

# **DISPATCH PROTOCOL**

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## **DISPATCH PROTOCOL (DP)**

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

#### **DP 1.1 Objectives**

The objectives of this Protocol are:

- (a) to implement those sections of the ISO Tariff which involve real time and emergency operations;
- (b) to describe the real time Dispatch of the Ancillary Services specified in the Ancillary Services Requirements Protocol (ASRP);
- (c) to describe the operational activities of the ISO after all commitments have been made in the Hour-Ahead Market as described in the Scheduling Protocol (SP);
- (d) to describe the use of Supplemental Energy bids received by the ISO in accordance with the Schedules and Bids Protocol (SBP); and
- (e) to describe how the ISO will meet the operational requirements of NERC and WSCC guidelines.

#### **DP 1.2 Definitions**

##### **DP 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 shall have the same meaning where used in this Protocol. A reference to a Section or an Appendix is a reference to a Section or an Appendix of the ISO Tariff. References to DP are to this Protocol or to the stated paragraph of this Protocol.

##### **DP 1.2.2 Special Definitions for this Protocol**

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

**“Backup ISO Control Center”** means the ISO Control Center located in Alhambra, California.

**"BEEP"** means the Balancing Energy and Ex-Post Pricing software referred to in SP 11.2 which is used to determine the merit order stack.

**"Control Area Operator"** means the person responsible for managing the real time operations of a Control Area.

**"Dispatch Instruction"** means an operating order that is issued by the ISO to a Participant pertaining to real time operations.

**"EOE"** means an Existing Operating Entity operating under an Existing Operating Agreement.

**"GCC"** means the single point of contact at the grid control center of Southern California Edison Company.

**"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.

**"Primary ISO Control Center"** means the ISO Control Center located in Folsom, California.

**"Participant"** means any of those entities referred to in DP 1.3.1(a)-(f).

**"Power System Stabilizer (PSS)"** means an electronic control system applied on a Generating Unit that helps to damp out dynamic oscillations on a power system. The PSS senses Generator variables, such as voltage, current and shaft speed, processes this information and sends control signals to the Generator voltage regulator.

**"Qualifying Facility"** means a qualifying co-generation or small power production facility recognized by FERC.

**"Security Coordinator"** means the person responsible for Security Monitoring in real time for the California Area.

**"TOC"** means the single point of contact at the transmission operations center of Pacific Gas & Electric Company.

**"Total Transfer Capability (TTC)"** means the amount of power that can be transferred over an interconnected transmission network in a reliable manner while meeting all of a specific set of defined pre-contingency and post-contingency system conditions.

**"Western Interconnection"** means a network of transmission lines embodied within the WSCC Region.

### **DP 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.
- (e) Time references in this Protocol are references to prevailing Pacific time.

### **DP 1.3      Scope**

#### **DP 1.3.1      Scope of Application to Parties**

This Protocol applies to the ISO and to the Participants:

- (a) Scheduling Coordinators (SCs);
- (b) Utility Distribution Companies (UDCs);
- (c) Participating Transmission Owners (PTOs);
- (d) Participating Generators;
- (e) Control Area Operators; and
- (f) Existing Operating Entities.

#### **DP 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.

## **DP 2              STANDARDS TO BE OBSERVED**

### **DP 2.1          Applicable Reliability Criteria**

The ISO shall exercise Operational Control over the ISO Controlled Grid in compliance with all Applicable Reliability Criteria. Applicable Reliability Criteria are defined as the standards established by NERC,

WSCC and Local Reliability Criteria and include the requirements of the Nuclear Regulatory Commission (NRC).

**DP 2.1.1 WSCC Criteria (Standards)**

(a) Western Interconnection

The WSCC set of standards for the Western Interconnection, which are based on the NERC standards. The WSCC further defines procedures and policies applicable to the Western Interconnection. WSCC guidelines include:

- (i) Part 1 – Reliability Criteria for Transmission System Planning
- (ii) Part 2 – Power Supply Design Criteria
- (iii) Part 3 – Minimum Operating Reliability Criteria (MORC)
- (iv) Part 4 – Definitions

(b) Operating Procedures

The WSCC Operating Procedures submitted to WSCC by individual utilities and the ISO to address specific operating problems in their respective grids that could affect operations of the interconnected grid.

(c) Dispatcher's Handbook

The WSCC Dispatcher's Handbook supplied by WSCC to all utilities and Control Areas as a reference for dispatchers to use during normal and emergency operations of the grid.

**DP 2.1.2 NERC Policies and Standards**

(a) National Standards

The NERC national level standards for all utilities to follow to allow for safe and reliable operation of electric systems.

(b) Operating Manual

The NERC Operating Manual supplied by NERC to all utilities and Control Areas as a reference for dispatchers to use during normal and emergency operations of the grid.

**DP 2.1.3 Local Reliability Criteria (Standards)**

The reliability criteria established at the ISO Operations Data unique to the transmission systems of each of the PTOs. Each PTO must provide its Local Reliability Criteria to the ISO, as required by the Transmission Control Agreement (TCA).

**DP 2.1.4 NRC (Standards)**

The reliability standards published by the NRC from time to time.

**DP 2.2 Ancillary Services**

The ISO will base its standards for the Dispatch of Ancillary Services upon WSCC MORC and ISO Controlled Grid reliability requirements.

**DP 2.3 ISO Standards**

The ISO Governing Board may establish guidelines more stringent than those established by NERC and WSCC as needed for the secure and reliable operation of the ISO Controlled Grid.

**DP 2.4 Good Utility Practice (Standards)**

When the ISO is exercising Operational Control of the ISO Controlled Grid, the ISO and Participants shall comply with Good Utility Practice. The ISO Tariff defines Good Utility Practice which, for ease of use of the DP, is repeated as follows:

“Any of the practices, methods, and acts engaged in or approved by a significant portion of the electric utility industry during the relevant time period, or any of the practices, methods and acts which, in the exercise of reasonable judgement in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety, and expedition. Good Utility Practice is not intended to be any one of a number of the optimum practices, methods, or acts to the exclusion of all others, but rather to be acceptable practices, methods, or acts generally accepted in the region.”

**DP 2.5 Existing Contracts**

The ISO will implement Sections 2.4.3 and 2.4.4 of the ISO Tariff with respect to Existing Contracts after the close of the Hour-Ahead Market and in real time in accordance with the SBP and the SP.

## **DP 2.6      The Role of Participants**

In issuing the Dispatch Instructions, the ISO will not intentionally request UDCs, Participating Generators, Generating Unit operators, or SCs to exceed any inherent plant rating or local restriction imposed by the plant or transmission owner in order to protect the design and/or operational integrity of its plant or equipment. In issuing Dispatch Instructions to PTOs, the ISO will comply with Section 5.1.7 of the TCA. Any conflict that may arise between an ISO issued Dispatch Instruction and a plant or transmission owner's restriction as mentioned above must be immediately brought to the ISO's attention by the person receiving such Dispatch Instruction prior to any attempt to implement that Dispatch Instruction.

## **DP 3          SCHEDULING AND REAL TIME INFORMATION**

### **DP 3.1      Final Schedules**

The scheduling process described in the SP will produce for the ISO real time dispatchers for each Settlement Period of the Trading Day a Final Schedule consisting of the combined commitments contained in the Final Day-Ahead Schedules and the Final Hour-Ahead Schedules for the relevant Settlement Period. The Final Schedule will include information with respect to:

- (a)      Generation schedules;
- (b)      Demand schedules;
- (c)      Ancillary Services schedules based on the ISO's Ancillary Services auction;
- (d)      Ancillary Services schedules, based on SCs' ISO accepted schedules and forecast load, for self-provided Ancillary Services;
- (e)      Interconnection schedules between the ISO Control Area and other Control Areas; and
- (f)      Inter-Scheduling Coordinator Trades.

### **DP 3.2      Supplemental Energy**

In addition to the Final Schedules, Supplemental Energy bids will be available to the ISO real time dispatchers, as described in the SBP, by 30 minutes prior to the start of the Settlement Period to which such Supplemental Energy bids apply.

**DP 3.3 SC Intertie Schedules**

In accordance with the SBP and the SP, SCs shall provide the ISO with Interconnection schedules prepared in accordance with all NERC, WSCC and ISO requirements. The provisions of the SBP and the SP shall apply to real time changes in Interconnection schedules under Existing Contracts.

**DP 3.4 Information to be Supplied by SCs**

**DP 3.4.1 SC Dispatch**

Each SC shall be responsible for the scheduling and Dispatch of Generation and Demand in accordance with its Final Schedule.

**DP 3.4.2 Generator or Interconnection Schedule Change**

Each SC shall keep the ISO apprised of any change or potential change in the current status of all Generating Units, Interconnection schedules and Inter-Scheduling Coordinator Trades. This will include any changes in Generating Unit capacity that could affect planned Dispatch and conditions that could affect the reliability of a Generating Unit. Each SC shall immediately pass to the ISO any information which it receives from a Generator which the Generator provides to the SC pursuant to DP 3.7. Each SC shall immediately pass to the ISO any information it receives from an EOE which the EOE provides to the SC pursuant to DP 3.9.

**DP 3.4.3 Verbal Communication with Generators**

Normal verbal communication of Dispatch Instructions between the ISO and Generators will be via the relevant SC. Each SC must immediately pass on to the Generator concerned any verbal communication for the Generator which it receives from the ISO. If the ISO considers that there has been a failure at a particular point in time or inadequate response over a particular period of time by the Generating Units to the Dispatch Instruction, the ISO will notify the relevant SC. In situations of deteriorating system conditions or emergency, the ISO reserves the right to communicate directly with the Generator(s) as required to ensure System Reliability.

**DP 3.4.4 Consequences of a Failure to Respond or Inadequate Response**

The ISO may apply penalties, fines, economic consequences or the sanctions referred to in DP 9.5.2 for any failure or inadequate response under DP 3.4.3 to the SC representing the Generator

responsible for such failure or inadequate response (which may be appropriately weighted to reflect its seriousness) subject to any necessary FERC approval.

**DP 3.5      Information to be Supplied by UDCs**

**DP 3.5.1      UDC Status Change**

Each UDC shall keep the ISO informed of any change or potential change in the status of its transmission lines and station equipment at the point of interconnection with the ISO Controlled Grid. Each UDC shall keep the ISO informed as to any event or circumstance in the UDC's service territory that could affect the reliability of the ISO Controlled Grid. This would include adverse weather conditions, fires, bomb threats, etc.

**DP 3.5.2      UDC Outage Scheduling**

Each UDC shall schedule all equipment Outages (or Outages of other equipment that could affect the ISO Controlled Grid) at the point of interconnection with the ISO using the appropriate Outage scheduling procedures described in the OCP.

**DP 3.5.3      UDC Outage Emergency Scheduling**

Each UDC shall coordinate any requests for emergency Outages on point of interconnection equipment directly with the appropriate ISO Control Center as specified in DP 6.2.

**DP 3.6      Information to be Supplied by PTOs**

**DP 3.6.1      Transmission Status Change**

Each PTO shall report any change or potential change in equipment status of the PTO's transmission assets immediately to the ISO (this will include line and station equipment, line protection, Remedial Action Schemes and communication problems, etc.). Each PTO shall also keep the ISO immediately informed as to any change or potential change in the PTO's transmission system that could affect the reliability of the ISO Controlled Grid. This would include adverse weather conditions, fires, bomb threats, etc.

**DP 3.6.2      Transmission Outage Scheduling**

Each PTO shall schedule all Outages of its lines and station equipment which are under the Operational Control of the ISO in accordance with the appropriate procedure under the OCP.

**DP 3.6.3      PTO Emergency Outage Scheduling**

Each PTO shall coordinate any requests for or responses to Forced Outages on its transmission lines or station equipment which are under the Operational Control of the ISO directly with the appropriate ISO Control Center as defined in DP 6.2.

**DP 3.7        Information to be Supplied by Generators**

**DP 3.7.1      Generator Status Change**

Each Generator shall immediately inform the ISO, through its respective SC, of any change or potential change in the current status of any Generating Units that are under the Dispatch control of the ISO. This will include, but not be limited to, any change in status of equipment that could affect the maximum output of a Generating Unit, the minimum load of a Generating Unit, the ability of a Generating Unit to operate with automatic voltage regulation, operation of the PSSs (whether in or out of service), the availability of a Generating Unit governor, or a Generating Unit's ability to provide Ancillary Services as required. Each Generator shall immediately report to the ISO, through its SC any actual or potential concerns or problems that it may have with respect to Generating Unit direct digital control equipment, Generating Unit voltage control equipment, or any other equipment that may impact the reliable operation of the ISO Controlled Grid.

**DP 3.7.2      Generator Schedules**

In the event that a Generator cannot meet its Generation schedule, whether due to a Generating Unit trip or the loss of a piece of equipment causing a reduction in capacity or output, the Generator shall notify the ISO, through its SC at once. If a Generator will not be able to meet a time commitment or requires the cancellation of a Generating Unit start up, it shall notify the ISO, through its SC at once.

**DP 3.8 Information to be Supplied by Control Area Operators**

**DP 3.8.1 System Status Change**

The ISO and each adjacent Control Area Operator shall keep each other informed of any change or potential change in the status of the Interconnection and any changes in the Interconnection's TTC. The ISO and each adjacent Control Area Operator shall keep each other informed of situations such as adverse weather conditions, fires, etc., that could affect the reliability of any Interconnection. Each Control Area Operator of the Control Areas in the California area, as defined by the WSCC Regional Security Plan, shall keep the ISO informed of all information required by WSCC for use by the Security Coordinator.

**DP 3.8.2 Scheduling Procedure**

The ISO and each adjacent Control Area Operator shall follow all applicable NERC and WSCC scheduling procedures. This will include checking the Interconnection schedules for the next Settlement Period prior to the start of the Energy ramp going into that hour. The ISO and each adjacent Control Area Operator shall check and agree on actual MWh net interchange after the hour for the previous Settlement Period. One Control Area shall change its actual number to reflect that of the other Control Area in accordance with WSCC standard procedures.

**DP 3.8.3 Data Exchange**

The ISO and each adjacent Control Area Operator shall exchange MW, MVar, terminal and bus voltage data with each other on a four second update basis. MWh data for the previous hour shall be exchanged once per hour. All MW and MWh data for both the ISO Control Area and the adjacent Control Areas must originate from the same metering equipment.

**DP 3.8.4 Operational Metering**

All provisions in this section DP 3.8 refer to information and data obtained from metering used for Control Area operations and not metering used for billing and settlement.



**DP 3.9 Information to be Supplied by EOE's Operating Under an Existing Operating Agreement**

**DP 3.9.1 Transmission Status Change**

Each EOE shall report any change or potential change in equipment status of the EOE's transmission assets immediately to the ISO (this will include line and station equipment, line protection, remedial action schemes and communication problems). Each EOE shall also keep the ISO immediately informed as to any changes or potential changes in the EOE's transmission system that could affect the reliability of the ISO Controlled Grid. This would include adverse weather conditions, fires, bomb threats, etc.

**DP 3.9.2 Transmission Outage Scheduling**

Each EOE shall schedule all Outages of its lines and station equipment which could affect the reliability of the ISO Controlled Grid in accordance with the appropriate procedure under the OCP.

**DP 3.9.3 EOE Emergency Outage Scheduling**

Each EOE shall coordinate any request for or responses to Forced Outages on its transmission lines or station equipment which could affect the reliability of the ISO Controlled Grid directly with the appropriate ISO Control Center as defined in DP 6.2.

**DP 3.9.4 Generator Status Change**

Each EOE shall inform the ISO, through its respective SC, immediately of any change or potential change in the current status of any Generating Units that are under the Dispatch control of the ISO. This will include, but not be limited to, any change in status of equipment that could affect the maximum output of a Generating Unit, the minimum load of a Generating Unit, the ability of a Generating Unit to operate with automatic voltage regulation, operation of the PSS (whether in or out of service), the availability of a Generating Unit governor, or a Generating Unit's ability to provide Ancillary Services as required. Each EOE shall immediately report to the ISO, through its SC any trouble on Generating Unit direct digital control equipment, Generating Unit voltage control equipment, or any other equipment that may impact the reliable operation of the ISO Controlled Grid.

**DP 3.9.5 Generator or Interchange Schedule Change**

Each EOE shall inform the ISO, through its respective SC, of any change or potential change in the current status of all Generating Units, Interconnection schedules and Inter-Scheduling Coordinator Trades. This will include any changes in Generating Unit capacity that could affect planned dispatch and conditions that could affect the reliability of a Generating Unit. Each EOE shall immediately pass to the ISO, through its respective SC, any information which it receives from a Generator which the Generator provides to the EOE pursuant to DP 3.9.

**DP 4 METHODS OF COMMUNICATIONS**

**DP 4.1 Methods of Transmitting Dispatch Instructions**

**DP 4.1.1 Full-Time Communications Facility Requirement**

Each Participant must provide a communications facility manned 24 hours a day, 7 days a week capable of receiving Dispatch Instructions issued by the ISO.

**DP 4.1.2 Communication via Telephone**

The ISO will issue Dispatch Instructions by telephone.

**DP 4.2 Verbal Dispatch Instructions**

**DP 4.2.1 Phone Lines**

Each Participant must maintain a dedicated telephone line available 24 hours a day every day of the year for immediate access by the ISO.

**DP 4.2.2 Voice Recording**

The ISO shall record all voice conversations that occur on the Dispatch Instruction communication equipment. These recordings may be used by the ISO to audit the Dispatch Instruction, and to verify the response of the Participant concerned to the Dispatch Instruction.

**DP 4.2.3      Logging**

The Dispatch Instruction and all information associated with it shall be logged and recorded by the ISO as soon as practical after issuing each Dispatch Instruction.

**DP 4.3            Contents of Dispatch Instructions**

Dispatch Instructions shall include the following information as appropriate:

- (a)    exchange of operator names;
- (b)    specific resource being dispatched;
- (c)    specific MW value of the resource being dispatched;
- (d)    specific type of instruction (action required);
- (e)    operating level and price point to which the resource is being dispatched;
- (f)    time the resource is required to begin initiating the Dispatch Instruction;
- (g)    time the resource is required to achieve the Dispatch Instruction;
- (h)    time of notification of the Dispatch Instruction; and
- (i)    any other information which the ISO considers relevant.

**DP 4.4            Acknowledgement of Dispatch Instructions**

The recipient of a verbal Dispatch Instruction shall confirm the Dispatch Instruction by repeating the Dispatch Instruction to the ISO.

**DP 5              ISO FACILITIES AND EQUIPMENT**

**DP 5.1           ISO Facility and Equipment Outages**

The ISO has installed redundant control centers, communication systems and computer systems. Most, but not necessarily all, equipment problems or failures should be transparent to Participants. This DP 5 addresses some situations when Participants could be affected, but it is impossible to identify and plan for every type of equipment problem or failure. Real time situations will be handled by the real time ISO dispatchers. The ISO control room in Folsom is

the Primary ISO Control Center and the ISO control room in Alhambra is the Backup ISO Control Center.

**DP 5.2      WEnet Unavailable**

**DP 5.2.1      Unavailable Critical Functions of WEnet**

During a total disruption of the WEnet several critical functions of the ISO will not be available including:

- (a) the Scheduling Infrastructure (SI) computer will not be able to communicate with SCs to receive any type of updated Schedule information;
- (b) the SI computer will not be able to communicate Congestion Management information and Schedule changes to the SCs; and
- (c) the ISO will not be able to communicate general information, including emergency information, to any Participants.

**DP 5.2.2      Communications during WEnet Unavailability**

During any period of WEnet unavailability, the ISO shall:

- (a) make all reasonable efforts to keep Participants aware of current ISO Controlled Grid status using voice communications;
- (b) use the most recent set of Balanced Schedules for each SC for the current and all future Settlement Periods and/or Trading Days until the WEnet is restored; and
- (c) attempt to take critical Schedule changes from SCs via voice communications as time and manpower allows.

**DP 5.3      Primary ISO Control Center – Loss of all Voice Communications**

**DP 5.3.1      Notification of Loss of Voice Communication**

In the event of loss of all voice communication at the Primary ISO Control Center, the Primary ISO Control Center will use alternate communications to notify the Backup ISO Control Center of the loss of voice communications. The Backup ISO Control Center will post information on the situation on the WEnet. Additional voice notifications will be made as time permits.

**DP 5.3.2 Notification of Restoration of Voice communication**

Once voice communications have been restored to the Primary ISO Control Center, the ISO will post this information on the WEnet.

**DP 5.4 Primary ISO Control Center – Control Center Completely Unavailable**

**DP 5.4.1 Notification of Loss of Primary ISO Control Center**

In the event that the Primary ISO Control Center becomes completely unavailable, the Primary ISO Control Center will use alternate communications to notify the Backup ISO Control Center that the Primary ISO Control Center is unavailable. The Backup ISO Control Center will post information on the situation on the WEnet. Additional voice notifications will be made as time permits.

**DP 5.4.2 Backup ISO Control Center Response**

The Backup ISO Control Center will post confirmation on the WEnet that all computer systems are functioning normally (if such is the case) and take complete control of the ISO Controlled Grid. The Backup ISO Control Center will notify the TOC by direct voice communication of the situation.

**DP 5.4.3 Notification of Restoration of Primary ISO Control Center**

Once the Primary ISO Control Center is again available, all functions will be transferred back, and the Primary ISO Control Center will notify all Participants via the WEnet.

**DP 5.5 Primary ISO Control Center - ISO Energy Management System (EMS) Unavailable**

**DP 5.5.1 Notification of Loss of EMS**

Should an outage occur to the redundant EMS computer systems in the Primary ISO Control Center, an auto transfer should occur to transfer EMS operation to the redundant EMS back up computers at the Backup ISO Control Center. Due to the severity of a total ISO EMS computer outage, the Primary ISO Control Center will post information on the WEnet that the Primary ISO Control Center EMS computer is unavailable and that EMS control has been transferred to the Backup ISO Control Center.

**DP 5.5.2 Notification of Restoration of EMS**

When the Primary ISO Control Center EMS computer is restored, the Backup ISO Control Center will initiate a transfer back of the EMS system to the Primary ISO Control Center. The Primary ISO Control Center will post information on the restored EMS computer system status on the WEnet.

**DP 5.6 Backup ISO Control Center – Loss of all Voice Communications**

**DP 5.6.1 Notification of Loss of Voice Communication**

In the event of a loss of all voice communications at the Backup ISO Control Center, the Backup ISO Control Center will use alternate communications to notify the Primary ISO Control Center of the loss of voice communications. The Primary ISO Control Center will post information on the situation via the WEnet. Additional voice notifications will be made as time permits.

**DP 5.6.2 Notification of Restoration of Voice Communication**

Once voice communications have been restored to the Backup ISO Control Center, the Primary ISO Control Center will post this information on the WEnet.

**DP 5.7 Backup ISO Control Center – Control Center Completely Unavailable**

**DP 5.7.1 Notification of Loss of Backup ISO Control Center**

In the event that the Backup ISO Control Center becomes completely unavailable, the Backup ISO Control Center will use alternate communications to notify the Primary ISO Control Center that the Backup ISO Control Center is unavailable. The Primary ISO Control Center will post information on the situation on the WEnet. Additional voice notifications will be made as time permits.

**DP 5.7.2 Primary ISO Control Center Response**

The Primary ISO Control Center will post confirmation on the WEnet that all computer systems are functioning normally (if such is the case) and take complete control of the ISO Controlled Grid. The Primary ISO Control Center will notify the SCE GCC by direct voice communications of the situation.

**DP 5.7.3 Notification of Restoration of Backup ISO Control Center**

Once the Backup ISO Control Center is again available all functions will be transferred back, and the Backup ISO Control Center will notify all Participants via the WEnet.

**DP 5.8 Use of IOUs' Energy Control Center Computers**

The ISO and the IOUs will comply with the procedures for the utilization by the ISO of the IOUs' Energy control center computers when developed. The ISO will post such procedures on the WEnet when agreed.

**DP 6 ROUTINE OPERATION OF THE ISO CONTROLLED GRID**

**DP 6.1 Overview/Responsibility**

The ISO shall operate the ISO Controlled Grid in accordance with the standards described in DP 2 and within the limit of all applicable nomograms and established operating limits and procedures.

**DP 6.2 ISO Jurisdiction**

**DP 6.2.1 ISO Controlled Facilities**

The ISO shall have Operational Control of all transmission lines and associated station equipment that have been transferred to the ISO Controlled Grid from the PTOs as listed in the ISO Register.

**DP 6.2.2 Primary ISO Control Center Jurisdiction**

The Primary ISO Control Center shall have jurisdiction over:

- (a) all transmission lines greater than 230kV and associated station equipment on the ISO Controlled Grid;
- (b) all Interconnections; and
- (c) all 230 kV and lower voltage transmission lines and associated station equipment identified in the ISO Register as that portion of the ISO Controlled Grid located in the PG&E Service Area.

**DP 6.2.3 Backup ISO Control Center Jurisdiction**

The Backup ISO Control Center shall have jurisdiction over all 230 kV and lower voltage transmission lines and associated station

equipment identified in the ISO Register as that portion of the ISO Controlled Grid located in the SCE and SDGE Service Areas.

**DP 6.3      Clearing Equipment for Work**

The clearance procedures of the ISO and the relevant UDC and PTO must be adhered to by all parties, to ensure the safety of all personnel working on ISO Controlled Grid transmission lines and equipment. In accordance with the OCP, no work shall start on any equipment or line which is under the Operational Control of the ISO unless final approval has first been obtained from the appropriate ISO Control Center. Prior to starting the switching to return any line or equipment to service the ISO shall confirm that all formal requests to work on the cleared line or equipment have been released.

**DP 6.4      Equipment De-energized for Work**

In some circumstances, System Reliability requirements may require a recall capability that can only be achieved by allowing work to proceed with the line or equipment de-energized only (i.e. not cleared and grounded). Any personnel working on such de-energized lines and equipment must take all precautions as if the line or equipment were energized. Prior to energizing any such lines or equipment deenergized for work, the ISO shall confirm that all formal requests to work on the de-energized line or equipment have been released.

**DP 6.5      Hot-Line Work**

The ISO has full authority to approve requests by PTOs to work on energized equipment under the Operational Control of the ISO, and no such work shall be commenced until the ISO has given its approval.

**DP 6.6      Intertie Switching**

The ISO and the appropriate single point of contact for the relevant PTO and the adjacent Control Area shall coordinate during the de-energizing or energizing of any Interconnection.



**DP 6.7      Operating Voltage Control Equipment**

**DP 6.7.1      Operating Voltage Control Equipment Under ISO Control**

The ISO will direct each PTO's single point of contact in the operation of voltage control equipment that is under the ISO's Operational Control.

**DP 6.7.2      Operating Voltage Control Equipment Under UDC Jurisdiction**

Each UDC must operate voltage control equipment under UDC control in accordance with existing UDC voltage control guidelines.

**DP 6.7.3      Special ISO Voltage Control Requirements**

The ISO may request a PTO via its single point of contact or a UDC via its single point of contact to operate under special voltage control requirements from time to time due to special system conditions.

**DP 6.8      Outages**

The ISO will coordinate and approve Maintenance Outages and coordinate responses to Forced Outages of all transmission facilities in the ISO Controlled Grid and Reliability Must-Run Units in accordance with the OCP.

Any scheduled Outages that are cancelled by ISO real time operations due to system requirements must be rescheduled with the ISO Outage Coordination Department in accordance with the OCP.

**DP 6.9      Security Monitoring**

The ISO shall be the Security Coordinator for the California Area. As Security Coordinator, the ISO, in conjunction with the other WSCC Security Coordinators, will be responsible for the stable and reliable operation of the Western Interconnection in accordance with the WSCC Regional Security Plan.

**DP 6.9.1      Security Coordinator**

As Security Coordinator, the ISO may direct activities as appropriate to curtail Schedules, Dispatch Generation or impose transfer limitations as necessary to relieve grid Congestion, mitigate potential overloads or eliminate operation outside of existing nomogram criteria.

**DP 6.9.2 Authority of WSCC Security Coordinators**

- (a) The Security Coordinator has the final authority to direct operations before, during and after problems or disturbances that have regional impacts. The WSCC security monitoring plans include collaboration with sub-regional Security Coordinators and control area operators to determine actions for anticipated problems. If there is insufficient time, or mutual concurrence is not reached, the Security Coordinator is authorized to direct actions and the control area operators must comply.
- (b) In the event of any situation occurring which is outside those problems already identified in the list of known problems, the Security Coordinator shall have the responsibility and authority to implement whatever measures are necessary to maintain system reliability. Those actions include but are not limited to; interchange curtailment, generation dispatch adjustment (real power, reactive power and voltage), transmission configuration adjustments, special protection activation, load curtailment and any other action deemed necessary to maintain system reliability.
- (c) The Security Coordinator shall also have the responsibility and authority to take action in its sub-region for problems in another sub-region that it may help resolve. This must be accomplished at the request of and in coordination with the Security Coordinators of the other sub-regions.

**DP 7 REAL TIME OPERATIONAL ACTIVITIES –  
THE HOUR PRIOR TO THE SETTLEMENT PERIOD**

**DP 7.1 Schedule Confirmation**

In the hour prior to the beginning of the Settlement Period, the ISO will review and evaluate the current system operating conditions to ensure sufficient Energy and Ancillary Services resources are available for the next Settlement Period. The ISO will:

- (a) verify that each SC's Ancillary Services obligations are scheduled as required. The ISO will procure additional Ancillary Services if insufficient resources are scheduled;
- (b) verify any Supplemental Energy bids received up to thirty (30) minutes prior to the Settlement Period, for increases or

decreases in Energy output which it may require for the Settlement Period; and

- (c) verify that with currently anticipated operating conditions there is sufficient transfer capacity on the ISO Controlled Grid to implement all Final Schedules.

#### **DP 7.2 Confirm Interchange Transaction Schedules (ITSs)**

Also in the hour prior to the beginning of the Settlement Period the ISO will:

- (a) adjust interchange transaction schedules (ITSs) as required under Existing Contracts in accordance with the procedures in the SBP and the SP for the management of Existing Contracts;
- (b) adjust ITSs as required by changes in transfer capability of transmission paths occurring after close of the Hour-Ahead Market; and
- (c) agree on ITS changes with adjacent Control Area Operators.

#### **DP 7.3 Supplemental Energy Bids**

Supplemental Energy bids may be submitted to the ISO no later than thirty (30) minutes prior to the beginning of the Settlement Period in accordance with the format and content requirements of the SBP. These Supplemental Energy bids cannot be withdrawn after thirty (30) minutes prior to the beginning of the Settlement Period. The ISO may Dispatch the associated resource at any time during the Settlement Period.

#### **DP 7.4 Intra-Zonal Congestion Management**

In the hour prior to the beginning of the Settlement Period the ISO will adjust SCs' Final Schedules to alleviate Intra-Zonal Congestion and to accommodate any Reliability Must-Run Generation which the ISO requires, but which has not been included in SCs' Final Schedules. The ISO will increment those Generating Units which have the lowest incremental Adjustment Bids, decrement the Curtailable Demand which has the lowest decremental Adjustment Bids, and decrement those Generating Units which have the highest decremental Adjustment Bids. To the extent that insufficient Adjustment Bids are available, the ISO will use incremental and decremental bids from available sources of Imbalance Energy in the Zone. In the event of no incremental or decremental bids being

available, the ISO will exercise its authority to direct the redispatch of resources within the Zone.

## **DP 8 REAL TIME OPERATIONAL ACTIVITIES – THE SETTLEMENT PERIOD**

### **DP 8.1 Settlement Period**

#### **DP 8.1.1 Responsibility of the ISO in Real Time Dispatch**

During real time Dispatch, the ISO will be responsible for dispatching Generating Units, Curtailable Demands and Interconnection schedules to meet real time imbalances between actual and scheduled Demand and Generation and to relieve Congestion, if necessary, to ensure System Reliability and to maintain Applicable Reliability Criteria.

#### **DP 8.1.2 Utilization of BEEP**

To achieve this, the ISO Control Center will utilize the merit order stack of available resources prepared pursuant to the SP through BEEP.

### **DP 8.2 Generating Units, Loads and Interconnection Schedules Dispatched for Congestion**

If there is Inter-Zonal or Intra-Zonal Congestion in real time, the ISO will use the merit order stack produced by BEEP to alleviate Inter-Zonal Congestion as described in DP 8.3. The ISO will use any Adjustment Bids which have been carried forward from the Day-Ahead or Hour-Ahead Markets as described in SBP 4, to resolve Intra-Zonal Congestion as described in DP 8.4.

### **DP 8.3 Inter-Zonal Congestion**

#### **DP 8.3.1 Treatment by Zone**

If there is Inter-Zonal Congestion in real time, the ISO shall increase Generation and/or reduce Demand separately for each Zone.

#### **DP 8.3.2 Selection of Generating Unit or Load to Increase Generation or Reduce Demand**

Where the ISO determines that it is necessary to increase Generation or reduce Demand in a Zone in order to relieve Inter-Zonal

Congestion the ISO shall select from the merit order stack the Generating Unit within the Zone (or the Interconnection schedule in a Control Area adjacent to the Zone) with a non-zero capacity remaining to increment which has the lowest incremental bid price (\$/MWh) or the Curtailable Demand located within the Zone (or the Interconnection schedule in a Control Area adjacent to the Zone) with a non-zero capacity remaining to reduce which has the lowest Demand reduction bid price.

**DP 8.3.3      Selection of Generating Unit to Reduce Generation**

Where the ISO determines that it is necessary to reduce Generation in a Zone in order to relieve Inter-Zonal Congestion, the ISO shall select from the merit order stack the Generating Unit within the Zone with a non-zero capacity remaining to decrement which has the highest decremental bid price.

**DP 8.4          Intra-Zonal Congestion**

In the event of Intra-Zonal Congestion in real time, the ISO shall adjust Generating Units and Curtailable Demands within the Zone (or Interconnection schedules in the Control Areas adjacent to the Zone) to alleviate the constraints, based on any Adjustment Bids which have been carried forward from the Day-Ahead and Hour-Ahead Markets as described in SPB 4 and on the incremental and decremental prices of resources within the Zone (or in the Control Areas adjacent to the Zone) taken from the merit order stack.

**DP 8.5          Additional Congestion Relief**

In the event that there are insufficient resources which provide financial bids to mitigate Inter-Zonal and Intra-Zonal Congestion, Final Schedules which do not rely on Existing Contracts will be adjusted in real time by allocating transmission capacity on a pro rata basis. Final Schedules which rely on Existing Contracts will be adjusted in real time by allocating transmission capacity in accordance with the operating instructions submitted under SBP 3.3. With respect to facilities financed with Local Furnishing Bonds the ISO shall adjust Final Schedules in real time in a fashion consistent with Section 2.1.3 and 7.1.6.3 of the ISO Tariff, Appendix B of the TCA, and Operating Procedures governing the use of such facilities.

## **DP 8.6 Real Time Dispatch Application**

### **DP 8.6.1 Real Time Dispatch**

During real time, the ISO shall dispatch Generating Units, Curtailable Demands and Interconnection schedules to meet imbalances between actual and scheduled Demand and Generation. In addition, the ISO may need to purchase additional Ancillary Services if Ancillary Services arranged in advance are used to provide balancing Energy, and such depletion needs to be recovered to meet System Reliability contingency requirements.

### **DP 8.6.2 Utilization of the Merit Order Stack**

The ISO will use the merit order stack as produced by BEEP, consisting of all the Supplemental Energy and Ancillary Services Energy bids as described in the SP to procure balancing Energy for:

- (a) satisfying needs for Imbalance Energy;
- (b) mitigating Inter-Zonal Congestion;
- (c) allowing resources providing Regulation service to return to the mid-point of their regulating ranges;
- (d) allowing recovery of Operating Reserves utilized in real time operations;
- (e) procuring additional Voltage Support required from resources beyond their power factor ranges in real time; and
- (f) managing Intra-Zonal Congestion in real time after use of available Adjustment Bids.

### **DP 8.6.3 Basis for Real Time Dispatch**

The ISO shall base real time Dispatch of Generating Units, Curtailable Demands and Interconnection schedules on the following principles:

- (a) the ISO shall dispatch Generating Units and Interconnection schedules providing Regulation service to meet WSCC and NERC Area Control Error (ACE) performance criteria;
- (b) following the loss of a resource and once ACE has returned to zero, the ISO shall determine if the Regulation Generating Units and Interconnection schedules are operating at a point away from their Set Point. The ISO shall then adjust the output of Generating Units and Interconnection schedules (either providing Spinning Reserve, Non-Spinning Reserve or Supplemental Energy) to return the Regulation Generating

Units and Interconnection schedules to their Set Points to restore their full regulating margin;

- (c) the ISO shall dispatch Generating Units, Curtailable Demands and Interconnection schedules only to meet its balancing Energy requirements. The ISO shall not dispatch such resources in real time for economic trades either between SCs or within a SC's portfolio;
- (d) the ISO shall select the Generating Units, Curtailable Demands and Interconnection schedules to be dispatched to meet its balancing Energy requirements based on the merit order stack of Energy bid prices produced by BEEP;
- (e) the ISO shall not discriminate between Generating Units, Curtailable Demands and Interconnection schedules other than based on price, and the effectiveness (location and ramp rate) of the resource concerned to respond to the fluctuation in Demand or Generation;
- (f) Generating Units, Curtailable Demands or Interconnection schedules shall be dispatched during the Settlement Period only until the next variation in Generation or Demand or the end of the Settlement Period, whichever is sooner. In dispatching such resources, the ISO is not making any commitment beyond the Settlement Period, as to the duration of their operation, nor the level of their output or Demand;
- (g) The ISO will not differentiate between Ancillary Services procured by the ISO and Ancillary Services which are being self-provided; and
- (h) within BEEP, once a decremental bid has been used by the ISO, it will then be included in the incremental part of the database with its incremental bid equal to its decremental price bid. Once an incremental bid has been used by the ISO it will then be included in the decremental part of the database with a decremental bid equal to its incremental price. In the event that the ISO subsequently needs to decrement output, it will initially decrement the Generating Units or Interconnection schedules incremented previously, and then continue down the merit order of the decremental bids.

## **DP 8.7 Ancillary Services Requirements**

The following requirements apply to the Dispatch of Ancillary Services in real time:

**DP 8.7.1 Regulation**

- (a) Regulation provided from Generating Units must meet the standards specified in the ASRP;
- (b) the ISO will dispatch Regulation in merit order of Energy bid prices as determined by the EMS;
- (c) in the event of an unscheduled increase in system Demand or a shortfall in Generation output and Regulation margin drops below a predetermined value, the ISO will use scheduled Operating Reserve, Replacement Reserve or Supplemental Energy to restore Regulation margin; and
- (d) when scheduled Operating Reserve is used for restoration of Regulation reserve, the ISO shall arrange for the replacement of that Operating Reserve (see DP 8.7.4);

**DP 8.7.2 Operating Reserve**

- (a) Spinning Reserve:
  - (i) Spinning Reserve provided from Generating Units and Interconnection schedules (for self-providers of Ancillary Services) must meet the standards specified in the ASRP;
  - (ii) the ISO will dispatch Spinning Reserve as may be required to meet the Applicable Reliability Criteria;
  - (iii) the ISO may dispatch Spinning Reserve as balancing Energy to return Regulation Generating Units to their Set Points and restore full Regulation margin; and
  - (iv) the ISO will dispatch Spinning Reserve in merit order of Energy bid prices as determined by BEEP;
- (b) Non-Spinning Reserve:
  - (i) Non-Spinning Reserve provided from Generating Units and Demands must meet the standards specified in the ASRP;
  - (ii) the ISO may dispatch Non-Spinning Reserve in place of Spinning Reserve to meet Applicable Reliability Criteria;
  - (iii) the ISO will dispatch Non-Spinning Reserve in merit order of Energy bid prices as determined by BEEP; and
  - (iv) the ISO may dispatch Non-Spinning Reserve to replace Spinning Reserve if there is a shortfall in Spinning Reserve because of a deficiency of balancing Energy;



**DP 8.7.3 Replacement Reserve**

- (a) Replacement Reserve provided from Generating Units, Curtailable Demands and Interconnection schedules must meet the standards specified in the ASRP;
- (b) the ISO will utilize Replacement Reserve to replace Operating Reserve that has been dispatched due to a shortfall in Generation or an increase in Demand;
- (c) the ISO may dispatch Replacement Reserve to replace Operating Reserve that has been dispatched for balancing Energy; and
- (d) the ISO will dispatch Replacement Reserve in merit order of Energy bid prices as determined by BEEP;

**DP 8.7.4 Replacement of Operating Reserve**

- (a) in the event of an unforecasted increase in system Demand or a shortfall in Generation output, the ISO shall utilize Replacement Reserve to restore Operating Reserve;
- (b) if pre-arranged Operating Reserve is used to meet balancing Energy requirements, the ISO may replace such Operating Reserve by dispatch of additional balancing Energy available from Supplemental Energy bids;
- (c) any additional Operating Reserve needs may also be met the same way;
- (d) where the ISO elects to rely upon Supplemental Energy bids, the ISO shall select the resources with the lowest incremental Energy bid price as established by BEEP; and
- (e) if the ISO restores Operating Reserve through utilization of Replacement Reserve, the ISO is not required to replace the utilized Replacement Reserve;

**DP 8.7.5 Voltage Support**

- (a) Voltage Support provided from Generating Units shall meet the standards specified in the ASRP;
- (b) the ISO may Dispatch Generating Units to increase or decrease MVar output within the power factor limits of 0.9 lagging to 0.95 leading (or within other limits specified by the ISO in any exemption granted pursuant to Section 2.5.3.4 of the ISO Tariff) at no cost to the ISO when required for System Reliability;

- (c) ISO may Dispatch each Generating Unit to increase or decrease MVar output outside of established power factor limits, but within the range of the Generating Unit's capability curve, at a price calculated in accordance with ISO Tariff;
- (d) If Voltage Support is required in addition to that provided pursuant to DP 8.7.5 (b) and (c), the ISO will reduce output of Participating Generators certified in accordance with the ASRP based on the merit order stack as determined by BEEP. The ISO will select Participating Generators in the vicinity where such additional Voltage Support is required; and
- (e) the ISO will monitor voltage levels at Interconnections to maintain them in accordance with the applicable Inter-Control Area Agreements.

**DP 8.7.6 Black Start**

- (a) Black Start shall meet the standards specified for Black Start in the ASRP; and
- (b) the ISO will dispatch Black Start as required in accordance with the applicable Black Start Agreement.

**DP 8.8 Real Time Management of Overgeneration Conditions**

In the event that Overgeneration conditions occur during real time, the ISO will direct the SCs to curtail Generation in accordance with Section 2.3.4 of the ISO Tariff and SCs shall implement such directions without delay.

**DP 9 DISPATCH INSTRUCTIONS**

**DP 9.1 ISO Dispatch Authority**

**DP 9.1.1 Range of ISO Authority**

The ISO has full authority to:

- (a) direct the physical operation of the ISO Controlled Grid, including (without limitation) circuit breakers, switches, voltage control equipment, protective relays, metering and Load Shedding equipment;
- (b) commit Reliability Must-Run Generation;
- (c) order a change in operating status of voltage control equipment;

- (d) take required action to prevent against uncontrolled losses of load or Generation;
- (e) control the output of Generating Units and Interconnection schedules (for self-providers of Ancillary Services) scheduled to provide Ancillary Services or offering Supplemental Energy;
- (f) dispatch Curtailable Demand which has been scheduled to provide Non-Spinning Reserve or Replacement Reserve; and
- (g) require the operation of resources which are at the ISO's disposal in a System Emergency, as described in DP 10.

**DP 9.1.2      Exercise of the ISO's Authority**

The ISO will exercise its authority under DP 9.1.1 by issuing Dispatch Instructions to the relevant Participants using the relevant communications method described in DP 4.

**DP 9.2          Participant Responsibilities**

**DP 9.2.1       Compliance with Dispatch Instructions**

All Participants within the ISO Control Area shall comply fully and promptly with the ISO's Dispatch Instructions unless such operation would impair public health or safety. Shedding Load for a System Emergency does not constitute impairment to public health or safety.

**DP 9.2.2       Notification of Non-Compliance with a Dispatch Instruction**

In the event that, in carrying out the Dispatch Instruction, an unforeseen problem arises (relating to plant operations or equipment, personnel or the public safety), the recipient of the Dispatch Instruction must notify the ISO or, in the case of a Generator, the relevant SC immediately. The relevant SC shall notify the ISO of the problem immediately.

**DP 9.3          Dispatch Instructions for Generating Units and Curtailable Demand**

The ISO may issue Dispatch Instructions covering:

- (a) Ancillary Services;
- (b) Supplemental Energy, which may be used for:
  - (i) Congestion Management; or
  - (ii) replacement of an Ancillary Service;

- (c) emergency operation of Generating Units, Curtailable Demands or Interconnection schedules, for example:
  - (i) output or Demand that can be dispatched to meet Applicable Reliability Criteria;
  - (ii) Generating Units that can be dispatched for Black Start;
  - (iii) Generating Units that can be dispatched to maintain governor control regardless of their Energy schedules; or
- (d) the operation of voltage control equipment applied on Generating Units as described in the ASRP.

## **DP 9.4 Response Required by Generators to ISO Dispatch Instructions**

### **DP 9.4.1 Action Required by Generators**

Generators must:

- (a) comply with Dispatch Instructions immediately upon receipt and shall respond in accordance with Good Utility Practice;
- (b) meet voltage criteria in accordance with the provisions specified in the ISO Tariff and ASRP;
- (c) meet the ramp rates required by ASRP for the Ancillary Service concerned;
- (d) respond to Dispatch Instructions for Ancillary Services within the time periods required by ASRP except in a System Emergency, when DP 10 will apply; and (in the case of Generating Units providing Regulation) respond to electronic signals from the EMS; and
- (e) respond to a Dispatch Instruction issued for the shut down of a Generating Unit, within the time frame stated in the Instruction.

### **DP 9.4.2 Qualifying Facilities**

Where a Qualifying Facility ("QF") has entered into an agreement with a PTO before March 31, 1997 for the supply of Energy to the PTO (an "Existing Agreement"), the ISO will follow the instructions provided by the parties to the Existing Agreement regarding the provisions of the Existing Agreement in the performance of its functions relating to Outage Coordination, and not require a QF to take any action that would interfere with the QF's obligations under the Existing Agreement. Each QF will make reasonable efforts to

comply with the ISO's instructions during a System Emergency without penalty for failure to do so.

## **DP 9.5      Failure to Comply with Dispatch Instructions**

### **DP 9.5.1      Obligation to Comply**

All entities providing Ancillary Services (whether self-provided or procured by the ISO) or whose Supplemental Energy bids have been accepted by the ISO shall be obligated to respond to the ISO's Dispatch Instructions in accordance with their terms. If a dispatched Generating Unit, Curtailable Demand or Interconnection schedule fails to respond to a Dispatch Instruction in accordance with its terms, the Generating Unit, Curtailable Demand or Interconnection schedule:

- (a) shall be declared and labeled as non-conforming to the Dispatch Instruction;
- (b) cannot be eligible to set the Hourly Ex Post Price.

### **DP 9.5.2      Sanctions**

The ISO will develop additional mechanisms to deter Generating Units and Loads in other Control Areas from failing to respond at a particular time or adequately respond over a particular period of time to a Dispatch Instruction or failing to perform according to Dispatch Instructions, for example, reduction in payments to SCs or suspension of the SC's Ancillary Services certificate for the Generating Unit, Curtailable Demand or System Resource concerned.

## **DP 10      EMERGENCY OPERATIONS**

### **DP 10.1      Notifications by ISO**

The ISO will provide the following notifications to Participants to communicate unusual system conditions or emergencies.

#### **DP 10.1.1      System alert**

ISO will give a system alert notice when the operating requirements of the ISO Controlled Grid are marginal because of Demand exceeding forecast, loss of major Generation or loss of transmission capacity that has curtailed imports into the ISO Control Area, or if the Hour-Ahead Market is short on scheduled Energy and Ancillary Services for the ISO Control Area.

**DP 10.1.2     System warning**

The ISO will give a system warning notice when the operating requirements for the ISO Controlled Grid are not being met in the Hour-Ahead Market, or the quantity of Regulation, Spinning Reserve, Non-Spinning Reserve, Replacement Reserve and Supplemental Energy available to the ISO is not acceptable for the Applicable Reliability Criteria.

This system warning notice will notify Participants that the ISO will, acting in accordance with Good Utility Practice, take such steps as it considers necessary to ensure compliance with Applicable Reliability Criteria, including the negotiation of Generation through processes other than competitive bids.

**DP 10.1.3     System Emergency**

When, in the judgement of the ISO, the System Reliability of the ISO Controlled Grid is in danger of instability, voltage collapse or under-frequency caused by transmission or Generation trouble in the ISO Control Area, or events outside of the ISO Control Area that could result in a cascade of events throughout the WSCC grid, the ISO will declare a System Emergency. This declaration may include a notice to suspend the Day-Ahead, Hour-Ahead and Real Time Markets, authorize full use of Black Start Generation, initiate full control of manual Load Shedding, authorize the curtailment of Curtailable Demand (even though not scheduled as an Ancillary Service). The ISO will reduce the System Emergency declaration to a lower alert status when it is satisfied, after conferring with Security Coordinators within the WSCC that the major contributing factors have been corrected, all involuntarily interrupted Demand is back in service (except interrupted Curtailable Demand selected as an Ancillary Service). This reduction in alert status will reinstate the competitive markets if they have been suspended.

**DP 10.2        Management of System Emergencies**

**DP 10.2.1     Declaration of System Emergencies**

The ISO shall, when it determines that a System Emergency exists, declare the existence of such System Emergency. A declaration of System Emergency by the ISO shall be binding on all Participants until the ISO announces that the System Emergency no longer exists.

**DP 10.2.2 Emergency Procedures**

In the event of a System Emergency, the ISO shall:

- (a) take action as it considers necessary to preserve or restore stable operation of the ISO Controlled Grid;
- (b) act in accordance with Good Utility Practice to preserve or restore reliable, safe and efficient service as quickly as reasonably practicable;
- (c) keep adjacent Control Area Operators informed as to the nature and extent of the System Emergency in accordance with WSCC procedures; and
- (d) where practicable, keep the Participants within the ISO Control Area informed.

**DP 10.2.3 Intervention in Market Operations**

- (a) The ISO may intervene in the operation of the Day-Ahead, Hour-Ahead or Real Time Markets and set the Administrative Price if the ISO determines that such intervention is necessary in order to prevent, contain or correct the System Emergency.
- (b) The ISO will not intervene in the operation of the Day-Ahead Market unless there has been a total or major collapse of the ISO Controlled Grid and the ISO is in the process of restoring it.
- (c) Before any such intervention, the ISO must (in the following order):
  - (i) Dispatch all scheduled Generation and all other Generation offered or available to it, regardless of price (including all Supplemental Energy bids, and Ancillary Services);
  - (ii) Dispatch all interruptible Loads made available by UDCs to the ISO in accordance with the UDC Operating Agreements;
  - (iii) Dispatch or curtail all price-responsive Curtailable Demand that has been bid into any of the markets and exercise its rights under all Load curtailment contracts available to it; and
  - (iv) exercise Load Shedding to curtail Demand on an involuntary basis to the extent that the ISO considers necessary.

- (d) The Administrative Price in relation to each of the markets for Imbalance Energy, Ancillary Services and Congestion Management shall be set at the applicable Market Clearing Price or appropriate charge, as the case may be, in the Settlement Period immediately preceding the Settlement Period in which the intervention took place.
- (e) The intervention will cease as soon as the ISO has restored all Demand that was curtailed on an involuntary basis as specified in (c).

**DP 10.2.4 Emergency Guidelines**

The ISO shall issue procedures for all Participants to follow during a System Emergency. These guidelines shall be consistent with the specific obligations of SCs and Participants referred to in DP 10.2.8, and DP 10.4

**DP 10.2.5 Implementation of Dispatch Instructions**

All Participants shall respond to ISO Dispatch Instructions with an immediate response during System Emergencies.

**DP 10.2.6 Periodic Tests of Emergency Procedures**

The ISO shall develop and administer periodic unannounced tests of System Emergency procedures. The purpose of such tests will be to ensure that the Participants are capable of responding to actual System Emergencies.

**DP 10.2.7 Prioritized Schedule for Shedding and Restoring Load**

The ISO shall, in consultation with Participants, develop a prioritized schedule for Load Shedding if a System Emergency requires such action. Such a schedule will include a prioritization of restoring Load if multiple Participants are affected.

**DP 10.2.8 Obligations of Participating Generators Relating to System Emergencies**

All Generating Units are subject to control by the ISO during a System Emergency. The ISO shall have the authority to:

- (a) instruct a Participating Generator to shut down any of its Generating Units which the Participating Generator does not require, or start any of its Generating Units that can be started in time to assist with the System Emergency;



- (b) instruct a Participating Generator to increase or curtail the output of any of its Generating Units; and
- (c) instruct the alteration of scheduled deliveries of Energy and/or Ancillary Services into or out of the ISO Controlled Grid,

if such an instruction is reasonably necessary to prevent an imminent System Emergency or to retain Operational Control over the ISO Controlled Grid during an actual System Emergency, and provided that the ISO has, where reasonably practicable, utilized Ancillary Services which it has the contractual right to instruct and which are capable of contributing to or containing or correcting actual, imminent or threatened System Emergencies prior to issuing such instructions.

### **DP 10.3 External Support/Assistance**

If, on a real time basis, the ISO is unable to comply with the Applicable Reliability Criteria, the ISO shall take such steps as it considers necessary, to ensure compliance, including the negotiation of contracts for Ancillary Services through processes other than competitive solicitations. If the ISO is unable to obtain such resources from within the ISO Controlled Grid, the ISO may solicit Ancillary Services from other Control Areas on a real time basis.

### **DP 10.4 UDC Emergency Procedures**

In the event of a System Emergency, each UDC shall comply with all directions from the ISO concerning the management and alleviation of the System Emergency and shall comply with all procedures outlined in this Protocol.

#### **DP 10.4.1 Use of UDC's Existing Load Curtailment Programs.**

- (a) UDC Electrical Emergency Plans  
The ISO shall have the authority to implement a UDC's Electrical Emergency Plan in consultation with the UDC, when Energy reserve margins are forecast to be at the levels specified in the existing plan.
- (b) UDC Under-Frequency Load Shedding Programs (UFLS):  
The ISO shall:
  - (i) with the UDC, review that UDC's UFLS program periodically to ensure compliance with Applicable Reliability Criteria;

- (ii) perform periodic audits of each UDC's UFLS to verify that the system is properly configured for each UDC; and
  - (iii) use reasonable endeavors to ensure that the total ISO UFLS is coordinated among the UDCs so that no UDC bears a disproportionate share of the total ISO UFLS program.
- (c) UDC Disconnect Load  
The ISO shall have the authority to direct a UDC to disconnect Load from the ISO Controlled Grid if necessary to avoid an anticipated System Emergency or to regain Operational Control over the ISO Controlled Grid during an actual System Emergency.
- (d) UDC Load Curtailment Programs  
As an additional resource for maintaining reliability and managing System Emergencies, the ISO may notify UDCs when the conditions exist which require the UDCs to implement their Load curtailment programs. The UDCs will exercise their best efforts, including seeking any necessary regulatory approvals, to enable the ISO to rely on their curtailment rights at specified levels of Operating Reserve.

**DP 10.4.2 Load Curtailment**

A SC may specify that Load will be reduced at specified Market Clearing Prices or offer the right to exercise Load curtailment to the ISO as an Ancillary Service or utilize Load curtailment itself (by way of self provision of Ancillary Services) as Non-Spinning Reserve or Replacement Reserve. The ISO, at its discretion, may require direct control over such Curtailable Demand to assume response capability for managing System Emergencies. However, providers of non-firm Loads shall not receive incentives for interruption under existing programs approved by a Local Regulatory Authority in addition to payment for Operating Reserve for the same quantity of Curtailable Demand. The ISO may establish standards for automatic communication of curtailment instructions to implement Load curtailment as a condition for accepting any offered Load curtailment as an Ancillary Service.

**DP 11      ALGORITHMS TO BE USED**

The ISO shall develop dispatch algorithms for use by the ISO for dispatching Generating Units and Curtailable Demands in accordance with the ISO Tariff.

**DP 12      INFORMATION MANAGEMENT**

The ISO shall provide all Participants with non-discriminatory access to information concerning the status of the ISO Controlled Grid by posting such information on the WEnet, or other similar computer communications device, or by telephone or facsimile in the event of computer systems failure.

**DP 13      AMENDMENTS TO THE PROTOCOL**

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