ISO TARIFF APPENDIX C

ISO Scheduling Process

Day-Ahead Schedule Timeline

	Responsible Parties					
Line	**Time (Before or on)**	**ISO**	**SCs**	**Must-Take and Reliability generation**	**UDC**	**Actions**
	Two days ahead					
0	6:00 PM	x				Publish forecasted transmission conditions (Generator Meter Multipliers, system load forecast (by Zones), estimated Ancillary Service requirements, scheduled transmission Outages, Loop Flows, congestion, ATC, etc.)
	One day ahead					
1	5:00 AM	X				Notify Scheduling Coordinators of unit-specific Reliability Must Run requirements
2	6:00 AM	x				Update system load forecast and Ancillary Service requirements.
3			X			Notify ISO of price option for Reliability Must-Run Units for which notification was provided at 5:00 a.m.
4			x			Provide direct access load forecasts to the ISO.
5	6:30 AM	x				Provide net direct access load forecasts to UDCs.
6[not used]						
7 [not used]						
8 [not used]						
9 [not used]						
10			x			Submit initial preferred energy schedules to the ISO.
11			x			Submit Ancillary Service bids and/or self-provided Ancillary Service schedules to the ISO.
12	10:00 AM	x				Validate all Scheduling Coordinator energy schedules, including RMR requirements, and bids; notify and resolve incorrect schedules and bids, if any.

13		x				Validate all Scheduling Coordinator Ancillary Service schedules and bids; notify and resolve incorrect Ancillary Service schedules and bids, If any.
14		x				Start the Inter-Zonal Congestion Management evaluation process and Ancillary Services bid evaluation.
15	11:00 AM	x				If no Inter-Zonal Congestion exists, go to line 27.
16		x				Complete advisory dispatch schedules and transmission prices if Inter-Zonal Congestion exists.
17		x				Complete the advisory schedules and prices of each Ancillary Service.
18		x				Notify all Scheduling Coordinator if Inter-Zonal Congestion exists. Publish advisory transmission prices.
19		x				Inform all Scheduling Coordinators their advisory dispatch schedules if Inter-Zonal Congestion exists.
20		x				Inform all Scheduling Coordinators advisory AS schedules and prices if Inter-Zonal Congestion exists.
21	11:05 PM		x			Start the process of developing revised schedules and price bids.
22			x			Start the process of developing revised AS schedules and price bids.
23	12:00 PM		x			Submit revised Preferred Schedules and price bids to the ISO.
24			x			Submit revised preferred AS schedules and price bids to the ISO.
25	12:00 PM	x				Validate all Scheduling Coordinator schedules and bids; notify and resolve incorrect schedules and bids, if any.
26		x				Validate all Scheduling Coordinator AS schedules and bids; notify and resolve incorrect schedules and bids, if any.
27		x				Start the Inter-Zonal Congestion Management evaluation process and Ancillary Services bid evaluation.

28	1:00 PM	x				Complete final dispatch schedules and transmission prices.
29		x				Complete Final Schedules and prices of each Ancillary Service.
30	1:00 PM	x				Complete Final Schedules.
31	1:00 PM	x				Inform all Scheduling Coordinators their final dispatch schedules.
32		x				Inform all Scheduling Coordinators their final AS schedules and prices.
33		x				Publish transmission prices if Inter-Zonal Congestion exists.
34		x				Calculate and communicate with Scheduling Coordinator the specific Scheduling Coordinators' Zonal prices if asked.
35 [not used]						
36 [not used]						
37 [not used]						
38		x				Develop net schedules for each of the Control Area interfaces. These interfaces include Scheduling Coordinator net schedules, Control Area net schedules and/or individual transactions.
39		x				Call each adjacent Control Area and check that net schedules at each interface point match. Search for discrepancies and identify transactions that do not match. Resolve discrepancies with the involved Scheduling Coordinators or eliminate the transactions with discrepancies.

ISO TARIFF APPENDIX D

Black Start Units

Appendix D - Black Start Units

The following requirements must be met by Generating Units providing Black Start ("Black Start Units"):

(a) Black Start Units must be capable of starting and paralleling with the ISO Controlled Grid without aid from the ISO Controlled Grid;

(b) Black Start Units must be capable of making a minimum number of starts per event (to be without aid from the ISO Controlled Grid as determined by the ISO);

(c) Black Start Units must be equipped with governors capable of operating in the stand alone (asynchronous) and parallel (synchronous) modes.

(d) Black Start Units must have startup load pickup capabilities at a level to be determined by the ISO, including total startup load (MW) and largest startup load (MW) for such power output levels as the ISO may specify.

(e) All Black Start Units must be capable of producing Reactive Power (boost) and absorbing Reactive Power (buck) as required by the ISO to control system voltages. This requirement may be met by the operation of more than one Black Start Unit in parallel providing that:

(i) the Black Start generation supplier demonstrates that the proposed Generation resource shares reactive burden equitably;

(ii) all Participating Generators associated with the proposed Black Start source are located in the same general area.

Buck/boost capability requirement shall be dependent on the location of the proposed resource in relation to Black Start load.

(f) All Black Start Units must have the following communication/control requirements:

(i) dial-up telephone;

(ii) backup radio;

(iii) manning levels which accord with Good Utility Practice.

ISO TARIFF APPENDIX E

Verification of Submitted Data for Ancillary Services

Appendix E

Verification of Submitted Data for Ancillary Services

The ISO shall use the following procedures for verifying the scheduling and bid information submitted by Scheduling Coordinators for Ancillary Services. In this Appendix, a "bid" is a bid submitted by a Scheduling Coordinator in the ISO's competitive Ancillary Services market. A "schedule" is a Schedule including Ancillary Services which the Scheduling Coordinator wishes to self-provide.

1. Bid File and Schedule Format. The ISO shall verify that the bid files and schedules conform to the format specified for the type of Ancillary Service bid or schedule submitted. If the bid file or schedule does not conform to specifications, it shall be annotated by the ISO to indicate the location of the errors, and returned to the Scheduling Coordinator for corrections. Any changes made by a Scheduling Coordinator shall require a new submittal of bid or schedule information, and all validity checks shall be performed on the re-submitted bid or schedule.

2. Generation Schedules and Bids.

2.1. Quantity Data. The ISO shall verify that no Scheduling Coordinator is submitting a scheduled or bid quantity for Regulation, Spinning Reserve, Non-Spinning or Replacement Reserve which exceeds available capacity for Regulation and Reserves on the Generating Units, Loads and resources scheduled for that Settlement Period.

2.2 Location Data. The ISO shall verify that the location data corresponds to the ISO Controlled Grid interconnection data.

2.3. Operating Capability. The ISO shall verify that the operating capability data corresponds to the ISO Controlled Grid interconnection data for each Generating Unit, Load or other resource for which a Scheduling Coordinator is submitting an Ancillary Service bid or schedule.

3. Load Schedules and Bids.

3.1. Quantity data. The ISO shall verify that the quantity of Non-Spinning and Replacement Reserve scheduled or bid from Dispatchable Load does not exceed scheduled consumption quantities for that Settlement Period.

3.2. Location data. The ISO shall verify that the location of the Dispatchable Load corresponds to the ISO Controlled Grid interconnection data for each supplier of Dispatchable Load.

4. Notification of Validity or Invalidity of Ancillary Services Schedules and Competitive Bids. The ISO shall, as soon as reasonably practical following the receipt of competitive bids or self-provided Ancillary Service schedules, send to the Scheduling Coordinator who submitted the schedule or bid the following information:

(a) acknowledgment of receipt of the competitive bid or self-provided Ancillary Service schedule;

(b) notification that the bid or schedule has been accepted or reject for non-compliance with the rules specified in this Appendix. If a bid or schedule is rejected, such notification shall contain an explanation of why the bid or schedule was not accepted;

(c) a copy of the bid or schedule as processed by the ISO.

In response to an invalid schedule or bid, the Scheduling Coordinator shall be given a period of time to respond to the notification. The Scheduling Coordinator shall respond by resubmitting a corrected schedule or bid. If the Scheduling Coordinator does not respond to the notification within the required time frame, the ISO shall proceed without that Scheduling Coordinator's bid or schedule.

5. Treatment of Missing Values.

5.1 Missing Location Values. Any bid submitted without a Location Code shall be deemed to have a zero bid quantity for that Settlement Period.

5.2 Missing Quantity Values. Any bid submitted without a quantity value shall be deemed to have a zero bid quantity for Ancillary Service capacity for that Settlement Period.

5.3 Missing Price Values. Any bid submitted with non-zero quantity value, but with a missing price value, shall be rejected.

6. Treatment of Equal Price Bids. The ISO shall allow these Scheduling Coordinators to resubmit, at their own discretion, their bid no later than 2 hours the same day the original bid was submitted. In the event identical prices still exist following resubmission of bids, the ISO shall determine the merit order for each Ancillary Service by considering applicable constraint information for each Generating Unit, Load or other resource, and optimize overall costs for the Trading Day. If equal bids still remain, the ISO shall proportion participation in the Final Day-Ahead or Hour-Ahead Schedule (as the case may be) amongst the bidding Generating Units, Loads and resources with identical bids to the extent permitted by operating constraints and in a manner deemed appropriate by the ISO.

7. Receipt of Bids and Schedules. The ISO shall maintain an audit trail relating to the receipt of bids and schedules and the processing of those bids and schedules.