

ELECTRICITY INDUSTRY ACT

ELECTRICITY INDUSTRY (WHOLESALE ELECTRICITY
MARKET) REGULATIONS 2004

WHOLESALE ELECTRICITY MARKET RULES

**Power System Operation Procedure
Communications and Control Systems:**

Commencement: This Power System Operation Procedure is to have effect from the commencement of the relevant provision of the Wholesale Electricity Market Rules under which it is made.

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1. COMMUNICATIONS AND CONTROL SYSTEMS

Communications and Control Systems Procedure details System Management's requirements for the Control and Communications Systems needed to support the dispatch process.

2. RELATIONSHIP WITH MARKET RULES

1. This Procedure has been developed in accordance with, and should be read in conjunction with clause 2.35 of the Wholesale Electricity Market (WEM) Rules (Market Rules).
2. References to particular Market Rules within the Procedure in bold and square brackets **[MR XX]** are current as at 1 June 2008. These references are included for convenience only, and are not part of this procedure.
3. In performing its functions under the Market Rules, System Management may be required to disclose certain information to Market Participants and Network Operators. In selecting the information that may be disclosed, System Management will utilize best endeavours and act in good faith to disclose only the information reasonably required by the application of the Market Rules.

3. SCOPE OF PROCEDURE

1. This procedure sets out the communication and control systems required to be in place to enable System Management to dispatch:
 - a. Scheduled Generators, Non-Scheduled Generators, Dispatchable and Curtailable Loads that are controlled directly by the Market Participant;
 - b. Scheduled or Non-Scheduled Generators where System Management, by agreement with the Market Participant, has operational control of that Facility; and
 - c. Interruptible Loads whose operation may be triggered by a fall in power system frequency.
2. The procedure specifies the main features of the speech, data and control systems that need to be in place between the Facility and System Management for the purpose of:
 - a. issuing, acknowledging and responding to Dispatch Instructions, Dispatch Orders and directives;
 - b. monitoring the MW output and connection status of the Facility; and
 - c. enabling prompt response to directions of System Management in the event of a High Risk Operating State or Emergency Operating State.

4. ASSOCIATED PROCEDURES AND STANDARDS

The following Power System Operation Procedures are associated with this Communications and Control Systems procedure:

- a. Power System Operation Procedure - Dispatch
- b. Power System Operation Procedure - Operational Data Points for Generating Plant

5. OPERATIONAL COMMUNICATIONS AND CONTROL SYSTEMS FOR SCHEDULED AND NON-SCHEDULED GENERATORS

Each Scheduled and Non-Scheduled Generator should provide voice and data communication systems in order for System Management to issue Dispatch Instructions, Dispatch Orders or directions, and for the subsequent acknowledgement of these back to System Management by the Market Generator.

5.1 SCADA Data and Control Requirements

1. Each Scheduled and Non-Scheduled Generator must provide remote monitoring and control SCADA equipment to enable System Management to remotely monitor/control the output and operational status of the Facility at its connection point to the SWIS network
2. The SCADA operational data points and the equipment for the communication of the data and control signals referenced in (1) above must meet the requirements of all applicable provisions of the Technical Rules, approved pursuant to the requirements of the *Electricity Networks Access Code 2004* and any applicable instrument established pursuant to powers under the Wholesale Electricity Market Rules.

5.2 Voice Communication Requirements

1. All Market Participants with Scheduled Generators or Non-Scheduled Generators must maintain voice communication systems that enable communication between the Market Generator and System Management.
2. All Market Participants with Scheduled Generators or Non-Scheduled Generators must maintain records of voice communications held between the Market Generator and System Management.
3. The standard of this equipment should meet the requirements of all applicable provisions of the Technical Rules, approved pursuant to the requirements of the *Electricity Networks Access Code 2004*.

5.3 Communication of Dispatch Instruction

Following the issue of a Dispatch Instruction System Management will produce an electronic confirmation of the instruction and transmit it to the Participant.

5.4 Electronic Transmission of Dispatch Instructions and Dispatch Orders through AGC

1. **Automatic Generation Control (AGC)** refers to equipment operated by System Management, which sends signals to Generating facilities participating in the AGC scheme to automatically adjust their output so as to maintain frequency or restore frequency within the Normal Operating Frequency Band.

2. A Dispatch Order is a direction issued by System Management to the **Electricity Generation Corporation (EGC)** as defined in clause 7.6A.3(a) of the Market Rules.
3. A Dispatch Instruction is an instruction given by System Management to a Market Participant other than the Electricity Generation Corporation as defined in clause 7.7.1 of the Market Rules.
4. Scheduled and Non-Scheduled Generators may have their Dispatch Instructions or Dispatch Orders transmitted electronically from System Management to the Generator Facility via System Management's AGC system.
5. A Generation Facility participating in System Management's AGC system will receive from the AGC a Dispatch Instruction or Dispatch Order in the form of an electronic control signal transmitted directly to the generator unit(s) output control or governing system. This signal will set the amount of required increase or decrease in generator output. The generating unit(s) will react to this signal within a timeframe and ramping rate agreed between the Participant and System Management.
6. Dispatch Instructions and Dispatch Orders generated by the AGC system will be limited to increase and decrease of generator output .
7. Connection of a Generation Facility to the AGC system will be through mutual agreement between the relevant Market Participant and System Management.

5.5 Generators operated by System Management

1. This section applies to Participants with Scheduled or Non-Scheduled Generators remotely operated by System Management under an agreement between the Participant and System Management [**MR 7.8**].
2. Under the agreement referenced in subsection (1), System Management may execute a number of Dispatch Instructions or Dispatch Orders relating to that facility through remote control facilities located in System Management's premises. These Dispatch Instructions and Dispatch Orders can be either a full range of start up, load and shut down instructions, or a reduced number of such instructions agreed to by System Management.
3. Before an operating agreement for remote operation and control is entered into, the Market Participant must acknowledge that System Management bears no liability or responsibility for failure of the Participant's Generation Facility to obey a Dispatch Instruction, or to comply with the Participant's Resource Plan.

5.6 Loss of Communication facilities

1. Where a major loss of communications occurs, the electronic data/control systems and some of the voice communication circuits referred to in section 5 of this procedure may become unavailable. Participants and System Management must then revert to speech communications, including the use

of back up speech facilities for the transfer of all Dispatch Instructions, Dispatch Orders and other operational information.

2. Where System Management's Control Centre has been evacuated and dispatch services shift to System Management's emergency control centre, an Emergency Operating State will exist. Contact with System Management will be via a series of emergency telephone numbers.
3. System Management must provide Market Participants with an emergency contact list to be used in these circumstances.
4. Market Participants must provide System Management with an emergency contact list to be used in these circumstances.

6. COMMUNICATION SYSTEMS FOR CURTAILABLE LOADS

A Market Customer who operates a Curtailable Load must provide a telephone contact that allows System Management to communicate Dispatch Instructions to the Market Customer.

6.1 Communication Systems for Dispatching Load Curtailment

1. All communication must be by telephone using nominated numbers.
2. Market Customers must nominate a contact person(s) and contact details for all matters concerned with their Curtailable Load, for that period where the Curtailable load is required to be available for dispatch.

6.2 Process for communicating Dispatch Instructions to Curtailable Loads

1. System Management must issue Dispatch Instructions to Market Customers with registered Curtailable Loads consistent with this Procedure and with the Power System Operation Procedure - Dispatch.
2. The content of the Dispatch Instructions must be consistent with the information detailed in the Standing Data, and any information provided by the IMO on restrictions on use of the Curtailable Load.

6.3 Issuing of a Dispatch Instruction to a Curtailable Load

System Management must issue a Dispatch Instruction to a Curtailable Load in accordance with the Market Rules [MR 7.7] and the Power System Operating Procedure - Dispatch.

7. COMMUNICATION AND CONTROL SYSTEMS FOR INTERRUPTIBLE LOADS

The communication, control and SCADA equipment functionality to be provided for an Interruptible Load shall be in accordance with the terms attaching to the Agreement for that Interruptible Load.