PRE-EMERGENCY PLANNING

Ruben Els

Director – Operational Risk Services

Riskonet

Pre-Emergency Planning

What is pre-emergency planning?

- Planning for the unfortunate event
- What does it involve?
  - Preparation of a plan
  - Training staff
  - Conducting drills

NOTICE IN CASE OF FIRE

IF YOU DISCOVER A FIRE

1. **Immediately notify your Fire Marshal or his deputy.**
2. **With the aid of a second person ATTACK the fire with a fire extinguisher or hose reel. DO NOT PLACE YOURSELF IN DANGER THE FIRE MARSHAL AND STAFF APPOINTED WILL: 1. Ensure that the fire brigade is called. FIRE BRIGADE No..... NB: It is imperative that the fire brigade is called as soon as possible. In the absence of the Fire Marshal or deputy, any staff members should make the call.**
3. **Start the Fire Alarm Procedure.**
4. **Direct staff and visitors to available exits if necessary. ALL STAFF If you are told to leave the building - go quickly using the main exit. If this route is blocked, go out using the BLUE route into Market Street. Do not use the lift. When you are out of the building assemble in the open area opposite the main entrance in Market Street. DO NOT RE-ENTER THE BUILDING FOR ANY REASON.* YOUR FIRE MARSHALS ARE:**
5. **Fire Marshal: Mr Len Sparks (Extension 203) Deputy: Mr George Jones Fire Brigade:**


5

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MAHAI GAS


EXCEL HARDWARE


DIESEL
CALTEX

Pre-Emergency Planning

Def: NFPA 1620: Standard for Pre-Incident Planning

Written document resulting form the **gathering** of general and detailed **data** to be **used** by **responding personnel** for **determining** the **resources** and **actions** necessary to mitigate **anticipated emergencies** at a **specific facility**.

Pre-Emergency Planning

IFSTA – International Fire Service Training Association

Def: Advance planning of **fire-fighting** operations at a **particular location,** taking in to account **all factors** that will influence fire-fighting operations.

Pre-Emergency Planning

Fire Chief Alan V Burnacini - Def

Written analysis of a **particular building** in terms of **size, hazards** and **build-in protection.**

Objectives

- Collect information to be integrated in a detailed Incident command system.
- Direct attention to features that will affect tactical decisions.
- To develop a flexible plan of attack.
- To get operations of to a predicable start.
- To take the guess work out of the response.
- Will allow for immediate and predictable actions to provide Incident Commander time to evaluate and develop a comprehensive plan.
- Plan for the most effective use of resources.
- Primary planning is a management function that analyses the hazards and applies resources needed based on the probability of occurrence.
- Identify hazards and response limitations.
- Must be useful information for responding personnel.
- Save lives, protect property & reduce losses.

Fire Risk Assessment

- Should consider:
  - All risks associated
  - Risks should be evaluated individually and collectively
  - Fuel load
  - Chemical & Physical properties
  - Special precautions of fuels (oxidizers)
  - Ignition sources
  - Means of fire spread
  - Structural features
  - Fixed fire protection

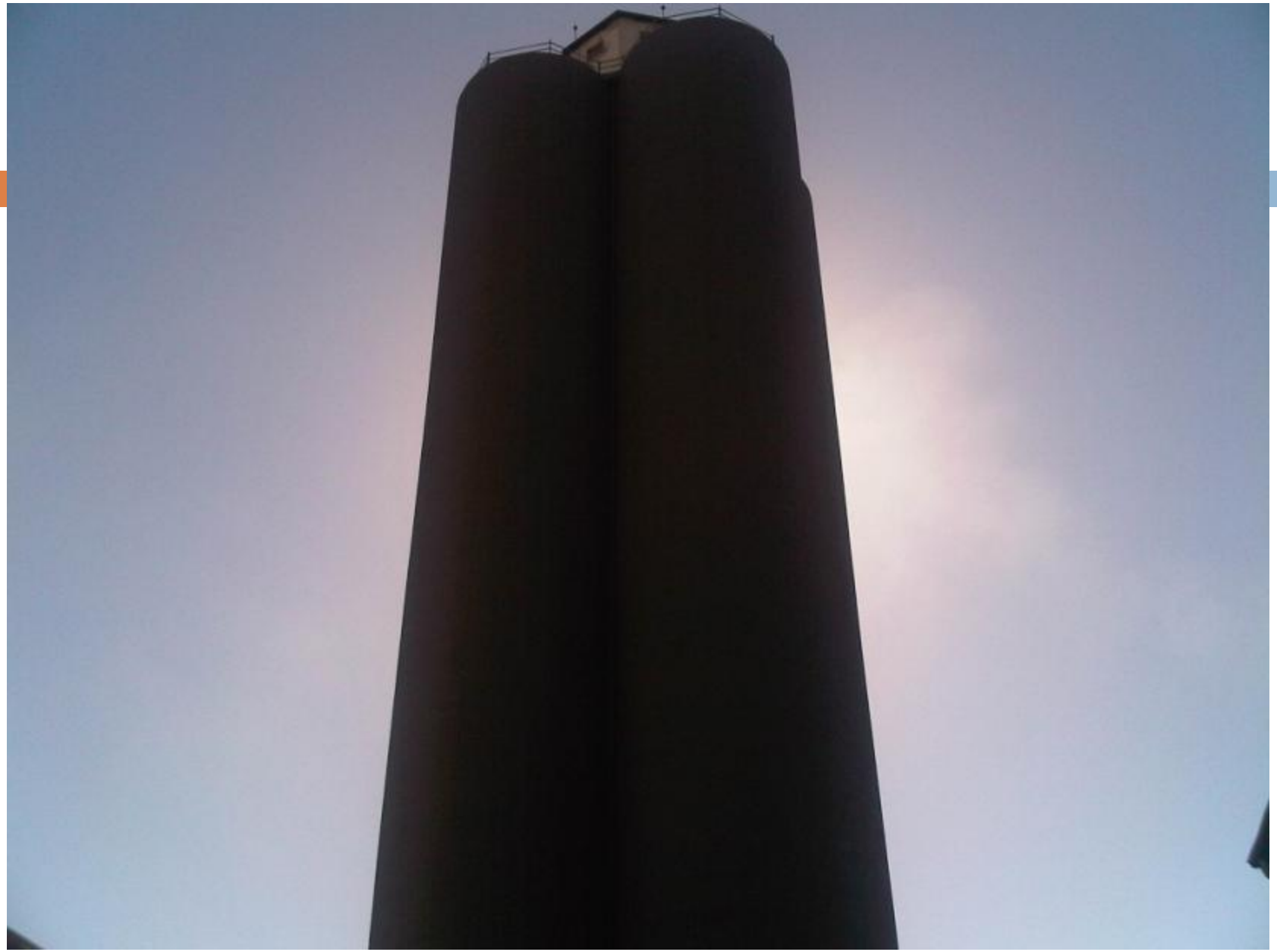
Fire Risk Assessment

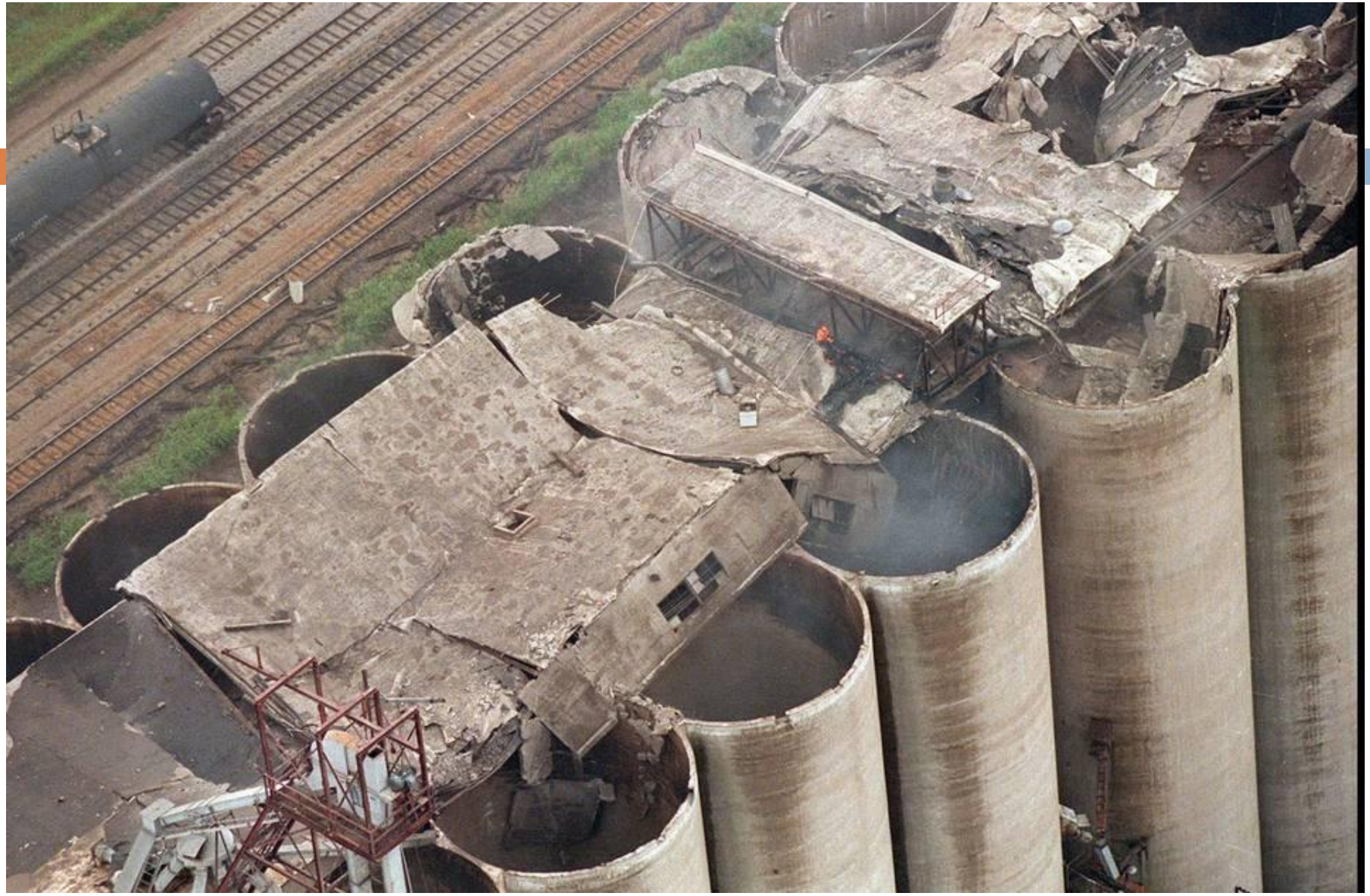
- Should consider:
  - Resources available
  - Resources required (water, foam, PPE etc.)
  - Interaction between systems
  - User responsibilities
  - Exposures
  - Environmental considerations
  - Effects to and from neighbours
  - Housekeeping
  - Location and response time of fire department
  - Staff training
  - Means of escape
  - Maintenance & testing


STOP


UNAUTHORIZED ENTRY PROHIBITED.
RESPONSIBLE PERSON: SAFETY OFFICER


PCB I VEL 4
13
08-OCT-08
200540686
6953-2






hth
TEST KIT
HYDROCHLORIC
POOL ACID
2 X 5 LITRE
EASY ACID
Granular Chlorine
PSP

Types of Risk Assessments

Ref.	Fire risks identified	Existing preventative measures	Priority	Recommendations	Actions taken
1.	**Jack Pod**				
1.1	Hose reel 54 is used for washing purposes.	Some dedicated points provided.	**M**	Prohibit the use of fire hose reels for washing purposes. Provide dedicated washing points. Make the hose up correctly through the run out guide.	
1.2	The current provision of emergency lights could not be assessed at the time of this assessment.	It was reported that there are emergency lights provided, linked to a battery backup and the generator.	**M**	These to be tested. Tests to include illumination levels and duration of the emergency lights. The lights to provide an illumination level of 0.3lux within 15 seconds.	

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Types of Risk Assessments

Element	Finding	Existing controls	Corrective recommendation	Estimated cost	Priority (H,M,L)	Probability rating	Severity rating without controls	Severity rating with existing controls	Risk Value
Transformer 1									
1.1 Fire	There is a 1 600kVA transformer. The transformer has been placed in a bunded room with a concrete roof. The ventilation system has been provided with a fire damper and the cable openings have been fire stopped. The fire separation is however compromised as there are some unprotected openings and a steel column that supports part of the plant roof. This is currently the only onsite transformer. The transformer is fitted with any fixed fire detection systems. The detection panel in security was	The transformer has been placed in a bunded room with a concrete roof. The ventilation system has been provided with a fire damper and the cable openings have been fire stopped. The transformer is provided with over temperature controls to regulate and control high temperatures. The transformer is provided with “Bucholtz relay”, to prevent over pressurization. In addition the transformer is fitted with protective breakers on either side of the transformers. These include over current and inrush protection.	All opening communicating with the substation should have at least a 2 hour fire resistance. This must be extended to include the steel Column within the transformer room. Continue with preventative maintenance and monitoring. Reinstate the fire detection system as soon as possible. Prevent the storage of combustibles in close proximity to the entrance to the room. Ensure that the contingency plan is reviewed at intervals not exceeding once per annum. Ensure the availability of the correct transformer as stated by the plan.	R 10 000	**M**	5	9	8	40

Consequence Types						
Financial Loss	Health and Safety	Natural Environment	Social / Cultural Heritage	Community / Govt. Reputation / Media	Legal	Severity Score
More than R 100 M	Multiple fatalities, permanent occupational disability, or disease.	Very significant impact on highly value species, habitat or eco system.	Irreparable damage to highly valued items of great cultural significance or complete breakdown of social order.	Prolonged international condemnation.	Potential jail terms for executives and or very high fines for company. Prolonged, multiple litigation.	10
R 50 M - R 100 M	Single fatality, occupational injury, or disease.	Significant impact on highly valued species, habitat, or ecosystem.	Irreparable damage to highly valued items of cultural significance or breakdown of social order.	International multi-NGO and media condemnation.	Very significant fines and prosecutions.	9
R 1 M - R10 M	Injury: Medical treatment and/or hospitalisation and more than 14 days lost.	Long-term environmental impairment of ecosystem function.	Widespread social impacts. Irreparable damage to highly valued items.	Moderate public or media outcry (international coverage).	Significant prosecution and fines.	7
R500 000 - R 1 M	Injury: Medical treatment and/or hospitalisation and less than 14 days lost.	Serious medium term environmental effects.	Significant damage to significantly valuable items.	Significant adverse national media / public / NGO attention.	Very serious litigation, including class actions.	6
R 100 000 - R 500 000	Injury: Medical treatment and less than 14 days lost.	Medium term environmental effects.	On-going serious social issues. Significant damage to structures / items of cultural significance.	Adverse national media / public / NGO attention.	Major breach of regulation. Major litigation with prosecution and/or moderate fine possible.	5
R 50 000 - R 100 00	Injury: Medical treatment with no days lost.	Moderate effects affecting ecosystem function.	Ongoing social issues. Permanent damage to items of cultural significance.	National media / public / NGO attention. Criticism by NGOs.	Serious breach of regulation with investigation or report to authority.	4
R 10 000 - R 50 000	No or only minor personal injury; First aid needed but no days lost.	Short-term effects but not affecting ecosystem function.	Moderate medium-term social impacts on local population. Partly repairable.	Attention from media and /or heightened concern by local community.	Moderate breach of regulation with investigation or report to authority.	3
Up to R 10 000	No or Minor Personal Injury: no treatment required.	Minor effects on biological or physical environment.	Minor medium-term social impacts on local population. Mostly repairable.	Minor, adverse local public or media attention and complaints.	Minor legal issues, non-compliances, and breaches of regulation	2
<R 1 000	No medical treatment required.	Limited damage to minimal area of low significance.	Low-level repairable damage to commonplace structures.	Public concern restricted to local complaints.	Low-level legal issue.	1

Risk Assessments

What should a Risk Assessment achieve?

- Ensure that all hazards are identified
- Ensure that action plans are developed to reduce the risk
- Ensure that plans are developed to manage the risk
- Evaluate existing action plans
- Ensure that action plans are developed or updated
- Improve staff awareness
- Make it a safer site

RISKONET

When should RA be conducted?

Information to be Included

- Address/location
- Available water for fire fighting
- Fixed fire detection and suppression systems
- User responsibilities when the system/s are activated
- Predicted behavior
- Strategy
- Problems/special requirements
- Hazards to personnel
- Site plan

Information to be Included

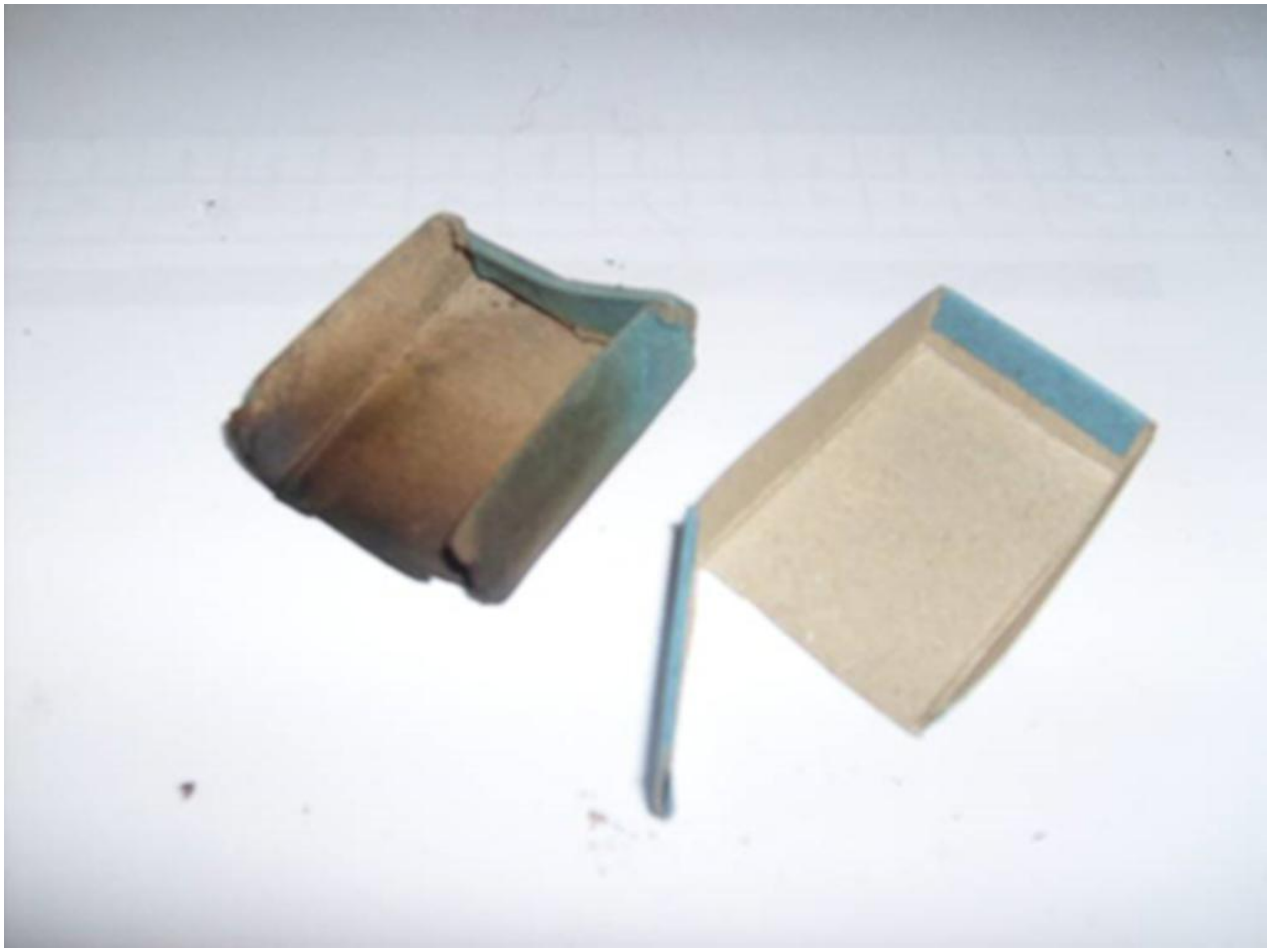
- Floor plan
- Utilities
- Location of shut-off valves
- Environmental factors
- Exposures
- Resources available
- Resources required
- Number of staff
- Fire department contact details
- Specialist contact details

Steps to develop a Plan

- Collecting information
- Analyzing information
- Developing a plan
- Considering all factors, “what if”?
- Testing and review
- Communication/Drills

Additional Considerations

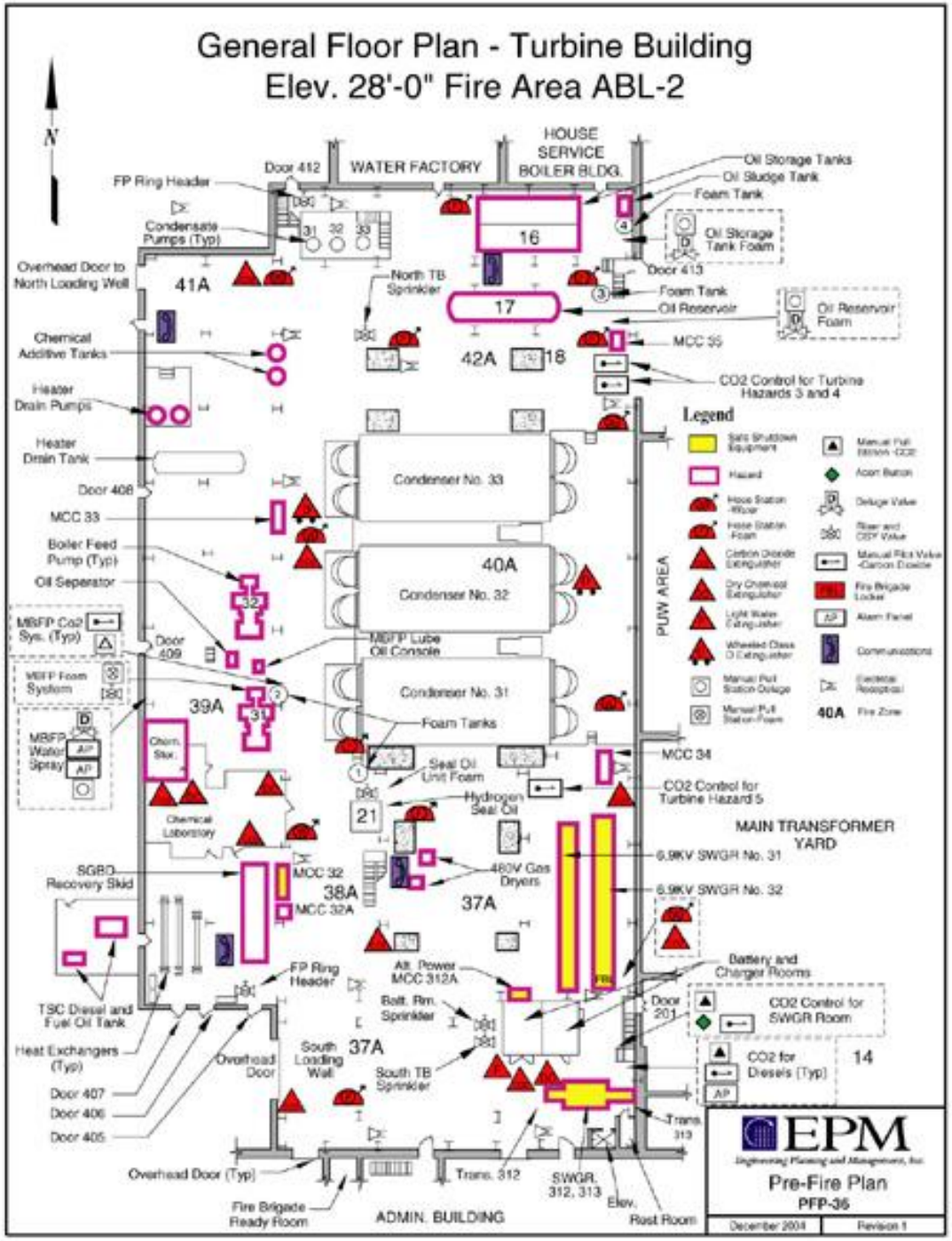
- Must be readily available
- Regular drills and reviews
- Comprehensive but easy to follow
- Salvage and recovery plan
- Post loss assessment
- Business contingency plan (BCP)




SAFETY MATCHES
LION

Purpose

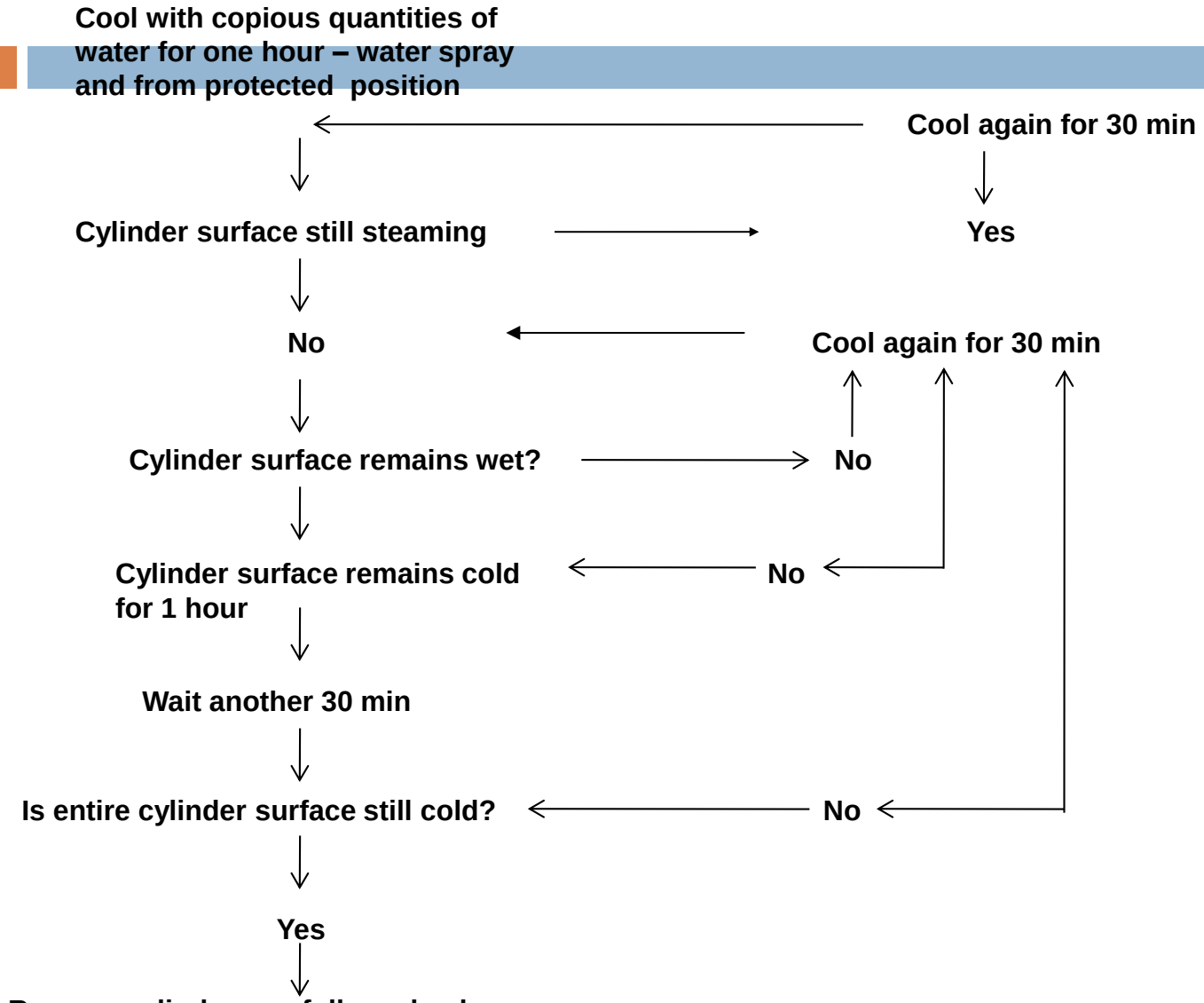
- Assessment tool to measure the level of preparedness.
- Ensure that all hazards are identified.
- Ensure that all hazards adequately protected.
- Reducing overall risk.
- Ensure in the event of a fire it will be controlled.
- Current plans are reviewed and updated.
- Reduces the response time.
- Improves the effectiveness of a response in the event of a fire.
- Improves general awareness.
- Save lives, protect property & reduce losses.


General Floor Plan - Turbine Building
Elev. 28'-0" Fire Area ABL-2
N
HOUSE SERVICE BOILER BLDG.
WATER FACTORY
Door 412
FP Ring Header
Condensate Pumps (Typ)
Overhead Door to North Loading Well
41A
North TB Sprinkler
16
17
Oil Storage Tanks
Oil Sludge Tank
Foam Tank
Oil Storage Tank Foam
Door 413
Foam Tank
Oil Reservoir
Oil Reservoir Foam
MCC 35
42A
18
CO2 Control for Turbine Hazards 3 and 4
Chemical Additive Tanks
Heater Drain Pumps
Heater Drain Tank
Door 408
MCC 33
Boiler Feed Pump (Typ)
Oil Separator
MBFP Co2 Sys. (Typ)
Door 409
MBFP Lube Oil Console
MBFP Foam System
MBFP Water Spray
39A
Chem. Stor.
Chemical Laboratory
Condenser No. 33
40A
Condenser No. 32
Condenser No. 31
Foam Tanks
Seal Oil Unit Foam
Hydrogen Seal Oil
21
MCC 34
CO2 Control for Turbine Hazard 5
PUW AREA
MAIN TRANSFORMER YARD
6.9KV SWGR No. 31
6.9KV SWGR No. 32
480V Gas Dryers
37A
SGBD Recovery Skid
MCC 32
38A
MCC 32A
Alt. Power MCC 312A
Batt. Rm. Sprinkler
Battery and Charger Rooms
Door 201
CO2 Control for SWGR Room
CO2 for Diesels (Typ)
14
FP Ring Header
TSC Diesel and Fuel Oil Tank
Heat Exchangers (Typ)
Overhead Door
South Loading Wall
37A
South TB Sprinkler
Door 407
Door 406
Door 405
Trans. 313
Overhead Door (Typ)
Trans. 312
SWGR. 312, 313
Elev.
Rest Room
Fire Brigade Ready Room
ADMIN. BUILDING
Legend
Safe Shutdown Equipment
Hazard
Hose Station -Water
Hose Station -Foam
Carbon Dioxide Extinguisher
Dry Chemical Extinguisher
Light Water Extinguisher
Wheeled Class D Extinguisher
Manual Pull Station-Deluge
Manual Pull Station-Foam
Manual Pull Station-CO2
Alarm Bell
Deluge Valve
Riser and OSY Valve
Manual Pilot Valve -Carbon Dioxide
Fire Brigade Locker
Alarm Panel
Communications
Electrical Receptacle
40A Fire Zone
EPM
Engineering Planning and Management, Inc.
Pre-Fire Plan
PFP-36
December 2004
Revision 1


907


Front of boat
Rear side
van panel

Cooling acetylene cylinders heated by fire



Emergency Planning Manual

1. Overview
2. Mitigation
3. Preparedness
4. Response
5. Recovery
6. Post lincident Review
7. Responsibilities
8. Contact List
9. Fire Safety Training Programme
10. Fire Safety Training Record
11. Fire Safety Management Structure

Emergency Planning Manual

FIRES IN GRAIN SILOS
GRAIN SILOS DUST EXPLOSIONS
GRAIN SILOS EVACUATION AND RESCUE
BUNKERS
CONVEYING SYSTEMS AND MECHANICAL EQUIPMENT
STORES
OFFICES AND COMMUNAL AREAS, MEETING HALLS, CANTEENS, AND KITCHENS
WORKSHOPS
ELECTRICAL TRANSFORMERS, GENERATORS AND RELATED ELECTRICAL EQUIPMENT
GRAIN DRYING EQUIPMENT
LPG STORAGE FACILITIES
SERVICE STATIONS AND FLAMMABLE LIQUID STORAGE
COAL BUNKERS FACILITY
VEHICLES
VEGETATION

Conclusion

- Gather info
- Develop strategies
- Test strategies
- Apply tactics
- Communicate
- Test & review

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Conclusion

- Well developed emergency plans:
  - Be divided into 3-timelines
    - Before and emergency
    - During an emergency
    - After an emergency

  Pre-emergency
  - Ensure all hazards have been identified
  - Ensure all hazards are being managed
  - Adequate means of protection has been provided
  - Guide to manage risks
  - Fires/emergencies will be reduced and prevented
  - Management is aware of the strategy and limitations
  - Emergency responders are aware of their actions required and other interactions required

  Durning and emergency
  - Comprehensive plans and procedures to guide the management and staff

  After an emergency
  - Actions required, salvage & recovery, who to inform, post loss assessments
  - Details of the Business Recovery Plan (BCP)

Questions

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