



GDF SUEZ
Australian Energy
Hazelwood Mine
2013

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2013 -2014 MINE ANNUAL FIRE TRAINING PRESENTATION

What does a FIRE mean to GDF Suez Hazelwood?

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- Places people at risk
- Everything comes to a halt?
- No Coal to Hazelwood PowerStation
- Loss of revenue \$\$
- Loss of Jobs!!
- All available people to fight the fire.

Photos of Fire in Hazelwood Mine.

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Duty of Care

- The OH&S Act 2004 States Duty of Care in sections 25 and 21
- 25. Duties of employees
- (1) While at work, an employee must—
 - (a) take reasonable care for his or her own health and safety;
 - (b) take reasonable care for the health and safety of persons who may be affected by the employee's acts or omissions at a workplace;

Duty of Care

- **S21 Main duties of employers**
- **Duties of employers to employees**
- **(1) An employer must, so far as is reasonably practicable, provide and maintain for employees of the employer a working environment that is safe and without risks to health.**
- **(E) Provide such information, instruction, training or supervision to employees of the employer as is necessary to enable those persons to perform their work in a way that is safe and without risks to health.**

What does this mean?

- **Example. Unmanned Dredger not hosed up**
- **If you discover an unmanned dredger that is not hosed up you should take steps to rectify this.**
- **Cleaning the 50 series conveyors road closure**

Fire Training/Fire Season

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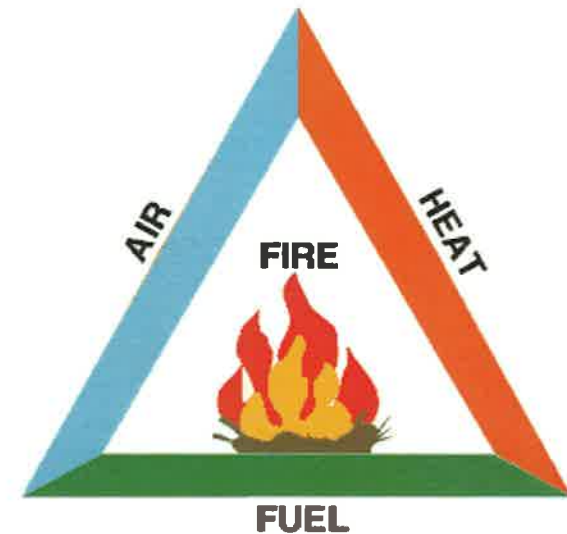
When do employees do Fire Training?

- **Annually – Prior to the start of the Declared Fire Season.**
- **Declared Fire season is worked out on a formula taking in to consideration weather predictions and history.**

How does fire work?

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- 3 Elements required for fire.
- Fuel, Oxygen, Heat.
- These 3 items in the right combination have potential to be a fire.
- Remove one item and the fire goes out.



When is a Hot works Permit Required?

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Any person wishing to operate a petrol motor or conduct Oxy Cutting, Welding, Grinding and Heating within the Mine boundary or within the Hazelwood Coal Bunker MUST obtain a Fire permit from the 1x7 Services Supervisor or Shift Supervisor prior to work commencing anytime during the year.

What is a Total Fire Ban Day?

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This is a day declared by the Country Fire Authority of Victoria where it is prohibited to light a fire in the open air.

Dispensation can be granted from the CFA on application by the Director Of Mining.

What is a Fire Alert?

- A Fire Alert is a day of extreme heat and high winds declared by either the Director of Mining, Mine Production Manager or 1x7 Services Supervisor.
- Red lights will be turned on all Dredgers, Stacker, Control Centre Building, Ditch Bunker (3 Transfer house) & Fire Service Office.
- Notification will be in the form of a recorded radio message or mobile phone text message. The radio message will be broadcasted every 15 minutes for the first hour then every half hour there after until the alert is called off. A called off message is repeated every 15 minutes for an hour then all the above are turned off.

What is a Fire Alert? cont.

- **On this day all vehicles are prohibited on coal except with permission from the 1x7 Services Supervisor.**
- **Only Essential Operational Personnel will be allowed on coal area's. All vehicles (4x4, Dozer) must be inspected for fire after use or every hour throughout the Fire Alert Period.**
- **All Maintenance within the Mine including Burning, Cutting, or Welding is to stop immediately.**

Who To Call When We Have A Fire/Emergency

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- **Emergency/Fire Call extn.**
When Using mobile Phone
- **When travelling on coal the maximum allowable speed is**
15Kmh
- **Smoking or the carrying of cigarettes below grass level is.....**
Prohibited

What is available to fight a fire?

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Reticulated Water System

Clean Water System – Artesian water

Dirty Water System - Reclaimed water

Mine Fire Tanker

Mine Slip on Fire tanker

Contractor Tankers, CFA

Hydrants & Rotary Sprays

Fire Extinguishers (four types)

Percolating Hoses

Knapsacks

People

Where is the equipment?

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Located Within All Mine Vehicles

2 x 38mm x 30m Percolating Fire hoses

1 x 16 litre Knapsack (full of water)

Nozzle with Branch

**Hoses/Equipment Located At Designated
Areas**

All Dredgers, Hose Trailers & Fire Service depot

Equipment on Mobile Plant

**Foam extinguisher Dry Chemical in cabin & 1x 19mm
hose**

What Not to do!

- 1. Don't fight electrical fires with a water based extinguisher.(Foam)**
- 2. Don't hit a coal or oil fire with a straight or direct jet of water.**
- 3. Don't stand directly over a fire hydrant or rotary spray!**

How to use fire equipment safely?

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- Know what you are about to do!
- Stop
- Think
- Don't Panic
- Work out a plan of attack
- What equipment and method to use

Lanzoni Skipper/Bauer Spray Operation

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Ensure Upper body is well away from Top Of Hydrant Spray

Keep Upper Body Clear Of Designated Area



Slowly Turn Spray On. One hand on the Nozzle and the other hand on the Valve. Ensure Upper body remains well away from top of spray



Once in full Operation Stand Back & Walk Away

Operating Deluge Valve Remotely

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Typical Deluge valve
Located At The Coal Face



Looking Down The
Length Of The Conveyor
Valve Supplying Water To
The 300mm F/Service
Pipe, Hydrants & Sprays

Turning Valve ON



Water Release from
Drain pipe Valve
Turning
ON

Turn Ball Valve *ON*
Depressurize Valve To
Allow Water flow

Turning Valve OFF



No Water Release
from Drain pipe
Valve Turning
OFF

Turn Ball Valve *OFF*
Pressurize Valve To
Stop Water flow

Setting Up Portable sprays

Correct Set Up



Portable Spray Set Up
Correctly Preventing
Spray From Tipping Over

Incorrect Set Up

Portable Spray Set Up
Incorrectly Potentially
Causing the Spray to Tip
Over



Typical Fire Fighting Equipment

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Spray



Percolating Hose



Non Percolating Hose



Branch / Nozzle



Knapsack



Fire Hose Reel



Mobile Tank



Hydrant



Y Branch

Typical Fire Fighting Equipment

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Emergency Response Trailers



Fire Tankers



Portable Monitors



Slip On Tankers

New Fire Fighting Equipment

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Thermal Imaging Camera



Portable Monitors

Carbon Monoxide Monitors

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Monitor Will Be Pre-Set To
Predetermined CO Limits
Emitting Audible Warning
Alarm

Nominated Observer To
Have Monitor Clipped
Below Shirt Collar
Monitoring Air Quality

Gas Monitors Pre Set At 30ppm Lower Limit – 8 hrs exposure
200ppm Upper Limit – 2-3 hrs exposure

Carbon Monoxide Properties

- **Carbon monoxide: chemical formula is CO**
- **Colourless, odourless & tasteless gas**
- **Relative Vapour Density of CO (Air = 1): 0.96**
- **Similar weight and density to air means that if the area is poorly ventilated, CO does not dissipate**
- **CO can be extremely high in one area and be completely absent in another**

| PPM | Exposure | Symptoms |
|------|----------|------------------------------|
| 25 | 8hrs | No Effect |
| 35 | 8hrs | No Effect |
| 200 | 2-3 hrs | Headaches and Nausea |
| 400 | 1-2 hrs | Severe headaches and nausea |
| 800 | 45min | Unconsciousness |
| 1600 | 20min | Death will occur within 1 hr |

Mine Carbon Monoxide (CO) Management Plan

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- **Initial Response Teams Attending A Coal Fire Will Require a CO Monitor present within the first 45min of the initial Fire Response**
- **A Nominated Observer will be appointed to the fire crew constantly moving within the fire Crew area Monitoring the Air quality.**
- **Gas Monitors pre set at 30ppm Lower Limit – 8hrs exposure. 200ppm Upper Limit – 2 to 3hrs exposure**

Mine Carbon Monoxide (CO) Management Plan cont.

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- **Work duration's will be adjusted according to results & if Upper Limit of 200ppm is reached immediately leave.**

- **Symptoms of Mild Headache, Fatigue, Nausea and Dizziness are to be Reported immediately to your Supervisor & First Aid.**

- **Monitors are located:**
 - Out side the reception window in the mine office
 - In the control center
 - In the emergency trailers

CFA Findings at Morwell

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Atmospheric Monitoring Conducted During October 2006 Fires:

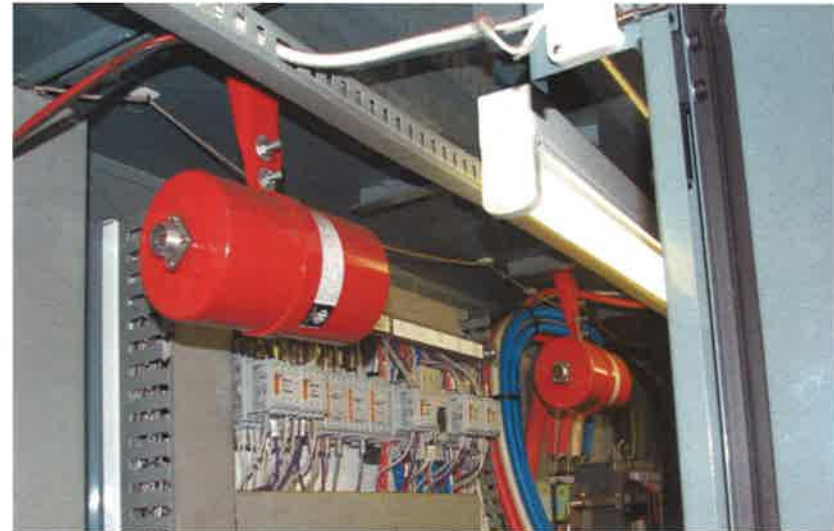
- High levels of CO in Air
- Wind direction (trapping and directing smoke and gas into pit)



Pyrogen Fire Protection of Electrical Equipment

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- These are solid (not pressurised) units designed to extinguish a fire in a small defined area.
- The units are installed in electrical cubicles throughout the mine.
- The number and size of the units has been designed to match the volume of the electrical cubicle.



Hazelwood Coal Bunker

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Pressure Gauge Located on Western Wall of Bunker



Valve spray lines located throughout the bunker
















Bunker Ceiling Mist Sprays Located At North & South ends of Bunker



Spray lines & hydrants located on top of bunker roof line



What Extinguishers do we have in the Mine?

|  Fire Protection Association Australia | | Portable Fire Extinguisher Guide | | | | | Fire Protection Association Australia Website www.fpaa.com.au | | |
|--|---|---|---------------------|--|---|---|---|--|--|
| | | CLASS A | CLASS B | CLASS C | CLASS E | CLASS F | CLASS D For fire involving combustible metals use special purpose extinguisher | | |
| Two colour schemes for fire extinguishers exist | | EXTINGUISHANT | Wood Paper Plastics | Flammable & Combustible Liquids | Flammable Gases | Electrically Energised Equipment | Cooking Oils and Fats | | |
| PRE 1999 | FROM 1999 | | | | | | | | |
| * |  |  | WATER | YES | NO | NO | NO | NO | Dangerous if used on flammable liquid, energised electrical equipment and cooking oils/fat fires |
| |  |  | WET CHEMICAL | YES | NO | NO | NO | YES | Dangerous if used on energised electrical equipment |
| * |  |  | FOAM | YES | YES | NO | NO | LIMITED | Dangerous if used on energised electrical equipment |
| * |  |  | POWDER | YES <small>(ABE)</small> NO <small>(BE)</small> | YES <small>(ABE)</small> YES <small>(BE)</small> | YES <small>(ABE)</small> YES <small>(BE)</small> | YES <small>(ABE)</small> YES <small>(BE)</small> | NO <small>(ABE)</small> LIMITED <small>(BE)</small> | Look carefully at the extinguisher to determine if it is a BE or ABE unit as the capability is different |
| * |  |  | CARBON DIOXIDE | LIMITED | LIMITED | LIMITED | YES | LIMITED | Not suitable for outdoor use |
| |  |  | VAPORISING LIQUID | YES | LIMITED | LIMITED | YES | NO | Check the characteristics of the specific extinguishing agent |

LIMITED indicates that the extinguishant is not the agent of choice for the class of fire, but that it may have a limited extinguishing capability.
Solvents such as alcohol or acetone mix with water and therefore require special foam
Green text indicates the class or classes in which agent is most effective

How to use a Fire Extinguisher

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- Inspect to ensure the tamper tag is in place and then use PASS.
- **P**ull the pin
- **A**im at the fire
- **S**queeze the handle
- **S**weeping motion

Booster Pump

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Outlet 2X 64mm
hoses

Inlet 2X 90mm
hoses

Booster Pump

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Don't forget the Pre Start Check

Fire Tanker (EX CFA)

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- Turn on the battery isolator
- Pull the on off switch to the on position
- Press the start button to start motor
- Increase the pump engine speed to increase water pressure



Battery Isolator



Open valve to fill tank



Press to start engine

Pull to turn on ignition

37 C 151



This valve turns on the live hose reel



This valve directs water to the rear outlets or all outlets



Questions?

Fire Tanker
operation