Overview of Emergency Management in the NEM

Fact Sheet

AEMO has established arrangements for the coordination of electricity emergencies across the National Electricity Market (NEM). These arrangements –based on established emergency management principles – outline the roles and responsibilities of AEMO and government, during an energy emergency.

AEMO's emergency plans and arrangements are a key element in ensuring that emergency situations in the NEM are responded to in a way that protects:

1. The safety of employees and the public.
2. The security of the power system.
3. The continuity of supply to customers.

AEMO's emergency responsibilities are outlined in the Power System Emergency Management Plan (the PSEMP). In Victoria AEMO has additional responsibilities under the Victorian Electricity Emergency Communications Protocol (the VEECP).

Power System Emergencies

Power system emergencies threaten the security or reliability of electricity supply in the NEM. They can be triggered by a range of events or conditions such as weather, natural disasters, and asset failures, which present an elevated risk of the power system becoming unstable or electricity supply shortfalls.

AEMO's role

AEMO is an independent energy market and system operator with statutory functions under electricity and gas legislation in most Australian states and territories. AEMO does not own any electricity or gas assets, but operates the National Electricity Market and the Wholesale Electricity Market (WA), the Victorian Declared Wholesale Gas Market, Gas Short-Term Trading Markets on the east coast and other wholesale gas trading and information platforms.

During an emergency affecting the NEM, AEMO coordinates and supports responses in accordance with the National Electricity Law and National Electricity Rules (Rules) to restore or maintain the safe, secure and reliable supply of electricity.

AEMO maintains the PSEMP and operational procedures which describe the powers, obligations, and processes AEMO uses to respond to an emergency in the NEM.

The PSEMP is a confidential document available only to jurisdictional energy agencies and Transmission Network Service Providers (TNSPs) in the NEM. Many of AEMO's operational procedures, however, are publicly available on the AEMO website.

There is more information on the PSEMP and activation of the plan later in this document.

Emergency Response

AEMO works together with the jurisdictional Departments responsible for energy and with the TNSPs in responding to power system emergencies.

There are several actions available to AEMO to mitigate a threat to the power system. These are described in chapter 4 of the National Electricity Rules and in AEMO's response procedures, and in general terms in the diagram in figure 1.

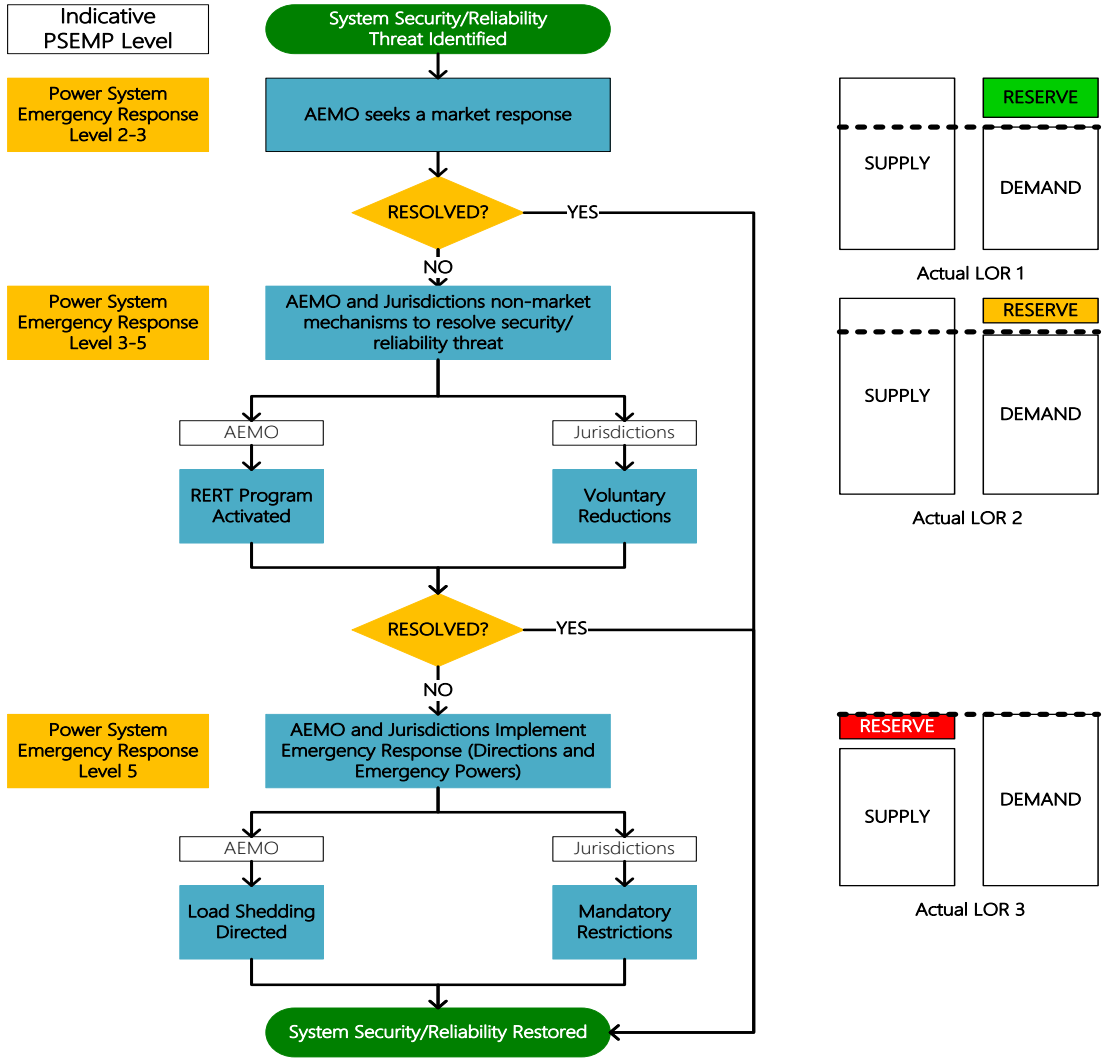
In summary, AEMO can:

- Try to liaise directly with participants and jurisdictions to manage the event.
- If there is sufficient time, notify the market of supply issues to encourage participants to respond by bidding extra supply into the market.
- Activate available Reliability and Emergency Reserve Trader (RERT) contracts to reduce load or obtain extra generation.
- Issue formal directions to participants.
- Direct load shedding to protect the security and reliability of the system.
- Suspend trading in the NEM spot market in one or more regions.

Operationally, power system equipment is protected against overload or damage from system security threats by automated protection schemes. These should trigger before controller-initiated processes can be used to intervene to maintain reliability of the system. Figure 1 outlines the general responses for reliability issues within

the power system. The responses shown below may be triggered in a different order depending on the urgency, scope, and nature of the threat.

Figure 1 - Responses to Power System Emergencies – supply shortage



Note: The Lack of Reserve (LOR) levels included in Figure 1 are defined in the Rules and have no direct relationship with Power System Emergency Response Levels Lack of Reserve levels are a signal to the electricity market and do not of themselves constitute an emergency. However, a forecast LOR level 2 or 3 will initiate an assessment of potential risk to the power system between AEMO's NEM Responsible Officer (RO), and the RO in each affected jurisdiction. An actual LOR level 2 or 3 may indicate an emergency as load shedding will be more likely or imminent.

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Communications

Direct Communications

Where there is an issue arising with a specific part of the power system or within a specific jurisdiction AEMO will initially communicate with the affected participant either directly or through the relevant Responsible Officer (RO).

Market Notices

AEMO uses Market Notices to communicate on a variety of issues including emergencies. Market Notices are posted on the website (https://www.aemo.com.au/market-notices) and sent via text and email to subscribers. You can subscribe on AEMO's website to receive Market Notices by text and email by entering your details at: https://www.aemo.com.au/subscribe.

PSEMP Conferences

PSEMP conferences are conducted when one of the defined trigger events in the PSEMP occurs or when there are threats to the power system with the potential to result in a significant event (such as widespread bushfires or high temperatures across multiple jurisdictions).

Response levels in the PSEMP

The PSEMP uses five levels of emergency which are based on the scope and response requirements that may be required:

Level 1: Operational Incident

An operational incident has only localised impact on service levels to customers and can be dealt with by a NEM participant's normal operational resources without additional assistance or incident declaration. AEMO is unlikely to become involved in this type of incident but some jurisdictional energy agencies may require or recommend a notification to the relevant body if such an event occurs. The impacted participant will coordinate the response and recovery from a level 1 Incident.

Level 2: Local Emergency

A local emergency impacts a single participant's ability to deliver service and requires emergency processes to be activated by the participant to manage the incident.

Discussion may be required between the relevant RO, JSSC, JDO and AEMO's NEM RO. This is facilitated either directly or by calling a PSEMP conference. The participant manages the emergency using their emergency processes.

Level 3: Widespread Emergency

A widespread emergency impacts multiple industry participants beyond the initially impacted participant. This level of event will require the mobilisation of operational and executive levels of impacted organisations and will require notification to the relevant jurisdictional energy agency and discussion between AEMO's NEM RO, jurisdictional ROs and JSSCs. JDOs are responsible for notifying the Relevant Official.

Level 4: AEMO Coordinated Response

At level 4 AEMO will coordinate the response as the emergency has significantly impacted more than one jurisdiction and the integrity of the energy system. AEMO will mobilise its internal Emergency Coordination Team which will work in conjunction with AEMO's control rooms to coordinate the security of the power system and manage the impact to the NEM. The ROs and JSSCs of all jurisdictions will be activated by AEMO in response to the event. AEMO will also provide a coordinated public information response through the media.

Level 5: Jurisdictional Direction

A level 5 incident has sufficient impact that one or more Jurisdictional energy agencies may decide to intervene in the market or system operation using legislated emergency powers. Under the NEM Emergency Protocol, any jurisdiction that is considering the use of emergency powers is to use best endeavours to liaise with AEMO and other impacted jurisdictions' ROs so that consequences of intervention can be reviewed, and alternatives considered.

Industry Conferences

In most cases you will interact only with organisations that you have a direct relationship with as part of your normal business. When there is a significant event which has the potential for broad impact or when there are changes which will impact a broad cross section of NEM participants and jurisdictions, AEMO may call an Industry Conference.

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Your nominated emergency contact will receive a notification via text and email with teleconference details. During the teleconference you will be given a briefing on the situation and have the opportunity to ask any questions to clarify your understanding of the situation and what may be expected of you as a participant.

Who's Involved in Emergency Management?

There are some specific roles that have been created under the emergency arrangements within the National Electricity Law, the Rules and the NEM Emergency Protocol. These roles function together to ensure that emergencies are managed effectively across the NEM. The key roles are described below.

NEM Responsible Officer (NEM RO)

A nominated AEMO staff member, the NEM RO acts as the emergency contact point for jurisdictions during incidents that are assessed to be at power system emergency response level 2 or higher.

Jurisdictional Responsible Officer (RO)

Nominated by each jurisdiction, often from within a TNSP, the jurisdictional RO acts as the emergency contact point for AEMO for emergency communications and during incidents that are assessed to impact or have the potential to impact the power system.

Jurisdictional System Security Coordinator (JSSC)

Appointed by the Minister in each jurisdiction to inform AEMO of sensitive loads and load shedding priorities. The JSSC liaises with AEMO and the other jurisdictions to through Power System Emergency Management Plan conferences or directly as required.

Jurisdictional Relevant Official

The Relevant Official is the person or body who exercises the use of an electricity specific emergency power and can be the Governor-in-Council, a Minister of the Crown, a statutory authority or an officer of a department or agency who is empowered to take such decisions.

Jurisdictional Designated Officer (JDO)

The JDO is the jurisdictional representative responsible for the development and review of the NEM Emergency Protocol. In addition, in the event of an emergency, a JDO may provide advice and support to the Relevant Official in relation to the exercise of electricity specific emergency powers, including the implementation of the relevant emergency powers instrument.

Beyond these NEM arrangements, each participant will have their own individual emergency response and recovery processes which may be linked into those of the organisations that they interact with (for example: a generator will have processes that articulate with the relevant TNSP and jurisdictional energy agency). The relationship between these functions is represented in Figure 2.

Your role

Your role in emergency management depends on how you participate in the NEM. In general terms you should ensure that you:

1. Maintain suitable emergency contacts (refer to the information panel below).
2. Establish what YOU need to do in the event of a power system emergency and document your plans.
3. Prepare for emergencies including training your people and running or participating in emergency exercises.

Emergency Contacts

A suitable emergency contact is:

- A 24hr number with a guaranteed response
- Backed by a roster of people (not dependent on a single individual)
- Kept current
- Provided to stakeholders
- Tested regularly

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Figure 2 -NEM Emergency Management Arrangements