



Department of **Consumer  
and Employment Protection**  
Government of **Western Australia**

**Energy Safety**

## **ELECTRICAL INCIDENT REPORT**

### **INVESTIGATION OF WILDFIRE AT ALLANSON, WESTERN AUSTRALIA ON 4 FEBRUARY 2005**

6 April 2005

2005-221

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## **1 INTRODUCTION**

A ground wildfire occurred at Section 1127 Mc Avoy Road, Allanson on 4 February 2005. It was reported that the cause of the fire might have had electrical origins, as local residents reported hearing a loud explosion. The reported explosion was followed by an electricity outage, and also occurred at approximately the time the fire was first observed.

As a result an investigation was carried out by Energy Safety, the technical and safety regulator for the electricity industry in WA. This report summarises the findings. The cooperation and assistance of officers of the Fire and Emergency Services Authority (FESA) and Western Power Corporation (WPC) is acknowledged.

### **1.1 Location of Incident**

In a grazing paddock on the farm at Location 1127 Allanson, WA in the vicinity of WPC power pole #WD/62/33.

### **1.2 Time and Date of Occurrence**

Approximately 1210 hours on Friday 4 February 2005.

### **1.3 Notification of Incident**

Mr Michael Bunko, Chief Electrical Inspector, of the Energy Safety Division, Department of Consumer & Employment Protection, was notified of the incident by Mr Tony Moran, of FESA at approximately 0940 hours on 5 February 2005.

### **1.4 Investigating Inspector**

The investigation was carried out by Mr Ross Reid, a designated Inspector (Electricity), Electrical Inspection Branch, Energy Safety Division, Department of Consumer & Employment Protection.

Mr Reid inspected the fire scene on 7, 8 & 16 February 2005.

## **2 ORIGIN OF THE GROUND FIRE**

No witnesses who claim to have seen the actual start of the ground fire have come forward.

The first person to see the fire was the property owner, who observed the smoke from his veranda at approximately 1215 hours, on 4 February 2005. The second person was an adjoining property owner who suffered a power outage at approximately 1215 hours and on investigating, saw smoke and a short time later the fire.

Both property owners identified the position of the fire in the same location, in the vicinity of the WPC power pole # WD62 / 33. It was therefore concluded that the fire started in a grazing paddock on the farm at Section 1127, McAvoy Road, Allanson WA, in the vicinity of WPC power pole # WD/62/33.

## **3 INVESTIGATION**

The ground fire burned approximately 40 hectares of pasture, a hay shed (including hay) and extensively damaged the fences.

### **3.1 Western Power's Equipment**

The main overhead power line near the origin of the fire is part of the WPC distribution system, which consists of a high voltage 12.7kV single-phase conductor with an earth return conductor. The live single-phase conductor is 7/2.50mm aluminium and the earth wire, which is slung below it, is of 7/1.60 gauge steel mounted on wood poles.

The overhead power line was constructed as a three-phase supply for a proposed commercial operation (chicken farm) that didn't eventuate. Only the centre top phase conductor (white phase) is "live". The two outside phase conductors are isolated at the nearest "disc insulators".

On Western Power's Pole # WD62 / 33 is mounted a high voltage expulsion drop out fuse (3 ampere) which protects the supply to a 10kva transformer supplying a single consumer. Western Power Corporation stated that this fuse did not operate.

A high voltage fuse (3 ampere), located eight bays of conductor upstream from the area of the fire origin, operated. However, below this fuse on the ground is long dry vegetation, which has not been burnt. The fire was extinguished before it reached this area.

A second high voltage fuse (16 ampere), located some distance upstream, closer to the Allanson township, protecting the same phase (white) also operated. The reported loud explosion is believed to have been caused when this fuse ruptured.

### **3.2 Weather**

The Bureau of Meteorology's Collie East station recorded the weather conditions at 0900 hours, as hot (39.2°), dry, with low relative humidity (8%) and low winds of 9 km/hr from the ESE.

The wind later, after the fire had started, changed direction to NE, gusting to 33 km per hour.

### 3.3 Findings

The investigation found:

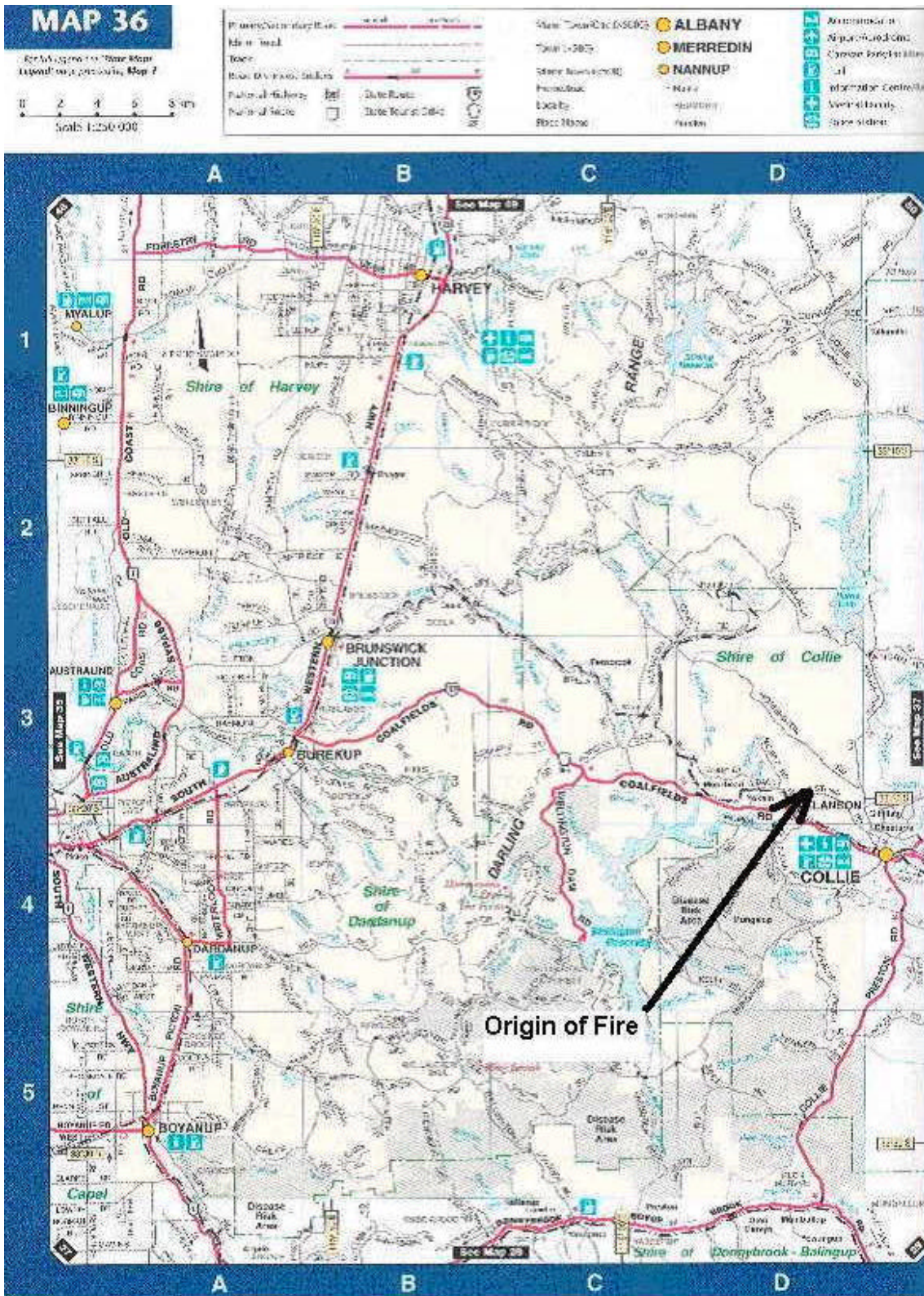
- The high voltage expulsion drop out fuse, located in the vicinity of the ignition point of the fire, near pole #WD62 / 33 did not operate;
- The power-line conductors are in good condition;
- Only the top (white) phase is live, the other two conductors would act as a barrier and minimise the chances of airborne debris coming into contact with the live conductor;
- There are no trees or vegetation in close proximity to the power lines;
- No tree branches or vegetation were found under the power line or along the entire route of the power line;
- There was relatively no wind (9km per hr) at the time the fire started;
- The space between the live phase conductor and the earth conductor is approximately 2.5 metres;
- No conductors fell to the ground;
- The pole spacing is not excessive;
- There is no excessive sag in the conductors; and
- No birds or animals were found along the route of the power line.

#### **4 CONCLUSIONS**

The investigation concluded that:

- There were no suspicious circumstances relating to the origin of the fire and no evidence of lightning in the area.
- Taking account of the burn pattern on the ground and the evidence from the two property owners, it is concluded that the fire originated in the dry pasture on the ground in the area adjacent to WPC's power pole # WD62 / 33.
- No evidence was found that indicated that Western Power's equipment was responsible for the ignition of the fire.
- The cause of the fire is undetermined.

# APPENDIX A – SITE MAP



## APPENDIX B - PHOTOGRAPHS

Photograph of Fire Area





**Fire Ignition Point Near Western Power Corporation's Power Pole # WD62/33**



**Western Power Corporation's Pole Top Hardware at Power Pole # WD62/33**



## **APPENDIX C – PERSONS INTERVIEWED**

DISCUSSIONS WERE HELD WITH THE FOLLOWING PERSONS:

The two property owners

Linesperson  
Western Power Corporation  
Collie Depot

Linesperson  
Western Power Corporation  
Picton Depot

Tony Moran  
Fire Service Manager  
Fire and Emergency Services Authority (FESA)