

## ATTACHMENT F

- (i) The WSCC approved path rating of the interface in the direction from the originating Zone to the receiving Zone or, if the interface has not received a WSCC approved rating, a rating determined by a methodology that is consistent with the WSCC's rating methodology; and
- (ii) The portion of the transfer capability of the interface available for transmission scheduling under Existing Contracts as Existing Rights.

and ensures the ISO's ability to honor all of its FTRs simultaneously under normal operating conditions.

#### **9.4 Issuance of Firm Transmission Rights by the ISO**

**9.4.1** The ISO shall make FTRs available by conducting an annual primary auction of FTRs, commencing approximately two months before the beginning of the term of the FTRs. The term of the FTRs shall not exceed one year. The auction of FTRs shall be a simultaneous multi-round, clearing price auction conducted separately and independently, as set forth in Section 9.4.2, for each FTR Market.

**9.4.2** The ISO shall conduct the auction of FTRs through the following procedures:

**9.4.2.1** At least thirty (30) days prior to the scheduled start of the auction, the ISO shall post on the ISO Home Page the following information:

- (i) the number of FTRs to be issued for each FTR Market;
- (ii) the starting bid price at which FTRs will be made available in each FTR Market in the first round of the auction, which price will be set in each FTR Market at a level equal to the greater of (a) \$100 per MW-year; (b) twenty (20) percent of the ratio of the net Usage Charges collected by the ISO with respect to that FTR Market in the most recent twelve-month period for which data are available to the total MW-years of Energy scheduled over the Inter-Zonal Interface in the relevant direction during that period; or (c) twenty (20) percent of the ratio of the net Grid Operation Charges (for new Inter-Zonal Interfaces that previously were transmission paths within a Zone) collected by the ISO in the most recent twelve-month period for which data are available to the total MW-years of Energy scheduled over the transmission paths in the relevant direction during that period, provided that, if data are available for only a portion of the twelve-month period, such data shall be used on annualized basis. The starting bid price thus established per MW-year will then be proportionately adjusted for the duration of the FTR cycle;
- (iii) the formula through which the ISO will determine how much to adjust the price of FTRs in each FTR Market for subsequent rounds of the auction, including the initial coefficients to be used in the formula and the range over which the coefficients may be adjusted in accordance with Section 9.4.2.3;

## ATTACHMENT G

- 5.7 Interconnection to the ISO Controlled Grid.
- 5.8 Recordkeeping; Information Sharing.
- 5.9 Access Right.
- 5.10 Black Start Services.
- 5.11 [Not Used]

## **6. TRANSMISSION SYSTEM INFORMATION AND COMMUNICATIONS.**

- 6.1 WEnet.
- 6.2 Reliable Operation of the WEnet.
- 6.3 Information to be Provided By Connected Entities to the ISO.
- 6.4 Failure or Corruption of the WEnet.
- 6.5 Confidentiality.
- 6.6 Standards of Conduct.

## **7. TRANSMISSION PRICING.**

- 7.1 Access Charges.
- 7.2 [Not Used]
- 7.3 [Not Used].
- 7.4 [Not Used]

## **8. GRID MANAGEMENT CHARGE.**

- 8.1 ISO's Obligations.
- 8.2 Costs Included in the Grid Management Charge.
- 8.3 Allocation of the Grid Management Charge Among Scheduling Coordinators and Other Appropriate Parties.
- 8.4 Calculation and Adjustment of the Grid Management Charge.
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## **9. FIRM TRANSMISSION RIGHTS**

- 9.1 Firm Transmissions Right Types
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9.7 Issuance of Firm Transmission Rights by the ISO

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accordance with Schedule 3 to Appendix F. Amounts payable by Original Participating TOs under this section shall be recoverable as part of the Transition Charge calculated in accordance with Schedule 3 of Appendix F. Amounts received by the ISO under this section shall be disbursed to New Participating TOs based on the ratio of each New Participating TO's net increase in costs in the categories described in the first sentence of this section, to the sum of the net increases in such costs for all New Participating TOs.

## **9. FIRM TRANSMISSION RIGHTS**

### **9.1 Firm Transmission Right Types**

Market Participants may acquire Point-To-Point Firm Transmission Rights (FTRs) and/or Network Service FTRs. All FTRs are defined in a specific direction from one or more Sources to one or more Sinks. FTRs issued by the ISO are specified in whole MW quantities, and these quantities are constant 24 hours per day, seven days per week, over the time period for which the FTR is auctioned. FTRs acquired through a conversion of Existing Rights may be FTR Options or FTR Obligations, according to the preference of the holder of the converted Existing Rights. FTRs allocated by the ISO to a Load Serving Entity or acquired through the auction process will be FTR Obligations. Point-To-Point FTRs are designed to provide both Day-Ahead financial entitlement and Day-Ahead physical scheduling priority, whereas Network Service Rights provide only Day-Ahead financial entitlement. For the purpose of secondary trading, an FTR Holder may unbundle an FTR into smaller whole-MW quantities and into separate hours of the day and/or days of the week, may unbundle Network Service Rights into components of Point-To-Point Rights, and may trade any of the components separately. All such trades must be reported to the ISO's Secondary Registration System.

#### **9.1.1 Point-To-Point Rights**

A Point-To-Point FTR specifies a single Source, a single Sink, and a MW quantity of power flow from the

Source to the Sink. Point-To-Point FTR Holders shall be entitled to the difference in the Locational Marginal Prices (LMPs) between the Sink and the Source specified by the FTR, multiplied by the MW quantity specified by the FTR. The Source and Sink of a Point-To-Point FTR may include multiple network nodes that have been aggregated into Trading Hubs or Load Aggregation Points and are represented by a single price and quantity for FTR bidding purposes. The MW quantity associated with a Source or Sink at a Trading Hub or Load Aggregation Point is distributed to the underlying network nodes according to the respective Load Distribution Factors (LDFs).

#### **9.1.2 Network Service Rights**

A Network Service FTR specifies MW quantities at each of a group of Sources and Sinks, such that the total MW quantity over all Sources equals the total MW quantity over all Sinks. Market Participants that hold Network Service Rights shall be entitled to the difference in the LMPs between the multiple Sources and Sinks, multiplied by the respective awarded quantities. Each multiple Source and Sink has its own price and quantity for purposes of bidding into the FTR Auction. Network Service Rights allow FTR Bidders the flexibility of supplying multiple Sinks from multiple alternative Sources.

#### **9.1.3 FTR Obligations and FTR Options**

Point-To-Point Rights and Network Service Rights allocated by the ISO to Load Serving Entities or released through the FTR Auction are FTR Obligations. For the special case of converted Existing Rights, the Existing Rights holder may choose to receive either FTR Options or FTR Obligations; in either case the converted Existing Rights will become Point-To-Point Rights, in accordance with Section 9.3.3.3.

##### **9.1.3.1 FTR Obligations**

The Holder of a FTR Obligation is entitled to a payment when the hourly Day-Ahead Sink LMP is greater than the Source LMP, and is subject to a charge when the price difference is reversed. The value of the



payment or charge is equal to the product (Sink LMP – Source LMP) times the MW quantity of the FTR.

The payment or charge for a Network Service Right is calculated by subtracting the sum of the Source LMPs times their associated FTR MW quantities from the sum of the Sink LMPs times their associated FTR MW quantities.

#### **9.1.3.2 FTR Options**

Holders of Point-To-Point FTR Options are entitled to payments when the hourly Day-Ahead Sink LMP is greater than the Source LMP, but are not subject to charges when that price difference is reversed.

### **9.2 Firm Transmission Rights Use for Ancillary Services**

Market Participants that provide Ancillary Services imports at Scheduling Points may choose to purchase and use FTRs from Scheduling Points to Sinks within the ISO Control Area as a hedge against explicit Congestion charges for reserving congested inter-tie transmission capacity in the import direction for Day-Ahead Ancillary Services imports.

### **9.3 Firm Transmission Rights Term and Release**

Each holder of Existing Rights that elects to convert such rights, and each Load Serving Entity that uses New Firm Use (NFU) transmission capacity to serve Load in the ISO Control Area, shall receive allocations of FTRs commensurate with their usage of the transmission system during a Historic Reference Period (HRP) as specified in Section 9.3.3. These allocations shall be combinations of FTRs of three-year, one-year and monthly duration as specified in Sections 9.3.2 and 9.3.3. Converted Rights holders shall have the choice of receiving FTR Options or FTR Obligations, whereas Load Serving Entities that serve Load using NFU transmission capacity shall receive FTR Obligations. If Converted Rights elect to receive FTR Obligations instead of FTR Options, they will be treated like Load Serving Entities as described in Section 9.3.3.4. FTR Obligations shall also be released in three-year, one-year,

and monthly FTR Auctions conducted by the ISO. FTRs acquired through the FTR Auction, as well as FTRs held by Converted Rights holders and Load Serving Entities, may be traded in the FTR Secondary Market as specified in Section 9.6. The ISO Governing Board shall approve the timing, the auction release amounts and allocation amounts of FTRs on a regular basis.

### **9.3.1 Historical Reference Period**

The Historic Reference Period (HRP) is the most recent continuous 12-month period ending on a cut-off date as determined by the ISO and noticed on the ISO Home Page, to allow the ISO a reasonable amount of time to perform the calculations required for the FTR release process, as described in the FTR Policy and Procedures Guide, as periodically updated and notified to the Market Participants.

### **9.3.2 FTR Terms**

Transmission capacity shall be allocated to Converted Rights holders and Load Serving Entities, and released in the FTR Auctions in three terms or durations, namely, long-term (3 years), mid-term (1 year), and short-term (monthly), subject to the release amounts specified in Section 9.3.3.

### **9.3.3 FTR Release**

Allocation and release of transmission capacity shall occur in the following sequence of steps, with each step taking into account transmission capacity already allocated or released in the preceding steps:

- 1) Specification of the network topology and associated path ratings to be used as the basis for allocating and auctioning three-year and one-year FTRs. Distinction shall be made, where relevant, between Contract Paths and other Pathways. The capacity of the Pathways used in the network model to assess and enforce simultaneous feasibility of FTRs for each category and term shall be determined as described in Sections 9.3.3.2 through 9.3.3.5. This procedure will

be done annually in preparation for the release of one-year FTRs. Every third year this network will also be used for the release of three-year FTRs.

- 2) Reservation of the transmission capacity needed for expected use of non-converted Existing Rights.
- 3) Capacity allocation to FTR Options previously allocated to the Existing Rights that converted prior to the HRP.
- 4) (Every third year.) Allocation of long-term FTR Options to those newly Converted Rights that elect to receive FTR Options.
- 5) (Every third year.) Allocation of long-term FTR Obligations to Load Serving Entities and to those newly Converted Rights that elect to receive FTR Obligations.
- 6) (Every third year.) Auction of long-term FTR Obligations.
- 7) Allocation of mid-term FTR Options to those newly Converted Rights that elect to receive FTR Options.
- 8) Allocation of mid-term FTR Obligations to Load Serving Entities and to those newly Converted Rights that elect to receive FTR Obligations.
- 9) Auction of mid-term FTR Obligations.
- 10) Revision of the network topology and associated path ratings as needed to reflect planned outages and de-ratings of transmission facilities, to be used as the basis for allocating and auctioning monthly FTRs. This will be done monthly. In a timely fashion as needed to support this monthly process, the PTOs shall provide to the ISO all available information on planned transmission outages and de-ratings for the coming month.

- 11) Reservation of the transmission capacity needed for expected monthly use of non-converted Existing Rights.
- 12) Allocation of monthly FTR Options to those Converted Rights that have elected to receive FTR Options.
- 13) Allocation of monthly FTR Obligations to Load Serving Entities and to those Converted Rights that have elected to receive FTR Obligations.
- 14) Auction of monthly FTR Obligations.

Allocations of FTRs to Converted Rights shall be structured to reflect the life of the associated Existing Contract, by adjusting the mix of long-term, mid-term and short-term FTRs appropriately. Upon the date of expiration of the associated Existing Contract, the Converted Rights holder will no longer be entitled to, and will no longer receive, an allocation of FTRs.

Simultaneous feasibility for allocation of FTRs to the Converted Rights and Load Serving Entities shall be assessed based on available transmission network capacity, whereas simultaneous feasibility for auctioned FTRs shall be determined by both the available transmission network capacity and the FTR bids.

The simultaneous feasibility conditions imposed on the FTRs shall be consistent with the reliability considerations taken into account in actual operations. Contingency considerations reduce the number of FTRs issued but do not increase the number of FTRs needed in order to offer perfect congestion hedges for any point to point transaction. This means that simultaneous feasibility conditions typically shall include n-1 contingency considerations. All contingencies that need to be considered to preserve the security of the ISO transmission system should be taken into account. This set of contingencies will include, at a minimum, the most important single largest contingency that ISO needs to protect against. Other contingencies will be included as appropriate.

#### **9.3.3.1 Existing Right Modeling**

All Existing Rights, both those that convert to FTRs and those that do not convert, shall be modeled by the ISO in collaboration with the respective PTOs to develop a specification of each Existing Right. The PTOs shall provide the ISO with the following information:

- Contract Path for each Existing Right
- Relation of Existing Right MW with Contract Path OTC for each Existing Right
- Relative priority, to be designated by each PTO for all its Existing Contracts, and coordinated among PTOs such that the Existing Right priority orders are system-wide, and
- Source/Sink designations for each Existing Right, including Location and injection/ejection amounts as a fraction of the full Existing Right on relevant Contract Path (fixed fractions of Existing Rights as Existing Rights vary with OTC levels will be assumed)

Sources and Sinks may be individual network nodes, Trading Hubs or Load Aggregation Points.

#### **9.3.3.2 Exclusion of Non-converted Existing Right Capacity from FTR Allocation and Auction**

Allocation of FTRs to Converted Rights holders and Load Serving Entities and release of FTRs in the FTR Auction shall in no way alter the ability of the non-converted Existing Rights holders to exercise their full Existing Contract scheduling rights in each hour commensurate with the prevailing Operating Transfer Capability (OTC) and the respective Existing Rights terms and conditions. The ISO shall set aside adequate transmission capacity on each encumbered Pathway at a level sufficient to accommodate the Existing Rights holders' use of that Pathway during the HRP, excluding periods of planned outages and force majeure events, as follows:

(1) Non-converted Existing Right Capacity Determination

For each Contract Path, for each hour of the HRP when the Contract Path was not on scheduled maintenance or experiencing excessive derate, the following computations shall be performed:

- (a) List the OTC, and determine the Existing Contracts MW amount for each Existing Right at that OTC.
- (b) Add up all Existing Rights MW amounts determined in (a) and take the maximum of the sum of Existing Rights MW amounts among the hours of each month during the HRP as the "monthly maximum Existing Rights capacity". Designate the corresponding hour as the "Existing Rights peak hour of the month", the corresponding OTC as the "monthly OTC", and its difference with corresponding Existing Rights (OTC – Existing Rights) as the "monthly ATC". Determine the Existing Rights at that hour as the "coincident monthly Existing Rights MW" for each Existing Rights holder.
- (c) Designate the maximum of the "monthly maximum Existing Rights capacity" quantities identified in (b) as the "total annual Existing Rights capacity" for the HRP, the relevant OTC as the "annual OTC" for the HRP, the relevant ATC as the "annual ATC" for the HRP, and the corresponding Existing Rights MW amount as the "annual Existing Rights" MW amount for the HRP.

(2) Simultaneous Feasibility of Non-converted Existing Rights

The ISO shall verify simultaneous feasibility of the Existing Rights determined in (1) assuming full transmission capacity (no derates) on all Pathways of the network model. The following procedure shall be used to assess and enforce simultaneous feasibility of non-converted Existing Rights:

(a) Using the full network, with all transmission Pathway OTCs at full capacity, place injections and ejections at relevant Sources and Sinks for each Existing Right using the injection/ejection fractions in the Existing Contracts specification of Section 9.3.3.1, and the levels determined in Section 9.3.3.2(1)(c) as the Contract Path MW right.

(b) In case of infeasibility, the following actions shall be taken:

i) A tolerance shall be accommodated for each Pathway at 3% of the Pathway OTC.

ii) For Pathways on which simultaneous accommodation of Existing Rights is infeasible, those Existing Rights that contribute to the flow on the Pathway beyond the tolerance shall be curtailed based on the relative scheduling priority established in the Existing Rights specifications (Section 9.3.3.1) until the Pathway limit violations are eliminated. Existing Rights with the same priority shall be curtailed pro rata.

(c) The MW quantities at the Source and Sink of the feasible Existing Rights shall be used as the "feasible" usage pattern for purposes of non-converted Existing Right capacity reservation and ATC determination for the subsequent steps described below.

### (3) Network Available Transmission Capacity (ATC) Determination

The simultaneously feasible non-converted Existing Rights from part (2) of this section shall be used to reserve transmission capacity for non-converted Existing Rights on each Pathway. The ATC for each Pathway shall be determined by the following formula:

$$\text{ATC} = \max(0, \text{OTC} - \text{Existing Rights})$$

Where the Existing Rights are the sum of all simultaneously feasible Existing Rights

contributions on the Pathway, and OTC is the coincident OTC determined in

9.3.3.2(1)(c) for Contract Paths or the full OTC for other Pathways.

(4) The ATC determined in (3) for each Pathway shall be allocated to the three-year, one-year, and monthly FTRs as follows:

- 30% for long-term (3-year) FTRs
- 75% for the combination of long-term and mid-term FTRs
- 100% for the combination of long-term, mid-term, and short-term (monthly) FTRs

(5) The ATCs determined in step (4) shall be updated annually based on the most recent HRP's Existing Rights and OTC data, and shall be adjusted each month for the monthly FTR release based on forecast minimum ATC (OTC less corresponding Existing Rights) for the subsequent month.

#### **9.3.3.3 Allocation of FTR Options to the Converted Rights Holders**

The ISO encourages Existing Rights holders to convert those rights to FTRs. Conversion of these rights will allow the ISO market to function more efficiently, and will allow the holders of the rights to participate fully in the benefits of the market.

The holders of Converted Rights are eligible to receive Point-To-Point FTR Options as described in this section. For the purpose of the simultaneous feasibility test for FTRs, the ISO shall use a Source/Sink pattern for the FTR Option, based on historical usage.

If a Converted Rights holder elects to receive Point-To-Point FTR Obligations instead of Point-To-Point FTR Options, the holder will be treated similarly to the Load Serving Entities receiving FTR Obligations and will be subject to the provisions of Section 9.3.3.4.



Converted Rights shall be distinguished from non-converted Existing Rights in five respects:

1) Converted Rights shall be allocated FTR Options, unless they explicitly request FTR Obligations; 2) the scheduling priority for Converted Rights shall apply in the Day-Ahead Market only (as is the case with all other FTRs); 3) the holder of Converted Rights can earn Congestion Revenues from other users of the transmission capacity by releasing unscheduled rights in the Day-Ahead Market; 4) the FTRs allocated to Converted Rights are tradable in the FTR Secondary Market; and 5) the FTRs allocated to Converted Rights will be in fixed MW quantities, in contrast to Existing Rights typically defined as a percentage of OTC.

#### **9.3.3.3.1 Accommodating FTR Options Allocated to Previously Converted Rights**

Existing Rights converted prior to the HRP shall be accommodated by allocating transmission capacity from the network ATC that is left over after transmission capacity reservation for non-converted Existing Rights, as specified in Section 9.3.3.2.

For purposes of allocating transmission capacity for the previously Converted Rights, simultaneous feasibility of previously Converted Rights shall be assessed in the following order:

- Long-term (3-year) previously Converted Rights using the network with 30% ATC on each Pathway.
- The total of long-term (3-year) and mid-term previously Converted Rights, using the network with 75% ATC on each Pathway, and keeping fixed the Sources/Sinks for the long-term Converted Rights.
- The total of previously Converted Rights of all terms, using the network with 100% of ATC on each Pathway, and keeping fixed the Source/Sink for the long-term and mid-term Converted Rights.

#### **9.3.3.3.2 Allocation of FTR Options to Newly Converted Rights**

Upon conversion, the volume and pattern of FTR Options to be allocated to Converted Rights shall be based on scheduling history of the converted Existing Rights during the relevant HRP using the following procedure:

##### **(1) Converted Right Capacity Determination**

For each Contract Path for each hour of the HRP when the Contract Path was not on scheduled maintenance or experiencing excessive derate, the following computations shall be performed:

- a) Determine the Existing Rights MW amount scheduled (up to 20 minutes before the hour) for each hour of the HRP.
- b) Determine, for each Existing Contract, from the MW schedules determined in (a), the minimum schedule among the hours of each month during the HRP as the "monthly Converted Right Capacity".
- c) Designate for each Existing Contract the minimum of the "monthly Converted Right Capacity" quantities identified in (b) over the 12-months of the HRP as the "non-simultaneous annual Contract Path MW allocation" for each newly Converted Right holder.

##### **(2) Simultaneous Feasibility of Converted Rights**

The following procedure shall be followed to assess and enforce simultaneous feasibility of FTR Options allocated to Converted Rights:

- a) Use the network ATC determined in Section 9.3.3.2. Place fixed injections and ejections at relevant Sources and Sinks for each previously Converted Right based on the levels and patterns determined in Section 9.3.3.3.1. Place injections and ejections at relevant Sources and Sinks for each newly Converted Right based on the injection/ejection fractions in the Existing

Rights specification (Section 9.3.3.2), and the levels determined in 9.3.3.2(1)(c) as the “non-simultaneous annual Contract Path MW allocation”.

- b) In case of infeasibility, the following actions shall be taken:
- iii) A tolerance band shall be accommodated for each Pathway at 3% of the Pathway ATC.
  - iv) For Pathways on which simultaneous accommodation of Converted Rights is infeasible, those Converted Rights that contribute to the flow on the Pathway beyond the tolerance shall be curtailed based on the relative scheduling priority established in the Existing Rights specifications (Section 9.3.3.1) until the Pathway limit violations are eliminated. Converted Rights with the same priority shall be curtailed pro rata.
- c) The MW quantities at the Source and Sink of the feasible Converted Right rights shall be used as the “feasible” usage pattern for purposes of Converted Right FTR Option release described below.

### (3) Allocation of Converted Right FTR Options

The MW quantities determined in 9.3.3.2(2) shall be used as the reference for the release of Converted Right FTR Options as follows:

- 30% for long-term Converted Right FTR Options
- 75% for the combination of long-term and mid-term Converted Right FTR Options
- 100% for the combination of long-term, mid-term, and monthly Converted Right FTR Options

- (4) The Converted Right FTR Options computed in 9.3.3.3.2(3) for the monthly cycles shall be augmented further based on the most recent similar month data, limited by the monthly ATC levels determined in Section 9.3.3.2(5).
- (5) The total (100%) FTR Options capacity determined in Sections 9.3.3.3.1 and 9.3.3.3.2(3) shall be set aside from the ATC levels determined in Section 9.3.3.2(3), and the remaining ATC shall be used for the allocation and release of FTR Obligations to Load Serving Entities and Converted Rights holders that elect to receive FTR Obligations, and auctioned FTR Obligations as specified in Sections 9.3.3.4 and 9.3.3.5.

#### **9.3.3.4 Allocation of FTR Obligations to the Load Serving Entities**

The ISO, in collaboration with Load Serving Entities, shall determine historic grid usage patterns in a manner analogous to that for Converted Rights specified in Section 9.3.3.3. These historic patterns shall form the basis of an allocation of FTRs to Load Serving Entities, utilizing a simultaneous feasibility assessment using the full network ATC that is left over after the reservation of transmission capacity for non-converted Existing Rights and the allocation of transmission capacity for Converted Right FTR Options specified in Sections 9.3.3.2 and 9.3.3.3.

##### **9.3.3.4.1 Initial Allocation of Load Serving Entity FTRs**

For the initial allocation of FTR Obligations to the Load Serving Entities, each Load Serving Entity shall put in a request to the ISO, along with justification, as to the level of long-term, mid-term, and short-term FTRs it needs to serve load for the forthcoming 12 months. These shall be used as upper bounds for the allocation of FTR Obligations to the LSE.

The procedure described below shall be followed to determine the allocation to Load Serving Entities of FTR Obligations:

- (1) Determination of non-simultaneous FTR MW eligibility. The non-simultaneous FTR MW eligibility of each Load Serving Entity represents the number of FTRs to which the Load Serving Entity would be entitled, in the absence of simultaneous feasibility constraints, based on the Load Serving Entity's use of the transmission system to serve Load during the relevant HRP. It shall be determined based on Load Serving Entity's historical net load (load minus local generation) in the Load Serving Entity's service area, as follows:
- a) A "net load duration curve" shall be constructed for each Load Serving Entity for each month during the HRP using the Load Serving Entity's historical net load.
  - b) The net load level exceeded 99.5% of the time during each month of the HRP shall be identified.
  - c) The minimum of the monthly 99.5% levels identified in b) shall constitute the total non-simultaneous FTR MW eligibility of the Load Serving Entity.
  - d) The MW eligibility level determined in c) shall be limited to the amount of FTR Obligations requested by the Load Serving Entity, and may be further constrained because of simultaneous feasibility requirements as specified below.
- (2) Identification of transmission usage pattern. The usage pattern for the Load Serving Entity's FTR Obligations shall be determined as follows:
- a) The Load Serving Entities shall identify to the ISO:
    - i) Primary (priority 1) Sources and Sinks associated with their intended FTR Obligations usage, along with the MW quantity at each Source or Sink. The Sinks may be individual network nodes, Trading Hubs or Load Aggregation Points.
    - ii) Up to 3 additional sets of Sources and Sinks with priorities 2 through 4, along with a

range (minimum or maximum) MW distribution at each Source or Sink, to be used in case the primary set does not pass the simultaneous feasibility test.

Each usage pattern/range shall be deemed applicable to all hours of the HRP.

- b) In case a Load Serving Entity does not provide the usage information specified in a), the ISO shall use the average historical scheduling pattern during the HRP, if available. If the average historical scheduling pattern is not available, the Load Serving Entity will not be allocated FTR Obligations, and must acquire them in the FTR Auctions described in Section 9.3.3.5.
- c) The MW quantities and ranges associated with the usage patterns shall be deemed to correspond to the total non-simultaneous FTR MW eligibility determined in (1) for each Load Serving Entity.
- d) The ISO shall verify simultaneous feasibility of the Load Serving Entity FTR levels and patterns using the network ATC determined in Section 9.3.3.3.2(5) as follows:
  - i) Simultaneous feasibility shall be assessed for the primary (priority 1) patterns (Sources, Sinks, and corresponding MW distributions).
  - ii) If the desired use is infeasible, the number of candidate patterns shall be expanded to include injection locations and ranges associated with the next level of priority.
  - v) If all priority patterns are exhausted, the non-simultaneous MW eligibility levels determined in (1) shall be reduced *pro rata*.

(3) The feasible MW levels (and patterns) determined in (2) shall be allocated as FTR Obligations to the respective Load Serving Entities as follows:

- 30% as long-term FTR Obligations
  - 75% as the combination of long-term and mid-term FTR Obligations
  - 100% as the combination of long-term, mid-term, and monthly FTR Obligations
- (4) The Load Serving Entity FTR Obligations computed in (3) for the monthly cycles shall be augmented further based on the most recent similar month data using 99.5% monthly Load Serving Entity net load data, limited by the monthly ATC levels determined in Section 9.3.3.3.2(5).

The total (100%) FTR Obligations capacity determined in step (3) shall be fixed for the release of auctioned FTR Obligations as specified in Section 9.3.3.5. Although transmission capacity reserved for non-converted Existing Rights and Converted Rights is taken out of the ATC, the capacity allocated to Load Serving Entities shall be incorporated in the subsequent FTR Auction process.

#### **9.3.3.4.2 Modifying Load Serving Entity Allocations**

The FTR Obligations shall be deemed allocated to the Load served by the Load Serving Entity. When customers switch retail providers, the FTRs shall move with them to the new Load Serving Entity. The initial and new Load Serving Entities shall exchange the FTRs and register the transfer using the Secondary Registration System (SRS) as specified in the FTR Policy and Procedures Guide.

#### **9.3.3.5 Network ATC of Firm Transmission Rights Auction**

The network ATC determined in Section 9.3.3.2(4) shall be used for the auction of FTRs as follows:

- The network used for the auction of long-term FTRs shall include 30% of the ATC of each Pathway as determined in Section 9.3.3.2(3) less long-term Converted Right FTR Options. Fixed Sources and Sinks shall be included for the Load Serving Entity's long-term FTR Obligations.

- The network used for the auction of mid-term FTRs shall include 75% of the ATC of each Pathway as determined in Section 9.3.3.2(3) less the long-term and mid-term Converted Right FTR Options. Fixed Sources and Sinks shall be included for the Load Serving Entity's long-term and mid-term FTR Obligations.
- The network used for the auction of short-term (monthly) FTRs shall include all of the ATC of each Pathway as determined in Section 9.3.3.2(5), less all Converted Right FTR Options. Fixed Sources and Sinks shall be included for all Load Serving Entity's FTR Obligations for the month.

#### **9.3.3.6 Firm Transmission Rights Auctions**

The ISO or its representative shall conduct periodic FTR Auctions to allow Market Participants to acquire or sell Firm Transmission Rights in accordance with provisions of this Section. The ISO shall publish information on the ISO Home Page about an upcoming FTR Auction at least seven (7) days prior to the FTR Auction.

##### **9.3.3.6.1 Frequency, Amount, and Timing of FTR Auctions**

FTR Auctions shall be held as frequently as monthly. The FTR Auction time and day of the month shall be indicated in the FTR Policy and Procedures Guide posted on the ISO Home Page.

##### **9.3.3.6.2 Term and Scope of FTR Auctions**

FTRs shall begin at midnight on the first day of the term of the FTRs and expire at midnight on the last day of the term of the FTRs. FTRs sold in the FTR Auction will have terms that extend up to a period of three years. The ISO shall offer for sale in the FTR Auction any remaining ATC for the relevant term after taking into account all the FTRs already outstanding at the time of FTR Auction, the quantity of Existing Rights, and the quantity of FTRs allocated to Load Serving Entities. Any FTR Holder may offer FTRs for sale in the FTR Auction or may sell the FTRs in the FTR Secondary Market and register the



transaction in the Secondary Registration System. Market Participants may bid for and acquire any number of FTRs, provided that all awarded FTRs are valid and simultaneously feasible with each other and with all FTRs outstanding at the time of the FTR Auction.

**9.3.3.6.3 Eligibility to Participate**

Any entity, with the exception of the ISO, shall be eligible to acquire FTRs by participating in the FTR Auction or by purchasing FTRs in the secondary market. An FTR Holder that is not a Scheduling Coordinator must be represented by an ISO-approved Scheduling Coordinator for all transactions with the ISO related to FTRs. Any entity wanting to participate in the FTR Auction must meet all requirements as described in the FTR Policy and Procedures Guide.

**9.3.3.6.4 FTR Auction Process and Market Participant Training**

The FTR Auction process and Market Participant training shall be conducted in accordance with the ISO's FTR Policy and Procedures Guide as posted on the ISO Home Page.

**9.3.3.6.5 Offers and Bids**

Bids to purchase FTRs and offers to sell FTRs shall be submitted in the form specified by the ISO in accordance with the requirements set forth below and as specified in the FTR Policy and Procedures Guide. Once submitted to the ISO, bids and offers may not be cancelled or rescinded by the FTR Bidders.

Bids to purchase FTRs shall specify the FTR type (Point-To-Point Right or Network Service Right). Bids for Point-To-Point Rights shall specify the associated Source and Sink and a monotonically increasing staircase bid curve of up to 10 quantities (MW) and prices (\$/MW). The Source and Sink can be either a network node or a standard Trading Hub; in addition, a Sink may be a Load Aggregation Point. Trading Hub and Load Aggregation Point injections and ejections shall be distributed to their underlying nodes

using the relevant Load Distribution Factors. Bids for Network Service Rights shall specify associated Sources and Sinks, and a staircase bid curve of up to 10 quantities (MW) and prices (\$/MW) for each Source and Sink. The bid curve for Sources must be monotonically increasing and for Sinks, monotonically decreasing. The Network Service Right awarded through the FTR Auction will consist of a set of Sources and Sinks and associated MW quantities, such that the sum of the MW quantities for all Sources equals the sum of the MW quantities for all Sinks. The valuation of such a Network Service Right is equal to the sum of the auction clearing prices at each Sink weighted by their associated MW quantities as specified by the FTR, minus the sum of the auction clearing prices at each Source weighted by their associated MW quantities as specified by the FTR. This valuation shall be the price paid by the FTR Bidder for the Network Service FTR.

A bid to purchase a specified megawatt quantity of FTRs shall constitute a bid to purchase a quantity of FTRs equal to or less than the specified quantity. A bid to purchase may not specify a minimum quantity that the FTR Bidder wishes to purchase. Bids to purchase and offers to sell FTRs shall be specified in whole megawatts and shall specify positive MW quantities. Bid and offer prices may be positive or negative. Bids shall be accepted by the ISO subject to such reasonable standards for the creditworthiness of the FTR Bidder or for the posting of security for performance as the ISO shall establish and describe in the FTR Policy and Procedures Guide, as posted on the ISO Home Page.

At the close of the bidding period each month, the ISO will utilize the bids as input to an FTR power flow optimization model. This model, containing all applicable transmission constraints and reliability requirements, shall determine the awarded FTRs subject to simultaneous feasibility of all FTRs including FTRs allocated or sold in previous FTR allocations and FTR Auctions. The winning bids shall be determined from the power flow optimization model that, while respecting transmission constraints and the maximum megawatt quantities of the bids and offers, shall select the set of simultaneously feasible FTRs with the highest net total auction value as determined by the bids of buyers. In the event that there

are two or more identical bids for the selected FTRs and there is insufficient Available Transfer Capacity to accommodate all of the identical bids, then each such FTR Bidder will receive a pro rata share of the FTRs that can be awarded.

An FTR Holder that wishes to sell an FTR may do so by placing an FTR bid in the opposite direction at a negative price, where the negative price is the minimum price at which it wishes to sell the FTR. FTRs shall be sold at the market-clearing price for FTRs between specified pairs of Sources and Sinks, as determined by the bid value of the marginal FTR that could not be awarded because it would not be simultaneously feasible with the rest. The power flow optimization model shall determine LMPs at each Source and Sink of all awarded FTRs. These LMPs shall be used to determine the payments and charges for each awarded FTR in accordance with Section 9.4.1.

#### **9.3.3.6.6          Announcement of Winners and Prices**

Within two (2) business days after the close of an FTR Auction, the ISO shall post the preliminary results on the ISO Home Page of the provisional winning bidders, the megawatt quantity, and the Source and Sink for each FTR awarded in the FTR Auction and the price at which each FTR was awarded. The ISO shall not disclose the prices specified in any bid to purchase or sell.

FTR Bidders shall pay the amount determined by the ISO to be due resulting from the FTR Auction within five (5) business days of receiving an invoice from the ISO by making payment to the ISO Clearing Account. If the FTR Bidder fails to make timely payment of the full amount due, the ISO may enforce any guarantee, letter of credit or other credit support provided by the defaulting FTR Bidder in accordance with the provisions of this section. If the ISO is required to institute proceedings to collect any unpaid amount, the defaulting FTR Bidder shall pay interest on the unpaid amount at the ISO Default Interest Rate for the period from the Payment Date until the date on which payment is remitted to the ISO Clearing Account. Within two (2) business days of the receipt of payments, excluding any

delinquencies, the ISO shall post on the ISO Home Page the final FTR Auction results comprised of the final winning bidders, the megawatt quantity, and the Source and Sink for each FTR awarded in the FTR Auction and the price at which each FTR was awarded. The ISO shall not disclose the prices specified in any bid to purchase or sell.

#### **9.3.3.6.7 FTR Auction Design**

The FTR Auction shall be an optimization problem of maximizing the FTR Auction revenue with simultaneous feasibility of all awarded and pre-existing FTRs. The FTR Auction revenue is determined by the bids of awarded FTRs. Awarded Point-To-Point Rights are balanced Schedules from the respective Source to the respective Sink. Awarded Network Service Rights are balanced Schedules from the respective Sources to the respective Sinks.

##### **9.3.3.6.7.1 Network Model**

The full network model with external network equivalents used in the FTR Auctions will be the same as that used in the Day-Ahead, Hour-Ahead and Real-Time Markets, except that the model in the FTR Auctions will not include transmission facility resistances (it will be a DC network model). Therefore, transmission losses will be ignored in the FTR Auction model.

##### **9.3.3.6.7.2 Network Constraints**

Only active power limits on transmission lines, transformers, and transmission interfaces shall be enforced in the FTR Auctions.

##### **9.3.3.6.7.3 Long-Term FTR Auction**

All transmission facilities shall be in service in the network model for the long-term FTR Auction. The transmission capacity available for long-term FTRs on each Pathway shall be determined in accordance with Section 9.3.3.5. Long-term FTR Obligations allocated to Load Serving Entities shall be included in

the network model as fixed injections to provide additional transmission capacity for counterflows as needed.

**9.3.3.6.7.4 Mid-Term FTR Auction**

All transmission facilities shall be in service in the network model for the mid-term FTR Auction. The transmission capacity available for mid-term FTRs in each Pathway shall be determined in accordance with Section 9.3.3.5. Long-term and mid-term FTR Obligations allocated to Load Serving Entities and long-term FTR Obligations sold in the long-term FTR Auction shall be included in the network model as fixed injections to provide additional transmission capacity for counterflows as needed.

**9.3.3.6.7.5 Short-Term FTR Auction**

Transmission facilities that are expected to be in service during the term of the short-term FTR Auction shall be in service in the network model for the short-term FTR Auction. The transmission capacity available for short-term FTRs on each Pathway shall be determined in accordance with Section 9.3.3.5. Long-term, mid-term, and short-term FTR Obligations allocated to Load Serving Entities, long-term FTR Obligations sold in the long-term FTR Auction, and mid-term FTR Obligations sold in the mid-term FTR Auction, shall be included in the network model as fixed injections to provide additional transmission capacity for counterflows as needed.

**9.4 Firm Transmission Rights Settlement**

Settlement of FTRs shall take place in the Day-Ahead Market and shall provide a hedge against Day-Ahead congestion costs. There will not be any settlements for FTR Holders in the Hour-Ahead or Real-Time Markets.

**9.4.1 FTR Auction Revenue Allocation**

Point-To-Point Obligations purchased at an FTR Auction shall be charged the product (Sink LMP – Source LMP) times the MW quantity of the FTR. This charge will be a payment to the FTR purchaser if

the price difference is negative. Network Service Rights purchased at an FTR Auction shall be charged the sum of the auction clearing prices at each Sink weighted by their associated MW quantities as specified by the FTR, minus the sum of the auction clearing prices at each Source weighted by their associated MW quantities as specified by the FTR. This charge will also be a payment to the FTR purchaser if the calculated charge is negative. FTR Holders who sell FTRs in an FTR Auction will receive the revenues generated by the FTRs they sold. Any remaining net revenues from an FTR Auction shall be paid to Participating Transmission Owners (PTOs) in proportion to their Transmission Revenue Requirement (TRR).

#### **9.4.2 Firm Transmission Rights Holder Payments and Charges**

In each hour of the Day-Ahead Market, settlement will be calculated with all FTR Holders based upon the Day-Ahead LMPs regardless of the FTR term. All FTRs of the same type (Options or Obligations) shall be treated the same regardless of when and how they are acquired.

##### **9.4.2.1 Congestion Revenue Allocation**

In each hour of the Day-Ahead Market, the Day-Ahead Energy Settlement, including explicit charges for inter-tie transmission capacity reservation for Day-Ahead Ancillary Services imports, shall result in Day-Ahead Congestion Revenue. This Congestion Revenue is due to transmission losses in the network and binding network constraints. If the Congestion Revenue is positive, it shall be allocated to FTR Holders as follows:

- (1) Holders of Point-To-Point Options shall be entitled to a payment equal to the product (Sink LMP – Source LMP) times the MW quantity of the FTR, if that amount is positive. If the price difference is negative, no payment or charge shall be due.
- (2) The holder of a Point-To-Point FTR Obligation shall be entitled to a payment equal to the product (Sink LMP – Source LMP) times the MW quantity of the FTR, if that amount is positive. If the

result of this calculation is negative, the holder of the Point-To-Point FTR Obligation shall be charged that amount.

- (3) The holder of a Network Service FTR Obligation shall be entitled to a payment equal to the sum of the LMPs at each Sink weighted by their associated MW quantities as specified by the FTR, minus the sum of the LMPs at each Source weighted by their associated MW quantities as specified by the FTR. If the result of this calculation is negative, the holder of the Network Service Obligation shall be charged that amount.

For each hour of the Day-Ahead Market in which the net of all FTR payments and charges is less than the Congestion Revenue, all FTR Holders shall be paid and charged fully according to their entitlements. The remaining Congestion Revenue shall be credited to the monthly FTR Balancing Account. If the net of all FTR payments and charges exceeds the Congestion Revenue, all FTR Holders shall be paid and charged pro rata in proportion to their entitlements. Any payment or charge shortfalls shall be accumulated and tracked monthly by FTR for the monthly clearing of the monthly FTR Balancing Account.

If the Congestion Revenue is negative, it shall be debited to the monthly FTR Balancing Account and all FTR entitlements shall be accumulated as payment or charge shortfalls accordingly. The Congestion Revenue may be negative if the ATC of the network is reduced by outages or derates to less than the ATC held by FTRs.

In each hour of the Hour-Ahead Market, the Hour-Ahead Energy settlement, including explicit charges for inter-tie transmission capacity reservation for Hour-Ahead Ancillary Services imports, shall result in Hour-Ahead Congestion Revenue. This Congestion Revenue is due to transmission losses in the network and due to binding network constraints. The Hour-Ahead Congestion Revenue shall be credited if positive, or debited if negative, to the monthly FTR Balancing Account in accordance with Section 9.4.2.2.

#### **9.4.2.2 Firm Transmission Rights Balancing Account**

Revenue adequacy (whether or not the ISO will collect sufficient Congestion Revenues to pay the financial entitlements owed to holders of FTRs) will depend on the differences between the transmission model, contingency specification and constraint set used for the simultaneous feasibility test and those used for scheduling the Day-Ahead Market. The less significant the differences, the less chance there is for a revenue inadequacy condition. Thus, in specifying the simultaneous feasibility test conditions, the objective is to try to choose settings that will be consistent with the state of the transmission system at the time that it is scheduled.

In any given hour in the Day-Ahead Market, FTR Holders are paid their FTR entitlement, which can be used to offset or completely eliminate Congestion costs that materialize due to LMP differences across the transmission network. If the ATC of the transmission network in that hour is no less than the ATC that is held by FTR Holders, the Congestion Revenue would be sufficient to pay all FTR entitlements fully, since FTRs are awarded and auctioned so that they are simultaneously feasible. If ATC has become unavailable due to outages, derates or unexpected loop flows, however, the Congestion Revenue may not be sufficient to pay the FTR Holders fully. Any Congestion Revenue to PTOs from the Day-Ahead and Hour-Ahead Markets, as well as PTO debits in accordance with the ISO Tariff, will be accumulated in the monthly FTR Balancing Account. Funds in the monthly FTR Balancing Account will be used to reduce or eliminate FTR Holders' Congestion Revenue deficiency.

##### **9.4.4.2.1 Monthly Clearing**

At the end of each month, if that month's FTR Balancing Account contains excess revenue, it shall be used to pay down the net FTR shortfall for that month. If the net FTR shortfall for the month is less than the revenue in the monthly FTR Balancing Account, all FTR monthly payment and charge shortfalls shall be paid and charged fully and the net payment shall be debited to the monthly FTR Balancing Account.



The remaining revenue in the monthly FTR Balancing Account shall be credited to the yearly FTR Balancing Account. If the net FTR shortfall for the month exceeds the revenue in the monthly FTR Balancing Account, all FTR monthly payment and charge shortfalls shall be paid and charged pro rata in proportion to their monthly shortfall and the remaining monthly payment and charge shortfalls shall be accumulated and tracked yearly by FTR for the yearly clearing of the yearly FTR Balancing Account. If the balance in the monthly FTR Balancing Account is negative at the time of the monthly clearing, all FTR monthly payment and charge shortfalls shall be accumulated and tracked yearly by FTR for the yearly clearing of the yearly FTR Balancing Account and the balance of the monthly FTR Balancing Account shall be debited to the yearly FTR Balancing Account.

#### **9.4.2.2.2 Yearly Clearing**

At the end of each year, if the yearly FTR Balancing Account contains revenue, it shall be used to pay down the net FTR shortfall over the year. If the net FTR shortfall for the year is less than the revenue in the yearly FTR Balancing Account, all FTR yearly payment and charge shortfalls shall be paid and charged fully and the net payment shall be debited to the yearly FTR Balancing Account. The remaining revenue in the yearly FTR Balancing Account shall be paid to the PTOs in proportion to their TRR. If the net FTR shortfall for the year exceeds the revenue in the yearly FTR Balancing Account, all FTR yearly payment and charge shortfalls shall be paid and charged pro rata in proportion to their yearly shortfall. If the balance in the yearly FTR Balancing Account is negative at the time of the annual clearing, no additional payments or charges shall be made.

### **9.5 Firm Transmission Rights Activity Rules and Monitoring**

#### **9.5.1 Affiliate Disclosure Requirements**

All entities that acquire FTRs by participating in the ISO's FTR Auction, or by purchasing FTRs in the secondary markets, must register as an FTR Holder with the ISO. FTR Holders must notify the ISO of

all entities with which the FTR Holder is affiliated that are FTR Holders or Market Participants. An Affiliate is an entity, company, or person that directly, or indirectly through one or more intermediaries, controls, or is controlled by, or is under common control with the subject entity, company, or person. This notification requirement is a continuing obligation, and FTR Holders must provide the ISO with this information at the time they register to participate in the FTR Auction and within five (5) business days of the acquisition of FTRs in the FTR Secondary Market, and must provide subsequent notifications concerning changes in affiliated entities within five (5) business days of such change.

#### **9.5.2 FTR Concentration**

##### **9.5.2.1 FTR Concentration Limits**

The ISO will monitor the FTR, Energy and Congestion markets and may impose position limits on the total number of FTRs that may be held by any one affiliate group if anomalous market behavior, gaming, or exercise of market power are observed that may be attributed to FTR concentration.

##### **9.5.2.2 Monitoring of FTR Concentration**

For FTR Holders with a concentration of FTR ownership or control using more than 25% of the ATC released for any FTR term on any Pathway used in the FTR Auction, the ISO shall monitor:

- Unused FTRs (FTRs above and beyond what the entity needs to hedge against congestion charges based on the entity's scheduling practices);
- FTRs in the opposite direction to what the entity needs to hedge against congestion charges based on the entity's scheduling practices (e.g., outbound FTRs for a Load Serving Entity or inbound FTRs for a generation owner);
- Schedule shifts for congestion management;
- The frequency of the entity being pivotal in the Energy or Congestion markets;

- Net FTR revenues (above the level used to hedge schedules).

The ISO also shall monitor FTR Secondary Market activity as specified in Section 9.6.

The ISO shall publish on the ISO Home Page such information concerning the concentration of ownership of FTRs as determined by the ISO Board of Governors from time to time.

## **9.6 Firm Transmission Rights Secondary Market**

The ISO shall not run an FTR Secondary Market but will provide FTR participants an interface to facilitate and track their FTR Secondary Market transactions. The ISO shall monitor the total FTR concentration (as specified in Section 9.5) and the secondary market transactions (as specified below).

To facilitate the operation of secondary markets in FTRs, the ISO shall post on the ISO Home Page: (i) the identity of entities that hold FTRs that have been registered with the ISO, together with the quantity of FTRs held by such entities and their corresponding Sources and Sinks; and (ii) the name and a contact telephone number or telecopy number of any entity that operates a secondary market in FTRs and that requests the ISO to post such information. The ISO also shall post the prices at which FTRs are transferred through secondary market transactions and shall indicate whether such transfers are conditional.

### **9.6.1 Trade Registration**

FTRs traded in the FTR Secondary Market must be reported to the ISO. Both the FTR Holder of record and the entity to which the FTRs have been transferred shall register the transfer of the FTR with the ISO by notifying the ISO through the form specified for that purpose by the ISO, and within the number of business days following the transfer published by the ISO on the ISO Home Page and WEnet but no later than such time as the ISO shall specify before the deadline applicable to scheduling Energy in the Day-Ahead Market, of (i) the date of the transaction; (ii) the identity of the FTR Holder of record; (iii) the

identity of the entity to which the FTRs have been transferred; (iv) the quantity of FTRs being transferred; (v) the Sources and Sinks of the FTRs being transferred; (vi) the portion of the term of the FTR for which they are transferred; (vii) the price at which the FTRs are being transferred; and (viii) whether the transfer of FTRs is subject to any conditions. The entity to which the FTRs have been transferred must also notify the ISO of all entities with which the transferee is affiliated that are FTR Holders or Market Participants as defined in the ISO Tariff, pursuant to Section 9.5.1. After the ISO receives such notices, the transferee shall be considered the FTR Holder of record with respect to the portion of the term of the FTR that is transferred. In order to use the scheduling priority of an FTR, an FTR must be registered with the ISO.

#### **9.6.2 Assignment of Firm Transmission Rights**

An FTR may be assigned, sold, or otherwise transferred in whole MW and full hourly increments by the FTR Holder to any entity eligible to be an FTR Holder, either for the entire term of the FTR or for any portion of that term provided. All FTRs that are so assigned, sold, or otherwise transferred by the FTR Holder are subject to the applicable terms and conditions for FTRs approved by FERC and set forth in the ISO Tariff.

#### **9.7 Issuance of Firm Transmission Rights by the ISO**

The ISO can issue Firm Transmission Rights to new Participating Transmission Owners or to entities who add new transmission capacity to the ISO grid through construction of new facilities or upgrading of existing facilities. There are two options for entities adding new transmission capacity: the merchant transmission option and the rate of return transmission option.

##### **9.7.1 New Participating Transmission Owners**

For the ten-year transition period described in Section 4 of Schedule 3 to Appendix F of the ISO Tariff, a

New Participating Transmission Owner (PTO) shall receive FTR Options (or if it so elects, FTR Obligations) for the Pathway to which the transmission facilities and Converted Rights for the Pathway that the New PTO turns over to the ISO's Operational Control give it transmission rights. The amount of FTRs will be determined when the Transmission Control Agreement is executed and shall be commensurate with the transmission capacity the New Participating TO is turning over to ISO Operational Control. FTRs issued in accordance with this section shall entitle the FTR Holder to receive Congestion Revenues commensurate with the FTR type (Options or Obligations) and to priority in the scheduling of Energy and Ancillary Services in the Day-Ahead Market in accordance with the provisions of the ISO Tariff. FTRs associated with Converted Rights shall terminate on the earlier of termination of the Existing Contract or the end of the ten-year transition period.

#### **9.7.2 Merchant Transmission Option**

When new transmission capacity is added under a merchant transmission model (the owner of the new capacity does not recover the investment cost under a FERC regulated and approved rate of return through the TAC or through direct payment from a PTO) and this new transmission capacity is provided to be put under ISO Operational Control and the ISO accepts it, the ISO will provide FTRs to the party responsible for the increased transmission capacity for the full amount of the increase in capacity, as approved by WECC or the appropriate party, in a combination of long-term, mid-term and monthly Point-To-Point FTRs in proportions as indicated in Section 9.3. Such allocation by the ISO will require the party responsible for the increased transmission capacity to provide to the ISO a set of desired Sources and Sinks for defining the FTRs. Under this option the entity shall not receive an amount of FTRs greater than the approved amount of the increase in transmission capacity. Of necessity these may have to be monthly FTRs initially, until such time as the next annual FTR Auction occurs.

### **9.7.3 Rate of Return Transmission Option**

When new transmission capacity is created under a FERC regulated and approved rate of return model (the owner of the new capacity recovers the investment cost plus rate of return through the TAC or through direct payment from a PTO), the owner will not receive any FTRs for the new capacity created. Instead, any increase in the ATC available will be allocated fully through the FTR Auction process and the associated auction revenues will be paid to the appropriate PTO to reduce the TAC.

Prior to the start of operation of any change of capacity, whether due to creation of a new facility, upgrade of an existing facility or a retirement or downgrade of an existing facility, the ISO will perform engineering studies to determine changes in system capacity and any necessary changes to the FTR release as a result of the change. At the next FTR Auction, the ISO will make the proper changes to accommodate the changes to grid transfer capacity. Any decrease in transmission capacity will be reflected through the reduction of available capacity in the next monthly FTR Auction and all subsequent FTR Auctions, as appropriate.

<b><u>Connected Entity</u></b>	A Participating TO or any party that owns or operates facilities that are electrically interconnected with the ISO Controlled Grid.
<b><u>Constraints</u></b>	Physical and operational limitations on the transfer of electrical power through transmission facilities.
<b><u>Contingency</u></b>	Disconnection or separation, planned or forced, of one or more components from an electrical system.
<b><u>Contract Path</u></b>	The Pathway over which a party has Existing Rights.
<b><u>Control Area</u></b>	An electric power system (or combination of electric power systems) to which a common AGC scheme is applied in order to: i) match, at all times, the power output of the Generating Units within the electric power system(s), plus the Energy purchased from entities outside the electric power system(s), minus Energy sold to entities outside the electric power system, with the Demand within the electric power system(s); ii) maintain scheduled interchange with other Control Areas, within the limits of Good Utility Practice; iii) maintain the frequency of the electric power system(s) within reasonable limits in accordance with Good Utility Practice; and iv) provide sufficient generating capacity to maintain operating reserves in accordance with Good Utility Practice.
<b><u>Control Area Gross Load</u></b>	For the purpose of calculating and billing the Grid Management Charge, Minimum Load Costs, Emissions Costs Charge and Start-Up Fuel Costs Charge, Control Area Gross Load is all Demand for Energy within the ISO Control Area. Control Area Gross Load shall <u>not</u> include Energy consumed by:  (a) generator auxiliary Load equipment that is dedicated to the production of Energy and is electrically connected at the same point as the Generating Unit (e.g., auxiliary Load equipment that is served via a distribution line

- that is separate from the switchyard to which the  
Generating Unit is connected will not be considered to  
be electrically connected at the same point); and
- (b) Load that is isolated electrically from the ISO Control  
Area (*i.e.*, Load that is not synchronized with the ISO  
Control Area).

**Control Area Services  
Charge**

The component of the Grid Management Charge that provides  
for recovery of the ISO's costs of ensuring safe, reliable  
operation of the transmission grid and dispatch of bulk power  
supplies in accordance with regional and national reliability  
standards, including, but not limited to:

- performing operation studies;
- system security analyses;
- transmission maintenance standards;
- system planning to ensure overall reliability;
- integration with other Control Areas;
- emergency management;
- outage coordination;
- transmission planning; and
- scheduling generation, imports, exports, and wheeling in  
the Day-Ahead and Hour-Ahead of actual operations.

**Converted Rights**

Those transmission service rights as defined in Section  
2.4.4.2.1 of the ISO Tariff, or those Existing Rights that are  
relinquished in exchange for FTRs.

**Cost Shifting**

A transfer of costs from one group of customers to another or  
from one utility to another.

**CPUC**

The California Public Utilities Commission, or its successor.



**Final Hour-Ahead Schedule**

The Hour-Ahead Schedule of Generation and Demand that has been approved by the ISO as feasible and consistent with all other Schedules based on the ISO's Hour-Ahead Congestion Management procedures.

**Final Schedule**

A Schedule developed by the ISO following receipt of a Revised Schedule from a Scheduling Coordinator.

**Final Settlement Statement**

The restatement or recalculation of the Preliminary Settlement Statement by the ISO following the issue of that Preliminary Settlement Statement.

**Flexible Generation**

Generation that is capable of, and for which the Generator has agreed to, adjust operating levels in response to real time market price or ISO control signals.

**Forced Outage**

An Outage for which sufficient notice cannot be given to allow the Outage to be factored into the Day-Ahead Market or Hour-Ahead Market scheduling processes.

**FPA**

Parts II and III of the Federal Power Act, 16 U.S.C. § 824 et seq., as they may be amended from time to time.

**FTR (Firm Transmission Right)**

A financial contract that entitles the FTR holder to a stream of revenues (or charges) based on the hourly energy price differences across specified network locations in the Day-Ahead Market. Holders of point-to-point FTR also hold physical scheduling rights (i.e., priority against schedule curtailment) in the Day-Ahead Market. Transmission capacity for which scheduling rights have not been utilized by FTR holders in the Day-Ahead Market becomes available as new firm use in the Day-Ahead and subsequent markets, as specified in the ISO Tariff.

**FTR Auction**

An auction conducted by the ISO to allow Market Participants to acquire or sell Firm Transmission Rights in accordance with provisions of Section 9.3.3.6 of the ISO Tariff.

**FTR Balancing Account**

An account maintained by the iso in which surplus or deficit congestion revenues from the Day-Ahead and Hour-Ahead Markets accumulate

**FTR Bidder**

An entity that submits a bid in an FTR auction conducted by the ISO, or any third party as selected by the ISO and noticed to the Market Participants, in accordance with Section 9.3.3.6.5 of the ISO Tariff.

<b><u>FTR Holder</u></b>	The owner of an FTR, as registered with the ISO.
<b><u>FTR Obligation</u></b>	An FTR that pays the FTR Holder when the hourly Day-Ahead Locational Marginal Price at the Sink specified by the FTR is greater than the Locational Marginal Price at the Source specified by the FTR (i.e., Sink LMP – Source LMP > 0), and charges the FTR Holder when this price difference is reversed (i.e., Sink LMP – Source LMP < 0).
<b><u>FTR Option</u></b>	An FTR that pays the FTR Holder when the hourly Day-Ahead Locational Marginal Price at the Sink specified by the FTR is greater than the Locational Marginal Price at the Source specified by the FTR (i.e., Sink LMP – Source LMP > 0), but does not charge the FTR Holder when this price difference is reversed (i.e., Sink LMP – Source LMP < 0).
<b><u>FTR Policy and Procedures Guide</u></b>	A document that provides the necessary detail for the FTR Auction process and the various policies and procedures associated with Firm Transmission Rights.
<b><u>FTR Secondary Market</u></b>	An FTR that pays the FTR Holder when the hourly Day-Ahead Locational Marginal Price at the Sink specified by the FTR is greater than the Locational Marginal Price at the Source specified by the FTR (i.e., Sink LMP – Source LMP > 0), and charges the FTR Holder when this price difference is reversed (i.e., Sink LMP – Source LMP < 0).
<b><u>Full Marginal Loss Rate</u></b>	A rate calculated by the ISO for each Generation and Scheduling Point location to determine the effect on total system Transmission Losses of injecting an increment of Generation at each such location to serve an equivalent incremental MW of Demand distributed proportionately throughout the ISO Control Area.

**Generating Unit**

An individual electric generator and its associated plant and apparatus whose electrical output is capable of being separately identified and metered or a Physical Scheduling Plant that, in either case, is:

- (a) located within the ISO Control Area;
- (b) connected to the ISO Controlled Grid, either directly or via interconnected transmission, or distribution facilities; and
- (c) that is capable of producing and delivering net Energy (Energy in excess of a generating station's internal power requirements).

**Generation**

Energy delivered from a Generating Unit.

**High Voltage  
Transmission Standby  
Serve**

Service provided by a Participating TO which allows a Standby Service Customer to utilize the Participating TO's High Voltage Transmission Facilities as a backup to ensure that Energy may be reliably delivered to the Standby Service Customer in the event of an outage of a Generating Unit located on or near the customer's premise.

**High Voltage Wheeling  
Access Charge**

The Wheeling Access Charge associated with the recovery of a Participating TO's High Voltage Transmission Revenue Requirements in accordance with Section 7.1.

**Historic Reference Period**

The most recent continuous 12-month period ending on a cut-off date, as determined by the ISO and noticed on the ISO Home Page, to allow the ISO a reasonable amount of time to perform the calculations required for the FTR allocation process, as described in the FTR Policy And Procedures Guide.

**Hour-Ahead**

Relating to an Hour-Ahead Market or an Hour-Ahead Schedule.

**Hour-Ahead Market**

The forward market for Energy and Ancillary Services to be supplied during a particular Settlement Period that is conducted by the ISO, the PX and other Scheduling Coordinators which opens after the ISO's acceptance of the Final Day-Ahead Schedule for the Trading Day in which the Settlement Period falls and closes with the ISO's acceptance of the Final Hour-Ahead Schedule.

**Hour-Ahead Schedule**

A Schedule prepared by a Scheduling Coordinator or the ISO before the beginning of a Settlement Period indicating the changes to the levels of Generation and Demand scheduled for that Settlement Period from that shown in the Final Day-Ahead Schedule.

**Hourly Capacity  
Reservation Costs**

Hourly Capacity Reservation Costs has the meaning set forth in Section 5.12.8.1.4.

**Hourly Curtailable  
Demand Costs**

Hourly Curtailable Demand Costs has the meaning set forth in Section 5.12.8.1.3.

**Network Service Rights**

Firm Transmission Rights that generalize Point-to-Point Rights by allowing multiple Sources and Sinks to be specified.

Network Service Rights are multipoint-to-multipoint rights.

Network Service Rights are offered only as FTR Obligations and do not have Day-Ahead scheduling priority.

**New Facility**

A planned or Existing Generating Unit that requests, pursuant to Section 5.7 of the ISO Tariff, to interconnect or modify its interconnection to the ISO Controlled Grid.

**New Facility License**

A license issued by a federal, state or Local Regulatory Authority that enables an entity to build and operate a Generating Unit.

**New Facility Operator**

The owner of a planned New Facility, or its designee.

**New Firm Used**

The amount of transfer capability left after apportioning Existing Rights not converted to FTRs, Converted Rights, and the various types and terms of FTRs.

**New High Voltage Facility**

A High Voltage Transmission Facility of a Participating TO that enters service after the beginning of the transition period described in Section 4 of Schedule 3 of Appendix F, or a capital addition made after the beginning of the transition period described in Section 4.1 of Schedule 3 of Appendix F to an Existing High Voltage Transmission Facility.

**New Participating TO**

A Participating TO that is not an Original Participating TO.

**Nomogram**

A set of operating or scheduling rules which are used to ensure that simultaneous operating limits are respected, in order to meet NERC and WSCC operating criteria.

**Non-Emergency Clearing  
Price**

The Market Clearing Price determined in accordance with  
Section 2.5.23.3.1.2.

**Non-Emergency Clearing  
Price Limit**

The limitation on Market Clearing Prices determined in  
accordance with Section 2.5.23.3.1.2.



**Participating TO**

A party to the TCA whose application under Section 2.2 of the TCA has been accepted and who has placed its transmission assets and Entitlements under the ISO's Operational Control in accordance with the TCA. A Participating TO may be an Original Participating TO or a New Participating TO.

**Pathway**

A network branch (or branch group) in a specified direction (from/to or import/export) with a specified transmission limit that is enforced in the ISO's Congestion Management process.

**Payment Date**

The date by which invoiced amounts are to be paid under the terms of the ISO Tariff.

**PBR (Performance-Based  
Ratemaking)**

Regulated rates based in whole or in part on the achievement of specified performance objectives.

**Physical Scheduling Plant**

A group of two or more related Generating Units, each of which is individually capable of producing Energy, but which either by physical necessity or operational design must be operated as if they were a single Generating Unit and any Generating Unit or Units containing related multiple generating components which meet one or more of the following criteria: i) multiple generating components are related by a common flow of fuel which cannot be interrupted without a substantial loss of efficiency of the combined output of all components; ii) the Energy production from one component necessarily causes Energy production from other components; iii) the operational arrangement of related multiple generating components determines the overall physical efficiency of the combined output of all components; iv) the level of coordination required to schedule individual generating components would cause the ISO to incur scheduling costs far in excess of the benefits of having scheduled such individual components separately; or

v) metered output is available only for the combined output of related multiple generating components and separate generating component metering is either impractical or economically inefficient.

**Planning Procedures**

Procedures governing the planning, expansion and reliable interconnection to the ISO Controlled Grid that the ISO may, from time to time, develop.

**Point-to-Point Rights**

Firm Transmission Rights that consist of balanced power transfers from a Source to a Sink. The Sources and Sinks for Point-to-Point Rights must be network nodes, Load Aggregation Points or Trading Hubs.

**PMS (Power Management System)**

The ISO computer control system used to monitor the real time performance of the various elements of the ISO Controlled Grid, control Generation, and perform operational power flow studies.

**Power Flow Model**

The computer software used by the ISO to model the voltages, power injections and power flows on the ISO Controlled Grid and determine the expected Transmission Losses and Generation Meter Multipliers.

**Preferred Day-Ahead Schedule**

A Scheduling Coordinator's Preferred Schedule for the ISO Day-Ahead scheduling process.

**Preferred Hour-Ahead Schedule**

A Scheduling Coordinator's Preferred Schedule for the ISO Hour-Ahead scheduling process.

**Preferred Schedule**

The initial Schedule produced by a Scheduling Coordinator that represents its preferred mix of Generation to meet its Demand. For each Generator, the Schedule will include the quantity of output, details of any Adjustment Bids, and the location of the Generator. For each Load, the Schedule will include the quantity of consumption, details of any Adjustment Bids, and the location of the Load. The Schedule will also specify quantities and location of trades between the Scheduling Coordinator and all other Scheduling Coordinators. The

**Scheduling Point**

A location at which the ISO Controlled Grid is connected, by a group of transmission paths for which a physical, non-simultaneous transmission capacity rating has been established for Congestion Management, to transmission facilities that are outside the ISO's Operational Control. A Scheduling Point typically is physically located at an "outside" boundary of the ISO Controlled Grid (e.g., at the point of interconnection between a Control Area utility and the ISO Controlled Grid). For most practical purposes, a Scheduling Point can be considered to be a Zone that is outside the ISO's Controlled Grid.

**Secondary Registration System**

The ISO-maintained system in which entities are required to record FTR Secondary Market transactions with the ISO and assign FTR scheduling rights to SCs.

**Security Monitoring**

The real time assessment of the ISO Controlled Grid that is conducted to ensure that the system is operating in a secure state, and in compliance with all Applicable Reliability Criteria.

**Self-Sufficiency Test Period**

For the initial Self-Sufficiency determination for a Participating TO, the Self-Sufficiency Test Period shall be the twelve-month period ending December 31, 1996. The Self-Sufficiency Test Period for a Participating TO undergoing a new Self-Sufficiency determination as a result of the termination or modification of an Existing Contract as referred in Section 7.1.3.2 of the ISO Tariff shall be the twelve-month period ending in the month prior to the month that the Existing Contract was terminated or modified.

**Service Area**

An area in which, as of December 20, 1995, an IOU or a Local Publicly Owned Electric Utility was obligated to provide electric service to End-Use Customers.

**Set Point**

Scheduled operating level for each Generating Unit or other resource scheduled to run in the Hour-Ahead Schedule.

<b><u>Severance Fee</u></b>	The charge or periodic charge assessed to customers to recover the reasonable uneconomic portion of costs associated with Generation-related assets and obligations, nuclear decommissioning, and capitalized Energy efficiency investment programs approved prior to August 15, 1996 and as defined in the California Assembly Bill No. 1890 approved by the Governor on September 23, 1996.
<b><u>Sink</u></b>	A Location at which Energy is withdrawn.
<b><u>Source</u></b>	A Location at which Energy is injected.
<b><u>Spinning Reserve</u></b>	The portion of unloaded synchronized generating capacity that is immediately responsive to system frequency and that is capable of being loaded in ten minutes, and that is capable of running for at least two hours.
<b><u>Standby Rate</u></b>	Means a rate assessed a Standby Service Customer by the Participating TO, as approved by the Local Regulatory Authority, or FERC, as applicable, for Standby Service which compensates the Participating TO, among other things, for costs of High Voltage Transmission Facilities.
<b><u>Standby Service</u></b>	Service provided by a Participating TO which allows a Standby Service Customer, among other things, access to High Voltage Transmission Facilities for the delivery of backup power on an instantaneous basis to ensure that Energy may be reliably delivered to the Standby Service Customer in the event of an outage of a Generating Unit serving the customer's Load.
<b><u>Standby Service Customer</u></b>	A retail End-Use Customer of a Participating TO that receives Standby Service and pays a Standby Rate.

**Standby Transmission  
Revenue**

The transmission revenues, with respect to cost of both High Voltage Transmission Facilities and Low Voltage Transmission Facilities, collected directly from Standby Service Customers through charges for Standby Service.

## ATTACHMENT H



**2.1.3 Facilities Financed by Local Furnishing Bonds or Other Tax-Exempt Bonds.**

**2.1.3.1** This Section 2.1.3 applies only to transmission facilities which are under the Operational Control of the ISO and are owned by a Local Furnishing Participating TO or other Tax Exempt Participating TO. Nothing in this ISO Tariff or the TCA shall compel (and the ISO is not authorized to request) any Local Furnishing Participating TO or other Tax Exempt Participating TO to violate: (1) restrictions applicable to facilities which are part of a system that was financed in whole or part with Local Furnishing Bonds or other Tax Exempt Debt or (2) the contractual restrictions and covenants regarding the use of any transmission facilities specified in Appendix B to the TCA.

**2.1.3.2** Each Local Furnishing Participating TO and other Tax Exempt Participating TO shall cooperate with and provide all necessary assistance to the ISO in developing an ISO Protocol to meet the objectives of Section 2.1.3.1 and shall keep the ISO fully informed of any changes necessary to that ISO Protocol from time to time.

**2.1.3.3** The ISO shall implement the ISO Protocol referred to in Section 2.1.3.1 provided that the Local Furnishing TOs and other Tax Exempt Participating TOs shall bear sole responsibility for the development of that ISO Protocol including the interpretation of all relevant legislation and the tax and other financial consequences of its implementation.

**2.2.1 Scheduling Responsibilities and Obligations.**

The provisions of this Section 2.2 shall govern the ISO's scheduling of Energy, Ancillary Services, and ACAP Resources on the ISO Controlled Grid and Congestion Management. Nothing in this ISO Tariff is intended to permit or require the violation of Federal or California law concerning hydro-generation and Dispatch, including but not limited to fish release

requirements, minimum and maximum dam reservoir levels for flood control purposes, and in-stream flow levels. In carrying out its functions, the ISO will comply with and will have the necessary authority to give instructions to Participating TOs and Market Participants to enable it to comply with requirements of environmental legislation and environmental agencies having authority over the ISO in relation to Environmental Dispatch and will expect that submitted Schedules will support compliance with the requirements of environmental legislation and environmental agencies having authority over Generators in relation to Environmental Dispatch. In contracting for Ancillary Services and Imbalance Energy the ISO will not act as principal but as agent for and on behalf of the relevant Scheduling Coordinators.

**2.2.2 ISO Scheduling Responsibilities.**

To fulfill its obligations with respect to scheduling Energy and Ancillary Services, and verifying the availability of adequate ACAP Resources to maintain system reliability, the ISO shall:

- (a) provide Scheduling Coordinators with operating information and system status on a Day-Ahead and Hour-Ahead, Zonal and/or Scheduling Point basis to enable Scheduling Coordinators to optimize Generation, Demand and the provision of Ancillary Services;
- (b) determine whether Preferred Schedules submitted by Scheduling Coordinators meet the requirements of Section 2.2.7.2, and whether they will cause Congestion;
- (c) prepare Suggested Adjusted Schedules on a Day-Ahead basis and Final Schedules on a Day-Ahead and Hour-Ahead basis;
- (d) validate all Ancillary Services bids and self provided Ancillary Services;

- (e) reduce or eliminate Congestion based on Adjustment Bids and in accordance with the Congestion Management procedures;
- (f) if necessary, make mandatory adjustments to Schedules in accordance with the Congestion Management procedures; and
- (g) determine Available Capacity Requirements for each Local Reliability Area and calculate corresponding Available Capacity Obligations(s) for each Load-Serving Scheduling Coordinator in a Local Reliability Area in accordance with the Reliability Assurance Requirements Protocol.

**2.2.3 Scheduling Coordinator Certification.**

The ISO shall accept Schedules and bids for Energy and Ancillary Services only from Scheduling Coordinators which it has certified in accordance with Section 2.2.4 as having met the requirements of this Section 2.2.3. Scheduling Coordinators scheduling Ancillary Services shall additionally meet the requirements of Section 2.5.6.

**2.2.3.1** Each Scheduling Coordinator shall:

- (a) demonstrate to the ISO's reasonable satisfaction that it is capable of performing the functions of a Scheduling Coordinator under this ISO Tariff including (without limitation) the functions specified in Sections 2.2.6 and 2.2.7 and that it is capable of complying with the requirements of all ISO Protocols;
- (b) identify each of the Eligible Customers (including itself if it trades for its own account) which it is authorized to represent as Scheduling Coordinator and confirm that the metering requirements under Section 10 are met in relation to each Eligible Customer for which it is submitting bids under this ISO Tariff;

- (c) confirm that each of the End-Use Customers it represents is eligible for Direct Access and identify each of the Load-Serving Entities (including itself, if it trades on its own account) which it is authorized to represent as a Scheduling Coordinator;
- (d) confirm that none of the Wholesale Customers it represents is ineligible for wholesale transmission service pursuant to the provisions of FPA Section 212(h);

Access Charge and Transition Charge. A Scheduling Coordinator, UDC or MSS may at any time increase its ISO Security Amount by providing additional guarantees or credit support in accordance with Section 2.2.3.2. A Scheduling Coordinator, UDC or MSS may reduce its ISO Security Amount by giving the ISO not less than fifteen (15) days notice of the reduction, provided that the Scheduling Coordinator, UDC or MSS is not then in breach of this Section 2.2.7.3. The ISO shall release, or permit a reduction in the amount of, such guarantees or other credit support required to give effect to a permitted reduction in the ISO Security Amount as the Scheduling Coordinator, UDC or MSS may select.

Following the date on which a Scheduling Coordinator commences trading, the Scheduling Coordinator shall not be entitled to submit a Schedule to the ISO and the ISO may reject any Schedule submitted if, at the time of submission, the Scheduling Coordinator's ISO Security Amount is exceeded by the Scheduling Coordinator's estimated aggregate liability for (i) Grid Management Charge, (ii) Imbalance Energy, Ancillary Services, Grid Operations Charge, Wheeling Access Charge, Usage Charges, and FERC Annual Charges, or (iii) deficiency charges assessed under the Reliability Assurance Requirements Protocol on each Trading Day for which Settlement has not yet been made in accordance with Section 11.3.1 and the Scheduling Coordinator's estimated liability for High Voltage Access Charge and Transition Charge for which Settlement has not yet been made in accordance with Section 11.3. The ISO shall notify a Scheduling Coordinator if at any time such outstanding liabilities exceed 90% of the relevant portion of the ISO Security Amount. For the purposes of calculating the Scheduling Coordinator's estimated aggregate liability, the estimate shall include (1) outstanding charges for Trading Days for which Settlement data is available, and (2) an estimate of charges for Trading Days for which Settlement data is not yet available. To estimate charges for Trading Days for which Settlement data is not yet available, the ISO will consider available historical Settlement data, appropriately adjusted to reflect recent market prices and trends, or other available information for individual Scheduling Coordinators.

**2.3.2.9.3 Imposing Sanctions.** If the ISO finds that the operation and maintenance practices of any Participating TOs, Participating Generators, Eligible Customers, or UDCs prolonged the response time or contributed to the Outage, the ISO may impose sanctions on the responsible Participating TOs, Participating Generators, Eligible Customers, or UDCs provided that no sanction shall be imposed in respect of actions taken in compliance with the ISO's instructions or pursuant to a Remedial Action Scheme. The ISO shall develop and file with FERC a schedule of such sanctions. Any dispute concerning whether sanctions should be imposed under this Section shall be resolved through the ISO ADR Procedures. The schedule of sanctions filed with FERC (including categories and levels of sanctions) shall not be subject to the ISO ADR Procedures. The ISO shall publish on the ISO Home Page details of all instances in which a sanction has been imposed.

**2.3.3 Coordination of Outages and Maintenance.**

**2.3.3.1 ISO Outage Coordination Office.** The ISO Outage Coordination Office shall be established by the ISO and shall coordinate and approve Maintenance Outages of: (i) all facilities that comprise the ISO Controlled Grid and (ii) Participating Generators. The ISO shall additionally coordinate and approve Outages required for new construction and for work on de-energized and live transmission facilities (e.g., relay maintenance or insulator washing) and associated equipment.

**2.3.3.2 Requirement for Approval.** An Operator shall not take: (i) facilities that comprise the ISO Controlled Grid, (ii) facilities that are ACAP Resources or (iii) Participating Generators out of service for the purposes of planned maintenance or for new construction or other work except as approved by the ISO Outage Coordination Office.

**2.3.3.3 Requests for Outages in Real Time Operation.** Requests for Outages of: (i) facilities that comprise the ISO Controlled Grid, (ii) facilities that are ACAP Resources, or (iii) Participating Generators in real time operation shall be made by the Operator to the ISO Control Center. The ISO will not approve any Outage request made within seventy-two (72) hours of the requested Outage start time unless: (i) the requested Outage could not have been reasonably foreseen and scheduled through the Outage coordination process provided in Section 2.3.3; and (ii) the requested Outage will not compromise ISO Controlled Grid reliability.

**2.3.3.4 Single Point of Contact.** Requests for approvals and coordination of all Maintenance Outages (consistent with Section 2.3.3.1) will be through a single point of contact between the ISO Outage Coordination Office and each Operator. The single point of contact for the ISO and each Operator will be specified from time to time by the Operator and the ISO pursuant to the detailed procedures referred to in Section 2.3.3.5.

**2.3.3.5 Maintenance Outage Planning.** Each Operator shall, by not later than October 15 each year, provide the ISO with a proposed schedule of all Maintenance Outages it wishes to undertake in the following year. The proposed schedule shall include all of the Operator's transmission facilities that comprise the ISO Controlled Grid and Participating Generators. In the case of a Participating TO's transmission facilities, that proposed schedule shall be developed in consultation with the UDCs interconnected with that Participating TO's system and shall take account of each UDC's planned maintenance requirements. The nature of the information to be provided and the detailed Maintenance Outage planning procedure shall be established by the ISO and set out in an ISO Protocol. Either the ISO, pursuant to Section 2.3.3.6, or an Operator, subject to Section 2.3.3.5.4, may at any time request a change to an Approved

**ACAP Resource**

Means megawatts of net capacity from owned, or contracted for, Qualified Generation, Qualified Interruptible Load, Qualified Contract Resource, or Qualified Portfolio all of which are accredited pursuant to the procedures set forth or referenced in RARP 6 and RARP Appendix B below and which otherwise qualify to satisfy Load Serving Entities' Available Capacity Obligations established in this Protocol.

**Access Charge**

A charge paid by all UDCs, MSSs and, in certain cases, Scheduling Coordinators, delivering Energy to Gross Load, as set forth in Section 7.1. The Access Charge includes the High Voltage Access Charge, the Transition Charge and the Low Voltage Access Charge. The Access Charge will recover the Participating TO's Transmission Revenue Requirement in accordance with Appendix F, Schedule 3. A Participating TO that has no transmission customers need not develop an Access Charge.

**Active Zone**

The Zones so identified in Appendix I to the ISO Tariff.

**Actual Imbalance**

A deviation between scheduled Generation and metered Generation at each UDC/ISO Controlled Grid boundary or at each Participating Generator's delivery point or a deviation between scheduled Load and metered Load at each UDC/ISO Controlled Grid boundary or ISO Control Area boundary.



**Adjustment Bid**

A bid in the form of a curve defined by (i) the minimum MW output to which a Scheduling Coordinator will permit a resource (Generating Unit or Dispatchable Load) included in its Schedule or, in the case of an Inter-SC Trade, included in its Schedule or the Schedule of another Scheduling Coordinator, to be redispatched by the ISO; (ii) the maximum MW output to which a Scheduling Coordinator will permit the resource included in its Schedule or, in the case of an Inter-SC Trade, included in its Schedule or the Schedule of another Scheduling Coordinator, to be redispatched by the ISO; (iii) up to a specified number of MW values in between; (iv) a preferred MW operating point; and (v) for the ranges between each of the MW values greater than the preferred operating point, corresponding prices (in \$/MWh) for

**Available Capacity  
Obligation**

Means, depending upon the context, a MACO, a DACO, or both, as described in RARP Section 2

**Available Transfer  
Capacity**

For a given transmission path, the capacity rating in MW of the path established consistent with ISO and WSCC transmission capacity rating guidelines, less any reserved uses applicable to the path.

**Balanced Schedule**

A Schedule shall be deemed balanced when Generation, adjusted for Transmission Losses equals forecast Demand with respect to all entities for which a Scheduling Coordinator schedules.

**Balancing Account**

An account set up to allow periodic balancing of financial transactions that, in the normal course of business, do not result in a zero balance of cash inflows and outflows.

**Base Transmission  
Revenue Requirements**

The Transmission Revenue Requirement adjusted to reflect the Transmission Revenue Balancing Account Adjustment (TRBAA).

**BEEP Interval**

The time period, which may range between five (5) and thirty (30) minutes, over which the ISO's BEEP Software measures deviations in Generation and Demand, and selects Ancillary Service and Supplemental Energy resources to provide balancing Energy in response to such deviations. As of the ISO Operations Date, the BEEP Interval shall be ten (10) minutes. Following a decision, by the ISO Governing Board, the ISO may, by seven (7) days' notice published on the ISO's Home Page, at <http://www.caiso.com> (or such other internet address as the ISO may publish from time to time), increase or decrease the BEEP Interval within the range of five (5) to thirty (30) minutes.

**ISO Grid Operations  
Committee**

A committee appointed by the ISO Governing Board pursuant to Article IV, Section 4 of the ISO bylaws to advise on additions and revisions to its rules and protocols, tariffs, reliability and operating standards and other technical matters.

**ISP (Internet Service  
Provider)**

An independent network service organization engaged by the ISO to establish, implement and operate Wenet.

**Load**

An end-use device of an End-Use Customer that consumes power. Load should not be confused with Demand, which is the measure of power that a Load receives or requires.

**Load Serving Scheduling  
Coordinator or LSSC**

Any Scheduling Coordinator representing a LSE.

**Load Shedding**

The systematic reduction of system Demand by temporarily decreasing the supply of Energy to Loads in response to transmission system or area capacity shortages, system instability, or voltage control considerations.

**Local Furnishing Bond**

Tax-exempt bonds utilized to finance facilities for the local furnishing of electric energy, as described in section 142(f) of the Internal Revenue Code, 26 U.S.C. § 142(f).

**Local Furnishing  
Participating TO**

Any Tax-Exempt Participating TO that owns facilities financed by Local Furnishing Bonds.

**Local Publicly Owned  
Electric Utilities**

A municipality or municipal corporation operating as a public utility furnishing electric service, a municipal utility district furnishing electric service, a public utility district furnishing electric services, an irrigation district furnishing electric services, a state agency or subdivision furnishing electric services, a rural cooperative furnishing electric services, or a joint powers authority that includes one or more of these agencies and that owns Generation or transmission facilities, or furnishes electric services over its own or its members' electric Distribution System.

**Local Reliability Area or  
LRA**

Means an area within the ISO Control Area that, due to transmission constraints (or other constraints), must rely on local generation to meet demand in the area and to ensure reliable system operation. LRAs are used by the ISO for assessing needs for local generation services to support reliability. A LRA is defined by the transmission constraints into and out of the area and the Operating Procedures and Nomograms used by the ISO to manage the area in real time. The existing LRAs are listed in RARP Appendix A.

**DEMAND FORECASTING PROTOCOL (DFP)**

**DFP 1 Objectives, Definitions and Scope**

**DFP 1.1 Objectives**

The objective of the DFP is to set forth procedures for submission of Demand Forecasts which will provide information to the ISO for projecting future Demand requirements to be served by the ISO Controlled Grid. The ISO shall utilize such forecasts to enable it to assess system reliability, preserve system security, and ensure short-term availability of adequate resources, and to carry out its functions under the Scheduling Protocol (SP), the Reliability Assurance Requirements Protocol (RARP) and the Outage Coordination Protocol (OCP).

**DFP 1.2 Definitions**

**DFP 1.2.1 Master Definitions Supplement**

Any word or expression defined in the Master Definitions Supplement to the ISO Tariff shall have the same meaning where used in this Protocol. A reference to a Section or an Appendix refers to a Section or an Appendix of the ISO Tariff unless otherwise indicated. References to DFP are to this Protocol or to the stated paragraph of this Protocol.

**DFP 1.2.2 Special Definitions for this Protocol**

In this Protocol, the following words and expressions shall have the meaning set opposite them:

**“Annual Peak Demand Forecast”** means a Demand Forecast of the highest Hourly Demand in any hour in a calendar year, in MW.

**“Congestion Zone”** means a Zone identified as an Active Zone in Appendix I of the ISO Tariff.

**“Hourly Demand”** means the average of the instantaneous Demand integrated over a single clock hour, in MW.

**“ISO Home Page”** means the ISO internet home page at <http://www.caiso.com/iso> or such other internet address as the ISO shall publish from time to time.

**“Weekly Peak Demand Forecast”** means a Demand Forecast of the highest Hourly Demand in any hour in a period beginning at the start of the hour ending 0100 on Sunday and ending at the end of the hour ending 2400 the following Saturday, in MW.

**DFP 1.2.3 Rules of Interpretation**

- (a) Unless the context otherwise requires, if the provisions of this Protocol and the ISO Tariff conflict, the ISO Tariff will prevail to the extent of the inconsistency. The provisions of the ISO Tariff have been summarized or repeated in this Protocol only to aid understanding.
- (b) A reference in this Protocol to a given agreement, ISO Protocol or instrument shall be a reference to that agreement or instrument as modified, amended, supplemented or restated through the date as of which such reference is made.
- (c) The captions and headings in this Protocol are inserted solely to facilitate reference and shall have no bearing upon the interpretation of any of the terms and conditions of this Protocol.
- (d) This Protocol shall be effective as of the ISO Operations Date.

**DFP 1.3 Scope**

**DFP 1.3.1 Scope of Application to Parties**

The DFP applies to the following entities:

- (a) Scheduling Coordinators (SCs);
- (b) Load-Serving Entities (LSEs), as represented by Load Serving Scheduling Coordinators (LSSCs);
- (c) Utility Distribution Companies (UDCs); and
- (d) the ISO.

**DFP 1.3.2 Liability of the ISO**

Any liability of the ISO arising out of or in relation to this Protocol shall be subject to Section 14 of the ISO Tariff as if references to the ISO Tariff were references to this Protocol.

**DFP 2 Scheduling Coordinator Twelve-Month Demand Forecast Responsibilities**

**DFP 2.1 Twelve-Month Data to be Submitted to the ISO by SCs**

At the time specified in DFP 2.3, each SC shall submit to the ISO its Monthly Peak Demand Forecast by Congestion Zone reflecting the Monthly Peak Demand Forecasts of the Load-Serving Entities that it proposes to Schedule. All Monthly Peak Demand Forecasts submitted shall include Demand Forecasts for the following 12 months.

**DFP 2.2 Format of Demand Forecasts**

Demand Forecasts must be submitted to the ISO electronically in the format set forth in Schedule 1 of this Protocol.

**DFP 2.3            Timing of Submission of Demand Forecasts**

The Demand Forecasts described in DFP 2.1 shall be submitted by SCs to the ISO on a monthly basis by noon of the 18th working day of the month.

**DFP 2.4            Forecast Standards**

**DFP 2.4.1        Avoiding Duplication**

SCs submitting Demand Forecasts to the ISO shall ensure, to the best of their ability, that any Demand they are forecasting is not included in another SC's Demand Forecasts. To accomplish this, each SC's Demand Forecasts should only reflect those End-Use Customers who they actually have under contract and who have notified their UDC or previous SC of their intention to change to another SC, and which are actually scheduled to convert.

**DFP 2.4.2        Required Performance**

Each SC submitting its Demand Forecasts to the ISO shall take all necessary actions to provide Demand Forecasts that reflect the best judgment of the submitting SC to help avoid potential System Reliability concerns and to enable the ISO to administer a meaningful market for Energy and Ancillary Services and to ensure the reliability of the ISO Controlled Grid. From time to time the ISO may publish information on the accuracy of SC Demand Forecasts.

**DFP 2.4.3        Incomplete or Unsuitable Demand Forecasts**

If the Demand Forecasts supplied by a SC to the ISO are, in the ISO's opinion, incomplete or otherwise unsuitable for use, or a particular Demand Forecast has not been supplied by a SC to the ISO as required under this Protocol, the ISO will substitute the last valid Demand Forecast received from the SC in replacement for any incomplete, unsuitable or not supplied Demand Forecasts, adjusted as the ISO sees fit.

**DFP 3             Scheduling Coordinators Seven-Day Forecast Responsibilities**

**DFP 3.1           Seven-Day Data to be Submitted to the ISO by SCs**

At the time specified in DFP 3.3, each UDC shall submit to the ISO its Daily Peak Demand Forecasts by Congestion Zone reflecting the Daily Peak Demand Forecast for load expected to be served by resources under the control of a represented LSE or UDC. All Daily Peak Demand Forecasts submitted shall include Demand Forecasts for the following seven days.

**DFP 3.2           Format of Demand Forecasts**

Demand Forecasts must be submitted to the ISO electronically in the format set forth in Schedule 2 of this Protocol.

**DFP 3.3            Timing of Submission of Demand Forecasts**

The Demand Forecasts described in DFP 3.1 shall be submitted by each SC to the ISO by 10 A.M. each day.

**DFP 3.4            Forecast Standards**

**DFP 3.4.1        Avoiding Duplication**

Each SC submitting Demand Forecasts to the ISO shall ensure, to the best of its ability, that any Demand Forecasts that it is submitting to the ISO are not duplicated in another SC's Demand Forecasts.

**DFP 3.4.2        Required Performance**

Each SC submitting its Demand Forecasts to the ISO shall take all necessary actions to provide Demand Forecasts that reflect the best judgment of the submitting SC to help avoid potential System Reliability concerns and to enable the ISO to administer a meaningful market for Energy and Ancillary Services and to ensure the reliability of the ISO Controlled Grid. The ISO may publish information on the accuracy of SC Demand Forecasts from time to time.

**DFP 4             ISO Responsibilities**

**DFP 4.1         Advisory Control Area Demand Forecasts**

The ISO will publish on WEnet and supply to the SCs advisory Control Area Demand Forecasts comprised of Hourly Demand Forecasts for each Congestion Zone for each Settlement Period of the relevant Trading Day. The ISO will publish this information in accordance with the timing requirements set forth in the SP and the RARP.

**DFP 4.2         ISO Demand Forecasts**

The ISO shall publish monthly on WEnet the following two (2) Demand Forecasts for the next twelve months.

- (i)            Consolidated SC Forecast. This forecast will be developed by adding together the Monthly Peak Demand Forecasts of the individual SCs.
- (ii)          Independent ISO Forecast. This forecast will be developed by the ISO.

The ISO may, at its discretion, publish on WEnet additional Demand Forecasts for two or more years following the next year.



**SCHEDULE 1**

**SC MONTHLY DEMAND FORECAST FORMAT**

**SC Twelve Month Load Forecast (for the next twelve months)**

This template is used to post 52 Weeks Load Forecast.

- (a) SC's ID code
- (b) Forecast Monthly Maximum Generation capacity for each of the next twelve months
- (c) Forecast Monthly Peak Demand for each of the next twelve months

**SCHEDULE 2**  
**SC DEMAND FORECAST FORMAT**

**SC/UDC Direct-Access Load Forecast**

This template is for use by the SCs to forecast their direct-access loads for each UDC. The forecast must be for seven future days starting with the current Day-Ahead Market.

- (a) SC's ID code
- (b) Trading Day of current Day-Ahead Market (month/day/year)
- (c) UDC's ID code
- (d) Hourly Demand Forecast for the 168 hours beginning with the first hour of the current Day-Ahead Market

- (f) the amount due from each Scheduling Coordinator for Wheeling Out and Wheeling Through Charges and the amount owed to each Participating TO for these charges in accordance with Appendix F, for each of the Settlement Periods of Day 0.
- (g) the amounts due from/to Scheduling Coordinators for Voltage Support (supplemental reactive power charges) for each of the Settlement Periods of Day 0 in accordance with Appendix G.
- (h) the monthly charges due from/to Scheduling Coordinators for long term voltage support provided by Owners of Reliability Must-Run Units in accordance with Appendix G.
- (i) the amounts due from/to Scheduling Coordinators for the provision of Black Start Energy from Reliability Must-Run Units for each of the Settlement Periods of Day 0 in accordance with Appendix G.
- (j) the amounts due from/to Black Start Generators for the provision of Black Start Energy for each of the Settlement Periods of Day 0 in accordance with Appendix G.
- (k) the amount due from each UDC or MSS, or from a Scheduling Coordinator delivering Energy for the supply of Gross Load not directly connected to the facilities of a UDC or MSS, for the High Voltage Access Charge and Transition Charge in accordance with operating procedures posted on the ISO Home Page. These charges shall accrue on a monthly basis.
- (l) the amounts due from Scheduling Coordinators for FERC Annual Charges.
- (m) the amount due from or to Load Serving Scheduling Coordinators for the costs associated with the monthly and daily ACAP deficiency charges in accordance with Section 7 of the Reliability Assurance Requirements Protocol.

All of the data, information, and estimates the ISO uses to calculate these amounts shall be subject to the auditing requirements of Section 10.5 of the ISO Tariff.

The ISO shall calculate these amounts using the software referred to in SABP 2.1 except in cases of system breakdown when it shall apply the procedures set out in SABP 9 (Emergency Procedures).

### **SABP 3.1.1**

#### **Additional Charges and Payments**

The ISO shall be authorized to levy additional charges or payments as special adjustments in regard to:

- (a) amounts required to round up any invoice amount expressed in dollars and cents to the nearest whole dollar amount in

order to clear the ISO Clearing Account. These charges will be allocated amongst Scheduling Coordinators over an interval determined by the ISO and pro rata based on metered Demand (including exports) during that interval;

- (b) amounts in respect of penalties which may be levied by the ISO in accordance with the ISO Tariff. These charges will be levied on the Market Participants liable for payment of the penalty; and
- (c) amounts required to reach an accounting trial balance of zero in the course of the Settlement process in the event that the charges calculated as due from ISO Debtors are lower

# **RELIABILITY ASSURANCE** **REQUIREMENTS PROTOCOL**

Issued by: Charles F. Robinson, Vice President and General Counsel  
Issued on: June 28, 2002

Effective: January 1, 2004

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## **RELIABILITY ASSURANCE REQUIREMENTS** **PROTOCOL (RARP)**

### **RARP 1      OBJECTIVES, DEFINITIONS AND SCOPE**

#### **RARP 1.1      Objectives**

- (a)      The ISO must provide all necessary support to its core function of providing non-discriminatory and reliable transmission service to all customers.
- (b)      The ISO must ensure that adequate ACAP Resources will be available to provide reliable service to loads within the ISO Control Area, to assist Load Serving Entities during System Emergencies and to coordinate planning of resources relied on to meet Load Serving Scheduling Coordinators' Available Capacity (ACAP) Obligations.
- (c)      The ISO seeks to implement this Protocol in a manner consistent with the development of a robust competitive marketplace.
- (d)      The ISO seeks to ensure efficient use and reliable operation of the transmission grid consistent with the achievement of planning and operating reserve criteria no less stringent than those established by the Western Electricity Coordinating Council, consistent with the ISO's statutory mandate.
- (e)      This Protocol requires every entity which is or will become a Load Serving Scheduling Coordinator to procure, in a forward market timeframe, resources sufficient to satisfy the ISO's peak monthly and daily operating requirements. This Protocol imposes such obligation through the Scheduling Coordinators who schedule for Load Serving Entities.

- (f) This Protocol directs each Load-Serving Scheduling Coordinator to share Available Capacity with other LSSCs to reduce the overall Capacity Reserve requirements for LSSCs while maintaining reliability on the ISO Controlled Grid.
- (g) This Protocol describes the ISO's determination of its peak monthly and daily capacity requirements.
- (h) This Protocol sets forth standards for certifying the capability of a resource to meet the ISO's monthly and daily capacity requirements.
- (i) The ISO does not intend by means of this Protocol to duplicate or assume any of the functions or responsibilities already performed by other entities in California.
- (j) This Protocol does not intend to abridge, alter or otherwise affect the System Emergency powers that the ISO may exercise pursuant to Section 4.5 of the ISO Tariff.

**RARP 1.2 Definitions**

**RARP 1.2.1 Master Definitions Supplement**

Unless the context otherwise requires, any word or expression defined in the Master Definitions Supplement to the ISO Tariff has the same meaning where used in this Protocol. A reference to a Section or an Appendix is to a Section or an Appendix of the ISO Tariff. References to RARP are to this Protocol or to the stated paragraph of, or Appendix to, this Protocol.

**RARP 1.2.2 Special Definitions for this Protocol**

In this Protocol, terms have the meaning set forth below:

**"ACAP Requirement"** has the meaning set forth in RARP 2.2.

**"ACAP Supplier"** means, depending upon the context, either (i) an entity with a contractual obligation with an LSE to have ready and make available, as called upon by the ISO, electric energy from a ACAP

Resource (and if the ACAP Resource is a long-start unit, offer its capacity in the Day-ahead market and the RUC process) or (ii) an entity, including a LSE that owns or controls a ACAP Resource, sponsoring the certification of a resource as a ACAP Resource for the purpose of entering into such a contractual obligation. All such contracts, must, at minimum meet the criteria for the certification of the underlying resource as a ACAP Resource set forth in Appendix B.

**“ACAP Supplier Scheduling Coordinator or ASSC”** means any Scheduling Coordinator responsible for the operation and performance of a ACAP Resource during the Operating Hour (in real-time). Depending on the contractual agreements between the ACAP Supplier and the Load Serving Entity, the ASSC may also be responsible for availability of the relevant ACAP Resource after the day-ahead market, i.e., for its participation in the Residual Unit Commitment (RUC) process, the Hour-ahead Energy and Ancillary Service markets, and Pre-dispatch/real-time.

**“Capacity Reserve Deficiency Hour”** means any hour during which the total available amount of available capacity is less than the load plus the Daily Reserve Margin (DRM).

**“Credible Demand Resource”** (CDR) means an amount of load nominated by an ACAP-deficient LSE that is subject to involuntary curtailment during Capacity Reserve Deficiency Hours. The Credible Demand Resource limit is based on the represented Load Serving Entity’s historical load, and is calculated as the level exceeded in 95 percent of the hours during the corresponding months in a relevant historical reference period.

**“Daily Available Capacity Obligation or DACO”** has the meaning set forth in RARP 2.4.

**“Daily Reserve Margin or DRM”** has the meaning set forth in RARP 2.1.2 and is calculated in accordance with the method provide in RARP Appendix C.

**“Effective Date”** means, January 1, 2004 or such other date deemed appropriate by the ISO Governing Board and approved by the FERC.

**“Force Majeure”** means any act of God, labor disturbance, act of public enemy, war, insurrection, riot, fire, storm or flood, explosion, breakage or accident to machinery or equipment, any curtailment, order, regulation or restriction imposed by governmental military or lawfully established civilian authorities, or any other cause beyond a Load Serving Scheduling Coordinator's control. No Load Serving Scheduling Coordinator shall be considered in default as to any obligation under this Protocol if prevented from fulfilling the obligation due to an event of Force Majeure. However, a Load Serving Scheduling Coordinator whose performance under this Protocol is hindered by an event of Force Majeure shall make all reasonable efforts to perform its obligations under this Protocol.

**“Monthly Available Capacity Obligation or MACO”** has the meaning set forth in RARP 2.3.

**“Monthly Reserve Margin or MRM”** has the meaning set forth in RARP 2.1.1 and is calculated accorded the method provided in RARP Appendix C.

**“Outage Incidence”** has the meaning as the term is used in RARP 8.2.1.

**“Qualified Contract Resource”** means capacity made available by contract to a LSSC or Load Serving Entity and which is certified as a qualifying ACAP Resource by the ISO in accordance with Appendix B.

**“Qualified External Resource”** means capacity made available from outside the ISO Control Area which is certified as a qualifying ACAP Resource by the ISO in accordance with Appendix B.

**“Qualified Generation”** means a generation facility which is certified as a qualifying ACAP Resource by the ISO in accordance with Appendix B.

**“Qualified Interruptible Load or QIL”** means load (including pumped storage hydroelectric generation in the pumping mode) subject by contract to interruption by the ISO and which is certified as a qualifying ACAP Resource by the ISO in accordance with Appendix B.

**“Qualified Portfolio”** means a portfolio of ACAP Resources consisting of Qualified Generation and Qualified Interruptible Load as defined in Appendix B.

**“Related Load Serving Entities”** means, solely for purposes of the cost responsibility provisions of this Protocol any joint municipal agency and one of its members. For purposes of this Protocol, representatives of state or federal government agencies will not be deemed Related Load Serving Entities with respect to each other, and a public body’s regulatory authority over an entity will not render it a Related Load Serving Entity with respect to such entity.

**“Reliability Must-Run Phase-Out Period”** means the period from the Effective Date until January 1, 2006 or until such other date upon which, subject to the approval of the ISO Governing Board, the ISO declares that this Reliability Must-Run Phase-Out Period is expired.

**“Special Resource Plan”** has the meaning set forth in RARP 4.5.

### **RARP 1.2.3 Rules of Interpretation**

- (a) Unless the context otherwise requires, if the provisions of this Protocol and the ISO Tariff conflict, the ISO Tariff will prevail to the extent of the inconsistency. The provisions of the ISO Tariff have been summarized or repeated in this Protocol only to aid understanding.

- (b) A reference in this Protocol to a given Protocol, ISO Protocol or instrument will be a reference to that Protocol or instrument as modified, amended, supplemented or restated through the date as of which such reference is made.
- (c) The captions and headings in this Protocol are inserted solely to facilitate reference and will have no bearing upon the interpretation of any of the terms and conditions of this Protocol.

**RARP 1.3 Effective Date**

This Protocol has no force or effect prior to the Effective Date.

**RARP 1.4 Scope**

This Protocol applies to the ISO and to the following:

- (a) Scheduling Coordinators,
- (b) Load Serving Entities,
- (c) ACAP Suppliers, and
- (d) ACAP Resources

**RARP 2 AVAILABLE CAPACITY OBLIGATIONS**

**RARP 2.1 Calculation of Reserve Margins**

**RARP 2.1.1 Calculation of Monthly Reserve Margin (MRM)**

The ISO will establish a Monthly Reserve Margin, which generally means the percentage level of capacity determined by the ISO to be needed in excess of the amount of capacity needed to provide energy equal to the ISO's forecast monthly peak load. The ISO will determine such need in accord with the objectives of this Protocol set forth in RARP 1.1 and in reference to its interpretation of the standards set forth in the Minimum Operating Reliability Criteria (MORC) of the WECC and the Criteria set forth by the NERC to the extent that they

are applicable to the ISO Controlled Grid. The specified method used by the ISO for determining the Monthly Reserve Margin is set forth in RARP Appendix C.

**RARP 2.1.2 Calculation of Daily Reserve Margin (DRM)**

The ISO will establish a Daily Reserve Margin, which generally means the percentage level of capacity determined by the ISO to be needed in excess of the amount of capacity needed to provide energy equal to the ISO's forecast day-ahead peak load. The ISO will determine such need in accord with the objectives of this Protocol set forth in RARP 1.1 and in reference to its determination of the corresponding MRM. The specified method used by the ISO for determining the Daily Reserve Margin is set forth in RARP Appendix C.

**RARP 2.2 Calculation of ACAP Requirements**

**RARP 2.2.1 Determination of System Base Available Capacity Requirement**

The ISO will first determine a base available capacity requirement for the ISO Control Area in megawatts equal to the product of: (i) the monthly peak load for the ISO Control Area and (ii) the quantity one (1) plus the Monthly Reserve Margin. The system base available capacity requirement shall be determined so as to ensure a loss of load probability (LOLP) of no more than 1 day in 10 years.

**RARP 2.2.2 Determination of ACAP Requirement for Each LRA**

The ISO will then determine the ACAP Requirement for each LRA by calculating the product of: (i) the base available capacity requirement determined pursuant to RARP 2.2.1 and (ii) the ratio of the LRA's historical coincident monthly peak to the total system forecast monthly peak.

**RARP 2.3 Calculation of Monthly Available Capacity Obligation (MACO).**

For each Load Serving Scheduling Coordinator that the ISO anticipates will serve load in a Local Reliability Area during a future month, the ISO will calculate a Monthly Available Capacity Obligation by determining the amount in megawatts equal to the product of: (i) the ratio of the sum of the historical coincident monthly peak loads of the Load Serving Entity(s) represented by the LSSC to the historical peak load for the LRA and (ii) the LRA's ACAP Requirement. Consequently, a single Load Serving Scheduling Coordinator may have multiple MACOs (i.e., a separately derived MACO in every LRA in which it represents load). For purposes of determining a Load Serving Scheduling Coordinator's historical contribution to the peak load of an LRA, the ISO will use historical load data provided by the Load Serving Scheduling Coordinator and the Load Serving Entities represented by the LSSC, as appropriately adjusted in accordance with RARP 2.3.1. For purposes of determining a Load Serving Scheduling Coordinator's historical contribution to the peak load of an LRA, the ISO will use load data from the same calendar month (e.g., for purposes of determining the MACO for November 2004, the ISO will utilize historical load data from November 2003 and other years, as appropriate).

The MACO is established for the peak hours of the month, and is defined as the number of hours during the forecast month when the system load forecast exceeds ninety-five percent of the monthly system peak load forecast.

**RARP 2.3.1 Adjustments for New and Departing Customers**

To the extent that the ISO deems it practical, the ISO shall assign an estimated peak load to a new customer coincident with the peak load in the LRA, and, accordingly, shall prospectively calculate all MACOs for LSSCs active in the LRA.

Upon receipt of notice and reasonable supporting documentation acceptable to the ISO from an LSSC that a customer included in the



calculation of such LSSC's MACO has requested disconnection of service, the ISO shall, where it deems practical and appropriate, subtract the amount appropriately attributable to the disconnected customer from such LSSC's MACO. The ISO shall, within three business days after its receipt of such notice and documentation from an LSSC, provide a response (i) specifying an approved adjustment to such LSSC's MACO, (ii) denying an adjustment as impractical and/or inappropriate, or (iii) stating the reasons that the supporting documentation provided is inadequate.

**RARP 2.3.2 Transitional Adjustment to MACOs for Reliability Must-Run Generation**

During each calendar month of the Reliability Must-Run Phase-Out Period in each LRA where an amount in megawatt-hours of Reliability Must-Run Generation may be called upon by the ISO pursuant to an RMR Contract, the ISO will subtract such amount from the ACAP Requirement for each LRA. Upon expiration of the Reliability Must-Run Phase-Out Period, this Section shall have no further force or effect.

**RARP 2.4 Calculation of Daily Available Capacity Obligation (DACO)**

The ISO will calculate the Daily Available Capacity Obligation by determining the amount in megawatts equal to the product of: (i) the quantity (1) plus the Daily Reserve Margin, (ii) the ISO's day-ahead peak load forecast, (iii) the LRA's share of the system peak load, and (iv) the Load Serving Entity's daily forecast coincident with the daily peak for the applicable LRA. As in the case of MACOs, a single Load Serving Entity may generate multiple DACOs.

The DACO of each LSE shall be capped at the LSE's MACO.

**RARP 2.5 Resources Qualifying to Meet Available Capacity Obligations**

Only specific resources pre-certified by the ISO in accordance with RARP 6 and Appendix B shall qualify for use by a Load Serving Scheduling Coordinator to meet its Available Capacity Obligation.

**RARP 2.6 Review of Available Capacity Obligations**

**RARP 2.6.1 Grid Operations Committee Review**

The Grid Operations Committee will periodically undertake a review of the ISO Controlled Grid operations and the Available Capacity Obligations imposed by this Protocol and may recommend to the ISO Governing Board that the ISO Governing Board, at its discretion, amend such obligation. The Grid Operations Committee also will conduct such periodic reviews to accommodate revisions to WECC and NERC standards.

The Grid Operations Committee will also establish any restrictions on the total amount of ACAP that can be supplied from a local area (e.g., generation pocket) to satisfy ACAP obligation of LSEs outside the local area.

**RARP 2.6.2 Contents of Grid Operations Committee Reviews**

Periodic reviews may include, but are not limited to:

- (a) analysis of the deviation between actual and forecast monthly peak load;
- (b) analysis of compliance with NERC and WECC Criteria.
- (c) analysis of Local Reliability Area boundaries
- (d) analysis of MRM and DRM levels, and MACO and DACO requirements
- (e) analysis of Credible Demand Resource eligibility levels
- (f) analysis of Monthly and Daily Deficiency Charge levels.

- (g) analysis of maximum amount of ACAP that may be supplied from a local area to serve the ACAP obligations outside the local area.

**RARP 3 RESPONSIBILITIES OF THE ISO**

With regard to the implementation of the provisions of this Protocol, the ISO will:

- (a) Perform all calculations and analyses, and prepare all studies and forecasts, necessary for (i) the determination of ACAP Requirements for each LRA listed in RARP Appendix A, (ii) the calculation of the corresponding MACO and DACO for each LSSC serving load in each LRA, and (iii) the administration of this Protocol;
- (b) Monitor the compliance of each LSSC with its obligations under this Protocol;
- (c) Provide timely notice of MACOs, DACOs, potential and actual deficiency charges, and such other information in accordance with the deadlines specified in Appendix D;
- (d) Assess, bill, collect and distribute deficiency charges (as described in RARP Section 7), in accordance with the terms of this Protocol;
- (e) Assist with the development of rules and procedures for determining and demonstrating the capability of resources relied on, or to be relied on, by the LSSC as a ACAP Resource;
- (f) Establish the capability to provide available capacity of resources relied on, or to be relied on, by the LSSC as ACAP Resources consistent with the requirements of this Protocol;
- (g) Coordinate maintenance schedules for generation resources operated as part of the ISO Control Area with the schedules of planned outages submitted by LSSCs and anticipated

- transmission planned outages in accordance with the applicable provisions of the ISO Tariff;
- (i) Determine and declare that a System Emergency exists or ceases to exist in all or any part of the ISO Control Area or announce that a System Emergency exists or ceases to exist in a Control Area interconnected with an Control Area in the ISO Control Area;
  - (j) Enter into agreements for (i) the transfer of energy in System Emergencies in the ISO Control Area or in a Control Area interconnected with the ISO Control Area and (ii) mutual support in such System Emergencies with other Control Areas interconnected with a Control Area in the ISO Control Area; and
  - (k) Coordinate the curtailment or shedding of load, or other measures appropriate to alleviate a System Emergency, to preserve reliability in accordance with FERC, NERC or WECC principles, guidelines, standards and requirements, and to ensure the operation of the ISO Control Area in accordance with Good Utility Practice.

**RARP 4 COMPLIANCE OF LOAD SERVING SCHEDULING COORDINATORS**

**RARP 4.1 Requirements for Compliance by Load-Serving Scheduling Coordinators**

In order to comply with the requirements established in this Protocol, each Load Serving Scheduling Coordinator, in conjunction with any other LSSCs representing the same Load Serving Entity, shall:

- (a) Secure from ACAP Suppliers the ACAP Resources needed to timely satisfy each MACO and DACO applicable to the Load Serving Entity(s) it represents;
- (b) Include, or have their associated Load Serving Entity(s) include, provisions in their contractual arrangements with ACAP Suppliers that such ACAP Suppliers shall comply

- with RARP 5, Appendices D & E, and all other provisions in this Protocol applicable to ACAP Suppliers;
- (c) Specify to the ISO, in accordance with the deadlines set forth in RARP Appendix D, the ACAP Resources which, as of the time of such specification, are expected to be available to the LSSC for its use in meeting its Available Capacity Obligations in each LRA wherein it will be active;
  - (d) Develop (or, to the maximum extent its legal rights allow, cause to be developed) and submit to the ISO schedules of planned outages of the resources relied on to meet its Available Capacity Obligations established in this Protocol and the applicable provisions of the ISO Tariff;
  - (e) Cooperate with other LSSCs as describe in RARP 4.4;
  - (f) Submit Special Resource Plans to the ISO in accordance with RARP 4.5;
  - (g) Collect and submit to the ISO the data indicated in Appendix E; and
  - (h) Provide all data submitted to the ISO in accordance with this Protocol in the time, manner and format set forth in RARP 4.6 and Appendix D, and, in the case of load forecasts, in compliance with the Demand Forecasting Protocol (DFP).

**RARP 4.2 Requirements for Compliance by ACAP Supplier  
Scheduling Coordinators**

In order to comply with the requirements established in this Protocol, each ACAP Supplier Scheduling Coordinator, in conjunction with the LSSCs representing the Load Serving Entity, shall:

- (i) Develop (or, to the maximum extent its legal rights allow, cause to be developed) and submit to the ISO schedules of planned outages of the ACAP Resources;

- (j) Offer all ACAP capacity not successfully scheduled in the day-ahead market by the LSSC in the RUC process.
- (k) Offer adequate Supplemental Energy bids into the real-time (BEEP) stack to cover for forced outage of the ACAP resources in its portfolio, or else be liable for uninstructed deviation charges.

**RARP 4.3 Prohibited Sales of ACAP Resources**

No Load Serving Scheduling Coordinator may sell a generating facility serving as a ACAP Resource unless it has such facilities to sell in excess of its Available Capacity Obligations plus its other contractual obligations to sell capacity.

**RARP 4.4 Coordination and Cooperation**

Each LSSC shall cooperate with the other LSSCs in the coordinated planning and operation of their owned or contracted for ACAP Resources to obtain a degree of reliability consistent with WECC and NERC regional practices. In furtherance of such cooperation each LSSC shall:

- (a) cooperate with the members and associate members of WECC to ensure the reliability of the ISO Control Area;
- (b) make available its ACAP Resources to the other LSSCs through the ISO for coordinated operation and to supply the needs of the ISO Control Area;
- (c) provide or arrange for transmission service to the projected load of the Load Serving Entity; and
- (d) provide or arrange for sufficient reactive capability and voltage control facilities to meet Good Utility Practice.

**RARP 4.5 Submission of Special Resource Plans**

Each Load Serving Scheduling Coordinator shall, with respect to every Qualified Interruptible Load (QIL) and Qualified Contract Resource (QCR) which such LSSC intends to rely on as a ACAP Resource for meeting its Available Capacity Obligations, submit and have on file with the ISO a Special Resource Plan to be implemented by direction of the ISO.

The Resource plan for QILs shall include at least the following:

- (i) A description of the location of the relevant load with appropriate resolution (node, load group, demand zone, or Aggregation Point) commensurate with the relevant LRA boundaries, and
- (ii) The maximum level of QIL desired.

The Resource plan for QCRs shall include the following at a minimum:

- (i) For import contracts, specification of the Scheduling Point of the resource (or in the case of the QCRs backed by network service rights the set of Scheduling Points). ISO may require additional information about the supplier(s) of the external ACAP Resources, such as their total resource availability, their load serving obligation and their contract obligation on their ACAP Resources. This information will be used to assess the capability and feasibility of the external ACAP Resource.
- (ii) For internal control area delivery contracts, specification of the physical resource(s) from which the ACAP Obligation will be satisfied.

**RARP 4.6 Data Submittals**

To perform the studies required to determine the ACAP Requirement and other needs under this Protocol and to determine compliance with the obligations imposed by this Protocol, each LSSC and ACAP

Supplier shall submit data (other than load forecasts) to the ISO in conformance with the following minimum requirements:

- (a) All data submitted shall satisfy the requirements, as they may change from time to time, of any procedures or guidelines adopted by the ISO Governing Board.
- (b) Data shall be submitted in an electronic format, or as otherwise specified by the ISO Governing Board.

LSSCs shall submit load forecasts in compliance with the Demand Forecasting Protocol (DFP).

**RARP 5 COMPLIANCE OF ACAP SUPPLIERS**

**RARP 5.1 Requirements for Compliance by ACAP Suppliers**

LSSCs or their associated Load Serving Entity(s) shall include in their contracts with ACAP Suppliers, and enforce, if necessary, terms sufficient to require compliance with obligations imposed on ACAP Suppliers in this Protocol.

**RARP 5.2 Effect of Transfer of ACAP Resources**

When the owner of a ACAP Resource sells or leases the ACAP Resource to another party, they may agree to designate the purchaser as the ACAP Supplier. Such designation shall be made in writing to the ISO at least five calendar days before the date by which any of the relevant obligations or requirements must be fulfilled. If no designation is made to the ISO, the seller shall continue to be the ACAP Supplier, and will be responsible for fulfilling all of the obligations and requirements set forth in the ISO Tariff.



**RARP 6 CERTIFICATION AND TESTING OF ACAP RESOURCES**

**RARP 6.1 Resources Eligible for ACAP Resource Status**

Pursuant to the procedures set forth in RARP Appendix B, the ISO will consider certification as a ACAP Resource of the following types of the resources:

- (a) Specific generation within the ISO Control Area (which, upon certification, are Qualified Generation);
- (b) Load-based resources within the ISO Control Area that can be controlled by the ISO, (which, upon certification, are Qualified Interruptible Loads);
- (c) Contract power that can serve in the manner of available capacity (which, upon certification, are Qualified Contract Resources);
- (d) External resources (which, upon certification, are Qualified External Resources), and
- (e) Qualified Generation and Qualified Interruptible Load aggregated into LRA-specific portfolios (which, upon certification, are Qualified Portfolios).

**RARP 6.1.1 Eligible Amount**

The Eligible Amount of ACAP Resources from a ACAP supplier can not exceed the unforced capacity of the supplier's portfolio minus its load serving obligation and other contractual obligation.

There may be limits on the total amount of ACAP that can be supplied from a local area (e.g., generation pocket) to satisfy ACAP obligation of LSEs outside the local area.

**RARP 6.2 Compliance Testing**

**RARP 6.2.1 Testing of a Generating Unit, System Unit or System Resource**

The ISO may test the capability of a ACAP Resource by issuing unannounced dispatch instructions requiring the generation facility to come on line and ramp up. Such tests may not necessarily occur on the hour. The ISO will measure the response of the generating facility to determine compliance with its stated capabilities.

**RARP 6.2.2 Testing of Qualified Interruptible Load**

The ISO may test the capability of a Load providing QIL by issuing unannounced Dispatch instructions requiring the operator of the Load to report the switchable Demand of that Load actually being served by the operator at the time of the instruction. No Load will be disconnected as part of the test.

**RARP 7 DEFICIENCY AND CHARGES**

**RARP 7.1 Deficiency**

To the extent any Load Serving Scheduling Coordinator fails to specify, or specifies but fails to provide, ACAP Resources sufficient to meet any of its Monthly Available Capacity Obligations or its Daily Available Capacity Obligations, and the Load Serving Scheduling Coordinator's failure is not excused by an event of Force Majeure, it has a deficiency.

The deficient LSSC shall designate an amount of Credible Demand Resource (CDR) equal to its MACO or DACO shortfall, and must choose between two options:

- (a) Pay no deficiency charge and have its CDR curtailed when ISO declares Stage 1 Emergency, or

- (b) Pay the deficiency charge as specified in RARP 7.2, and have its CDR curtailed when ISO declares Stage 3 Emergency (in which case the CDR will be curtailed before other rotating blackouts).

The ACAP-deficient LSE may elect the two options for different parts of its CDR. In general, the ACAP-deficient LSE may designate an amount of CDR along with a Demand Resource Curtailment Priority.

The Demand Resource Curtailment Priority shall state whether the Demand Resource may be curtailed in the context of an ISO declaration of (i) a Stage 1 Emergency (Stage 1 Demand Resource) or (ii) a Stage 3 Emergency conditions (Stage 3 Demand Resource).

The Credible Demand Response limit is based on the represented Load Serving Entity's historical load, and shall be calculated as the level exceeded in 95 percent of the hours during the corresponding months in the historical reference period.

**RARP 7.2 Deficiency Charges**

**RARP 7.2.1 Deficiency Charges For Shortfalls With Respect to MACOs**

A Load Serving Scheduling Coordinator with a deficiency as described in RARP 7.1 with respect to a MACO shall pay to the ISO a deficiency charge in the amounts specified below depending upon the calendar month during which the deficiency was incurred:

- (a) During the months of June, July and August, the deficiency charge is \$50,000 per megawatt of deficiency.
- (b) During the months of March, May, September, October, the deficiency charge is \$30,000 per megawatt of deficiency.
- (c) During the months of December, January, and February, the deficiency charge is \$40,000 per megawatt of deficiency.

- (d) During the months of April and November, the deficiency charge is \$20,000 per megawatt of deficiency.

The MACO deficiency charge is waived if the LSE has designated adequate Credible Stage 1 Demand Resources in each relevant Local Reliability Area to match its MACO shortfall.

If the LSE has designated adequate Credible Demand Resource to match its MACO shortfall, to the extent that all or part of the designated resources are of Stage 3 Demand Resources, the LSSC will be subject to the MACO deficiency charge.

The MACO deficiency charge rate is doubled to the extent that the LSSC does not have adequate Credible Demand Resources to match its MACO deficiency.

**RARP 7.2.2 Deficiency Charges For Shortfalls With Respect to DACOs**

A Load Serving Scheduling Coordinator with a deficiency as described in RARP 7.1 with respect to a Daily Available Capacity Obligation shall pay to the ISO a DACO deficiency charge in the following amount in dollars/megawatt-day:

$DACODF = 1/30 * MACODF$  if the ISO is not ACAP short for the day;

$DACODF = 1/3 * MACODF$

where

DACODF: DACO Deficiency Charge Rate (dollars/megawatt-day)

MACODF: MACO Deficiency Charge Rate (dollars/megawatt-month)

The DACO deficiency charge is waived if the LSSC has designated adequate Credible Stage 1 Demand Resources in relevant Local Reliability Areas to match its DACO shortfall.

If the LSSC has designated adequate Credible Demand Resources to match its daily DACO shortfall, to the extent that all or part of the

designated resources are a Stage 3 Demand Resource, the LSSC will be subject to the daily ACAP deficiency charge. However, the LSE may not convert any Stage 1 Demand Resource it had designated towards its monthly ACAP shortfall to Stage 3 Demand Resource for its daily ACAP shortfall, even if the LSE is willing to pay the daily deficiency charge. In other words, the LSE is allowed to designate additional Stage 3 Demand Resources for its daily ACAP shortfall only if the shortfall is caused by the unanticipated unavailability of ACAP resources the LSE had acquired towards its monthly ACAP Obligation. The DACO deficiency charge rate is doubled if the LSSC does not have adequate Credible Demand Resource to match its DACO deficiency.

To prevent false reporting of ACAP Resources, the ISO reserves the right to review any daily deficiency incident. If the investigation reveals the planned ACAP Resources are not credible for the month (e.g. hydroelectric generation is out of water/energy a month prior, or a unit is scheduled to be on maintenance) the ISO will increase the daily deficiency charge to the level of the monthly deficiency charge. For repeated and serious violations there may be additional sanctions and penalties.

**RARP 7.3      Distribution of Charge Receipts**

Any deficiency charges collected under RARP 7.2 shall be distributed by the ISO, on a pro rata, megawatt basis for the month or day for which the deficiency was assessed, to the Load Serving Entities who satisfied their MACO or DACO for each month or day during which the deficiency was assessed. The basis for the allocation shall be the ACAP-sufficient LSE's ACAP that participated (i.e., scheduled or bid at prices within the prevailing bid caps) in the day-ahead market, limited to the higher of LSE's monthly or daily ACAP Obligation.

**RARP 7.4 Annual Review and Determination of Charge Amounts**

No later than November 1<sup>st</sup> of each year, the Grid Operations Committee will recommend to the ISO Governing Board such charges to be applicable under this Protocol for the next calendar year, which, upon approval of the ISO Governing Board, shall be modified accordingly, subject to the receipt of all required regulatory approvals.

**RARP 8 PERFORMANCE PENALTIES**

Each ACAP Supplier will be subject to (i) the provisions regarding the requirements for performance and sanctions for non-compliance, if any, contained in such ACAP Supplier's contract with its representative LSSC, and (ii) the provisions of the ISO Tariff applicable to real time deviations and penalties.

**RARP 9 BILLING AND PAYMENT**

**RARP 9.1 Periodic Billing**

Each LSSC shall receive a statement periodically setting forth (i) any amounts due from or to that LSSC as a result of any charges or penalties imposed pursuant to this Protocol. To the extent practical, such statements are to be coordinated with any billings or statements required pursuant to the ISO Tariff.

**RARP 9.2 Payment.**

The payment terms and conditions shall be as set forth in the billing statement and shall, to the extent practicable, be the same as those then in effect under the ISO Tariff

**RARP 10      INDEMINIFICATION AND LIMITATION OF LIABILITIES**

**RARP 10.1      Indemnification**

Each LSSC agrees to indemnify and hold harmless each of the other LSSCs, its officers, directors, employees or agents for all actions, claims, demands, costs, damages and liabilities asserted by third LSSCs against the LSSC seeking indemnification and arising out of or relating to acts or omissions in connection with this Protocol of the LSSC from which indemnification is sought, except (i) to the extent that such liabilities result from the willful misconduct of the LSSC seeking indemnification and (ii) that each LSSC shall be responsible for all claims of its own employees, agents and servants growing out of any workmen's compensation law. The amount of any indemnity payment under this section shall be reduced (including, without limitation, retroactively) by any insurance proceeds or other amounts actually recovered by the LSSC seeking indemnification in respect of the indemnified actions, claims, demands, costs, damages or liabilities. If any LSSC shall have received an indemnity payment in respect of an indemnified action, claim, demand, cost, damage, or liability and will subsequently actually receive insurance proceeds or other amounts in respect of such action, claim, demand, cost, damage, or liability, then such LSSC shall pay to the LSSC that made such indemnity payment the lesser of the amount of such insurance proceeds or other amounts actually received and retained or the net amount of the indemnity payments actually received previously.

**RARP 10.2      Liability of the ISO**

Any liability of the ISO arising out of or in relation to this Protocol shall be subject to Section 14 of the ISO Tariff as if references to the ISO Tariff were references to this Protocol.

**RARP 11      CONFIDENTIALITY**

No LSSC shall have a right hereunder to receive or review any documents, data or other information of another LSSC, including documents, data or other information provided to the ISO, to the extent such documents, data or information have been designated as confidential pursuant to the procedures adopted by the ISO or to the extent that they have been designated as confidential by another LSSC; provided, however, a LSSC may receive and review any composite documents, data and other information that may be developed based on such confidential documents, data or information if the composite document does not disclose any individual LSSC's confidential data or information.

**RARP 12      AMENDMENTS TO THE PROTOCOL**

If the ISO determines a need for an amendment to this Protocol, the ISO shall follow the requirements as set forth in Section 16 of the ISO Tariff.



**RELIABILITY ASSURANCE REQUIREMENTS PROTOCOL**

**APPENDICES A-E**

Issued by: Charles F. Robinson, Vice President and General Counsel  
Issued on: June 28, 2002

Effective: January 1, 2004

**APPENDIX A**  
**LIST OF LOCAL RELIABILITY AREAS**

**A 1**            **Humboldt**

**Battle Creek**

**North Bay**

**Chico**

**Greater Bay Area**

**Sierra**

**Stockton Area**

**Fresno Area**

**LA Basin**

**San Diego County**

**Vaca-Dixon**

**APPENDIX B**  
**PROCEDURES FOR CERTIFICATION OF ACAP RESOURCES**

**B 1                    Certification of Qualified Generation**

All generation resources located within the ISO Control Area will be certified as Qualified Generation to the ACAP Supplier that demonstrates that it is committed by contract to the LSSC, or by agreement with the ISO, that it will:

- (a)            Perform Demonstrated Maximum Net Capability (DMNC) tests in accordance with established ISO Procedures for determining the Pmax of a PGA Resource.
- (b)            Provide the amount of capacity from its ACAP Resource through a combination of scheduling or bidding in the ISO's day-ahead market for every hour of any day equal to the amount of capacity from such ACAP Resource supplied to an LSSC that has been identified by such LSSC as counting towards the LSSC's DACO.
- (c)            Refrain from entering a contractual commitment to supply the same capacity from a ACAP Resource more than once during the same time period.
- (d)            Comply with the ISO's established procedures for Outage Coordination, as those requirements are specified in ISO Tariff Section 5.5.
- (e)            Make no objection to compliance testing performed in accordance with RARP 6.1.
- (f)            Provide to the ISO, by the 20<sup>th</sup> day of each month, GADS data or data equivalent to GADS data pertaining to the previous month.

The eligible level of each Qualified Generation is limited, with respect to DACO, by the facility's actual available capacity in the day-ahead time

frame (day-ahead energy market and RUC), and with respect to MACO, the unforced capacity (UCAP), where UCAP is determined according the following calculation:

$$UCAP = DMNC \times (1 - FOR)$$

where

$$FOR = (FOH / MH)$$

where

FOH: The number of hours of forced outage during a historical reference period (rolling 12-months).

MH: The number of hours of the historical reference period, excluding the hours when the unit had no schedule or bid into the market and was not on scheduled maintenance.

## **B 2 Certification of Qualified Interruptible Loads**

In order to provide a ACAP Resource in the form of Qualified Interruptible Load, the ACAP Supplier must demonstrate, at a minimum, that it will obligate itself by contract to an LSSC to perform as follows:

- (a) Bid into the day-ahead market as price cap bid load, and, consequently, be scheduled based on their bids and day-ahead prices;
- (b) Determine in real-time whether, and at what level, to purchase energy or to interrupt through their bids into the hour-ahead market;
- (c) Pay the nodal price for the difference between its scheduled load and the load for which it is purchasing, if choosing to purchase energy;
- (d) Interrupt promptly upon request by the ISO;
- (e) Provide notice to the ISO at least 30 days prior to the beginning of a scheduled maintenance period that would reduce their ability to interrupt during an upcoming period;

- (f) Provide notice promptly to the ISO of any major equipment that is out of service and not using power and again when such equipment returns to service;
- (g) Provide to the ISO a written commitment that any scheduled maintenance that will impair their ability to interrupt with no corresponding reduction in load will only be conducted from November 1<sup>st</sup> through March 31<sup>st</sup> of any calendar year.

The eligible level of each QIL is limited based on actual historical consumption for similar periods (similar month, or similar day, distinguished by peak and off-peak hours). The eligible level is that exceeded at least [95] percent of the time during the reference historical similar period.

**B 3 Certification of Qualified Contract Resources**

The ISO will consider upon request the certification of certain existing contracts as Qualified Contract Resources. The ISO will grant summarily such requests with respect to any contract endorsed by the CERS. For all other contracts, the ISO reserves the authority to make this determination on a case-by-case basis, and, where appropriate, to make determinations establishing an equivalence of available capacity. The ISO will summarily deny any request for certification where the contract fails to meet the following threshold criteria:

- (a) Executed prior to October 1, 2002; and
- (b) Provides for firm capacity and energy, according to WECC standards.

**B 4 Certification of External Resources**

In order for the ISO to certify an external resource proposed by an LSSC or ACAP Supplier, the sponsor must demonstrate to the ISO's satisfaction the following:

- (a) The control area in which the resource is located will not recall or curtail, for purposes of satisfying its own control

- area load, imports from that control area into the ISO Control Area of an amount of energy equal to the capacity that resource proposes to supply to the ISO Control Area;
- (b) The control area in which the resource is located will afford the ISO Control Area the same curtailment priority that it affords its own control area load;
  - (c) The delivery point into the ISO system;
  - (d) Verification that all arrangements required by the host control area have been made to ensure the sale and delivery of energy associated with the resource to the ISO control area;
  - (e) Verification of the acquisition of transmission rights (ETCs, converted ETC FTR Options, LSE FTR Obligations, or Firm Transmission Rights acquired through primary FTR auction or secondary FTR markets) that originate at the point of delivery identified in (c) above;
  - (f) Identification of the underlying source of the power; and
  - (a) Adequate means of contractual control.

**B 5**

**Certification of Qualified Portfolios**

**Within an LRA, an ACAP Supplier may aggregate Qualified Generation and Qualified Interruptible Loads into a portfolio for the purpose of creating a Qualified Portfolio, provided that, for every hour of any day that a Qualified Portfolio has been identified by an LSSC as supplying an amount of capacity to contribute towards its DACO, the ACAP Supplier shall provide such amount of capacity through a combination of scheduling or bidding in the ISO's day-ahead market.**

**APPENDIX C**

**METHOD FOR CALCULATION OF RESERVE MARGINS**

- C 1** The ISO proposes that the Monthly Reserve Margin (MRM) be calculated by summing historical ISO operating reserve and regulation requirements, a contingency for load forecast error, and a contingency for outages. The contingencies for load forecast error and outages will consider the following:
- (a) Historical accuracy of ISO monthly load forecasts;
  - (b) Generating unit capability and types for every existing and proposed unit;
  - (c) Generator forced outage rates for existing mature generating units based on data submitted by the each LSSC for each of its Load Serving Entities' respective systems, from recent experience, and for immature and proposed units based upon forecast rates related to unit types, capabilities and other pertinent characteristics; and
  - (d) Generator maintenance outage factors and planned outage schedules.
- C 2** Based on the above, the ISO proposes that the MRM be determined as follows:
- $$\text{MRM} = \text{ORM} + \text{FCM} + \text{OCM}$$
- where
- FMP:** The forecast monthly peak for the ISO system, which will be the weather-normalized, 50/50 probability load.
- ORM:** The operating reserve margin, as determined by a review of historical ISO operating reserve procurement levels.
- FCM:** Forecast contingency margin, as determined by historical data and statistical analysis.

OCM: Multiple outage contingency margin, as determined by historical data and statistical analysis. This margin is to cover for simultaneous outages of power system elements (e.g., a power plant and a transmission line, the outages due to Remedial Action Schemes, RAS, etc.) beyond the contingencies covered by operating reserve margin. Initially this margin will be set to zero.

**C 3** The Daily Reserve Margin shall be calculated as the sum of the Operating Reserve and Regulation percentage requirements.



**APPENDIX D**  
**TIMELINES**

<b>D 1</b>	<b>Minimum Periods Prior to Month of Obligation</b>	
	90 Days Prior	ISO issues ISO forecast, by UDC
	75 Days Prior	ISO identifies new generation resources identified as potential ACAP providers
	40–45 Days Prior	LSSCs provide to the ISO 12-month load forecasts for each Load Serving Entity represented by LRA, as provided in DFP Section 2.1
	30 Days Prior	ISO reviews each LSE's forecast and determines if sum of LSEs' forecasts is greater than or equal to ISO forecast (on a UDC basis)
	25 Days Prior	If there is a deficiency, ISO allocates the additional forecast amount to LSEs by LRA
	20 Days Prior	ISO posts MACOs for LSEs by LRA
	17 Days Prior	Each LSE submits to ISO a list of ACAP Resources to meet MACO(s)
	14 Days Prior	ISO reviews for feasibility and deliverability each LSE's list of ACAP Resources
	10 Days Prior	ISO informs each LSE of infeasible ACAP Resources.
	7 Days Prior	LSEs report to ISO final list of ACAP Resources, and in case of ACAP deficiency, its credible Demand Resources
	1 day prior	ISO issues Monthly Deficiency penalty notifications

<b>D 2</b>	<b>Schedule Within Month of Obligation</b>	
	Day Before, 5 AM	LSSCs submit to the ISO on behalf of each Load Serving Entity represented (i) a list designating ACAP Resources for the day ahead and (ii) 7-day load forecasts, as provided in DFP Section 2.2 The DACO deficient LSSCs designate credible Demand Resources.
	Day Before, 6 AM	ACAP Suppliers confirm to ISO the LSSCs' List
	Day Before, 10 AM	ACAP Resources schedule and bid in day-ahead markets
	Day Before, 2 PM	ACAP Resources bid in day-ahead RUC
	Day Before, 6 PM	ISO issues Daily Deficiency penalty notifications
	Day of Obligation	ACAP Resources schedule and bid in hour-ahead and real-time markets
<b>D 3</b>	<b>Maximum Period Following Month of Obligation</b>	
	15 Days	ISO determines final monthly deficiency charges and non-compliance penalties for prior month
	Next Scheduled Bill	ISO bills LSSCs for charges, penalties and costs

**APPENDIX E**  
**DATA REQUIREMENTS**

- E 1** Each LSSC, on behalf of the Load Serving Entity it represents, shall submit to the ISO the following data:
- (a) Annual five-year resource plans conforming to the requirements of the WECC;
  - (b) Periodic compilations of historic Load Serving Entity load data on an LRA basis;
  - (c) Month-and Day-ahead load forecasts, in accordance with the Demand Forecasting Protocol; and
  - (d) Availability, operating, outage, meter and other data for ACAP Resources, including such data provided to the LSSCs by ACAP Suppliers.