Meeting Date: 28 March 2019

Distributors' Emergency Preparedness and Management

Security and Reliability Council

Note: This paper has been prepared for the purpose of the Security and Reliability Council. Content should not be interpreted as representing the views or policy of the Electricity Authority.

Contents

1. Executive Summary

1.1. The SRC asked its secretariat to provide a report about the emergency management preparedness of distributors.

1.2. Emergency management is the process of preparing for, mitigating, responding to and recovering from an emergency. Emergency management is a dynamic process. Planning, though critical, is not the only component. Training, conducting drills, testing equipment and coordinating activities with the community and other bodies are other important functions.

1.3. Emergency preparedness within electricity distributors is driven by two key pieces of regulation: the price quality regulation of the Commerce Commission and the Civil Defence and Emergency Management Act 2002 (CDEM Act). Both require distributors to have resilience and emergency planning as part of their business.

1.4. The SRC have previously heard from the Commerce Commission on their plans for improved asset management practices from distributors. Those asset management practices tend to be focused on planning pre-event mitigations.

1.5. The CDEM Act requires each distributor to "…ensure that it is able to function to the fullest possible extent, even though this may be at a reduced level, during and after an emergency." This is a high standard to meet and applies to before, during and after an event.

1.6. This paper discusses the key elements of emergency preparedness and sets the scene for a presentation on the emergency management plans of four distributors and subsequent discussion.

2. Background and purpose

2.1. The SRC has previously had presentations from:

2.1.1. the Commerce Commission on their focus on improved asset management practices across EDBs – which includes investing in appropriate levels of resilience

2.1.2. Wellington Electricity on their application of asset management practices for resilience investment for improved emergency preparedness.

2.2. The purpose of this paper is to give context to emergency management and the key legislative requirements for distributors and address SRC action item #9 which requires the "Secretariat to report to SRC about the emergency management preparedness of distributors."

3. What is emergency preparedness and emergency management?

3.1. An emergency is:

"an unplanned event that can cause death or significant injuries to employees or the public, or that can disrupt a business or its operation, cause physical or environmental damage or threaten the organisation's financial standing or public image."[1]

3.2. Emergencies can strike an organisation in many different ways. The underlying events that cause emergencies can be classified as set out in Table 1 below.

Table 1: Classification and examples of emergencies

Natural events	Technological events	Human events
Drought	Hazardous material release	Economic
Snow/ice/hail	Transportation accident	Terrorism
Windstorm/Tropical Storm	Power/utility failure	Hostage situations
Hurricane/Typhoon	Radiological accident	Enemy attack
Tornado	Fuel/resource shortage	Mass hysteria
Lightning storm	Business interruption	General strike
Extreme heat/cold	Communication interruption	Sabotage
Earthquake/land shift	Explosion/fire	Civil unrest
Dust/sand storm	Building/structure collapse	Arson
Fire	Extreme air pollution	
Tsunami	Dam/stockbank failure	
Biological, eg influenza	Strike	
Flood/wind-driven water	Financial collapse	
Volcanic eruption		
Landslide/mudslide		
Geomagnetic storms		

1 Alexander A. (2003) Towards the development of standards in emergency management training and education, Disaster Prevention and Management 12(2), 113-123

3.3. The phased activities involved in emergency preparedness and emergency management can be categorised as follows:

3.3.1. **Risk Reduction**: Preparing to handle an emergency:

3.3.1.1. includes any activities that prevent an emergency, reduce the chance of an emergency happening.

3.3.1.2. involves actions taken to protect lives and property.

3.3.1.3. regulation like the Building Code and the Resource Management Act are also examples of emergency preparedness.

3.3.2. **Readiness** (to respond): Means actions taken before an emergency occurs designed to influence how to respond to an emergency:

3.3.2.1. identifying hazards, quantifying risks and developing an overall framework

3.3.2.2. plans to save lives and to help response and rescue operations

3.3.2.3. exercises/drills are undertaken to prepare

3.3.3. **Response**: Response is safely putting your preparedness plans into action during an emergency, such as:

3.3.3.1. seeking shelter, shutting off gas valves, boarding windows

3.3.3.2. first response, saving lives, supporting community, securing against further damage

3.3.3.3. assessing impact and coordinating resources

3.3.3.4. establishing a basis for recovery

3.3.4. **Recovery**: Activities that take place after an emergency, such as:

3.3.4.1. taking actions to return to a normal or even safer situation

3.3.4.2. learning lessons and adapting risk reduction and readiness activities accordingly

3.3.4.3. making plans for who will do what and how will it be paid for.

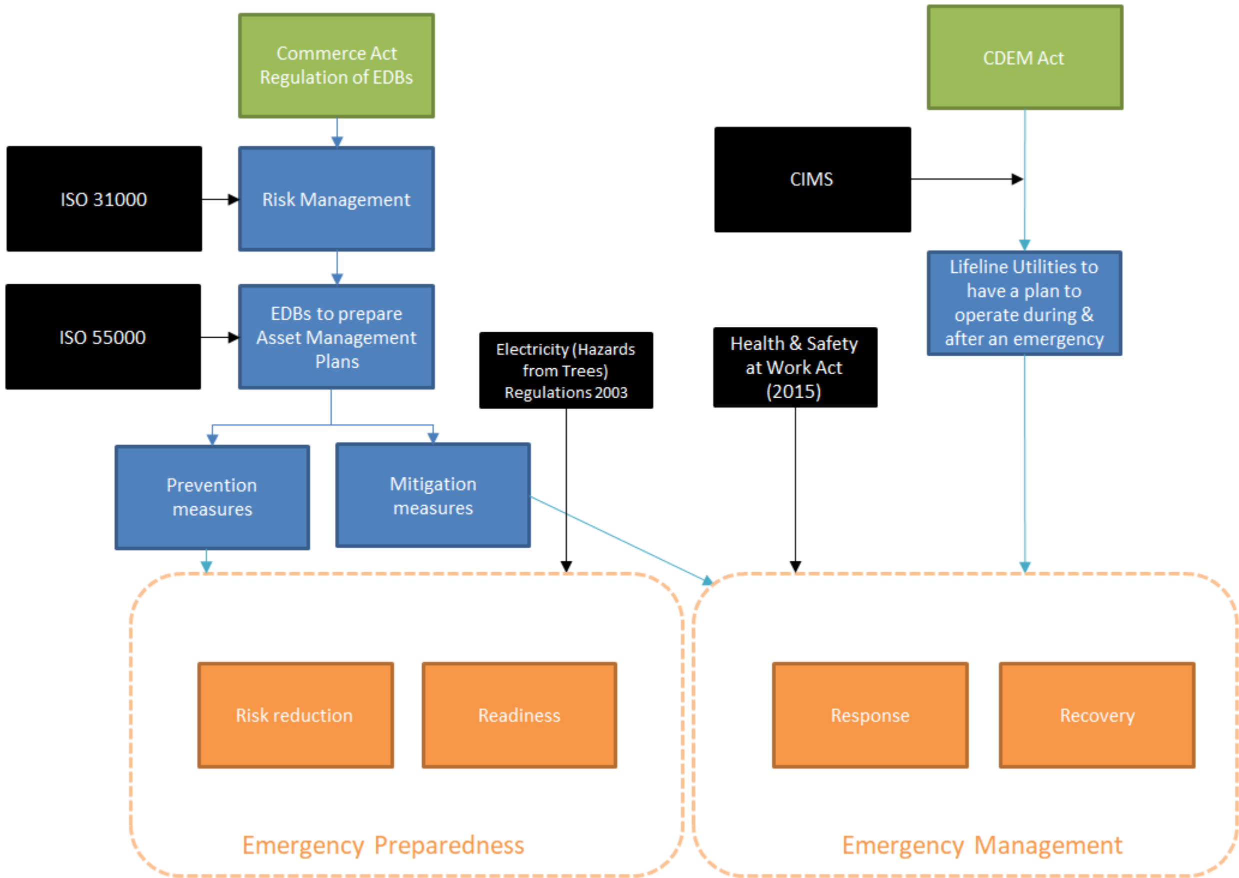
3.4. Pre-emergency activities (risk reduction and readiness) are collectively referred to in this paper as emergency preparedness.

3.5. Activities during and after an emergency (response and recovery) are collectively referred to in this paper as emergency management.

4. Legislative framework for emergency preparedness and management

4.1. The key legislation over emergency management for network operators come from the Commerce Act (EDB Price Quality Regulation) and the CMEM Act. The linkage between these pieces of legislation is set out below in Figure 1.

Figure 1: Regulatory framework for emergency



4.2. The following sections provide brief summaries of the regulatory elements of the framework illustrated in Figure 1.

Distributor Asset Management Plans

4.3. The Commerce Commission has significant role to play in ensuring that distributors meet good practice asset management and preparation for emergencies. The primary avenue for this is through setting the requirement for asset management plans and their subsequent oversight of these plans. If a distributor's plans fail to meet required standards, the Commerce Commission has a number of mechanisms to incentivise performance.

4.4. On 9 November 2017, the Commerce Commission released an open letter setting out its priorities for the electricity distribution sector for 2017/18 and beyond. Among those priorities, asset management was singled out as a key focus area. In its open letter, the Commerce Commission noted:

> *"Sound asset management is an integral part of ensuring that distributors improve efficiency and provide services at a price and quality that reflects the demands of electricity consumers. However, assessing whether distributors' asset management decisions result in over- or under-investment is a challenge, given the typically long lifetimes of network assets. In addition, there can be a significant lag between assets deteriorating and quality reducing, and it can be difficult to set leading performance indicators that appropriately reflect the risk of poorer quality in the future."*

4.5. Good practice asset management requires:

4.5.1. Asset classification

4.5.2. Threat categorisation

4.5.3. Consequence analysis

4.5.4. Vulnerability analysis

4.5.5. Threat likelihood analysis

4.5.6. Risk/resilience analysis

4.5.7. Risk/resilience management

4.6. Asset management decisions result in capital planning. This is then reflected in the planned spending found in distributors' Asset Management Plans.

Civil Defence Emergency Management Act 2002

4.7. Distributors are considered a lifeline utility under the CDEM Act. Crucially, this requires distributors to be able to function to "the fullest possible extent" during and after an emergency and have plans for being able to function.

4.8. Appendix A set out the key responsibilities of distributors under the CDEM Act.

Electricity (Hazards from Trees) Regulations 2003

4.9. The purpose of the 'tree regulations' is to protect the safety of the public and the security of electricity supply by:

4.9.1. Prescribing minimum distances between power lines and trees.

4.9.2. Establishing who is responsible for cutting or trimming trees close to power lines.

4.9.3. Outlining rules and penalties if the regulations are not complied with.

4.9.4. Providing an arbitration system to resolve disputes.

4.10. The Electricity Networks Association has been campaigning for changes to the regulatory arrangements for vegetation management.[2] It appears that a review should be completed by the end of 2019.[3]

Health & Safety at Work Act 2015

4.11. Distributors' responsibilities under the Health and Safety at Work Act 2015 are:

4.11.1. A duty to substitute, isolate and or implement engineering controls if they cannot eliminate risks. If the risk still remains they then must implement administrative controls. Lastly, personal protective equipment must be used.

4.11.2. A duty to maintain and review effective control measures.

4.11.3. A duty to provide information, supervision, training and instruction.

4.11.4. A duty to prepare, maintain and implement an emergency plan

4.12. By removing earlier prescriptions about testing evacuations twice per annum, the above arrangements place focus on effectiveness and ensuring effort is proportional to the relative risks involved.

The New Zealand Co-ordinated Incident Management System (CIMS)

4.13. CIMS is an agreed method of incident management to be employed by emergency responders for efficient incident management in New Zealand. CIMS is mandated through the CDEM Act for essential services (fire, ambulance, police). When distributors interact with essential services during an emergency, it will follow the CIMS protocols.

4.14. CIMS provides a set of management rules that is common to all emergency service providers. This means that when different emergency services need to work together on an incident or disaster, they already share a standardised management structure, a standardized set of management principles, and a standardized system of information management.

4.15. Distributors should consider adoption of CIMS for ease of emergency operations.

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[2] See https://www.ena.org.nz/news-and-events/news/why-the-tree-regulations-arent-working/

[3] See https://www.ena.org.nz/news-and-events/news/review-of-tree-regulations-finally-starting/

5. Reviews of distributor emergency preparedness and management

Price Quality Regulation – Asset Management Plans

5.1. A review of all distributors' risk preparedness is currently being undertaken by the Commerce Commission. That review is nearing completion and findings are not yet public.

5.2. The Commerce Commission has agreed to discuss findings when it attends the 20 June 2019 SRC meeting. The SRC can expect a written report that includes dashboards of 'health indicators' of risk and emergency management practices, but there will be significant caveats involved on what conclusions can be drawn from the results.

5.3. Three high-level observations can be made from a brief review of asset management plans:

5.3.1. Evidence suggests that existing Asset Management Plans are a mixed bag. The level of alignment with good practice as defined by ISO 55000 is variable, and it is possible that the Commerce Commission may require further attention placed on good practice in these plans.

5.3.2. Risk management is also a work in progress. Alignment with good practice as defined by ISO 31000 will require further attention by some distributors. This should assist with emergency planning.

5.3.3. Emergency preparedness information has room for improvement. Commentary on the linkage between emergency preparedness and asset management could be improved. Some distributors have previously spent considerable effort on improving the resiliency of their networks to emergency events and this is not reflected in the latest asset management plans.

CDEM Act

5.4. Key criteria for assessing compliance with the CDEM Act requires that:

5.4.1. Emergency management framework and specific plans are in place to provide minimum disruption to the lifeline utility

5.4.2. Emergency management plans need to be current, periodically tested and subject to a meaningful review process

5.4.3. Post-event performance reviews need to take place with lessons fed back into risk reduction and readiness plans.

5.5. To address the SRC's action, the secretariat has chosen to review four distributors that have experience with a variety of classes of emergency. A verbal presentation will be given to the 28 March 2019 SRC meeting based on a mix of public and unpublished information.

6. Questions for the SRC to consider

6.1. The SRC may wish to consider the following questions.

Q1. Would there be benefit in receiving a paper about legislative and regulatory requirements for emergency preparedness planning in other jurisdictions?

Q2. What further information, if any, does the SRC wish to have provided to it by the secretariat?

Q3. What advice, if any, does the SRC wish to provide to the Authority?

7. Attachments

7.1. The following items are included as attachments to this paper:

7.1.1. Distributors' key responsibilities under the CDEM Act (Appendix A)

Appendix A: Distributors' key responsibilities under the CDEM Act

A1. Distributors are classified as a lifeline utility under the CDEM Act.[4] Their key responsibilities are summarised in the following sections.

Duties of lifeline utilities

A2. Distributors must undertake civil defence emergency management duties or perform other functions or duties as required.[5]

A3. As a lifeline utility, distributors must:

> *"ensure that it is able to function to the fullest possible extent, even though this may be at a reduced level, during and after an emergency*
>
> *make available to the Director in writing, on request, its plan for functioning during and after an emergency*
>
> *participate in the development of the national civil defence emergency management strategy and civil defence emergency management plans*
>
> *provide, free of charge, any technical advice to any Civil Defence Emergency Management Group or the Director that may be reasonably required by that Group or the Director*
>
> *ensure that any information that is disclosed to the lifeline utility is used by the lifeline utility, or disclosed to another person, only for the purposes of this Act."*[6]

Provision of Information

A4. The Director, or a CDEM Group, may require distributors to provide information that in the opinion of the Director or the Group, is reasonably necessary for the exercise of civil defence emergency management. The information must be in the possession of distributors and provided without unreasonable difficulty, delay or any expense.[7]

A5. CDEM Groups have powers when a state of emergency is in force in its area. Distributors must comply with the instructions of a CDEM Group.[8]

Requisition Requirements

A6. If a state of emergency is in force a Controller (as defined in the Act) or member of the police or person authorised by him or her, may direct distributors to place and land, building or equipment under his or her control and direction.

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4 Schedule 1 Part B (2)
5 Section 59
6 Section 60
7 Section 76
8 Sections 85 – 89 & 92

A7. The person exercising any requisitioning powers must provide distributors with a written statement specifying: The property that is requisitioned and the person under whose control the property is placed.

A8. Distributors must provide any assistance that is reasonably required for the effective and safe use of requisitioned property.[9]

Direction Requirements

A9. While a state of emergency is in force, distributors must comply with a direction given either verbally or in writing by a Controller or a member of the police, or any person acting under the authority of a Controller or a member of the police.[10]

A10. If any employee of a distributor is required by the Director or Controller to be absent from their employment during a state of emergency, they cannot be dismissed by reason of their absence.[11]

[9] Section 90

[10] Section 91

[11] Section 112