

Plant Safety – Information Requirements

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NSW DEPARTMENT OF **PRIMARY INDUSTRIES**

Overview

Engineering safety

Managing risk

Legislation

Information generation and provision

DPI expectations

Summary

Engineering Safety

- **Prevention of:**
 - gas and/or dust explosions
 - electric shock and burns
 - injury from mechanical energies
 - fires
 - injury and death from unintended operation
- **Provision of electrical & mechanical safeguards**
- **Life-cycle management of risks**

MINING PLANT = MAJOR RISK

Managing Risk

- **Hierarchy of risk controls**
 - Eliminate the hazard
 - Substitute the hazard for one that gives a lesser risk
 - Isolating the hazard from the person
 - Engineering controls
 - Procedures
 - PPE
- **Hazard reduction precedence**
 - Design out the hazard
 - Safety devices that fail to safety
 - Warning devices
 - Special procedures and training

Legislation

Duties of designers, manufacturers and suppliers of plant

(1) ... must:

(a) ensure the plant is safe and without risks to health when properly used, and

(b) provide adequate information about the plant to whom it is supplied to ensure safe use

Extends to:

- Components and accessories, supply of plant by sale, transfer, lease or hire, and whether as principal or agent, and supply of plant or substance to a person for the purpose of supply to others.
- Specific provisions for coal operations

Information generated

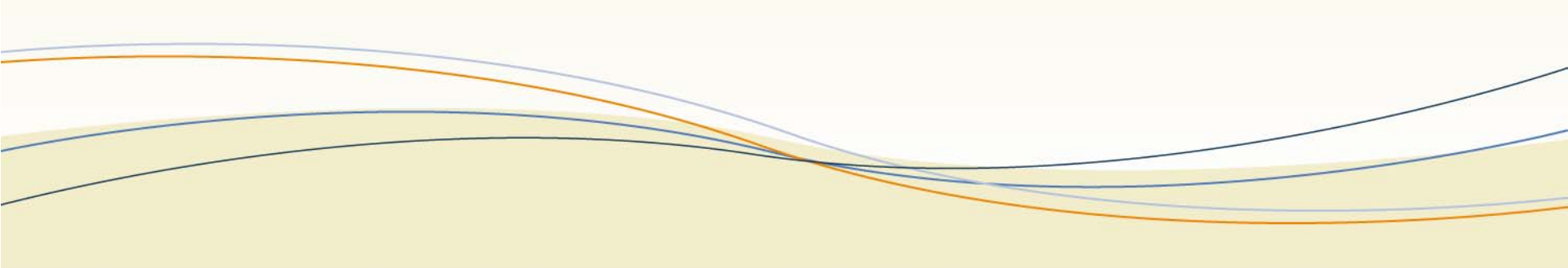
- **Purpose for which the plant was designed**
- **Foreseeable hazards over the life-cycle**
- **Obtaining information to:**
 - do the hazard ID & RA,
 - develop risk controls, and
 - provide information
- **Risks from the foreseeable hazards**
 - impact on the work environment
 - range of environmental & operational conditions
 - ergonomic, access and egress needs
 - specific legislative risk controls
- **Risk assessment reviews**

Information generated

– Risk controls

- ergonomics, access and egress
- build up of materials
- plant specifically designed for working near electrical conductors
- guarding
 - permanently fixed, or
 - interlocked or presence sensing,
 - must consider ejection of material
- work procedures & devices for unblocking moving parts

Information generated

- **Life- cycle management**
 - **Testing or inspections**
 - **Systems of work necessary for safe use**
 - **Competencies required**
 - **Emergency procedures**
 - **Test and inspection reports**
 - **Identified problems**
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Provision of information

Purpose for which the plant was designed

Testing or inspections to be carried out

Life- cycle management

Systems of work necessary for safe use

Knowledge, training or skills required

Emergency procedures

Test and inspection reports

Knowledge of a problem - notify the owner

Provision of specific information

Hazardous Zone Electrical Plant

- CoC and approval
- AS/NZS60079.0
- Drawings
 - ID Ex features
 - Sufficient detail to verify compliance to drawings and CoC
 - Traceable to CoC
- Conform to approval conditions
- Maintained so coal operations can life-cycle manage
- Conform to AS2290.1

Provision of specific information

Records of plant

- Mobile plant
- Remote controlled plant
- Fixed gas monitoring plant
- Records and reports by competent persons must be kept on a plant safety file
- Winders (for registration purposes)

Expectations

- A SYSTEMATIC, RIGOROUS & AUDITABLE APPROACH TO SAFETY.
- An essential part of that systematic approach is the “SAFETY FILE” concept
- Refer:
 - NIOSH best practice
 - IEC61508
 - AS2290.1

Safety File

Contains the documentation that demonstrates the level of safety built into the system

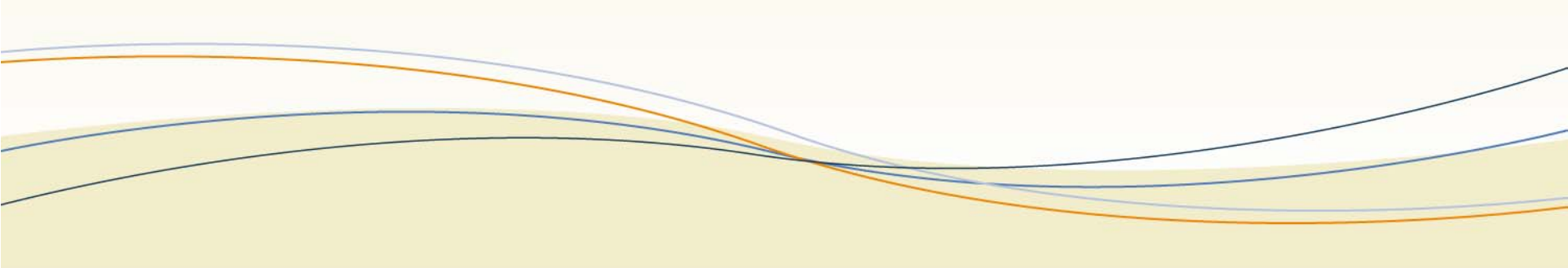
Identifies the limitations for the system's use and operation.

It is a “proof of safety” that the system and its operation meet the appropriate level of safety for the intended application.

It starts from the concept and is maintained through the full life cycle.

It provides administrative support for the associated safety program.

Information Summary

- Based on risk management
 - Covers the life-cycle
 - Assumes a system safety engineering approach
 - Critical to safe life-cycle use
 - A lot of information generated
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Information Summary

- Different people require different information
- Management of the information can be very complex
- The safety file concept is an accepted method of managing plant information.