



# MANAGING WORKPLACE AND ENVIRONMENTAL RISK THROUGH THE MAJOR HAZARD FACILITIES REGULATIONS

GEOFF TAYLOR – DEPUTY CHIEF INSPECTOR – MAJOR HAZARD FACILITIES ENVIRONMENTAL COMPLIANCE CONFERENCE

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# ROLE OF WORKSAFE NEW ZEALAND

- WorkSafe is New Zealand's Health and Safety Regulator
- Formed following the Pike River Disaster
- Principal legislation is the Health and Safety at Work Act 2015

# ROLE OF HIGH HAZARDS UNIT

- High Hazards Unit formed within WorkSafe to better regulate activities which have high potential consequences if things go wrong
- The High Hazards Unit includes Extractives, Petroleum and Geothermal, and Major Hazard Facilities teams
- Health and Safety at Work (Major Hazard Facilities) Regulations 2016

# WHAT IS A MAJOR HAZARD FACILITY?

- A facility that WorkSafe has designated as either an **upper tier** or **lower tier** major hazard facility depending on the quantity of **specified hazardous substances**

Product	Lower Tier (tonnes)	Upper Tier (tonnes)
Petroleum Products	2,500	25,000
LPG	50	200

# HIGH LEVEL REQUIREMENTS FOR MHFS

- Safety Assessment
- Implementation of Controls
- Emergency Response Plan
- Safety Management System
- Safety Case for Upper Tier MHFs

# BUNCEFIELD, UK 2005



# SAFETY ASSESSMENT

- MHF Regulations require all major hazard facilities to undertake a safety assessment
- A safety assessment is a documented, comprehensive, and systematic investigation and analysis of all health and safety risks associated with major incident hazards
- Risk includes likelihood and consequence

# MAJOR INCIDENT

## 9 Meaning of major incident

(1) In these regulations, *major incident* means an **uncontrolled event** at a **major hazard facility** that—

(a) involves, or potentially involves, **specified hazardous substances**; and

(b) **exposes multiple persons** to a **serious risk** to their health or safety (including a risk of death) arising from an immediate or imminent exposure to—

(i) 1 or more of those substances as a result of the event; or

(ii) the direct or indirect effects of the event.

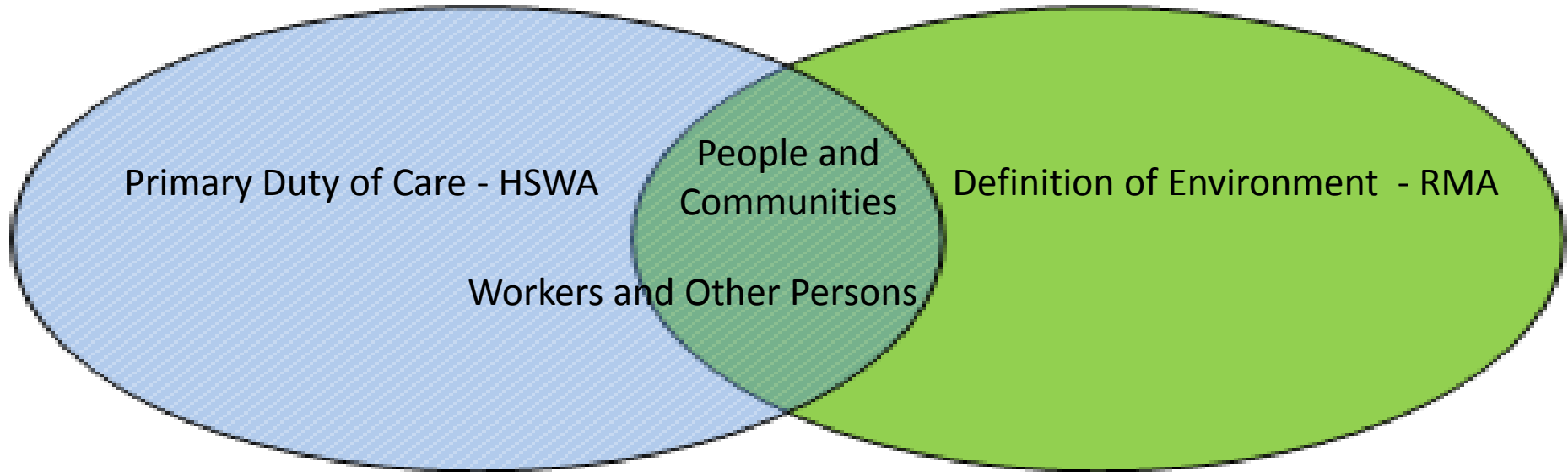
(2) Without limiting subclause (1), an **uncontrolled event** includes any of the following:

(a) escape, spillage, or leakage of a substance:

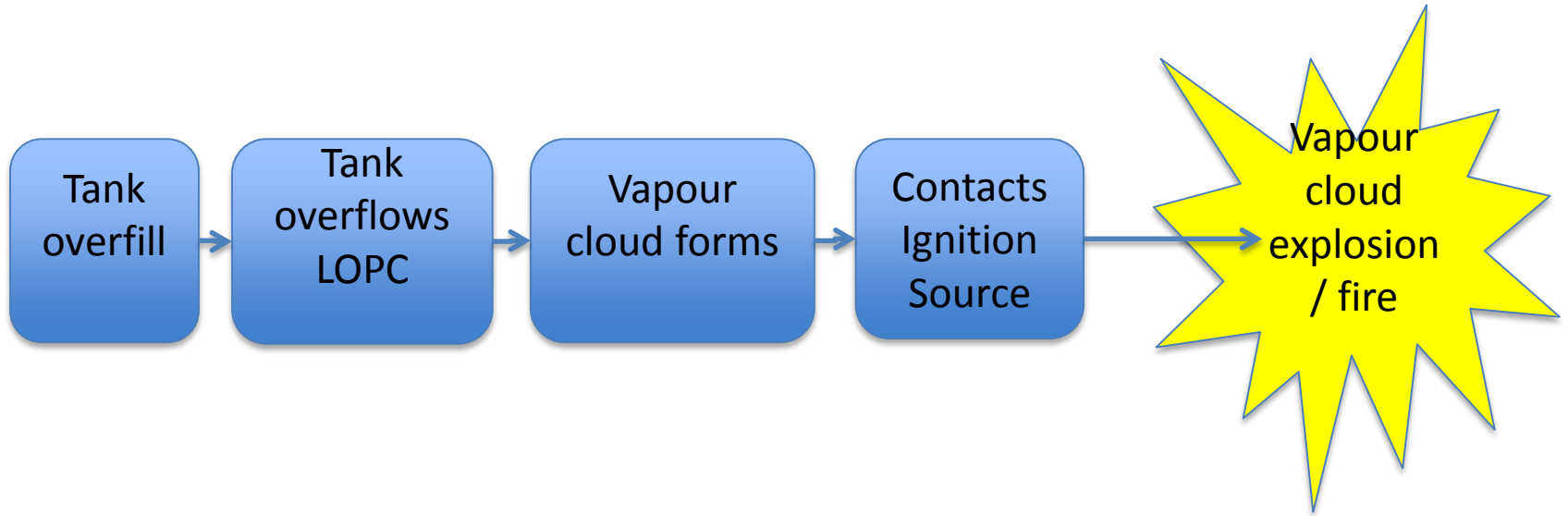
(b) implosion, explosion, or fire.



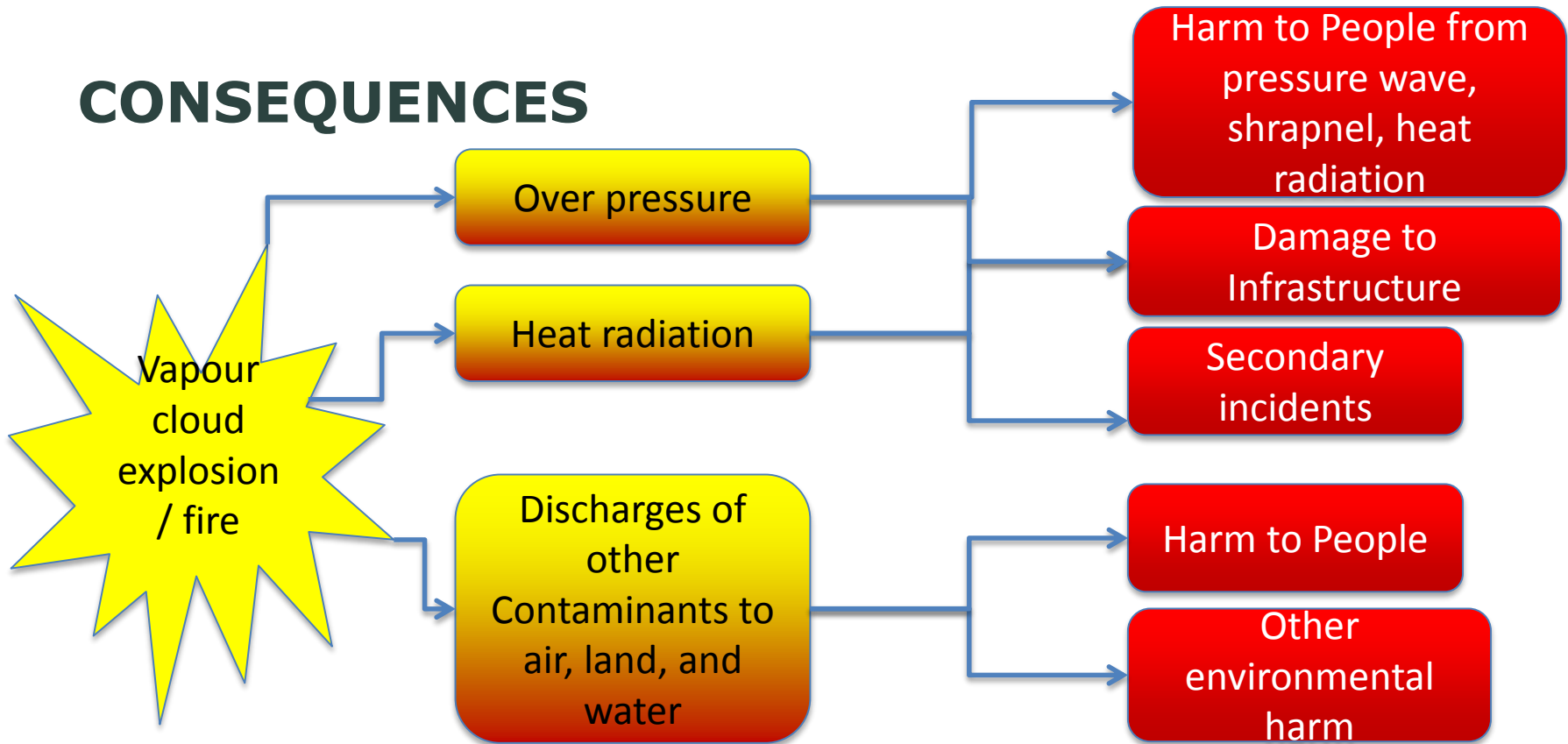
# COMMONALITY BETWEEN HSWA AND RMA



# IDENTIFICATION OF MI PATHWAY

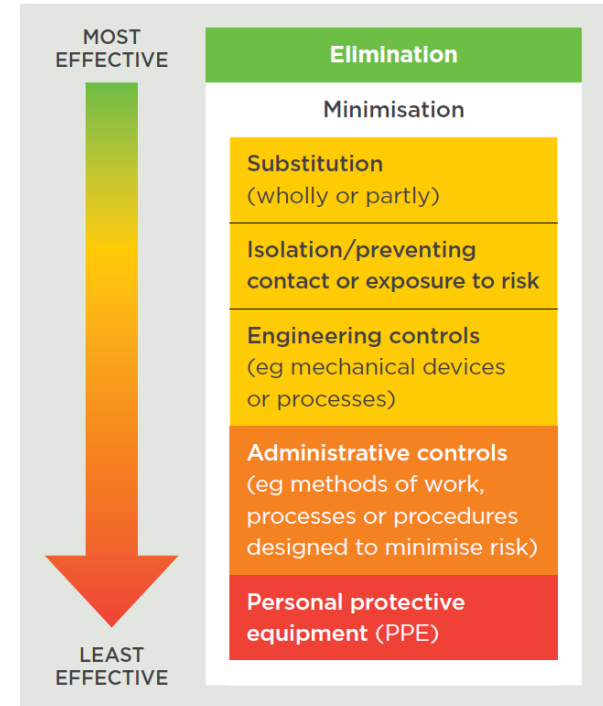


# CONSEQUENCES

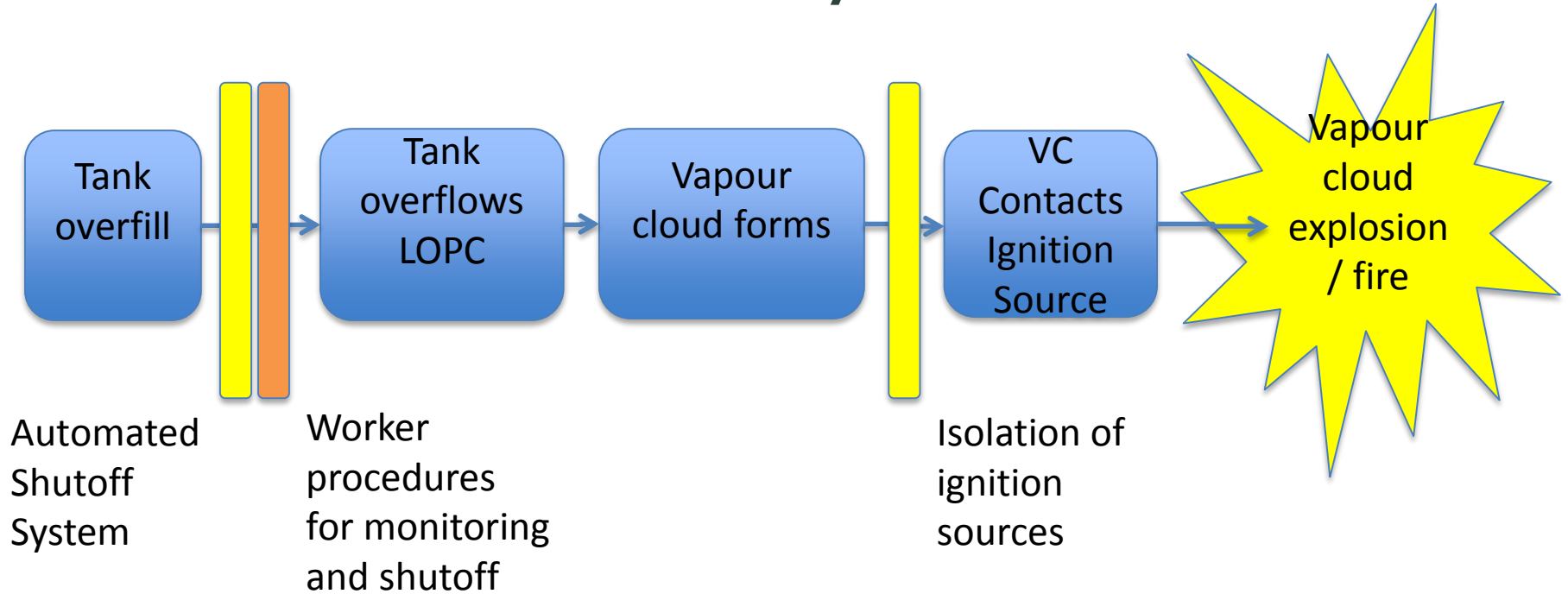


# IMPLEMENTATION OF CONTROLS

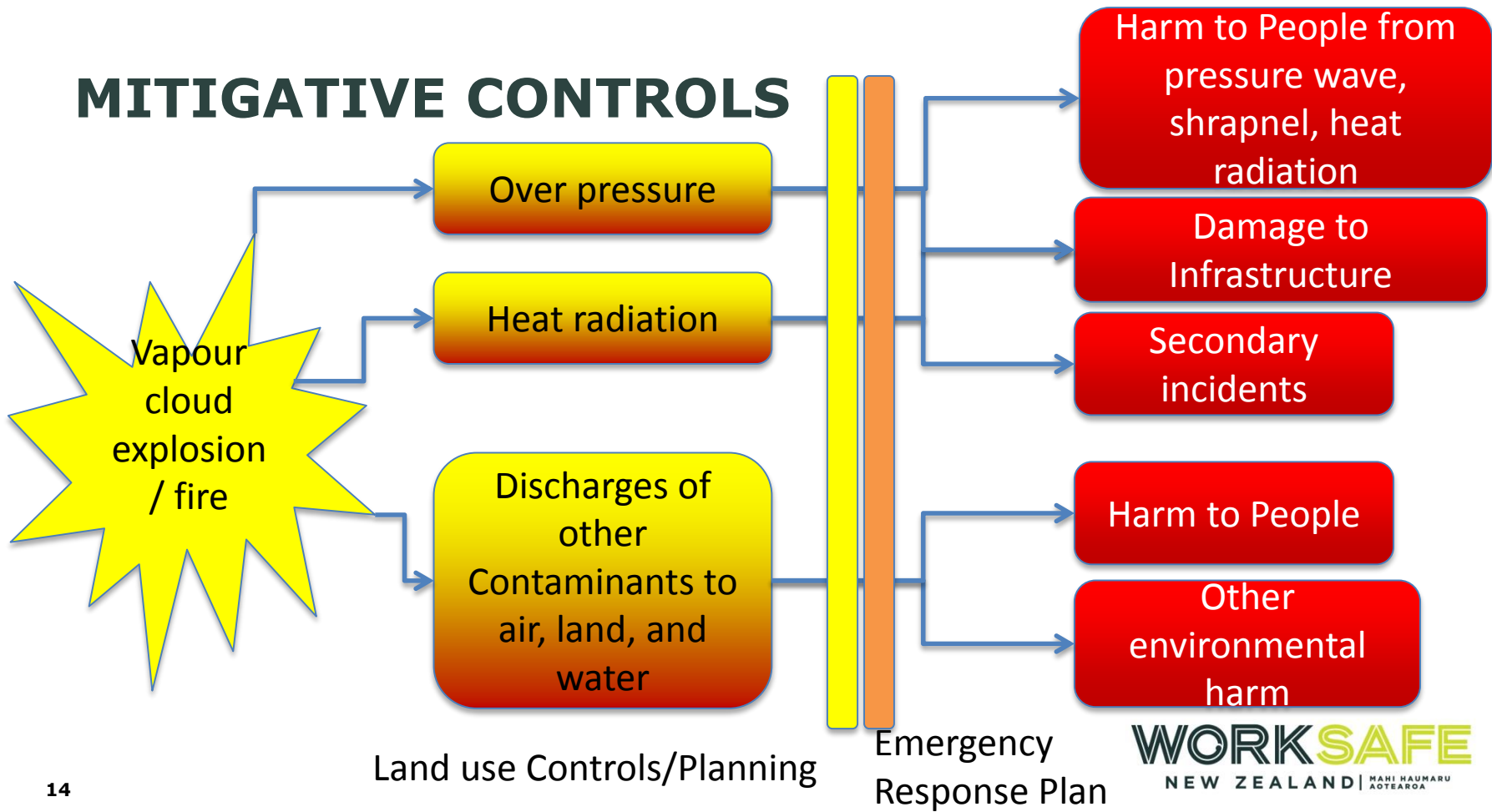
- MHFs required to implement controls
- These are ways to prevent incidents occurring or ways of mitigating consequences
- Controls can and do fail
- They need to be appropriate, independent, monitored, maintained, survivable and work when required



# PREVENTIVE CONTROLS/BARRIERS



# MITIGATIVE CONTROLS

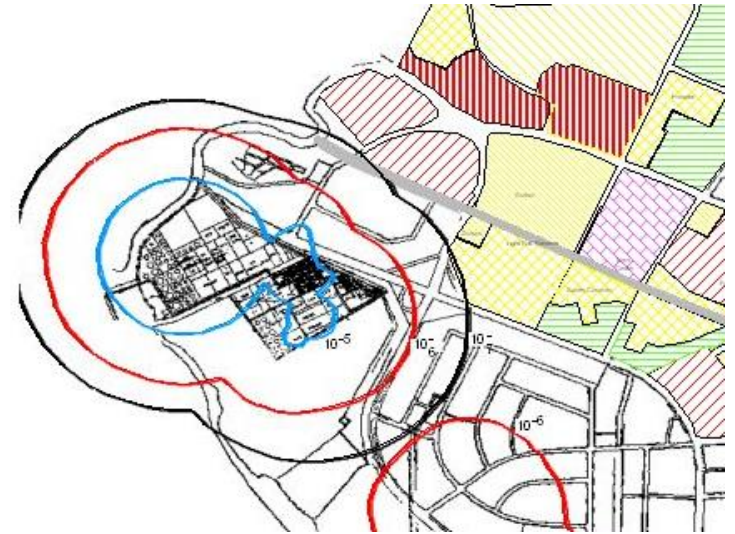
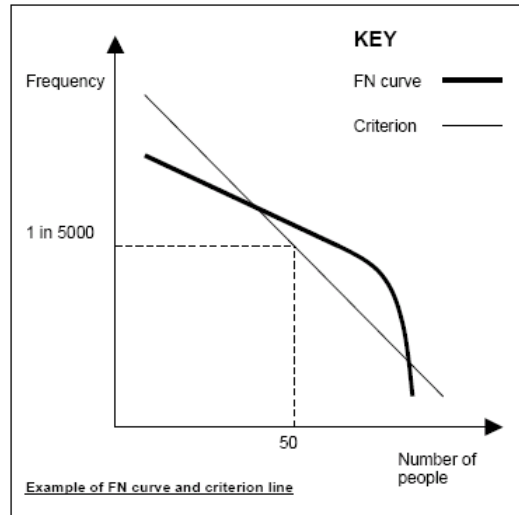


# MODELLING TO QUANTIFY CONSEQUENCE

- Consequences can be modelled:
- Overpressure – structural damage, effects on people
- Heat flux – health effects, secondary fires
- Atmospheric dispersion modelling for toxics

# QUANTIFIED RISK ESTIMATES

- Risk estimates generated for workers and other populations exposed to the incident(s)





# LAND USE PLANNING

- When it all goes wrong, distance between the hazard and people is one of the best defences
- Preventive controls can only go so far to make up for poor land use planning
- Getting it right depends on having the right information about risk to help guide decision makers

# EMERGENCY RESPONSE PLAN

- MHFs are required to prepare an extensive emergency response plan
- Consultation about the plan is required with local authorities and emergency services
- Duty to notify local community and local authority in the event of an MI

# KEY POINTS

- WorkSafe MHF Teams are focussed on protecting the health and safety of workers and other people around MHFs
- By helping to prevent incidents other environmental harm can be avoided
- More information is potentially available to support local authorities in land use planning and emergency management functions

# MORE INFORMATION

- Email: [hhu.mhf@worksafe.govt.nz](mailto:hhu.mhf@worksafe.govt.nz)
- Website: <http://www.worksafe.govt.nz/worksafe/information-guidance/guidance-by-industry/major-hazard-facilities>

**QUESTIONS?**

**EVERYONE WHO GOES TO WORK  
COMES HOME HEALTHY AND SAFE**

**WORKSAFE**  
NEW ZEALAND | MAHI HAUMARU  
AOTEAROA