



# Public Safety Management Plan 2007



# Preface

Welcome to Western Power's Public Safety Management Plan for 2007. The safety of the public, our workforce and customers, is paramount to Western Power. No activity is permitted to come before the safety and health of employees, contractors and the community. Work is to cease if safety cannot be assured.

This plan provides an overview of how Western Power manages public safety. It also describes the link between network investment and public safety.

This plan is aligned with Western Power's overarching Safety and Health Policy and Management System, which articulates our vision of:

“Conducting business in a manner where the workforce and community are free from injury and harm.”

The information provided in this plan is intended to be useful to all involved in its implementation, and to provide an insight into our public safety management systems and processes. We value your feedback about the information provided here.



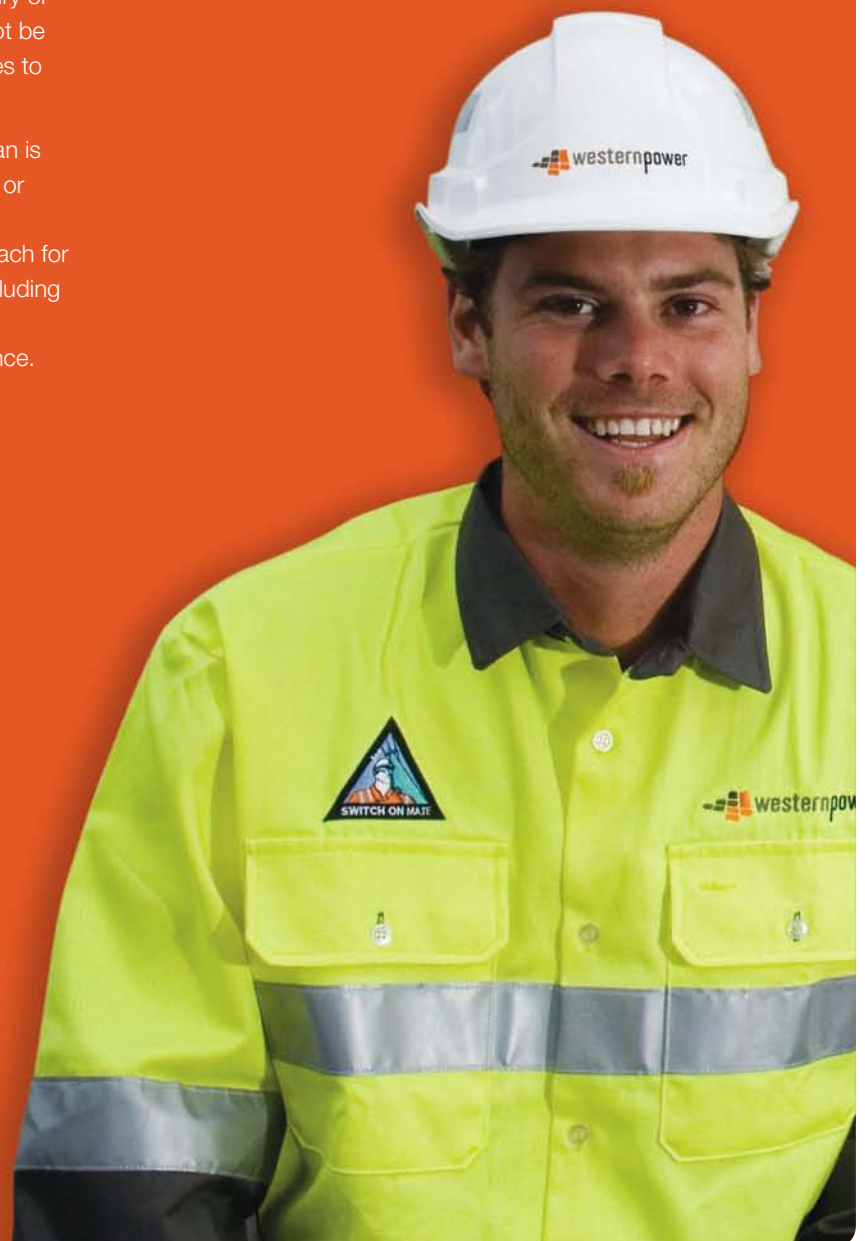
Doug Aberle  
Managing Director

# Introduction

Western Power is a Western Australian statutory corporation and the major distributor of electricity in Western Australia. It owns and operates an interconnected transmission and distribution network that extends throughout WA's south west. Safety, including public safety, is a core value in Western Power and takes priority over all other network management considerations.

Western Power recognises that its electricity network presents inherent public safety risks from events such as storms, lightning strikes, acts of vandalism, vehicle accidents, plant failure and inadvertent contact with live electrical conductors. These events can cause injury or damage property. While many of these risks cannot be completely eliminated, it is critical to have strategies to control them.

The purpose of this Public Safety Management Plan is to minimise the risks of injury to the general public or damage to property because of Western Power's operations. It contributes to a best-practice approach for the management of Western Power's network, including planning, design, construction, maintenance and operation, and helps to ensure legislative compliance.



safe reliable efficient

# Western Power's electricity network

Western Power operates an extensive electricity network that connects to more than 800,000 residential, commercial, mining, manufacturing and agricultural customers from Kalbarri in the north to Kalgoorlie in the east and Albany in the south, as shown below. This network is referred to as the South West Interconnected System (SWIS).

Western Power transmits electricity from generators (such as power stations) to customers on behalf of electricity retailers. It has both a transmission network and a distribution network comprising overhead wires and poles, underground cables, substations and associated equipment such as transformers.

Power is received from electricity generators and fed into the transmission network. Substations transform the electricity into suitable voltages for consumption by customers. The transmission network operates at voltages of 330 kV, 220 kV, 132 kV and 66 kV.

The distribution network consists of:

- a high voltage distribution system operating at voltages of 33kV, 22kV, 11kV and 6.6kV; and
- a low voltage distribution system operating at voltages of 415V and 240V.

Detailed information on network assets is available in the Western Power Annual Asset Management Report.



Area serviced by Western Power's transmission and distribution network  
– the South West Interconnected System (SWIS)

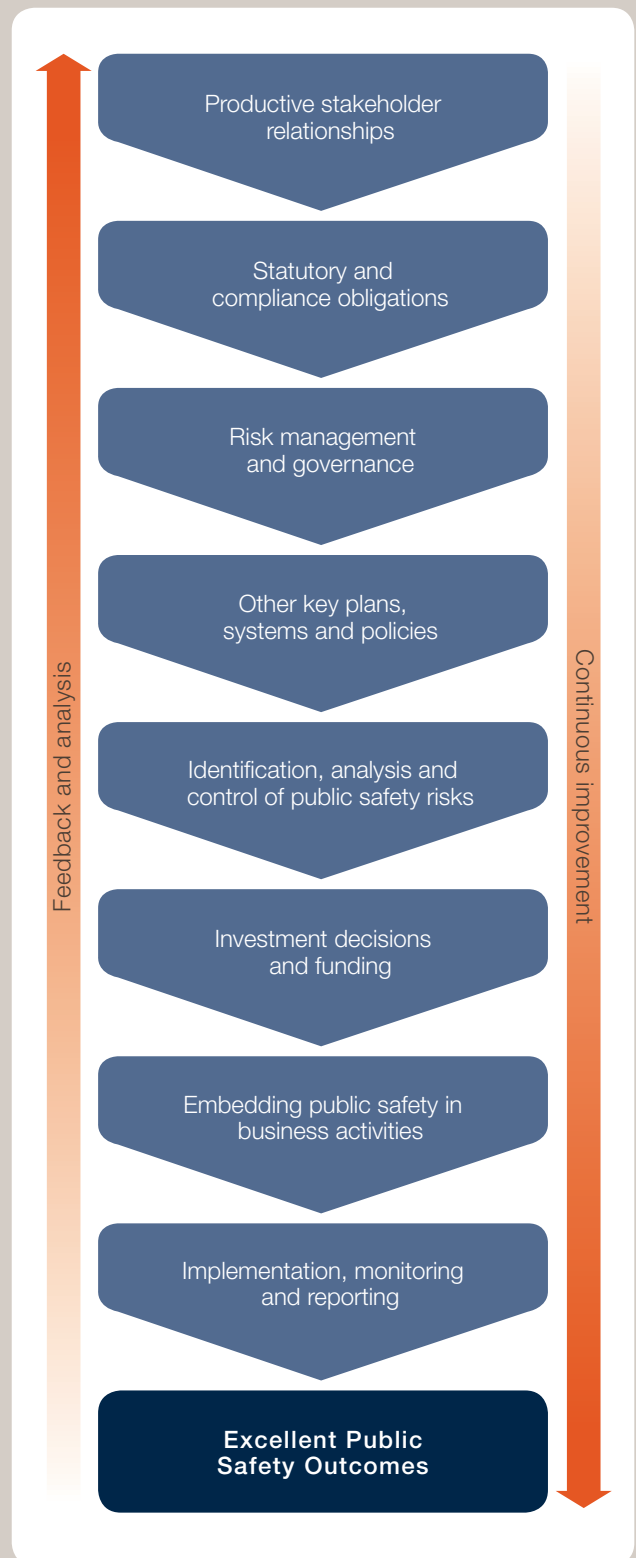
# Public safety management

Western Power's public safety management strategy is based on identifying and eliminating or controlling all reasonably foreseeable public safety risks. To achieve this requires a whole of business approach to embed controls into routine business activities.

This strategy is underpinned by:

- establishing and maintaining effective and productive relationships with stakeholders with an interest in public safety;
- promoting public awareness of potential electrical safety risks;
- compliance with legislative and statutory requirements;
- application of a consistent risk management framework across the business;
- establishing clear linkages between public safety outcomes and investment decisions/funding requirements;
- application of appropriate procedures for all business activities, including procedures for dealing quickly with network emergencies and hazardous situations;
- thorough investigation of all incidents and accidents and evaluation of data on network faults; and
- developing, implementing and monitoring improvement initiatives and programs intended to reduce, control or eliminate public risks.

Western Power's framework for managing public safety is shown opposite.



## Stakeholders

Western Power recognises that effective public safety management requires the support and cooperation of many stakeholders, including:

- employees;
- members of the public;
- EnergySafety;
- Work Safe;
- Office of Energy;
- Dial 1100 Before You Dig;
- police;
- Fire and Emergency Services Authority (FESA);
- industry peak bodies (such as the Electrical Contractors Association and the Civil Contractors Federation);
- local authorities; and
- community representative groups.

Western Power's objective is to establish and maintain effective, productive relationships and to work collaboratively with all stakeholders who have an interest in public safety.

## Statutory and compliance obligations

Western Power is required to comply with an extensive range of legislation, regulations and codes covering almost all aspects of the business, including the safety of employees and the public.

The key ones are:

- Electricity Corporations Act 2005;
- Electricity Industry Act 2004;
- Energy Operators (Powers) Act 1979;
- Electricity Act 1945;
- Electricity Regulations 1947;
- Environmental Protection Act 1986 and Regulations;
- Occupational Safety & Health Act 1984;
- Electricity (Supply Standards and System Safety) Regulations 2001; and
- The Technical Rules, which set out the standards, procedures and planning criteria governing the construction and operation of an electricity network.

To comply with these obligations, Western Power has developed and implemented a range of internal policies, plans, procedures, instruction manuals, codes and technical criteria, including this plan.

### EnergySafety

EnergySafety is part of the Department of Consumer and Employment Protection and has an important role in the management of public safety. In addition to licensing electrical contractors, EnergySafety determines and regulates the Electricity (Supply Standards and System Safety) Regulations 2001, which has a strong focus on technical regulations for the electricity network in relation to employee, contractor and public safety. Other legislation that falls into EnergySafety's role includes the Electricity Act 1945 and the Electricity Regulations 1947.

Further information on the role of EnergySafety and their requirements can be found on their website at:

[www.energysafety.wa.gov.au](http://www.energysafety.wa.gov.au)

## Risk management and governance

Risk management is a key component of effective corporate governance and is integral to how Western Power manages public safety. Western Power's approach to risk management is to ensure it is a dynamic process embedded throughout the business. Risk is managed in a structured and systematic manner that assists with informed decision-making and contributes to successful business outcomes.

Western Power has a Risk Management Framework that provides detailed guidance for the identification, analysis, control and monitoring of business risks.

As part of the framework, individual business areas are responsible for the detailed assessment and monitoring of identified risks, including public safety risks. This includes the ranking of each risk (low, moderate, high or extreme) based on the consequences and relative likelihood of events, and the development of strategies to address the identified risks.



## Linkage to key plans, systems and policies

Western Power has a number of key plans, systems and policies that are closely linked to the management and control of public safety risks. These are listed below, along with a brief description of how they are linked to public safety management. For further details, see Western Power's website.

**Safety and health policy and management system:** a framework for managing all safety and health issues in the business, including public safety.

**Annual Planning Report:** a comprehensive network development planning report on planned developments in the SWIS.

**Annual Asset Management Report:** an asset management plan addressing the public safety risk for network assets and the principals on which asset management decisions are based.

**Bushfire Management Plan and Implementation Plan:** a best practice approach to mitigating the risk and impact of bushfires, comprising a framework of policies, processes, strategies and accountabilities for managing risk. The implementation plan converts the management plan strategies into an action plan.

**Crisis Management Plan:** a comprehensive plan that identifies potential crises and control measures. The plan provides a framework that enables Western Power to respond rapidly and appropriately to crisis events and hazardous situations.

**Environmental Policy and System:** a policy that ensures business activities are conducted to minimise or avoid adverse impacts on the environment, and a system supporting due diligence and principles of continuous improvement.

**Public Safety Awareness Plan:** an outline of the major electricity safety issues and the messages and programs Western Power will use to reach target audiences, including the general public, about the potential hazards associated with the transmission and distribution of electricity in the SWIS.

# Identifying, analysing and controlling public safety risks

## Differentiating public safety risks

In terms of safety, the general public can be segmented into broad categories, each of which is potentially exposed to different network hazards or risks.

The broad categories Western Power considers from this perspective include:

- members of the public involved in general and recreational activities;
- non-Western Power workers working close to the overhead network;
- non-Western Power workers involved in ground excavation work near the underground network;
- emergency workers;
- rural workers; and
- transport workers, such as drivers transporting controlled high loads.

Western Power considers the risks associated with each category to develop risk mitigation and control strategies, including the design and implementation of public safety education and awareness campaigns and materials.



## Inherent risks

Hazardous situations exist inherently with Western Power's electricity networks, exposing staff, contractors, the public and the environment to a degree of risk.

Western Power systematically identifies these risks and manages them through the adoption of mitigation or control mechanisms.

## Specific risks

In addition to the inherent risks, there are a range of circumstances that could result in specific network asset-related public safety risks.

These risks can result from:

- asset conditions (such as age);
- as a result of past design or construction standards or practices; or
- unique operating conditions that stress network components.

Western Power has identified a number of specific public safety risks associated with the condition of its network. Strategies to reduce, control or eliminate these risks have been developed, and programmes of work established. Some of these programmes involve significant financial expenditure and resource commitment and extend over multiple years. Western Power's objective is to prioritise work within and across these programmes to achieve the greatest overall reduction in public safety risk in the shortest period of time.

# Embedding public safety in business activities

A key aspect of Western Power's public safety management strategy is to allocate sufficient funding to reduce, control or eliminate public safety risks.

Western Power's primary objective is to provide a safe, reliable and efficient electricity network. To achieve this objective, Western Power makes prudent capital and operating investment decisions that are scrutinised by the independent regulator and meet the objectives of our distribution and transmission licenses.

In making these investment decisions, Western Power focuses on three key areas:

- duty of care and compliance obligations;
- customer outcomes; and
- network performance.

To achieve Western Power's vision of conducting business in a manner where our workforce and the community are free from injury and harm, every activity the business undertakes must consider the need to eliminate, reduce or control public safety risks. An overview of how this is achieved for our key business activities is provided below.

## Network development planning

Western Power's network development planning is based on whole-of-network, regional and local forecasts of peak demand, predictions about generation developments and a detailed understanding of the capacity and characteristics of network elements. Forecasts are developed through close consultation with customers, industry and government agencies.

For planning purposes, the network can be divided into the bulk transmission network and load areas related to network configuration. Each load area is studied in detail every two years to ensure that assets do not fail under normal service conditions and that public safety is not compromised.

As an example, planning studies can identify the need to carry out network enhancements to avoid loading of electrical equipment beyond safe limits or to ensure that the network elements can withstand the high currents that flow when an electrical fault occurs. A comprehensive protection system is also maintained to trip and/or isolate faulty or extremely overloaded equipment.

## Design and procurement

Western Power designs the network so that it can be constructed, maintained and operated safely, with minimal risk to employees, contractors and the public, while delivering an electrical network that has sufficient capacity, is reliable and cost effective.

Western Power develops and uses design standards and equipment specifications that comply with all relevant external and internal standards, codes of practice, guidelines and legislation. Public safety is a primary consideration when reviewing existing standards and policies and in the development of new standards and policies. All detailed engineering design is undertaken in accordance with the relevant design standards by suitably qualified resources. Quality assurance procedures are in place to ensure that final designs are safe and fit for purpose.

## Asset maintenance and replacement planning

Western Power ensures that electricity network assets are maintained in a condition that presents negligible risk to employees and the public and that enables the assets to perform reliably and achieve their expected life.

The primary strategy is one of preventative maintenance based on a program of inspection and condition monitoring. From a public safety perspective, maintenance strategies need to take into account the age and condition of network assets and the higher use of the network, driven by increased demand. Inspection and maintenance management plans for risk mitigation are produced annually and include activities such as pole replacement, reinforcement, line conductor spreader installation and pole top fire mitigation.

## Field activities

Western Power ensures that all staff and contractors working on or near the network have the necessary skills, training, competencies and procedures to complete work in a safe manner at all times.

Plans and designs are converted into physical outcomes through staff and contractors carrying out work on the network, often in close proximity to private property or members of the public. Western Power is committed to ensuring the safety of staff, contractors and public during such field activities.

# Embedding public safety in business activities (cont'd)

Strategies to achieve this include:

- a competency-based training regime for field staff and contractors, including regular refresher training;
- compliance with the Safety LifeSavers, the rules designed to carry out the work in a safe manner;
- the use of approved tools and equipment suitable for the required tasks;
- the development and implementation of effective processes for pre-job planning, job risk assessments and hazard controls to remove or control public safety risks;
- the development and implementation of approved work practices that comply with relevant industry regulations and internal standards; and
- the use of audit inspections and quality assurance procedures to ensure compliance with design and construction standards.

## Operations and network control

Western Power ensures that operation of its network and access to work on or near the network is managed in a safe manner and in accordance with approved procedures, which include switching programs and work permits.

All network operations are carried out in accordance with documented operating procedures and safety rules to ensure the safety of the general public, employees and contractors working on or near network assets.

Western Power's Safety Manual contains detailed procedures for those working on or near the electricity network. All persons who undertake construction or operations work on or near the electricity network must follow these procedures.

## Fault and emergency response

Western Power has systems and process for dealing with emergencies that affect the electricity network (including fires, explosions, impacts, natural disasters, acts of terrorism and civil disturbances). These procedures, which are updated and tested periodically, allow rapid attention to hazardous situations, including an appropriate escalation mechanism. Western Power's Crisis Management and Recovery System Manual and the Emergency Management Manual detail these procedures.

Western Power's response to emergencies centres around three key priorities:

- safety of people and property;
- protection of the environment; and
- restoration of the network.

## Network asset information management

Western Power ensures that relevant, current and accurate network assets data and information is available to all parties who need it. Appropriate asset information is a significant enabler for fast, effective decision making in all aspects of the business, including public safety related decisions.

## Incident investigation

Western Power aims to investigate all incidents, accidents, near misses and network faults with a view to determining root causes to drive continuous improvement.

Investigation of incidents, accidents, near misses and network faults provides valuable information for continuous improvement and it is an important element of Western Power's public safety management strategy. Western Power has dedicated resources to undertake such investigations, with all significant incidents investigated and reported on in detail. These investigations and associated reports identify root causes and recommend changes to avoid a future occurrence. These recommendations are fed back into the appropriate areas of the business for implementation.

# Continuous improvement

Western Power is committed to a philosophy of continuous improvement for all aspects of its business, including the management of public safety. The continuous improvement cycle is based on a framework of four key steps outlined below: Approach, Deployment, Results and Improvement.

## Approach

Identifies Western Power's intent and plan, including the strategies, processes and infrastructure intended to achieve the intent and to track and measure progress.

## Deployment

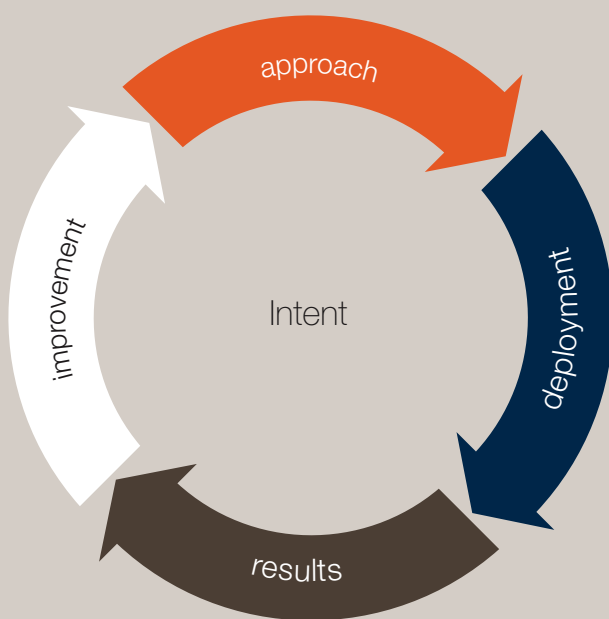
Identifies how Western Power deploys its funds and resources to achieve its plans.

## Results

This is the measurement of the effectiveness of the approach and deployment in achieving the intended outcomes through the use of performance indicators.

## Improvement

The process by which the Approach and Deployment are modified to achieve better results.



*Continuous Improvement Cycle*



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