

**1997 PACIFIC NORTHWEST COORDINATION  
AGREEMENT**

**Agreement  
for  
Coordination of Operations  
among  
Power Systems of the Pacific Northwest**

**June 18, 1997**

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## 1997 Pacific Northwest Coordination Agreement

This 1997 Pacific Northwest Coordination Agreement (“Agreement”), executed as of June 18, 1997, is by and among THE UNITED STATES OF AMERICA (“United States”), acting by and through THE BONNEVILLE POWER ADMINISTRATOR OF THE DEPARTMENT OF ENERGY (“Administrator”), THE DIVISION ENGINEER, NORTHWESTERN DIVISION, CORPS OF ENGINEERS, DEPARTMENT OF THE ARMY (“Division Engineer”), and THE REGIONAL DIRECTOR, BUREAU OF RECLAMATION, PACIFIC NORTHWEST REGION, DEPARTMENT OF THE INTERIOR (“Regional Director”); THE UNITED STATES ENTITY designated pursuant to Article XIV of the “Treaty between Canada and the United States of America Relating to the Cooperative Development of the Water Resources of the Columbia River Basin”; THE CITY OF EUGENE, OREGON, a municipal corporation of the State of Oregon; THE CITY OF SEATTLE, WASHINGTON, a municipal corporation of the State of Washington; THE CITY OF TACOMA, WASHINGTON, a municipal corporation of the State of Washington; PUBLIC UTILITY DISTRICT NO. 2 OF GRANT COUNTY, WASHINGTON, a municipal corporation of the State of Washington; PUBLIC UTILITY DISTRICT NO. 1 OF CHELAN COUNTY, WASHINGTON, a municipal corporation of the State of Washington; PUBLIC UTILITY DISTRICT NO. 1 OF PEND OREILLE COUNTY, WASHINGTON, a municipal corporation of the State of Washington; PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON, a municipal corporation of the State of Washington; PUBLIC UTILITY DISTRICT NO. 1 OF COWLITZ COUNTY, WASHINGTON, a municipal corporation of the State of Washington; PUGET SOUND ENERGY, INC., a corporation; PORTLAND GENERAL ELECTRIC COMPANY, a corporation; PACIFICORP, a corporation; THE WASHINGTON WATER POWER COMPANY, a corporation; THE MONTANA POWER COMPANY, a corporation; and COLOCKUM TRANSMISSION COMPANY, INC., a corporation.

## WITNESSETH:

WHEREAS, the Parties operate major hydroelectric generating plants or electric systems which serve the Pacific Northwest area; and

WHEREAS, the Parties have achieved substantial economies and additional firm power resources for the Pacific Northwest in the past by voluntarily coordinating the planning and operation of their facilities through the Northwest Power Pool and by entering into various contracts and arrangements, including the 1964 Pacific Northwest Coordination Agreement and amendments thereto; and

WHEREAS, coordination for the production of power must take into consideration non-power uses for water resources and must be achieved as a part of the comprehensive development and management of water resources for maximum sustained benefit for the public good; and

WHEREAS, the United States and Canada have entered into the "Treaty between Canada and the United States of America Relating to the Cooperative Development of the Water Resources of the Columbia River Basin" ("Treaty"), which Treaty contemplates coordination among the producers of power in the Pacific Northwest and the Canadian facilities subject to the Treaty; and

WHEREAS, the Administrator and the Division Engineer have been designated the United States Entity pursuant to Executive Order No. 11177 and Article XIV of the Treaty; and

WHEREAS, Canada is entitled under the Treaty to certain power benefits ("Canadian Entitlement") from the United States; and

WHEREAS, the United States and Public Utility District No. 1 of Chelan County, Washington, Public Utility District No. 1 of Douglas County, Washington, and Public Utility District No. 2 of Grant County, Washington (collectively "Mid-Columbia PUDs") first entered into the Canadian Entitlement Allocation Agreements in 1964, which agreements specified the portion of the Canadian Entitlement that the Mid-Columbia PUDs agreed to deliver to the Administrator during the duration of such agreements based upon the existence of coordination among the producers of power in the Pacific Northwest and the Canadian facilities subject to the Treaty; and

WHEREAS, the United States and the Mid-Columbia PUDs have entered into a subsequent set of Canadian Entitlement Allocation Extension Agreements dated April 30, 1997, which agreements specify the portion of the Canadian Entitlement that the Mid-Columbia PUDs agree to deliver to the Administrator pursuant to the terms of such agreements based upon the existence of coordination among the producers of power in the Pacific Northwest and the Canadian facilities subject to the Treaty; and

WHEREAS, the Administrator is authorized to transmit and dispose of electric power energy generated at various Federal hydroelectric projects in the Pacific Northwest in accordance with the Bonneville Project Act, approved August 20, 1937, as amended, the Reclamation Project Act of August 4, 1939, the Flood Control Act of December 22, 1944, the Preference Act of August 31, 1964, as amended, the Transmission System Act of October 18, 1974, as amended, the Northwest Power Act of December 5, 1980, as amended, and pursuant to the following orders of the Secretary of the Interior: No. 2563 dated May 2, 1950, and No. 2860 dated January 19, 1962, as amended; and

WHEREAS, the Administrator is authorized by Order No. 2860, as amended, to enter into such contracts, agreements, and arrangements, upon such terms and conditions and in such manner as the Administrator may deem necessary, as provided in the Bonneville Project Act, as amended; and

WHEREAS, the Secretary of the Army is authorized by various public laws related to the development of the Columbia River Basin to construct, operate, and maintain dam and reservoir projects for multiple purposes, one purpose being the generation of power; and

WHEREAS, the Secretary of the Army is to deliver electric power and energy which, in the Secretary's opinion, is not required in the operation of hydroelectric projects to the Secretary of Energy for transmission and disposal in accordance with Section 5 of the 1944 Flood Control Act; and

WHEREAS, the Secretary of the Army and the Chief of Engineers have delegated necessary and appropriate authority to the Division Engineer; and

WHEREAS, the Commissioner of Reclamation has delegated necessary and appropriate authority to the Regional Director; and

WHEREAS, the three Federal agencies, acting through the Administrator, the Division Engineer, and the Regional Director, in order to execute this 1997 PNCA on behalf of the United States, have entered into an agreement of even date herewith entitled "Memorandum of Agreement Between the Federal Parties to the 1997 PNCA";

NOW, THEREFORE, in consideration of the premises and of the mutual benefits from covenants hereinafter set forth, the Parties do hereby agree as follows.

## Part I. Introductory Provisions

### Section 1. Term and Termination

#### (a) Effective Date

Except as provided in parts III, *Operations*, and IV, *Rates and Charges*, and section 16, *Regulatory and Judicial Authorities*, this Agreement shall become effective the February 1 following execution by all of the Parties listed in the first paragraph of this Agreement and shall terminate on September 15, 2024.

#### (b) Suspension of Comprehensive Agreement

On the Effective Date, the Comprehensive Agreement shall remain in effect, but performance thereof by the Parties to this Agreement shall be suspended and all outstanding obligations of such Parties shall be subject to, and shall continue in force pursuant to, the terms of this Agreement; *provided* should any Party be prevented by operation of law from performing this Agreement, then that Party shall, while so prevented, and to the extent not prohibited by applicable law or regulation, perform pursuant to the Comprehensive Agreement and shall have all of the rights and shall be bound to perform all of the obligations of such Party consistent with all of the terms of the Comprehensive Agreement.

### Section 2. Definitions

The following capitalized terms shall have the following meanings when used in this Agreement.

***Actual Adjusted Energy Load*** and ***Actual Adjusted Peak Load*** of a Party means its actual energy load and actual peak load, respectively, adjusted by including the amount of the Party's firm commitments to deliver energy or capacity from its Firm Resources to other Parties and non-Parties and by excluding the amount of such Party's firm rights to receive energy or capacity from other Parties' Firm Resources. The Actual Adjusted Energy Load and the Actual Adjusted Peak Load of the Coordinated System means the sums of the Actual Adjusted Energy Loads and Actual Adjusted Peak Loads, respectively, of all of the individual Parties.

***Actual Adjusted Load*** means the aggregate of the Actual Adjusted Energy Load and Actual Adjusted Peak Load of a Party or of the Coordinated System, as the case may be.

***Actual Energy Capability*** ("***AEC***") means for any Period the amount of energy received and energy generated by a Party during such Period, as determined pursuant to subsection 9(b), ***Actual Energy Capability***. The Actual Energy Capability of the Coordinated System means the sum of the Actual Energy Capabilities of the individual Parties.

***Actual Firm Energy Load*** means for either a Party or the Coordinated System its Estimated Firm Energy Load updated to reflect actual conditions.



**Actual Peaking Capability (“APC”)** means for any Party the Peaking Capability of all of such Party’s Firm Resources, except those scheduled for Maintenance Outage, after, consistent with this Agreement, deduction of Forced Outage Reserves and adjustments for delivery or receipt of Interchange Capacity. The Actual Peaking Capability of the Coordinated System means the sum of the Actual Peaking Capabilities of all of the individual Parties.

**Annual Reservoir** means a reservoir that is able to refill in the current Operating Year from empty at the end of the Critical Period associated with the Firm Load Carrying Capability established for the current Operating Year to the maximum allowable elevation by the immediately following July 31 using the Refill Volume.

**Assigned Water** means for a reservoir the water equivalent of In Lieu Energy that the Reservoir Party controlling such reservoir has delivered to a downstream Party.

**Assured Refill Curve (“ARC”)** means a reservoir operating guideline based on the Refill Volume used to refill a reservoir and to determine its Base Energy Content Curve.

**Base Energy Content Curve (“Base ECC”)** means a reservoir operating guideline determined under section 7, *Determination of Base and Variable Energy Content Curves*, whose effect is to limit the Coordinated System’s production of secondary energy, such curve to be used as a starting point for developing Proportional Draft Points.

**Canadian Storage** means the reservoir storage in Canada existing on the Effective Date that affects Columbia River flows.

**Comprehensive Agreement** means the *Agreement for Coordination of Operations among Power Systems of the Pacific Northwest* executed as of September 15, 1964, as subsequently amended by the parties thereto.

**Conservative Streamflow Estimate** means with respect to any Project for the current and next Period the most probable forecast of Unregulated Streamflows by the Reservoir Party for such Project and, for any remaining Periods of the Operating Year, the forecast of Unregulated Streamflows based on the latest Volume Forecast for such Periods. If such forecasts are not available, the Unregulated Streamflows in the Load Determination Re-regulation shall be used under this Agreement in lieu of such forecasts.

**Coordinated System** means the aggregated Systems of each of the Parties, including generating plants, reservoirs, transmission systems, and associated facilities owned or controlled by such Party and coordinated by such Party under this Agreement. The Coordinated System shall include Treaty Storage to the extent such inclusion is not inconsistent with the Treaty.

**Coordinating Group** means the group established pursuant to subsection 5(a), *Coordinating Group*.

**Critical Peaking Period** means the Period(s) (not necessarily consecutive) during an Operating Year when the relationship of the Coordinated System’s computed Peaking Capability to its Estimated Adjusted Peak Load indicates the highest probability of load loss for such Period(s) pursuant to the methodology in Exhibit F, *Reserves*.

**Critical Period** means the consecutive Periods during which, based on the streamflows of the Historical Period of Record adjusted for changes in consumptive uses, the Firm Resources of the Parties serve the least total amount of the Coordinated System's Estimated Firm Energy Load.

**Critical Period Energy Capability** means for a Party or the Coordinated System the average energy that can be produced from its Firm Resources (excluding energy reserves pursuant to subsection 8(c), *Energy Reserve*, and Firm Resources scheduled for Maintenance Outage) under coordinated operations during the Critical Period based on full use of available stored water that can be shaped to the Coordinated System's Estimated Adjusted Energy Load during the Critical Period.

**Critical Rule Curve ("CRC")** means a guide for the storage and release of storage water from each reservoir to be used under this Agreement to develop the Coordinated System's Firm Energy Load Carrying Capability when the Coordinated System is in Proportional Draft. The Critical Rule Curve(s) for each reservoir is determined pursuant to subsection 6(l), *Determination of Critical Rule Curves*, and shall consist of one or more end-of-Period reservoir elevations needed to supply the Coordinated System's Firm Energy Load Carrying Capability when the Coordinated System is in Proportional Draft.

**Cyclic Reservoir** means a reservoir that is not an Annual Reservoir.

**Deficit Party** means a Party that has an Estimated Adjusted Energy Load that is less than the sum of its (i) Estimated Firm Energy Load and (ii) commitments under this Agreement to deliver firm energy to other Parties from its Firm Resources, minus its firm rights under this Agreement to receive energy from other Parties' Firm Resources.

**Delivering Party** means a Party that delivers or returns energy pursuant to this Agreement.

**Drawdown Period** means the consecutive Period(s) during which Coordinated System reservoirs are being drafted to meet load. The Drawdown Period for each Operating Year begins on or after August 1 when there is a sustained decrease in the Coordinated System's Storage Energy resulting from either Coordinated System reservoir drafts or drafts that would have occurred if Coordinated System reservoirs adhered to the Energy Content Curves. The Drawdown Period ends after January 1 when the Coordinated System's storage indicates a sustained increase in Storage Energy or when a sustained decrease in thermal generation occurs to avoid an increase in such Storage Energy, whichever occurs first.

**Effective Date** means the date the Agreement becomes effective pursuant to the terms of this Agreement.

**Energy Content Curve ("ECC")** means a guide to reservoir operations determined pursuant to section 7, *Determination of Base and Variable Energy Content Curves*, that is used to determine certain operating rights and obligations under this Agreement.

**Estimated Adjusted Energy Load ("EAEL") and Estimated Adjusted Peak Load ("EAPL")** of a Party means the maximum energy load and the maximum Peak Load amounts that such Party reasonably expects could be served from its anticipated Firm Energy Load Carrying Capability and Firm Peak Load Carrying Capability, respectively. The Estimated Adjusted Energy Load and Estimated Adjusted Peak Load of the Coordinated System means the sums of the Estimated Adjusted Energy Loads and Estimated Adjusted Peak Loads, respectively, of all of the Parties. Each Party shall, for purposes of running the Preliminary Regulation pursuant to subsection 6(c),

*Preliminary Regulation*, furnish to each other Party preliminary Estimated Adjusted Energy Loads that such Party reasonably expects could be served from its anticipated Firm Load Carrying Capability. Each Party shall modify its Estimated Adjusted Load pursuant to section 6, *Determination of Firm Load Carrying Capability*, such that its Estimated Adjusted Load equals its Firm Load Carrying Capability determined by use of the Final Regulation pursuant to subsection 6(m), *Establishment of Firm Load Carrying Capability*.

***Estimated Adjusted Load*** means the aggregate of the Estimated Adjusted Energy Load and the Estimated Adjusted Peak Load of a Party or of the Coordinated System, as the case may be.

***Estimated Firm Energy Load (“EFEL”)*** and ***Estimated Firm Peak Load*** means a Party’s best estimate of its firm energy load and firm Peak Load, excluding firm commitments to deliver energy or capacity to other Parties, which it expects to serve from its Firm Resources and from its firm rights under this Agreement to receive energy and capacity from other Parties’ Firm Resources. Firm commitments to supply energy or capacity outside the geographical area specified in the definition of System shall be separately identified when submitted under subsection 6(a), *Load and Firm Resource Data*. The Estimated Firm Energy Load and the Estimated Firm Peak Load of the Coordinated System means the sums of the Estimated Firm Energy Loads and the Estimated Firm Peak Loads, respectively, of all of the Parties.

***Estimated Firm Load*** means the aggregate of the Estimated Firm Energy Load and the Estimated Firm Peak Load of a Party or of the Coordinated System, as the case may be.

***Final Regulation*** means the Coordinated System regulation run pursuant to subsection 6(j), *Final Regulation*, to be used under this Agreement to (i) provide information from which Critical Rule Curves are determined pursuant to subsection 6(l), *Determination of Critical Rule Curves*, (ii) determine the Coordinated System’s final Critical Period Energy Capability, and (iii) after adjusting for final Restoration, determine each Party’s Firm Load Carrying Capability pursuant to subsection 6(m), *Establishment of Firm Load Carrying Capability*; provided the Final Regulation shall be the Load Determination Re-regulation if Firm Energy Load Carrying Capabilities are established from the first year of the Critical Period.

***Firm Energy Load Carrying Capability (“FELCC”)*** and ***Firm Peak Load Carrying Capability (“FPLCC”)*** means for the Coordinated System the firm energy load and Peak Load, respectively (as determined pursuant to this Agreement), that the Coordinated System is able to serve in any Period (inside or outside of the Critical Period) from the Firm Resources of the Coordinated System after deducting the required energy reserves and Forced Outage Reserve. For individual Parties Firm Energy Load Carrying Capability and Firm Peak Load Carrying Capability means the energy load and the Peak Load, respectively (as determined pursuant to this Agreement), that such Party is able to serve in any Period on a firm basis under this Agreement. Each Party’s Firm Energy Load Carrying Capability and Firm Peak Load Carrying Capability shall be determined in accordance with paragraph 6(h)(6), *Determination of Firm Load Carrying Capability*, established in accordance with subsection 6(m), *Establishment of Firm Load Carrying Capability*, adjusted in accordance with subsection 6(o), *Adjustments to Established Firm Load Carrying Capabilities*, and further adjusted in accordance with subsection 9(k), *Adjustments in Firm Energy Load Carrying Capability During Operating Year*.

***Firm Load Carrying Capability (“FLCC”)*** means the aggregate of the Firm Energy Load Carrying Capability and the Firm Peak Load Carrying Capability of a Party or of the Coordinated System, as the case may be.

**Firm Resources** means the following facilities and firm arrangements for the acquisition of power generated from facilities that in each case are available to a Party to supply firm energy and firm capacity and that are submitted for coordination under this Agreement.

**(i) *Projects Inside the Coordinated System***

Projects owned, leased, or otherwise controlled by a Party from time to time during the term of this Agreement, in each case located within the geographical area identified in the definition of System, except for resources committed to others under a type of agreement described in (ii) below of this definition; *provided* Projects above the tailrace of Bonneville Dam shall be Firm Resources coordinated under this Agreement and other hydroelectric resources may be Firm Resources coordinated under this Agreement at the option of such Party. Subject to section 24, *Re-negotiation*, and subsections 26(b), *Transfer of a Project to a Non-Party*, and 26(c), *Transfer of a Project to a Party*, once a resource in this category is submitted as a Firm Resource, it shall remain a Firm Resource for the duration of this Agreement.

**(ii) *Share of Projects Inside the Coordinated System***

All resources under an agreement or agreements that provide that a Party's System obtains from time to time during the term of this Agreement all or a portion of all of the various and several energy benefits available from a particular Project or particular hydroelectric resource specified in such agreement, in each case located within the geographical area identified in the definition of System; *provided* resources from Projects above the tailrace of Bonneville Dam shall be Firm Resources coordinated under this Agreement and other hydroelectric resources may be Firm Resources coordinated under this Agreement at the option of such Party. Subject to section 24, *Re-negotiation*, and subsections 26(b), *Transfer of a Project to a Non-Party*, and 26(c), *Transfer of a Project to a Party*, once a resource from a Project in this category is submitted as a Firm Resource, it shall remain a Firm Resource during the term of this Agreement for as long as the submitting Party has control over such resource.

**(iii) *Thermal and Miscellaneous Resources***

All or any part of dependable thermal and miscellaneous resources available to a Party that are dedicated to serve Northwest load and included in the Coordinated System at the option of such Party; *provided* the submitting Party's ratio of coordinated thermal Firm Resources to coordinated hydroelectric Firm Resources does not exceed seven to one; *provided further* that The Montana Power Company may continue to coordinate all of the thermal resources it submits to coordination the first year of this Agreement notwithstanding the above-referenced limitation. Thermal and miscellaneous Firm Resources may include, but shall not be limited to, contracts for the purchase of firm power or energy from resources not otherwise a part of the Coordinated System and arrangements by a Party for a supply of firm power or energy from its own resources not otherwise included in its System. A submitting Party retains the right in its sole discretion to remove a thermal and miscellaneous resource after its inclusion as a Firm Resource.

The Coordinated System's Firm Resource means the aggregate of the Firm Resources submitted by all of the Parties pursuant to subsection 6(a), *Load and Firm Resource Data*. Firm Resources submitted by any Party for coordination shall be listed on Exhibit D, *The Coordinated System's*

*Firm Resources as of June 18, 1997*, to this Agreement. Pursuant to paragraph 6(b)(1), *Adjusting Firm Resources*, Exhibit D, *Coordinated System's Firm Resources as of June 18, 1997*, shall be updated annually by the Coordinating Group to conform to information submitted by the Parties in their subsection 6(a), *Load and Firm Resource Data*, data submittal.

***Flexibility Adjustment Account ("FAA")*** means the account for each Party maintained by the Coordinating Group that advances or delays Firm Energy Load Carrying Capability of such Party pursuant to subsection 9(k), *Adjustments in Firm Energy Load Carrying Capability During Operating Year*.

***Forced Outage*** means an outage, full or partial, due to any failure of the turbine, generator, any auxiliary components, or pertinent structures, not including a System's main-grid transmission system facilities, that requires a generating unit to reduce production. To be considered forced an outage must satisfy one of the following conditions: (i) It is necessary immediately to take the generating unit or equipment out of service or reduce generation; or (ii) it is necessary to take the generating unit or equipment out of service or reduce generation before a normally-scheduled maintenance period or a low-load period of sufficient length to make the necessary repairs.

***Forced Outage Rate*** means for a generating unit the probability of such unit being out of service in any Period as expressed by a ratio of the expected hours out of service divided by the total hours in such Period.

***Forced Outage Reserve*** means generating capacity held in reserve as required by subsection 8(b), *Forced Outage Reserves*, to replace the generation lost because of a Forced Outage so as to avoid loss of load.

***Heavy Load Hours ("HLH")*** means the hours from 0700 hours to 2200 hours, Monday through Saturday, excluding national holidays.

***Historical Period of Record*** means the historical period beginning August 1928 (updated at a minimum every ten years) containing the record of streamflows used for planning under this Agreement.

***Holding Energy ("HE")*** means energy transferred between Parties pursuant to subsection 9(c), *Delivery and Return of Holding Energy*, in order to delay the draft of a reservoir. The affected Parties shall prepare schedules of Holding Energy transfers pursuant to paragraph 6(i)(4), *Designation of Holding Energy*.

***Hydroelectric Firm Energy Load Carrying Capability ("Hydroelectric FELCC")*** means the Coordinated System's total Firm Energy Load Carrying Capability less that portion of such Firm Energy Load Carrying Capability attributable to thermal and miscellaneous Firm Resources after adjusting those Firm Resources for the planned Maintenance submitted pursuant to paragraph 6(a)(4), *Maintenance*, and revised pursuant to paragraph 6(f)(3), *Revisions to Maintenance*.

***In Lieu Energy*** means energy (i) delivered pursuant to subsection 9(j), *Release of Water From Storage and In Lieu Energy Deliveries*, by a Reservoir Party to the owner of a downstream Project in an amount equivalent to the amount of energy that could have been produced at such downstream Project if water above the Energy Content Curve had been released as requested by the owner of such downstream Project, or (ii) returned pursuant to subsection 9(j), *Release of*

*Water From Storage and In Lieu Energy Deliveries*, by the owner of a downstream Project to a Reservoir Party.

**Indicated Export** means for both planning and operational purposes the amount by which a Party's Firm Energy Load Carrying Capability in a Period is less than the latest estimate of the energy capability of its Firm Resources in such Period determined in accordance with this Agreement, as such estimate is adjusted for (i) estimates of Restoration, and (ii) energy reserves calculated pursuant to subsection 8(c), *Energy Reserve*.

**Indicated Exporting Party** means for planning purposes a Party whose Firm Energy Load Carrying Capability determined in the Modified Regulation is in any Period greater than the latest estimate of the energy capability of its Firm Resources for that Period, as such estimate is adjusted for (i) estimates of Restoration, and (ii) energy reserves calculated pursuant to subsection 8(c), *Energy Reserve*.

**Indicated Import** means for both planning and operational purposes the amount by which a Party's Firm Energy Load Carrying Capability in a Period is greater than the latest estimate of the energy capability of its Firm Resources in such Period determined in accordance with this Agreement, as such estimate is adjusted for (i) estimates of Restoration, and (ii) energy reserves calculated pursuant to subsection 8(c), *Energy Reserve*.

**Indicated Importing Party** means for planning purposes a Party whose Firm Energy Load Carrying Capability determined in the Modified Regulation is in any Period less than the latest estimate of the energy capability of its Firm Resources for that Period, as such estimate is adjusted for (i) estimates of Restoration, and (ii) energy reserves calculated pursuant to subsection 8(c), *Energy Reserve*.

**Indicated Receiving Party** means for operational purposes a Party that has a right to receive and may require the delivery of energy pursuant to this Agreement but that has not requested the delivery of all such energy.

**Indicated Supplying Party** means for operational purposes a Party that is required to deliver energy pursuant to this Agreement but that has not been requested to deliver all such energy.

**Initial Shift Allocation Level** means one of the following levels of Estimated Adjusted Energy Load elected pursuant to paragraph 6(a)(8), *Specification of Intention to Shift and Initial Shift Allocation Level*, by the Shifting Party to be used throughout the Critical Period for the purposes of allocating shift: (i) its average Critical Period hydroelectric capability plus its average non-hydroelectric Firm Resources' capability in the Shift Allocation Interval; or (ii) its average Firm Resources in the Shift Allocation Interval. Such Shifting Party's election shall remain fixed during the Critical Period.

**Interchange Capacity** means capacity transferred on request between Parties pursuant to subsection 9(e), *Interchange Capacity*, to supply any part of a Party's deficiency between its Actual Peaking Capability and Firm Peak Load Carrying Capability.

**Interchange Energy** means energy transferred on request between Parties pursuant to subsection 9(d), *Interchange Energy*, either to (i) supply any part of a Party's deficiency between its Actual Energy Capability and Firm Energy Load Carrying Capability, or (ii) return such energy to the Supplying Party. Interchange Energy includes both Regular Interchange Energy and Loaned Interchange Energy.

**Light Load Hours (“LLH”)** means hours other than Heavy Load Hours.

**Load Determination Re-regulation (“LDR”)** means the hydroelectric re-regulation to be used under this Agreement to conform the initial Critical Period planning regulation for the established Firm Energy Load Carrying Capability to the current Operating Year planning requirements pursuant to section 6(o), *Adjustments to Established Firm Load Carrying Capabilities*.

**Loaned Interchange Energy** means Interchange Energy that (i) is identified as loaned when requested pursuant to paragraph 9(d)(1), *Delivery of Interchange Energy*, and (ii) can be called back in accordance with clause 9(d)(3)(A)(ii), *Loaned Interchange Energy*, to the extent a Supplying Party’s Actual Energy Capability, excluding the use of thermally-generated energy, is less than its Firm Energy Load Carrying Capability.

**Maintenance Outage** means for a Party any Firm Resource outage, other than a Forced Outage, that is for the purpose of routine or special maintenance without regard to whether such outage is scheduled or occurs before or after such Party’s subsection 8(a), *Maintenance*, submittal.

**Modified Regulation** means the Coordinated System regulation run pursuant to subsection 6(h), *Modified Regulation*, to be used under this Agreement to (i) estimate the Coordinated System’s modified-maximum Critical Period Energy Capability, (ii) after adjustment for estimated Restoration pursuant to subparagraph 6(h)(1)(E), *Adjust Firm Resources to Estimated Adjusted Energy Load*, provide a modified estimate of each Party’s Critical Period Energy Capability, and (iii) provide an initial estimate of each Party’s Firm Load Carrying Capability.

**Non-shapeable Energy Capability** means in any Period in which the Coordinated System’s energy capability cannot match the Coordinated System’s Estimated Adjusted Energy Load, measured in megawatts, the difference between (i) the Coordinated System’s energy capability and (ii) the Coordinated System’s Estimated Adjusted Energy Load plus the Offset, if any, for that Period.

**Offset** means for planning purposes the adjustment(s), measured in megawatts, to the Coordinated System’s energy capability necessary to distribute surpluses or deficits uniformly between the Critical Period Energy Capability and the Coordinated System Estimated Adjusted Energy Loads. Offsets shall equal the difference between the Coordinated System’s energy capability and the Coordinated System’s Estimated Adjusted Energy Load; *provided* in Periods containing Non-shapeable Energy Capability Offsets shall equal zero.

**Offset Interval** means the sequential Periods where energy can be shaped between such Periods and energy surpluses or deficits can be uniformed.

**Operating Year** means August 1 through July 31.

**Other-than-Treaty Storage** means Canadian Storage and modifications thereto that are not Treaty Storage.

**Party** means any party to this Agreement; *provided* when action is to be taken under this Agreement by the United States it may be taken, as appropriate, by independent action of the Administrator, the Division Engineer, or the Regional Director, notwithstanding that the United States is the actual Party and is ultimately responsible under this Agreement.

**Peak Load** means the highest clock-hour-average load for a stated period.

**Peak Load Hours (“PLH”)** means any six or fewer hours (irrespective of whether such hours are consecutive, Heavy Load Hours, or Light Load Hours) that a Party may declare daily as Peak Load Hours pursuant to this Agreement. Once made by a Party, a Peak-Load-Hours designation shall be applied consistently with respect to such Party under all pertinent sections of this Agreement.

**Peaking Capability** means for a Firm Resource the maximum Peak Load carrying ability of such Firm Resource or for a Party the sum of all Peak Load carrying abilities of all of such Party’s Firm Resources. The Peaking Capability of the Coordinated System means the sum of the Peaking Capabilities of all of the Parties.

**Period** means a calendar month; *provided* when the Critical Period begins or ends within a calendar month Period means that portion of such calendar month that is part of the Critical Period and that portion of such calendar month that is not part of the Critical Period.

**Potential Spill Period** means the period commencing upon a Reservoir Party’s notification to all other Parties that a potential spill condition exists and continuing until the Reservoir Party notifies the Parties that the potential spill condition has ended.

**Preliminary Regulation** means the Coordinated System regulation run pursuant to subsection 6(c), *Preliminary Regulation*, to be used under this Agreement to (i) determine a preliminary maximum Critical Period Energy Capability for the Coordinated System, and (ii) after adjustment for estimated Restoration, estimate each Party’s preliminary Critical Period Energy Capability.

**Project** means any hydroelectric generating facility or reservoir that is a Firm Resource and is used for power purposes in a Party’s System.

**Proportional Draft** means the release of water to Proportional Draft Points pursuant to paragraph 9(g)(3), *Proportional Draft*.

**Proportional Draft Points (“PDP”)** means target reservoir elevations established by the Coordinating Group when draft below the Energy Content Curves is necessary to develop the Coordinated System’s Firm Energy Load Carrying Capability.

**Provisional Draft** means the release of water as permitted in subsection 9(l), *Provisional Energy*, that a Reservoir Party anticipates will cause its reservoir(s) to be below its end-of-Period Energy Content Curve(s) at the end of the current Period.

**Provisional Energy** means the energy generated from Provisional Draft.

**Receiving Party** means a Party that receives or requests receipt of an initial delivery of energy pursuant to subsection 9(c), *Delivery and Return of Holding Energy*, 9(d), *Interchange Energy*, 9(e), *Interchange Capacity*, 9(j), *Release of Water From Storage and In Lieu Energy Deliveries*, or 9(n), *Transfers Due To Forced Outage*. For the purposes of subsection 9(i), *Storage of Energy in Reservoirs*, the Receiving Party means a Reservoir Party that has accepted energy for storage in its System.

**Refill-hold Period** means the time interval between successive Drawdown Periods.



**Refill Criterion** means 98 percent of the Coordinated System's maximum storage capability measured in Storage Energy at the end of the Refill-hold Period.

**Refill Regulation** means a multi-year simulation of the operation of Projects over the Historical Period of Record used under this Agreement to determine Variable Energy Content Curves for the Coordinated System reservoirs pursuant to subparagraph 7(d)(4)(B), *Refill Regulation*.

**Refill Volume** means for each reservoir the volume equivalent of the streamflows corresponding to the third lowest volume Unregulated Streamflow at site in the Historical Period of Record during those Periods for which the Energy Content Curves indicate that such reservoir would be filling after such streamflow has been reduced by (i) minimum discharge requirements, (ii) non-power requirements for water at site and upstream, and (iii) water required for refill at upstream reservoirs. All Projects above the tailrace of Bonneville Dam shall use the same year (third lowest volume unregulated inflow) in determining the Refill Volume.

**Regular Interchange Energy** means all Interchange Energy that is not Loaned Interchange Energy.

**Requesting Party** means a Party that has an outstanding request for a delivery of energy from the System of a Party invoking a deferral pursuant to subsection 9(h), *Priorities on Use of Facilities for Power*.

**Reservoir Party** means a Party who owns reservoir storage or has a right to determine the operation of reservoir storage under an agreement described in (ii) of the definition of Firm Resource. The United States shall be a Reservoir Party with respect to Treaty Storage.

**Restoration** means transfers of Firm Energy Load Carrying Capability among the Parties pursuant to subsection 6(k), *Determination of Restoration*, so that all Parties can carry at least as much firm energy load from their Restoration Project(s) as they could have carried before development of Treaty Storage. The sum of all Restoration over the Coordinated System equals zero.

**Restoration Project** means for each submitting Party a Project listed on Exhibit E, *Limits of Rights to Restoration*, that qualifies such Party for Restoration under subsection 6(k), *Determination of Restoration*.

**Settlement Criterion** means 98 percent of the Storage Energy achieved in the Final Regulation at the start of the Critical Period.

**Shifting Allocation Interval** means for each Offset Interval the Period or group of sequential Periods commencing at the beginning of the Critical Period and ending in the last Period of that Offset Interval.

**Shifting Party** means a Party that shifts Firm Energy Load Carrying Capability from one year of the Critical Period to another year in the Critical Period by algebraically exceeding its Critical Period average surplus or deficit by at least two megawatts in any interval within the Critical Period; *provided* that if shift occurs as a result of a change in participation in a joint-participation Project (Estimated Adjusted Energy Loads minus Estimated Firm Energy Loads are non-uniform), the difference corresponding to the change in participation shall not be considered in determining whether a Party is a Shifting Party. For purposes of this definition, an interval can be either an Operating Year for determining desired hydroelectric generation pursuant to

submethods 6(b)-1.A., *Calculation of Desired Hydroelectric Generation*, and 6(g)-1.A., *Calculation of Desired Hydroelectric Generation*, or a Shifting Allocation Interval for allocating reductions in shift.

***Spinning Reserve*** means the unloaded generating capacity of a Party's Firm Resources that is ready at all times to take load upon demand, together with any firm arrangements with another generation supplier for obtaining such capacity, and less any such firm arrangements for the supply of such capacity to another entity. Only that portion of such capacity or firm arrangements which is capable of serving load on a sustained basis within five minutes of the time of demand may be considered to be Spinning Reserve. A Party may consider as Spinning Reserve under this Agreement capacity being used to supply loads to which service can be interrupted upon five minutes' notice.

***Spinning Reserve Requirement*** means the minimum Spinning Reserve which a Party is required to maintain pursuant to subsection 8(d), *Spinning Reserve*.

***Storage Energy*** means for a Project the energy equivalent of the water stored above normal bottom elevation in such Project calculated using the Critical Period average water-to-energy conversion factors of all Projects at site and downstream. Storage Energy for a Party means the aggregate of the Storage Energy in all of such Party's reservoir Project(s). Storage Energy for the Coordinated System means the aggregate of the Storage Energy in all of the reservoir Projects of the Coordinated System.

***Supplying Party*** means a Party that makes an initial delivery of energy pursuant to subsection 9(c), *Delivery and Return of Holding Energy*, 9(d), *Interchange Energy*, 9(e), *Interchange Capacity*, 9(j), *Release of Water From Storage and In Lieu Energy Deliveries*, 9(i), *Storage of Energy in Reservoirs*, or 9(n), *Transfers Due to Forced Outage*.

***Surplus Party*** means a Party that has an Estimated Adjusted Energy Load in excess of the sum of its Estimated Firm Energy Load plus its commitments to deliver firm energy to other Parties from its Firm Resources and minus its firm rights to receive energy from other Parties' Firm Resources.

***System*** means for any Party such Party's Firm Resources and transmission facilities that are adequately interconnected and that are interconnected with the Systems of other Parties to accomplish the objectives of this Agreement and that are located within the following geographical area: the states of Washington, Oregon, Idaho, Montana, and Wyoming; *provided* PacifiCorp's System shall also include its Firm Resources and transmission facilities that are located in California within the Klamath River Basin and are interconnected and coordinated with its other resources and facilities independently of this Agreement; *provided further* The City of Seattle's System shall also include its arrangement for power from the High Ross Treaty. The System of the United States shall include Treaty Storage to the extent such inclusion is not inconsistent with the Treaty.

***Treaty*** means the "Treaty between the United States of America and Canada Relating to the Cooperative Development of the Water Resources of the Columbia River Basin," as supplemented from time to time by the exchange of notes between the governments of the United States and Canada.

***Treaty Storage*** means the reservoir storage provided by Canada under Article II of the Treaty.

***Trial Refill Regulation*** means the multi-year simulation of the operations of Projects run pursuant to subparagraph 7(d)(4)(A), *Trial Refill Regulation Based on Minimum Flow Variable Energy Content Curves*, using preliminary Variable Energy Content Curves for purposes of comparison with the Refill Regulation pursuant to subparagraph 7(d)(4)(B), *Refill Regulation*, in order to establish the final-planned Variable Energy Content Curves.

***Unregulated Streamflow*** means the rate of flow at a given point due to natural-lake storage and river-channel restrictions adjusted to eliminate the effects of reservoir regulation.

***Variable Energy Content Curve (“Variable ECC”)*** means operating guidelines for Cyclic Reservoirs similar in purpose to the Base Energy Content Curve but based on the Volume Forecast. The Variable Energy Content Curve is determined by using a 95 percent probability that actual unregulated flows will equal or exceed forecasted unregulated flows pursuant to subsection 7(d), *Variable Energy Content Curves*.

***Volume Forecast*** means for each reservoir in the Coordinated System the 50 percent confidence forecast and subsequent updates of the January through July volume runoff for such reservoir, as provided by the responsible reservoir systems; *provided* for reservoirs operated by the United States, the United States shall use the National Weather Service’s (or its successor’s) volume forecast for The Dalles, Oregon.

### **Section 3. Exhibits**

Exhibits A through J, attached hereto and as subsequently updated by the Parties as provided in this Agreement, are incorporated into this Agreement.

### **Section 4. Coordination/Priorities**

#### **(a) Agreement to Coordinate**

Subject to the terms and conditions of this Agreement, each of the Parties shall coordinate with all of the other Parties the planning and operation of its System.

#### **(b) Priorities**

The Parties shall coordinate their Systems to make available to each Party its optimum Firm Load Carrying Capability (“FLCC”), to provide optimum FLCC for the Coordinated System, and, consistent with these objectives, to produce the optimum amount of useable secondary energy for each Party.

### **Section 5. Implementation of Agreement**

## **(a) Coordinating Group**

### **(1) Structure and Duties**

Each non-Federal Party and the Division Engineer, the Administrator, and the Regional Director shall appoint a representative and an alternate representative to represent such Party or entity as a member of the Coordinating Group to act for it in matters pertaining to this Agreement. Each Party shall notify all of the other Parties in writing of the name of any representative and alternate representative appointed pursuant to this paragraph 5(a)(1), and of any replacement therefor. At the request of any such representative, the Coordinating Group shall meet to perform one or more of the following actions.

#### **(A) Implementation**

Plan, operate, and resolve issues related to coordination of Firm Resources under this Agreement.

#### **(B) Studies and Plans**

Conduct studies and make plans relating to coordinated planning and operations pursuant to this Agreement for the information of the Parties. The studies and plans shall include those specifically required by this Agreement (for example, the Preliminary Regulation, the Modified Regulation, and the Final Regulation) and any other studies, plans, or determinations decided by the Coordinating Group to be necessary for purposes of this Agreement. The Coordinating Group may revise study and plan results and revise or waive deadlines related thereto.

#### **(C) Organizational Rules**

Adopt, modify, or supplement rules required for the proper functioning of the Coordinating Group. The rules governing the functioning of the Coordinating Group shall be as set out in Exhibit A, *Organizational Rules*.

#### **(D) Costs**

Approve the reasonable costs of the Coordinating Group and its staff, which may include reasonable costs for: engineering, secretarial, and clerical services; space; furniture and equipment rentals; utility services; supplies and miscellaneous office services. Each month the chairman of the Coordinating Group shall submit to each of the Parties an itemized statement showing all costs incurred by the Coordinating Group during the preceding month and the allocation of such costs among the Parties pursuant to this Agreement.

## **(E) Annual Methods and Procedures**

Adopt, modify, or supplement annual methods and procedures. Annual methods and procedures may be used to implement or revise sections 6, *Determination of Firm Load Carrying Capability*, 7, *Determination of Base and Variable Energy Content Curves*, 8, *Maintenance and Reserves*, and 9, *Operating Procedures, Obligations, and Rights*, and to implement any of the other sections of this Agreement. The Coordinating Group's waiver of any provision in this Agreement through its adoption, modification, or supplementation of an annual method or procedure pursuant to this subparagraph 5(a)(1)(E) shall not be construed as a waiver of any other provision of this Agreement or as a waiver of the same or any similar provision in any other instance.

All decisions of the Coordinating Group shall be by unanimous consent; *provided* that an abstention or a failure to object shall be considered consent.

## **(2) Responsibility for Costs**

Each Party shall pay all of the costs and expenses of its own Coordinating Group representative. Twenty-five percent of the Coordinating Group's general overhead and staff costs that have been consented to by the Coordinating Group (the "Lesser Cost") shall be shared pro rata among all of the Parties, other than the United States Entity, with each such Party's pro rata share being equal to the Lesser Costs multiplied by a fraction, the numerator of which is equal to the number of such Party's representatives to the Coordinating Group and the denominator of which is equal to the number of Parties plus one. The Administrator shall pay all of the Lesser Costs payable by the United States pursuant to this paragraph 5(a)(2). Seventy-five percent of the Coordinating Group's general overhead and staff costs that have been consented to by the Coordinating Group (the "Greater Costs") shall be shared pro rata among all of the Parties whose share of the Coordinated System's Firm Energy Load Carrying Capability ("FELCC") for the Operating Year is greater than one percent, with each such Party's pro rata share being equal to the Greater Costs multiplied by a fraction, the numerator of which is one and the denominator of which is equal to the number of Parties whose share of the Coordinated System's FELCC for such Operating Year is greater than one percent. The Administrator shall pay all of the Greater Costs payable by the United States pursuant to this paragraph 5(a)(2).

## **(b) Methods and Procedures**

The Parties may adopt long-term methods and procedures and the Coordinating Group may adopt annual methods and procedures as provided in subparagraph 5(a)(1)(E), *Annual Methods and Procedures*, to implement or revise this Agreement. The long-term methods and procedures shall be as set out in Exhibit B, *Long-Term Methods and Procedures*, and the annual methods and procedures shall be as set out in Exhibit C, *Annual Methods and Procedures*. Methods and procedures pertaining to coordinated planning pursuant to this Agreement shall be hereafter referred to in this Agreement as

“methods,” and methods and procedures pertaining to coordinated operations pursuant to this Agreement shall be hereafter referred to in this Agreement as “procedures.”

## **(1) Long-Term Methods and Procedures**

### **(A) Term**

Long-term methods and procedures shall, subject to subparagraph 5(b)(1)(B), *Adoption*, be effective, as specified therein, during the remaining term of this Agreement or for a period of ten Operating Years or five Operating Years.

### **(B) Adoption**

The Parties may consider new long-term methods and procedures each Operating Year. Long-term methods and procedures agreed to and signed by all of the Parties by May 1 of any Operating Year shall become effective at the later of (i) the beginning of the following Operating Year, and (ii) the time of any required regulatory and other approval or permission required to be effective.

### **(C) Reopening**

Any Party may reopen negotiation of any long-term method or procedure once every five years after such method or procedure becomes effective and the Parties shall consider any modification proposed by such Party. Any modification to a long-term method or procedure shall be only by unanimous vote of all of the Parties. Any such modification made by May 1 of any Operating Year shall become effective at the later of (i) the beginning of the following Operating Year, and (ii) the time of any required regulatory and other approval or permission required to be effective.

### **(D) Extension of Long-Term Method or Procedure at Expiration**

Immediately prior to the expiration of any long-term method or procedure, the Coordinating Group shall determine whether any of the Parties object to extending such long-term method or procedure. Extension of any long-term method or procedure shall be by unanimous consent of all of the Parties; *provided* any long-term method or procedure not objected to by any of the Parties shall automatically be extended for a term equivalent to its initial term not to exceed the term of this Agreement.

## **(2) Annual Methods and Procedures**

### **(A) Term**

Annual methods and procedures subject to subparagraph 5(b)(2)(b), *Adoption*, shall be effective for a period of one Operating Year.

### **(B) Adoption**

The Coordinating Group may consider annual methods and procedures each Operating Year. If any annual methods or procedures are presented to the Coordinating Group for approval, each member of the Coordinating Group shall either approve or disapprove the proposed methods or procedures in their entirety. Any annual method or procedure approved by all of the members of the Coordinating Group by May 1 of any Operating Year shall become effective at the later of (i) the beginning of the following Operating Year, and (ii) the time of any required regulatory and other approval or permission required to be effective.

If no Coordinating Group member objects by March 1 of any Operating Year to the extension of the current annual methods or procedures, such annual methods or procedures shall be automatically extended for the next Operating Year. The Coordinating Group member that objects shall specify the basis for its objection. If an objection is received, each member of the Coordinating Group shall negotiate in good faith with the objective of accommodating such objection by modification of such annual method or procedure.

### **(C) Transition of Annual Method or Procedure to Long-Term Method or Procedure**

If an annual method or procedure has been in effect for five consecutive Operating Years, the Parties shall consider whether to adopt such annual method or procedure on a long-term basis.

## Part II. Planning

### Section 6. Determination of Firm Load Carrying Capability

Each year the Coordinating Group shall determine the Firm Load Carrying Capability (“FLCC”) of the Coordinated System and of each individual Party in accordance with the following provisions. In connection with such determination, the Parties shall exchange all relevant data.

#### (a) Load and Firm Resource Data

Not later than February 1 of each Operating Year, each of the Parties shall provide to each of the other Parties the following data applicable to the Periods commencing on the following August 1.

##### (1) Load Data

Load data including (i) Estimated Firm Load, (ii) estimated secondary energy load, and (iii) Estimated Adjusted Load that such Party reasonably expects could be supplied from its anticipated FLCC including estimated Restoration. Estimated Firm Load is a basic requirement for planning. Each Party shall make these estimates to the best of its ability.

##### (2) Plant Data

To the extent not provided with respect to a previous Operating Year, all hydroelectric and thermal plant data regarding the Firm Resources of such Party including Project Unregulated Streamflows for the Historical Period of Record, reservoir capacity, conversion factors and peaking capacities throughout the operating range, operating restrictions, minimum flow limitations, limitations required for non-power uses, fuel conversion rates, and any other data reasonably anticipated by such Party to be necessary for the determination of FLCC.

##### (3) Data Regarding Power Transfers with Others Outside the Coordinated System

Data relating to amounts of energy and capacity that a Party expects to receive from or deliver outside the Coordinated System.

##### (4) Maintenance

Schedule of Maintenance Outages in accordance with subsection 8(a), *Maintenance*.



## **(5) New Firm Resources**

To the extent not previously provided pursuant to this Agreement, service schedule for new or additional Firm Resources.

## **(6) Firm Resource Retirements**

Firm Resources affecting generating capability listed in Exhibit D, *Coordinated System's Firm Resources as of June 18, 1997*, that are scheduled to be permanently taken out of service, terminated, retired, or abandoned; *provided* any retirement by any Party of a Project with seasonal storage shall have been preceded by a minimum of four years' notice to all other Parties, unless such retirement resulted from, was due to, or was caused by one or more uncontrollable forces as defined in section 21, *Uncontrollable Forces*.

## **(7) Removal of Firm Resources**

Thermal or miscellaneous Firm Resources listed in Exhibit D, *Coordinated System's Firm Resources as of June 18, 1997*, or coordinated under this Agreement during the previous Operating Year that are being removed from coordination under this Agreement.

## **(8) Specification of Intention to Shift and Initial Shift Allocation Level**

Specification of Operating Year(s) in which such Party anticipates being a Shifting Party as reflected in its submitted Estimated Adjusted Energy Loads ("EAEL"), together with its Initial Shift Allocation Level. If a Shifting Party fails to declare an Initial Shift Allocation Level, its EAEL shall be set to its average Firm Resources in the Initial Shift Allocation Interval.

While Surplus and Deficit Parties may reallocate their EAELs between Periods in the Critical Period pursuant to paragraph 6(a)(1), *Load Data*, a Surplus Party may not submit EAELs that would show a deficit in any Period in the Critical Period and a Deficit Party cannot submit EAELs that would show a surplus in any Period in the Critical Period.

## **(b) Necessary Actions Prior to Running the Preliminary Regulation**

The Coordinating Group shall take the following actions prior to running the Preliminary Regulation.

## **(1) Adjusting Firm Resources**

Adjust the Firm Resources and reflect the changes to the Firm Resources in Exhibit D, *Coordinated Firm Resources as of June 18, 1997*, as follows.

### **(A) Addition or Removal of Firm Resources**

Add to each Party's Firm Resources the new or additional Firm Resources scheduled for service, as specified by such Party pursuant to paragraph 6(a)(5), *New Firm Resources*, and remove from each Party's Firm Resources the Firm Resources scheduled (i) to be taken out of service, terminated, retired, or abandoned, as specified by such Party pursuant to paragraph 6(a)(6), *Firm Resource Retirements*, or (ii) to be removed from coordination, as specified by such Party pursuant to paragraph 6(a)(7), *Removal of Firm Resources*.

### **(B) Delay in Availability**

Adjust the Firm Resources of each Party to reflect any delays or advances in the availability of such Firm Resources as reflected in the data provided by such Party pursuant to paragraphs 6(a)(5), *New Firm Resources*, 6(a)(6), *Firm Resource Retirements*, and 6(a)(7), *Removal of Firm Resources*.

The Coordinating Group shall use Exhibit D, *Coordinated System's Firm Resources as of June 18, 1997*, as revised pursuant to this paragraph 6(b)(1) to determine FLCC.

## **(2) Determination of Critical Period**

Determine the Critical Period using the data provided by the Parties pursuant to subsection 6(a), *Load and Firm Resource Data*.

## **(3) Shifting Limitations**

Adjust the EAELs of the Coordinated System pursuant to method 6(b)-1., *Responsibilities of Study Group After Determination of Critical Period and Prior to Running the Preliminary Regulation*; provided the EAELs of individual Parties shall not be adjusted.

## **(c) Preliminary Regulation**

Using the following criteria, the Coordinating Group shall run a Preliminary Regulation not later than March 15 of each Operating Year in order to determine a preliminary maximum Critical Period Energy Capability for the Coordinated System.

## **(1) Limitations for the Preliminary Regulation**

Except as set forth in subsections 8(a), *Maintenance*, and 8(c), *Energy Reserve*, base the Preliminary Regulation on the utilization of all Firm Resources.

### **(A) Utilization of All Hydroelectric Firm Resources**

Except as set forth in clauses 6(c)(1)(A)(i), 6(c)(1)(A)(ii), and 6(c)(1)(A)(iii) below, assume that each reservoir in the Coordinated System is at its normal top elevation at the beginning of the Critical Period and is drafted to its normal bottom elevation by the end of the Critical Period. Assume that the release of Treaty Storage in each Period is consistent with the most recent Treaty operating plan described in subsection 22(a), *United States-Canada Operating Plans*.

#### **(i) Limitation of Reservoir Draft**

Assume that no reservoir shall be drafted below the point where there is a net loss of Critical Period Energy Capability to the Coordinated System.

#### **(ii) Limitation of Reservoir Operations to Accommodate Non-power Requirements**

Base the regulation on the maximum use of storage water subject to Project non-power requirements.

#### **(iii) New Reservoirs**

When a new reservoir is to be included in the regulation, use the estimate of the reservoir's expected elevation for the July 31 preceding the first Critical Period in which such reservoir is included pursuant to this Agreement as a Firm Resource of such Reservoir Party which the Reservoir Party shall provide to each of the other Parties.

### **(B) Percent Outflow Limit**

Limit the plant factor of each Project in any Period to the higher of (i) 85 percent, or (ii) the plant factor for an individual Project that is necessary to make the most of the Coordinated System's available storage useable during the Critical Period.

### **(C) Multi-Year Critical Period Draft Limit**

As of each March 31 in a multi-year Critical Period, limit each reservoir's draft to its Assured Refill Curve ("ARC") unless all other

reservoirs have been drafted to their ARCs and additional draft is required to meet the Coordinated System's EAEL. If draft of the Cyclic Reservoirs to their ARCs would result in generation in excess of such EAEL, regulate the Cyclic Reservoirs above their ARCs and allocate the resulting amount of Storage Energy (calculated pursuant to Formula 6.1 below) to each Cyclic Reservoir not required to draft down to its ARC.

**Formula 6.1**

$$SE_{\text{res}} = (G_{\text{arc}} - EAEL_{\text{cs}})R_{\text{full-arc}}$$

Where,

$SE_{\text{res}}$  = The Storage Energy, in megawatt months, to be allocated to each Cyclic Reservoir such that that reservoir will be operated above its March 31 ARC but will not be operated above its flood control rule curve.

$G_{\text{arc}}$  = The Coordinated System's generation, in megawatt months, for March resulting from operating all reservoirs down to their March 31 ARCs.

$EAEL_{\text{cs}}$  = The Coordinated System's EAEL, in megawatt months, for March.

$R_{\text{full-arc}}$  = The ratio of (i) the Storage Energy equivalent of drafting a Cyclic Reservoir from full to its March 31 ARC to (ii) the sum of the Storage Energy equivalents of drafting the Cyclic Reservoirs from full to their March 31 ARCs.

## (2) Distribution of Energy Over the Critical Period

To the extent possible within the hydroelectric capability of each Project and except as provided in subsection 6(b)(3), *Shifting Limitations*, and method 6(c)-1., *Establishing Initial Offset(s)*, adjust the operation of hydroelectric facilities to distribute uniformly among the Periods of the Critical Period any energy surpluses or deficits between the Critical Period Energy Capability and the Coordinated System's EAEL.

## (d) Determination of Preliminary Critical Period Energy Capability

The Coordinating Group shall determine for each Party a preliminary Critical Period Energy Capability by adjusting for estimated Restoration the Critical Period Energy Capability reflected in the Preliminary Regulation for such Party.

## **(e) Identification of Problems in the Preliminary Regulation**

The Coordinating Group shall identify and communicate any problems in the Preliminary Regulation pursuant to method 6(e)-1., *Communication of Problems in the Preliminary Regulation*.

## **(f) Modified Load and Firm Resource Data**

Prior to April 1 of each Operating Year, each Party shall modify its February 1 load and Firm Resource data submitted pursuant to subsection 6(a), *Load and Firm Resource Data*, pursuant to the following.

### **(1) Reduction of Thermal**

A Party may reduce the amount of thermal energy and capacity to be included in its Firm Resources to the extent such amount is surplus to that Party's Estimated Firm Load. Any reduction in thermal energy capability during the Critical Period shall either (i) be the same in each Period, or (ii) shall be distributed such that the thermal energy capability remaining after such reduction has the same shape as the Party's EAEL, unless in either case changes in thermal energy capability are required to support thermal peaking.

### **(2) Revisions to Firm Contracts With Others Outside the Coordinated System**

A Party may revise data submitted pursuant to subsection 6(a), *Load and Firm Resource Data*, concerning firm contracts with others outside the Coordinated System.

### **(3) Revisions to Maintenance**

A Party may revise its schedule of Maintenance Outages submitted pursuant to subsection 6(a), *Load and Firm Resource Data*, and may identify any resulting changes in peak and energy capability for the affected Period(s).

### **(4) Revisions to Load**

Each Party shall (i) revise its EAEL so that its average EAEL during the Critical Period equals its preliminary Critical Period Energy Capability as determined pursuant to subsection 6(d), *Determination of Preliminary Critical Period Energy Capability*, and (ii) lower its Estimated Adjusted Peak Load ("EAPL") so that its peak load does not exceed its anticipated Firm Peak Load Carrying Capability ("FPLCC") in any Period. Subject to the above requirements and so long as such revision does not, in the determination of the Coordinating Group, exacerbate a problem identified in the Preliminary Regulation and communicated

to the Parties under method 6(e)-1., *Communication of Problems in the Preliminary Regulation*, a Party may revise its EAEL and EAPL in any Period for any reason; *provided* a Surplus Party shall not submit EAELs that would show a deficit in any Period in the Critical Period and a Deficit Party shall not submit EAELs that would show a surplus in any Period in the Critical Period.

## **(5) Forced Outage Rates**

Each Party shall submit a Forced Outage Rate for each unit of its Firm Resources using the methodologies specified in clause 8(b)(3)(A)(ii), *Forced Outage Rates*. Until a Party submits a Forced Outage Rate for each unit of each of its Firm Resources, or if a Forced Outage Rate submitted by a Party pursuant to this paragraph 6(f)(5) is inconsistent with the Forced Outage Rate submitted for such unit pursuant to clause 8(b)(3)(A)(ii), *Forced Outage Rates*, the Coordinating Group shall, for purposes of this section 6, set the capacity of such unit equal to zero.

## **(g) Adjustment of Estimated Adjusted Energy Loads Prior to Running the Modified Regulation**

The Coordinating Group shall adjust the respective EAELs of the Coordinated System and of each of the Parties pursuant to method 6(g)-1., *Responsibilities of the Study Group Prior to Running the Modified Regulation*.

## **(h) Modified Regulation**

The Coordinating Group shall run a Modified Regulation and, in doing so, shall perform the following actions in the order set forth below.

### **(1) Running the Modified Regulation**

After April 1 of each Operating Year, the Coordinating Group shall run a Modified Regulation using the load and Firm Resource data used by the Coordinating Group to run the Preliminary Regulation, as such data has been modified and adjusted by the Parties pursuant to subsection 6(f), *Modified Load and Firm Resource Data*, in order to determine a modified maximum Critical Period Energy Capability for the Coordinated System. The Coordinating Group shall run the Modified Regulation in an effort to accomplish the following in the priority listed below with subparagraph 6(h)(1)(A) being the highest priority.

#### **(A) Distribution of Energy Over the Critical Period**

Except as provided in paragraph 6(f)(4), *Revisions to Load*, and insofar as possible, any energy surpluses or deficits between the Critical Period Energy Capability and the Coordinated System's EAEL shall be distributed uniformly among the Periods of the Critical Period pursuant to method 6(h)-1., *Re-establishing Initial Offset(s)*. The Coordinating

Group shall run the Modified Regulation in each Period of the Critical Period based on the Coordinated System's EAEL adjusted for any Offset(s). For the Critical Period, the day-weighted average of all Offsets shall equal the difference between the average Coordinated System's EAEL and its average energy capability.

### **(B) Limit Non-useable Energy**

Limit the amount of non-useable energy from the Coordinated System to no more than the amount of non-useable energy from the Coordinated System used in the Preliminary Regulation.

### **(C) Limit Draft in Multi-Year Critical Periods**

As of each March 31 in a multi-year Critical Period, no reservoir shall be drafted below its ARC unless all other reservoirs have been drafted to such elevations and additional draft is required to meet the Coordinated System's EAEL. If draft of the Cyclic Reservoirs to such elevations would result in generation in excess of such EAEL, Cyclic Reservoirs shall be regulated above such elevations and the amount of retained Storage Energy (calculated pursuant to Formula 6.1 in subparagraph 6(c)(1)(C), *Multi-Year Critical Period Draft Limit*) shall be allocated to each Cyclic Reservoir not required to draft down to its ARC.

### **(D) Limit Plant Factor**

Limit the plant factor of each Project in any Period to the higher of (i) 85 percent, or (ii) the plant factor for an individual Project that is necessary to make the most of the Coordinated System's available storage useable during the Critical Period.

### **(E) Adjust Firm Resources to Estimated Adjusted Energy Load**

After adjusting average energy capability of the Coordinated System for energy reserves and estimated Restoration, adjust each Party's Firm Resources to equal its EAEL for the portion of each Operating Year in the Critical Period.

### **(F) Minimize Head Loss**

Minimize loss of Critical Period Energy Capability to the extent that drafting storage water reduces head and results in a loss of the Coordinated System's Critical Period Energy Capability.

## **(2) Determination of Critical Period Energy Capability**

The Coordinating Group shall determine for each Party a modified Critical Period Energy Capability by adjusting for estimated Restoration the Critical Period Energy Capability reflected in the Modified Regulation for such Party.

## **(3) Adjustments for Non-shapeable Energy Capability**

In the event that the Coordinated System's energy capability cannot be reduced sufficiently in any Period of the Critical Period to meet that Period's Coordinated System's EAEL and corresponding Offset, the Coordinating Group shall adjust the EAELs of all Indicated Exporting Parties in that Period according to Formula 6.2 below.

### *Formula 6.2*

$$EAEL'_{ies} = EAEL_{ies} + (O_{per} + NSEC)R_{iss}$$

Where, for each Period with Non-shapeable Energy Capability,

$EAEL'_{ies}$  = The adjusted EAEL, in megawatts, of the Indicated Exporting Party from the Modified Regulation.

$EAEL_{ies}$  = The initial EAEL, in megawatts, of the Indicated Exporting Party from the Modified Regulation.

$O_{per}$  = The Offset, in megawatts, for the applicable Period.

$NSEC$  = The Non-shapeable Energy Capability, in megawatts.

$R_{iss}$  = The ratio of (i) the Indicated Exporting System's export to (ii) the total of all Indicated Exporting Parties' exports, in megawatts, where the export is the difference between the Indicated Exporting Party's energy capability, adjusted for estimated Restoration and energy reserves, and its EAEL.

Any increase in the EAEL of a Party made pursuant to this paragraph 6(h)(3) shall not be subject to adjustments pursuant to paragraph 6(h)(5), *Final Adjustments to Balance Parties' Loads and Firm Resources*.



#### **(4) Adjustments to Uniformly Distribute Energy Surpluses or Deficits**

Pursuant to method 6(h)-2., Reductions to the Party's(Parties') Estimated Adjusted Energy Load for Insufficient Generation After the Modified Regulation is Run, the Coordinating Group shall reduce the EAEL of each of the Parties in Periods not containing Non-shapeable Energy Capability in order to create a uniform surplus or deficit over the Critical Period for those Periods.

#### **(5) Final Adjustments to Balance Parties' Loads and Firm Resources**

For all Periods in which EAELs have not been adjusted pursuant to paragraph 6(h)(3) above, the Coordinating Group shall adjust each Party's EAEL according to Formula 6.3 below.

##### *Formula 6.3*

$$A'_{6.3} = (EC_{mr} + Restor - EAEL_{adj})R_{days}$$

Where, in each Period,

- $A'_{6.3}$  = The adjustment, in megawatts, to be made to a Party's EAEL.
- $EC_{mr}$  = The Critical Period Energy Capability, in megawatts, established in the Modified Regulation for such Party.
- Restor = The estimated Restoration, in megawatts, for such Party.
- $EAEL_{adj}$  = The Critical Period average EAEL, in megawatts, for such Party, as adjusted pursuant to paragraph 6(h)(3), *Adjustments for Non-shapeable Energy Capability*, or 6(h)(4), *Adjustments to Uniformly Distribute Energy Surpluses or Deficits*.
- $R_{days}$  = The ratio of (i) days in the Critical Period to (ii) the total days in Periods not containing Non-shapeable Energy Capability.

#### **(6) Determination of Firm Load Carrying Capability**

The Coordinating Group shall determine each Party's FLCC from the Modified Regulation in accordance with subparagraphs 6(h)(6)(A) and 6(h)(6)(B) below.

### **(A) Determination of Firm Energy Load Carrying Capability**

The Firm Energy Load Carrying Capability (“FELCC”) of each Party for any Period shall be that Party's EAEL submitted pursuant to paragraph 6(a)(1), *Load Data*, as revised pursuant to paragraph 6(f)(4), *Revisions to Load*, and as adjusted sequentially pursuant to paragraphs 6(h)(3), *Adjustments for Non-shapeable Energy Capability*, 6(h)(4), *Adjustments to Uniformly Distribute Energy Surpluses or Deficits*, and 6(h)(5), *Final Adjustments to Balance Parties’ Loads and Firm Resources*.

### **(B) Determination of Firm Peak Load Carrying Capability**

The Coordinated System’s FPLCC in each Period of the Critical Peaking Period shall be the sum of the computed Peaking Capabilities of each of the Parties, as derived from the Modified Regulation as set forth below and in the following order.

#### **(i) Determination of Peaking Capability for Periods of the Operating Year**

In order to determine the peaking capability of the Coordinated System for each Period of the Operating Year, the Coordinating Group shall do the following.

##### **(a) Peaking Capability for the Highest Peak Load**

Identify the Period (or consecutive Periods) in the Operating Year with the Coordinated System’s highest EAEL. The computed Peaking Capability for such Period(s) shall be the average of the beginning and ending Peaking Capabilities for such Period(s) in the Modified Regulation. The Coordinating Group shall use the same methodology to determine the Peaking Capability for the Period immediately preceding and for the Period immediately succeeding the Period(s) with the Coordinated System’s highest EAEL.

##### **(b) Peaking Capability for the Lowest Peak Load**

Identify the Period (or consecutive Periods) in the Operating Year with the Coordinated System’s lowest EAEL. The computed Peaking Capability for such Period(s) shall be the average of the beginning and

ending Peaking Capabilities for such Period(s) in the Modified Regulation. The Coordinating Group shall use the same methodology to determine the Peaking Capability for the Period immediately preceding and for the Period immediately succeeding the Period(s) with the Coordinated System's lowest EAPL.

**(c) Peaking Capability for Increasing Loads**

Identify each remaining Period in the Operating Year in which the amount of the Coordinated System's EAPL is (i) greater than the immediately preceding Period's Coordinated System's EAPL, and (ii) less than the immediately succeeding Period's Coordinated System's EAPL. The computed Peaking Capability for such identified Period shall be equal to the Peaking Capability computed in the Modified Regulation for the end of such identified Period.

**(d) Peaking Capability for Decreasing Loads**

Identify each remaining Period in the Operating Year in which the amount of the Coordinated System's EAPL is less than the immediately preceding Period's Coordinated System's EAPL and greater than the immediately succeeding Period's Coordinated System's EAPL. The computed Peaking Capability for such identified Period shall be equal to the Peaking Capability computed in the Modified Regulation for the beginning of such identified Period.

**(e) Peaking Capability in Other Cases**

Identify each Period in the Operating Year for which the Peaking Capability has not been determined pursuant to subclause 6(h)(6)(B)(i)(a), 6(h)(6)(B)(i)(b), or 6(h)(6)(B)(i)(c) above. For each such identified Period the computed Peaking Capability shall be equal to the average of the Peaking Capabilities computed for the beginning and the end of such identified Period in the Modified Regulation.

**(f) Adjustments for Maintenance Outages and Forced Outage Reserves**

Reduce the computed Peaking Capability for all Periods referenced in subclauses 6(h)(6)(B)(i)(a), 6(h)(6)(B)(i)(b), 6(h)(6)(B)(i)(c), and 6(h)(6)(B)(i)(d) above for scheduled Maintenance Outages and Forced

Outage Reserves determined pursuant to subsection 8(b), *Forced Outage Reserves*.

**(ii) Determination of Critical Peaking Period Average Firm Peak Load Carrying Capability for Each Party**

The Coordinating Group shall determine the Critical Peaking Period in accordance with paragraph 8(b)(2), *Determination of Forced Outage Reserves*. The Coordinating Group shall determine each Party's Critical Peaking Period average FPLCC (i) by adding the Peaking Capability for such Party computed pursuant to clause 6(h)(6)(B)(i), *Determination of Peaking Capability for Periods of the Operating Year*, for the Periods of the Critical Peaking Period and (ii) then by dividing that sum by the number of Periods in the Critical Peaking Period.

**(iii) Determination of Each Party's Firm Peak Load Carrying Capability for Each Period**

The Coordinating Group shall determine each Party's FPLCC in each Period of the Operating Year (i) by adding such Party's EAPL for that Period to its Critical Peaking Period average FPLCC and (ii) then by subtracting each Party's Critical Peaking Period average EAPL from that sum; *provided* the FPLCC of a Party in any Period not included in the Critical Peaking Period shall not exceed the maximum Peaking Capability for such Party computed pursuant to clause 6(h)(6)(B)(i), *Determination of Peaking Capability for Periods of the Operating Year*, for such Period.

**(iv) Adjustments to Maintenance Outages**

Each Party shall reschedule Maintenance Outages to decrease the number of Periods in the Critical Peaking Period, to the extent that such rescheduling is reasonably practicable and would not cause another Period to become part of the Critical Peaking Period. The Coordinating Group shall, pursuant to this subparagraph 6(h)(6)(B), re-compute the Critical Peaking Period and the FPLCC of each of the Parties after any rescheduling of Maintenance Outages.

**(v) Determination of Peak Deficient Parties**

A Party shall be considered peak deficient for purposes of subsection 6(i), *Adjustments to the Modified Regulation*, if its FPLCC is either less than its EAPL in any Period of the Critical Peaking Period or if its FPLCC is greater than its computed

Peaking Capability computed pursuant to clause 6(h)(6)(B)(i) above in any other Period.

## **(i) Adjustments to the Modified Regulation**

Not later than May 15 of each Operating Year, each Reservoir Party may, in order to obtain an optimum regulation for its System and subject to the limitations set forth in this subsection 6(i), make adjustments in (each of) its reservoir's(s') regulation(s) determined in the Modified Regulation for the next Operating Year. Such adjustments shall be made sequentially by Period beginning at the start of the Critical Period and continuing through the last Operating Year of the Critical Period.

### **(1) Adjustment Limitations**

No Party shall adjust its reservoir's(s') regulation(s) under this paragraph 6(i)(1) in a manner that results in any of the following.

#### **(A) Loss of Useable Generation**

A loss of the Coordinated System's useable generation during the Critical Period through (i) increase in total spill of water, (ii) increase in uncontrollable generation (*i.e.*, energy capability less all energy reserves in excess of the EAEL in any Period), or (iii) inability to draft all storage water to end-of-Critical Period elevations.

#### **(B) Change to April 1 Reservoir Elevations**

A change to any reservoir elevation as of April 1 of each year of the Critical Period from such April 1 elevation determined in the Modified Regulation.

#### **(C) Increases in Indicated Imports or Exports**

An increase in its Indicated Import or Indicated Export of energy in any Period, except as provided in paragraph 6(i)(4), *Designation of Holding Energy*.

#### **(D) Reductions in Indicated Imports or Exports**

A reduction in its Indicated Import or Indicated Export of energy in any Period, if such reduction is in an amount greater than such Indicated Import or Indicated Export, respectively.

### **(E) Reduction in Storage Drafts for the Return of Holding Energy**

A reduction of storage draft in a reservoir designated as receiving Holding Energy (“HE”), if such reduction is in an amount greater than the amount of draft required to return the HE.

### **(2) Implementation of Adjustments**

A Reservoir Party shall only make adjustments that can be accommodated by the other Reservoir Parties as follows. When a Reservoir Party makes an adjustment in any of its reservoirs’ regulations, each of the other Reservoir Parties shall, to the extent permitted by the above limitations and within its reservoir(s) operating requirements, make corresponding adjustments in (each of) its reservoir’s(s’) regulation(s) so that the Coordinated System’s energy capability, less all energy reserves, equals the EAEL of the Coordinated System in every Period. Such adjustments shall be prorated among the Reservoir Parties in proportion to their Indicated Import or Indicated Export of energy as determined in the Modified Regulation.

Each Reservoir Party shall make all necessary compensating adjustments such that (each of) its reservoir(s) shall be at the elevations indicated in the Modified Regulation for April 1 of each year of the Critical Period or, if such Critical Period ends in the Operating Year for which such adjustments apply, by the end of the Critical Period.

### **(3) Priority of Adjustments**

Adjustments shall be allowed in the priority listed below with subparagraph 6(i)(3)(A) being the highest priority.

#### **(A) Peak Deficient Parties**

Any Party having a peak deficiency under the Modified Regulation, if the adjustment would reduce its Indicated Exports of energy during the Period under consideration and reduce or eliminate its cumulative Indicated Exports of energy from the start of the Critical Period through the Period or Periods of its peaking deficiency.

#### **(B) Importing Parties**

Any Party, if the adjustment would reduce or eliminate its Indicated Import of energy during the Period under consideration.

### **(C) Exporting Parties**

Any Party, if the adjustment would reduce or eliminate its Indicated Export of energy during the Period under consideration.

If adjustments are requested by more than one Reservoir Party, requests shall be addressed in the order of priority specified above. If fewer than all requests in one order of priority can be accommodated, the requests in that priority shall be met pro rata, based upon the ratio of (i) the energy equivalent of each request to (ii) the total energy equivalent of all requested adjustments, and the requests of lower orders of priority shall not be addressed.

### **(4) Designation of Holding Energy**

If any Reservoir Party is precluded by paragraph 6(i)(1), *Adjustment Limitations*, from adjusting the regulation(s) of (each of) its reservoir(s) to reduce or eliminate the Indicated Import of energy to its System in the first two Periods of the Critical Period, that Reservoir Party may designate a part or all of the remaining import in those Periods as HE. In response, each Party having an Indicated Export may designate a part or all of its Indicated Export of energy available in those Periods as HE.

If any Party with an Indicated Export in a Period elects not to designate part or all of its Indicated Export of energy as HE, that Party shall increase its EAEL in that Period in an amount equivalent to that amount of its Indicated Export of energy that such Party elected not to designate as HE and shall correspondingly decrease its EAEL in Periods between the third Period of the Critical Period and the following March.

If a Party designates a part or all of its Indicated Exports of energy as HE, the following shall apply. Prior to making adjustments to reduce the draft from the designated reservoirs of an Indicated Importing Party who desires to draft, the affected Parties shall prepare a schedule that shows the amounts and Period(s) of HE transfers and the reservoir(s) designated by the Indicated Importing Party involved in the transfers. In the event the affected Parties cannot agree on such a schedule, a schedule shall be created by the affected Parties that requires the return of HE as soon as possible after the second Period of the Critical Period in an amount that is equal to the least of: (i) the Indicated Importing Party's Indicated Export; (ii) the Indicated Exporting Party's Indicated Import, or (iii) the amount available for return from the designated reservoir(s). Schedules shall in any case provide for return of all HE before the April 1 following delivery.

Subject to the limitations set forth in paragraph 6(i)(1), *Adjustment Limitations*, the Indicated Importing Party may re-regulate any of its reservoirs, and shall re-regulate any designated reservoir(s) upon the request of the Indicated Exporting Party, to increase the scheduled return of HE to the extent that the Indicated Exporting Party can store or otherwise use such scheduled return on its own System. In the event that the total available Indicated Exports exceed the total HE designated by the Reservoir Party(ies) from its(their) Indicated Imports, then

such exceedence shall be prorated among the original Indicated Exporting Parties to the extent such Parties are still Indicated Exporters, based upon such original Indicated Exports.

Reservoirs of the importing Systems designating HE shall be re-regulated to produce on the importing System the energy designated by it but not made available to it as HE.

## **(5) Final Adjustments for Head Losses and Gains**

Following any reservoir re-regulation under this subsection 6(i), the Parties shall adjust their EAELs and EAPLs to reflect the increases or decreases in Firm Resources in their Systems caused by changes in hydroelectric plant heads.

## **(j) Final Regulation**

Not later than July 1 of each Operating Year, the Coordinating Group shall prepare a Final Regulation incorporating all permissible adjustments pursuant to this Agreement. Following the procedures set forth in paragraph 6(h)(6), *Determination of Firm Load Carrying Capability*, the Coordinating Group shall use the resulting-final Critical Period Energy Capability, after adjustments for Restoration, to determine each Party's FLCC.

## **(k) Determination of Restoration**

The purpose of Restoration is to compensate Reservoir Parties for decreases in their FELCCs caused by the inclusion of Treaty Storage. Each Restoration Project has a right to carry at least the same firm energy load with Treaty Storage as it would have without inclusion of such storage. To accomplish this, all Projects whose ability to carry firm energy load is increased as a result of inclusion of Treaty Storage shall provide a portion of this increased ability to Restoration Projects whose ability to carry firm energy load has been decreased as a result of inclusion of Treaty Storage.

As soon as possible, the Coordinating Group shall run a Restoration regulation based upon all data in the Final Regulation except that Treaty Storage shall be excluded and the Estimated Firm Energy Load (“EFEL”) of the Coordinated System shall be used. When the Critical Period for the Final Regulation is less than one year, the EFEL shall include only firm load within the geographical area specified in the definition of System. In such regulation, the Coordinated System’s EFEL shall be adjusted by a uniform percentage in each month in order to balance the loads as adjusted with the Coordinated System’s Critical Period Energy Capability without Treaty Storage. If the Critical Period without Treaty Storage is shorter than seven months, a new regulation without Treaty Storage shall be run using the seven months September through March as the Critical Period.

## **(1) Determination of Gains and Losses**

For each Restoration Project the Coordinating Group shall determine the amount of gain or loss for the Critical Period according to Formula 6.4 below.



**Formula 6.4**

$$Q = P_w - (S_w/S_{w/o})P_{w/o}$$

Where,

- Q = Restoration Project gain or loss, in megawatts; *provided* the amount of any loss shall not exceed the Restoration Project's "Restoration-Limit Megawatts" set forth in Exhibit E, *Limits of Rights to Restoration*.
- $P_w$  = Critical Period Energy Capability, in megawatts, of each Restoration Project from the Final Regulation (with Treaty Storage) after adjustment for tailwater encroachment.
- $P_{w/o}$  = Critical Period Energy Capability, in megawatts, of each Restoration Project from the Restoration Regulation (without Treaty Storage) after adjustment for tailwater encroachment.
- $S_w$  = Average EFEL, in megawatts, of the Party that includes the Restoration Project in its Firm Resources for the Critical Period determined with Treaty Storage.
- $S_{w/o}$  = Average EFEL, in megawatts, of the Party that includes the Restoration Project in its Firm Resources for the Critical Period determined without Treaty Storage and for all repetitions of such Critical Period included in the Critical Period with Treaty Storage.

**(2) Equalization of Gains and Losses**

The gain for Restoration Projects with a positive Q value shall be revised and redistributed to Restoration Projects with a negative Q value according to Formula 6.5 below.

**Formula 6.5**

$$Q' = (Q)R_{lg}$$

Where,

- $Q'$  = The revised Restoration Project gain, in megawatts.
- $Q$  = The gain, in megawatts, determined for the Restoration Project pursuant to the paragraph 6(k)(1) above.
- $R_{lg}$  = The ratio of all Restoration Project losses, in megawatts, to all Restoration Project gains, in megawatts, determined in paragraph 6(k)(1) above.

### **(3) Determination of Restoration by Party**

The net amount of Restoration to be supplied by or to each Party shall be the algebraic sum of  $Q'$  as determined in the preceding paragraph 6(k)(2) for each Restoration Project in that Party's System. Each Party shall adjust its energy capability in each Period by the amount of net Restoration determined under this paragraph 6(k)(3).

### **(l) Determination of Critical Rule Curves**

The Coordinating Group shall establish Critical Rule Curves ("CRC") by July 1 of each year based upon reservoir drafts determined under subsection 6(j), *Final Regulation*. The CRCs for the next Operating Year shall reflect the reservoir drafts indicated for such Operating Year from all prior Final Regulations that included any part of the such Operating Year in its Critical Period. The CRCs shall be ordered and designated by number (*i.e.*, first, second, etc.) on the basis of the decreasing Coordinated System's Storage Energy indicated by such CRCs at the beginning of such Operating Year. The CRCs for each reservoir shall be identified in feet of elevation as of the end of each Period of such Operating Year.

### **(m) Establishment of Firm Load Carrying Capability**

Not later than August 1 of each Operating Year, the Coordinating Group shall establish the FLCC of each Party most recently calculated under subsection 6(j), *Final Regulation*; *provided* if the Coordinated System fails to reach 98 percent of its total Storage Energy by the end of July of the preceding Operating Year, as soon as practicable after August 1 of the current Operating Year the FLCC of each Party shall be re-established retroactively using the following procedures.

## **(1) Determination of Coordinated System Storage Energy**

The Coordinating Group shall compute the Storage Energy of the Coordinated System for each Final Regulation that contains part or all of the current Operating Year within the Critical Period. To make this computation, the Coordinating Group shall convert the storage content of each reservoir as of the end of the previous Operating Year to its Coordinated System energy equivalent and total the resulting energy equivalents.

## **(2) Determination of Percent Full**

The Coordinating Group shall compare the amount(s) of total Storage Energy computed in paragraph (1) of this subsection 6(m) to the Storage Energy for the preceding July 31 computed using procedure 9(b)-3., *Actual Energy Regulation*. The Coordinating Group shall establish the FLCC of each Party for the current Operating Year using the Final Regulation that most closely approximates the computed Storage Energy of the preceding July 31.

If procedure 9(b)-3., *Actual Energy Regulation*, is rescinded, the Coordinating Group shall compare the amount(s) of total Storage Energy computed in paragraph (1) of this subsection 6(m) to the Storage Energy in the reservoirs of the Coordinated System as of the preceding July 31. The Coordinating Group shall establish the FLCC of each Party for the current Operating Year using the Final Regulation that most closely approximates the computed Storage Energy of the preceding July 31. If the actual Storage Energy is less than the lowest Storage Energy computed from the applicable Final Regulations, the Coordinating Group shall establish as the FLCC of each Party for the current Operating Year the FLCC of such Party for the current Operating Year computed using the Final Regulation with the lowest computed Storage Energy.

## **(n) Firm Energy Load Carrying Capability Outside the Critical Period**

### **(1) Pre-Critical Period Firm Energy Load Carrying Capability**

When FLCC is established using the first Operating Year of a Critical Period and the Critical Period commences after the beginning of such first Operating Year, the Coordinating Group shall employ either method 6(n)-1., *Development of Pre-Critical Period Firm Energy Load Carrying Capability for Critical Periods Longer than One Year*, or method 6(n)-3., *Development of Pre-Critical and Post-Critical Period Firm Energy Load Carrying Capability for Critical Periods Less Than One Year*, to establish each Party's FELCC for each Period occurring prior to the Critical Period.

## **(2) Post-Critical Period Firm Energy Load Carrying Capability**

When FLCC is established using the final Operating Year of a Critical Period and the Critical Period ends before the end of such final Operating Year, the Coordinating Group shall employ either method 6(n)-2., *Development of Post-Critical Period Firm Energy Load Carrying Capability for Critical Periods Longer than One Year*, or method 6(n)-3., *Development of Pre-Critical and Post-Critical Period Firm Energy Load Carrying Capability for Critical Periods Less Than One Year*, to establish each Party's FELCC for each Period following the end of the Critical Period.

## **(o) Adjustments to Established Firm Load Carrying Capabilities**

If the Parties re-establish their FELCCs under subsection 6(m), *Establishment of Firm Load Carrying Capability*, prior to August 16 of the current Operating Year, the Coordinating Group shall make the following adjustments to reflect the data submitted by the Parties in their subsection 6(a), *Load and Firm Resource Data*, submissions, as modified by their subsection 6(f), *Modified Load and Firm Resource Data*, submissions.

### **(1) Retirement of Firm Resources**

Adjust for Firm Resources scheduled to be permanently taken out of service or abandoned before or during the Operating Year.

### **(2) Project Data**

Update characteristics of Firm Resources to conform to current subsection 6(a), *Load and Firm Resource Data*, data submittals.

### **(3) New Firm Resources**

Add Firm Resources not previously available.

### **(4) Purchases**

Adjust for changes in firm purchases from outside the Coordinated System.

### **(5) New Non-power Requirements**

Add or modify non-power requirements not reflected in studies or regulations used to establish FLCCs.

Upon making any of the above submitted adjustments, the Coordinating Group shall revise each Party's FLCC in each Period of the Operating Year to reflect any change in

the capability of that Party's Firm Resources and any change in firm purchases for such Period. The Coordinating Group shall use a Load Determination Re-regulation to make these revisions pursuant to method 6(o)-1., *Load Determination Re-regulation Process*.

### **(p) Exchange of Firm Energy Load Carrying Capability**

Two or more Parties may exchange FELCC so long as the Coordinated System's total FELCC remains unchanged in each Period.

## **Section 7. Determination of Base and Variable Energy Content Curves**

Subject to this section 7, each Reservoir Party annually shall determine for (each of) its reservoir(s) Base Energy Content Curves ("Base ECC") and Variable Energy Content Curves ("VECC") that provide storage sufficient to allow the Coordinated System at all times to generate its Firm Energy Load Carrying Capability ("FELCC") under a recurrence of any streamflows in the Historical Period of Record. Base ECCs shall be expressed as reservoir elevations, in feet, for the end of each Period of the twelve-month period beginning on August 1.

### **(a) Assured Refill Curve**

Each Reservoir Party shall determine an Assured Refill Curve ("ARC") for (each of) its reservoir(s) based upon the elevations necessary to refill such reservoir using the Refill Volume.

### **(b) Critical Period of One Year or Less**

When the Critical Period is one year or less, each Reservoir Party shall determine the Base ECC for (each of) its reservoir(s) from end-of-Period elevations indicated in the Critical Rule Curve(s) ("CRC") from the Final Regulation and from additional data in accordance with this subsection 7(b), subject to recalculation as provided in subsection 7(d), *Variable Energy Content Curves*.

#### **(1) Base Energy Content Curve for Annual Reservoir**

Each Reservoir Party shall use as the Base ECC for (each of) its Annual Reservoir(s) the CRC for such reservoir from August 15 through the last Period included in the Critical Period. For Periods after the end of the Critical Period, the Reservoir Party shall distribute among Periods the water required to refill such reservoir using the same distribution of the Unregulated Streamflows used to determine Refill Volume.

## **(2) Base Energy Content Curve for Cyclic Reservoir**

Each Reservoir Party shall use as the Base ECC for (each of) its Cyclic Reservoir(s) the CRC for such reservoir until the CRC represents the volume of water in the Refill Volume for the Periods remaining in the Operating Year for which the Coordinating Group is currently planning.

For the remainder of such Operating Year, the Reservoir Party shall develop a Base ECC for (each of) its Cyclic Reservoir(s) to fill the reservoir to normal top elevation by the end of such Operating Year. The water required to refill the reservoir shall be distributed among the remaining Periods using the distribution of the Unregulated Streamflows used to determine the Refill Volume.

## **(c) Critical Period Longer Than One Year**

When the Critical Period is longer than one year, each Reservoir Party shall use as the Base ECC for (each of) its Cyclic Reservoir(s) at the end of each Period the higher of the ARC or the elevations calculated in the Final Regulation for the first year of the Critical Period which started in the current Operating Year. Each Reservoir Party shall use as the Base ECC for (each of) its Annual Reservoir(s) the CRC in the first year of the Critical Period.

## **(d) Variable Energy Content Curves**

Each Reservoir Party shall determine VECCs for (each of) its Cyclic Reservoir(s) for the Periods in January through July of the current calendar year in accordance with the following procedures.

### **(1) Volume Inflow Forecasting Method**

Not later than August 1 of each year, for Cyclic Reservoirs, each Reservoir Party shall supply to all other Parties the basic method used by such Reservoir Party for forecasting volume inflow into (each of) its reservoir(s). The basic forecast methods shall include methods for determining the probable volume inflow to each such reservoir and the volume inflow for an agreed-upon probability of occurrence (as described in the immediately succeeding sentence) for the periods from the first of each Period, January through July, through July 31. Unless otherwise agreed by the Coordinating Group, the forecasts used in this paragraph 7(d)(1) and in paragraph 9(f)(1), *Updating Variable Energy Content Curves*, shall provide a 95 percent probability that the actual volume inflow shall equal or exceed the forecasted volume inflow.

### **(2) Method to Determine Variable Energy Content Curves**

Not later than August 1 of each year, each Reservoir Party shall supply to all other Parties VECCs for (each of) its Cyclic Reservoir(s). Such VECCs shall be

based upon forecasted volume inflow, and shall be in the form of a table, equation, family of curves, or other form from which end-of-Period reservoir contents or feet of elevation for the period January through July of the current calendar year can be determined. The VECCs shall provide for drafts below the Base ECC in the amount by which the forecasted volume inflow is in excess of total requirements for refill of the reservoir, minimum discharge requirements, non-power requirements for water at site and upstream, and water required to refill at upstream reservoirs. The VECCs shall be such that all reservoirs return to normal top elevation by the end of the following July.

### **(3) Historical Streamflow Record**

The Coordinating Group shall at least once each ten years update the Historical Period of Record with the available streamflows.

### **(4) Refill Regulations**

#### **(A) Trial Refill Regulation Based on Minimum Flow Variable Energy Content Curves**

Not later than September 1 of each year or such other date as may be agreed upon by the Coordinating Group, the Reservoir Parties shall, using streamflows from the Historical Period of Record, run a Trial Refill Regulation for comparison with the Refill Regulation referred to in subparagraph 7(d)(4)(B) below. In these regulations, the Coordinated System's assumed reservoir elevations on August 1 of each of the historical years shall be the actual reservoir elevations as of August 1 of the current Operating Year. Each reservoir shall be regulated on the Base ECC or the VECC, whichever is lower, except that the reservoirs shall be regulated below such ECCs as provided in subsection 9(g), *Operation of Reservoirs Below Energy Content Curves and Critical Rule Curves*, if necessary to produce the FELCC of the Coordinated System. In determining VECCs after January 1 of each year, the forecasted Unregulated Streamflow volume for each reservoir for the applicable month shall be the actual historical Unregulated Streamflow reduced by the forecasting error with the agreed-upon probability referred to in paragraph 7(d)(1) above.

#### **(B) Refill Regulation**

The Reservoir Parties shall run a Refill Regulation for the reservoirs in the Coordinated System to determine whether there are possible adjustments to VECCs that would, after the development of FELCC, allow the Coordinated System to refill in 95 percent of the years in the Historical Period of Record. The Reservoir Parties shall analyze the Trial Refill Regulation to determine the number of years in which both (i) energy in excess of the Coordinated System's FELCC was produced

in the January through July period, and (ii) the Storage Energy in reservoirs of the Coordinated System failed to refill on July 31.

For purposes of such determination as to refill, the Refill Criterion shall be used irrespective of the length of the Critical Period.

If the number of such years exceeds five percent of the number of years in the Historical Period of Record, each Reservoir Party shall raise the applicable VECCs of its reservoirs that failed to refill to the elevations needed to reduce the number of such years to be no more than five percent of the number of years in the Historical Period of Record. Such percentage shall be revised to reflect any change in the forecast probability referred to in paragraph 7(d)(1) above. Each Reservoir Party shall first raise its VECCs to the Base ECC. If that fails to reduce the number of such years to be no more than five percent of the number of years in that Historical Period of Record, each Reservoir Party shall raise its VECCs to the extent necessary to reduce the number of such years to be no more than five percent of the number of years in that Historical Period of Record. If adjustments can be made to such reservoirs of two or more Systems, each Reservoir Party shall adjust the VECCs of its reservoirs with an indicated energy generation in excess of its FELCC during those Periods in which adjustments are required to higher elevations in proportion to the amount of such excess generation. In the event such adjustments by such Reservoir Parties with excess Systems fail to reduce the number of years as required in this subparagraph 7(d)(4)(B), additional adjustments required to achieve such reduction shall then be made by each Reservoir Party to its reservoirs with VECCs.

## **(5) Adjustments to Historical Variable Energy Content Curves to Pass Refill Test**

Not later than October 1 of each year, each Reservoir Party shall tabulate (each of) its reservoir(s)'s VECCs, as adjusted pursuant to subparagraph 7(d)(4)(B) above, as a function of forecasted volume inflow for each reservoir in feet of elevation for the end of each Period, January through July.

## **Section 8. Maintenance and Reserves**

### **(a) Maintenance**

Each Party shall submit in a timely fashion under subsection 6(a), *Load and Firm Resource Data*, a schedule for planned maintenance work on its System that might reduce its Peaking Capability or energy capability during the period pertinent to the determinations of Firm Load Carrying Capability ("FLCC") under section 6, *Determination of Firm Load Carrying Capability*, or the 24-month period commencing on the following August 1, whichever is longer. The Parties shall attempt to minimize the number and duration of Maintenance Outages in the Critical Peaking Period and in as



many adjacent Periods as possible, and shall attempt to coordinate outages to create a uniform peak surplus or uniform peak deficit in all Periods. The Parties shall measure such surpluses and deficits for each Period by subtracting from the Peaking Capability of the Coordinated System the sum of the Estimated Adjusted Peak Load (“EAPL”) of the Coordinated System, Forced Outage Reserves of the Coordinated System, and the effect of total scheduled Maintenance Outages. If any Party revises schedules as permitted in paragraph 6(f)(3), *Revisions to Maintenance*, and subclause 6(h)(6)(B)(i)(f), *Adjustments for Maintenance Outages and Forced Outage Reserves*, such Party shall, in making such revisions, assume operation under the conditions that are to be used to determine the FLCC. Although the Parties retain discretion to schedule maintenance activities, each Party shall submit an adequate schedule of Maintenance Outages to protect its actual ability to produce its FLCC computed pursuant to section 6, *Determination of Firm Load Carrying Capability*.

## **(b) Forced Outage Reserves**

The Parties shall maintain reserve capacity in the Coordinated System at a level sufficient to protect against the loss of load in an Operating Year with no greater probability than one day in ten years. The Coordinating Group shall determine the probability of such loss of load based upon characteristics of Peak Load variability and generating equipment Forced Outage Rates.

### **(1) Forced Outage Reserve Studies**

Not later than May 15 of each Operating Year, the Coordinating Group shall make a Forced Outage Reserve study as described in this subsection 8(b) based on the Modified Regulation for use pursuant to subparagraph 6(h)(6)(B), *Determination of Firm Peak Load Carrying Capability*. Not later than July 1 of each Operating Year, the Coordinating Group shall make the study required to compute Forced Outage Reserves used in the determination of FLCC pursuant to subsection 6(j), *Final Regulation*.

### **(2) Determination of Forced Outage Reserves**

The Coordinating Group shall determine the Forced Outage Reserve for each Party for each Period as follows.

#### **(A) Coordinated System Peaking Capability**

The Coordinating Group shall determine the Peaking Capability of the Coordinated System pursuant to clause 6(h)(6)(B)(i), *Determination of Peaking Capability for Periods of the Operating Year*, without deduction of Forced Outage Reserve, for each Period.

### **(B) Determination of Peak Load**

The Coordinating Group shall determine a Peak Load for the Coordinated System that is uniformly greater or less than the EAPL for the Coordinated System in each Period such that the probability of load loss for the Operating Year is equivalent to one day in ten years.

### **(C) Determination of Critical Peaking Period**

The Critical Peaking Period shall include (i) the Period in the succeeding Operating Year with the highest probability of load loss, and (ii) all other Periods in such Operating Year for which the probability of load loss is greater than or equal to one-tenth of the probability of load loss in the Period in (i).

### **(D) Determination of the Coordinated System's Forced Outage Reserve**

For each Period in the Critical Peaking Period the Forced Outage Reserve of the Coordinated System shall be the difference between the Peaking Capability determined for such Period pursuant to subparagraph 8(b)(2)(A) above and the Peak Load for such Period determined pursuant to subparagraph 8(b)(2)(B) above. For all other Periods the Forced Outage Reserve of the Coordinated System shall equal the average of the Forced Outage Reserves of the Coordinated System for the Periods of the Critical Peaking Period.

### **(E) Allocation of Forced Outage Reserve**

For each Period of the Critical Peaking Period the Coordinating Group shall allocate the Forced Outage Reserve of the Coordinated System to each Party hereto using the method described in Exhibit F, *Reserves*, and the quantity so allocated to a Party in a Period shall be such Party's Forced Outage Reserve for such Period. For all other Periods the Forced Outage Reserve of any Party shall be equal to the average of the Forced Outage Reserves of such Party for the Periods of the Critical Peaking Period.

## **(3) Determination of the Load Loss Probability Distribution**

The Coordinating Group shall determine the load loss probability distribution by convolving the capacity loss probability distribution (computed in subparagraph 8(b)(3)(A) below) with the Peak Load probability distribution (determined in subparagraph 8(b)(3)(B) below) in accordance with probability mathematics detailed in Exhibit F, *Reserves*.

## **(A) Computation of Capacity Loss Probability Distribution**

The Coordinating Group shall compute the capacity loss probability distributions considering the following.

### **(i) Peak Firm Resources**

The resources to be included in such computations for each Party shall be its Firm Resources as defined in (i) and (ii) of the definition of Firm Resources, the thermal resources included pursuant to (iii) of such definition, and any generating resources located outside the Coordinated System that are designated by the owning Party and that, but for their location, would meet the requirements of the definition of Firm Resources.

### **(ii) Forced Outage Rates**

Each Party may submit Forced Outage Rates for any of its generating units using the approved methodologies set out in method 8(b)-1., *Forced Outage Rates*. Each Party shall review such Forced Outage Rates annually and shall make any appropriate revisions in Exhibit G, *Forced Outage Rates*.

### **(iii) Default Forced Outage Rates**

If a Party does not submit Forced Outage Rates for any of its units under clause 8(b)(3)(A)(ii) above, the Coordinating Group shall use the most recently submitted Forced Outage Rates for such generating unit(s). If any such unit has never had a forced outage rate submitted, the Coordinating Group shall set the capacity of such unit at zero.

### **(iv) Shared Resource**

When any major resource referred to in subclause 8(b)(3)(A)(i) above is shared by a number of Parties on a pro rata basis and when the resource is operated so that the sharing Parties' loads are in some part served by such resource as if it were in fact within such Parties' utility responsibility areas, the effect of such resource on the capacity loss probability distribution for such Party shall be as described in Exhibit F, *Reserves*.

**(v) Out of Area Capacity**

The Coordinating Group shall treat capacity available to any Party on a firm basis from major interties with other areas as single sources of generation with appropriate Forced Outage Rates assigned thereto.

**(B) Peak Load Probability Characteristics**

The characteristics of the Peak Load probability distribution applicable to each Party shall be as given in Exhibit H, *Peak Load Characteristics*. Each Party shall review such characteristics every five years, or more often if necessary, and make any appropriate revisions.

**(c) Energy Reserve**

The energy reserve of a Party shall be the product of the firm energy capability of thermal plants included in its Firm Resources and the applicable Forced Outage Rates calculated under method 8(b)-1., *Forced Outage Rates*.

**(d) Spinning Reserve**

The purpose of the Spinning Reserve Requirement is to insure a degree of spinning reserve capability and diversity within the Coordinated System. The Parties recognize that tie line control requirements, transmission limitations, local standby reserves, and prudent operating practices may result in greater Spinning Reserves for some Parties than the Spinning Reserve Requirement hereafter specified.

Each Party shall maintain during the current Operating Year Spinning Reserves of not less than one per cent of its EAPL.

A Party may arrange with another system to supply all or part of its Spinning Reserve Requirement.

## Part III. Operations

This part shall not come into effect until the August 1 following the Effective Date.

### Section 9. Operating Procedures, Obligations, and Rights

#### (a) Use of Firm Load Carrying Capability and of Energy and Capacity in Excess of Firm Load Carrying Capability

Each Party may use its Firm Load Carrying Capability (“FLCC”) for any purpose. Each Party may use any available excess power for any purpose to the extent that the Coordinated System’s Actual Energy Capability (“AEC”) or Actual Peaking Capability (“APC”) exceeds the amount required to supply the Coordinated System’s FLCC. For the purpose of this subsection 9(a): (i) “excess power” is a Party’s excess capacity and excess energy; (ii) “excess capacity” is the amount by which a Party’s APC, including its Interchange Capacity rights and excluding its Interchange Capacity obligations, exceeds its Firm Peak Load Carrying Capability (“FPLCC”); and (iii) “excess energy” is the amount by which a Party’s AEC, including its Interchange Energy and Holding Energy (“HE”) rights and excluding its Interchange Energy and HE obligations, exceeds the Party’s Firm Energy Load Carrying Capability (“FELCC”).

#### (b) Actual Energy Capability

The Parties shall use procedure 9(b)-3., *Actual Energy Regulation*, to calculate their AECs; *provided* if procedure 9(b)-3., *Actual Energy Regulation*, is rescinded pursuant to this Agreement, each Party shall determine and use its AEC as set forth in paragraphs 9(b)(1) and 9(b)(2) below.

##### (1) Adjustments to Actual Energy Capability

The AEC of a Party for a Period shall be determined within five business days after the end of such Period. The determination of AEC shall be based on the energy actually received under firm contracts and arrangements with systems outside the Coordinated System and actual energy generated from a Party's Firm Resources and then adjusted for any rights and obligations pursuant to this subsection 9(b), observing priorities for use of facilities set forth in subsection 9(h), *Priorities on Use of Facilities for Power*. Appropriate adjustments shall be made when applicable for Maintenance Outages, Forced Outages, energy capability of Firm Resources not used, In Lieu Energy, stored energy, Flexibility Adjustment Account (“FAA”), Provisional Energy, Interchange Energy, HE, energy reserves, and energy for secondary purposes. Such adjustments for rights and obligations shall observe the following procedures, when applicable: Forced Outages and Maintenance Outages not

scheduled pursuant to subsection 6(a), *Load and Firm Resource Data*, and subparagraph 6(f)(3), *Revisions to Maintenance*, shall not reduce the capability of a Party's Firm Resources and shall, therefore, neither increase a Party's right to Interchange Energy nor decrease such Party's obligation to deliver Interchange Energy at any time from what such right or obligation would have been without the outages; adjustment for an FAA shall be made only for positive balances in such account; appropriate adjustments for Interchange Energy and HE received, delivered, or returned during the Period shall be made to determine any remaining obligation or right; appropriate reductions shall be made for storage water that has been drafted below the lowest elevation permitted under subsection 9(g), *Operation of Reservoirs Below Energy Content Curves and Critical Rule Curves*; appropriate reductions shall be made in a Period for energy generation utilized for secondary purposes, and not requested as Interchange Energy, that could not have been stored in Coordinated System reservoirs and that would have otherwise spilled; and any adjustment involving the conversion of water to energy capability shall be determined by application of the same plant characteristic data submitted and used in the determination of FELCC pursuant to section 6, *Determination of Firm Load Carrying Capability*.

## **(2) Estimated Actual Energy Capabilities**

Estimates of each Party's AEC shall be used for operating purposes during each Period whenever rights or duties are to be determined currently based on AEC. The Party shall make estimates for the current Period or the remaining part of the current Period based on conservative forecasts from known conditions. Required adjustments on account of differences between AEC and such estimates for a Period shall be made after the Period.

## **(c) Delivery and Return of Holding Energy**

### **(1) Requests for Holding Energy**

This subsection 9(c) shall apply if the Parties establish a FLCC for the Coordinated System that is associated with schedules for HE pursuant to paragraph 6(i)(4), *Designation of Holding Energy*. The Supplying Party shall deliver to a Receiving Party in any Period the lesser of (i) the amount established pursuant to paragraph 6(i)(4), *Designation of Holding Energy*, (ii) the amount sufficient to keep the Receiving Party's reservoir(s) at (each of) its Energy Content Curve(s) ("ECC"), or (iii) the amount requested by the Receiving Party. The Receiving Party may require such delivery at a daily rate of up to 120 percent of the amount established pursuant to paragraph 6(i)(4), *Designation of Holding Energy*. The Supplying Party shall pay the Receiving Party pursuant to paragraph 14(e)(1), *Holding Energy Service Charge*.

### **(2) Conversion to Storage**

To the extent that HE is about to be spilled from the reservoir into which it was imported, the Receiving Party shall convert such energy at no charge to energy

stored under the provisions of paragraph 9(i)(1), *Regular Storage*, and shall refund to the Supplying Party a payment computed pursuant to paragraph 14(e)(3), *Refund Resulting from Conversion of Holding Energy to Storage*. If a reservoir has HE from more than one Supplying Party, the Receiving Party shall designate the amount of each Supplying Party's HE to be converted under this paragraph 9(c)(2). The converted energy shall be subject to the provisions of paragraphs 9(i)(1), *Regular Storage*, 9(i)(2), *Potential Spill Conditions*, and 14(g)(2), *Stored Energy and Holding Energy*, and subsection 14(e), *Holding Energy Charges*.

The Receiving Party's obligation to return HE shall be decreased by the amount of HE converted to stored energy, but the Supplying Party's remaining obligation to deliver HE shall not be increased.

### **(3) Return of Holding Energy**

The schedule of HE returns established pursuant to paragraph 6(i)(4), *Designation of Holding Energy*, shall be decreased to equal the total amount of remaining HE. Within each Period the Supplying Party shall have a right to the return of any remaining HE in a daily amount up to 120 percent of the adjusted schedule. If the Supplying Party requests return of HE prior to its scheduled return, the Receiving Party shall comply with such request to the extent honoring such request does not require draft below the ECC at the reservoir involved. When the HE is returned, the Supplying Party shall pay to the Receiving Party the balance of cash payments owed under paragraph 14(e)(1), *Holding Energy Service Charge*.

### **(4) Uniform Hourly Schedules and Special Shaping**

The Delivering Party may elect not to deliver HE on Peak Load Hours ("PLH") and shall pay a shaping fee to the Party receiving the HE in accordance with paragraph 14(e)(2), *Holding Energy Re-shaping Charges*. For those hours not excluded, the Delivering Party shall deliver the daily amount of HE uniformly.

## **(d) Interchange Energy**

Each Party shall have a right under this Agreement to energy equivalent to its FELCC. Any Party with an Indicated Import may require the delivery of Interchange Energy from one or more Parties with an Indicated Export. Such delivery from any individual Party with an Indicated Export shall not exceed the lesser of (i) the remaining portion of the Indicated Import not being supplied by Interchange Energy, or (ii) the Indicated Export not being supplied to other Parties as Interchange Energy. All Parties shall use their AEC and take delivery of Interchange Energy or procure energy to meet the lesser of their Actual Adjusted Energy Load or FELCC. Interchange Energy may be supplied by any Party from FELCC in excess of its Actual Adjusted Energy Load. The Delivering Party may elect not to deliver Interchange Energy on PLHs. For those hours not excluded under the immediately preceding sentence, the Delivering Party shall deliver Interchange Energy uniformly.

Upon request, a Party with a net debit in its Interchange Energy account with a Delivering Party shall pay an interim cash advance to the Delivering Party. The Parties shall settle imbalances in Interchange Energy deliveries pursuant to subparagraph 9(d)(3)(D), *Settling Interchange Energy Imbalances*.

## **(1) Delivery of Interchange Energy**

For each Interchange Energy request, the Supplying Party shall declare on which prescheduled day(s) of such delivery it shall provide Loaned Interchange Energy and on which prescheduled day(s) of such delivery it shall provide Regular Interchange Energy. Such declaration of a Supplying Party shall not be changed for that request.

### **(A) Loaned Interchange Energy**

If Loaned Interchange Energy is accepted, clause 9(d)(3)(A)(ii), *Loaned Interchange Energy*, shall govern its return.

### **(B) Regular Interchange Energy**

A Supplying Party whose incremental cost of supplying Interchange Energy is greater than the single price determined in paragraph 14(a)(3), *Determination of Regular Interchange Energy Rate*, may require the Receiving Party to attempt to obtain Regular Interchange Energy from another Party. A Receiving Party required to seek another source of Regular Interchange Energy shall, to the extent available and as time may permit, obtain such portion of Regular Interchange Energy from other Supplying Parties whose incremental cost of both producing or acquiring the Regular Interchange Energy is no greater than the single price. To the extent the Receiving Party is unable to obtain Regular Interchange Energy from alternative sources, the original Supplying Party shall satisfy the original request.

### **(C) Competing Requests for Interchange Energy**

When the sum of Interchange Energy requests exceeds the obligation of the Supplying Party to deliver Interchange Energy, such Supplying Party may deliver the Interchange Energy to the Receiving Party(ies) of its choice.

## **(2) Over-receipt of Interchange Energy**

When a Receiving Party receives more Interchange Energy than it has a right to during a Period, it shall return the excess amount if requested by a Delivering Party. The Parties shall determine excess receipts within ten days after the end of the Period or as provided in subprocedure 9(b)-3.B., *Use of Actual Energy Regulation to Determine Interchange Rights and Obligations*. A Delivering



Party may give notice to such Receiving Party within three business days after such determination requesting return of the excess Interchange Energy. Such excess shall be returned within 15 days or by the end of the current Period, whichever is later. If a Delivering Party does not elect to recall excess Interchange Energy, such energy shall be accounted for as Interchange Energy unless the Supplying Party and Delivering Party agree to treat an excess receipt of Interchange Energy as a return of HE.

### **(3) Return of Interchange Energy**

#### **(A) Determination of Obligation to Return**

On demand a Receiving Party shall return Interchange Energy to a Supplying Party as follows.

##### **(i) Interchange Energy/Receiving Party Excess**

Interchange Energy shall be returned to the extent the Receiving Party's AEC is in excess of its FELCC.

##### **(ii) Loaned Interchange Energy**

Irrespective of the Receiving Party's energy requirements, Loaned Interchange Energy shall be returned whenever the Supplying Party's AEC (excluding the use of thermally generated energy) is less than its FELCC.

##### **(iii) Regular Interchange Energy/Supplying Party Deficit**

Irrespective of the Receiving Party's energy requirements, Regular Interchange Energy shall be returned whenever the Supplying Party's AEC is less than its FELCC.

A Receiving Party's obligation(s) to return Interchange Energy on demand pursuant to this paragraph 9(d)(3) shall be limited on any hour by the amount by which the Receiving Party's Peaking Capability exceeds the capacity such Party is using for purposes of higher priority under subsection 9(h), *Priorities on Use of Facilities for Power*; provided the daily energy amount of return shall not be affected except as allowed in such subsection.

#### **(B) Credit for Returns**

When a Receiving Party returns Interchange Energy to a Supplying Party, the outstanding Interchange Energy imbalance between such Supplying Party and such Receiving Party shall be reduced. Returns of

Regular Interchange Energy by a Receiving Party shall be applied to its imbalance account on a “first-in, first-out” basis by megawatt hour, except returns of excess Regular Interchange Energy deliveries shall be applied to the Period when the excess energy was delivered. A return of Regular Interchange Energy shall reduce the charges for such imbalance by eliminating the charges per megawatt hour. Upon a return of Regular Interchange Energy, the Supplying Party shall refund any applicable interim cash payments.

### **(C) Accounting Responsibilities**

The Supplying Party shall inform the Receiving Party on an on-going basis of the balance of outstanding Interchange Energy identified by the Operating Year of initial delivery, the charge associated with such Operating Year, and the amount of outstanding interim cash payments.

### **(D) Settling Interchange Energy Imbalances**

The Parties shall settle Interchange Energy imbalances pursuant to subprocedure 9(d)-3.A., *Settlement of Imbalances*; provided if that subprocedure is rescinded pursuant to this Agreement, the Parties shall settle imbalances as follows. At the end of any Refill-hold Period when Coordinated System reservoirs reach the Settlement Criterion, any Loaned Interchange Energy return obligation as of July 31 of that calendar year shall terminate. The Receiving Party shall (i) credit interim cash advances received from the Supplying Party to Regular Interchange Energy imbalances, and (ii) pay the Supplying Party for any imbalances remaining as of July 31 of that calendar year pursuant to paragraph 14(a)(2), *Regular Interchange Energy Imbalances*. Upon such payment, the Receiving Party’s obligation to return Regular Interchange Energy imbalances to the Supplying Party shall be discharged.

## **(e) Interchange Capacity**

Each Party shall have a right under this Agreement to capacity equivalent to its FPLCC.

### **(1) Right to Interchange Capacity**

Any Party whose APC is less than its FPLCC shall have a right to the amount of Interchange Capacity necessary to meet its FPLCC. Except as provided in paragraph 9(e)(2) below, any Party whose APC is in excess of its FPLCC shall supply Interchange Capacity, and any Party with capacity in excess of its Actual Adjusted Peak Load may supply Interchange Capacity.

## **(2) Capacity Calculation**

The Parties shall account for Interchange Capacity service on a calendar week basis and the Receiving Party shall pay for it at the rate provided in subsection 14(c), *Interchange Capacity Imbalances*. Such payment shall be based on the maximum amount requested and delivered during any hour as Interchange Capacity; *provided* if the Supplying Party is subsequently unable during that calendar week to deliver Interchange Capacity as great as the rate at which Interchange Capacity was previously delivered during such week, the lower amount shall be the Interchange Capacity delivered during such calendar week.

## **(3) Return of Energy Associated with Delivery of Capacity**

At the option of the Supplying Party, the Receiving Party shall (i) return energy received with the delivery of Interchange Capacity within seven days of such delivery during Light Load Hours at a rate not to exceed that of the delivery of such Interchange Capacity, or (ii) purchase such energy at the rate specified in paragraph 14(a)(2), *Regular Interchange Energy Imbalances*.

## **(f) Adjustment of Energy Content Curves**

Pursuant to the following, each Reservoir Party shall update its Variable Energy Content Curves (“VECC”) and then the Coordinating Group shall adjust the ECCs for non-power requirements and natural restrictions.

### **(1) Updating Variable Energy Content Curves**

At the beginning of each Period from January through July or as soon thereafter as practicable, each Reservoir Party shall provide all other Parties with projections of (i) the ECC elevation of (each of) its Cyclic Reservoir(s) at the end of each Period during the remainder of the Operating Year, and (ii) (each of) its reservoir’s(s’) inflow forecast and underlying data. Each reservoir’s ECC shall be the lower of its Base ECC or its VECC. To determine such ECC elevations the Reservoir Party shall use its forecast method submitted pursuant to paragraph 7(d)(1), *Volume Inflow Forecasting Method*, and the VECC specified in paragraph 7(d)(5), *Adjustments to Historical Variable Energy Content Curves to Pass Refill Test*; *provided* if the Reservoir Party reasonably determines that its forecasted elevations do not represent the planned operation as described in subparagraph 7(d)(4)(B), *Refill Regulation*, the Reservoir Party may deviate from the forecast method, the reservoir’s VECCs, or both, to the extent necessary to incorporate such operation into the VECCs. Any Reservoir Party deviating from the procedures of paragraphs 7(d)(1), *Volume Inflow Forecasting Method*, and 7(d)(5), *Adjustments to Historical Variable Energy Content Curves to Pass Refill Test*, shall advise all other Parties in writing of the reasons therefor.

## **(2) Draft for Non-power Requirements**

If to satisfy non-power requirements a Reservoir Party is required to operate its reservoirs below the ECC, the actual elevations of such reservoir shall be deemed to be the ECC for such reservoir.

## **(3) Operation Above Energy Content Curve Due to Natural Restrictions**

If a reservoir's actual elevation exceeds its ECC only because of a natural restriction that limits the outflow of a reservoir and the Project controlling such reservoir is discharging water at its current maximum restricted rate, the actual elevation shall be deemed to be the ECC for such reservoir.

## **(g) Operation of Reservoirs Below Energy Content Curves and Critical Rule Curves**

Procedure 9(g)-1., *Operation of Reservoirs Below Adjusted Energy Content Curves and Critical Rule Curves*, shall govern the operation of reservoirs below their respective ECCs and CRCs. If such procedure is rescinded pursuant to this Agreement, the following shall apply.

### **(1) Condition for Reservoir Draft Below Energy Content Curve**

Except as provided in subsection 9(1), *Provisional Energy*, and paragraph 9(g)(2) below, no Reservoir Party shall draft any of its reservoirs below the ECC for such reservoir unless all of the following conditions exist.

#### **(A) Reservoirs are at Energy Content Curve or Physical Limit**

All reservoirs have been drafted within their physical limits to their respective ECCs.

#### **(B) Firm Resources at Full Operation**

Firm Resources are operating to the full extent they were submitted in section 6, *Determination of Firm Load Carrying Capability*, planning or the Party who owns, leases, or controls the Firm Resources replaces them with an equivalent amount of energy (i) from outside the Coordinated System, (ii) from its FELCC in excess of its Actual Adjusted Energy Load, or (iii) from another Party's FELCC in excess of that Party's Actual Adjusted Energy Load.

### **(C) Draft Necessary to Produce Firm Energy Load Carrying Capability**

Further draft is necessary to produce the Coordinated System's FELCC.

## **(2) Reservoir Balancing**

Each Reservoir Party may draft any of its reservoirs below the ECC for such reservoir subject to the following conditions; *provided* if reservoir-balancing drafts or drafts for storage in another entity's system or another Party's System affect downstream Projects, the Reservoir Party and such downstream Parties shall treat such drafts as Provisional Drafts under subparagraphs 9(l)(1)(C), *Production of Provisional Energy/Options to Retain Energy or Produce Energy for Return*, and 9(l)(1)(D), *Adjustment to Actual Elevations*.

### **(A) Reservoir Balancing Within a System**

A Reservoir Party may exchange water between (or "balance") its reservoirs if it can demonstrate that (i) the water exchanged is equivalent in useable energy to the Coordinated System, and (ii) there is an equal or greater probability that its reservoirs will refill after the water is exchanged.

### **(B) Reservoir Balancing Between Systems**

A Reservoir Party may draft any of its reservoirs down to the ARC for such reservoir to store the resulting energy, including related head losses, in a reservoir of another Reservoir Party so long as such energy can be returned and during such storage there is no greater risk of spill. Subsection 9(i), *Storage of Energy in Reservoirs*, shall govern such storage.

## **(3) Proportional Draft**

When all reservoirs must be operated below their ECCs in order to produce the Coordinated System's FELCC, the Coordinating Group shall establish Proportional Draft Points ("PDPs") for Coordinated System reservoirs and each Reservoir Party shall operate (each of) its reservoir(s) to its PDP. PDPs shall result in Coordinated System reservoirs being drafted proportionately, expressed in elevation, between CRCs sequentially ordered pursuant to subsection 6(l), *Determination of Critical Rule Curves*. For purposes of this paragraph 9(g)(3), the normal bottom of the reservoir shall be an additional and the lowest CRC. If a Reservoir Party has lowered any of its reservoirs' ECC elevations for any Period below one or more of the reservoir's(s') CRC elevations under subsection 9(f), *Adjustment of Energy Content Curves*, such Reservoir Party shall lower the CRC elevations for such reservoir(s) that are above the ECC elevation to the level of the ECC elevation.

If a Reservoir Party is unable to draft any of its reservoirs to their PDP established above (i) without spilling water that reasonably could be used within the Critical Period, or (ii) because of outlet restrictions, discharge requirements, or operation for non-power requirements, such Reservoir Party shall operate (each of) such reservoir(s) as near as possible within such limitations to achieve its PDP established above, whereupon the Coordinating Group shall ratably adjust all other reservoirs' PDPs to produce the FELCC of the Coordinated System; *provided* a Reservoir Party may exchange storage water among the reservoirs of such Reservoir Party for the purpose of balancing such Party's reservoirs if such exchange does not affect adversely any downstream Project not owned or operated by such Party and if such Party can reasonably demonstrate such exchange results in equivalent useable energy and probability of refill.

## **(h) Priorities on Use of Facilities for Power**

No Party shall be required to exceed the capabilities of physical facilities that are dedicated to coordination and are available for its use. If a Party reasonably determines that such capabilities will be exceeded because of a combination of (i) such Party's rights to FLCC under this Agreement, (ii) demands made under this Agreement, and (iii) such Party's performance of its obligations to provide power, energy, and transmission services, such Party shall use the capabilities of its facilities (including machine capacity, reservoir capacity, and transmission capacity) according to the priority listed below with paragraph 9(h)(1) being the highest priority. Once a Party determines that its capabilities will be exceeded because of a combination set forth above, each demand on such Party under this Agreement remaining unmet because of any such combination shall be deferred until such time as such Party determines that it has sufficient capabilities to satisfy such demand in the order of its priority. Multiple transactions falling within the same numbered category shall have the same priority.

### **(1) Firm Load Carrying Capability From Hydroelectric Firm Resources**

The Party shall supply its FLCC from its own hydroelectric Firm Resources and shall use its transmission capacity to fulfill its own FLCC and to fulfill contracts for transmission services or for transmission services associated with such Party's power or energy contracts.

### **(2) Firm Load Carrying Capability From Other Firm Resources**

The Party shall supply its remaining FLCC from its other Firm Resources.

### **(3) Interchange Capacity**

The Party shall deliver Interchange Capacity under subsection 9(e), *Interchange Capacity*.

#### **(4) Deliveries and Returns Needed to Support Others' Firm Energy Load Carrying Capability**

When required to maintain the Requesting Party's(ies') FELCC, the Party shall deliver and return In Lieu Energy, deliver replacement energy under subparagraph 9(1)(1)(C), *Production of Provisional Energy/Options to Retain Energy or Produce Energy for Return*, and deliver energy under the refusal option pursuant to paragraphs 13(c)(2), *Return by Downstream Party Upon Release of Storage*, and 13(c)(3), *Return by Reservoir Party Upon Storage*.

#### **(5) Return of Storage Needed to Support Others' Firm Energy Load Carrying Capability**

When required to maintain the Requesting Party's(ies') FELCC, the Party shall return energy stored in reservoirs under subsection 9(i), *Storage of Energy in Reservoirs*.

#### **(6) Interchange Needed to Support Others' Firm Energy Load Carrying Capability**

When required to maintain the Requesting Party's(ies') FELCC, the Party shall deliver or return HE and Interchange Energy under subsections 9(c), *Delivery and Return of Holding Energy*, and 9(d), *Interchange Energy*.

#### **(7) Any Other Purpose for Own Use**

The Party shall supply any of its own requirements for other purposes.

#### **(8) Interchange for Others' Use**

The Party shall deliver and return HE and Interchange Energy under subsections 9(c), *Delivery and Return of Holding Energy*, and 9(d), *Interchange Energy*, to allow the Requesting Party(ies) to use it for any other purpose.

#### **(9) Deliveries and Returns for Others' Use**

The Party shall deliver and return In Lieu Energy, deliver replacement energy under subparagraph 9(1)(1)(C), *Production of Provisional Energy/Options to Retain Energy or Produce Energy for Return*, and deliver energy under the refusal option pursuant to paragraphs 13(c)(2), *Return by Downstream Party Upon Release of Storage*, and 13(c)(3), *Return by Reservoir Party Upon Storage*, to allow the Requesting Party(ies) to use it for any other purpose.

## **(10) Storage Returns for Others' Use**

The Party shall return energy stored in reservoirs under subsection 9(i), *Storage of Energy in Reservoirs*, to the Requesting Party(ies) to use it for any other purpose.

## **(11) Provisional Energy Deliveries**

The Party shall deliver energy produced from the release of water for the production of Provisional Energy under subparagraph 9(1)(1)(C), *Production of Provisional Energy/Options to Retain Energy or Produce Energy for Return*.

## **(12) Any Other Use**

The Party shall use its discretion in delivering or returning energy to the Requesting Party(ies) for use for any other purpose.

# **(i) Storage of Energy in Reservoirs**

## **(1) Regular Storage**

A Supplying Party may store energy with any Reservoir Party to the extent that the Reservoir Party has space available in its reservoir(s). The Reservoir Party shall have discretion in the use of its storage space. A Reservoir Party receiving conflicting requests for storage space or return of stored energy shall also have discretion in determining how to meet the request(s) and, if spill occurs, whose energy was spilled. A Reservoir Party planning to displace stored energy shall notify the Supplying Party and shall endeavor to conserve the energy.

Each Reservoir Party shall account for the energy it stores, spills, or returns in megawatt hours. To compute the energy equivalent in megawatt hours of water spilled, the Reservoir Party shall use the average conversion factor (megawatts per thousand cubic feet per second) in effect at the time the water was spilled.

On demand, a Reservoir Party shall return to the Supplying Party any stored energy not purchased or spilled to the extent the Reservoir Party's available hydroelectric-generating capacity at the reservoir exceeds the generating capacity required for higher priority purposes under subsection 9(h), *Priorities on Use of Facilities for Power*. When releasing water to return stored energy the Reservoir Party shall decrease the Supplying Party's account for stored energy by the sum of the following quantities.

### **(A) Energy Returned**

The amount of stored energy returned.



## **(B) Energy Spilled**

The amount of energy spilled at the Reservoir Party's downstream Projects caused by the release.

## **(C) Credits for In Lieu Energy Spilled**

The amount of the Reservoir Party's In Lieu Energy that is lost through spill credits at downstream Projects caused by the release of stored water.

Spill resulting from water released to return stored energy constitutes spill of stored energy. Charges and refunds for the foregoing shall be governed by subsection 14(f), *Stored Energy Service Charges*.

If a Reservoir Party generates energy with stored water and consequently spills an equivalent amount of energy elsewhere on its System or if that Reservoir Party transfers such energy to another Party for immediate spill, such energy shall be considered spilled energy.

When the reservoirs of the Coordinated System reach the Refill Criterion, a Reservoir Party may purchase any remaining energy stored in its reservoirs by a Supplying Party under this subsection 9(i) from such Supplying Party at the rate set forth for Interchange Energy imbalances in paragraph 14(a)(2), *Regular Interchange Energy Imbalances*.

## **(2) Potential Spill Conditions**

During a Potential Spill Period the following subparagraphs 9(i)(2)(A) and 9(i)(2)(B) shall apply, except as to energy stored during any such Potential Spill Period. Such energy shall not be returned under subparagraph 9(i)(2)(A) below even if the spill occurs after the notice period expires.

### **(A) Imminent Spill**

When a Reservoir Party notifies all other Parties who have stored energy in its reservoir that spill is imminent, the charges for any stored energy returned during such imminent spill condition shall be determined under paragraph 14(f)(4), *Charges in the Case of Imminent Spill*.

### **(B) Transfers to Avoid Spill**

Upon the request of a Supplying Party, a Reservoir Party shall make reasonable efforts to transfer stored energy to avoid spill. If stored energy is so transferred to avoid spill, no Receiving Party shall impose a charge for transferring stored energy from its reservoir to another Party's reservoir. In such instances, the original Receiving Party shall retain the delivery charge received pursuant to paragraph 14(f)(1), *Delivery Charges*. The Supplying Party shall pay the return charges to the final

Receiving Party on return of the Supplying Party's stored energy under paragraph 14(f)(2), *Return Charges*. If stored energy is spilled after it is transferred, the original Receiving Party shall refund the charges collected on delivery pursuant to paragraph 14(f)(5), *Refund of Storage Charges when Storage is Spilled*.

When any energy a Reservoir Party accepts for storage during a Potential Spill Period is returned, the charges in paragraph 14(f)(2), *Return Charges*, shall apply or, if spilled, such spill shall be on a "last-stored, first-spilled" basis.

## **(j) Release of Water From Storage and In Lieu Energy Deliveries**

### **(1) Provisions for Requested Releases**

The owner of a downstream Project may request release of water accumulated above the ECC in an upstream reservoir. Upon such request, the upstream Reservoir Party either shall release such water or shall supply to the requesting downstream Project owner energy in lieu thereof in an amount equivalent to the energy that such water would have generated at the downstream Project if released. In Lieu Energy shall be scheduled such that receipt of such energy by the downstream Project owner will be neither more nor less advantageous to the downstream Project owner than if the water had been released. The downstream Project owner's receipt of In Lieu Energy vests in the Reservoir Party such owner's right to water corresponding to the In Lieu Energy and increases the amount of Assigned Water attributed to the downstream Project owner.

### **(2) Conservation of Energy**

In any request for the release of water, the downstream Project owner shall use its best efforts to minimize spill. The Reservoir Party shall not be required to release water (or to deliver energy in lieu thereof) in excess of the generating capability of its reservoir Project unless the Reservoir Party's reasonable forecasts indicate that the reservoir would otherwise be above its ECC at the end of the Drawdown Period.

### **(3) In Lieu Energy Return**

When the right of any downstream Project owner to water above the ECC at an upstream reservoir has been satisfied and Assigned Water is being released (*i.e.*, the reservoir's rate of release exceeds the rate indicated by the reservoir's ECC), the downstream Project owner shall return all incremental energy generated at its downstream Project from the release of such Assigned Water.

The energy shall be returned as it is generated from the Assigned Water release except in the following cases.

### **(A) Rate Limitation**

When the rate of generation exceeds the energy equivalent of the difference between the reservoir's actual outflow and the reservoir's minimum release requirement, the downstream Project owner shall return the energy at the maximum allowable rate until such return obligation is satisfied.

### **(B) Adjustment for Natural Outflow Restrictions**

When the ECC of a reservoir is adjusted because of a natural outflow restriction under paragraph 9(f)(3), *Operation Above Energy Content Curve Due to Natural Restrictions*, and the adjustment creates an obligation to return outstanding In Lieu Energy, a downstream Project owner with a return obligation shall make available to the Reservoir Party, in each of the five weeks following such adjustment, 20 percent of the energy owed.

## **(4) Termination and Reinstatement**

During the portion of the year when the ECC indicates that an upstream reservoir is refilling, a downstream Project owner may, by giving notice to the Reservoir Party, suspend its right to request further release of water from the upstream reservoir until the end of the current Refill-hold Period. During such period, the downstream Project owner may, by giving notice to the Reservoir Party, designate any portion of the water released from the upstream reservoir in excess of minimum releases as Assigned Water releases up to the amount of its Project's remaining Assigned Water. The resulting return of In Lieu Energy shall be returned so as to conform to the return requirements in paragraph 9(j)(3) above. If the ECC is adjusted under paragraph 9(f)(1), *Updating Variable Energy Curves*, any right to request releases of water that had been suspended may be reinstated by the downstream Project owner by giving notice to the Reservoir Party when the adjusted ECC deviates from the previously designated ECC; *provided* after such reinstatement the downstream Project owner shall not again suspend its right until (i) it has made a request for a release of water at the reservoir, and (ii) seven days have elapsed since reinstatement.

## **(5) Requests of Mid-Columbia Projects for Release of Storage from Federal Projects Upstream of Chief Joseph Project**

The rights and obligations of the Wells, Rocky Reach, Rock Island, Wanapum, and Priest Rapids Project owners arising from this subsection 9(j) with respect to those reservoirs upstream from Chief Joseph Project for which the United States is the Reservoir Party shall be implemented pursuant to procedure 9(j)-3., *In Lieu Energy Transactions for Federal Reservoirs and Mid-Columbia Projects*, so long as that procedure is in effect.

## **(6) Termination for the Last Year of the Agreement**

During the last Operating Year of this Agreement any downstream Project owner may, by giving notice to the Reservoir Party, terminate its right to request releases of water from upstream reservoirs. Upon such termination, the downstream Project owner may, by giving notice to the Reservoir Party, designate any releases in excess of minimum as releases of Assigned Water up to the amount of its Project's remaining Assigned Water and, if such designation is made, the downstream Project owner shall return energy in accordance with paragraph 9(j)(3) above.

## **(7) Settlement When the Agreement Terminates**

If any Assigned Water remains in a reservoir after termination of this Agreement, the downstream Project owner shall pay the Reservoir Party an amount equal to the product of the energy equivalent of such Assigned Water and the rate to be calculated under paragraph 14(a)(3), *Determination of Regular Interchange Energy Rate*. The energy equivalent shall be calculated by multiplying the remaining Assigned Water by the average energy conversion factor of the downstream Project during the Drawdown Period immediately preceding termination of this Agreement.

## **(8) Accounting**

Each day each Reservoir Party shall provide an accounting to each downstream Project owner of such downstream Project owner's right to storage releases, In Lieu Energy schedules, and projections of reservoir outflows.

## **(9) Assumed Useable Generation**

For the purposes of calculations under this subsection 9(j), the Reservoir Party and the downstream Party shall assume (i) that all reservoir and downstream generating units are operable, and (ii) that all water that could be used by such generating units is useable for generation. In making such calculations the Reservoir Party and the downstream Party shall include tailwater encroachment settlements.

## **(k) Adjustments in Firm Energy Load Carrying Capability During Operating Year**

### **(1) Adjustments**

A Party may, by giving notice to the Coordinating Group, advance or delay its FELCC in any month of the Operating Year subject to the limitations in this subsection 9(k). The Coordinating Group shall determine whether the requested

adjustments comply with such limitations and shall maintain an FAA of each Party's FELCC in megawatt hours. The limitations are as follows.

## **(A) Individual Party Limitations**

### **(i) Balancing of Firm Energy Load Carrying Capability Adjustments**

A Party may advance or delay its FELCC so long as that Party's FAA balance is zero both (i) at the end of the Operating Year, and (ii) at the end of the Critical Period originally associated with the adopted FLCC if the Critical Period ends in such Operating Year.

### **(ii) Cap on Individual Party Adjustments**

A Party may advance up to five percent of its FELCC remaining between the date of such advancing and the time such Party's FAA balance must be zero; *provided* a Party may never have outstanding more than five percent of its then-remaining FELCC.

### **(iii) Additional Individual Party Limitations**

Except for increases of FELCC previously delayed under paragraph 9(k)(2) below, a Party may not advance its FELCC in any Period in the Operating Year by more than the sum of the following amounts.

#### **(a) Load Overrun**

For any part of August that falls outside the Critical Period, an amount equal to the difference between the Actual Firm Energy Load of a Party and that Party's Estimated Firm Energy Load ("EFEL") submitted for such part of August; for all other Periods, the difference between the Party's Actual Adjusted Energy Load and that Party's Estimated Adjusted Energy Load ("EAEL").

#### **(b) Maintenance and Forced Outage**

An amount equal to the energy-capability difference between (i) the actual Maintenance Outages and Forced Outages during such Period and (ii) the Maintenance Outages scheduled for such Period pursuant to subsection 8(a),

*Maintenance*, and paragraph 6(f)(3), *Revisions to Maintenance*.

Any advancing of FELCC for other purposes must be unanimously approved by all of the Parties.

### **(B) Coordinated System Limitation**

The sum of the Parties' FAA accounts with positive balances shall not exceed (i) nine percent of the Coordinated System's remaining Hydroelectric Firm Energy Load Carrying Capability ("Hydroelectric FELCC") between the date of such advancing and the time the sum of such Parties' FAA balances must be zero or, if Treaty Storage is not permitted to be affected by changes in FELCC, (ii) six percent of such Hydroelectric FELCC.

### **(C) Timing of Corresponding Adjustment**

A Party requesting to advance FELCC shall indicate the Period in which it desires to return the FELCC. A Party may not schedule a return in a Period that it is not hydraulically useable or during the Period when such Party's FELCC was advanced; *provided* if the advancement of FELCC was served by the Coordinated System's surplus it can be returned in any Period.

### **(D) Allocation**

When all Parties' requests to advance FELCC exceed the above limitations, the amount of FELCC that may be advanced shall be allocated among the Parties pursuant to subprocedure 9(b)-5.B., *Testing Submitted Flexibility Adjustments for Compliance with Flexibility Limitations*.

## **(2) Effect of Adjustments on Other Provisions/Demonstration of Ability to Support Adjustments with Critical Period Streamflows**

Procedure 9(k)-2., *Delay of Firm Load Carrying Capability*, shall govern how a Party may delay its FELCC in any Period of the Operating Year; *provided* if such procedure is rescinded a Party may delay its FELCC by (i) maintaining an equivalent amount of storage in any of its reservoirs over their respective CRCs for such Period, (ii) deferring rights to storage releases under this Agreement, or (iii) making other arrangements for increasing its AEC equivalent to the increase in its FELCC, or by any combination thereof. Upon request by another Party or by the Coordinating Group, such Party shall demonstrate its ability to produce the claimed increase in the FELCC of the Coordinated System until the time such

Party's FAA balance must be zero under the streamflows in the Historical Period of Record used to establish FELCC.

### **(3) Accounting**

A Party shall notify all other Parties of any advance or delay of FELCC pursuant to this subsection 9(k) within ten days after the end of the month to which such advance or delay applies and shall specify how that Party provided capability sufficient to make such advance or delay. A Party shall revise its AEC to reflect changes attributable to delay(s) of FELCC in its FAA. The Study Group shall modify the changing Party's FAA. Increases in FELCC shall be expressed as positive quantities.

## **(l) Provisional Energy**

### **(1) General Provisions**

Except as provided in subsection 9(g), *Operation of Reservoirs Below Energy Content Curves and Critical Rule Curves*, procedure 9(l)-2., *Reservoir Operating Margin*, and other relevant procedures, a Reservoir Party may draft any of its reservoirs in a manner that will cause such reservoirs to be below its end-of-Period ECC at the end of the current Period to produce Provisional Energy under the following conditions.

#### **(A) Required Declaration of Provisional Draft**

Any Reservoir Party which anticipates a Provisional Draft and which is able to make the demonstration required in subparagraph 9(l)(1)(B) below shall give notice to all affected Parties prior to making the Provisional Draft.

#### **(B) Required Conditions**

Any Party expecting to sell, dispose of, or use Provisional Energy (including energy returned to a Reservoir Party under subparagraph 9(l)(1)(C) below) must be able to demonstrate that such Party is able to recover the Provisional Energy it would sell, dispose of, or use and the incidental generating losses at the time the water otherwise would have been drafted based on the assumption that such storage water was the last increment of water drafted. Such demonstration shall be made by such Party upon request by any other Party. To make such demonstration, the Party shall establish that it (i) can recall the Provisional Energy that it proposes to use, or (ii) has committed other firm generating resources or stored energy not already committed for FELCC under this Agreement.

### **(C) Production of Provisional Energy/Options to Retain Energy or Produce Energy for Return**

A Reservoir Party shall notify downstream Project owners of its schedule for Provisional Draft. Each downstream Project owner shall advise the Reservoir Party that it shall either retain or return the energy it can produce from the Provisional Draft to the Reservoir Party. If the downstream Project owner returns such energy, the Reservoir Party shall deliver to such owner, at the time that the water used to produce Provisional Energy would have been released, replacement energy in the amount that the downstream Project could have generated with such release. Neither Party shall charge the other for the energy exchanged under this subsection 9(1).

### **(D) Adjustment to Actual Elevations**

For computations using “actual elevation” of a reservoir under this Agreement, such “actual elevation” shall be computed by (i) adding the water actually in storage at any time to the water in the Reservoir Provisional Draft Account at such time, and (ii) converting such sum to the equivalent elevation; *provided* “actual elevation” for any reservoir shall not exceed the normal top elevation for such reservoir.

## **(2) Accounting**

### **(A) Reservoir Provisional Draft Account**

Each Reservoir Party shall keep a separate reservoir Provisional Draft account, in thousands of second-foot days, of the Provisional Draft for each reservoir.

### **(B) Provisional Return Account**

Each Reservoir Party and associated downstream Parties shall keep separate provisional return accounts of the water equivalent, in thousands of second-foot days, of the Provisional Energy returned by each downstream Party.

### **(C) Provisional Energy Retained Account**

Each Reservoir Party and associated downstream Parties shall keep provisional energy retained accounts, in megawatt hours, that reflect the energy produced from the Provisional Draft and retained by such Party including, for the Reservoir Party, the Provisional Energy returned to the Reservoir Party by associated downstream Parties.



## **(m) Adjustments for Changes in Schedules of Firm Resource Availability**

### **(1) Adjustments of Firm Load Carrying Capability for Changes to New or Additional Firm Resources**

The Coordinating Group shall adjust the FLCC for each affected Party as follows for delays or advances in the availability of generating facilities scheduled pursuant to paragraph 6(a)(5), *New Firm Resources*, and used for the determination of its FLCC in section 6, *Determination of Firm Load Carrying Capability*.

#### **(A) Delay in Availability**

If there is such a delay, the Coordinating Group shall reduce the FLCC of each affected Party for the Period(s) of such delay by the amount of capacity and energy that the facility was scheduled to provide to each affected Party in the Load Determination Re-regulation (“LDR”).

#### **(B) Advance in Availability**

If there is such an advance, any affected Party may require the Coordinating Group to rerun the LDR and increase its FLCC for the Period(s) of such advance by the amount of capacity and energy that the facility was scheduled to provide such affected Party in such LDR.

#### **(C) Adjustments of Firm Load Carrying Capability for Changes to Initial Conditions of New Reservoirs**

The Coordinating Group shall adjust the FLCC of each affected Party as follows for the actual elevation on July 31 in those reservoirs described in clause 6(c)(1)(A)(iii), *New Reservoirs*, as “new reservoirs” if such actual elevation is different from that in the LDR.

##### **(i) Less Than Planned**

If the July 31 actual elevation in a new reservoir is less than in the LDR, the Coordinating Group shall reduce the FELCC of each affected Party by the energy equivalent of the reduced storage. The Coordinating Group shall reduce the FELCC for each affected Party between the beginning of the Critical Period and March 31 of the current Operating Year in those Periods designated by each such Party.

## **(ii) Greater Than Planned**

If the July 31 actual elevation in a new reservoir is greater than in the LDR, an affected Party may require the Coordinating Group to increase its FELCC by the energy equivalent of the increased storage, using the affected Party's energy conversion factor to calculate such increase in FELCC. The Coordinating Group shall increase the FELCC for each affected Party between the beginning of the Critical Period and March 31 of the current Operating Year in those Periods designated by each such Party.

## **(n) Transfers Due to Forced Outage**

### **(1) Thermal Firm Resource Outages**

A Party experiencing a Forced Outage of a thermal Firm Resource may require a Party having unused available thermal capability to deliver energy in an amount that is the lesser of (i) the megawatt amount of the available thermal energy, or (ii) the megawatt amount of the Forced Outage. The Supplying Party may not operate its reservoirs below the elevations permitted under subsection 9(g), *Operation of Reservoirs Below Energy Content Curves and Critical Rule Curves*, in the absence of such delivery in order to provide the energy. The Receiving Party shall pay for all energy received under this paragraph 9(n)(1) at the charge specified in paragraph 14(d)(2), *Energy*.

### **(2) Loss of Load**

A Party facing a loss of load due to a Forced Outage may require the delivery of emergency capacity from any Party with excess Forced Outage Reserve as follows. The amount of the Receiving Party's request for transfer shall not exceed the lesser of (i) the amount needed to prevent the Receiving Party's loss of load, and (ii) the megawatt amount of the Receiving Party's Forced Outage minus the megawatt amount of its Forced Outage Reserve. The Supplying Party shall not be required to deliver an amount that exceeds its excess Forced Outage Reserve, which is its Forced Outage Reserve minus the sum of its then-existing Forced Outages and emergency capacity it delivers at the same time to other Parties. The Supplying Party may require the Receiving Party either to return the energy associated with the transfer of emergency capacity within one week or to purchase such energy pursuant to paragraph 14(d)(2), *Energy*.

### **(3) Capacity Calculation**

The Receiving Party shall pay the Supplying Party the capacity charge provided in paragraph 14(d)(1), *Capacity*, for transfers of energy pursuant to paragraphs 9(n)(1) and 9(n)(2) above as follows. Transfers due to Forced Outages shall be accounted for on a calendar week basis. The capacity measurement for purposes of such charge shall be based upon the maximum amount requested and delivered during any hour; *provided* if the Supplying Party

is unable during that calendar week to deliver subsequent transfer(s) at a rate equal to the initial transfer rate, the capacity measurement shall be reduced to the lesser amount.

### **(o) Operating Data and Deviations**

Each Party shall prepare in advance and coordinate with other Parties in accordance with Exhibit I, *Scheduling Provisions*, hourly schedules of energy and capacity deliveries for each day. Each Party shall identify and separately account for simultaneous and offsetting transfers of energy for each hour. Such scheduled transfers shall be deemed to have been made at the point of delivery when delivered through the Supplying Party's interconnections. The Parties shall minimize and account for operating deviations from the schedule. The Parties promptly shall exchange operating data as necessary for determinations under this Agreement.

As far in advance as practicable each Party shall coordinate with other affected Parties full or partial operational interruptions to facilitate repairs, maintenance, or replacement of facilities. If such interruptions occur, the Party modifying energy or capacity schedules shall compensate the affected Parties by making corresponding adjustments to future energy and capacity delivery schedules under similar water supply and load conditions.

### **(p) Cross-Border Flows**

The Parties shall treat deviations in the use of Other-Than-Treaty Storage pursuant to procedure 9(p)-1., *Cross-Border Flows*.

## **Section 10. Transmission Lines and Associated Facilities**

### **(a) Coordinated System Transmission**

Subject to this Agreement, the Parties may use capacity available in transmission lines and associated facilities owned, leased, or otherwise controlled as part of the Systems of other Parties without charge for the delivery of (i) Interchange Capacity, (ii) Interchange Energy, (iii) Holding Energy ("HE"), (iv) In Lieu Energy, (v) energy transferred to or from storage under subsection 9(i), *Storage of Energy in Reservoirs*, and (vi) for the delivery of Provisional Energy from a downstream Party to a Reservoir Party or the replacement of that energy by the Reservoir Party pursuant to subparagraph 9(l)(1)(C), *Production of Provisional Energy/Options to Retain Energy or Produce Energy for Return*; provided where such capacity is provided by a Party acting solely as a transferor and the use of such capacity has not otherwise been provided for, a transmission charge shall be applied as provided in subsection 14(g), *Transmission Service Charges*; provided further except for transfers of Interchange Capacity, such transferor shall not be obligated to make such capacity available during any hours it has designated to the affected Parties as Peak Load Hours, except on Sundays and national holidays.

## **(b) System Transmission**

Each Party shall provide adequate firm transmission capacity through ownership, lease, or other firm arrangements to make useable its Firm Load Carrying Capability (“FLCC”). At the request of any Party, the Parties shall review compliance with the transmission requirements of this subsection 10(b) and prepare such studies as may be required to determine such matter. The Parties shall exchange all data necessary for such studies. If the Coordinating Group determines that a Party has not provided the required adequate transmission capacity, such Party’s FLCC shall be appropriately reduced unless arrangements are made to overcome such deficiency.

## **(c) Transmission Scheduling**

The Parties shall schedule power and energy to be delivered hereunder to a directly interconnected System in such amounts that the difference between the quantities scheduled in opposite directions shall not exceed the available capacity of the interconnecting transmission lines and associated facilities. When such power and energy is to be delivered through such interconnected System to other Systems, it shall be so designated at the time of the scheduling.

## **Section 11. Reactive**

The Parties shall coordinate their operations so that the flow of reactive power does not adversely affect the Coordinated System or the directly interconnected Systems.

## **Section 12. Loads in Excess of Capabilities**

Any Party having a load in excess of the sum of its Firm Load Carrying Capability and the secondary energy to which it has rights under section 9, *Operating Procedures, Obligations, and Rights*, shall supply that excess load from power and energy sources other than its Firm Resources, and shall not have a right to power or energy for such excess load from the Coordinated System.

## Part IV. Rates and Charges

This part shall not come into effect until the August 1 following the Effective Date.

### **Section 13. Payment for Coordinated Storage Releases From Reservoirs Located in the United States**

#### **(a) Computation of Payments**

The Parties owning or operating downstream Projects that have a right under this Agreement to coordinated storage releases from upstream reservoirs controlled by dams located in the United States shall make annual payments to the owners or operators of such reservoirs. The payments for all years shall be computed as follows.

##### **(1) Annual Costs**

The Reservoir Party shall determine the annual costs to be borne by power arising from ownership and operation of the dam and reservoir furnishing the benefits. Such annual costs shall include that part of the interest, maintenance, and depreciation (or similar charges) to be borne by power under applicable law, and that part of the operation expenses (including land rentals and similar charges), administrative and general costs, and taxes other than net income taxes to be borne by power. Each Reservoir Party annually shall submit to the Coordinating Group the capital and annual costs for each Project for which headwater payments are to be made. The Coordinating Group shall publish these updated costs in Exhibit J, *Computation of Payments Under Subsection 13(a), Payment for Coordinated Storage Releases from Reservoirs Located in the United States*, and shall apportion such annual costs between the storage and head functions.

##### **(2) Storage Component of Annual Cost**

The Coordinating Group shall determine the cost to be apportioned to the storage function according to Formula 13 below.

**Formula 13**

$$C_s = C_p(P_s + A_s)/(P_s + A_s + P_h + A_h)$$

Where,

$C_s$  = Annual power cost of the dam and reservoir apportioned to storage.

$C_p$  = Annual cost of the dam and reservoir to be borne by power both at site and downstream.

$P_s$  = Critical Period energy, at site and downstream from at-site storage as determined pursuant to paragraph 13(a)(4) below.

$A_s$  = Average annual useable energy, at site and downstream from at-site storage after adjustment to reflect the relative values of average annual and Critical Period energy, all as determined and adjusted pursuant to paragraph 13(a)(3) below.

$P_h$  = Critical Period energy, at site from unregulated flow and from at-site and upstream storage as determined pursuant to paragraph 13(a)(4) below.

$A_h$  = Average annual useable energy, at site from unregulated flow and from at-site and upstream storage after adjustments reflecting the relative values of average annual and Critical Period energy, all as determined and adjusted pursuant to paragraph 13(a)(3) below.

### **(3) The Average Annual Values**

The Coordinating Group shall use the reservoir regulations made pursuant to subparagraph 7(d)(4)(A), *Trial Refill Regulation Based on Minimum Flow Variable Energy Content Curves*, adjusted for changes in Energy Content Curves (“ECC”) made pursuant to subparagraph 7(d)(4)(b), *Refill Regulation*, to determine the average annual useable energy to be adjusted as hereinafter provided in this paragraph 13(a)(3).

The Coordinating Group shall determine average annual energy gains from storage before adjustments for tailwater encroachment and usability for each Project for each Period by computing the energy capability of such Project with and without storage. The Coordinating Group shall adjust the resulting increment of energy from storage for each Period by the obligation to deliver energy or right to receive energy from an adjacent Project that arises out of a settlement for tailwater encroachment. The amount of such obligation assigned to storage shall in each Period bear the same ratio to the total obligation in the

Period as storage use bears to total plant discharge in the Period. The Coordinating Group shall reduce the Coordinated System's total increment of energy gained or lost due to storage to the amount useable in the Coordinated System's estimated load after use of energy from unregulated flow. The Coordinating Group shall prorate such gain or loss to each Project in each Period in proportion to that Project's increment of energy due to storage.

The Coordinating Group shall assign the increments of average annual useable energy gain or loss at each Project from storage to each upstream reservoir in proportion to the storage change at each reservoir.

The  $A_s$  for each storage Project shall be the algebraic sum of these increments in megawatt months for that Project's storage at site and downstream, divided by the number of months in the study, and multiplied by 2.

The  $A_h$  for each storage Project shall be the algebraic sum of the useable energy at site from unregulated flow and the useable energy from at-site and upstream storage, divided by the number of months in the study, and multiplied by 2.

#### **(4) Critical Period Values**

The Coordinating Group shall use the Final Regulation to determine  $P_s$  and  $P_h$  for use in Formula 13.

The Coordinating Group shall determine Critical Period energy gains from storage before adjustment for tailwater encroachment for each Project for each Period by computing the energy capability with and without storage. The Coordinating Group shall adjust if applicable the resulting increment of energy from storage for each Period for the tailwater encroachment assigned to storage for that same Period as set forth in paragraph 13(a)(3) above and shall make further adjustments for any Restoration received from Projects that gain from Treaty Storage as determined in paragraph 6(k)(1), *Determination of Gains and Losses*. After such adjustments the Coordinating Group shall assign the increments from storage to all upstream reservoirs in proportion to each reservoir's storage release during the Critical Period. The  $P_s$  for each reservoir shall be the sum of these increments, in megawatt months, computed for such reservoir, including the increment computed at the reservoir Project itself, divided by the number of months in the Critical Period. The  $P_h$  for each reservoir Project shall be the sum of the energy, megawatt months, over the Critical Period from unregulated flow and from releases from at-site and upstream storage, divided by the number of months in the Critical Period.

#### **(5) Annual Payment**

The Coordinating Group shall distribute the costs apportioned to the storage function of each reservoir Project among the Projects, at site and downstream, in proportion to each Project's increment of the quantity  $(P_s + A_s)$  from the applicable reservoir. The owner or operator of each downstream Project shall pay the annual costs apportioned to such downstream Project to the owner or

operator of such upstream reservoir Project, subject to the limit provided in subsection 13(b) below.

## **(b) Limit of Payment**

The payments required in paragraph 13(a)(5) shall be limited so that they do not exceed the value of the benefits received from each storage Project. For payments determined between the Effective Date and the beginning of the first Operating Year, the Coordinating Group shall compute the value of benefits received from each storage Project and the appropriate limit pursuant to Subsection 13(b) of the Comprehensive Agreement. For the first Operating Year after the Effective Date, the Coordinating Group shall compute the value of benefits received from storage as the product of \$5,000 multiplied by the total megawatts represented by each downstream Project's increment of the quantity  $(P_s + A_s)$  as described in paragraph 13(a)(5) above. Beginning the sixth Operating Year after the Effective Date, the Coordinating Group shall increase the dollar component of the formula \$1,000 each year until it equals \$10,000. After that time, the dollar component of the formula shall remain constant for the remainder of the term of the Agreement.

## **(c) Refusal Option**

### **(1) Options for New Projects**

Parties owning a Project(s) downstream from any dam and reservoir hereafter constructed in the United States shall have a right, not less than 60 days prior to the receipt at such Project(s) of the initial storage releases from any such dam and reservoir, to reasonably accurate estimates of the data required to make the computations described above, including the date when such releases shall be made. Such Parties shall, within 30 days of receipt of the data estimates, elect one of the following three options.

#### **(A) Short-term Return**

Make available for return to the reservoir owner or operator all energy that can be generated at such Project(s) from storage releases from such dam and reservoir for a period of ten years from the estimated date when such initial releases will be made, which period shall terminate at the end of an Operating Year, and accept such energy thereafter for the remainder of this Agreement's term; *provided* prior to five years before the ten-year period terminates the downstream Parties may elect to make available for return such energy to the reservoir owner or operator for the remainder of this Agreement's term.

#### **(B) Return for Remainder of Contract Term**

Make available for return such energy to the reservoir owner or operator for the remainder of this Agreement's term.



### **(C) Acceptance of Energy**

Accept such energy for the remainder of this Agreement's term.

*Provided* within 60 days after notice of any increase in the annual payment to be made to the owner or operator of such dam and reservoir, a downstream Party accepting energy from such dam and reservoir shall have an additional opportunity to elect subparagraph 13(c)(1)(A), 13(c)(1)(B), or 13(c)(1)(C) above.

### **(2) Return by Downstream Party Upon Release of Storage**

The owner of a downstream Project(s) returning energy to the reservoir owner or operator pursuant to this subsection 13(c) shall make such energy available approximately concurrently with the receipt of the storage releases from the reservoir at the downstream Project(s), subject to the priorities on the use of machine capacity set forth in subsection 9(h), *Priorities on Use of Facilities for Power*. The reservoir owner or operator shall make available such energy at the high voltage side of the switchyard of the affected downstream Project(s), or an equivalent amount of water shall be spilled if so directed by the reservoir owner or operator.

### **(3) Return by Reservoir Party Upon Storage**

When the reservoir owner or operator is storing water to refill its reservoir, the reservoir owner or operator shall make available to any downstream Party who returned the energy generated from storage releases under subparagraph 13(c)(1)(A) or 13(c)(1)(B) the energy that would otherwise have been useable at the downstream Project(s). The reservoir owner or operator shall return such energy approximately concurrently with the storing of such water for reservoir refill, subject to the priorities on the use of machine capacity set forth in subsection 9(h), *Priorities on Use of Facilities for Power*. The reservoir owner or operator shall make available such energy at the high voltage side of the switchyard of the affected downstream Project(s).

### **(4) Relief from Payment**

When a downstream Project is making energy available for the return to a reservoir owner or operator pursuant to this subsection 13(c) the owner of such downstream Project(s) shall be relieved of the obligation to pay to the reservoir owner or operator on account of such downstream Project(s) any amounts in excess of those required to be paid by Section 10(f) of the Federal Power Act and such reservoir owner or operator shall pay to the owner of such downstream Project(s) an amount equal to the Section 10(f) payments so required to be made.

## **(5) Generation Service Charge**

The Party or Parties that are receiving energy from another Party due to the release or withholding of storage under this subsection 13(c) shall make a payment of \$1.00 per megawatt hour as compensation for the generation of the energy actually so returned.

## **(d) Procedure on Payments**

Downstream Parties shall make payments for each Operating Year under this section 13 except payments under paragraph 13(c)(5) above in twelve equal monthly payments due and payable on or before the fifteenth day of each month beginning September 1 of the first Operating Year and continuing each month through August 15, 2025. A downstream Project owner shall pay to the Administrator payments owed to the United States under this section 13. The Administrator shall hold such payments in suspense for the credit of such owner pending annual determination by the Federal Energy Regulatory Commission (“FERC”) of the amount due to the United States from such owner to satisfy the requirements of Section 10(f) of the Federal Power Act as applied to Projects owned by the United States within this Agreement. Within thirty days after such determination by FERC, or prior to delinquency, whichever is sooner, the Administrator shall transfer to FERC from such funds to the extent available the amounts FERC determined necessary to satisfy the requirements of Section 10(f) as between such owner and such Projects of the United States of America. At the request of any Party, payments shall be appropriately adjusted to reflect any delay or advance from the schedule assumed for a new Firm Resource coming into service.

## **(e) Provision Relating to the Lewis River Basin**

Payments for coordinated storage releases from reservoirs located in the United States as computed pursuant to the provisions of this section 13 shall not be applicable to Projects located on the Lewis River, Washington, since PacifiCorp and Public Utility District No. 1 of Cowlitz County, Washington, have entered into a power contract dated June 4, 1957, as amended September 1, 1983, and certain other agreements that provide for the settlement for headwater benefits for existing and potential Projects on the Lewis River in a different manner.

## **(f) Effect of Payments**

It is the intention of the Parties that the payments provided for in this section 13 shall, among other things, constitute full satisfaction as between the Parties of all obligations under Section 10(f) of the Federal Power Act for the period covered by this Agreement. The Parties hereto agree to submit this Agreement promptly to FERC. The non-Federal Parties shall file this Agreement with FERC pursuant to 18 C.F.R. § 11.14.

## **(g) Provision Relating to Payments by the United States of America**

The United States shall not be required to make payments, offsets, or credits under this Section 13 for benefits received by Federal Projects from coordinated storage releases from a non-Federal upstream reservoir Project completed after July 1, 1965, where the license for such non-Federal reservoir Project requires such non-Federal reservoir Project owner to provide such benefits without payments, offsets, or credits by the United States, nor shall any Party be required to make such payments, offsets, or credits on behalf of the United States.

## **Section 14. Other Charges**

The charges listed in this section 14 shall be applicable to exchanges, transfers, and services performed under this Agreement.

### **(a) Rates for Regular Interchange Energy, Interim Cash Advances, and Settlement of Regular Interchange Energy Imbalances**

#### **(1) Interim Cash Advances**

If the Supplying Party calls for an interim cash advance to pay for the delivery of Regular Interchange Energy under subsection 9(d), *Interchange Energy*, the Receiving Party shall pay such advance at the rate established pursuant to paragraph 14(a)(3) below. The Supplying Party shall refund any interim cash advance upon return of Regular Interchange Energy.

#### **(2) Regular Interchange Energy Imbalances**

The rate for a Receiving Party settling imbalances of Regular Interchange Energy owed to a Supplying Party under subparagraph 9(d)(3)(D), *Settling Interchange Energy Imbalances*, is that established in paragraph 14(a)(3) below. Any interim cash advances not returned by the Supplying Party shall be applied to the settlement of the imbalance.

#### **(3) Determination of Regular Interchange Energy Rate**

By July 31 the Coordinating Group shall establish a single rate for the following Operating Year to be applied both to interim cash advances referred to in subsection 9(d), *Interchange Energy*, and to the settlement of Regular Interchange Energy imbalances pursuant to subparagraph 9(d)(3)(D), *Settling Interchange Energy Imbalances*. The rate shall be in effect for interim cash advances or imbalances relating to Regular Interchange Energy delivered during

that Operating Year even if (i) the interim cash advance is made, (ii) the energy is returned, or (iii) the imbalances are settled in a subsequent Operating Year under subparagraph 9(d)(3)(D), *Settling Interchange Energy Imbalances*.

In the absence of an applicable long-term procedure, the Coordinating Group shall determine the rate according to the Formula 14 below.

**Formula 14**

$$R = XY + Z$$

Where,

R = Rate.

X = The heat rate, which is 10,000,000 BTU per megawatt hours.

Y = Fuel price, which is the average cost in dollars per BTU of mainline interruptible or spot market gas price for the twelve-month average for the immediately preceding July through June at Sumas, Washington, determined by reference to *Inside FERC* or some similar publication in the event *Inside FERC* is no longer published.

Z = An adder, which is initially four and three-quarters dollars per megawatt hour, and which shall be adjusted annually to reflect changes in the Portland, Oregon, CPI as reflected in the CPI for all urban consumers, published by the Bureau of Labor Statistics.

## **(b) Interchange Energy Service Charge**

No service charge shall be imposed upon a Party returning Interchange Energy for (i) energy returned during Heavy Load Hours (“HLH”), (ii) energy returned during Light Load Hours (“LLH”) to the extent it was supplied during LLHs, or (iii) energy returned during hours requested by the Supplying Party. A service charge of \$2.50 per megawatt hour shall be imposed upon a Receiving Party that returns Interchange Energy during any other hours.

## **(c) Interchange Capacity Imbalances**

The Receiving Party shall pay the Supplying Party for Interchange Capacity imbalances between them as provided for in paragraph 9(e)(2), *Capacity Calculation*, at the end of each Operating Year at the rate of \$2,000 per megawatt week. The Supplying Party may require an interim cash advance at such rate to pay for delivery of Interchange Capacity. The Supplying Party shall refund any interim cash advance upon the return of Interchange Capacity.

## (d) Charges for Transfers Due to Forced Outages

### (1) Capacity

At the end of each Operating Year, the Parties shall pay for capacity imbalances that are the result of transfers caused by Forced Outages as provided for in subsection 9(n), *Transfers Due to Forced Outage*, at the rate of \$2,000 per megawatt week. The Supplying Party may require an interim cash advance to pay for delivery of capacity related to transfers due to Forced Outages. The Supplying Party shall refund any interim cash advance upon return of capacity related to transfers due to Forced Outages.

### (2) Energy

For energy delivered under paragraph 9(n)(1), *Thermal Firm Resource Outages*, a Receiving Party shall pay a Supplying Party the greater of (i) the rate provided for Regular Interchange Energy set out in paragraph 14(a)(3) above, or (ii) the incremental cost of such energy plus an adder of \$4.00 per megawatt hour, which adder shall be adjusted annually to reflect changes in the Portland, Oregon, CPI published by the Bureau of Labor Statistics for all urban consumers.

To the extent that the Supplying Party does not exercise its option to call for the return of energy that had been delivered pursuant to paragraph 9(n)(2), *Loss of Load*, a Receiving Party shall pay the Supplying Party the greater of (i) the rate provided for Regular Interchange Energy set out in paragraph 14(a)(3) above, or (ii) the rate representing the incremental cost of such energy as determined by the Supplying Party.

The Supplying Party may require an interim cash advance at such rate to pay for delivery of energy delivered under paragraph 9(n)(1), *Thermal Firm Resource Outages*. The Supplying Party shall refund any interim cash advance upon return of such energy.

## (e) Holding Energy Charges

### (1) Holding Energy Service Charge

A Supplying Party under subsection 9(c), *Delivery and Return of Holding Energy*, shall pay to the Receiving Party a total service charge of \$3.50 per megawatt hour in two installments. The Supplying Party shall pay the first installment of \$2.00 per megawatt hour at the time of delivery of Holding Energy (“HE”) under paragraph 9(c)(1), *Requests for Holding Energy*, and shall pay the second installment of \$1.50 per megawatt hour when the Receiving Party returns the HE under paragraph 9(c)(3), *Return of Holding Energy*.

## **(2) Holding Energy Re-shaping Charges**

To the extent that a Delivering Party's delivery or return of HE exceeds the daily average and is in a shape other than uniform on all hours pursuant to paragraph 9(c)(4), *Uniform Hourly Schedules and Special Shaping*, such Delivering Party shall pay the Party receiving the energy \$2.50 per megawatt hour for each megawatt hour delivered or returned during LLHs when such delivery or return exceeds the average hourly amount of energy delivered or returned that day.

## **(3) Refund Resulting from Conversion of Holding Energy to Storage**

To the extent that HE is converted to energy stored under the provisions of paragraph 9(c)(2), *Conversion to Storage*, the Receiving Party shall refund to the Supplying Party \$0.75 per megawatt hour. The unrefunded \$1.25 per megawatt hour shall be retained by the Receiving Party in lieu of the charges under paragraph 14(f)(1) below.

## **(f) Stored Energy Service Charges**

The Supplying Party shall pay the Receiving Party for stored energy services under this subsection 14(f), unless a refund is required as specified below. For purposes of this subsection 14(f), Peak Load Hours ("PLH") shall mean those PLHs designated by the Receiving Party. For purposes of this subsection 14(f), "short-term storage" shall mean energy that has been in storage for less than two weeks and "long-term storage" shall mean energy that has been in storage for two weeks or longer. A "first-in, first-out" accounting method shall be used to determine whether storage is short- or long-term when a requesting Party has stored energy with a Reservoir Party on more than one occasion. In such instances, deliveries out of storage accounts shall be applied first to decrease the balances of the earliest energy deliveries.

### **(1) Delivery Charges**

A delivery charge shall be paid at the rates set forth in (A), (B), and (C) of this paragraph 14(f)(1) when energy is delivered for storage under paragraph 9(i)(1), *Regular Storage*. If stored energy is spilled, the Receiving Party shall refund delivery charges to the Supplying Party pursuant to paragraph 14(f)(5) below.

#### **(A) Light Load Hours**

Two dollars per megawatt hour when delivered during LLHs not designated as PLHs.

**(B) Heavy Load Hours**

One dollar per megawatt hour when delivered during HLHs not designated as PLHs.

**(C) Peak Load Hours**

There is no service charge for delivery of energy for storage during PLHs.

**(2) Return Charges****(A) Return Charges For Short-term Storage**

Energy returned from short-term storage pursuant to paragraph 9(i)(1), *Regular Storage*, shall be paid for at the following rates.

**(i) Light Load Hours**

One dollar per megawatt hour when returned during LLHs not designated as PLHs.

**(ii) Heavy Load Hours**

Three and one-half dollars per megawatt hour when returned during HLHs not designated as PLHs.

**(iii) Peak Load Hours**

Five dollars per megawatt hour when returned during PLHs.

**(B) Return Charges For Long-Term Storage**

There is no charge for the return of energy from long-term storage during LLHs not designated as PLHs. Energy returned from long-term storage at other times pursuant to paragraph 9(i)(1), *Regular Storage*, shall be paid at the following rates.

**(i) Heavy Load Hours**

Two and one-half dollars per megawatt hour when returned during HLHs not designated as PLHs.

**(ii) Peak Load Hours**

Four dollars per megawatt hour when returned during PLHs.

### **(3) Charges in Potential Spill Conditions**

The Supplying Party shall pay for the storage of energy delivered during a Potential Spill Period at the rates established in paragraph 14(f)(1) above. The Supplying Party shall pay for the return of such storage at the rates established in paragraph 14(f)(2) above; *provided* that if the Reservoir Party subsequently notifies the Supplying Party that spill is imminent, the provisions of paragraph 14(f)(4) below shall not apply to the return of such storage.

### **(4) Charges in the Case of Imminent Spill**

The following rates shall apply when stored energy is returned during an imminent spill condition (even if the energy is returned during a PLH) so long as a Reservoir Party has notified Parties who have stored energy in such Reservoir Party's reservoir that spill is imminent. There is no charge for the return of stored energy when the return of such energy occurs during LLHs. There shall be a charge of \$2.50 per megawatt hour for stored energy returned during HLHs.

### **(5) Refund of Storage Charges when Storage is Spilled**

When energy stored pursuant to paragraph 9(i)(1), *Regular Storage*, is spilled, the Receiving Party shall refund any initial charges paid to the Supplying Party for the spilled stored energy under paragraph 14(f)(1) above, or retained by the Receiving Party under paragraph 14(e)(3) above. The Reservoir Party that originally accepted the energy for storage shall refund the initial charges even if the stored energy was transferred to a reservoir of another Party pursuant to paragraph 14(f)(6) below prior to the stored energy being spilled. The charges refunded shall be computed by multiplying the megawatt hours of stored energy spilled by the weighted average of the applicable rates of the total energy stored by a Party with the Reservoir Party at the time of the spill, including the stored energy that was spilled.

### **(6) Transfers to Avoid Spill**

There is no transfer charge when a Receiving Party, on its own initiative or as arranged by the Supplying Party, transfers stored energy from its reservoir to the reservoir of another Party to avoid probable spill. In such instances, the original Receiving Party shall keep the initial charge (i) received on delivery pursuant to paragraph 14(f)(1) above, or (ii) retained by the Receiving Party under paragraph 14(e)(3) above. The Receiving Party that returns the energy to the Supplying Party shall be paid the additional charges on return required under paragraph 14(f)(2) above. If stored energy is spilled after it is transferred, the initial charge (i) received on delivery pursuant to paragraph 14(f)(1) above, or (ii) retained by the Receiving Party under paragraph 14(e)(3) above shall be refunded by the original Receiving Party.



## **(g) Transmission Service Charges**

The following Parties shall pay a charge to a Party providing transmission service pursuant to subsection 10(a), *Coordinated System Transmission*, when such Party acts solely as a transferor. In the absence of a separate agreement between the Parties involved for such transmission, the following rates shall apply.

### **(1) Interchange Energy**

The Receiving Party shall pay \$1.60 per megawatt hour for Interchange Energy deliveries or returns.

### **(2) Stored Energy and Holding Energy**

The Supplying Party shall pay \$1.75 per megawatt hour on both the delivery and return of HE pursuant to subsection 9(c), *Delivery and Return of Holding Energy*, or of stored energy pursuant to subsection 9(i), *Storage of Energy in Reservoirs*; provided if the HE or the stored energy after conversion to stored energy is spilled, no charge shall be made, or if a charge has been made, a refund shall be given.

### **(3) In Lieu Energy**

The Delivering Party shall not pay to a Party that is acting solely as a transferor a charge for any delivery or return of In Lieu Energy except when such transferor is providing transmission service because the Delivering Party is using the capabilities of its facilities for a higher priority than such delivery or return in accordance with the priorities of subsection 9(h), *Priorities on Use of Facilities for Power*, in which case the Delivering Party shall pay to such transferor \$2.00 per megawatt hour.

### **(4) Provisional Energy**

The Reservoir Party shall pay \$2.00 per megawatt hour for deliveries or replacements of Provisional Energy pursuant to subparagraph 9(l)(1)(C), *Production of Provisional Energy/Options to Retain Energy or Produce Energy for Return*.

### **(5) Interchange Capacity and Transfers due to Forced Outages**

The Receiving Party shall pay \$2.00 per megawatt hour for energy deliveries associated with the delivery of Interchange Capacity pursuant to section 9(e), *Interchange Capacity*, and energy deliveries or returns associated with the delivery of emergency capacity due to Forced Outages pursuant to section 9(n), *Forced Outage*.

## (h) Billing

Other than interim cash advances as provided in subsection 9(d), *Interchange Energy*, and headwater benefit payments provided for in subsection 13(d), *Procedure on Payments*, Parties shall be billed monthly and make payment within 20 days after billing.

## (i) Changes in Charges

### (1) Scope of This Subsection 14(i)

The rates and charges provided for in this section 14 other than those rates and charges provided for in paragraphs 14(a)(3) and 14(d)(2) above are subject to review by the Parties and to change as provided in this subsection 14(i). The rates and charges provided for in paragraphs 14(a)(3) and 14(d)(2) above are not subject to this subsection 14(i), but are recalculated annually by the Coordinating Group pursuant to the methodologies contained in such paragraphs.

### (2) Annual Option to Review Transmission Charges

Any Party may give notice prior to each July 1 specifying desired changes to transmission charges in subsection 14(g) above. Upon receipt of such notification, all Parties shall review the transmission charges referred to therein. Any changes made to such charges shall be subject to the written agreement of all of the Parties and shall become effective the Operating Year immediately following the date of such agreement by the Parties and receipt of all regulatory authorizations necessary to effectuate such change with respect to each Party.

### (3) Review of Other Charges

Beginning in the fourth Operating Year after the Effective Date, any Party may prior to July 1 request changes in any of the rates and charges under this section 14 except those contained in paragraphs 14(a)(3), 14(d)(2), and subsection 14(g) above. The Parties may request changes to rates and charges annually; *provided* if any rate or charge is changed, such changed rate or charge shall remain in effect for three years before any further change to such rate or charge may be made. Any change made to any such rate or charge shall be subject to the written agreement of all of the Parties and shall become effective the Operating Year immediately following the date of such agreement by the Parties and receipt of all regulatory authorizations necessary to effectuate such change with respect to each Party.

### (4) Procedure Where Parties Cannot Agree to Charges

If the Parties fail to agree on any change to rates or charges (including transmission and other charges) provided for in this section 14, the non-Federal

Parties hereto who are subject to the jurisdiction of the Federal Energy Regulatory Commission (“FERC”) with respect to any such rate or charge shall submit the matter on or before the following January 1 to FERC for determination, pursuant to the standards set forth in Section 205 of the Federal Power Act, of the rate or charge to be made by the Parties; and the other Parties hereto agree, insofar as they may lawfully do so, that the charges to be made by them shall not be in excess of the applied rate or charge so determined by FERC; *provided that* any of such other Parties may, but shall not be obligated to, reduce any rate or charge in effect at the time of such submission. Each Party hereby gives its irrevocable consent to the intervention by all other Parties in any such proceeding before FERC. After rates and charges are agreed upon by all of the Parties or are finally determined by FERC pursuant to this subsection 14(i), each Party shall diligently pursue obtaining all necessary regulatory and administrative review, approvals and authorizations necessary to effectuate such rate or charge with respect to such Party. Any FERC-determined rate or charge shall become effective at the beginning of the Operating Year simultaneously following receipt of all regulatory and administrative approvals and authorizations necessary to effectuate such rate or charge with respect to each of the Parties.

## Part V. General Provisions

### Section 15. Non-power Uses

Nothing in this Agreement shall require a Party to operate a Project in a manner inconsistent with its requirements for non-power uses or functions, and no Party shall be considered in violation of this Agreement or suffer any penalty thereunder because of any Project operation undertaken in good faith for the purpose of preserving priority to such non-power uses or functions, or of protecting against harm to human life or property.

### Section 16. Regulatory and Judicial Authorities

This Agreement shall neither be nor become effective unless and until this Agreement has been approved, accepted for filing, or permitted to become effective by the Federal Energy Regulatory Commission (“FERC”) (including under Section 22 of the Federal Power Act if required by FERC) without any change or new condition that is unacceptable to any of the Parties; *provided* if FERC requires a change in, or imposes a new condition on, this Agreement, this Agreement shall become effective only if all the Parties agree in writing to such change or new condition. If the date that this Agreement is approved, accepted for filing, or permitted to become effective by the FERC is between February 1 and August 1, the Effective Date shall be the first February 1 following such approval, acceptance for filing, or permission to become effective.

If any provision of this Agreement is invalidated by a final order of any regulatory or judicial authority having jurisdiction, the Parties shall consider whether to modify this Agreement so as to remove any impediment to validity of this Agreement. In the absence of such modification agreed to in writing by all of the Parties, the Comprehensive Agreement shall be in full force and effect in accordance with its terms.

### Section 17. Integration

This Agreement replaces, as to the Parties, the Comprehensive Agreement; *provided* if this Agreement is invalidated as contemplated in section 16, *Regulatory and Judicial Authorities*, the Comprehensive Agreement shall be in full force and effect in accordance with its terms.

### Section 18. Entire Agreement

This Agreement constitutes the entire agreement of the Parties with respect to the subject matter of this Agreement and all prior written and oral agreements, negotiations, communications, and understandings of any of the Parties with respect to such subject matter are merged and incorporated into, and superseded by, this Agreement; *provided* notwithstanding the foregoing this section 18 shall not merge the Comprehensive Agreement into this Agreement and shall not preclude the enforceability of the Comprehensive Agreement in the event that this Agreement is invalidated as contemplated in section 16, *Regulatory and Judicial Authorities*.

### Section 19. Miscellaneous Provisions

### **(a) Survival of Rights and Obligations**

No obligation incurred under this Agreement to return power or pay money shall be discharged by the termination, cancellation, expiration, or completion of this Agreement.

### **(b) Calculation of Time**

Unless otherwise stated, any reference to a day means a calendar day. All time references shall be to Pacific Time.

### **(c) Amendment**

No amendment to this Agreement or revocation of a method or procedure shall be effective unless it is in writing and signed by all of the Parties.

### **(d) Headings**

The headings in this Agreement are provided for organizational purposes only and shall not be construed to modify or interpret any provision of this Agreement.

### **(e) Precedence**

In the event of a conflict between a method or procedure and any provision of this Agreement, the provisions of this Agreement shall govern.

### **(f) Reservation of Rights**

Each Party expressly reserves all of the rights (sovereign or otherwise), powers, and defenses that it may have.

## **Section 20. Preservation of Water Rights**

Nothing contained in this Agreement shall be construed to abrogate, modify, limit, or otherwise change in any respect any water rights held by any Party.

## **Section 21. Uncontrollable Forces**

No Party shall be considered to be liable for failing to fulfill any obligation under this Agreement if such failure is caused by an uncontrollable force. For purposes of this Agreement, “uncontrollable force” means any cause beyond the control of the Party affected, including, but not limited to, failure of facilities, flood, earthquake, storm, fire, lightning, epidemic, war, riot, civil disturbance, labor disturbance, sabotage, restraint by court order, or requirement of state regulatory agency having jurisdiction, which by exercise of diligence and foresight such Party could not reasonably have been expected to avoid and which by exercise of reasonable diligence such Party is unable to overcome. “Uncontrollable force” also means a requirement of Federal

regulatory agency or legislative body having jurisdiction which is beyond the control of the Administrator, the Division Engineer, the Regional Director, the United States Entity, the City of Eugene, Oregon, the City of Seattle, Washington, the City of Tacoma, Washington, Public Utility District No. 2 of Grant County, Washington, Public Utility District No. 1 of Chelan County, Washington, Public Utility District No. 1 of Pend Oreille County, Washington, Public Utility District No. 1 of Douglas County, Washington, Public Utility District No. 1 of Cowlitz County, Washington, Puget Sound Energy, Inc., Portland General Electric Company, PacifiCorp, The Washington Water Power Company, The Montana Power Company, and Colockum Transmission Company, Inc., (whichever is affected) and which by the exercise of diligence and foresight such Party or entity could not reasonably have been expected to avoid and which by exercise of reasonable diligence such Party or entity (whichever is affected) is unable to overcome.

Nothing in this section 21 shall be construed as expanding any of the obligations of any Party. Each Party shall give prompt notice of any uncontrollable force adversely affecting its ability to perform under this Agreement. Any Party affected by an uncontrollable force shall make reasonable efforts to remedy its inability to perform with reasonable dispatch; *provided* no Party shall be required to prevent or settle a strike or any other labor dispute against its will.

## **Section 22. Provisions Relating to Treaty Storage**

### **(a) United States-Canada Operating Plans**

The United States Entity shall use its best efforts to develop and implement operating plans for Canadian Storage with the Canadian Entity in order to obtain optimum power generation downstream in the United States consistent with the provisions of this Agreement and the Treaty. To this end the United States Entity will consult with the other parties hereto as provided in this Agreement.

### **(b) United States as Reservoir Party for Treaty Storage**

The United States shall be the Reservoir Party in this Agreement for Treaty Storage as if such storage were a part of the United States of America's System; *provided* the United States shall not be obligated as a Reservoir Party to the extent the operating plans (including any revision thereof) agreed upon by the United States Entity and the Canadian Entity do not permit implementation of such obligation.

### **(c) Treaty Operating Plans**

Under the Treaty, the United States Entity and the Canadian Entity are to annually agree on operating plans for the sixth succeeding year of operation and such operating plans are to be designed to achieve optimum power generation in both the United States and Canada or in either country as provided in the Treaty.

Prior to any agreement on such operating plans between the United States Entity and the Canadian Entity, the Parties shall cooperate and submit data to the United States Entity in accordance with criteria established by the United States Entity for development of an

annual operating plan. The Parties may require the Coordinating Group to make studies of the Coordinated System, assuming utilization of available Treaty Storage, to provide guidance to the United States Entity in regards to the optimum generation desired by Parties in the United States. The Coordinating Group shall make such studies consistent with the provisions of the Treaty and on a timely basis. The United States Entity, consistent with its obligations under the Treaty, shall use its best efforts to achieve such utilization in the operating plan finally determined and agreed to with the Canadian Entity.

Unless mutually agreed otherwise by all of the Parties and consistent with the provisions of the Treaty, studies for the Coordinated System shall be conducted in accordance with the provisions and procedures set forth in sections 6, *Determination of Firm Load Carrying Capability*, 7, *Determination of Base and Variable Energy Content Curves*, and 8, *Maintenance and Reserves*.

#### **(d) Non-delegation**

Nothing in this Agreement shall be construed to be a delegation by the United States Entity of its rights and powers under the Treaty to any Party hereto, nor shall this Agreement impose upon the United States any liability for damages with respect to Canada's operation of Treaty Storage beyond the liability of Canada under Article XVIII of the Treaty.

#### **(e) Deviations of Treaty Storage from Operating Plans**

If the operation of Treaty Storage deviates from the operating plans agreed to between the United States and Canada under the Treaty and In Lieu Energy is not available to offset the impacts of such deviation, procedure 22(e)-1., *Deviations in Use of Treaty Storage*, shall govern the rights and obligations of the Parties.

## **Section 23. Provision Relating to Federal Reclamation Project Requirements**

Nothing contained in this Agreement shall be construed to abrogate, modify, limit, or otherwise change in any respect the right or the obligation of the United States to furnish power and energy to its present or future Federal Reclamation Project requirements.

## **Section 24. Re-negotiation**

### **(a) Mandatory Modifications**

It is the Parties' intent under this Agreement that all of the Parties obtain net positive benefits from the coordination of their facilities over the term of this Agreement. The Parties recognize that their positions and the characteristics of the Coordinated System may change on account of, for example, additions of thermal generation and changes in load shape or periods of peak load demands. If such change have occurred and if the provisions of this Agreement no longer provide to the Parties and the Coordinated System optimum hydroelectric generation, the Parties shall modify this Agreement so as to accommodate such changes and to achieve optimum generation.

### **(b) Discretionary Modifications/Withdrawal**

#### **(1) Notice of Re-negotiation**

If a Party at any time determines that it is materially less able to provide from its Firm Resources economic electric utility service to its customers during the balance of the term of this Agreement than it would have been able to provide had this Agreement not been in effect, such Party may by written notice to each other Party request re-negotiation of this Agreement to eliminate such condition.

#### **(2) Notice of Withdrawal**

Upon receipt of such notice, each of the Parties shall commence good faith negotiations with all of the other Parties with the objective of modifying this Agreement to eliminate such condition. If such negotiations fail to result in modification to this Agreement that is satisfactory to all of the Parties, the Party requesting re-negotiation may give written notice to each of the other Parties of withdrawal from this Agreement all of such Party's Firm Resource(s) except any Project or share of output of a Project which is upstream from the tailrace of Bonneville Dam. The withdrawal shall take effect at the beginning of the fifth Operating Year following the Operating Year in which such notice was given; *provided* if any three Parties, including at least one non-Federal Party, within one year of such notice challenge before any jurisdictional or regulatory authority having jurisdiction the existence of such condition and diligently pursue such challenge, such withdrawal shall not be effective until such challenge has been



finally resolved in favor of the Party seeking withdrawal, in which case the withdrawal shall be effective at the end of the Operating Year in which the challenge is finally resolved or the beginning of the fifth Operating Year after notice, whichever is later. Upon withdrawal, all of the Parties shall settle all outstanding obligations pursuant to this Agreement arising from the withdrawal of such Project(s). Notwithstanding the foregoing, a Party that owns, controls, leases or has a participating share in a Project located above the tailrace of Bonneville Dam shall continue to coordinate such Project or such share.

## **Section 25. Notices**

Notices under this Agreement shall be effective on dispatch when (i) mailed first-class return receipt requested in the United States postage prepaid, (ii) sent via electronic mail or similar successor technology, (iii) sent via facsimile copy, or (iv) sent in any other manner agreed to by the Coordinating Group and in each case addressed to the section 5, *Implementation of Agreement*, Coordinating Group representative of a Party or, in the case of the United States Entity, to the representatives of both the Division Engineer and the Administrator. Any notice to be given by the United States may be given by the Coordinating Group representative of either the Administrator, the Division Engineer, or the Regional Director.

## **Section 26. Additional Parties**

### **(a) Parties**

#### **(1) Joinder of a Party**

Any entity may join as a Party to this Agreement so long as it satisfies each of the following three conditions.

#### **(A) Hydroelectric Resource**

The entity has hydroelectric resource(s) with an aggregate generating capacity of at least five megawatts that would qualify as a Firm Resource(s) under (i) or (ii) of the definition of Firm Resource.

#### **(B) Interconnected**

Such qualifying hydroelectric resource(s) is adequately interconnected with such entity's other resources and transmission facilities and with the other Parties' Systems to accomplish the objectives of this Agreement.

#### **(C) Coordination**

Such entity coordinates such hydroelectric resource(s) to the fullest extent possible pursuant to the terms of this Agreement.

Any such joinder shall be evidenced by the execution of an addendum entitled "Agreement Joining Additional Party" which shall be signed by such additional party. The joinder shall bind such additional Party to all of the covenants, terms, and conditions of this Agreement and become effective on the next February 1 for planning provisions and on the first August 1 after such February 1 for operating provisions. All such addenda shall be attached to and incorporated into this Agreement.

## **(2) Removal of a Party**

Subject to subsections 26(b) and 26(c) below, any entity that has been a Party shall cease to be a Party to this Agreement if and when it no longer has a hydroelectric Firm Resource that qualifies as a Firm Resource under (i) or (ii) of the definition of a Firm Resource.

## **(b) Transfer of a Project to a Non-Party**

This subsection 26(b) shall not apply to retirement or permanent abandonment of Firm Resources. As soon as practicable, a Party that expects to transfer a Project or has notice of a potential involuntary transfer of a Project shall provide written notice to all of the other Parties of such transfer. The Party shall inform the transferee of the then outstanding energy obligations under this Agreement related to the Project.

### **(1) Involuntary Transfer/Project Above Tailrace of Bonneville Dam**

If a Project above the tailrace of Bonneville Dam is involuntarily transferred, the transferring Party shall, subject to Federal and state law and regulation, use reasonable efforts to cause or induce the new owner to become a Party. In no event shall the transferring Party have any continuing obligation under this Agreement with respect to such Project, with the exception that any outstanding obligation to pay money or to return power, other than obligations relating to In Lieu Energy and Provisional Energy shall survive such transfer.

### **(2) Voluntary Transfer/Project Above Tailrace of Bonneville Dam**

If a Project above the tailrace of Bonneville Dam is voluntarily transferred, the transferring Party shall, subject to Federal and state law and regulation, use its best efforts to require or cause the new owner to become a Party. If the new owner does not become a Party, the Parties shall determine how to address the removal of the Project as a Firm Resource under this Agreement.

### **(3) Transfer of Other Projects**

If a Project that is not above the tailrace of Bonneville Dam is transferred, the transferring Party shall use its best efforts to require or cause the new owner to

become a Party. If the new owner does not become Party, the transferor shall have no continuing obligation under this Agreement with respect to such Project; *provided* any existing obligation under this Agreement to return power or pay money shall not be discharged until satisfied.

If a Project is transferred and the transferee does not become a Party, the Study Group shall remove such Project from Exhibit D, *Coordinated System's Firm Resources as of June 18, 1997*.

### **(c) Transfer of a Project to a Party**

In the event a Party acquires hydroelectric generation facilities upstream from the tailrace of Bonneville Dam in addition to those already coordinated by that Party, such facilities shall be coordinated in accordance with the terms of this Agreement. For the purposes of this subsection 26(c), such additional hydroelectric facilities include, but are not limited to, newly installed hydroelectric turbines at an existing facility and new hydroelectric generation facilities, whether obtained from another Party or from an entity not a Party.

## **Section 27. Kerr Project**

Nothing in this Agreement shall require the continued coordination of the Kerr Project (Project No. 5) if and when the Kerr Project Federal Energy Regulatory Commission license is transferred from The Montana Power Company to the Confederated Salish and Kootenai Tribes.

## **Section 28. Execution in Counterparts**

This Agreement may be executed in any number of counterparts. All such counterparts shall constitute a single document with the same force and effect as if all Parties signing a counterpart had signed all the other counterparts.

IN WITNESS WHEREOF the Parties have executed this Agreement as of the eighteenth day of June, 1997.

UNITED STATES OF AMERICA  
By THE BONNEVILLE POWER ADMINISTRATOR OF  
THE DEPARTMENT OF ENERGY

By: \_\_\_\_\_  
Randall W. Hardy  
Administrator and CEO

UNITED STATES OF AMERICA  
By THE DIVISION ENGINEER, NORTHWESTERN  
DIVISION, U.S. ARMY CORPS OF ENGINEERS

By: \_\_\_\_\_

Robert H. Griffin  
Brigadier General, U.S. Army  
Division Engineer

UNITED STATES OF AMERICA  
By THE REGIONAL DIRECTOR, BUREAU OF  
RECLAMATION, PACIFIC NORTHWEST REGION,  
DEPARTMENT OF THE INTERIOR

By: \_\_\_\_\_

John W. Keys III  
Regional Director

THE UNITED STATES ENTITY,  
designated pursuant to the Article XIV of the Treaty,

By THE BONNEVILLE POWER ADMINISTRATOR OF  
THE U.S. DEPARTMENT OF ENERGY

By: \_\_\_\_\_  
Randall W. Hardy  
Administrator and CEO

By THE DIVISION ENGINEER, NORTHWESTERN  
DIVISION, U. S. ARMY CORPS OF ENGINEERS

By: \_\_\_\_\_  
Robert H. Griffin  
Brigadier General, U.S. Army  
Division Engineer

THE CITY OF EUGENE, OREGON,  
a municipal corporation of the State of Oregon

By: \_\_\_\_\_

\_\_\_\_\_

Title: \_\_\_\_\_



THE CITY OF SEATTLE, WASHINGTON,  
a municipal corporation of the State of Washington

By: \_\_\_\_\_

\_\_\_\_\_

Title: \_\_\_\_\_

THE CITY OF TACOMA, WASHINGTON,  
a municipal corporation of the State of Washington

By: \_\_\_\_\_

\_\_\_\_\_

Title: \_\_\_\_\_

PUBLIC UTILITY DISTRICT NO. 2  
OF GRANT COUNTY, WASHINGTON,  
a municipal corporation of the State of Washington

By: \_\_\_\_\_

\_\_\_\_\_

Title: \_\_\_\_\_

PUBLIC UTILITY DISTRICT NO. 1  
OF CHELAN COUNTY, WASHINGTON,  
a municipal corporation of the State of Washington

By: \_\_\_\_\_  
Roger A. Braden  
General Manager

PUBLIC UTILITY DISTRICT NO. 1  
OF PEND OREILLE COUNTY, WASHINGTON,  
a municipal corporation of the State of Washington

By: \_\_\_\_\_

\_\_\_\_\_

Title: \_\_\_\_\_

PUBLIC UTILITY DISTRICT NO. 1  
OF DOUGLAS COUNTY, WASHINGTON,  
a municipal corporation of the State of Washington

By: \_\_\_\_\_  
William C. Dobbins  
CEO / Manager

PUBLIC UTILITY DISTRICT NO. 1  
OF COWLITZ COUNTY, WASHINGTON,  
a municipal corporation of the State of Washington

By: \_\_\_\_\_

\_\_\_\_\_

Title: \_\_\_\_\_

PUGET SOUND ENERGY, INC. ,  
a corporation

By: \_\_\_\_\_

\_\_\_\_\_

Title: \_\_\_\_\_



PORTLAND GENERAL ELECTRIC COMPANY,  
a corporation

By: \_\_\_\_\_

\_\_\_\_\_

Title: \_\_\_\_\_

PACIFICORP,  
a corporation

By: \_\_\_\_\_

Brian D. Sickels

Vice President

THE WASHINGTON WATER POWER COMPANY,  
a corporation

By: \_\_\_\_\_

\_\_\_\_\_

Title: \_\_\_\_\_

THE MONTANA POWER COMPANY,  
a corporation

By: \_\_\_\_\_

\_\_\_\_\_

Title: \_\_\_\_\_

COLOCKUM TRANSMISSION COMPANY, INC.,  
a corporation

By: \_\_\_\_\_

\_\_\_\_\_

Title: \_\_\_\_\_