

# UE PL 0009 Fire Prevention Plan

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2019/23 v.1



## Liability Disclaimer

This Fire Prevention Plan (**'the Plan'**) has been prepared to inform relevant stakeholders of the asset management approach, processes and strategies applied to the management of the United Energy (UE) Electricity Network to prevent fire ignition emanating from the UE supply network.

This Plan has also been prepared for the purposes of the *Electrical Safety Act (1998)* and the *Electricity Safety (Bushfire Mitigation) Regulations 2013 (Vic)* and may be referred to as a 'Bushfire Prevention Plan' to satisfy the purposes of these legislative requirements.

Some of the information and statements contained in the Plan are comprised of, or are based on, assumptions, estimates, forecasts, predictions and projections made during UE's annual asset management planning cycle. In addition, some of the information and statements in the Plan are based on actions that UE currently intends it will take in the future. Circumstances will change, assumptions and estimates may prove to be wrong, events may not occur as forecasted, predicted or projected, and UE may, at a later date, decide to take different actions to those it currently intends to take.

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When considering any part of the Plan, persons should take appropriate expert advice in relation to their own circumstances and must rely solely on their own judgement and expert advice obtained.

June 2019

## Signatories (Version 1.0 - issued June 2019)

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## Fire Prevention Plan Issue History

Issue	Name of Plan	Date Finalised	Prepared by
1.0	2019/23 First Issue	3/6/2019	T. Fisher

## Key Contacts List

These are the prescribed contact particulars to satisfy the regulatory requirement (ref. clause 7(1)(a) (b), (c), (d) and (da) of the *Electricity Safety (Bushfire Mitigation) Regulations 2013*.

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## Compliance with the Regulations

The Electricity Safety (Bushfire Mitigation) Regulations 2015 require UE to submit a Bushfire Mitigation Plan (referred to in this document as the UE Fire Prevention Plan (FPP)) for a five-year period to ESV for review and approval. The FPP has been developed to address the requirements of the Electricity Safety (Bushfire Mitigation) Regulations 2015.

United Energy report UE RP 2532.2 Electricity Safety (Bushfire Mitigation) Regulations Legislation Report reviews these regulations and identifies United Energy's compliance obligations and provides evidence of compliance.

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# 1 Fire Prevention Policy

## Fire Prevention Policy



UE is committed to providing our customers with a **safe, reliable and affordable supply of electricity** through the application of an effective asset management framework. United Energy aims to achieve high levels of public safety through programs that are designed to manage the risk of fire ignition arising from the design, construction, commissioning, operation, maintenance and decommissioning of the network to as low as reasonably practicable.

We will achieve our commitment by adopting the following principles:

- Minimise **safety** risks as far as practicable.
- Enhance our **reputation** as a trusted service provider through active industry leadership and the delivery of **safe** and **reliable** services that meet the needs and expectations of our customers and communities.
- Adopt a **risk-based approach** to managing our network.
- **Comply with** as a minimum all relevant **legislative and regulatory requirements** as well as Australian, international and industry standards and any other requirements to which UE subscribes.
- **Embrace innovation and technology** to continuously improve our asset management framework and activities consistent with recognised asset management standards for the long term benefit of our employees, shareholders, customers and other stakeholders.

United Energy aims to meet these important fire prevention commitments by conducting the following activities:

- Work with other agencies to ensure a **coordinated approach** to fire risk management;
- Ensure that developments having a relevance to United Energy are adequately **supported**;
- Focus not just on **reducing** the number of network incidents, but their consequence;
- **Communicate** fire risks and shared responsibilities; and
- **Monitor and evaluate** relevant information to effectively manage the network.

**We strive for excellence** in everything we do and are always accountable for our own performance including the management and operation of our network to achieve the objectives outlined in the policy.

This Policy is to be read in conjunction with the **Asset Management Policy**.



Mark Clarke  
General Manager, Electricity Networks  
June 2018



## 1.1 Introduction

UE is committed to operating its electricity network in full compliance with the requirements of the Act and Regulations administered by Energy Safe Victoria (**ESV**). Due to prevailing weather conditions and country environments conducive to fires UE acknowledges the need to act proactively in designing and operating its electricity distribution assets to prevent fire ignition.

Being an authority in the distribution of electricity in its franchise area, UE acknowledges its responsibility to the local community by considering all relevant practical technologies available to prevent fires.

The creation of this plan and the policies and procedures herein demonstrate the commitment from all levels of management within UE to the minimisation of fires due to electricity assets. Whether the terms minimisation or prevention are used, the aim of this plan is to be a primary reference for all fire-related policies and procedures and to manage the fire ignition risk using approved techniques.

These policies and procedures are communicated to all UE employees, Service Providers (**SP**) and subcontractors and stringently enforced at the design, construct, commission, operate, maintain and decommission stages.

A copy of this plan, approved by ESV, will be available for inspection at Level 1, 43-45 Centreway, Mt. Waverley during normal business hours and on UE's website <https://www.unitedenergy.com.au/wp-content/uploads/2015/09/UE-Fire-Prevention-Plan.pdf>.

## Fire History

Three significant and devastating days of fires have ravaged significant parts of Victoria from 1977 to 2009.

- **12 February 1977**  
There were 68 separate fires reported in Victoria on that day, 16 of which were major.
- **16 February 1983**  
There were 180 separate fires reported in Victoria on 'Ash Wednesday', the majority of which were major. Twenty-nine were alleged to involve electricity assets. Seventy people perished because of these fires in South Australia and Victoria.
- **7 February 2009**  
The devastating 'Black Saturday' fires on the 7 February 2009 were the worst fires in Australia's history costing 173 lives and destroying over 2,000 dwellings in fires that raged throughout the northern and eastern areas in the outer suburbs and small towns within 100km of Melbourne.

Following the 2009 'Black Saturday' bushfires, the State Government of Victoria established the 2009 Victorian Bushfires Royal Commission to investigate the causes and responses to the bushfires in an effort to learn from these tragic events to reduce the likelihood and impact of future bushfires. In its July 2010 Final Report, the Royal Commission concluded that five of the eleven major fires that it investigated were started by power lines. The Royal Commission made 67 recommendations, of which eight (Recommendations 27 to 34) related to reducing the likelihood of power lines starting catastrophic bushfires.

The Powerline Bushfire Safety Taskforce was established in August 2010 to recommend to the Victorian Government how to maximise the value to Victorians from the Royal Commission recommendations. The PBST presented its final report to the Victorian Government on 30 September 2011. The Victorian Government accepted the recommendations made by the Taskforce and in December 2011 announced a package of initiatives including high performance Automatic Circuit Reclosers (**ACRs**) Ground Fault Neutralisers (**GFN's**).

As a result of the Victorian Bushfire Royal Commission and Recommendation 33, Energy Safe Victoria (**ESV**) has directed UE under section 141(2)(d) of the *Electricity Safety Act (1998)* and via letters dated 4 January 2011 to amend its Electricity Safety Management Scheme (**ESMS**) to include the development (or reinforcement) of plans and procedures in relation to the fitting of spacers/spreaders, vibration dampers and armour rods.

## 1.2 Objectives

The objective of this Plan is to clearly define the policies and procedures of UE in relation to the prevention of fire, these being:

- To establish policies and practices that will minimise as far as practicable, the risk of network assets or operational activities being the cause of a fire ignition with particular focus on high bushfire risk days
- To demonstrate to all stakeholders, United Energy's commitment and due diligence in operating an electricity network that minimises risk and meets stakeholders objectives/expectations
- To implement the requirements of the *Electricity Safety Act (1998)*, the *Electricity Safety (Bushfire Mitigation) Regulations* and the *Electricity Safety (Electric Line Clearance) Regulations*.

## 1.3 Vision

To mitigate the fire risk to the community and the environment from electricity distribution assets. UE will support this vision by instilling the following values:

- Use of skilled people and modern technology
- Continued development and improvement of methods of environmental management of fire safe distribution assets
- Providing training in line with industry standards for vegetation management
- Provision of excellent and responsive customer service.

## 1.4 Mission

To ensure that vegetation clearances, electrical distribution assets and Private Overhead Electric Lines (**POELs**) are maintained in accordance with the relevant Acts, Regulations and the United Energy's accepted ESMS.

At all times these activities will be carried out with attention to:

- Ensuring public safety
- Ensuring private property security
- Ensuring continuity of supply
- Delivery of quality service
- Responsible environmental management
- Commitment to work place safety
- Minimising of community cost
- Notification/consultation/negotiation with relevant stakeholders.

## 1.5 Definitions

### UE PL 0009 Fire Prevention Plan (the Plan)

This document is prepared by UE and submitted to ESV to comply with the *Electricity Safety Act (1998)* Section 113A (1).

#### ESV

Energy Safe Victoria.

#### UE

United Energy (**UE**) distributes electricity to southern and eastern suburbs of Melbourne and the Mornington Peninsula, Victoria. UE is one of five licensed electricity distribution networks in Victoria.

#### Service Provider (SP)

The Service Provider/s (**SP**) refers to the organisation/s contracted to implement and deliver the requirements of the Plan.

The major service providers for UE include:

- Zinfra provides the line maintenance and asset inspection services to UE
- Citipower/Powercor provide the Vegetation Management Services.

## 1.6 References

- *Electricity Safety Act (1998)*
- *Electricity Safety (Bushfire Mitigation) Regulations 2013*
- *Electricity Safety (Electric Line Clearance) Regulations 2015*
- *Electricity Safety (Management) Regulations 1999*
- Any Current ESV Directions and Exemptions.

## 1.7 References Internal

Plan/Procedure	Document #	UE Internal Link
Fire Prevention Strategy	UE PL 2039	<a href="http://uenetwork.domain.prd.int/AssetPlanning/FirePrevention/Plans/FP%20Strategy/UE%20PL%202039%20Fire%20Prevention%20Strategy.docx">http://uenetwork.domain.prd.int/AssetPlanning/FirePrevention/Plans/FP%20Strategy/UE%20PL%202039%20Fire%20Prevention%20Strategy.docx</a>
Electric Line Clearance Management Plan ( <b>ELCMP</b> ) Incorporating the 'Vegetation Management Strategy'	CPPAL & UE 2018-2019 ELCMP v7	<a href="http://uenetwork.domain.prd.int/AssetPlanning/ElectricLineClearance/Plans/2018-19%20CitiPower%20Powercor%20%20United%20Energy%20ELCMP%20Final%20Approved%20V7%20(002).docx">http://uenetwork.domain.prd.int/AssetPlanning/ElectricLineClearance/Plans/2018-19%20CitiPower%20Powercor%20%20United%20Energy%20ELCMP%20Final%20Approved%20V7%20(002).docx</a>
Asset Inspection Manual	UE MA 0003	<a href="http://uenetwork.domain.prd.int/PublishedDocuments/Manuals/UE-MA-2003%20Asset%20Inspection%20Manual.pdf">http://uenetwork.domain.prd.int/PublishedDocuments/Manuals/UE-MA-2003%20Asset%20Inspection%20Manual.pdf</a>
Maintenance Manual LV Private Overhead Electric Lines	UE MA 2620	<a href="http://uenetwork.domain.prd.int/PublishedDocuments/Manuals/UE-MA-2620%20Maintenance%20Manual%20-%20LV%20Private%20Overhead%20Electric%20Lines.pdf">http://uenetwork.domain.prd.int/PublishedDocuments/Manuals/UE-MA-2620%20Maintenance%20Manual%20-%20LV%20Private%20Overhead%20Electric%20Lines.pdf</a>
Health Safety and Environment ( <b>HSE</b> ) Incident Management	UE PR 0251	<a href="http://uenetwork.domain.prd.int/PublishedDocuments/Procedures/UE-PR-0251%20Health%2C%20Safety%20and%20Environment%20(HSE)%20Incident%20Management.pdf">http://uenetwork.domain.prd.int/PublishedDocuments/Procedures/UE-PR-0251%20Health%2C%20Safety%20and%20Environment%20(HSE)%20Incident%20Management.pdf</a>

UE Network Performance Incident Investigation Management	UE PR 2309	<a href="http://uenetwork.domain.prd.int/PublishedDocuments/Procedures/UE-PR-2309%20Network%20Performance%20Incident%20Investigation%20Management.pdf">http://uenetwork.domain.prd.int/PublishedDocuments/Procedures/UE-PR-2309%20Network%20Performance%20Incident%20Investigation%20Management.pdf</a>
UE Lifecycle Strategies	Various	<a href="http://uenetwork.domain.prd.int/PublishedDocuments/Plans/Forms/AllItems.aspx">http://uenetwork.domain.prd.int/PublishedDocuments/Plans/Forms/AllItems.aspx</a>
UE Disputes Resolution Process		<a href="https://www.unitedenergy.com.au/contact-us/dispute-resolution-%20process/">https://www.unitedenergy.com.au/contact-us/dispute-resolution-%20process/</a>
UE Customer Charter		<a href="http://www.unitedenergy.com.au/your-electricity">www.unitedenergy.com.au/your-electricity</a>
UE Risk Management Framework and Policy		<a href="https://unitedenergy.sharepoint.com/rm-framework-and-policy">https://unitedenergy.sharepoint.com/rm-framework-and-policy</a>
UE Electricity Safety Management Scheme	UE ST 2921	<a href="http://uenetwork.domain.prd.int/PublishedDocuments/Standards/UE-ST-2921%20Electricity%20Safety%20Management%20Scheme.pdf">http://uenetwork.domain.prd.int/PublishedDocuments/Standards/UE-ST-2921%20Electricity%20Safety%20Management%20Scheme.pdf</a>
HV Operations Manual	UE MA 0001	<a href="http://uenetwork.domain.prd.int/PublishedDocuments/Manuals/UE-MA-0001%20HV%20Operations.pdf">http://uenetwork.domain.prd.int/PublishedDocuments/Manuals/UE-MA-0001%20HV%20Operations.pdf</a>
UE Emergency Management Plan Event Command Organisation		<a href="http://thevault/enterprisemngt/resilience/Governance/ECO%20Manual%20Emergency%20%20Crisis%20Mgt/ECO%20Manual.pdf">http://thevault/enterprisemngt/resilience/Governance/ECO%20Manual%20Emergency%20%20Crisis%20Mgt/ECO%20Manual.pdf</a>
Introducing New Equipment into the United Energy Distribution Network	UE PR 2363	<a href="http://uenetwork.domain.prd.int/PublishedDocuments/Procedures/UE-PR-2363%20Introducing%20New%20Equipment%20into%20the%20United%20Energy%20Distribution%20Network.pdf">http://uenetwork.domain.prd.int/PublishedDocuments/Procedures/UE-PR-2363%20Introducing%20New%20Equipment%20into%20the%20United%20Energy%20Distribution%20Network.pdf</a>
Electricity Approved Materials and Suppliers List.	UE ST 2402	<a href="http://uenetwork.domain.prd.int/PublishedDocuments/Standards/UE-ST-2402%20Approved%20Materials%20and%20Suppliers%20List%20Combined.pdf">http://uenetwork.domain.prd.int/PublishedDocuments/Standards/UE-ST-2402%20Approved%20Materials%20and%20Suppliers%20List%20Combined.pdf</a>
Distribution Construction Standards Manuals.	UE MA 2000.4	<a href="http://uenetwork.domain.prd.int/PublishedDocuments/Standards/UE-ST-2000.04%20Distribution%20Construction%20Standards%20Earthing.pdf">http://uenetwork.domain.prd.int/PublishedDocuments/Standards/UE-ST-2000.04%20Distribution%20Construction%20Standards%20Earthing.pdf</a>
Distribution Design Standards Manual	UE ST 2005	<a href="http://uenetwork.domain.prd.int/PublishedDocuments/Standards/UE-ST-2005%20Zone%20Substation%20Assets%20Drafting%20Standards.zip">http://uenetwork.domain.prd.int/PublishedDocuments/Standards/UE-ST-2005%20Zone%20Substation%20Assets%20Drafting%20Standards.zip</a>
Qualifications and Training Requirements for Network Access	UE PR 310.001	<a href="http://uenetwork.domain.prd.int/PublishedDocuments/Procedures/UE-PR-310.001%20Qualification%20and%20Training%20Requirements%20for%20Network%20Access.pdf">http://uenetwork.domain.prd.int/PublishedDocuments/Procedures/UE-PR-310.001%20Qualification%20and%20Training%20Requirements%20for%20Network%20Access.pdf</a>
NCC Procedure: Total Fire Ban Actions	UE PR 9365	<a href="http://uenetwork.domain.prd.int/PublishedDocuments/Procedures/UE-PR-9365%20Total%20Fire%20Ban%20Actions.pdf">http://uenetwork.domain.prd.int/PublishedDocuments/Procedures/UE-PR-9365%20Total%20Fire%20Ban%20Actions.pdf</a>
NCC Procedure: Fire Start	UE PR 9367	<a href="http://uenetwork.domain.prd.int/PublishedDocuments/Procedures/UE-PR-9367%20Fire%20Start.pdf">http://uenetwork.domain.prd.int/PublishedDocuments/Procedures/UE-PR-9367%20Fire%20Start.pdf</a>
NCC Procedure: Electricity Triggers, Alerts and Notifications.	UE PR 94522	<a href="http://uenetwork.domain.prd.int/PublishedDocuments/Procedures/UE-PR-9452%20UE%20Triggers%20C%20Alerts%20and%20Notifications.pdf">http://uenetwork.domain.prd.int/PublishedDocuments/Procedures/UE-PR-9452%20UE%20Triggers%20C%20Alerts%20and%20Notifications.pdf</a>
NCC Procedure: Hot Weather Planned Outage Cancellation	UE PR 9386	<a href="http://uenetwork.domain.prd.int/PublishedDocuments/Procedures/UE-PR-9386%20Hot%20Weather%20Planned%20Outage%20Cancellation.pdf">http://uenetwork.domain.prd.int/PublishedDocuments/Procedures/UE-PR-9386%20Hot%20Weather%20Planned%20Outage%20Cancellation.pdf</a>

## 1.8 Scope

This Plan defines UE's policies and procedures for the prevention of fire ignition due to electricity assets, including responsibilities and accountabilities. It includes references to other plans or instructions, which combine with the Plan to cover all activities that are carried out by UE employees, SP and subcontractors which have an impact on the risk of fire ignition.

The following map shows the land to which this Fire Prevention Plan applies with respect to the UE area. The map identifies the UE supply network Hazardous Bushfire Risk Area (**HBRA**) in red, Low Bushfire Risk Area (**LBRA**) in yellow.

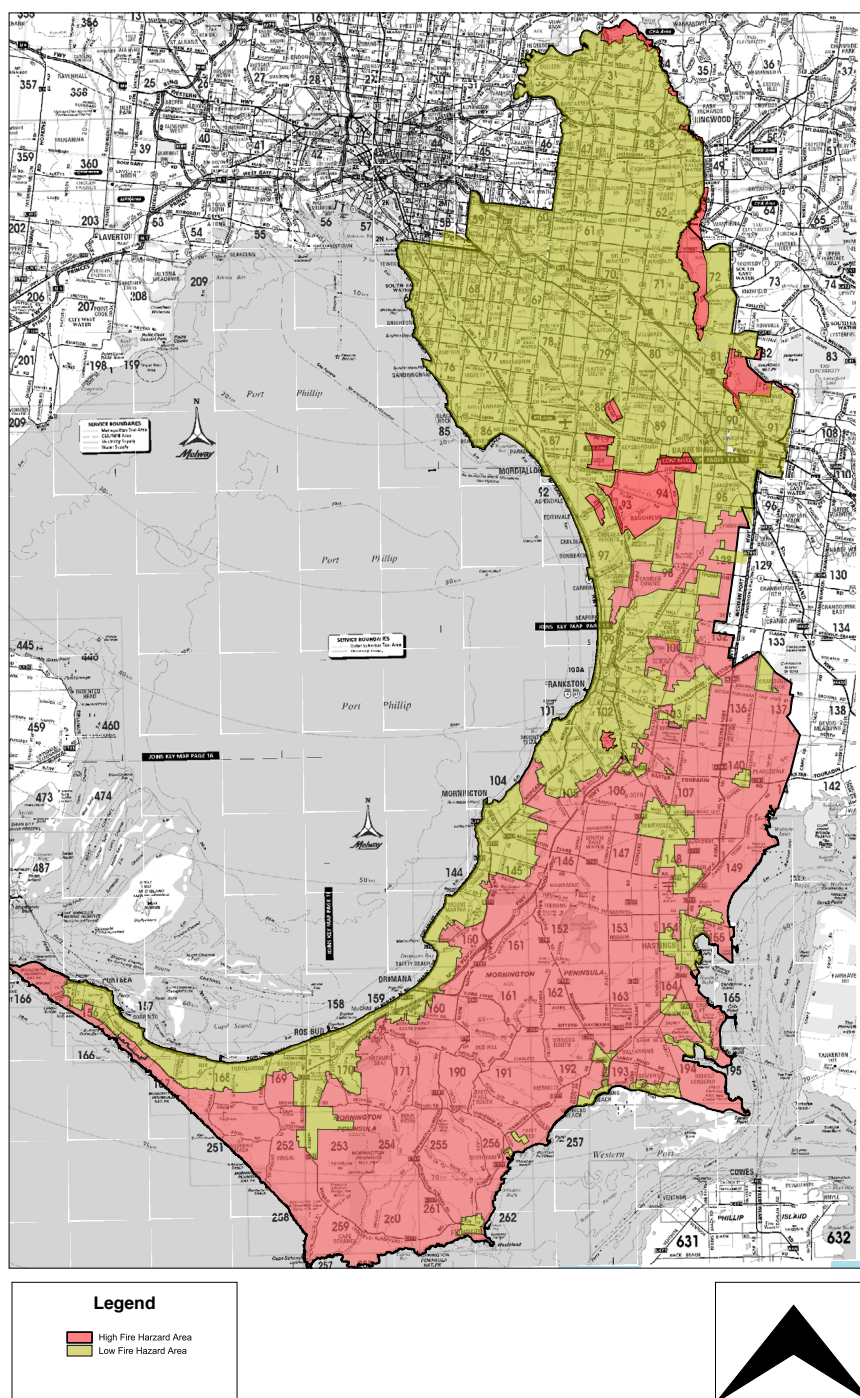


Figure 1 UE Geographic HBRA/LBRA



**Note:** Figure 1 defines the geographic area to which this Plan applies including the HBRA/LBRA split (see section 3 Objectives). Details of this area are maintained and available in the UE GIS system.

Figure 1 also shows how the system defines geographical boundaries with other Distribution Businesses (**DB**).

As displayed in the above map, the UE service area covers the eastern and southern suburbs of Melbourne:

- Its northern boundary at the Yarra River in Templestowe
- Its western boundary in St Kilda
- Its eastern boundary at Hallam
- South including all the Mornington Peninsula through to Portsea.

The UE service area is also shown as a wide orange line in Edition 38 of the Greater Melbourne street directory published by Melway – refer to Key Maps pages 9 to 17.

## 1.9 Statistics

United Energy distributes electricity in Melbourne's south and east including the Mornington Peninsula covering an area of 1472 km<sup>2</sup>. The electricity distribution assets have a replacement value of over four billion dollars comprising 47 zone substations; approximately 206,000 poles; 12,500 distribution substations; 10,000km of overhead power lines and 3,300km of underground cables.

The northern part of UE's service territory is a developed, urban area lying entirely within the Melbourne metropolitan area, including predominantly residential and commercial centres such as Doncaster, Box Hill, Caulfield and Glen Waverley.

The southern part of UE's service territory is a mix of developed and undeveloped land with Dandenong being recognised as the capital of the south east and is Victoria's manufacturing heartland. Frankston denotes the southern rim of the Melbourne metropolitan area and the border to the Mornington Peninsula. Frankston is one of the largest retail areas outside the Melbourne CBD.

The Mornington Peninsula, in the southern part of UE's service territory, is a 720 square kilometre boot-shaped promontory separating two contrasting bays: Port Phillip and Western Port.

Representing 50% of UE's territory by area, the Mornington Peninsula, is surrounded by the sea on three sides, with coastal boundaries of over 190 kilometres. It is a mixture of urban areas, resort towns, tourist development and rural land with considerable amount of high bushfire risk area.

Recent changes to the Electricity Safety Act now mean that the responsibility for the management of vegetation in the vicinity of these assets is shared only with Councils and customers within UE boundaries.

The UE area has been classified by the CFA into two categories; Hazardous Bushfire Risk Area (**HBRA**) and Low Bushfire Risk Areas (**LBRA**) in compliance with Part A, Section 80 of the Electricity Safety Act (1998).

Specific asset standards and vegetation management requirements apply in these areas.  
UE statistical data on distribution poles as at 1 January 2018 is as follows:

Distribution Poles	LBRA	HBRA	Total
Total Number of Poles	195,605	19,969	215,574
% of UE geographic area	40%	60%	100%
Kilometres of Overhead Sub T / HV	3,252	1,133	4,385
Kilometres of Overhead LV	5,366	466	5,832
Number of LV Overhead Service Lines	350,476	8,546	359,022

## 1.10 Strategies

The core fire prevention strategies adopted by UE are:

- Rigorous management processes – policies and procedures shall be documented and understood by all relevant UE employees, SP and subcontractors, and systems shall be in place to:
  - o Monitor and audit the implementation of the plan
  - o Identify any deficiencies in the plan or the plan's implementation
  - o Improve the plan and the plan's implementation if there are any deficiencies identified.
- Preventative programs – these shall be based on the analysis of fire risk and the implementation of appropriate instructions and programs
- Asset condition monitoring – the condition of the assets shall be closely monitored through a program of inspections, testing and recording. Systems shall be put in place to:
  - o Monitor and audit the effectiveness of inspections carried out under the plan
  - o Ensure that any training necessary for persons assigned to perform functions under the plan is provided
  - o Monitor and audit the competence of the persons assigned to carry out inspections under the plan.
- Programs for days of total fire ban – appropriate operational procedures shall be maintained and implemented on days of total fire ban.
- Monitor and complete analysis of data systems.

## 1.11 Operational Environment and Assumptions

In implementing the Fire Prevention Plan within the UE area, the following operational assumptions and arrangements are made.

- The UE geographical area is located within the Central Fire Zone (Regions 8 and 13) as defined by the CFA
- The fire danger period for these regions is usually declared in early December and pre-fire season works in the HBRA areas are usually scheduled to finish before the end of November. The Fire Prevention Manager is responsible for advising the Fire Prevention Committee of possible variations in this date
- At present, the number of assets to be maintained or replaced will not vary significantly from the numbers estimated from previous years. These estimates are reflected by information contained in the UE Asset Management System (**GIS/SAP**) for the UE supply network. The Fire Prevention Committee is responsible for setting these estimates
- Approximately 98% of trees affecting the HBRA network can be maintained to the Code specification by cyclic pre-summer cutting or removal programs. The remaining 2% of trees require special arrangements (e.g. important or significant vegetation)

- The majority of assets in the UE area are accessible throughout the year. However, there are a few assets on hilltops and in gullies where access difficulties can occur. The majority of these assets are located in the Mornington Peninsula area. The Head of Vegetation Management is responsible for ensuring that those assets not accessible will be managed without compromising the fire prevention program
- Funding for carrying out the requirements of the Plan will be made available as part of the normal budgeting process.

## 2 The Role of Senior Management

### Purpose

To clearly demonstrate, internally and externally, senior management's commitment to fire prevention.

### Objectives

To actively participate in the implementation of the Fire Prevention Plan including:

- Attending scheduled meetings where possible
- Attending Senior Management Briefings
- Liaison with regulatory authorities when required
- Minimising the number of fire starts from network assets.

### Accountabilities

Senior management is responsible for:

- Visibly and actively participating in the promulgation, communication and operation of the Fire Prevention policy and procedures
- Carrying out periodic assessments of the Fire Prevention Management System
- Establishing key performance measures as senior management controls
- Ensuring preventative programs are in place to prevent fire starts from network assets
- Fostering an ongoing culture of continuous improvement and proactive reduction in network defects or faults which lead to fire ignition.

### Requirements

Further details are contained in Policy 4 and in the Management Structure Procedure FPP2.

## 3 Fire Prevention Risk Register

### Purpose

To ensure that all activities which contribute to the prevention of fire risk or affect fire risk are properly identified, documented and managed.

### Objectives

- To identify and document the risk management processes, procedures and activities (and the relationships between them) associated with managing the risk of fire.
- To identify the management control mechanisms for the activities critical to the management of fire risk.
- Ensuring the reporting, investigation and analysis of any alleged fire ignition from network assets.



## Accountabilities

The Fire Prevention Manager in consultation with the Fire Prevention Committee is responsible for the updating of the Fire Prevention Risk Register.

## Requirements

This Plan provides the elements that support the Fire Prevention Risk Register.

The Fire Prevention Risk Register is detailed in the Fire Prevention Management System Procedure FPP1.

# 4 Management Structure

## Purpose

To ensure a clear understanding of the responsibilities for the implementation and control of all activities related to fire prevention.

## Objectives

- To have in place a formal, documented management structure for fire prevention
- For each position, to have clearly identified responsibilities with assigned authority and accountability
- To identify the inter-relationships between those that manage, perform, record and verify fire prevention activities.

## Accountabilities

The Fire Prevention Manager is responsible for documenting the fire prevention management structure.

## Requirements

The responsibilities, authority and accountability for each position shall be documented in position descriptions. The management structure is detailed in the Management Structure Procedure FPP2.

# 5 Management Reporting

## Purpose

To ensure all personnel responsible for fire prevention activities are fully informed on the status of all matters critical to the performance of their fire prevention responsibilities.

## Objectives

To provide appropriate and timely reports to all levels of the fire prevention management structure.

## Accountabilities

The Fire Prevention Manager is responsible for the compilation and circulation of reports.

## Requirements

Further details are contained in the Management Reporting Procedure FPP3.

## 6 Reporting to ESV

### Purpose

To keep ESV informed of relevant matters associated with fire prevention.

### Objectives

To ensure that ESV is provided with all necessary information required by them, in relation to fire prevention activities.

### Accountabilities

The Fire Prevention Manager is responsible for the compilation of reports and forwarding them to ESV.

### Requirements

Regular reports will be provided to ESV covering information, and in a format, agreed between UE and ESV. Additional information will be provided to ESV on request and every effort will be made to provide such information in a timely manner.

Details of the process for the application of the policy are contained in the Significant Incident Reporting Procedure FPP4.

## 7 Systems for Measuring and Validating Performance

### Purpose

To ensure that the status of the fire prevention program and the effectiveness of the management system are measured and validated. This includes the effectiveness of UE's performance in relation to fire starts.

### Objectives

To establish appropriate measures to be used to assess the performance of the Plan, this includes:

- The status of the fire prevention program
- The effectiveness of the fire prevention management system
- The performance in relation to alleged fire starts.

### Accountabilities

The General Manager Service Delivery is responsible for the establishment of the measures, setting the targets, data capture and evaluation of the results.

### Requirements

Further details are contained in the following Procedures:

- HBRA Fire Prevention Index Procedure FPP5
- Annual Program of Activities Procedure FPP6
- Reporting, Investigation and Analysis of Fire Ignitions Procedure FPP16.

## 8 UE PL 0009 Fire Prevention Plan

### Purpose

To plan and document UE's approach to managing the fire risk.

### Objectives

- To prepare an annual plan covering the identification of the risks, the environment, the works program, communication and required actions
- To meet legislative and regulatory requirements.

### Accountabilities

The Fire Prevention Manager is responsible for the preparation of the plan.

### Requirements

The plan shall be prepared annually, in accordance with the Fire Prevention Plan Procedure FPP7.

## 9 Coordination with Other Organisations

### Purpose

To ensure effective liaison with other organisations relevant to fire prevention activities.

### Objectives

- To maintain communication links and emergency protocols with other organisations relevant to fire prevention activities
- Foster and maintain mutual support arrangements with these organisations.

### Accountabilities

The Fire Prevention Manager is responsible for the ongoing liaison with fire agencies. The Head of Network Operations and Control is responsible for emergency communications.

The Network Risk and Assurance Manager is responsible for the ongoing liaison with ESV other MECs and regulatory bodies on electrical safety and technical compliance matters.

The Head of Vegetation Management is responsible for the ongoing liaison with Councils and Other Responsible Persons.

### Requirements

UE will coordinate with:

- MFESB – Metropolitan Fire and Emergency Services Board
- CFA – Country Fire Authority
- DELWP – Department of Environment, Land, Water and Planning
- ESV – Energy Safe Victoria
- Municipal Councils and Other Responsible Persons
- AER – Australian Energy Regulator
- Other Distributors

Further details are contained in the Coordination with Other Authorities Procedure FPP8.

## 10 Technology Implementation

### Purpose

To take advantage of available technologies to minimise the fire risk.

### Objectives

- To implement available technologies to minimise the risk of fires from electricity assets, where there is a business benefit.
- To work towards creating an environment where the required electric line clearance distances are maintained.

### Accountabilities

The General Manager Service Delivery is responsible for the implementation of technologies to reduce the fire risk.

### Requirements

UE supports existing programs that ensure all power lines in green field residential estates are placed underground.

Construction and maintenance work on the existing electricity network will use the opportunity to reduce the effect of the electricity network on the natural environment. In rural areas and along easements, UE will be sensitive to the land use in the adjacent area.

UE encourages and supports community groups and public authorities to suggest viable propositions that may reduce the impact of electrical assets on the environment. Proposals will be evaluated in relation to public safety, cost, community conservation values and the characteristics of the affected vegetation.

New technology and equipment shall be introduced into the United Energy distribution network in accordance with *UE PR 2363 Introducing New Equipment into the United Energy Distribution Network*.

Technologies considered shall include:

- Installation of Ground Fault Neutralisers (**GFNs**) in HBRA and where the fire loss consequence is high
- The application of insulated cable systems
- The management of fault energy levels.

Further details are contained in the Technology Implementation and Development Procedure FPP9.

## 11 Step Change to Industry Practice

### Purpose

To ensure, by proper process, that changes to established fire prevention practices or programs will not measurably increase the risk of fire and that due diligence has been applied.

### Objectives

- To ensure that a rigorous process is followed for the implementation of step changes to industry practices
- To ensure that key stakeholders (e.g. ESV and insurers) are consulted.

### Accountabilities

The General Manager Asset Management is responsible for the assessment, consultation and approval of any step changes.

The General Manager Service Delivery is responsible for the implementation and monitoring of any step changes.

### Requirements

Further details are contained in the Step Change to Industry Practice Procedure FPP10.

## 12 Training

### Purpose

To ensure that personnel, including SP and subcontractors, engaged in fire prevention activities are appropriately trained and have the competency to undertake the task.

### Objectives

To maintain an effective system for the assessment and training of employees, SPs and subcontractors.

### Accountabilities

The General Manager Service Delivery is responsible for ensuring field operations employees, SP and subcontractors engaged in fire prevention activities meet the training requirements.

### Requirements

Further details are contained in the Training Procedure FPP11.

## 13 Monitoring and Review

### Purpose

To ensure the ongoing effectiveness of the Fire Prevention Management System.

### Objectives

- To ensure that fire prevention procedures are followed and are meeting their objectives.
- To ensure the timeliness and effectiveness of responses.
- To review the value of performance measures.

### Accountabilities

Senior management is responsible for the audit and review of the Fire Prevention Management System.

The Fire Prevention Manager (**FPM**) is responsible for the monitoring of the procedures contained in this Plan and for the review of the value of performance measures.

The General Manager Service Delivery is responsible for all audits associated with Occupational Health and Safety (**OHS**) and quality in the field.

### Requirements

Further details are contained in the Monitoring and Review Procedure FPP12.

## 14 Document Control and Records Management

### Purpose

To ensure the currency, retention and security of fire prevention records.

### Objectives

- To ensure that the information relating to fire prevention activities is:
  - o Up to date
  - o Stored securely with controlled access
  - o Kept for an appropriate length of time.
- To ensure that the appropriate level of management approves fire prevention policies and procedures.

### Accountabilities

The FPM is responsible for managing the storage of information relating to fire prevention activities and for arranging the approval of the Plan.

### Requirements

Document control shall be conducted in accordance with UE's Quality System. Further details are contained in:

- Fire Prevention Management System Control and Approved Procedure FPP13
- Management of Critical Information Procedure FPP14.

## 15 Reporting, Investigation and Analysis of Fire Ignition

### Purpose

To ensure that the cause of every fire ignition is understood so the potential risk can be assessed and appropriate actions taken.

### Objectives

- To respond to, report, investigate and analyse reported ground fire ignitions involving network assets
- To respond to, report, investigate and analyse reported incidents or situations with the potential to cause fire ignition.

### Accountabilities

The Service Providers are responsible for the reporting of known fire starts into the Distribution Management System (**DMS**) and UE is responsible for the creation of a 'Report of Electrical Accident' (Schedule 2 Report)', and data entry into the ESV OSIRIS reporting system and a copy to the Fire Prevention Manager as soon as practicable, normally within two (2) business days.

The Service Providers are also responsible to ensure a 'Fire Ignition Report' form is created by service providers and forwarded on to the Fire Prevention Manager within seven (7) days.

The General Manager Asset Management is responsible for any analysis required as a result of a fire start and the communication of any corrective actions that may arise from such an analysis.

The General Manager Service Delivery is responsible for the investigation and communication that maybe required as a result of a fire start and the implementation of any corrective actions.

### Requirements

Further details are contained in:

- Response to Reported Unsafe Situations Procedure FPP15
- Reporting, Investigation and Analysis of Fire Ignitions Procedure FPP16
- ESV Reporting Guidelines.

## 16 Fire Risk Assessment

### Purpose

To assess the risk of causes and potential causes of fire ignition from the UE supply network to enable appropriate action to prevent the risk.

### Objectives

- To carry out a rigorous risk assessment for known and potential causes of fire ignition
- From the risk assessment, to implement appropriate actions.

### Accountabilities

The Fire Prevention Committee is responsible for the development and continual update of the risk register. The General Manager Service Delivery is responsible for the implementation of any actions.

### Requirements

Further details are contained in the Risk Assessment Procedure FPP17.

## 17 Preventative Programs

UE preventative programs are condition-based giving consideration to replacement, modification and maintenance due to a condition assessment based on cyclic inspection programs, trend analysis or risk assessments.

Further details are contained in Attachment 1 of the Annual Program of Activities Procedure FPP6.

### 17.1 Network Assets

#### Purpose

To prevent fire ignition from the UE supply network.

#### Objectives

- UE will have preventative programs for all identified causes of ignition and potential causes of fire ignition
- UE will maintain a system of design, construction, operation and maintenance standards for all works associated with the network that have been developed to take account of fire safety.

#### Accountabilities

The General Manager Asset Management is responsible for the planning and development of asset management programs.

The General Manager Service Delivery is responsible for the coordination and management of all cyclic inspection programs on network assets and the coordination and management of response programs.

#### Requirements

Network assets shall be maintained in a safe and serviceable condition through the following strategies:

- The rectification of damaged or defective items
- Regular maintenance to ensure operational effectiveness
- Replacement of identified deteriorating items (approaching the end of their effective operational life).

Further details are contained in the Network Assets Preventative Programs Procedure FPP18.

### 17.2 Electric Line Clearance Management

#### Purpose

To ensure that adequate clearances are maintained between vegetation and network assets.

#### Objectives

- To maintain programs for achieving regulatory clearances at all times between vegetation and network assets
- To have in place an Electric Line Clearance Management Plan (**ELCMP**), approved by ESV.

#### Accountabilities

The Head of Vegetation Management is responsible for preparation of the ELCMP.

The General Manager Electricity Networks is responsible for approval of the ELCMP.

The General Manager Service Delivery is responsible for the approval and implementation of the ELCMP.



## Requirements

Compliance with the Electricity Safety (Electric Line Clearance) Regulations 2015. Further details are contained in the Electric Line Clearance Management Procedure FPP19.

### 17.3 Operational Instructions and Maintenance Procedures

#### Purpose

To ensure operational instructions and maintenance plans are maintained for activities in the event of a fire, a day of total fire ban and during a fire danger period.

#### Objectives

- To maintain a system of operational instructions for inspection, testing and assessment of network assets
- To maintain a system of operational instructions for the UE supply network and field personnel in the event of a fire.
- To maintain a system of operational instructions and maintenance plans for days of total fire ban and during a fire danger period
- To maintain a system of standards for the design, construction, operation and maintenance of the network, in line with regulatory requirements and good industry practice.

#### Accountabilities

The General Manager Asset Management is responsible for the standards for the design, construction, commissioning, operation, and maintenance and decommissioning of the network.

The General Manager Service Delivery is responsible for operational instructions in relation to the UE supply network and field personnel in the event of a fire and for the implementation of plans for days of total fire ban and during a fire danger period.

#### Requirements

UE does not have specific maintenance plans for their assets in the event of a fire or during the fire danger period.

Details of the operational instructions in the event of a fire are contained in the UE Operations Manual (Document No. UE MA 0001).

Operational instructions and technical standards will be subject to audit and review. Further details are contained in the following procedures:

- Coordination with Other Authorities Procedure FPP8
- Monitoring and Review Procedure FPP12
- Technical Standards for Design, Construction, Operation and Maintenance Procedure FPP20
- Operational Contingency Plans Procedure FPP26.

Operational instructions specific to days of total fire ban/code red days are detailed in the procedure below:

- Coordination with Other Authorities Procedure FPP8 (TFB Permits)
- Operational Contingency Plans Procedure FPP26.

Operational instructions specific to vehicles, plant and equipment carried during fire danger period are detailed in the procedure below:

- Use of Vehicles, Plant and Equipment in Periods of High Fire Risk Procedure FPP21.

## 17.4 Procurement of Equipment and Services

### Purpose

To ensure that equipment and services procured for works on the UE supply network do not compromise UE's fire prevention standards.

### Objectives

- To ensure that SP and subcontractors providing services on the UE supply network meet the same standards as UE employees
- To ensure that equipment purchased for use on the UE supply network has been assessed in relation to the risk of fire ignition.

### Accountabilities

The General Manager Asset Management is responsible for ensuring that the technical specifications for materials, plant and equipment for use on the UE supply network meet fire safety performance requirements.

The General Manager Service Delivery is responsible for ensuring that SP and subcontractors providing services on the UE supply network are aware of, and comply with, UE's requirements in relation to fire prevention standards.

### Requirements

SPs and subcontractors who fail to meet the required standards in relation to fire prevention activities shall not be employed. Equipment assessed as not meeting the required performance in relation to fire prevention shall not be purchased.

Further details are contained in:

- Evaluation of Materials, Plant and Equipment Procedure FPP22
- Use of Contractors Procedure FPP23.

## 17.5 Public Awareness

### Purpose

To enhance public awareness of fire prevention issues.

### Objectives

- To increase community awareness of the risks of POELs and the dangers of work in the vicinity and on vegetation near such lines
- To increase the contribution by the community to minimising the risk of fires.

### Accountabilities

The General Manager Service Delivery is responsible for ensuring information is passed to the community in regard to the management of vegetation and POEL inspections.

The General Manager Customer and Market Services is responsible for targeted public awareness programs.

### Requirements

UE shall provide information and community support as detailed in:

- Electric Line Clearance Management Procedure FPP19
- Private Overhead Electric Lines Procedure FPP25.

## 18 Network Monitoring

### 18.1 Asset Management System

#### Purpose

To maintain a database of information to enable the effective management of the UE supply network.

#### Objectives

- To identify and record the location of network assets
- To record the condition and status of each asset identified.

#### Accountabilities

The General Manager Asset Management is responsible for the development of the asset management systems.

The General Manager Service Delivery is responsible for the timely and accurate recording of data into the asset management systems.

#### Requirements

Information about the UE asset management systems is detailed in Management of Critical Information Procedure FPP14.

The asset management systems comprise several components, some of which include the Works Management System, GIS and field data capture capability.

### 18.2 Asset Inspection and Assessment

#### Purpose

To assess and record the condition of network assets.

#### Objectives

- To assess by inspection and, where appropriate, by testing the condition of network assets
- To assess by inspection the clearances between vegetation and network assets.

#### Accountabilities

The General Manager Asset Management is responsible for the effectiveness of procedures for inspections, assessments and tests contained in the Asset Inspection Manual.

The General Manager Service Delivery is responsible for Asset Inspection activity in accordance with the Asset Inspection Manual.

#### Requirements

UE will inspect their assets on a cycle not exceeding 37 months for HBRA and 61 Months for LBRA.

Instructions covering the detailed description of items that need to be identified for approved replacement, modification or maintenance programs and features to be observed in assessing asset condition are contained in the UE Asset Inspection Manual.

Instructions covering the detailed description of items that need to be identified for approved replacement, modification or maintenance programs and features to be observed in assessing asset condition are contained in the UE Asset Inspection Manual.

Further details are contained in:

- Network Assets Preventative Programs Procedure FPP18
- Electric Line Clearance Management Procedure FPP19
- Inspection, Measurement and Testing Equipment Procedure FPP24.

### 18.3 Private Overhead Electric Lines

#### Purpose

To ensure the POELs are maintained in a safe and serviceable condition.

#### Objectives

- To manage the assessment of POELs
- To manage the rectification and replacement of defective POELs.

#### Accountabilities

The General Manager Asset Management is responsible for the effectiveness of procedures for inspections, assessments and tests contained in the UE Asset Inspection Manual.

The General Manager Service Delivery is responsible for the inspection and assessment of POELs, defect notification, follow up actions on faulty POELs (including any ESV directives) and disconnection of POELs with defects on either total fire ban days or during the fire danger period if required.

#### Requirements

While POELs are primarily the responsibility of the owner, UE will inspect them on a cycle not exceeding 37 months, notify the owner of any defects found and monitor the process of fault rectification as an integral part of the FPP. The rectification of defects is the responsibility of the owner of the POEL.

UE also inspects the vegetation around POELs annually to ensure that the appropriate vegetation clearance space is maintained, and notifies the owner of any non-compliance identified and monitors the process of rectification as an integral part of the UE ELCMP.

UE requires that POELs within the HBRA are made safe before the fire season, and may disconnect supply on total fire ban days or under direction from ESV if repairs are not completed.

Where a POEL is found to be defective and is to be replaced, the replacement service will be the most appropriate type, either an underground service or a HV line and substation. As required by Regulation 403 of the *Electricity Safety (Installations) Regulations 1999*, POELs in need of substantial reconstruction will be required to be replaced with underground consumer's mains.

Further details are contained in the Private Overhead Electric Lines Procedure FPP25.

## 19 Operational Programs and Emergency Response on Total Fire Ban Days

### Purpose

To have plans prepared for actions to be taken on days of total fire ban.

### Objectives

To be prepared such that the appropriate actions will be implemented on days of total fire ban.

### Accountabilities

The UE Emergency Liaison Manager and the Service Providers' Emergency Managers, in collaboration with the Network Control Centre, are jointly responsible for the implementation of the FPP26 Operational Contingency Plan policy.

### Requirements

#### Operational Contingency Plans

UE has established an FPP 26 Operational Contingency Plan, which details actions that need to be taken to secure the safety of network assets:

- Where preventative program works are incomplete, or
- Extraordinary environmental conditions exist.

Further details are contained in Operational Contingency Plans Procedure FPP26.

#### Private Overhead Electric Lines

The assessment of POELs and the rectification/replacement of POELs procedures are contained in the FPP25 Private Overhead Electric Lines Procedure.

#### Fault Energy Management

The likelihood of fire ignition from electricity assets is related to the energy delivered into the fault. United Energy's protection philosophy is to strike a balance between fault energy, the resultant likelihood of fire start, and the continuity of electricity supply through the design and operation of protection systems, network configuration and fault current limiting technologies.

Neutral Earth Resistors (**NERs**) have been installed in the majority of UE zone substations supplying the HBRA network. This reduces the energy of a line to ground fault, and the fire risk.

On days of high fire risk, the available fault energy on most HBRA feeders is further reduced by enabling alternative protection settings and/or the suppression of the auto re-close function on the feeder circuit breaker and/or pole mounted Automatic Circuit Recloser (**ACRs**). Where the HBRA feeder exposure is minimal, the protection is typically provided via HV fuses. In addition, Ground Fault Neutralisers (**GFNs**) are placed into 'non fault discrimination' mode to further limit the fault energy for all 22kV phase to earth faults, and trip any feeder circuit breaker with a sustained fault.

Further details are contained in FPP26 Operational Contingency Plans Procedure and in the FPP27 Fault Energy Management Procedure.

#### Permit Requirements

Each year total fire ban day permits are obtained from the relevant fire authorities, permitting limited field activities as described in the Coordination with Other Authorities Procedure FPP8.

## 20 Legislation – User Guide

### 20.1 History

As a result of the serious fires in 1977, the State Government established an enquiry headed by Sir Esler Barber QC. The Barber Enquiry issued a report, making a number of recommendations relating to the State Electricity Commission of Victoria (**SECV**). The report was a benchmark in fire prevention activities throughout Australia and identified relevant factors requiring attention.

Following the catastrophic fires in 1983, the *SEC Act (1958)* was amended by the *State Electricity Commission (Clearance of Lines) Act (1983)* which created that part of the *State Electricity Commission Act (1958)* entitled 'Part VI Provisions Relating to Tree Clearance', (sections 58 to 65 inclusive of the Principal Act). This was to clarify responsibilities for tree clearances and the maintenance of private lines.

The amendments also provided for a Code of Practice for Tree Clearance, the establishment of a Consultative Committee and regulations for the enactment of the Code and notices.

A revised form of a voluntary code, developed by the SEC in consultation with local government, received legislative support in Part VI of the *SEC Act (1958)* in January 1984.

The 1996 remaking of the renamed Power Line Clearance Code introduced the principle of management plans to reduce the level of prescription contained in the Code. The Code was revised in 1999 and gazetted as the Code of Practice for Electric Line Clearance [Vegetation] 1999 before subsequently being incorporated into the *Electricity Safety (Electric Line Clearance) Regulations 2005*. These regulations have now expired and been replaced by the *Electricity Safety (Electric Line Clearance) Regulations 2015*.

Regulations made under Sections 110 and 111 of the *SEC Act (1958)* were introduced in 1997 [Electricity Safety (Network Assets) Regulations] which set out requirements relating to the ignition of fire and network assets.

Subsequently the *Electricity Safety Act (1998)* has incorporated the relevant sections of the *SEC Act (1958)*.

The *Electricity Safety (Network Assets) Regulations 1997* were revoked in 1999 and replaced by the *Electricity Safety (Network Assets) Regulations 1999*. These regulations have now expired and been replaced by the *Electricity Safety (Management) Regulations 2009* S.R. No. 165/2009 this version incorporating amendments as at 1 November 2013.

The *Electricity Safety (Bushfire Mitigation) Regulations* make provision for the preparation of fire prevention plans and the inspection of POELs by major electricity companies. These regulations were amended as at 1 May 2016 and are noted as 2013 S.R. No. 62/2013.

### 20.2 Current Acts and Regulations

The following is provided as a summary and interprets parts of current Legislation, Acts and Regulations. The Acts and Regulations should be directly referred to for matters of decision and legal advice sought as necessary.

## **20.3 The Electricity Safety Act (1998) – Authorised Version 072 (1 September 2017)**

### **PART 8 – Bushfire Mitigation Requirements for Certain Operators and Electric Line Clearance Division 1 – General**

In summary, Division 1 supplies the definition and the regulatory framework around the description of:

- Section 79 – Urban Area
- Section 80 – Fire Hazard Rating
- Section 81 – Declared Area in Urban Area
- Section 82 – Operation of Part
- Section 83 – Point of Supply.

#### **Division 1A – Bushfire mitigation requirements for certain operators of at-risk electric lines Subdivision 1 – Interpretation**

In summary Division 1A supplies the definition and the regulatory framework around the description of:

- Section 83A – Definitions

#### **Subdivision 2 – General duties in relation to bushfire mitigation plans**

- Section 83B – General duty of specified operators to minimise bushfire danger
- Section 83BA – Submission of bushfire mitigation plans for acceptance
- Section 83BB – Compliance with bushfire mitigation plan

#### **Subdivision 3 – Acceptance and validation of bushfire mitigation plans**

- Section 83BC – Validation of bushfire mitigation plans
- Section 83BD – Additional information
- Section 83BE – Acceptance of bushfire mitigation plan
- Section 83BF – Provisional acceptance of bushfire mitigation plan
- Section 83BG – Non-acceptance of bushfire mitigation plan
- Section 83BH – Energy Safe Victoria may determine bushfire mitigation plan
- Section 83BI – Duration of accepted bushfire mitigation plan
- Section 83BJ – Compliance audits for accepted bushfire mitigation plans – independent audits
- Section 83BJ – Compliance audits – Energy Safe Victoria

### **Division 2 – Responsibility for Maintenance of Lines**

Section 84 makes Distribution Companies, Transmission Companies and others responsible for 'keeping of the whole or any part of a tree clear of an electric line'.

In summary:

Under section 84A(1) and (2) an occupier of land above or below the surface of the land is responsible for the maintenance of a private electric or low voltage electric line

Section 84B(1) of the Act an occupier of land that is contiguous to land on which there is a Private Electric Line is responsible for keeping the whole or any part of a tree situated on the occupiers land clear of the line.

Under section 84C a council is responsible for the management public land in an area of land declared under section 81 and is responsible for the keeping of the whole or any part of a tree situated on that land clear of an electric line that is not a private electric line.

Under section 84D a person other than a distribution company who owns or operates a electric line, or installs or uses an electric line under the Act of the Commonwealth, is responsible for the keeping of the whole or any part of a tree clear of the electric line.



## **Subdivision 2 – Other Matters**

Section 85 gives Distribution Companies and Transmission Companies the power to:

- Enter onto land for the purpose of inspecting electric lines, pursuant to Section 85(a) of the Act
- Require, with the agreement of ESV, that new or substantially reconstructed electric lines be placed underground, pursuant to Section 85(b) of the Act
- Enter on to land to fulfil their responsibilities under Section 84 and 84D (i.e. keeping trees clear of electric lines) subject to the production of an approved certificate, pursuant to Section 85(c) of the Act.

Section 86 gives Distribution Companies the power to serve notice in writing on other responsible persons which requires them to carry out their responsibilities under the Act to maintain clearance between vegetation and electric lines. Where they fail to do so, the Distribution Company may carry out the necessary works and recover costs, subject to conditions.

Section 86A gives ESV the power to give directions for restriction or prevention of tree growth.

## **Division 2A – Electric Lines and Municipal Fire Prevention Plans**

Section 86B requires that municipal fire prevention plans specify procedures for the identification of trees that are hazardous to electric lines.

## **Division 3 – Electric Line Clearance Consultative Committee**

Section 87 requires that there be an Electric Line Clearance Consultative Committee. Section 88 sets out the functions of the committee.

Section 88A requires the committee to have regard to the reliability and security of electricity supply.

Section 89 sets out procedures for amending or varying the Code of Practice for Electric Line Clearance.

Section 90 makes it an offence to contravene or fail to comply with a prescribed provision of the Code.

## **Division 4 – Compliance Audits in Relation to Compliance with the Code**

Section 90A applies to a responsible person who has prepared a management plan relating to compliance with the code that has been approved by ESV under the regulations.

Section 90B may require the responsible person to undertake independent audits of the plan.

## **Division 5 – Compliance audits in relation to compliance with the management plan**

Section 90C enables ESV to conduct or cause to be conducted an audit of the plan to satisfy compliance with management plans.

Section 90D enables ESV to conduct compliance audits for management plans.

Section 90E enables compliance audits for management plans—*independent audits*.

## **Part 10 – Electricity Safety Management**

### **Division 2A – Ongoing Bushfire Mitigation Requirements for Major Electricity Companies.**

Section 113A requires major electricity companies, before 1 July each year, to submit to ESV for approval a Fire Prevention Plan.

Section 113B requires major electricity companies compliance with bushfire mitigation plan.

Section 113C requires ESV to ensure validation, acceptance, provisional acceptance and determination of bushfire mitigation plans.



Section 113D requires accepted bushfire mitigation plan forms part of accepted ESMS.

Section 113E requires the MEC to undertake revisions that only relate to bushfire mitigation as requested by ESV.

Section 113F makes major electricity companies responsible for inspecting private overhead lines, and requires them to provide notice to the occupier before such an inspection and to provide notice to the owner of any maintenance required. This section also gives the major electricity company the power to enter onto land to carry out the inspection.

### **Part 13 – Regulations**

Section 149 establishes general regulation-making powers.

Section 151 empowers the making of Electric Line Clearance regulations with respect to (in part) the Code of Practice for Electric Line Clearance.

Section 151A empowers the making of Bushfire Mitigation regulations

Section 157 establishes further regulation-making powers.

## **20.4 Electricity Safety (Management) Regulations 2009**

### **Part 3 – Records and Reporting**

Section 28 (2) (b) requires network operators to report serious electrical incidents to ESV. This includes a fire originating from the operator's supply network. Section 28(2) is replicated below.

*Specified Electrical Incident:*

*An electrical incident (other than a serious electrical incident) that resulted in –*

- (a) an electric shock from –
  - (i) the operator's supply network or*
  - (ii) an electrical installation supplied electricity by the operator's supply network; or**
- (b) a fire originating from the operator's supply network or*
- (c) a part of the operator's supply network becoming dislodged from its supporting structure.*

## **20.5 Electricity Safety (Line Clearance) Regulations 2015**

These regulations prescribe the Code of Practice for Electric Line Clearance (including penalty provisions), the provision of management plans and transitional arrangements.

Section 7 prescribes the Code of Practice.

Section 8 defines the prescribed penalty provisions.

Section 9 requires that management plans relating to compliance with the Code are prepared and submitted by 31 March each year to ESV for approval. This section also specifies the content of the management plans.

## 20.6 Electricity Safety (Bushfire Mitigation) Regulations

The *Electricity Safety (Bushfire Mitigation) Regulations* make provision for the preparation of fire prevention plans and the inspection of POELs by major electricity companies.

UE has included in this plan procedures specifically in relation to the inclusion of regulation 7(2) which defines the types of assets excluded in the definition of the 'Supply Network'. These exclusions do not include primarily underground assets that are located above the surface of the land:

- Kiosk Substations/Switches
- Ground Type Substations
- Indoor Substations
- Switching Cubicles
- Pillars

A transition plan has been included in this plan, documenting the timeframe for migrating the requirements of regulations 7(i), (i) and (ii) to these assets, by June 2019, in line with the UE overhead assets.

Amendments to the *Electricity Safety (Bushfire Mitigation) Regulations*, mandate the installation of Ground Fault Neutraliser (**GFN**) technology in the highest fire loss consequence parts of Victoria. The legislation does not include any United Energy zone substations in the rollout.

United Energy is committed to working with stakeholders to ensure the safe, efficient supply and use of electricity and has installed GFN's Mornington (**MTN**) zone substation in early 2019 and plans to have Dromana (**DMA**) installed by December 2019 to reduce fire risk to a level that is as low as reasonably practicable.

Before any product can be considered for use on the electricity network, it must be accompanied by a formal safety assessment and meet the requirements of United Energy's product approval process.

The product proposal must be supported by Manufacturer's details:

- Manufacturer's name, type and model number of the product
- Manufacturer's certified recommendation supporting the intended use of the product
- Recognised international standard(s) that apply to the product, design, manufacture, testing
- Source of materials and place of manufacture
- Original type, routine, endurance, environmental, factory acceptance, site acceptance, and commissioning test reports from an accredited laboratory
- Design, installation, inspection and maintenance instructions for the product
- Details of service experience in similar environment.

The product proposal must be supported by an engineering assessment, completed by a recognised subject matter expert, on the impact on the product:

- Effect on the network, and network assets
- Changes to existing work practices
- Business case for the proposed product.

Prior to the commencement of each fire season, and during the GFN operating period, each GFN location shall be inspected and tested in accordance with the manufacturer's recommendations.

Test results will be made available to Energy Safe Victoria, upon request.

## **FPP1: Fire Prevention Management System Procedure**

### **Purpose**

This procedure describes the Fire Prevention Management System.

### **Scope**

This procedure applies to all activities associated with fire prevention.

### **References**

Nil.

### **Definitions**

Nil.

### **Procedure**

The Fire Prevention Management System provides the framework for management of the fire risk. Details of the system are contained in Attachment 1.

### **Attachments**

1. Fire Prevention Management System for the current year.

## Attachment 1: Fire Prevention Management System for 2019/23

	Public and Field Reports of Unsafe Situations	Asset Monitoring	Vegetation Clearance	Preventative Programs	Materials Purchases
<b>Review Risk Register</b>	Assess risk. Assign priority.	Assess risk. Set standards. Inspect assets. Assign priority.	Inspect lines. Assess risk. Consider alternatives.	Assess risk. Set standards.	Assess risk. Prepare specification.
<b>Remedial Actions</b>	Take appropriate action to improve the Plan and the Plan's implementation when deficiencies are identified.			Arrange cyclic maintenance. Replace ageing and unserviceable assets.	Purchase equipment.
<b>Records Management</b>	Record in SAP/GIS/VMS. Provide reports.				
<b>Monitoring, Audit and Review</b>	Analyse reports. Monitor the implementation of the Plan. Conduct regular audits on the effectiveness of inspections carried out under the Plan. Review performance and identify any deficiencies in the Plan or in the implementation of the plan. Amend policies and procedures, if necessary, to improve the Plan's implementation.				
<b>Training</b>	Ensure the required knowledge, training and skills to perform functions under the Plan is provided to all personnel, SP and subcontractors. Conduct regular audits on the competence of the persons assigned to carry out the Plan. Carry out initial and refresher training. Record all training undertaken.				

## FPP2: Management Structure Procedure

### Purpose

This procedure describes the management structure for the implementation and control of all fire prevention related activities.

### Scope

This procedure applies to all activities associated with fire prevention.

### References

Nil.

### Definitions

Nil.

### Procedure

#### Fire Prevention Management Structure

The management structure for the implementation and control of all fire prevention related activities is contained in Attachment 1.

#### United Energy

UE distributes electricity to southern and eastern suburbs of Melbourne and the Mornington Peninsula, Victoria. UE is one of five licensed electricity distribution networks in Victoria.

#### UE Chief Executive Officer (CEO)

The CEO has overall responsibility for all activities relating to the performance of the UE electricity network.

#### UE General Manager, Electricity Network

The General Manager, Networks (Electricity) has the responsibility for the production of all Policies and Strategies relating to operating and maintaining a safe electricity network and the approval of this Plan.

#### UE General Manager Asset Management

The General Manager Asset Management is responsible for performance of the network and the formulation of Capex and Opex strategies to achieve compliance with the Plan.

Responsibilities include (but are not limited to):

- The lifecycle management strategies for Fire Prevention and Electric Line Clearance
- Ensuring the UE design, construction and inspection standards prevent fire ignition by network assets
- Failure mode analysis of potential fire risks
- Distribution Construction Manual
- Distribution Design Standards Manual
- Zone Substation Design and Construction Standards
- Asset Inspection Manual
- Assessment of fire performance of new materials and equipment
- Fire performance requirements in purchase specifications
- Analysis of outage data for potential fire risks

- Establishing preventative programs
- Implementing new technologies to reduce fire risk
- The development of strategies to mitigate the causes of fire ignition
- Risk assessment of new preventative programs or changes to programs.

#### **UE Network Risk and Assurance Manager**

The Network Risk and Assurance Manager is responsible for the review and submission of the Plan.

Responsibilities include (but are not limited to):

- Creation and submission of the UE ESMS
- Overseeing compliance and performance with relevant legislation
- Chairs the Fire Prevention Committee
- Monitoring performance and compliance with the Plan
- Maintaining, updating and submitting plans and procedures to ESV as required
- Application for exemptions when required
- Reporting to ESV.
- Review and Submission of the ELCMP.

#### **UE General Manager Service Delivery**

The General Manager Service Delivery has the management responsibility for all field activities relating to the electricity network including the production and approval of the Plan.

#### **UE Head of Field Services**

The UE Head of Field Services and his/her reports are responsible for the implementation of sections in the Plan that relate to their roles and responsibilities to ensure UE is meeting its legislative compliance responsibilities within the Plan.

Responsibilities include:

- Creating updating and monitoring the performance and compliance of the Plan
- Contract management of non-vegetation Service Providers and External Resources including the achievement of time, cost and quality targets
- Failure mode analysis of potential fire risks
- Implementation of preventative programs.
- Implementation of this Plan
- Management of the fire prevention reporting and the Works Management System
- Monitoring and delivering reports from the Works Management System
- The monitoring and auditing of training standards of inspection and vegetation SP and subcontractors
- Monitoring and auditing the competence of the persons assigned to carry out inspections under the Plan
- Monitoring and auditing the effectiveness of inspections carried out under the Plan
- Management and reporting of the status of defective POELs
- Ensuring all identified asset maintenance is programmed, completed and electronic management systems updated within prescribed timelines.

### **UE Head of Vegetation Management**

The UE Head of Vegetation Management and his/her reports are responsible for the implementation of sections in the Plan that relate to their roles and responsibilities to ensure UE is meeting its legislative compliance responsibilities within this Plan and the ELCMP.

Responsibilities include:

- Preparation of the ELCMP
- Creating updating and monitoring the performance and compliance of the Plan
- Contract management of Vegetation Service Providers and External Resources including the achievement of time, cost and quality targets
- Failure mode analysis of potential fire risks
- Implementation of preventative programs.
- Implementation of this Plan and ELCMP
- The monitoring and auditing of training standards of Vegetation Service Providers and External Resources
- Ensuring all identified vegetation maintenance is programmed, completed and electronic management systems updated within prescribed timelines.

### **UE Fire Prevention Manager**

The Fire Prevention Manager is responsible for the preparation of the Plan. Responsibilities include:

- Developing and implementing the annual independent Summer Audit Program
- Assisting with business cases to enhance fire prevention performance
- Compiling and circulating the fire prevention reports
- Liaising with other bodies regarding fire prevention activities
- Reporting, investigation and analysis of fire ignitions
- Assist in the development of strategies to mitigate the causes of fire ignition
- Initiating the regular review of the Fire Prevention Risk Register.

### **UE Line Managers, Service Providers (SP) Team Leaders and Contract Coordinators**

UE Line Managers, SP Team Leaders and Contract Coordinators manage the day to day fire prevention activity performed on UE assets by employees, SP and subcontractors. Responsibilities include:

- Ensuring that any training necessary for persons assigned to perform functions under the Plan is provided
- Monitoring and auditing the competence of the persons assigned to carry out inspections under the Plan
- Monitoring and auditing the effectiveness of inspections carried out under the Plan
- Quantifying fire prevention workload and producing programs to meet timelines
- Carrying out quality audits of fire prevention works to ensure compliance
- Carrying out audits of personnel, safety and work practices
- Investigating new techniques and systems of work for possible implementation
- Vegetation management
- Asset inspection
- Developing and maintaining annual inspection schedules and programs
- Pole and asset maintenance and replacement
- Conductor replacement
- POEL inspection, maintenance and replacement.

## Fire Prevention Committee

In addition to the individual duties above, there is also a Fire Prevention Committee.

This committee includes representatives from both Electricity Networks and Service Delivery and involves the key personnel responsible for the delivery of the Plan, including Service Provider representation when required. These meetings occur at least monthly in the lead up to fire season and less frequently outside this period, depending on the status of the network and climatic conditions and are primarily focused on the UE HBRA in the lead up to fire season.

Responsibilities of the Committee include:

- Management of preventative and response programs
- Ensuring that fire prevention and associated activities are performed in accordance with the Plan
- The implementation of actions where fire prevention targets have potential to be exceeded
- Endorsement of the Plan
- Approval of new or altered programs
- Carrying out senior management briefing
- Monitoring performance against targets
- Taking actions where performance is not meeting targets
- Monitoring and auditing the implementation of the Fire Prevention Plan
- Identifying any deficiencies in the Plan or the Plan's implementation
- Improving the Plan and the Plan's implementation if any deficiencies are identified.

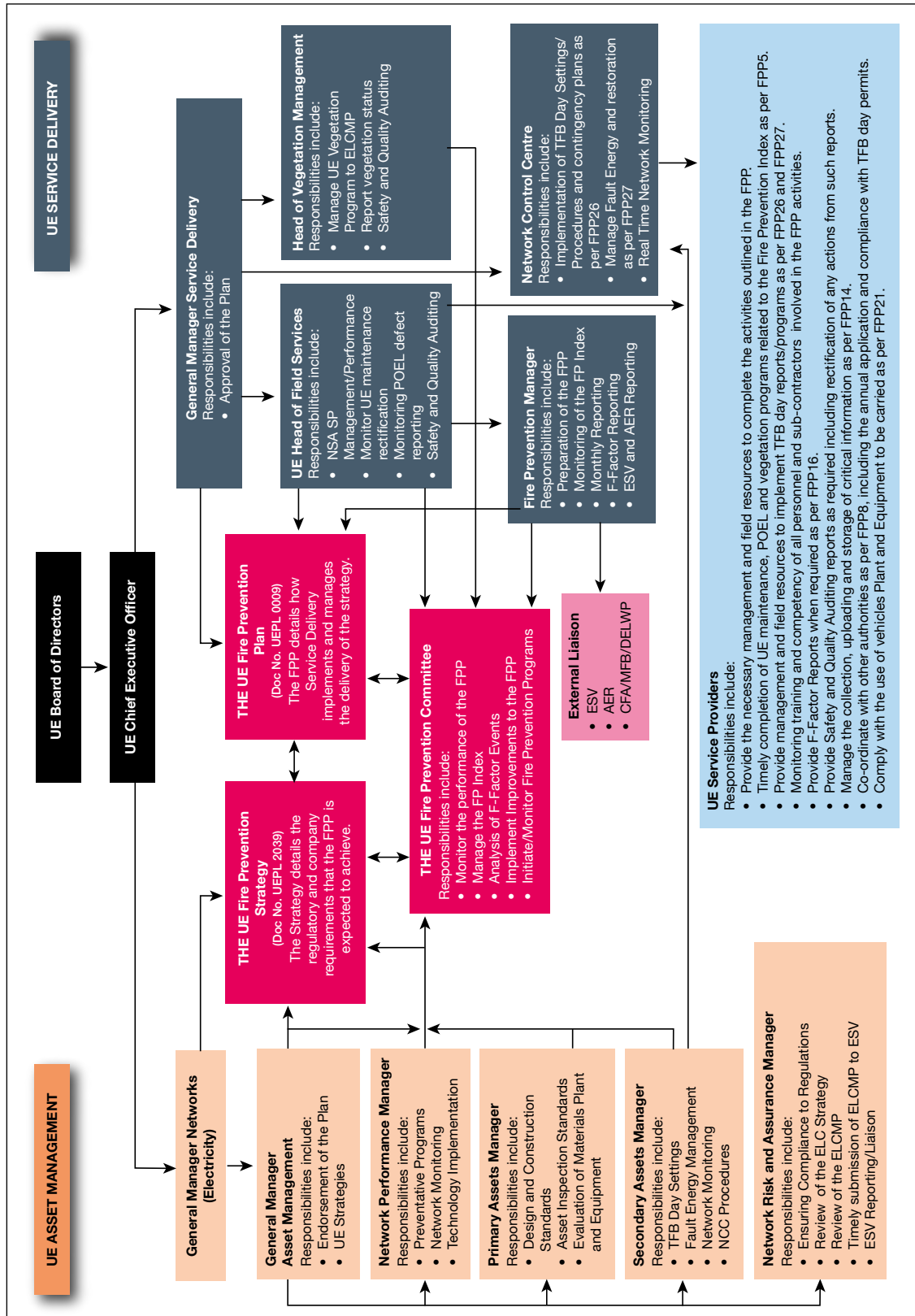
## Attachments

1. Fire Prevention Management Structure.



## Attachment 1: Fire Prevention Management Structure

The following management structure outlines the positions responsible for the preparation, approval, submission and implementation of the UE Plan.



## FPP3: Management Reporting Procedure

### Purpose

This procedure describes the process for reporting the status of UE's fire prevention activities within the HBRA.

### Scope

This procedure applies to all reports associated with fire prevention.

### References

Nil.

### Definitions

Nil.

### Procedure

Reports are produced by the Fire Prevention Manager from information extracted from SAP (via Tableau), VMS, DMS, various government websites and other sources and is utilised to update the:

- The current HBRA Fire Prevention Index
- Weather patterns and CFA forecast for the upcoming season including curing mapping
- The status of fire season
- The Fire Start Performance Indicator (refer FPP16).

### Significant Milestones Status Report

At Fire Prevention Committee meetings, normally held on a monthly basis, the checklist located in the calendar of significant events is updated to demonstrate the progress against all activities.

### Attachments

Nil.

## FPP4: Significant Incident Reporting Procedure

### Purpose

This procedure describes the significant incident reporting requirements.

### Scope

This procedure includes the regular and ad-hoc reporting to both United Energy Senior Management and Energy Safe Victoria.

### References

Electricity Safety (Bushfire Mitigation) Regulations 2013.

ESV Electrical Incident and Safety Performance reporting Guidelines.

Fire Reporting data sheet for summer weekly report, ESV email 17 October 2017

### Definitions

ESV                      Energy Safe Victoria

Significant Incident    An incident that is sufficiently important to be worthy of attention:  
a ground fire in HBRA during the declaration period; a ground fire greater than 10m<sup>2</sup>; any incident that has the potential to draw media attention.

### Procedure

Updates of Fire Prevention Plan will be submitted to ESV for approval, be in accordance with the Electricity Safety (Bushfire Mitigation) Regulations 2013, and include the items covered by Fire Prevention Plan Procedure FPP7.

In addition to all electrical incidents and safety performance being reported to ESV in accordance with the ESV Electrical Incident and Safety Performance reporting Guidelines, significant incidents shall be reported the GM EN, the GM SD and the Director Energy Safe Victoria, as soon as practicable.

**Note:**        *The ESV guidelines require the United Energy Duty Officer to report all ground or vegetation fires in HBRA, to the ESV 24-hour emergency call number 1800 000 922, as soon as practicable.*

A weekly (summer) report shall be provided to ESV during the fire season, as specified by ESV.

The content and reporting frequency of additional information requested by ESV shall be subject to agreement with UE.

Independent audits of fire prevention activities, shall be arranged to confirm compliance with the Electricity Safety (Bushfire Mitigation) Regulations 2013 and the protocols agreed with UE.

### Attachments

Nil.

## FPP5: HBRA Fire Prevention Index Procedure

### Purpose

This procedure describes the process for calculating the HBRA Fire Prevention Index.

### Scope

This procedure applies to the critical activities that contribute to the Index.

### References

Nil.

### Definitions

Nil.

### Procedure

#### Background

The HBRA Fire Prevention Index is a weighted measure of the progress of the critical activities in the fire prevention program. The Index provides an indication of the amount of overdue work within the HBRA required to reach a state of fire prevention preparedness. The target is for a zero Index to be achieved prior to the declaration of the fire season, and to maintain the Index at zero throughout the fire season.

#### Calculation of the Index

The critical activities that comprise the components of the Index are those activities that

1. Have been regulated, or
2. Are maintenance defects that are considered to present a serious fire risk based on previous experience.

A list of the maintenance codes contained in the UE Asset Inspection Manual which are considered to present a fire risk based on previous experience are included in Attachment 3.

These critical activities are weighted as a percentage relative to the level of risk for that item. The total of all the weightings shall be 100%.

The Denominator is an annual unit of work for that critical activity based on the volumes identified in the current year by the asset inspection information available to the Fire Prevention meeting in mid- June. If there is not enough inspection data available, historical information will be used in determining the denominator.

This is determined from the following:

- SAP – UE's Data System that contains all the current maintenance and POEL items and holds the historical data
- Tableau – The Reporting system that interrogates SAP on the status of maintenance and POEL
- GIS – Used to calculate the spans on the network and is the network asset register
- Vegetation Management System (**VMS**) – Provides the vegetation statistics.

## Index Monitoring

The index is normally calculated at the end of each month or more frequently (normally weekly) in the lead up and during the declared fire season. This allows for the closure of any items in SAP or the VMS prior to these periods.

This monitoring involves the UE and POEL maintenance (via the UE SAP System) and vegetation (via the Vegetation – Inspection and Cutting Spans Report– see Attachment 2) planners providing reports to the Fire Prevention Manager on what or if any maintenance items or vegetation spans are overdue (indexing) and which may become overdue within the next reporting period (20 days).

An example of this report is contained in Attachment 2 titled 'HBRA Maintenance Dashboards'.

## Reporting of Indexing Items (During Fire Season)

This process further monitors and captures items that may index in the period between the weekly reporting cycles.

Where items are identified to fall over due (thus index) within the next indexing period (including any identified VP1 trees which must be action within two (2) (declared season) and seven (7) (undeclared season) working days) an email must be forwarded immediately by the SP to UE Maintenance Planners, Vegetation Planners and copy to the Fire Prevention Manager to verify what actions are in place to ensure these items are rectified or re-assessed in line with UE guidelines.

These UE staff shall confirm closure within the UE system as soon as practical after this occurs.

If these items are not verified as being completed within the due date the FPM shall include these items on the index and immediately inform the UE Head Service Delivery for resolution within two (2) working days.

If subsequently evidence is provided that the items were completed by the indexing date these shall be retrospectively removed from the index. Any indexing or retrospectively removed items will be highlighted at the next FPC meeting.

## POEL Defects

UE continually monitors POEL defects and liaises with owners and ESV to ensure timely rectification of these defects.

Where defects are outstanding on days of TFB/Code Red or disconnections will occur as per table 'Attachment 5' titled 'TFB Disconnection Guide' contained in FPP25: Private Overhead Electric Lines Procedure within this Plan.

## Index Table Definitions

- Actuals (**A**) – The units of work overdue for that activity
- Weighting (**W**) – The percentage assigned to that critical activity
- Denominator (**D**) – The annual units of work estimated to be identified for that activity
- Index Value (**I**) – The index value is calculated via the formula ' $I = A/D * W$ '

Within the calculation a variant has been inserted so the value of the index cannot exceed the weighting assigned to each critical activity. An example of the HBRA Fire Prevention Index Table is shown in Attachment 1.

The critical activities, Denominators and Weightings are reviewed annually by the Fire Prevention Committee, usually in early-mid June, and this is documented as an action in the Annual Program of Fire Prevention Events Procedure (FPP6).

## Responsibilities

The Fire Prevention Manager is responsible for calculating the HBRA Fire Prevention Index.

The Fire Prevention Committee shall review the Critical Activities, Denominators and Weightings on an annual basis, as part of the preparation of the Fire Prevention Plan.

## Attachments

1. HBRA Fire Prevention Index Table
2. HBRA Maintenance Dashboards (example only)
3. HBRA Maintenance Codes included in the FPI.

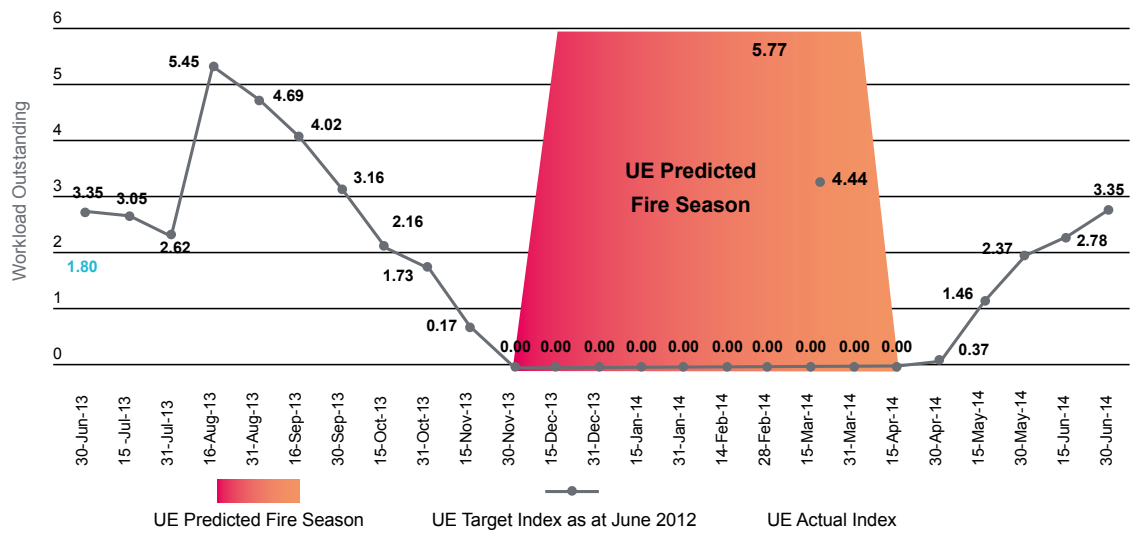
## Attachment 1: HBRA Fire Prevention Index Table

UE – HBRA Fire Prevention Index Table (Example Only)				
Critical Activities	Actual	Weighting	Denominator	Index Value
The critical activities that make up the components of the Index are those activities that have been regulated or that are considered to present a serious fire risk based on previous experience.	The units of work overdue for that activity (A) These numbers are for example only	The percentage assigned to that critical activity (W)	The annual units of work expected to be identified for that activity (D)	The index value (I) is calculated via the formula 'I = A/D*W'
Network Asset Inspection and Maintenance				
<b>Asset Inspection including POELs</b> (Overdue = not Inspected within 37 Months of last Inspection) Maximum Index Value = 15%	75	15	6,862	0.11
<b>Limited Life Poles</b> (Overdue = not made Fire Safe or Reinspected within 13 months) Maximum Index Value = 5%	0	5	75	0.00
<b>Network Attachments P42 (42 Days)</b> (Overdue = not made Fire Safe within AI Manual guidelines) Maximum Index Value = 20%	35	20	1,523	0.69
<b>Network Attachments – P2 (32 Weeks)</b> (Overdue = not made Fire Safe within AI Manual guidelines) Maximum Index Value = 20%	35	20	1,523	0.69
<b>Unserviceable Poles</b> (Overdue = not made Fire Safe within AI Manual guidelines) Maximum Index Value = 10%	1	10	59	0.17
Vegetation				
<b>Pre-Summer Inspection of Spans</b> (Overdue = any spans not inspected within that calendar year) Maximum Index Value = 5%	0	5	18,500	0.00
<b>Pre-Summer Cutting of Spans</b> Overdue= any spans not cut within ELCMP timeframes) Maximum Index Value =25%	0	25	4,650	0.00
<b>Total</b>		<b>100</b>		<b>1.80</b>

The Index can vary over the range from zero to 100, zero being if all work has been completed within the priority timeframe assigned and 100 if significant volumes of work, up to the maximum denominator, are outside the priority timeframe assigned.

Network and POEL Asset Inspection and Maintenance, Vegetation are the three items that form the HBRA Fire Prevention Index.

## UE Index Target v Actual - All Items (example only)





## Attachment 2: HBRA Maintenance Dashboards (Example Only)

### UE and POEL Assets (Via Tableau)

#### Maintenance Dashboard - HBRA

Fire Period End Date : January 13, 2020					
UE Assets - Open Notifications					
	Overdue/Maintenance	Due - 1 to 7 Days	Due - 8 to 28 Days	Due -29 to 224 Days	Total
Serviceable Pole Insp	0	0	2	8	10
Limited Life Insp	0	0	0	7	7
P42 (42D)/P90	0	3	31	26	60
P2(32W)	0	0	0	1,059	1,059
Unserviceable Pole	0	0	0	17	17
POEL - Open Notifications					
	Overdue/Maintenance	Due - 1 to 7 Days	Due - 8 to 28 Days	Due -29 to 224 Days	Total
POEL Cyclic Program	0	1	1	2	4
POEL P42(42D)/P90/P2	2	0	2	36	40
POEL Referred to ESV	1	0	0	0	1
POEL Unserviceable Pole	2	0	3	2	7

### Attachment 3: HBRA Maintenance Codes included in the FPI

DAMAGE CODE	DETAILS	DAMAGE CODE	DETAILS
6	Pole: Concrete Damaged/Corroded	26B	Conductor: Armour Rod Fit/Replace
7	Pole: Leaning	26C	Conductor: Damper Fit/Replace
8	Pole: Cap Fit/Refit	26F	Conductor: Fault Indicator Fit/Replace
15	Crossarm: LV Deteriorated	32H	HV Spreader
16	Crossarm: HV Deteriorated	34A	Conductor: Resag LV
18	Bird Cover: Unsuitable	34B	Conductor: Resag HV
20	Insulator: LV Deteriorated	34C	Conductor: Check LV Clearance
22	Insulator: HV Deteriorated	34D	Conductor: Check HV Clearance
25	Conductor: Ties Require Maint/Rep	45A	Possum Guard: Fit or Maintain
26	Conductor: Fittings Req Maint/Rep	45H	HV Hardware Needs to be Tightened
28	Conductor: Strands Require Repair	45L	LV Hardware Needs to be Tightened
30	Conductor: Corroded	50A	Retrospective Service Height
32	Conductor: LV Spreader Required	66A	Sub-T: Crossarm Inter Deteriorated
34	Conductor: Requires Resag	66B	Sub-T: Crossarm Strain Deteriorated
40	Guy: Install or Replace	66C	Sub-T: Insulator Defective
42	Guy: Requires Maintenance	66D	Sub-T: Cond/Fittings Require Maint
45	Hardware Needs to be Tightened	70A	Surge Diverter: Fit
50	Service Fittings req Maint/Repl	70B	Surge Diverter: Renew
51	Service Requires Replacement	70C	Surge Diverter: Disconnect only
57	Tree Rubbing on Service	70D	Surge Diverter: Renew Disc Lead
62	Hazards Near Line	75A	EDO: Renew
66	Sub-T: Requires Maintenance	75B	EDO: Fuse Tube Requires Replace
70	Surge Diverter: Requires Maint	75C	EDO: Fire Choke/Fuse Cap Missing
75	EDO: Requires Maintenance	75D	LV Pole Mounted Capacitor
77	Powder Filled Fuse: Req Maint	77A	Powder Filled Fuse: Renew
79	Wine Glass Insulator/Concrete Pole	85A	Earth: Cover Strip/Sign Req Maint
85	Earth: Requires Maintenance/Repl	85T	Earth Test
87	Sub/Switch/CHP Req Animal Proof	87B	Transformer Rusty or Leaking Oil
90	Fuse: LV Isol/Fuse Req Maint/Repl	87C	Switch: Maintenance
15A	Crossarm: LV Inter Deteriorated	87E	Switch: Insulator Maintenance
15B	Crossarm: LV Strain Deteriorated	87F	Switch: Arc Chute Maintenance
15C	Crossarm: LV Anti-Split Required	87G	Cable: Guard Required
15D	Crossarm: LV Communications Support Arm	87H	Switch: Earth Requires Maint
16A	Crossarm: HV Inter Deteriorated	87I	Pole TX Height
16B	Crossarm: HV Strain Deteriorated	95S	Public Lighting Fault & Maintenance
16c	Crossarm: HV Anti-Split Required	B1	LV Blade Isolator Defective
20A	Insulator: LV Inter Deteriorated	B2	LV Fused Isolator Defective
20B	Insulator: LV Strain Deteriorated	B3	LV Conductor Termination Defective
22A	Insulator: HV Inter Deteriorated	B6	Live Exposed LV
22B	Insulator: HV Strain Deteriorated	B9	LV Pillar/Pit defective
23A	Façade: Insulation contact with structure	C2	Tx Cables Damaged/Underrated
23B	Attachment Points Broken ABC Façade	C4	Tx Damaged, Rusty
23C	Discoloration of ABC Façade insulation	C5	Tx Faulty/OOS
23D	Unapproved Coverings, Guards on ABC Façade	C8	Tx Connections hot/defective
23E	Attachment Points Rusty/Bent ABC Façade	L	Limited Life
23G	Façade: Defective Cable Ducts/ Conduits	S111	Isolator Damaged/Burning Contacts
23H	Façade: Cable Insulation Damage/ Defect	S144	Switch Not Functioning Safely/Satisfact
23O	Open Wire Façade Mount Conductor	U	Unserviceable
26A	Conductor: 'D' Loop Fit/Replace		

## **FPP6: Annual Program of Activities Procedure**

### **Purpose**

This procedure describes the process for establishing and implementing an annual program of fire prevention activities within the HBRA of UE.

### **Scope**

This procedure covers the key fire prevention milestones in the HBRA.

### **References**

Nil.

### **Definitions**

Nil.

### **Procedure**

As part of the preparation of the annual Fire Prevention Plan, the Fire Prevention Manager shall prepare an Annual Program of Activities. The Program will list key milestones, the accountable position for completion of each milestone and the target date for completion of each milestone. Details of the items contained in the Program are shown in Attachment 1.

The Fire Prevention Committee shall monitor progress against the Plan on a regular basis and progress against the Program will be included in management reports.

### **Attachments**

1. Annual Program of Activities

## Attachment 1: Annual Program of Activities

Key Milestones	Accountable Position	Target Date
Complete pre-summer inspection/LiDar program within the HBRA and LBRA.	Head of Vegetation Management	End August*
Present Fire Prevention Committee Training.	Fire Prevention Manager	End July*
Review and finalise the 'Critical Activities', 'Denominators' and 'Weightings' that will be used in the formation of the Fire Prevention.	Unitised Works Manager	End July*
Complete all required inspection of POELs, UE assets, including limited life poles within the HBRA.	Unitised Works Manager	End July*
Begin liaison with ESV in relation to any overdue POELs within the HBRA.	UWM/FPC	From end July ongoing*
Ensure total fire ban day permits from CFA, MFB, DELWP are applied for.	Fire Prevention Manager	End July*
<p>Initiate actions for new target dates to complete specific fire prevention programs if required from the target dates below:</p> <ul style="list-style-type: none"> <li>Pre-summer Inspection completion = 31 August annually</li> <li>Target completion of all maintenance items = 15 November annually.</li> <li>Target completion of all vegetation cutting or removal = 1 December annually.</li> </ul> <p>At this time contingency plans are to be developed to ensure the resources are available to complete outstanding works before the declaration of the fire danger period.</p>	Fire Prevention Manager	Assessed from the August Fire Prevention Meeting and then monthly thereafter*
Review Fire Prevention Risk Register.	All	End August*
Liaise with Other Responsible Persons about their pre-summer inspection and cutting or removal programs in declared fire areas of the HBRA and the LBRA.	Head of Vegetation Management	End August ongoing*
Provide evidence of audits into the effectiveness of the inspections carried out on the HBRA UE supply network. Review training records for all Asset Inspectors and provide evidence of competence.	Unitised Works Manager	End August*
<p>Remind UE, SP's and subcontractors of the requirements of FPP21 in relation to vehicle, plant and equipment inspections and firefighting equipment to be carried on vehicles from 1 October and include in H&amp;S Audits from this point.</p> <p>This Procedure includes:</p> <ul style="list-style-type: none"> <li>Vehicle Use Guidelines</li> <li>Pre-Summer Vehicle Inspection</li> <li>Equipment to be Carried</li> </ul>	H&S Officers, Service Delivery and Head of Vegetation Management	End September*
Ensure all HBRA UE supply network assets located within AusNet Services terminal stations have been audited to ensure assets are in a serviceable condition – including tree clearances.	Unitised Works Manager	End September*

Key Milestones	Accountable Position	Target Date
Arrange access to vegetation curing maps from CSIRO, liaise closely with CFA officials on expected declaration date and adjust programs as required.	Fire Prevention Manager	Mid October*
Initiate an annual review and an attestation of the FPP procedures by the responsible persons for inclusion in any updated FPP.	Fire Prevention Manager	End October*
Ensure Service Providers/UE have fire authority permits to work on total fire ban days.	Service Delivery Managers	Mid November
Complete, or have re-assessed, overdue maintenance within the HBRA.	Service Delivery Managers/FPC	Mid November ongoing*
Review Operational Contingency Plan.	Fire Prevention Manager/NCC and Secondary Assets Manager	Mid November*
Complete pre-summer pruning program or reassess targets within the HBRA and the LBRA	Head of Vegetation Management/FPC	End November*
Mail out POEL Fire Risk Prevention letters and brochures.	General Manager Customer and Market Services	End November
Submit any updated Fire Prevention Plan to ESV, post plan on intranet and extranet and advise stakeholders.	Fire Prevention Manager/ Network Risk, Safety and Compliance Manager	End December ongoing*
Issue draft ELCMP for comments.	Head of Vegetation Management	End February
Review Fire Prevention Risk Register.	All	End August*
Submit ELCMP to ESV.	Head of Vegetation Management/ Network Risk, Safety and Compliance Manager	End March

Key Milestones	Accountable Position	Target Date
<p>Review effectiveness of fire prevention systems including:</p> <ul style="list-style-type: none"> <li>Assess the implementation of the Fire Prevention Plan</li> <li>Identify any deficiencies in the Plan or the plan's implementation</li> <li>Improve the Plan and the Plan's implementation if any deficiencies are identified.</li> </ul>		
<p>Undertake a Post Implementation Review (<b>PIR</b>), this should include the following</p> <ul style="list-style-type: none"> <li>The activities for Fire Prevention management that worked well</li> <li>Activities that did not work well, and an analysis as to why</li> <li>A plan to rectify the activities that did not work well.</li> </ul> <p>All actions arising from the PIR will be documented and assigned responsibility and timeframes for closure. These will be monitored by the FPC through to completion.</p>	Fire Prevention Committee	After end of fire season

**NOTE:** \*These targets are dependent on the start or end of fire season and may vary from year to year.

## FPP7: Fire Prevention Plan Procedure

### Purpose

This procedure describes the process for preparing the Fire Prevention Plan.

### Scope

This procedure covers the development, accuracy and approval of the Fire Prevention Plan.

### References

*Electricity Safety Act (1998), Section 113A*

*Electricity Safety (Bushfire Mitigation) Regulations.*

### Definitions

Nil.

### Procedure

The Fire Prevention Plan 2014-19 has been prepared by the Fire Prevention Manager. Any updates to the plan or procedures will be completed and verified by the relevant manager as detailed in Attachment 1 – 'Verification of Accuracy (FPP Procedures)'. These changes will then be submitted to the Fire Prevention Committee by the FPM for endorsement.

The final version of the plan will be reviewed by the Network Risk, Safety and Compliance Manager, endorsed by the General Manager Asset Management and approved by the General Managers of Electricity Assets and Service Delivery. Any updates undertaken of the current five year UE Fire Prevention Plan (2019/23) will be provided to ESV.

The Fire Prevention Plan shall include the following:

- The name, address and telephone number of UE
- The name, position, address and telephone number of the person responsible for the preparation of the Plan
- The name, position, address and telephone number of the persons who are responsible for carrying out the Plan
- The telephone number of a person who can be contacted in an emergency that requires action by UE to mitigate the danger of fire
- The fire prevention policies, strategies, and objectives to prevent fire ignition from the UE network
- The objectives of the Plan to prevention of fire danger
- A description, map or plan of the land to which the plan applies, identifying HBRAs and the location of UE assets
- The strategies to prevent the risk of the UE supply network starting fires
- The preventative programs to be adopted and a list of all works programs to be undertaken within the HBRA before the next fire danger period for the purpose of preventing fire ignition from the UE supply network.
- A plan for inspection that ensures that all POEL and UE asset within the HBRA a are inspected at regular intervals of no longer than three years
- Details of the processes and procedures for ensuring that only persons who have satisfactorily completed a training course approved by Energy Safe Victoria or persons covered by any ESV exemption are assigned to carry out asset inspections as per dot point above

- The operation and maintenance plans for UE's network:
  - o In the event of a fire
  - o During any day which has been declared to be a day of total fire ban
  - o During a fire danger period.
- The investigation, analysis and methodology to be adopted for the prevention of fire ignition from the UE supply network
- Details of the processes and procedures by which the specified operator will:
  - o Monitor and audit the implementation of the Fire Prevention Plan
  - o Identify any deficiencies in the Plan or the Plan's implementation
  - o Monitor and audit the effectiveness of inspections carried out under the plan
  - o Improve the Plan and the Plan's implementation if any deficiencies are identified;
  - o Ensure that any training necessary for persons assigned to perform functions under the Plan is provided
  - o Monitor and audit the competence of the persons assigned to carry out inspections under the Plan.
- A policy of UE in relation to the assistance to be provided to fire agencies in the investigation of fires near UE's network
- Details of processes and procedures for enhancing public awareness of:
  - o The responsibilities of the owners of private overhead electric lines in relation to prevention of fire danger
  - o The obligation of the major electricity company to inspect private overhead electric lines within its distribution area.

## Attachments

1. Verification of Accuracy (FPP Procedures).



## Attachment 1: Verification of Accuracy (FPP Procedures).

The following responsible persons have verified that the procedures associated with the plan are accurate as of the dates listed below.

FPP Procedure	Person(s) Responsible	Confirmed Accurate	Comment / Updates
FPP1: Fire Prevention Management System Procedure	Trevor Fisher	June 2019	Assessment Completed – Minor amendments only
FPP2: Management Structure Procedure	Trevor Fisher	June 2019	Assessment Completed – Updated all roles and titles to reflect current status
FPP3: Management Reporting Procedure	Trevor Fisher	June 2019	Assessment Completed – No amendments required
FPP4: Significant Incident Reporting Procedure	Mike Tshaikiwsky	June 2019	Assessment Completed – Minor amendments only
FPP5: HBRA Fire Prevention Index Procedure	Trevor Fisher	June 2019	Assessment Completed – Removed POEL defects from FPI and defects list
FPP6: Annual Program of Activities Procedure	Trevor Fisher	June 2019	Assessment Completed – Minor amendments only
FPP7: Fire Prevention Plan Procedure	Trevor Fisher	June 2019	Assessment Completed – Updated this (FPP Procedures) table
FPP8: Coordination with Other Authorities Procedure	Trevor Fisher	June 2019	Assessment Completed – Minor amendments only
FPP9: Technology Implementation and Development Procedure	Rob Simpkin / Michael Merakalis	June 2019	Assessment Completed – Minor amendments only
FPP10: Step Change to Industry Practice Procedure	Mike Tshaikiwsky	June 2019	Assessment Completed – No amendments required
FPP11: Training and Competence Procedure	Rob Foord Craig Smith, Brian Rennie Hugh Vickers-Willis	June 2019	Assessment Completed – Addition of 'Condition Based Modelling'
FPP12: Monitoring and Review Procedure	Mike Tshaikiwsky Trevor Fisher	June 2019	Assessment Completed – Minor amendments only
FPP13: Fire Prevention Management System Control and Approval Procedure	Trevor Fisher	June 2019	Assessment Completed – No amendments required
FPP14: Management of Critical Information Procedure	Tobie De Villiers	June 2019	Assessment Completed – No amendments required
FPP15: Response to Reported Unsafe Situations Procedure	Steve Piasentin Tim Smith	June 2019	Assessment Completed – Minor amendments only
FPP16: Reporting, Investigation and Analysis of Fire Ignitions Procedure	Trevor Fisher	June 2019	Assessment Completed – F-Factor Graph updated

FPP Procedure	Person(s) Responsible	Confirmed Accurate	Comment / Updates
FPP17: Risk Assessment Procedure	Trevor Fisher Mike Tshaikiwsky	June 2019	Assessment Completed – No amendments required
FPP18: Network Assets Preventative Programs Procedure	Michael Merakalis	June 2019	Assessment Completed – Minor amendments only
FPP19: Electric Line Clearance Management Procedure	Hugh Vickers-Willis	June 2019	Assessment Completed – Minor amendments only
FPP20: Technical Standards for Design, Construction, Operation and Maintenance Procedure	Michael Merakalis	June 2019	Assessment Completed – Minor amendments only
FPP21: Use of Vehicles, Plant and Equipment in Periods of High Fire Risk	Craig Smith Steve Piasentin Hugh Vickers-Willis	June 2019	Assessment Completed – Minor amendments only
FPP22: Evaluation of Materials, Plant and Equipment	Tim Smith Steve Piasentin Hugh Vickers-Willis	June 2019	Assessment Completed – No amendments required
FPP23: Use of Contractors Procedure	Tim Smith Steve Piasentin Hugh Vickers-Willis	June 2019	Assessment Completed – No amendments required
FPP24: Inspection, Measurement and Testing Equipment Procedure	Tim Smith Steve Piasentin Hugh Vickers-Willis	June 2019	Assessment Completed – No amendments required
FPP25: Private Overhead Electric Lines Procedure	Craig Smith Hugh Vickers-Willis Jason Craig	June 2019	Assessment Completed – Updated associated Procedure
FPP26: Operational Contingency Plans Procedure	Rob Simpkin David Kowal	June 2019	Assessment Completed – Minor amendments only
FPP27: Fault Energy Management Procedure	Rob Simpkin	June 2019	Assessment Completed – Minor amendments only

## FPP8: Coordination with Other Authorities Procedure

### Purpose

This procedure describes the process for coordinating with other organisations regarding fire prevention activities and response to emergencies such as fires.

### Scope

This procedure covers the liaison with other organisations to coordinate fire prevention activities and respond to emergencies.

### References

UE Operations Manual (Document No. UE MA 0001)

UE Emergency Management Plan (ELE-PL0900)

### Definitions

<b>MFB</b>	Metropolitan Fire and Emergency Services Board
<b>CFA</b>	Country Fire Authority
<b>DELWP</b>	Department of Environment, Land, Water and Planning
<b>ESV</b>	Energy Safe Victoria
<b>AER</b>	Australian Energy Regulator

### Procedure


#### Fire Investigation

On request, UE will provide assistance to MFB, CFA, DELWP or other statutory bodies regarding the investigation of fires near the UE supply network. The UE Emergency Response Manager shall arrange such assistance.

#### Activities during the Fire Danger Period

Although permits are not required for work during the fire danger period, the CFA has literature providing guidance on what precautions need to be undertaken when performing various activities including welding, grinding, soldering or gas cutting. UE expects all work crews undertaking such activities on their behalf to comply with these precautions at all times especially during the fire danger period.

Below is an extract from the CFA poster titled 'CAN I OR CAN'T I?' which clearly documents the requirements when undertaking these activities.

Can I carry out welding, grinding, soldering or gas cutting?			
	Fire Danger Period		Total Fire Ban
	YES	NO	YES
	<b>But only if:</b> <ul style="list-style-type: none"> <li>A fire-resistant shield or guard is in place to stop sparks, etc</li> <li>An area at least 1.5 metres is cleared of flammable material or wetted down sufficiently to prevent the spread of fire</li> <li>You have a water supply or water spray knapsack containing at least 9 litres of water</li> <li>A person is in attendance at all time while the fire is alight</li> <li>All out offs and hot materials are placed in fireproof receptacle.</li> </ul>	Activities such as welding, gas-cutting, soldering, grinding, charring, extracting honey and heating bitumen produce fire and heat and are prohibited during TFB.	In some circumstances, CFA or MFB will issue a permit to community charitable organisations, statutory corporations, councils, industrial or trade operations or for public entertainment purposes to authorise such activities during TFB. These permits must come from CFA Regional offices or MFB Zone offices, and may not be issued by Municipal Fire Prevention Officers.

## **Permits Required for Activities on Days of Total Fire Ban**

Permits are to be applied for annually by the end of July, and distributed to relevant line managers on receipt of the permit. The permits are valid for a period of 12 months.

The activities permitted under the permit conditions should be avoided or deferred if possible on days of total fire ban.

The Service Provider's Executive General Manager or equivalent may give written endorsement to work crews involved in the use of the items listed on the permits for the entire fire season, provided these crews adhere to the requirements of the permits as described in Attachment 1.

Work permits must be obtained annually from the following agencies for business activities on days of total fire ban.

- DELWP
- CFA
- MFB.

Service Providers involved in the use of equipment or work practices normally prohibited on a TFB day are responsible for obtaining the necessary permits, which cover their own and any subcontract crews.

The permits are granted by these agencies on request, and copies shall be forwarded to all relevant service provider staff, work crews and subcontractors with copies provided to the UE Contract Managers.

## **Mutual Aid Plan (MAP)**

Consistent with the requirements of Clause 7 of the Distribution Code, UE has entered a cooperative agreement with the four other distribution companies to deal with major incidents such as fires. UE will meet its commitments under this agreement as the need arises.

## **Declaration of a Fire Disaster**

If a disaster is declared by a Fire/Disaster Coordinator and roadblocks are erected, UE operational personnel must not enter into the restricted area. All operations must be performed external to the restricted area.

Arrangements may be agreed to between the Fire/Disaster Coordinator and the Head of Network Operations and Control to enable operations or activities within the restricted area. This agreement must hold the safety of personnel paramount. Personnel involved in such situations must be consulted and their agreement to the arrangements confirmed before entry is undertaken.

## **Response to Fire Emergencies**

Response to fire emergencies shall be in accordance with the UE Emergency Management Plan (**EMP**). A copy of this plan may be viewed at UE's Mt. Waverley office during normal business hours. Refer to Operational Contingency Plans Procedure FPP26 for further detail.

The EMP has been developed to ensure that the UE supply network can respond effectively to emergency situations associated with the UE assets.

The EMP contains details of the key processes of notification, escalation and mobilisation, the source and organisation of resources and the actions which should be considered, and is part of an overall plan of the Company framework for Emergency Management.

The UE Operations Manual is called up by the EMP and contains an operational plan for UE assets in the event of a fire. UE does not have a specific maintenance plan for their assets in the event of a fire or during the fire danger period. However, post a fire event, the necessary maintenance will be carried out in accordance with any fire authority permits that are in force.

### **Contact Details of Other Organisations**

Contact between UE and other organisations is vital in both emergency and normal situations throughout both the lead up to and duration of the declared fire season. Local government and fire authorities provide valuable information on the expected commencement, duration and severity of the declared fire season.

### **CFA and Bureau of Meteorology (BOM) Information**

The BOM provides regular reports containing historical and future outlooks on the weather, climate temperature and rainfall.

The CFA also provides satellite photographic grassland curing maps of Victoria. The grassland curing maps show the extent to which moisture is present at ground level and hence give an indication of the potential fire risk.

The FPM will utilise these maps covering the UE area as required in the lead up to the declaration of the fire season and during the fire season.

These maps are circulated in accordance with the Fire Prevention Management reporting system outlined in this procedure.

The links to this data are as follows:

### **BOM Rainfall and Temperature Outlooks**

<http://www.bom.gov.au/climate/outlooks/#/rainfall/median/seasonal/0> <http://www.bom.gov.au/climate/outlooks/#/temperature/maximum/median/seasonal/0>

### **CFA Curing Mapping**

<http://cfaonline.cfa.vic.gov.au/mycfa/Show?pageId=colGrasslandCuringMap>

### **Fire Season Monitoring**

The FPM will remain in close liaison with the CFA Officers in the approach to fire season to assess whether there is likely to be an early or delayed start to the fire season.

The fire season is usually declared on or about mid-December but can be delayed into January or not declared at all. The Electric Line Clearance and Fire Prevention will provide regular updates on the status of fire season declaration.

The CFA's website provides mapping updated on a weekly basis displaying the status of fire restrictions in each municipality within Victoria in the lead up to the summer period.

This mapping can be viewed at the following webpage – <http://www.cfa.vic.gov.au/warnings-restrictions/fire-restrictions-map/>

### **Mapping of Hazardous Bushfire Risk Areas (CFA Local Government)**

The concept of fire hazard mapping was commenced in 1981 by the CFA to enable local councils to better plan new development in rural areas and to plan their overall fire protection programs.

The latest fire boundary changes occurred in 2013 and were historically updated every four years by the CFA in consultation with UE and local government representatives.

As of 2016 UE have received advice that any future HBRA boundary alterations will be by application to the CFA as required by stakeholders.

The current maps have been superimposed on the UE GIS plans that show the road network and electricity distribution lines. This enables all assets to be assigned a fire area rating dependant on each asset location which is uploaded into SAP.

### **Municipal Fire Prevention Committees (Local Government)**

Each municipality outside the Metropolitan Fire District has a Municipal Fire Prevention Committee.

Where the municipality is adjacent to any part of a forest or crown land reserve, a representative of the DELWP will also be a member.

The Fire Prevention Manager, or nominated representatives, will attend meetings of the Municipal Fire Prevention Committee when invited and report to the Fire Prevention Committee any matters affecting UE operations or business position.

Procedure FPP26 contains the contact details of municipal fire prevention officers at municipalities controlling the fire risk areas of UE.

### **Liaison with Other Network Operators**

UE, in accordance with its cyclic inspection program, shall inspect UE assets attached to poles/towers owned by another network operator. Assets owned by another network operator and attached to UE pole/towers shall be inspected by UE as part of its cyclic inspection program, and any defects reported to the asset owner.

### **Municipal Councils**

The UE Head of Vegetation Management shall maintain ongoing liaison with municipal councils.

### **Attachment**

1. Total Fire Ban Day Permits (Summary of Requirements).

## Attachment 1: Total Fire Ban Day Permits – (Summary of Requirements)

Authority	Permit Type	Worksite Preparation Requirements	Personnel Requirements	Fire Fighting Equipment Requirements	Contact Authority Prior to Work Commencement
<b>CFA</b>	Permit for Welding, Cutting, Grinding  Permit No:	Ground cleared of all combustible materials or maintained in a wetted down condition for a radius of 10 metres	Minimum of two people in attendance at all times with one purely as an observer	Fully equipped hose available for immediate use or 1,000 litre tanker	Manager of Community Safety Region 8 9793 4088 or Region 13 9735 0511
<b>CFA</b>	Permit for Use of Blow Lamps or Gas Torches  Permit No:	Ground cleared of all combustible materials for three metre radius or maintained in a wetted down condition for a radius of five metres	Minimum of two people in attendance at all times with one person solely as observer and for fire fighting purposes	Two 16 litre knapsacks	Manager of Community Safety Region 8 9793 4088 or Region 13 9735 0511
<b>MFB</b>	Permit for Essential Cable Jointing, Welding, Cutting and Grinding  Permit No:	Ground cleared of all combustible materials or maintained in a wetted down condition for a radius of three metres	Minimum of two people in attendance at all times	One 9 litre knapsack	MFB B/H 9665 4501 or A/H Duty Commander 9665 4235
<b>DELWP</b>	Permit to Operate Welding, Cutting and Grinding Equipment  Permit No:	Ground cleared of all combustible materials for a radius of three metres	Minimum of two people in attendance at all times	Two 15 litre knapsacks  One rake-hoe One shovel	The Manager, Fire in the relevant region of DELWP-9412 4777

### Validity of Permits

To ascertain which permit applies, the Melways is marked with the details of the CFA and MFB boundaries. DELWP permits only apply for work being performed in State Forests and National Parks.

### Contact Authorities before Work Commencement

Work crews are required under these permits to advise the CFA and MFB of the time, location, and duration of any work prior to commencement.

## **FPP9: Technology Implementation and Development Procedure**

### **Purpose**

This procedure describes the process for the implementation of technology to minimise/prevent fire ignition emanating from the UE supply network.

### **Scope**

This procedure covers situations where technology has been identified and is being implemented to reduce the risk of fire ignition from the UE supply network. It includes technologies that are mature and have been used for many years and technologies that are relatively new, still evolving, undergoing trials or under development.

### **Assessment of New Technologies**

UE shall regularly monitor the availability of new technology and where appropriate trial the technology before rolling it out to the network where it is feasible to do so. UE also supports the development of new technology, including funding, where such support is deemed appropriate. The adoption of new technologies is typically introduced via UE's technical standards committees.

Considerations will include:

- The effectiveness of the technology at preventing fire, based on sound scientific evidence
- The cost and lifecycle of the technology relative to the value of the risk reduction
- Impact on reliability, health and safety and other network considerations
- Comparison against alternative options
- Integration into existing networks and network modifications required to support the new technology
- How to apply the technology including update of standard, procedures, training etc.

### **General**

The General Manager Asset Management will allocate appropriate funding within the annual budgeting process for fire prevention capital projects when identified.

### **Attachments**

Nil.

### **References**

- UE PR 2363 Introducing New Equipment into the United Energy Distribution Network
- UE ST 2402 Electricity Approved Materials and Suppliers List.
- UE ST 2000 Electricity Construction and Standards
- UE-ST-2421 Code of Engineering Practice for Shared Use of Poles
- UE-ST-2420 Distribution Network Earthing Standard
- UE-GU-2414 Surge Arrester Application Guidelines
- UE-GU-2408 Distribution Switch Application Guidelines
- UE-GU-2400 URD Design Guideline
- UE-GU-2402 Underground Industrial Distribution Design Guidelines
- UE-GU-2405 Distribution Substation Loading Guidelines
- UE-ST-2401 Public Lighting Technical Standard.



## Definitions

<b>ABC</b>	Aerial Bundled Cable. BTOS – Bus Tie Open Scheme.
<b>BTOS</b>	Bus Tie Open Scheme
<b>HV</b>	High Voltage (22kV)
<b>GFN</b>	Ground Fault Neutraliser.

## Procedure

New technology shall be introduced into the United Energy distribution network in accordance with *UE PR 2363 Introducing New Equipment into the United Energy Distribution Network*.

The United Energy As Far As Practicable (**AFAP**) process is used to identify opportunities (controls) to improve safety outcomes by reducing the residual risk, likelihood or consequence, of a fire event.

The 'practicability' of each opportunity was formally evaluated by Subject Matter Experts and a business case was developed for 'practicable' opportunities.

Trials of the technology are funded by United Energy, government, equipment suppliers, universities, or a combination of these organisations.

The time frame for implementation of the technology on completion of the trial have been completed is dependent on the business need for the technology solution and the expected improvement in safety outcome.

Some of the technologies that UE is currently evaluating, deploying or fully implemented include:

### 1. Insulated Cable Systems

To further mitigate the risks of fire starts caused by bare overhead conductors in heavily vegetated areas UE is trialling a covered conductor system. The system employs unscreened insulated HV conductor and insulation piercing connectors to minimize exposure of vegetation or animals to bare conductors.

The covered conductor system may also have benefits in LBRA areas to improve reliability of supply and minimize vegetation clearing.

In October 2016, United Energy, in conjunction with a consortia of Participating Organisations, received a government grant to undertake the testing of Covered Conductor (**CC**) as a replacement for bare wire overhead conductors.

Following successful testing, two locations were selected for the field trials:

- Mordialloc: a section 3 phase HV network, located in a bayside location susceptible to salt spray, in an exposed urban environment, with high fault frequency
- Cape Schanck: a section of SWER network, located in an exposed rural area with dense coastal vegetation, susceptible to strong winds and salt spray.

The field trials are underway, and United Energy is now developing construction standards for the installation and rollout of CC on the network, planned to be completed by December 2019.

### 2. High Performance Protection Systems

High performance protection systems allow protection setting groups to be enabled and disabled using remote control from the network control centre. Protection sensitivity and operating speed can be increased and automatic reclose functionality disabled as needed on high bushfire risk days. Fire prevention is prioritised above network reliability.

The status of the relevant protection arrangements at zone substations supplying HBRA network feeders is contained in FPP27.

This is mature technology and already fully implemented.

### 3. High Speed Protection

UE is trialling Siemens fuse savers which can provide reliability and bushfire risk reduction benefits.

Fuse savers allow fault current to be interrupted very quickly, faster than a fuse. The resulting reduction in fault energy means a lower risk of fire ignition and increased probability that the fault will self-clear. On high bushfire risk days the fuse savers will be programmed not to reclose.

A trial installation at 17 sites commenced in 2015 without SCADA connectivity. United Energy is now rolling out SCADA connectivity to all sites. To date only six sites have been completed and due to a number of technical issues further field work has been paused. It is planned that all issues will be resolved and completed early in 2020. Fuse saver performance will then be monitored for a period of time before a decision is made to install any more across the network.

United Energy is currently testing a new type of modem, updated firmware and methodology where more of the analytics are performed at the SCADA end rather than at each site. If this proves to be successful, SCADA will be implemented at these sites by June 2019.

### 4. Fault Current Limiting Technologies

Reducing the prospective fault current reduces the energy released during a fault thereby reducing the risk of fire ignition.

UE is currently using neutral earthing resistors (**NERs**) at zone substations that supply high bushfire risk areas in order to reduce phase to earth fault levels.

Ground Fault Neutralisers (**GFNs**) are another technology that greatly reduces the prospective phase to earth fault current over that of an NER. Refer below.

### 5. Asset Mapping and Condition Assessment Tools

A number of technologies are important to maintaining assets in good condition to prevent faults that can cause a bushfire or ensure protection systems operate reliably in the event of a fault to limit the damage.

The technologies implemented by UE include:

- Geographic asset mapping to identify assets in HBRA and fire loss consequence in different parts of the network
- Event/fault data logging and analysis of historical fault records to identify the location of network faults thus allowing works to be undertaken to reduce the risk of repeat faults at the same location. An example is locating conductor clashing sites and associated mitigation works such as installation of HV spreaders
- Monitoring of protection relay and zone substation d.c. supply health to ensure protection systems are available and will operate as designed to isolate network faults quickly
- Thermal imaging allowing high resistance connections to be found that can reduce the risk of joint and conductor failure resulting in fire.

## 6. Early Fault Detection Systems

UE is trialling early fault detection systems that rely upon the detection of partial discharges that propagate along the powerline from a network fault. The technology has the potential to detect a range of fault types including those that lead to pole fires. The technology could provide early warning before a fire starts and before conventional protection systems can detect the fault and can provide the approximate location of the fault allowing fault crews to be sent quickly. United Energy has evaluated the technology, and has deemed that the technology is not effective at this point in time. Progress in technological development in this field will continue to be monitored.

## 7. Broken Conductor Fault Detection Systems

UE has partnered with a local university and the Victorian government to begin work on the development of a new protection system that can detect a broken high voltage conductor and immediately trip the circuit before the conductor hits the ground and has an opportunity to start a fire. The technology is anticipated to be most suited to high risk rural networks that use single wire earth return (SWER) systems that cannot benefit from NER or GFN technologies.

The project is split into three stages with stage 1 now complete:

- Stage 1. Feasibility study and prototype development 2018/19
- Stage 2. Field trial and prototype evaluation 2019/2020
- Stage 3. Subject satisfactory completion of Stage 2, deployment across UE SWER networks post 2020.

This work is commercial in confidence.

## 8. Ground Fault Neutralisers (GFNs)

GFNs can be deployed to reduce the risk of powerline faults starting fires. They require the installation of specialised technology at the zone substation together with a range of hardening works on the distribution network.

GFNs minimise the risk of phase to earth faults on high voltage overhead powerlines starting fires by automatically reducing the current flow to very low levels within milliseconds of the fault occurring. GFNs can detect phase to earth faults with up to 10 times the sensitivity compared with traditional sensitive earth fault protection schemes such as NERs.

UE currently has two GFNs installed, one at Frankston South (**FSH**) and another at Mornington (**MTN**). UE is currently installing a third GFN at Dromana (**DMA**) with commissioning expected in late 2019.

## GFN Performance Standards

The *Electricity Safety (Bushfire Mitigation) Regulations* define performance standards (also known as the 'required capacity') for the operation of GFNs in Victoria.

UE is not obligated to meet these performance standards, however UE will be aiming to achieve performance standards as close as possible to those defined by the regulations.

Maximum sensitivity is a function of many variables including network damping, dissymmetry, and size as well as the fault detection algorithms employed. Variables such as damping vary over time meaning that sensitivity can vary over time. As network size increases sensitivity degrades. UE networks are large with a 270A ASC at Mornington and 300A ASC planned for Dromana.

UE expects that it will be possible to satisfy all of the criteria with the exception of the fault detection sensitivity. Higher sensitivity allows a greater number of faults to be detected. UE expects the sensitivity to be better than 12.7kΩ on days of total fire ban.

Mornington REFCL has only been operating since 2nd November 2018. More operating experience is required in order to optimise the operating performance.

Performance improvements afforded by the GFN includes:

- Faster fault detection speed allows the REFCL to respond sooner thereby reducing energy into the fault. For large networks, fault detection speed reduces slightly for high impedance faults due to longer time constant. The performance standards in the regulations are attainable if the fault is detected
- Faster RCC operating speed allows the REFCL to reduce the voltage on the faulted phase faster, thereby reducing the energy into the fault. RCC operating time is approximately 3 cycles. For most faults a delay of three cycles is acceptable
- The lower the residual voltage on the faulted phase while the RCC compensates for the fault the lower the energy into the fault. This is a function of many variables including fault location and load on the feeder containing the fault, harmonic voltage distortion, and RCC tuning. UE shall endeavour to operate the REFCL to provide acceptable performance and will aim to achieve performance in accordance with the regulations however this will not be confirmed until performance testing is completed. High performance can only be achieved using cycle by cycle feedback control loop which is not currently offered by Swedish Neutral. Ultimately performance is heavily dependent upon Swedish Neutral technology.
- Energy into the fault during fault confirmation testing when locating and checking if a fault is sustained some current must be injected into the fault and the lower the amount of energy injected the better. UE will minimise the energy into the fault for a variety of fault resistances. While it will be possible to achieve under 0.1A2s for some faults this may not be achievable for all faults. Performance depends upon Swedish Neutral technology including processing time to take measurements of voltage and current and calculate zero sequence admittances. UE has the tools to determine the theoretical energy which will be confirmed during testing.
- The REFCL must be operational to mitigate bushfire risk. REFCL reliability and availability is of paramount importance. This is not covered under any performance standard. To improve availability UE has developed operating modes that allow the REFCL to operate even when certain components may be defective. For example if there is a loss of a.c. supply to the RCC the REFCL can operate without the RCC in service (new logic required which shall be available soon).

UE intends to work with all manufacturers of GFN technology to continuously improve performance over time as new capabilities are developed, UE will look to upgrade its GFNs and network where this can be achieved economically. For example the GFN installed at Mornington zone substation will have enhanced capability compared to the GFN commissioned at Frankston South zone substation in 2009 and UE will consider upgrading this GFN once Mornington and Dromana zone substation GFNs are installed and the improvements are demonstrated to be reliable and effective.

## GFN Operating Modes

On the basis that all GFN protection system components are operational the system installed at Mornington zone substation is operating as follows:

### Earth Fault Discrimination Disabled

This operating mode is enabled on high fire risk days.

In this mode the GFN will automatically trip the feeder circuit breaker if the earth fault is sustained. If the GFN is unable to determine which feeder has the fault, it will close the NER circuit breaker to allow conventional sensitive earth fault protection to clear the fault (if it can detect it).

## **Earth Fault Discrimination Enabled**

This operating mode enabled is enabled at all other times i.e. non-high fire risk days.

In this mode the GFN will close the NER circuit breaker if the earth fault is sustained and allow conventional sensitive earth fault protection to clear the fault. If the earth fault is back fed through a distribution transformer winding or is very high impedance fault and therefore cannot be detected using conventional sensitive earth fault protection, the GFN will trip directly trip the feeder circuit breaker.

'Earth fault discrimination disabled' mode provides maximum protection against powerline faults igniting bushfires while the 'earth fault discrimination enabled' mode provides maximum network reliability.

After a fault has been isolated by tripping the feeder circuit breaker, the feeder is patrolled to locate the fault thus allowing the switch zone containing the fault to be isolated and for the remaining parts of the feeder to be restored to normal. If the fault cannot be located it might be necessary to gradually restore supply, one switch zone at a time, preferably with the GFN in service. If the fault still exists the feeder circuit will trip again but the switch zone containing the fault will now be known allowing further fault locating methods and tools to be used to pinpoint the exact location and repairs to be made.

The operating modes UE intends to use are subject to change based on the introduction of new technology, techniques, operating experience and knowledge gained over time.

Should any of the major GFN components fail there is no redundancy to allow the system to continue functioning. Where possible, UE will continue to operate the GFN in a reduced capacity mode (e.g. operate the GFN using only the ASC if the RCC has failed).

## **Backup Protection Systems**

Independent backup protection systems will be installed to close the NER circuit breaker allowing conventional earth fault protection to operate should something abnormal occur. Conventional earth fault protection is sufficient to clear the vast majority of faults however provides significantly lower performance in regards to preventing powerline faults igniting bushfires.

## **Inspection, Testing and Reporting**

An extensive inspection and test process shall be undertaken during GFN commissioning. This will include primary tests by creating a deliberate phase to earth fault on the network.

UE has only planned to do primary fault tests on one feeder at one location. The details of these tests have not yet been determined. These tests will allow the sensitivity of the REFCL to be determined, the operating speed to be measured, the residual voltage on the faulted phase to be measured and the energy into the fault to be measured during a fault confirmation test. Tests will be undertaken on all three phases. UE shall undertake sufficient testing to satisfy our own requirements regarding performance. Measurement of currents on feeders that are not tested will also be assessed to verify feeders are well balanced and providing low change in zero sequence admittance as required to demonstrate good performance.

Following each real (unplanned) network fault the operation of system shall be reviewed to ensure it is functioning to expected performance levels.

Reports on the progress of the GFN installation program and the annual performance calibration for the GFNs installed at each zone substation will be submitted to ESV in accordance with the ESV reporting guidelines.

## FPP10: Step Change to Industry Practice Procedure

### Purpose

This procedure describes the process for implementing a step change to industry practices.

### Scope

This procedure covers the process for the implementation of significant changes to existing fire prevention practices associated with the operation of the UE supply network.

### References

Nil.

### Definitions

Significant Change – a major departure from established industry practice.

### Procedure

A formal proposal shall be prepared for General Manager approval, which must include:

- The expected benefits from the change
- A risk assessment of the proposed change reviewed by the Network Risk and Assurance Manager, including the effectiveness of controls
- A sensitivity analysis
- An implementation plan to manage the transition.
- The monitoring and reporting that will be utilised to validate the benefits arising from the change.

Specific consideration shall be given to consultation with ESV and insurers prior to making the decision to proceed. The proposal must be endorsed by the Fire Prevention Committee and approved by Senior Management.

A formal post-implementation review may be conducted following implementation of the change. ESV and insurers may be advised of the results of any post-implementation review.

### Attachments

Nil.

### Current Year

There are currently no proposals for significant change to industry practice.

## FPP11: Training and Competence Procedure

### Purpose

This procedure describes the process for ensuring that employees, SP and subcontractors engaged in fire prevention activities are competent to carry out their work.

### Scope

This procedure covers the training, re-training, review and recording of training of all personnel, SP and subcontractors engaged in fire prevention activities.

### References

Qualifications and Training Requirements for Network Access Asset

Asset Inspection Manual (Document No. UE MA 0003)

Electric Line Clearance Management Plan (ELCMP) (Document No. UE PL 0010)

### Definitions

As detailed in regulation 7(2) within the Electricity Safety (Bushfire Mitigation) Regulations 2013 'a supply network does not include a terminal station, a zone substation or any part of the major electricity company's underground supply network that is below the surface of the land'.

Conversely, any parts of the UE network above the surface of the land with the exception of zone substations constitute their 'Supply Network'.

### Procedure

It is a requirement of the Electricity Safety (Bushfire Mitigation) Regulations 2013 (Vic), specifically Part 7(1)(j) require all persons assigned to carry out inspections on the company's supply network assets must have:

- (a) Satisfactorily completed a training course approved by Energy Safe Victoria
- (b) The detail of the processes and procedures for ensuring persons (other than those above) who carry out or will carry out functions under the plan are competent to do so
- (c) Details of the processes and procedures for ensuring that persons [other than persons referred to in a) and b) above], who will carry out functions under the plan are competent to do so.

### Asset Inspection (Pole and Overhead)

#### Cyclic Asset Inspection

It is a UE contractual requirement that all employees and contractors engaged to carry out cyclic inspections on the company's supply network assets must meet the VESI skills and training guidelines and matrix for asset inspector's published at [www.vesi.com.au](http://www.vesi.com.au). and any UE specific requirements.

The prime training courses currently approved by Energy Safe Victoria for asset inspection are;

- Certificate II in Asset Inspection – 22109VIC
- Certificate II in ESI Asset Inspection - UET20612.

Where this qualification has been attained in a State of Australia other than Victoria, induction shall be conducted by a person holding a Certificate IV in Training and Assessment at a minimum, and include information on Victorian Acts, Regulations, Codes of Practice, Safety Rules, Industry Guidelines and Asset Identification.



## Condition Based Risk Management (CBRM)

Condition based risk assessment is a methodology that brings together asset information, engineering knowledge and practical experience of assets to define and quantify current and future asset condition, performance and risk.

In early 2017, the new Network Analytic Platform (**NAP**) was deployed by UE which allowed UE to operationalise the Crossarm CBRM model and use it for decision making on a daily basis. The crossarm CBRM uses a health index and a risk index to determine the final priority of a crossarm defect. Health index was determined based on the damage type, severity and location on a crossarm along with construction type and additional loading. Risk index was derived from the risk potentially resulting from a crossarm, such as STPIS impact, fire risk and safety risk.

The application of crossarm CBRM model was implemented through stages, the health model was implemented in April 2017 in full automation mode and the risk model was added on to the application in April 2018.

UE document (UE GU 2415) titled 'Crossarm CBRM Assessment Guideline'.

## Asset Inspection (Ground Type Assets and Façade Mounted LV Mains)

The addition of regulation 7(2) in the Electricity Safety (Bushfire Mitigation) Regulations 2013 defines the types of assets excluded in the definition of the 'Supply Network'. These exclusions do not include primarily traditionally underground assets that are located above the surface of the land.

Such Asset Types include:

- Kiosk Substations/Switches
- Ground Type Substations
- Indoor Substations
- Switching Cubicles
- Pillars
- Façade Mounted LV Mains

Currently, there is no training organisation approved by ESV to carry out a training course solely for these assets.

Subsequently, UE has documented the processes and procedures which will form the scope of the inspection of these types of assets.

UE will ensure that all employees and contractors engaged to carry out inspections on these assets must obtain and maintain suitable qualifications which UE has determined are necessary to safely and adequately inspect these types of assets in line with the scope described in the Lifecycle Strategies.

All employees and contractors engaged in Ground Type Assets inspection must have received initial training and undertake regular competency/refresher training in accordance to the VESI Skills and Training Matrix.

Training requirements will also be documented in the Substations Inspection Manual.



Asset Type	Lifecycle Strategy	Minimum Trade Qualification
<ul style="list-style-type: none"> <li>Kiosk Substations</li> <li>Switches</li> <li>Ground Type Substations</li> <li>Indoor Substations</li> <li>Switching Cubicles</li> </ul>	UE PL 2015 Non-Pole Distribution Substations	<ul style="list-style-type: none"> <li>Authorised to Enter</li> </ul> <b>NOTE:</b> pole inspection in ground type substations to be undertaken by Asset Inspectors
Pillars	UE PL 2017 Underground Distribution Systems	<ul style="list-style-type: none"> <li>Cable Joiner</li> <li>Substation Electrician / Fitter Distribution</li> </ul>
Façade Mounted Mains	UE PL 2007 Connectors and Conductors	<ul style="list-style-type: none"> <li>Lineworker Distribution</li> </ul>

## Vegetation Cutting or Removal

All employees and contractors engaged in vegetation cutting or removal must have successfully completed the competency-based training in line with the requirements set out within the 'VESI Vegetation Management Guidelines' and any UE specific requirements.

All Service Provider (**SP**) and subcontractor field operations employees shall be trained in accordance with Qualifications and Training Requirements for Network Access (UE PR 0006).

In accordance with the preferred service provider terms and conditions, all contracts or orders for services shall require that all contractors' employees:

- Hold all necessary qualifications and permits, including those required by law
- Are adequately trained and are competent to carry out their duties in relation to provision of services.

## FPP12: Monitoring and Review Procedure

### Purpose

This procedure describes the process to be utilised for monitoring and review of the effectiveness of the Fire Prevention Management System.

### Scope

This procedure covers audit and review of the elements of the Fire Prevention Management System.

### References

Nil.

### Definitions

Nil.

### Procedure

#### Energy Safe Victoria Audit

ESV generally conducts a desktop and field audit of the UE Fire Prevention Plan and the ELCMP. Audit findings, recommendations and observations are actioned in accordance with the assigned priority. Progress of each action item is monitored by the Fire Prevention Committee.

Three elements that are normally covered by ESV audits include:

- Network assets (poles and wires) including POELs
- Vegetation clearance
- The systems, processes and procedures supporting the fire prevention program.

#### HBRA Summer Inspection Program

Each year, on behalf of the Fire Prevention Committee, the Fire Prevention Manager engages independent inspectors to conduct a summer inspection to monitor the effectiveness of the ELCMP programs, especially in the HBRA.

These inspections also highlight obvious asset defects.

The inspections are normally conducted from December through to the end of the declared fire season. They cover between 50 to 100% of the UE HBRA. A description of the code definitions utilised for asset inspection is included as Attachment 1.

Urgent Asset or POEL defects are reported immediately to the UE NCC for rectification. Non-urgent UE asset or POEL defects shall be emailed to the UE Maintenance Planners at the end of each day.

Any in contact vegetation is reported immediately via text message to the:

- UE Vegetation Planner Auditors
- UE Head of Vegetation Management, and
- the FPM

The UE Vegetation Planner Auditors acknowledges receipt of the message via text back to the auditor, the FPM, and the Head of Vegetation Management advising what steps have been put in place to clear the span and also advises when this is completed in accordance with UE ELCMP.

Results of vegetation or hazard tree findings from the summer audit program will be recorded utilising the vegetation codes within the ELCMP at the time of assessment.

## **Senior Management Briefing**

A senior management briefing, undertaken normally on a biennial basis, is conducted just prior to the commencement of the declared fire season to ensure that the business is fully prepared. This briefing may include a presentation on the status of the UE Fire Prevention programs or site visits. Other managers may conduct or arrange ad-hoc site visits during the year, with particular emphasis on the lead up to and during the fire season.

## **Fire Prevention Management System Review**

The Fire Prevention Committee initiates an annual review of the effectiveness of the Fire Prevention System, for completion by the end of June which includes:

- The effectiveness of preventative programs
- The effectiveness of the monitoring, recording and reporting processes
- The timeliness of response and the achievement of program items
- Performance measures and their value
- The frequency, type and expertise of those responsible for carrying out these activities.

The results of the review are reported to the Fire Prevention Committee for consideration and recommendation of any improvements and/or changes to be included in the following years plan.

## **Attachments**

1. Asset and POEL Defect Definitions
2. HBRA Pre-Summer and Summer Inspection/Audit Schedule.

**Attachment 1: 2019/23 – Asset and POEL Defect Definitions  
(Fire Prevention Indexing Items)**

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Definition	Action Required
<b>P1</b>	<p>Means:</p> <p>An asset inspection officer/auditor has assessed that the condition of an attachment is in need of urgent attention based on the criteria that it represents either:</p> <ul style="list-style-type: none"> <li>• An immediate fire risk or</li> <li>• A public safety risk or</li> <li>• Immediate risk/s to the continuity of the electricity supply.</li> </ul> <p>The asset inspector will contact the UE dispatch or his supervisor to arrange immediate action on such defects.</p>
<b>Priority 42 Maintenance</b>	<p>Means:</p> <p>An asset inspection officer/auditor made the assessment that the condition of an attachment requires maintenance or replacement within 42 days. Service Providers have a stretch target to rectify within 30 days during the declared fire danger period.</p>
<b>Priority 2 Maintenance</b>	<p>Means:</p> <p>An asset inspection officer/auditor made the assessment that the condition of an attachment requires maintenance or replacement within 32 weeks.</p> <p>Service Providers have a stretch target to rectify Priority 2 maintenance within 12 weeks during the declared fire danger period.</p>

## Attachment 2: HBRA Pre-Summer and Summer Inspection/Audit Schedule

Process Name	Company Responsible	Company Role	Month												Status
			Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	
Vegetation Management within the HBRA	Powercor/Citipower/UE	Vegetation Management	X												
Asset Inspection within the HBRA	Zinfra	Asset Inspection	X												
Asset Inspection Competency Audit HBRA	UE	Unitised Maintenance Group – Service Delivery				X									
Desktop and Field Audit	Energy Safe Victoria	Technical and Safety Regulator							X						
Summer Audit Program	UE	Fire Prevention Manager on behalf of Fire Prevention Committee									X				

## **FPP13: Fire Prevention Management System Control and Approval Procedure**

### **Purpose**

This procedure describes the process for control and approval of the Fire Prevention Management System documentation.

### **Scope**

This procedure covers the control and approval of the elements of the Fire Prevention Plan, which provides the support for the Fire Prevention Management System.

### **References**

Fire Prevention Management System Procedure (FPP1)

### **Definitions**

Nil.

### **Procedure**

#### **Approval**

The Fire Prevention Plan shall be approved by the General Managers Electricity Networks and Service Delivery.

#### **Control**

The Fire Prevention Plan shall be controlled in accordance with Document and Data Control Procedure. The Plan shall be controlled electronically and be available on the UE internet. When printed, the Plan will become uncontrolled.

### **Attachments**

Nil.

## FPP14: Management of Critical Information Procedure

### Purpose

This procedure describes the process for management of critical fire prevention information.

### Scope

This procedure covers the management of critical information contained in the records of the Fire Prevention Management System.

### References

UE IT Security Policy

### Definitions

Nil.

### Procedure

#### Data Collection and Responsibility

UE has implemented sophisticated information technology systems to assist asset management methodologies.

UE uses the maintenance methodologies to determine the optimum asset maintenance policies. A range of asset parameters are used including asset type, criticality, failure modes, location and environment, asset age, number of operations performed and general condition.

The information technology systems that are used to manage the electricity network assets are GIS and SAP. The integration with complementary systems such as SCADA, Customer Information, Transformer Load Management and Profiling, Distribution Management and Field Computing completes the suite of systems.

The systems provide key business tools for asset data management, works management, maintenance management and operations management.

The detailed information that is available regarding the assets, particularly their location and characteristics such as type, age and condition, allow improved decision-making and visibility of asset information.

UE is continually looking for opportunities to improve the management of assets and will continue to do so.

#### Data Retention and Disposal

Network asset information (including POELs, inspection results, testing results and fault reports) is retained in electronic form within the GIS and SAP databases.

HBRA Fire Prevention Index data is kept by the Fire Prevention Manager for five years. Audit reports are also retained for five years.

#### Security and Access Restrictions

In accordance with the company's IT Security Policy, access to electronic information is strictly controlled via passwords and User Ids. Each user is provided with the levels of access to specified parts of the systems appropriate to that user.

### Attachments

Nil.

# FPP15: Response to Reported Unsafe Situations Procedure

## Purpose

This procedure describes the process for responding to reports of unsafe situations.

## Scope

This procedure covers the response to reports of unsafe situations, by internal or external parties, that have the potential to cause fire ignition.

## References

UE Health Safety and Environment (HSE) Incident Management

## Definitions

Nil.

## Procedure

Unsafe situations that have the potential to cause fire ignition, and that are reported either external to or internally within UE, are assessed and accorded a priority dependent on the level of risk presented.

Items reported are recorded in a SAP notification and given a priority as defined in SAP, from P1, P42, P2, P3, POPP or a PN.

Defect Priority	Required Rectification Timeframe
P1	24 hours
P42	42 days
P2	32 weeks
P3	3 years
POPP	Opportunistic or reassessment
PN	Information only

## Priority Rating

Section 3, Records of the Asset Inspection Manual assigns priority ratings to various types of defects or damage observed and provides detailed advice to inspectors and maintenance planners. A priority rating may be reassessed following subsequent inspections.

During any inspections any item found to be defective or deteriorated will be assigned a priority rating in accordance with the Asset Inspection Manual and this section also contains the process where asset items can undergo a re-assessment or reclassification by a suitable qualified person.

## Temporary Support of Defective Poles

This applies to situations where immediate action to change an unserviceable or other defective pole is not practical.

Poles temporarily supported by stays or struts using sound engineering principles are detailed in Section 7 of the Asset Inspection Manual.

## Attachments

Nil.



# FPP16: Reporting, Investigation and Analysis of Fire Ignitions Procedure

## Purpose

This procedure describes the process for reporting, investigating and analysing fire ignition incidents.

## Scope

This procedure covers all known instances of fire ignition caused by the UE supply network assets.

## References

*Electricity Safety Act (1998)*

*Electricity Safety (Bushfire Mitigation) Regulations* UE Electricity Safety Management Scheme (ESMS)

UE Network Performance Incident Investigation Management Procedure

## Definitions

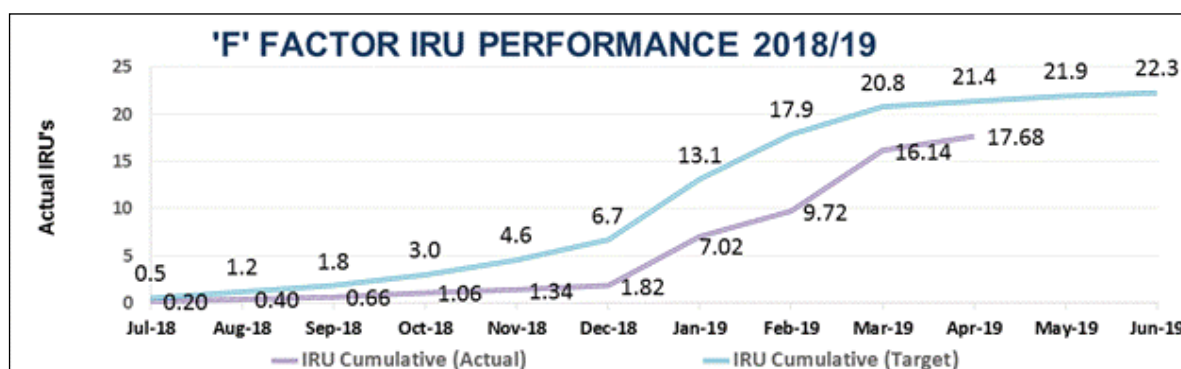
<b>ESV</b>	Energy Safe Victoria
<b>MFESB</b>	Metropolitan Fire and Emergency Services Board
<b>CFA</b>	Country Fire Authority
<b>VWA</b>	Victorian WorkCover Authority
<b>Legal Privilege</b>	The protection from disclosure which may attach to documents and other forms of information.
<b>Incident Command Centre (ICC)</b>	A specific location where the management of the incident takes place (normally in the case of a fire, a CFA/MFB premises).
<b>Fire</b>	A fire where the cause of ignition was, or involved, UE assets, plant or equipment, or the plant or equipment of contractors engaged by UE. The fire may be confined to UE assets or involve adjacent vegetation or property.

## Procedure – Fire Start Performance Indicator (the F-Factor)

The F-Factor scheme encourages distributors to improve their operations so they reduce the type of instances that could lead to the starting of bushfires. On 22 December 2016, the Victorian Government published the 'f-factor scheme order 2016' (the Order).

This 2016 Order revokes the 2011 f-factor scheme Order and provides for the establishment of a new incentive mechanism that targets incentives towards ignitions that pose the greatest risk of harm through the use of ignition risk units (**IRUs**). The Order in Council requires DNSPs to report:

## F-Factor Performance 2018/19



## Regulatory Reporting

Under the Electrical Safety (Management) Regulations (2009), Part 3, Section 28 (2)(b) states in summary that a:

Relevant asset operator shall report 'Specified Electrical Incidents' that resulted in —

- (a) An electric shock from —
  - (i) The operator's supply network or
  - (ii) An electrical installation supplied electricity by the operator's supply network or
- (b) A fire originating from the operator's supply network or
- (c) A part of the operator's supply network becoming dislodged from its supporting structure.

To satisfy the reporting requirements for section 28(2)(b) all fire ignition involving UE assets shall be reported to ESV and the Fire Prevention Manager as soon as practicable by telephone, with an

Electrical Incident Confirmation Form being provided to ESV within two business days. An Electrical Incident Report Form shall be provided within 20 business days, in conformance with the UE ESMS.

In addition to this information from 1 July 2012 a 'Fire Ignition Report' is to be completed by field staff whenever fire ignition is identified identifying the cause of the fire ignition and all asset details.

The investigation and analysis may include:

- The mode of failure of the asset
- The circumstances and environment associated with the mode of failure
- The cost of damage and consequential loss
- The need for remedial action at the site or at other similar situations
- Tracking against the F-Factor.

Incidents shall be handled in accordance with the UE Health Safety and Environment (**HSE**) Incident Management procedure. In the event of any significant increase in fire start activity; the Fire Prevention Manager is responsible for identifying contributing causes.

## FPP17: Risk Assessment Procedure

### Purpose

This procedure describes the process for assessing the risk of causes and potential causes of fire ignition from electrical assets.

### Scope

This procedure covers the assessment of risk associated with the UE supply network and known incidents which occur elsewhere involving plant or equipment items similar to those owned by UE.

### References

UE Risk Management Framework.

### Definitions

Nil.

### Procedure

#### Risk Register

As part of its ESMS, UE maintains a risk register which identifies all the key risks associated with the management of an electrical distribution business.

The risk associated with causes of fire ignition will vary and depend upon the frequency of incidents and the environmental conditions likely to prevail at the time of the incident.

Known and potential causes of fire ignition emanating from the UE supply network are subject to an annual risk assessment that shall include:

- Risk Title, scenario/context
- The causes of fire
- The Inherent Risk – inherent frequency and consequence from fire ignition
- The Risk Controls – i.e. policies, procedures in place to reduce the risk
- The Residual Risk – current frequency and consequence of fire ignition (considering risk controls in place)
- Any proposed action to further reduce the risk.

### Attachments

Nil.

# FPP18: Network Assets Preventative Programs Procedure

## Purpose

This procedure describes the process for fire preventative programs for the UE supply network assets.

## Scope

This procedure covers preventative programs within the HBRA and LBRA on the UE supply network for the following:

- Poles
- Pole Top Attachments
- Conductors
- Conductor Clashing
- Bird/Animal Mitigation
- SWER Earthing Systems
- HV Fuses
- Spacers/Spreaders
- Vibration Dampers
- Armour Rods
- Surge Diverters
- Low Voltage Spreaders
- Façade Mounted LV Mains
- Kiosks
- Switching Cuticles
- Ground and Indoor Substations
- Pillars and Cabinets.

## References

UE MA 0003 Asset Inspection Manual

UE Lifecycle Strategies

UE ST 2921 Electrical Safety Management Scheme.

## Definitions

Nil.

## Procedure

Within the HBRA of UE, the Asset Inspection Program is designed to begin as soon as the fire season has ended. It is the responsibility of the UE Unitised Works Manager to ensure this program begins in a timely manner and all inspections within the HBRA are completed by July or for as soon as practical for certain areas where access is restricted by ground conditions.

### Asset Inspection Program

- The inspection of the above ground assets within the HBRA network is been carried out on a routine cycle not exceeding 37 months, and on a cycle not exceeding 61 months within the LBRA
- Each pole is tested for soundness and treated with pole saver rods and the pole attachments and conductors are inspected visually from the ground, in accordance with the UE MA 0003 Asset Inspection Manual

- HBRA limited life poles that have not been replaced or staked are to be re-inspected within 13 months.
- HBRA poles that will become due for inspection by the end of the fire season are inspected and replaced or reinstated as necessary.
- The information gathered is loaded into the UE Asset Management System (**GIS/SAP**).
- At the same time a visual inspection is made of the vegetation near the line. Any concerns are forwarded to the UE Head of Vegetation Management and dispatched to the vegetation management contractor for prompt detailed inspection and action as required
- Asset Inspectors will maintain the currency of information recorded in GIS/SAP. In addition, geographic information will be recorded on Field Data Capture Devices for recording and cross-referencing to GIS/ SAP. This information will be referred to as UE asset information.
- As per Section 3 of the Asset Inspection Manual previously identified asset defects may be reinspected and re-assessed by suitable qualified persons and the UE SAP system updated accordingly.

**Accountability:** UE Unitised Works Manager

### **Maintenance Program**

It is the responsibility of the Maintenance Planners to program the work generated from this program as soon as it appears in the Works Management System (SAP), to ensure all works identified in the HBRA are completed before the onset of the next fire season. As the scheduled asset inspection is completed, the appropriate SP Maintenance Planner will program, from SAP notifications, the following items:

#### **Poles and Pole Top Attachments**

- Defective poles to be replaced or reinstated (staked) before the fire season
- Missing, deteriorated or damaged pole top assets
- Unacceptable or damaged HV fuses and surge diverters
- Ensure the GIS/SAP database is to be updated as works are completed.

#### **Conductors and Conductor Attachments**

- Deteriorated or damaged conductors or conductor fittings
- Missing, deteriorated or damaged fittings such as Vibration dampers and Armour rods.
- Missing or damaged HV spacers or LV spreaders
- Ensure the GIS/SAP database is to be updated as works are completed.

#### **Conductor Clashing**

Clashing of bare HV conductors may occur under fault conditions. This has the potential to generate sparks and result in fire starts in vegetated environments. UE will be assessing the entire overhead HV network utilizing LiDAR technology to ascertain conductor clearances and assess for potential of conductor clashing in high risk zones.

Sites found with potential of clashing will be remediated as necessary.

#### **Bird/Animal Fire Prevention**

- The current policy is to install longer insulators that do not require bird/animal covers.
- The Maintenance Planner will identify from SAP notifications pole tops requiring action to prevent bird/animal-induced flashover. This work is normally done on an opportunistic basis when other work is to be carried out on the structure.
- The GIS/SAP database is to be updated as works are completed.

#### **SWER Earthing Systems**

- SWER isolating substation earthing systems will be tested on a routine two-year cycle
- SWER distribution substation – the physical inspection of earths is to be carried out at three-yearly intervals as part of the asset inspection of the substation pole. Testing of these earths is required at six-yearly intervals.

- Job files to be prepared and resources scheduled to test and repair as required.
- The GIS/SAP database will be updated as works are completed.

**Accountability:** UE and SP Maintenance Planners.

#### **HV Fuses**

- All unacceptable HV fuses are identified through the asset inspection cycle and scheduled for replacement
- EDO fuses in HBRA area where fault levels exceed fuse rating (2 kA) are regularly assessed and replaced.

#### **Vibration Dampers & Armour Rods**

Vibration dampers and armour rods may be required on spans to minimize conductor vibration and provide mechanical strengthening to mitigate conductor damage.

As part of the routine Asset Inspection process all overhead conductor spans are assessed for requirement to fit vibration dampers and armour rods. Where required these are scheduled for installation.

**Accountability:** UE and SP Maintenance Planners.

#### **Surge Arresters**

As part of the routine Asset Inspection process all surge arresters are inspected for condition and to ensure they are of an acceptable type. Unacceptable types are scheduled for replacement.

#### **Maintenance from the HBRA Summer Audit Program**

In addition the SP and UE Maintenance Planners must continually monitor SAP to ensure any maintenance identified outside of the normal asset inspection program (e.g. from the HBRA summer audit program, management audits) are completed within the timeframes to ensure they do not impact the HBRA Fire Prevention Index.

**Accountability:** UE and SP Maintenance Planners.

#### **Low Voltage Spreaders**

- The Maintenance Planner will identify, from SAP notifications, locations where LV spreaders need to be installed, maintained or replaced in the HBRA from the end of the previous fire season and completed before November or earlier if fire season is declared early
- Job files to be prepared and resources scheduled to maintain or install LV spreaders
- The GIS/SAP database will be updated as works are completed.

**Accountability:** UE and SP Maintenance Planners.

#### **Façade Mounted LV Mains**

Under the requirements of the Electricity Safety (Bushfire Mitigation) Regulations, 2013 UE must inspect all overhead conductors and connectors on three and five-year cycles for the HBRA and LBRA. Additional inspection is required of façade mount low voltage mains (ABC or open wire) in order to comply with regulation. Façade mount LV mains conductor is commonly located along shop fronts above verandas and LV ABC can be located in ducts, lying in gutters or along roof tops. As a result the inspection of this asset cannot be performed satisfactorily by the means utilised in the overhead asset inspection program (ground based visual or elevated camera inspection).

In addition to the difficulties in assessing locations to undertake the inspection is this assets unknown condition due to the absence of regular historical inspections. A dedicated program of up-close inspection of façade mount LV conductor is required. Consideration will be required as to which personnel that can safely access the areas required for close inspection of the conductor.

Inspection of LV façade mount conductors shall visually assess:

- Are mechanical supports intact and mounted to fixed structures
- Are conductors correctly seated within supports or on insulators
- Is there evidence of any previous faults
- Is there any visible damage to the installation services fed by the LV mains.

#### **For Open Wire LV Conductor**

- Are clearances maintained between conductor to conductor and conductor to surrounding structures
- Visual assessment of the condition of the conductor in accordance with direction within UE MA 003 Asset Inspection Manual.

#### **For LV ABC Conductor**

- Where the cable is located within metal ducts is there damage near the cable duct or other conductive structures (e.g. metal flashing)
- Inspection for any visible damage to the LVABC insulation, including any evidence of rubbing against fixed structures.

**Accountability:** UE and SP Maintenance Planners.

#### **Asset Inspection Program (Ground Type Assets)**

The addition of regulation 7(2) in the Electricity Safety (Bushfire Mitigation) Regulations 2013 defines the types of assets excluded in the definition of the 'Supply Network'. These exclusions do not include primarily traditionally underground assets that are located above the surface of the land.

#### **Switchgear and Substations**

This includes

- Kiosk Substations/Switches
- Ground Type Substations
- Indoor Substations
- Switching Cubicles.

The inspection process is to undertake general inspections and reporting on the condition of non-pole substations. As a minimum requirement the inspection procedure shall target, but not limited to, electrical equipment covering:

- Recording of all equipment including serial numbers
- Hot spot test
- Earth test (non CMEN and 10 yearly)
- Security checks, cleaning and weeding
- Corrosion
- Abnormal audible discharge
- Cable size, type and cable condition
- Transformer and switchgear gas/oil leaks and levels.

#### **Pillars and Cabinets**

The following list details the main areas of inspection:

##### **External Inspection**

- Damaged or cracked pillar cover or damaged and corroded cabinet enclosure
- Damaged, broken or missing stainless steel cord or other device used for locking pillar
- Damaged cabinet lock
- Confirm that surrounding landscape does not prohibit normal operational access to pillar or cabinet.

## Internal Inspection

Internal inspection is only required under fault conditions or where defects may allow unauthorised access i.e. missing locks or damaged external housing. In these circumstances the asset may need to be opened for further investigation.

- All cable active connections and terminations should be insulated. Visually check to confirm signs of damaged or burnt cable and insulation. Confirm for signs of damage to all components comprising the LV switchboard of cabinet
- Visual check to confirm that cable connections and all earth connections are secure
- Damaged or cracked LV switch housing
- Confirm the LV switch has padlock used to lock the switch in the open or closed position,
- Visible signs of rust or deterioration of pillar or cabinet steel support
- Confirm pillar is sealed around the cables
- Ensure that the pillar or cabinet is locked at completion of inspection.

**Accountability:** UE Substations & UG Cable Planner

## Attachments

Nil.

## Current Year

The addition of regulation 7(2) in the Electricity Safety (Bushfire Mitigation) Regulations 2013 defines the types of assets excluded in the definition of the 'Supply Network'. These exclusions do not include primarily traditionally underground assets that are located above the surface of the land.

Such 'Ground Type Assets' include:

- Kiosk Substations/Switches
- Ground Type Substations
- Indoor Substations
- Switching Cubicles
- Pillars.

In addition façade mounted LV mains assets have previously only been subject to visual inspection via an asset inspector from the ground pertaining only to the point of attachment to the façade.

As required under section 7(k), UE has documented the processes and procedures which will form the scope for ensuring persons (other than persons referred to in paragraph 7(j)) who carry out or will carry out functions under the plan are competent to do so.

The processes and procedures (scope) for the inspection of these types of assets are contained in Lifecycle Strategies and replicated this procedure.

The details of the relevant qualifications UE believe are best suited to the scope of the inspection is contained in the UE Fire Prevention Plan 2019/23, specifically FPP11 titled 'Training and Competence Procedure'.

All employees and contractors engaged in Ground Type Assets inspection must have received initial training and undertake regular competency/refresher training in accordance to the VESI Skills and Training Matrix. Training requirements will also be documented in the Substations Inspection Manual.

A summary of the location of the scope of inspection and minimum qualifications to undertake such inspections are documented in the table below.



Assets	Numbers		Scope contained in the following UE Lifecycle Strategy and the 2019/23 UE FPP	Minimum Trade Qualification
	LBRA	HBRA		
Kiosk Substations / Switches	1,909	166	UE PL 2015 Non-Pole Distribution Substations	<ul style="list-style-type: none"> <li>Authority to Enter</li> </ul> <b>NOTE:</b> Pole inspection in ground type substations to be undertaken by Asset Inspectors
Switching Cubicles	38	4		
Ground Type Subs,	642	18		
Indoor Subs,	1,126	9		
Pillars	8,070	195	UE PL 2017 Underground Distribution Systems	<ul style="list-style-type: none"> <li>Cable Jointer</li> <li>Substation Electrician/ Fitter Distribution</li> </ul>
Façade Mounted Mains	10km	0.0km	UE PL 2007 Connectors and Conductors	<ul style="list-style-type: none"> <li>Lineworker Distribution</li> </ul>

### LV Façade Mounted Mains

This type of mains conductor has previously only been subject to visual inspection via an asset inspector from the ground pertaining only to the point of attachment to the façade.

UE databases have determined there is approximately 10km of LV façade mounted mains as part of its distribution network. UE is currently determining the most efficient and safe method to inspect these cables or conductors and offer the proposed transition plan to full compliance.

*LV Façade Mounted Mains – Proposed Level of Compliance	2015/16	2016/17	2017/18	2018/19
LBRA	0%	33%	66%	100%
HBRA	100%	100%	100%	100%

## FPP19: Electric Line Clearance Management Procedure

### Purpose

This procedure describes the process for ensuring that adequate clearances are maintained between vegetation and network assets.

### Scope

This procedure covers:

- The maintenance of programs for achieving statutory clearances between vegetation and network assets
- The development and implementation of an ELCMP.

### References

Electricity Safety (Bushfire Mitigation) Regulations  
Electricity Safety (Electric Line Clearance) Regulations  
UE Customer Charter  
UE Electric Line Clearance Management Plan (**ELCMP**)

### Definitions

Nil.

### Procedure

#### Vegetation Inspection and Cutting Programs

Vegetation inspection, and cutting programs, will be conducted annually in HBRA and LBRA in accordance with the ELCMP approved by ESV. Periodic, independent audits of the effectiveness of the inspection and cutting programs will be undertaken throughout the year as outlined in the UE Consolidated Audit Program. These audits will be carried out by ESV, Internal Audit, UE and Powercor vegetation groups as outlined in the ELCMP.

Each year, on behalf of the Fire Prevention Committee, the Fire Prevention Manager engages independent inspectors to conduct a summer inspection to monitor the effectiveness of the ELCMP programs, especially in the HBRA. This inspection also highlights obvious asset defects.

A pre-summer inspection within the LBRA is not undertaken. Vegetation in these areas is managed under the cyclic program outlined in the ELCMP which includes audits by the UE Vegetation Group to ensure compliance with UE's obligations.

As part of the continuous improvement process the FPC may periodically initiate independent vegetation inspections to monitoring compliance with the ELCMP.

**Accountability:** UE Head of Vegetation Management.

#### Attachments:

Nil.

## **FPP20: Technical Standards for Design, Construction, Operation and Maintenance Procedure**

### **Purpose**

This procedure describes the system of standards for the design, construction, operation and maintenance of the network.

### **Scope**

This procedure covers the standards, plans and instructions which are used for the design, construction, operation and maintenance of the network in preparation for, and during, the declared fire danger period.

### **References**

UE MA 2004 Distribution Construction Standards Manual

UE MA 2005 Distribution Design Standards Manual

UE Lifecycle Management Plans

UE MA 0003 Asset Inspection Manual

UE MA 0001 Operations Manual.

### **Definitions**

Nil.

### **Procedure**

The design, construction, operation and maintenance of the electrical distribution assets shall conform to the UE MA 2004 Distribution Construction Standards Manual, UE MA 2005 Distribution Design Standards Manual, UE MA 0001 Operations Manual and UE Lifecycle Management Plans.

The fire hazard risk shall be identified and controlled at the design and specification phase of standard distribution pole structures and components, through the UE Standards Committee.

UE has no specific plans in relation to the operation of the network during the declared fire danger period, however for days of total fire ban please refer to FPP26 for more detail.

### **Attachments**

Nil.

## FPP21: Use of Vehicles, Plant and Equipment in Periods of High Fire Risk Procedure

### Purpose

This procedure describes the process for operating vehicles, plant and equipment prior and during the fire danger period within the HBRA or country areas.

### Scope

This procedure applies to UE, Service Providers (SP's) and sub-contractors operating vehicles, plant and equipment prior and during the fire danger period within the HBRA or country areas.

### References

The CFA Act 1958

**Accountability** UE, SP and subcontractor's management, staff and employees

### Procedure

#### CFA Requirements – General

The CFA Act 1958 in part sets out the following requirements, which shall be observed by all personnel within the HBRA or country areas:

- Burning is prohibited except upon obtaining a written permit signed by a Municipal Fire Prevention Officer and in accordance with the conditions appearing on such permit.
- No fire may be lit in the open air for cooking, barbecues, or other such purposes except in a properly constructed fireplace or a trench at least 30 centimetres deep around which there is an area of 3 metres width clear of all flammable material and the air movement is no stronger than 10 km/h. The space above this area shall also be clear for a minimum of 3 metres of all flammable material. No fire may be lit within 7.5 metres of any log or stump. No such fire may be left unattended and shall be completely extinguished before leaving it. The fire shall not exceed an area in excess of one square metre and the size of the fire and the fuel used shall be the minimum size necessary for the purpose
- It is an obligation to report any fire discovered to a Fire Brigade, Forest Officer or Police Officer.
- The throwing down of lighted tobacco, cigarettes, cigars, matches or any other burning material or thing is prohibited
- The placing of phosphorous or any other explosive or combustible substance in a position where it may be ignited (whether by the sun's rays or by any other cause) is prohibited.
- Any person who uses welding or gas cutting equipment or any grinding tool in the open air shall use a shield of fire resistant material, wet down or clear for a radius of 1.5 metres. There shall be kept available a hose connected to a water supply, a fully charged knapsack, spray pump or a container of at least 9 litres of water. Work cut offs and electrode stubs shall be placed in a fireproof receptacle
- A blowlamp or gas torch shall not be put down where a fire is likely to be caused.

#### Vehicles – CFA Requirements

Personnel responsible for field activities will inform all vehicle operators that vehicles with hot exhausts entering 'off road' situations can initiate fires and the following shall be observed:

- During declared 'Fire Danger Periods' the CFA requires:  
Every motor vehicle in contact with grass or other vegetation shall be fitted with an efficient exhaust-silencing device (e.g. muffler), that takes all of the exhaust from the engine through the silencing device.

Every heat engine and every tractor which is in contact with or within a distance of 9 metres from any crop, grass or stubble or other vegetation shall:

- o Be free from mechanical faults and defects likely to cause fire
- o Carry fire suppression equipment comprising either:
  - o At least one knapsack spray pump (fully charged), in working order, with a capacity of not less than 9 litres; or
  - o At least one water (stored pressure) fire extinguisher, in working order, fully charged with water and maintained at the correct pressure, with a capacity of not less than 9 litres (refer to 4.1.1)
- o Be equipped with an efficient spark arrester, or a spark arrester which complies with Australian Design Standard (AS 1019)
- o Pre-existing tractors shall have efficient spark arresters and new tractors shall comply with AS 1019.

### **UE – Requirements**

Any vehicles, plant or equipment using an internal combustion engine, including trucks, bulldozers, tractors, cable winders, generators, compressors, chainsaws, etc. is covered by this procedure.

### **Vehicle Use Guidelines**

- Vehicles, Plant and Equipment shall be free from defects that are likely to cause fire ignition.
- Vehicles, Plant and Equipment shall be equipped with an efficient exhaust system.
- Drivers of large diesel vehicles required to travel off-road shall ensure that the vehicle does not initiate fire ignition by complying with the following:
  - o Knowledge of the condition of the vehicle
  - o Attention to the route taken; and
  - o Ensuring the vehicle is not left running unattended.
- Operators of vehicle-mounted ancillary generators shall ensure that the unit does not ignite a fire by complying with the following:
  - o Knowledge of the condition of the generator
  - o Attention to positioning
  - o Ensuring the unit is not left running unattended and preparation of a firefighting kit.

### **EWPs & Crane Borers – Additional Requirements**

The above restrictions especially affect EWPs, crane borers and any other vehicles that are left off road with engines running. Operators of these vehicles shall ensure that the following steps are taken:

- Never leaving the vehicle unattended with the motor operating;
- Avoid working on grassed areas wherever possible;
- Remove build-up of grass from the vehicle;
- The vehicle is carrying tools (shovels, rakes) to clear an area; and
- Heat resistant sheets or water to douse the area.

### **Unleaded Petrol Vehicles (ULP)**

The use of ULP vehicles during the high fire danger period shall be minimised and the driver shall assess the risk of entering a long grass area and, if entering, be equipped and ready to use a fire fighting knapsack or extinguisher.

It is imperative that vehicles using unleaded petrol are tuned correctly as otherwise this will cause the exhausts to become much hotter. ULP vehicles shall not be parked off-road with the engine running.

Any vehicles that operate off-road should be checked to ensure no grass is trapped on or near the exhaust systems, this is especially crucial on ULP vehicles as ULP exhaust systems operate at around 700°C.

### **Private and Other Vehicles**

In certain circumstance UE, SP's or subcontractors will require staff and personnel to use their private or other vehicles for undertaking normal day to day activities on behalf of UE (worksite inspections, audits etc) during the high fire risk period (October – December) within the HBRA or country areas.

In these circumstances unless the vehicle has undergone a compliance inspection, including the carrying of the adequate firefighting equipment and compliance sticker, as per this procedure such vehicles shall not be permitted to traverse off road.

### **Diesel Particulate Defuser (DPD)**

All trucks (eg; ISUZU) fitted with Diesel Particulate Defuser (**DPD**) should follow the DPD Manual Regeneration Procedure (refer to individual truck manual or Safety Gram 2014004). This should be carried out at the end of each shift when the truck has returned to depot.

A number of trucks may be fitted with DPDs. The DPD collects particle matter in the DPD filter and this will need to be burnt to regenerate the filter. When the DPD is not regenerated regularly there is a risk of catalytic burn which has the potential to ignite grass and other flammable materials beneath the truck.

### **Non-Compliant Vehicles, Plant and Equipment**

UE require all SP vehicles, plant and equipment used on the UE network to comply with the CFA regulations during the high fire risk period within the HBRA or country areas.

Where UE, SP's and subcontractors elect not to adhere to the compliance requirements because the geographical nature of their work does not take them into country areas regularly a non-compliance sticker (see Attachment 1) shall be fitted to all vehicles, plant and equipment advising users of such equipment that it shall not be used within country areas during the months of October until the end of April.

### **Scope – Pre-Summer Vehicle Plant and Equipment Inspections**

It is recommended that Pre-Summer Vehicle Plant and Equipment Inspections are carried during September each year. This will allow time for rectification of any defects before any early declared TFB days (previously early October) and is also within a reasonable timeline before the beginning of the high fire risk period (nominally 1 December).

### **Responsibilities      Line Manager/Supervisor**

By 1 October each year, the relevant Line Manager/Supervisor is to confirm equipment as per section 4.1.1 is fitted to vehicles and remain fitted/ full/charged prior to any field works on an ongoing basis.

The Line Manager/Supervisor shall also to arrange a subsequent inspection be carried out by a qualified mechanic as per section 4.1.2 for all vehicles, plant and equipment that will be used within the HBRA or country areas during the fire danger period prior to 1 October.

Fire Equipment shall be confirmed fitted before the mechanic undertakes his vehicle checks as per below.

## Vehicle – Fire Equipment

From 1 October annually, through to cessation of the fire danger period, all UE, Service Providers (SP) and subcontractor vehicles that may operate within the HBRA or country areas will be fitted with the following minimum firefighting equipment:

Vehicle	Required Equipment
EWP's Crane Browsers, Tippers, LCTs and Vehicles towing or carrying Plant/ Equipment	<ul style="list-style-type: none"> <li>• A full knapsack 16 litre (plastic) or knapsack 14 litre (brass), (both shall comply with AS 1687)</li> <li>• Shovel; and</li> <li>• Rake Hoe</li> </ul> <p><b>Notes:</b> <i>In areas with a high exposure to sunlight the plastic knapsack may crack and be inoperative, hence the more costly brass knapsack is preferable. Where plastic knapsacks are chosen they should be regularly checked for signs of deterioration, it is possible to purchase replacement plastic sections without fittings.</i></p>
Sedans / Station Wagons / Supervisor Vehicles	<ul style="list-style-type: none"> <li>• A fully charged and within date a dry chemical fire extinguisher that complies with AS/NZS1841. 1:1997 and AS/AZS 1841.5: 1997 or ;</li> <li>• A full 9 litre knapsack that complies with AS 1687</li> </ul>
(TFB)	<p><b>All Vehicles – Additional Requirements</b></p> <p>MG, SP's and subcontractors shall ensure that if welding, cutting, grinding, using blowtorches or gas torches on Code Red or TFB days they must refer to the additional requirements stipulated of the relevant TFB day permit.</p>

## Scope of Work – Qualified Mechanic

### Vehicle – Diesel Particulate Defuser (DPD)

All trucks (e.g. ISUZU) fitted with a DPD shall be checked by a qualified mechanic as per the DPD Manual Regeneration Procedure (refer to individual truck manual or Safety Gram 2014004). Truck drivers shall be familiar with the DPD requirement

### Vehicle – Exhaust/Underbody

Exhaust checked and confirmed for soundness and skid plate and underbody has no accumulated dry grass by a qualified mechanic and compliance sticker filled in and attached to vehicle windscreen. The vehicle is also checked before use by driver on an ongoing basis per normal operational requirements.

### Plant/Equipment – Exhaust/Spark Arrestor

For chainsaws and other plant/equipment originally checked and confirmed by qualified mechanic (see Note 1) and compliance sticker filled in and attached in a location where obvious to user (e.g. near on/off switch or ignition switch). The plant/equipment is also checked before use by qualified operator on an ongoing basis as per normal operational requirements.

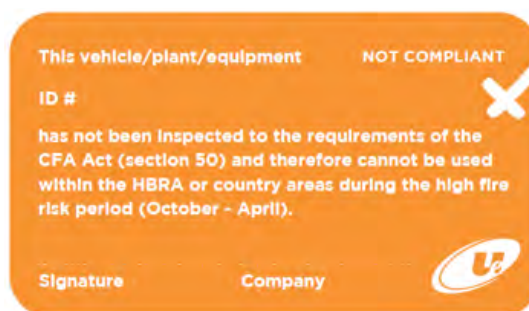
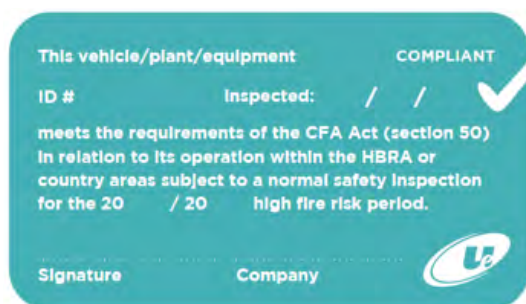
#### Note 1:

*In relation to the inspection of chainsaws, UE Vegetation Contractors may assign a suitable experienced employee/s to undertake such inspections and complete the sticker requirements.*

## Attachments

1. Compliance/Non-Compliance Stickers
2. Fire Preparedness Completion Statement (Example Only).

## Attachment 1: Compliance/Non-Compliance Stickers



## Attachment 2: Fire Preparedness Completion Statement (Example Only)

<b>Fire Season:</b>	2016/17
<b>Work Group/Party:</b>	Asplundh Tree Services
<b>Fire Equipment Fitted: Verified By –</b>	Asplundh Supervisor
<b>Vehicle: DPD Exhaust/Underbody Verified By –</b>	EPV Speciality Services
<b>Plant/Equipment; Exhaust/Spark Arrestor: Verified By –</b>	EPV Speciality Services
<b>Report date:</b>	27 September 2017

Vehicle / Plant Description	Rego / ID	Fire Equipment: Date Checked	DPS Date Checked	Exhaust/ Underbody Date Checked	Exhaust/ Spark Arrestor Date Checked
Isuzu/Ewp	GTV 123	12/10/2017	12/10/2017	12/10/2017	12/10/2017
Generator	GEN - 661	N/A	N/A	12/10/2017	12/10/2017
Hino/Tipper	YUN 567	12/10/2017	N/A	12/10/2017	12/10/2017
Chipper	HGF 765	N/A	N/A	12/10/2017	12/10/2017
Landcruiser	RET 876	12/10/2017	N/A	12/10/2017	12/10/2017
Toyota Hiace	UJK 432	12/10/2017	N/A	12/10/2017	12/10/2017
Chainsaw/Stihl	CS-345	N/A	N/A	12/10/2017	12/10/2017
Compressor	COMP-768	N/A	N/A	12/10/2017	12/10/2017
Isuzu/Digger	YYH 901	12/10/2017	12/10/2017	12/10/2017	12/10/2017



## FPP22: Evaluation of Materials, Plant and Equipment Procedure

### Purpose

This procedure describes the process for ensuring that equipment purchased for use on the UE supply network has been assessed in relation to the risk of fire ignition..

### Scope

This procedure covers the purchase of all materials, plant and equipment used on the UE supply network which represents a high risk of fire ignition. Standards may vary depending on the fire rating of a particular area (HBRA/LBRA).

### References

UE PR 2363 Introducing New Equipment into the United Energy Distribution Network.

### Definitions

Nil.

### Procedure

UE has a standards committee which meets regularly with the charter of reviewing any new or existing materials, plant and equipment.

New equipment shall be introduced into the United Energy distribution network in accordance with *UE PR 2363 Introducing New Equipment into the United Energy Distribution Network*.

### Specification and Tender Evaluation

In preparing the specifications for the procurement of material, plant and equipment used on the UE supply network, consideration shall be given to the fire safety of the material, plant and equipment. Existing specifications shall be reviewed in this light when assessing tender evaluations that are due for re-tendering or renewal of contracts. Where appropriate, specific fire performance standards shall be included in the specification, as well as references to Australian Standards.

### Attachments

Nil.

## FPP23: Use of Contractors Procedure

### Purpose

This procedure describes the process for ensuring that contractors providing services on the UE HBRAs are aware of, and comply with, UE's requirements in relation to fire prevention programs.

### Scope

This procedure covers provision of all services that are relevant to fire prevention activities.

### References

Nil.

### Definitions

Nil.

### Procedure

All new service contracts and those coming up for renewal for work on the UE supply network shall be reviewed by the General Manager Service Delivery and the Head of Vegetation Management to ensure that no aspects will compromise UE's fire prevention programs.

All contractors tendering for the provision of services relevant to fire prevention activities shall be given access to a copy of UE's Fire Prevention Plan and other information relevant to the particular service.

SP and subcontractors shall be contractually bound to:

- Comply with the UE Fire Prevention Plan
- The provision of staff with approved training and competency requirements
- The provision of approved plant and equipment
- Safe working standards
- Implement, monitor and review procedures as required
- Audit and review procedures
- The recording of information and the keeping of records
- Reporting to UE.

Such contracts shall have the clauses included as per Attachment 1 and be subjected to regular audit and review in accordance with the UE preferred contractor accreditation process.

### Attachments

1. Clauses for inclusion in Contracts

## Attachment 1: Clauses for Inclusion in Contracts

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### Mitigating Fire Risk

Due to the risks associated with the types of equipment used and the sites where the work is carried out, all vehicles working in HBRAs will be required to carry at least one 16 litre knapsack at all times. During the fire danger period, driving of vehicles in grassed areas must be avoided.

The contractor and its personnel may be required, at the contractor's cost, to participate in any UE fire prevention program during the period of this contract by participating in, among other things:

- Senior Management Briefings
- Fire update sessions
- Fire preparedness and response training.

From the declaration of the fire danger period or 1 November annually, through to cessation of the fire danger period, all contractor vehicles that may operate in the HBRAs will be fitted with the following minimum firefighting equipment:

- Firefighting knapsack (16 litre) or foam fire extinguisher (nine litre, blue)
- Fire hoe or rake
- Means of communication.

In accordance with the UE Fire Prevention Plan, this shall be supplied to the contractor electronically via the extranet by the General Manager Service Delivery.

The contractor acknowledges and agrees that all work under this contract must be performed in accordance with the UE Fire Prevention Plan.

### Days of Total Fire Ban

The contractor will be required to obtain, at its cost, the appropriate permits from the CFA, MFB and DELWP when required to operate welding, cutting, grinding, blow torch or other equipment on days of total fire ban.

The contractor and their personnel shall adhere to conditions specified in those permits in absolute terms at all times. Whenever a permit is required, permission must also be sought from, and approved by, the General Manager Service Delivery.

Due to the risks associated with the types of equipment used and the sites where the services are carried out, no services which are deemed by the General Manager Service Delivery or the contractor to be a risk to the environment or public shall be carried on the UE HBRA on days of total fire ban, or days identified by the General Manager Service Delivery as placing excessive demand on the system by the removal of UE assets from the system for service or otherwise.

Where appropriate, the General Manager Service Delivery may allow the contractor to perform services in LBRA on days of total fire ban. There shall be no payments made by UE to the contractor and the contractor assumes all risk in relation to time lost under these circumstances.

### Hazardous Bushfire Risk Areas

In providing the services, the contractor must ensure it complies, and that its personnel comply, with all applicable laws, legislation, regulations, orders and the like concerned with fire prevention.

## **FPP24: Inspection, Measurement and Testing Equipment Procedure**

### **Purpose**

This procedure describes the process for ensuring that equipment used for inspection, measurement and testing is suitable, calibrated correctly and used appropriately.

### **Scope**

This procedure covers all equipment used for inspection, measurement and testing on the UE supply network.

### **References**

UE MA 0001 Operations Manual.

### **Definitions**

Nil.

### **Procedure**

#### **Service Providers**

SP and sub-contractors using equipment for inspection, measurement or testing within the UE will have in place appropriate procedures such that the equipment used for inspection, measurement and testing is suitable, calibrated correctly and used appropriately.

### **Attachments**

Nil.

## FPP25: Private Overhead Electric Lines Procedure

### Purpose

This procedure describes the process for assessing the condition of POELs, including vegetation clearance, and rectifying or replacement of defective POELs. The intended outcome of these assessments is to identify and ensure rectification of any obvious defects that could result in fire ignition or risk to electrical safety.

### Scope

This procedure covers the inspection and rectification/replacement of defective POELs, in relation to prevention of fire ignition, as well as action to be taken on days of total fire ban. It also sets out the responsibilities of customers in relation to how their POELs will be managed.

### References

Electricity Safety (Bushfire Mitigation) Regulations 2015  
UE MA 0003 Asset Inspection Manual  
UE MA 2620 LV Private Overhead Electric Lines.

### Definitions

#### POEL

Any overhead, low voltage electric line (normally on private property) used to take electricity from the point of supply, whether or not that line is vested in a major electricity company.

### Procedure

#### Inspection

- POELs are inspected on a cycle not exceeding 37 months in the HBRA and 61 months within the LBRA and in accordance with the times of inspection contained in provision 9 of the Electricity Safety (Bushfire Mitigation) Regulations 2013.
- POELs are inspected in accordance with the standards of inspection contained in provision 10 of the Electricity Safety (Bushfire Mitigation) Regulations 2013. These standards are documented within the UE Asset Inspection Manual, Section 9.
- There is no requirement to carry out a programmed inspection of private electric lines beyond the first connection point to a building or structure (not a pole).
- Vegetation associated with all POELs is managed by the UE vegetation group in accordance with the ELCMP. In addition, these inspectors report any urgent line defects observed.
- Where POELs are identified as defective, AI's issue Private Line Inspection reports to the land owner/ occupier.
- For defects considered urgent (likely to fail within one week) or hazardous, a Maintenance Planner and/or UE Dispatch is contacted immediately for appropriate action which may include immediate disconnection of the POEL.
- Inspection data is recorded in the GIS/SAP database.
- Details of defective POELs are recorded in SAP including follow-up actions. In situations where the property owner fails or otherwise declines to comply with requests to remedy identified POEL defects, relevant details will be forwarded to ESV for assistance for processing, management and advice.

**Accountability:** Head of Field Services (Maintenance)  
Head of Vegetation Management (Vegetation)

## Maintenance and Fault Rectification

The details related to the maintenance and fault rectification of POEL are contained within document number UE MA 2620 titled LV Private Overhead Electric Lines.

A copy of the contents section of the manual is attached below and includes all the various notification letters provided to customers throughout the inspection and fault process.

### Maintenance Manual

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### Dispute Resolution

UE will endeavour to resolve any disputes arising from the execution of their duties in a fair and reasonable manner. If the customer is not satisfied with the response received from their first point of contact they have the right to have the dispute reviewed at a higher level within the Service Provider.

If no agreement is reached the dispute may be referred to ESV for a mechanism for resolution.

If the non-resolution of the dispute presents a fire or safety risk then UE may be obliged to disconnect supply or in the case of vegetation clearing to enter the property and complete the work at the customer's expense.

The customer may also register a formal complaint with UE. Details of this process are located on the UE homepage at <https://www.unitedenergy.com.au/contact-us/dispute-resolution-process>

**Accountability:** Head of Field Services (Maintenance)  
Head of Vegetation Management (Vegetation)

### Auditing

- HBRA Pre-Summer and Summer Audit Programs
- The Unitised Works Manager will arrange regular reviews of outstanding works including visits to the properties concerned.

**Accountability:** Head of Field Services (Maintenance)  
Head of Vegetation Management (Vegetation)

### Community and Customer Relations

- The procedure for situations where vegetation is identified to be infringing the requirements of the regulations in relation to service lines is contained within the ELCMP.
- A database is maintained which contains names and addresses of customers that own a POEL in the UE HBRA. Each year around October, these customers are mailed a personalised letter, as per Attachment 2, which describes how public awareness might be enhanced of the responsibilities of owners of POELs and UE responsibilities in respect to POELs. Included with this letter is a comprehensive brochure (POEL Safety and Responsibility). A cover of this brochure is shown as Attachment 4.
- In addition to this advertisements are included in local newspapers from prior to summer highlighting UE's obligations to inspect POELS along with other information. See Attachment 8.
- For the requirement of regulation 10 of the Electricity Safety (Bushfire Mitigation) Regulations 2013, the notice as shown in Attachment 1, is given to occupiers of land with POELs in compliance to regulation 9 prior to the inspection being carried out by the asset inspector.
- With reference to the notice in Attachment 1 (and as prescribed in regulation 11 of the Electricity Safety (Bushfire Mitigation) Regulations 2013) the period specified must not be 'more than 45 days before the inspection and not less than 21 days before the inspection'. The inspector will write the date, in the space provided at the top of the notice, on which the notice was given to the property owner, occupier, customer and/or available property representative.
- UE will encourage the undergrounding of POELs wherever possible. The level of guidance and support will be evaluated on a case-by-case basis at the discretion of the UE Head of Field Services.

**Accountability:** Head of Field Services (Maintenance)  
Head of Vegetation Management (Vegetation)

### Disconnection of Defective POELs on Days of Total Fire Ban

- If the POEL defect within a HBRA cannot be made fire safe, or has exceeded the priority timeframe as per the guidance table in this procedure – see Attachment 5 the POEL will be allocated to the defect work crews who will disconnect and reconnect supply on days of total fire ban
- The list of potential disconnections will be available to the UE NCC via a disconnection spreadsheet and maintained from 1 October until the end of the fire season by the UE maintenance and asset inspection group.

### Attachments

1. Notice of Inspection of POEL
2. Fire Safety for Private Overhead Electric Lines (POEL) Customers
3. Cover of Service Line and POEL Brochures
4. Example of Public Awareness Advertisement
5. TFB Defect Disconnection Guide.

United Energy Distribution Pty Limited  
ABN 70 064 651 029



To the Occupier

Dear Sir/Madam

**RE: Notice Of Inspection Of Private Overhead Electric Line (POEL)**

United Energy (UE) is the electricity distribution asset owner and operator for the southern and eastern suburbs of Melbourne and the Mornington Peninsula. Service Providers are contracted by UE to maintain the poles and wires in your area. UE has a dedicated asset inspection program to manage POELs to ensure uninterrupted supply of power and a fire safe environment.

In accordance with section 113F(2) of the Electricity Safety Act (1998), please be advised that on or about [insert date no earlier than 21 days no later than 45 days] an asset inspector from our service providers will inspect all POELs above the surface of land on the property you occupy, except for those parts of the lines that are installed after the point at which they are connected to a building or other structure (not including a pole).

The inspection may reveal that defects exist, maintenance is required or vegetation needs cutting or removal on a POEL located on the property that you occupy. If this is the case, we will give the owner written notice of the maintenance work required to be carried out.

Should you require any advice concerning your defective POEL, a company representative from our service providers, who are acting on our behalf, would be only too happy to be of service to you. We thank you for your cooperation in helping us to keep your neighbourhood safe.

Thank you in advance for your cooperation

For all inquiries please contact our service providers (insert company), on XXXX XXXX  
or the relevant asset inspector in person on the phone number below.



## Attachment 2: Fire Safety for Private Overhead Electric Lines (POEL) Customers

United Energy Distribution Pty Limited  
ABN 70 064 651 029



To the Owner / Occupant

Street Address

Town VIC Postcode

### Fire Safety for Private Overhead Electric Lines (POEL) Customers

United Energy (UE) is licensed by the Victorian Government to distribute electricity across Melbourne's south-eastern suburbs and the Mornington Peninsula (from St Kilda to Portsea).

We serve some 630,000 customers and own and manage 209,000 poles along with some 13,000 kilometres of wires. We are proud to be your local electricity distributor.

As a customer with Private Overhead Electric Lines (POEL), please find enclosed a brochure titled Private Overhead Electric Lines — Safety and Responsibility.

We strongly encourage you to read the brochure which outlines your rights and responsibilities regarding POEL located on your property. This brochure is as an essential part of your preparation for this year's fire season.

It is your responsibility to maintain the POEL and the associated poles and other electrical equipment at your property. As part of this maintenance, we recommend that you regularly inspect these powerlines, ensuring they are well maintained and clear of trees and branches.

This maintenance will reduce the possibility of power supply failures, electrocution or fires.

We strongly recommend an inspection should be performed at least every six months by a qualified contractor.

UE is committed to a safety first approach, especially in the lead up to summer, and we utilise a range of fire prevention strategies to improve the safety and security of our communities. As such, UE undertakes the following activities:

- Overhead powerline inspections including a three yearly inspection cycle for POEL
- Public awareness activities including advice to POEL customers of pending inspections
- Written notification to POEL customers to rectify any defects that may arise from these inspections
- Annual vegetation inspections of POEL in Hazardous Bushfire Risk Areas (HBRA).

We recommend you engage a Registered Electrical Contractor (REC) to carry out an inspection and conduct any necessary repairs. A list of RECs is available on the Energy Safe Victoria website - [www.esv.vic.gov.au](http://www.esv.vic.gov.au). You can also engage an appropriately qualified vegetation clearance contractor to create the required clearance space between nearby trees and your POEL.

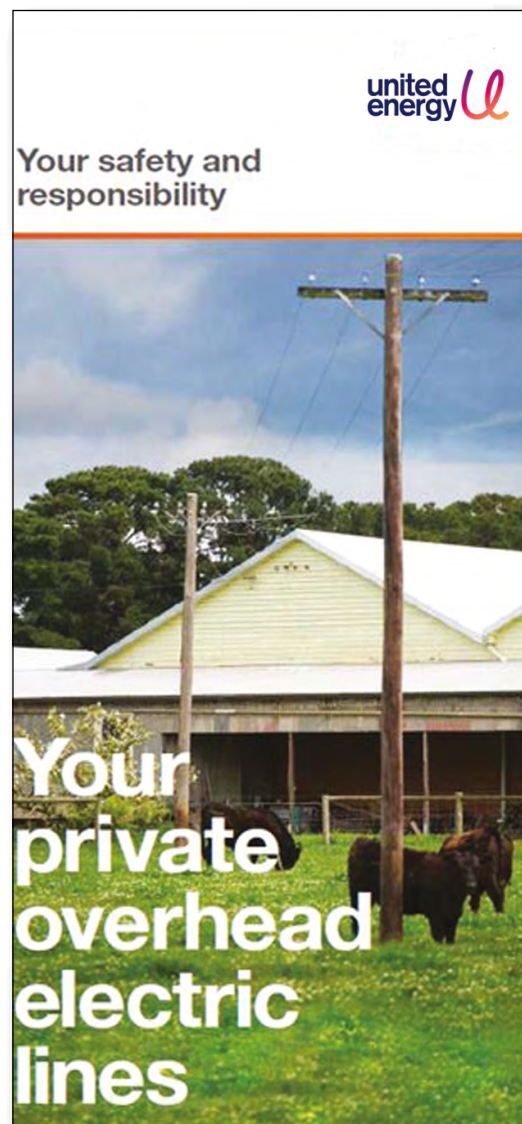
Please seek advice if you are unsure about your responsibilities. For further information about legislation and regulations, please again refer to the Energy Safe Victoria website.

If you no longer have a POEL, please call us on 1300 131 689 or email [customerrelations@ue.com.au](mailto:customerrelations@ue.com.au). This will ensure our records are updated. Fire safety is everyone's responsibility and UE thanks you for your support in better protecting our community from the threat of fires this summer.

Regards,

Adam Gellie  
General Manager Service Delivery

Attachment 3: Cover of Service Line and POEL Brochures





# Help protect our community from fires this

United Energy (UE) proudly serves the energy needs of more than 670,000 customers in communities across Melbourne's east and south-eastern suburbs and down to the Mornington Peninsula. We own and manage more than 205,000 poles along with 13,000km of wires.

## Trees, service lines and your responsibilities

For the majority of powerlines in our network, the responsibility of maintaining the clearance between powerlines and trees rests with us (your distributor), or the local municipality.

However, you as a landowner or tenant, are responsible for clearing the trees on your property around the service line. This is the powerline that runs from the pole in the road reserve to the front of your premises, and a clearance of at least 300mm must be maintained at all times. Failure to maintain your service line clearance may result in a defect notice being issued to your premises and your power supply disconnected.

## Private Overhead Electric Powerlines (POEL)

If you have a Private Overhead Electric Line (POEL), it is your responsibility for maintaining safe clearances around poles and other electrical equipment on your property.

Regular inspections and maintenance will reduce the possibility of power supply failures, electrocution or fires and should be done at least every six months.

## United Energy recommends:

- Engaging a Registered Electrical Contractor (REC) to carry out inspections and to complete any necessary repairs.
- Engaging an appropriately qualified vegetation clearance contractor to create the required clearance space

Failure to meet your obligations may result in UE taking proactive steps to disconnect your power on high bushfire risk days.





### 132 099

Fallen or damaged power lines should always be treated as live and dangerous. Keep clear and report to UE as soon as possible.

**ue.com.au**

For more information on POELs, powerlines and your responsibilities, download our brochure or call 1300 131 689 (8am to 6pm Mon to Fri)

For language assistance call 131 450

# Attachment 5: TFB Defect Disconnection Guide

Maintenance Code	Maintenance Description	Priority Guidance	Disconnect on TFB declared day (Notification not overdue)	Disconnect on TFB declared day (If any Notification is overdue)
95PC	Private Line Defective Conductors	<b>Conductors:</b>		
		No spreaders fitted. HBRA = P42	YES	YES
		Insufficient clearances between conductors. HBRA = P42/P2		
		Damaged, badly corroded or broken conductors, terminations = P42/P2.		
		Insufficient ground/structure clearances/open wire = P42/P2		
		Insufficient ground/structure clearances – covered = P42	NO	NO
		Insufficient ground/structure clearances – covered P2		
		<b>Insulation deteriorated:</b>		
		Conductor damaged = P42/P2	NO	YES
		Conductor not damaged = P42/P2		
95PP	Private Line Defective Assets	<b>Poles Not Straight:</b>		
		15 degree lean or greater = P1	YES	YES
		10 – 15 degree lean = P42/P2	NO	
		<b>Stays Damaged:</b>		
		Broken stay = P1	NO	YES
		Pole leaning / deteriorated – jagged wires sticking out, excessively rusted = P42/P2		
		Pole leaning / moderate damage or rust = P42/P2		
		<b>Pole Top Rot:</b>		
		Effecting crossarm connection = P42/P2	NO	YES
		Badly deteriorated = P42/P2		
		<b>Loose Hardware:</b>		
		If not immediate fire risk = P42/P2	NO	YES
		<b>Uninsulated Conductors</b>		
		In contact. = P42	YES	YES
		Within clearance space 2m = HBRA = P42	NO	
		<b>Insulated Conductors</b>		
		In contact = P42	YES	YES
		Within clearance Space (0.6m) = P2	NO	

Maintenance Code	Maintenance Description	Priority Guidance	Disconnect on TFB declared day (Notification not overdue)	Disconnect on TFB declared day (if any Notification is overdue)
95PU	Private Line Unserviceable Pole	<b>Wood Poles:</b>		
		No Sound Wood = Urgent (P1).		YES
		<b>Deterioration:</b>		
		Less 30mm of sound wood = P2		YES
		Between 50mm – 31mm of Sound wood = P2	NO	YES
		<b>Under Girth:</b>		
		If the girth of a wooden pole, other than treated pine, is less than 550mm at any point within 200mm above the ground = P42	NO	YES
		If the girth of a treated pine pole is less than 450 mm at any point within 200 mm above the ground = P2		
		<b>Steel and Concrete Poles</b>		
		Unserviceable concrete pole = major concrete areas missing with exposed rusty reinforcing steel	NO	YES
		Unserviceable steel pole = excessive rust & pitting covering more than one quarter of pole, holes and easily dented by hitting with hammer		
		Imminent Failure = P1	YES	
95PX	Private Line Defective Crossarms	<b>Crossarm Inspection</b>		
		Inadequate Bracing = P42/P2	YES	YES
		If crossarm is loose or on an angle = P42/P2	NO	
		Deteriorated /Undersized (AI Assessment)= P42/P2	NO	
		Braces Fitted But Not Straight = P42/P2	NO	

## FPP26: Operational Contingency Plans Procedure

### Purpose

This procedure describes the process for actions that will be taken to secure the safety of all persons and network assets during declared fire danger periods and on days of total fire ban.

### Scope

This procedure covers the operational plans that will take effect during days of total fire ban to secure the safety of all persons and network assets. There are no specific operational plans implemented on the network during the declared fire danger period.

### References

UE MA 0001 Operations Manual: Switching and Earthing (**SE**) – Emergency, Section 03 and 04  
 NCC Procedure: UE PR 9365 Total Fire Ban Actions  
 NCC Procedure: UE PR 9367 Fire Start  
 NCC Procedure: UE PR 9452 UE Triggers, Alerts and Notifications NCC  
 NCC Procedure: UE PR 9386 Hot Weather Planned Outage Cancellation.

### Definitions

Acronym or Term	Description
<b>A/H</b>	After Hours
<b>B/H</b>	Business Hours
<b>CFA</b>	Country Fire Authority
<b>FDI</b>	Fire Danger Index and is both the GFDI and FFDI
<b>FFDI</b>	Forest Fire Danger Index
<b>GFDI</b>	Grass Fire Danger Index
<b>HBRA</b>	High Bushfire Risk Area
<b>NCC</b>	Network Control Centre
<b>NET</b>	Network Escalation Team
<b>NMS</b>	Network Management System
<b>PR</b>	Procedure
<b>POEL</b>	Private Overhead Electric Lines
<b>SP</b>	Service Provider
<b>TFB</b>	Total Fire Ban
<b>UE</b>	United Energy Distribution Pty Ltd



## Procedure

### De-Energisation of Feeders

Plans for the de-energisation of feeders (or part of) will come into effect where/when

- Requested by emergency services
- The safe operation of the feeder can no longer be assured.
- Stipulated in this Plan

The Head of Network Operations and Control will implement contingency plans for de-energisation of feeders where required.

De-energisation of supply to an area has serious implications and can only be considered as a last resort and consideration must be given to retaining supply to essential services such as, but not limited to:

- Hospitals
- Water supply
- Communication facilities, radio transmitters
- Life support systems.

### Staffing during Days of Total Fire Ban

Customer Contact Centre and NCC functions are operational 24 X 7. Additional personnel can be called if required.

A NET may be established by the UE Emergency Manager or NCC Management at the Emergency Management Room adjacent to the UE NCC within the UE office at Mt. Waverley and its formation communicated throughout UE and their service providers.

Service Provider Depots may be manned under the following conditions:

- If the situation is critical due to weather conditions, significant fires or other events
- If requested by the UE Emergency Manager or NCC Management.

### Operational Fire Preparedness

UE has extensive detailed procedures for the operational behaviour and maintenance strategies that are expected during emergencies and specifically fire events including declaration of TFB days.

These procedures are detailed in the documentation referred to in the 'References' section.

**Accountability:** Head of Network Operations and Control

### Total Fire Ban Day Permits

In some cases a Service Provider or their subcontractors will be required to perform work in the open using a naked flame on total fire ban days. This work could include supply connection, fault works, emergency cable jointing, welding, gas flame cutting, grinding, shrink sleeve heating etc. It should be noted that it is preferable to defer this work on total fire ban days where possible.

Permits are to be obtained by the Service Provider and provided to all their and any subcontractor work crews to allow this work to proceed where necessary. Work crews should have copies of the relevant permits that outline the requirements and the contact requirements prior to performing the work.

**Accountability:** Service Providers

## Where Preventative Program Works within HBRA are Incomplete

In the event that preventative program works within the HBRA are incomplete, the following actions shall be taken on days of total fire ban:

- An assessment will be made by the Fire Prevention Manager as to the nature of the risk of the incomplete works
- Consideration will be given to the following:
  - o De-energisation of the feeder or portion of the feeder
  - o Placing observers at the site or sites of the incomplete works
  - o No specific action required.

The latter could be appropriate in situations such as where a pole requiring replacement or inspection is situated in a location that is too wet for access thus posing a minimal risk.

**Accountability:** Fire Prevention Manager

## Days of Total Fire Ban – Actions upon the receipt of Notification of the Declaration of a TFB Day

The following actions are to be taken as soon as the Network Control Centre (NCC) has been notified that the CFA has declared a total fire ban within the UE area, normally on the afternoon before the TFB Day.

The NCC will:

- Immediately notify all key personnel as per;
  - o NCC Procedure: UE PR 9365 Total Fire Ban Actions
  - o NCC Procedure: UE PR 9452 Electricity Triggers, Alerts and Notifications.
- In conjunction with the Service Providers, review high ambient temperature day planned work (specifically paying attention to planned customer interruptions) and make recommendations to Network Control Centre Management (B/H) or UE Emergency Manager (A/H) as per NCC Procedures:
  - o UE PR9386 Hot Weather Planned Outage Cancellation.
  - o NCC Procedure: UE PR 9452 UE Triggers, Alerts and Notifications.

In general, shutdowns should not proceed on the UE HBRA network for high ambient temperatures unless the risk of not proceeding (i.e. making an asset fire safe) is greater than the potential risk of proceeding with the works. In the event of prearranged work proceeding, consideration should be given to a number of items as per NCC Procedure: UE PR 9386 Hot Weather Planned Outage Cancellation.

- Plan for the enabling of the required TFB/Code Red protection settings before 10am on the TFB or before the FDI exceeds 30.
- Create Trouble Orders to be dispatched and completed by 10am on day of TFB as per NCC Procedure: UE PR 9365 Total Fire Ban Actions in the NCC NMS for:
  - o POEL Disconnections – As guided by the POEL disconnection spreadsheet
  - o Vegetation in Contact (PT-1)
  - o Overdue Maintenance Items

**Accountability:** Head of Network Operations and Control

## Actions on the TFB Day

The NCC will as per NCC Procedure: UE PR 9365 Total Fire Ban Actions:

- Implement Network Protection changes before 10:00 hours or if the FDI had reached 30
- Dispatch SP crews to disconnect identified defected POEL's
- Dispatch SP crews to action / cut identified Vegetation in Contact (PT-1) locations



- Dispatch SP crews to inspect / action identified overdue maintenance items.
- Report above outcomes to UE Emergency Manager by 10 am on day of TFB.

**Accountability:** Head of Network Operations and Control

The UE Emergency Manager will:

- Confirm that Network protection changes has been implemented before 10:00 hours or if the FDI had reached 30 as per NCC Procedure: UE PR 9365 Total Fire Ban Actions
- Confirm that identified defected POEL's have been disconnected by 10AM
- Confirm that identified Vegetation in Contact (VT-1) has been cut / actioned by 10 AM
- Confirm that identified Overdue Maintenance items has been inspected / actioned by 10AM
- Document what planned work have/have not proceeded in HBRA area
- Complete the contingency plan checklist (see attachment 4) and send to the distribution list as identified on the contingency plan checklist.

**Accountability:** Head of Network Operations and Control

### The Deployment and Cessation of Total Fire Ban Day Protection Schemes

The deployment and restoration of network protection schemes will apply from 10:00am on the Total Fire Ban day or when the Fire Danger Index (FDI) reaches 30 (whichever occurs first) and will not be rescinded until the FDI drops below 30 and is trending downwards. UE Emergency Manager approval will be obtained if changes to network protection schemes are to be restored prior to midnight.

The most relevant weather observation sites to determine the FDI for UE is:

- South area is Frankston, Rosebud Zone Substation and Cerberus
- Central area is Scoresby and Carrum Zone Substation
- North area is Bulleen and Moorabbin Airport.

The NCC may re-connect disconnected POELs once the FDI has dropped below 30 or after midnight. In the event of continuous days of total fire ban, disconnected POELs should remain disconnected and the UE Emergency Manager and Customer Service Availability advised accordingly.

Below is an example of the information of the FDI index from the UE dedicated Weather Zone Energy Dashboard Weather Portal at – <http://www.weatherzone.com.au/>

OBSERVATIONS FOR UE									
VIC Melbourne Central W & S Gippsland UE									
Station	Time	Temp (°C)	RH (%)	Wind (km/h)	Gust (km/h)	FFDI	GFDI	Rain (mm)	Rain Last 1hr (mm)
Carrum ZSS	10:30	11.4	91	2	4	1	1	0.0	-
Rosebud ZSS	10:30	13.7	70	0	6	2	0	0.0	-
Sth Channel Island	11:00	-	-	7	7	-	-	-	-
Melbourne	11:00	13.2	87	6	6	1	1	0.0	-
Fawkner Beacon	11:00	-	-	4	4	-	-	-	-
St Kilda	11:00	-	-	11	11	-	-	-	-
Viewbank	11:00	11.1	100	0	0	1	0	0.0	-
Moorabbin Ap	11:00	13.7	87	11	11	1	2	0.0	-
Frankston	11:00	14.2	79	6	6	2	1	-	-
Cerberus	11:00	12.6	93	0	0	1	0	0.0	-
Scoresby	11:00	13.3	68	9	9	2	2	0.0	-

OBSERVATIONS FOR UE							
VIC Melbourne Central W & S Gippsland UE							
Station	Time	Temp (°C)	RH (%)	Wind (km/h)	FFDI	GFDI	Rain (mm)
Melbourne	17:00	21.0	38	19	11	8	4.2
Fawkner Beacon	17:00	-	-	37	-	-	-
St Kilda	17:00	-	-	54	-	-	-
Bulleen	17:00	22.1	42	28	12	14	4.4
Moorabbin Ap	17:00	21.0	45	28	10	12	5.8
Frankston	17:00	18.9	54	37	9	17	-
Cerberus	17:00	19.4	47	26	9	10	4.8
Sth Channel Island	17:00	-	-	54	-	-	-
Scoresby	17:00	19.9	43	30	11	14	8.2

## Restoration of Supply after a Protection Operation

If protection operates during a Total Fire Ban day causing a HV outage (or LV in the UE HBRA network) the affected feeder/circuit must be patrolled as per Operational Procedure OP-G6-2 and NCC Procedure: UE PR 9365 Total Fire Ban Actions.

## Operational Contingency Planning

On every Total Fire Ban day, a TFB Checklist / Implementation of Contingency Plan (see Attachment 4) shall be completed by the UE Emergency Manager, whether actions are required or not, and forwarded to the distribution list as indicated on the attachment as soon as practical after 10:00am.

In cases where the following items exist on the network on a day of Total Fire Ban, the actions taken to mitigate any fire risk must be documented in the Operational Contingency Plan:

- Outstanding 'VP1' vegetation
- Overdue defective or non-fire safe POELs that require disconnection
- Overdue P1, P42 or P2 maintenance items that cannot be re-inspected.

The Operational Contingency Plan may include, but is not limited, to the following actions:

- Disconnection, re-inspection or 'make safe' of overdue maintenance items or POELs
- Emergency cutting of any 'VP1' defined as vegetation in the first 10% of the Minimum Clearance Space (MCS)\* applies to only energised LV and HV assets
- On-site monitoring of vegetation and assets if required
- A risk assessment of the potential for fire ignition weighed up against the impact of disconnection of supply.

The UE Emergency Manager will initiate a risk assessment of the line affected and prepare the Operational Contingency Plan in conjunction with the NCC and Service Providers Emergency Managers.

The disconnection of distribution lines on days of Total Fire Ban may have serious implications and this will be considered as a last resort and will be referred to the UE Emergency Manager for approval. Where it is likely that a distribution line will need to be disconnected on a day of Total Fire Ban, efforts will be made to contact affected customers where possible.

Essential and Emergency Services will also be advised of any impending disconnection of distribution lines.

### Areas of High Consequence (AHC)

Each year, before the fire season, UE will decide on the fire mitigation precautions to be taken in AHC to mitigate the risk of fire ignition. These decisions are based on mapping received from government sources (DELWP) and UE internal knowledge.

### DELWP Determined AHC

The current (DELWP) advice for UE is the HV 22kV feeders located below (in blue) which are located within UE LBRA and as such may not be subject to any specific protection setting requirements on TFB/ Code Red Days.

### Mt Martha Area



The Blue lines mark 22kV feeders that have been to be AHC. In these particular areas portions of these feeders reside outside the RED HBRA.

As a result of the AHC determined by DELWP in the Mt Martha area we have added the following devices to the Attachment 3 - Protection Settings for the 2017/18 Fire Season.

- DMA 14 Feeder
- DMA 14 ACR MT7369
- DMA 24 ACR MT7436



## UE Determined AHC

The UE knowledge is primarily derived from fire behaviour history and local knowledge of the terrain and involves additional protection settings initiated on TFB or Code Red Days on feeders often located within the LBRA where if a fire occurred could cause considerable loss.

## Dromana/McCrae Area



The blue lines represents the approximately location of a 22kV feeder DMA 21 ex ACR RB002 in the Dromana/McRae LBRA that have been determined by UE to be area that we consider an AHC.

Taking this into consideration UE has determined that additional protection settings are required on this ACR only on Code Red Days and have included DMA 21 ex ACR RB002 in Attachment 3.

The Attachment 3 list is dynamic and may be amended from time to time due to ongoing network requirements but is current as of December 2018.

\* As taken from HMAS Cerberus and RBD ZSS weather stations.

## Attachments

1. List of Key UE and Service Provider Personnel
2. Contacts Details of Other Organisations Emergencies
3. Protection Settings for TFB or Code Red Days for the the 2018/19 Fire Season
4. Status Report/Contingency Plans (Example)

## Attachment 1: List of Key UE and Service Provider Personnel

Position	Contact Name	Contact No.	
		Business Hours	After Hours
United Energy (UE) — Key Personnel			
Chief Executive Officer	Tim Rourke	8846 9900	132 099
General Manager Electricity Network	Mark Clarke		
General Manager Corporate Affairs	Joanne Pafumi		
General Manager Service Delivery	Adam Gellie		
General Manager Asset Management	Craig Savage		
Head of Field Services	Kieran Connell		
Head of Vegetation Management	Hugh Vickers-Willis		
Unitised Works Manager	Tim Smith		
Fire Prevention Manager	Trevor Fisher		
UE Emergency Manager	Roster information Via Network Control Centre		
Network Control Centre — Key Personnel			
Head of Network Operations and Control	David Kowal	132 099	
Network Controller/Resource Coordinator	On Shift – 24 Hours		
Zinfra Emergency Manager	Roster information via Network Control Centre		

*Note – After hours contact numbers for all personnel via the Network Control Centre*

## Attachment 2: Contacts Details of Other Organisations Emergencies

EMERGENCIES	TELEPHONE
Country Fire Authority	000
Department of Environment, Land, Water and Planning	000
Metropolitan Fire Brigade	000
Vic Fire (Media Issues and information)	A/H or B/H 9887 7766

### Attachment 3: Protection Settings for TFB or Code Red Days for the 2018/19 Fire Season

This list is dynamic and may be amended from time to time due to ongoing network requirements but is current as at November 2018.

No.	Zone Substation	Type	Feeder Name	ACR Name	NER/ GFN	TFB Day		Code Red Day		Comment
						Enable TFB Mode (LSIOC)	Suppress AR	Enable TFB Mode (LSIOC)	Suppress AR	
1	CRM	Feeder	CRM11	N/A	No	N/A	N/A	N/A	N/A	Feeder is fitted with non-standard 'X' line current differential protection and 'Y' inverse time overcurrent and earth fault protection. There is no auto reclose functionality available. No action required.
2	CRM	Feeder	CRM13	N/A	No	Yes		Yes	Yes	
3	CRM	Feeder	CRM14	N/A	No	Yes		Yes	Yes	
4	CRM	Feeder	CRM21	N/A	No	N/A	Yes	N/A	Yes	No LLW or TFB mode available on this feeder.
5	DVY	ACR	DVY24	FS0047	Yes	Yes		Yes	Yes	
6	CRM	ACR	CRM21	FS7882	No	Yes		Yes	Yes	
7	CRM	Feeder	CRM34	N/A	No	Yes		Yes	Yes	
8	CRM	Feeder	CRM35	N/A	No	Yes		Yes	Yes	
9	DC	ACR	DC1	DT0798	No	Yes		Yes	Yes	
10	DC	ACR	DC3	DT7076	No	Yes		Yes	Yes	
11	DMA	Feeder	DMA13	N/A	Yes	Yes		Yes**	N/A	
12	DMA	SWER ACR	DMA13	RB7328	N/A	Yes		Yes	Yes	SWER ACR
13	DMA	ACR	DMA13	RB7532	Yes	Yes		Yes	Yes	Ex this ACR contains HBRA but also areas of High Consequence (UE determined) within LBRA.
14	DMA	Feeder	DMA14	N/A	Yes	Yes		Yes**	N/A	This feeder contains some areas of High Consequence.
15	DMA	ACR	DMA14	MT7369	Yes	Yes		Yes	Yes	Ex this ACR contains areas of High Consequence.

No.	Zone Substation	Type	Feeder Name	ACR Name	NER/ GFN	TFB Day		Code Red Day		Comment
						Enable TFB Mode (LSIOC)	Suppress AR	Enable TFB Mode (LSIOC)	Suppress AR	
16	DMA	ACR	DMA15	RB7233	Yes	Yes		Yes	Yes	
17	DMA	ACR	DMA21	RB0002	Yes	N/A		Yes	Yes	Ex this ACR contains areas of High Consequence (UE determined) within a LBRA. The assessment recommends this section as requiring action on Code Red Days only.
18	DMA	Feeder	DMA23	N/A	Yes	Yes		Yes**	N/A	
19	DMA	ACR	DMA23	RB7227	Yes	Yes		Yes	Yes	
20	DMA	ACR	DMA23	RB7257	Yes	Yes		Yes	Yes	
21	DMA	Feeder	DMA24	N/A	Yes	Yes		Yes**	N/A	
22	DMA	ACR	DMA24	MT7452	Yes	Yes		Yes	Yes	
23	DMA	ACR	DMA24	MT7681	Yes	N/A		Yes	Yes	Ex this ACR contains areas of High Consequence (UE determined) within a LBRA. The assessment recommends this section as requiring action on Code Red Days only.
	DMA - RBD	Sub T	DMA - RBD #1	N/A	N/A				Yes	Assessed as requiring action on Code Red only.
	DMA - RBD	Sub T	DMA - RBD #2	N/A	N/A				Yes	Assessed as requiring action on Code Red only.
24	DSH	Feeder	DSH24	N/A	Yes	Yes		Yes	Yes	
25	DSH	Feeder	DSH33	N/A	Yes	Yes		Yes	Yes	
26	DVY	Feeder	DVY24	N/A	Yes	Yes		Yes**	N/A	
27	DVY	Feeder	DVY34	N/A	Yes	Yes		Yes**	N/A	
28	ERTS-MGE	Sub-T	ERTS-MGE	N/A	N/A				Yes	Assessed as requiring action on Code Red only.
29	FSH	Feeder	FSH12*	N/A	Yes + GEN	N/A	Yes	N/A	Yes	

No.	Zone Substation	Type	Feeder Name	ACR Name	NER/ GFN	TFB Day		Code Red Day		Comment
						Enable TFB Mode (LSIOC)	Suppress AR	Enable TFB Mode (LSIOC)	Suppress AR	
30	FSH	ACR	FSH12	N/A	Yes + GEN	Yes		N/A	Yes	
31	FSH	Feeder	FSH21*	N/A	Yes + GEN	N/A	Yes	N/A	Yes	
32	FSH	ACR	FSH21	FS8221	Yes + GEN	Yes		Yes	Yes	
33	FSH	Feeder	FSH23*	N/A	Yes + GEN	N/A	Yes	N/A	Yes	
34	FSH	ACR	FSH23	FS7892	Yes + GEN	Yes		Yes	Yes	
35	FSH	ACR	FSH23	FS8277	Yes + GEN	Yes		Yes	Yes	
36	FSH	Feeder	FSH32*	N/A	Yes + GEN	N/A	Yes	N/A	Yes	
37	FSH	ACR	FSH32	FS1069	Yes + GEN	Yes		Yes	Yes	
38	FSH	Feeder	FSH33*	N/A	Yes + GEN	Yes		Yes	Yes	FSH
39	FTN	ACR	FTN13	FS8222	Yes	Yes		Yes	Yes	
40	FTN	Feeder	FTN25	N/A	Yes	Yes		Yes**	N/A	
41	FTN	ACR	FTN25	FS1098	Yes	Yes		Yes	Yes	
42	GW	ACR	GW2	DN1013	Yes	Yes		Yes	Yes	
43	GW	ACR	GW7	DN8367	Yes	Yes		Yes	Yes	
44	HGS	Feeder	HGS21	N/A	Yes	Yes		Yes**	N/A	
45	HGS	ACR	HGS21	MT7712	Yes	Yes		Yes	Yes	
46	HGS	ACR	HGS21	MT7725	Yes	Yes		Yes	Yes	
47	HGS	Feeder	HGS22	N/A	Yes	Yes		Yes**	N/A	



No.	Zone Substation	Type	Feeder Name	ACR Name	NER/ GFN	TFB Day		Code Red Day		Comment
						Enable TFB Mode (LSIOC)	Suppress AR	Enable TFB Mode (LSIOC)	Suppress AR	
48	HGS	ACR	HGS22	MT7226	Yes	Yes		Yes	Yes	
49	HGS	ACR	HGS22	MT7367	Yes	Yes		Yes	Yes	
50	HGS	Feeder	HGS23	N/A	Yes	Yes		Yes**	N/A	
51	HGS	ACR	HGS23	MT0447	Yes	Yes		Yes	Yes	
52	HGS	ACR	HGS23	MT7722	Yes	Yes		Yes	Yes	
53	HGS	SWER ACR	HGS23	MT7475	N/A	Yes		Yes	Yes	SWER ACR
54	HGS	Feeder	HGS31	N/A	Yes	Yes		Yes**	N/A	
55	HGS	ACR	HGS31	MT7529	Yes	Yes		Yes	Yes	
56	HGS	Feeder	HGS32	N/A	Yes	Yes		Yes**	N/A	
57	HGS	Feeder	HGS33	N/A	Yes	Yes		Yes**	N/A	
58	HGS	ACR	HGS33	MT7756	Yes	Yes		Yes	Yes	
59	HGS	ACR	HGS33	FS8280	Yes	Yes		Yes	Yes	
60	HGS	ACR	HGS33	MT7521	Yes	Yes		Yes	Yes	
61	KBH	ACR	KBH34	DN9850	Yes	Yes		Yes	Yes	
62	KBH	Feeder	KBH35	N/A	Yes	Yes		Yes	Yes	Replaces DN8300 line fuses
63	LD	ACR	LD2	DN7964	Yes	Yes		Yes	Yes	
64	LD	ACR	LD33	DN8274	Yes	Yes		Yes	Yes	
65	LWN	Feeder	LWN21	N/A	Yes	Yes		Yes	Yes	
66	LWN	Feeder	LWN23	N/A	Yes	Yes		Yes	Yes	
67	LWN	ACR	LWN23	FS8285	Yes	Yes		Yes	Yes	
68	LWN	ACR	LWN21	FS7877	Yes	Yes		Yes	Yes	
69	LWN	Feeder	LWN32	N/A	Yes	Yes		Yes**	N/A	
70	LWN	ACR	LWN32	FS7538	Yes	Yes		Yes	Yes	

No.	Zone Substation	Type	Feeder Name	ACR Name	NER/ GFN	TFB Day		Code Red Day		Comment
						Enable TFB Mode (LSIOC)	Suppress AR	Enable TFB Mode (LSIOC)	Suppress AR	
71	LWN	Feeder	LWN33	N/A	Yes	Yes		Yes**	N/A	
72	LWN	ACR	LWN33	FS7865	Yes	Yes		Yes	Yes	
73	MC	ACR	MC7	DN3333	Yes	Yes		Yes	Yes	
74	MGE	Feeder	MGE12	N/A	Yes	Yes		Yes	Yes	
75	MGE	Feeder	MGE13	N/A	Yes	Yes		Yes	Yes	
76	MGE	Feeder	MGE21	N/A	Yes	Yes		Yes	Yes	
77	MGE	ACR	MGE23	DN8068	Yes	N/A		Yes	N/A	Assessed as requiring action on Code Red Days only. TFB mode is not available on this ACR; only enable LLW mode for Code Red Days.
78	MGE	Feeder	MGE32	N/A	Yes	N/A	Yes	Yes**	N/A	
79	MGE	ACR	MGE33	N/A	Yes	Yes		Yes	N/A	
80	MTN	Feeder	MTN22*	N/A	Yes+GFN	Yes		Yes**	N/A	
81	MTN	ACR	MTN22*	MT7622	Yes+GFN	Yes		Yes	Yes	
82	MTN	Feeder	MTN23*	N/A	Yes+GFN	Yes		Yes**	N/A	
83	MTN	Feeder	MTN24*	N/A	Yes+GFN	Yes		Yes**	N/A	
84	MTN	ACR	MTN24*	FS7893	Yes+GFN	Yes		Yes	Yes	
85	MTN	ACR	MTN24*	MT0494	Yes+GFN	Yes		Yes	Yes	
86	MTN	ACR	MTN24*	MT7451	Yes+GFN	Yes		Yes	Yes	
87	MTN	Feeder	MTN32*	N/A	Yes+GFN	Yes		Yes**	N/A	
88	MTN	ACR	MTN32*	MT7225	Yes+GFN	Yes		Yes	Yes	
89	MTN	ACR	MTN32*	MT7621	Yes+GFN	Yes		Yes	Yes	

No.	Zone Substation	Type	Feeder Name	ACR Name	NER/ GFN	TFB Day		Code Red Day		Comment
						Enable TFB Mode (LSIOC)	Suppress AR	Enable TFB Mode (LSIOC)	Suppress AR	
90	MTN	Feeder	MTN34*	N/A	Yes+GFN	Yes		Yes**	N/A	
91	MTN	Feeder	MTN35*	N/A	Yes+GFN	Yes		Yes**	N/A	
92	MTN	ACR	MTN35*	MT0011	Yes+GFN	Yes		Yes	Yes	
93	MTN-DMA	Sub-T	MTN-DMA	N/A	N/A				Yes	Assessed as requiring action on Code Red only.
94	NP	Feeder	NP12	N/A	Yes	Yes		Yes**	N/A	
95	NP	ACR	NP12	DN3357	Yes	Yes		Yes	Yes	
96	NP	ACR	NP34	DN9628	Yes	Yes		Yes	Yes	
97	NW	ACR	NW13	DT7144	Yes	Yes		Yes	Yes	
98	RBD	Feeder	RBD12	N/A	Yes	Yes		Yes**	N/A	
99	RBD	ACR	RBD12	RB0376	Yes	Yes		Yes	Yes	
100	RBD	SWER ACR	RBD12	RB7371	N/A	Yes		Yes	Yes	SWER ACR
101	RBD	ACR	RBD13	RB7226	Yes	Yes		Yes	Yes	Ex this ACR contains some HBRA but also areas of High Consequence (UE determined) within LBRA.
102	RBD	Feeder	RBD21	N/A	Yes	Yes		Yes**	N/A	
103	RBD	ACR	RBD21	RB0391	Yes	Yes		Yes	Yes	
104	RBD	SWER ACR	RBD21	RB7329	N/A	Yes		Yes	Yes	SWER ACR
105	RBD	SWER ACR	RBD21	RB7359	N/A	Yes		Yes	Yes	SWER ACR
106	RBD	SWER ACR	RBD21	RB7360	N/A	Yes		Yes	Yes	SWER ACR
107	RBD	ACR	RBD24	RB7406	Yes	Yes		Yes	Yes	
	RBD – STO	Sub T	RBD – STO #1	N/A	N/A				Yes	Assessed as requiring action on Code Red only.
108	RWT	Feeder	RWT35	N/A	No	N/A	N/A	N/A	Yes	Assessed as requiring action on Code Red only.

No.	Zone Substation	Type	Feeder Name	ACR Name	NER/ GFN	TFB Day		Code Red Day		Comment
						Enable TFB Mode (LSIOC)	Suppress AR	Enable TFB Mode (LSIOC)	Suppress AR	
109	RWT	ACR	RWT35	BH7181	No	N/A		Yes	N/A	Assessed as requiring action on Code Red Days only. TFB mode is not available on this ACR; only enable LLW mode for Code Red Days.
110	SS	Feeder	SS23	N/A	Yes	N/A	Yes	N/A	Yes	No LLW or TFB mode available on this feeder.
111	STO	Feeder	STO13	N/A	Yes	Yes		Yes	Yes	
112	STO	ACR	STO13	RB0205	Yes	Yes		Yes	Yes	
113	STO	ACR	STO14	RB0228	Yes	Yes		Yes	Yes	
114	STO	Feeder	STO21	N/A	Yes	Yes		Yes	Yes	
115	STO	ACR	STO21	RB7324	Yes	Yes		Yes	Yes	
116	STO	ACR	STO21	RB7322	Yes	Yes		Yes	Yes	
117	TBTS-MTN	Sub-T	TBTS-MT #1	N/A	N/A				Yes	Assessed as requiring action on Code Red only
117	TBTS-MTN	Sub-T	TBTS-MT #2	N/A	N/A				Yes	Assessed as requiring action on Code Red only
118	TBTS-DMA	Sub-T	TBTS-DMA	N/A	N/A				Yes	Assessed as requiring action on Code Red only

\* Suppress AR irrespective of whether the GFN (GFN) is in service or not.

\*\* Enable Live Line Work (LLW) Mode instead of TFB Mode (because the relay logic design prevents disabling auto reclose while in TFB mode).

**NOTE:** If remote communications to a field device (e.g. feeder or ACR) is unavailable on a declared TFB Day or Code Red Day, then the NCC shall request an Operator attend the site to manually invoke the changes defined above.

### Fire Feeders where protection includes a fuse saver device.

			Name	Upstream Protection Device	Name	NER	Fuse Saver Operating Mode #			
No.	Zone Substation	Type	Feeder		Fuse Saver		Non Fire Risk Day	TFB Day *	Code Red Day **	Comment
1	DMA	Fuse Saver	DMA15	RB7233	RB0048	Yes	Normal	Normal Single	Fast Single	
2	DMA	Fuse Saver	DMA15	RB7233	RB7204	Yes	Normal	Normal Single	Fast Single	
3	DMA	Fuse Saver	DMA23	RB7257	RB7137	Yes	Normal	Normal Single	Fast Single	Protection is disabled.
4	DMA	Fuse Saver	DMA23	RB7227	RB0186	Yes	Normal	Normal Single	Fast Single	
5	HGS	Fuse Saver	HGS31	HGS31	MT0182	Yes	Normal	Normal Single	Fast Single	
6	HGS	Fuse Saver	HGS23	MT7722	MT0512	Yes	Normal	Normal Single	Fast Single	Protection is disabled.
7	HGS	Fuse Saver	HGS23	MT0447	MT7208	Yes	Normal	Normal Single	Fast Single	Protection is disabled.
8	HGS	Fuse Saver	HGS33	MT0045	MT0593	Yes	Normal	Normal Single	Fast Single	Protection is disabled.
9	HGS	Fuse Saver	HGS33	FS8280	FS1248	Yes	Normal	Normal Single	Fast Single	Protection is disabled.
10	LWN	Fuse Saver	LWN21	LWN21	FS0410	Yes	Normal	Normal Single	Fast Single	Protection is disabled.
11	MTN	Fuse Saver	MTN32	MTN32	MT0091	Yes	Normal	Normal Single	Fast Single	Protection is disabled.
12	RBD	Fuse Saver	RBD12	RB0376	RB0057	Yes	Normal	Normal Single	Fast Single	
13	RBD	Fuse Saver	RBD12	RB0376	RB0056	Yes	Normal	Normal Single	Fast Single	
14	RBD	Fuse Saver	RBD21	RB0391	RB0135	Yes	Normal	Normal Single	Fast Single	
15	RBD	Fuse Saver	RBD21	RB7406	RB0106	Yes	Normal	Normal Single	Fast Single	
16	DMA	Fuse Saver	DMA24	MT7681	MT0210	Yes	Normal	Normal Single	Fast Single	Supplies LBRA and an area of high consequence.
17	HGS	Fuse Saver	HGS21	MT7725	MT0424	Yes	Normal	Normal Single	Fast Single	Supplies LBRA

# Where remote communications is not yet available, the Fuse Saver protection shall be turned off and remain off until remote communications is established (expected 1st quarter CY18).

\* Also enable TFB mode on the upstream protection device.

\*\* Also enable Code Red mode on the upstream protection device.

Normal = standard inverse time trip with reclose enabled.

Normal Single = standard inverse time trip with reclose suppressed and 3 phase lockout enabled

Fast Single = near instantaneous trip with reclose suppressed and 3 phase lockout enabled

### Fire Feeders where protection is achieved via fuse only.

Distribution Feeder or ACR	Spans	Fire Authority Area	NER	Fuse Type	Switch No
BU 14	10	MFB North	No	Powder Filled	DT0599
DN 13	15	CFA Region 13	Yes	Boric Acid	DN2831
FSH 33 (GFN)	7	CFA Region 8	Yes	Boric Acid	FS7413
LD 33	22	CFA Region 13	No	Powder Filled	DN0220

### Fire Feeders where no action is taken by UE.

Distribution Feeder or ACR	Spans	Fire Authority Area	NER	Comments
DSH 34 Feeder	4	CFA Region 8	Yes	<p>In relation to these feeders no action is taken due to the fact there is 10 spans or less located within the fire area for each feeder.</p> <p>The risk has been determined to be greater by putting many customers at risk for a prolonged supply outage than for the minimal fire risk proposed of these spans.</p> <p>Feeder LYD 14 is a AusNet feeder and they have provided advice that this feeder is suppressed on TFB days to a similar setting to the UE feeders</p>
LYD 14 (Ausnet)	10	CFA Region 13	No	
LWN 35 Feeder	7	CFA Region 8	Yes	
DMA 12 Feeder	1 (CHP)	CFA Region 8	Yes	



## Memorandum

**To:** UE Emergency, Adam Gellie; Rob Simpkin, Tim Smith, Hugh Vickers-Willis, Scott Hitchiner, Trevor Fisher, Kieran Connell, Craig Smith, Brian Rennie; Kate Webster; Mike Tshaikiwsky; Steve Piasentin; David Kowal; Eric Castricum; Mark Clarke; Craig Savage

**From:** UE Emergency Manager (UE 'On Call' Manager)

**Date:** 01/03/2019

**Subject:** TFB/CODE RED CHECKLIST / IMPLEMENTATION OF CONTINGENCY PLAN

*Note: UE Emergency Manager to update sections in Red.*

Confirmations and Action	Resp. Person	Done	Contingency Plan for any Uncompleted Actions
1. Confirm with NCC all TFB Network Protection Settings have been implemented.	UE Emergency Manager	Yes	Network protection settings for TFB have been implemented
2. Prearranged Construction Work. Confirm what HBRA planned work has / has not been cancelled after consultation with Service Providers and NCC.		Yes	No Construction work cancelled There was no planned work in HBRA today
3. Overdue Maintenance Works Confirm with NCC that no HBRA defective (P1, P42 or P2) assets works are overdue or have been re-assessed or action taken if necessary.		Yes	No maintenance items overdue / indexing in HBRA
4. Overdue Defective POELs Confirm with NCC if any HBRA overdue defective or non-fire safe POELs have been disconnected		Yes	No POEL's required to be disconnected
5. Vegetation Confirm with NCC that no outstanding VP1 vegetation in the HBRA or detail any actions taken.		Yes	No VP1 spans in the HBRA
Name: David Kowal	Date: 01/03/2019		Time: 10:00am

The UE Emergency Manager must confirm all actions and advise that all contingency plan actions (if required) have been implemented by 10:00 hours on the day of the total fire ban.

## FPP27: Fault Energy Management Procedure

### Purpose

This procedure describes the process for managing fault energy on days of total fire ban. It has been established that the likelihood of fire ignition from electricity assets is related to the energy delivered into the fault.

United Energy's protection philosophy is to strike a balance between fault energy, and the resultant likelihood of a fire start, while maintaining continuity of electricity supply through design and operation of protection systems, network configuration and fault current limiting technologies.

### Scope

This procedure covers the actions to be taken to manage fault energy on days of total fire ban.

### References

Nil.

### Definitions

GFN = Ground Fault Neutraliser

### Standard Protection

Standard protection is applied on the distribution network to detect network faults (short circuits) and initiate automatic tripping of protective devices to isolate the fault from the network. Standard protection is typically time graded in order to minimise the extent of the resulting network outage. This protection is often referred to as a slow trip within the industry.

### Auto Reclose

Auto reclose is a control system that, after a programmed time delay, automatically closes a protective (e.g. feeder CB or ACR) device following a protection initiated trip. When disabled or suppressed, automatic re- close of the protective device will be blocked.

### Total Fire Ban Mode

When enabled, standard (or slow) protection is bypassed and the protection operates instantaneously and immediately trips the protective device with no intentional delay. This protection is often referred to as a fast or instantaneous trip. Upon automatic reclose of the feeder circuit breaker or ACR, the system automatically reverts back to standard protection operation.

## Procedure

### Distribution Feeders

High voltage feeders within the UE supply network have several methods available to limit risk of fire ignition by limiting the available fault energy.

These methods include:

1. GFN – fitted at Frankston South (FSH) and Mornington (MTN) zone substations (Dromana (DMA) in 2019)
2. NER – fitted at UE zone substations that supply HBRA feeders
3. Enabling Total Fire Ban Mode or Code Red Mode protection settings



4. Suppression of the auto reclose function on the feeder circuit breakers and ACRs including SWER systems (if no Total Fire Ban mode available)
5. HV fuses – fitted throughout the network.

The Network Control Centre (**NCC**) will limit fault energy by applying the above as per the procedures stipulated for total fire ban/code red days as per Attachment 3 of FPP26.

### **How the Network will behave on Fire Declared Days**

#### **TFB Mode Enabled (TFB Day)**

Upon detection of the fault, instantaneous tripping of the protective device followed by automatic reclose of the protective device. If the fault is still present on the network, standard protection will trip the relevant protective device which may be downstream of the initial tripping device.

#### **Auto Reclose Suppressed (TFB Day where TFB Mode is not programmed in the field device)**

Upon detection of the fault, standard protection will trip the protective device without any reclose operation.

#### **TFB Mode Enabled and Auto Reclose Suppressed (Code Red)**

Upon detection of the fault, instantaneous tripping of the protective device will result without any reclose operation.

#### **Supply Restoration Procedure (non-GFN)**

The implementation of instantaneous protection (TFB Mode and Code Red Mode) presents technical and operational challenges when switching the network e.g. load transfers or restoring supply after unplanned outages. A key issue is the susceptibility of instantaneous protection to trip on load inrush current during supply restoration switching.

Therefore, the following procedures apply:

- i. Physical patrol of the high voltage line following a circuit breaker trip shall be undertaken:
  - (a) to the next intelligent protective device (e.g. ACR) including all spurs when in TFB mode.
  - (b) of the entire line that has been de-energised including all spurs this includes section past any downstream protective device inclusive of fuses when in Code Red mode.
- ii Disable TFB mode when re-energising the high voltage line (TFB mode to be enabled once line has been successfully re-energised).
- iii Disable Code Red mode when re-energising the high voltage line (Code Red mode to be enabled once line has been successfully re-energised).

#### **Supply Restoration Procedure (GFN)**

The following procedures apply:

- i. GFN to be temporarily switched out of service and station returned to NER earthing when:
  - (a) Network switching requires parallels with non-GFN protected network or where switching could create a disturbance that could be falsely identified as a fault
  - (b) Load transfers result in network capacitance exceeding the rating of the Arc Suppression Coil (ASC).
  - (c) If there is a repeating or restriking fault that the GFN is unable to clear.
  - (d) There is a system or component failure that requires the GFN to be taken out of service. This could occur automatically or manually by an operator after receiving alarms.

### **Fault Energy Management Sub-Transmission – TFB Days**

Single shot auto reclose is applied on all 66kV sub-transmission lines on the UE network.

It is UE policy not to suppress auto reclose on 66kV sub-transmission lines on days of total fire ban. This policy has been made on the basis that the lines are protected by high-speed line current differential protection or line distance protection, all of which will detect and quickly isolate fire risk faults.

Sensitive earth fault protection also afforded to sub-transmissions lines and is configured not to initiate auto reclose in cases where the sensitive earth fault protection is non-directional.

### **Sub-Transmission – Code Red Days**

On any Code Red day the auto reclose on 66kV lines that traverse through significant heavily vegetated areas of HBRA will be suppressed as per the Attachment 3 in FPP26.

**Accountability:** Head of Network Operations and Control

