QUEENSLAND AND NSW MINES RESCUE SERVICES

Emergency Mine Entry/Re-entry and Knowledge Management

Presenter

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Mines Rescue Pty Limited

TOPICS

- Experiences
- Managing the known unknown
- Legislation
- The Project.

EXPERIENCES

RECOMMENDATIONS

"Knowledge of conditions in a mine following an incident is essential in planning any rescue effort. Information systems must be provided to support implementation of the most appropriate rescue measures".

Moura No.2 Inquiry Task Group 4 Report

"Industry should develop an effective computer-based emergency decision support system for incident management and training".

- ***Recommendation 17 Moura No.2 Inquiry Task Group 4 Report***

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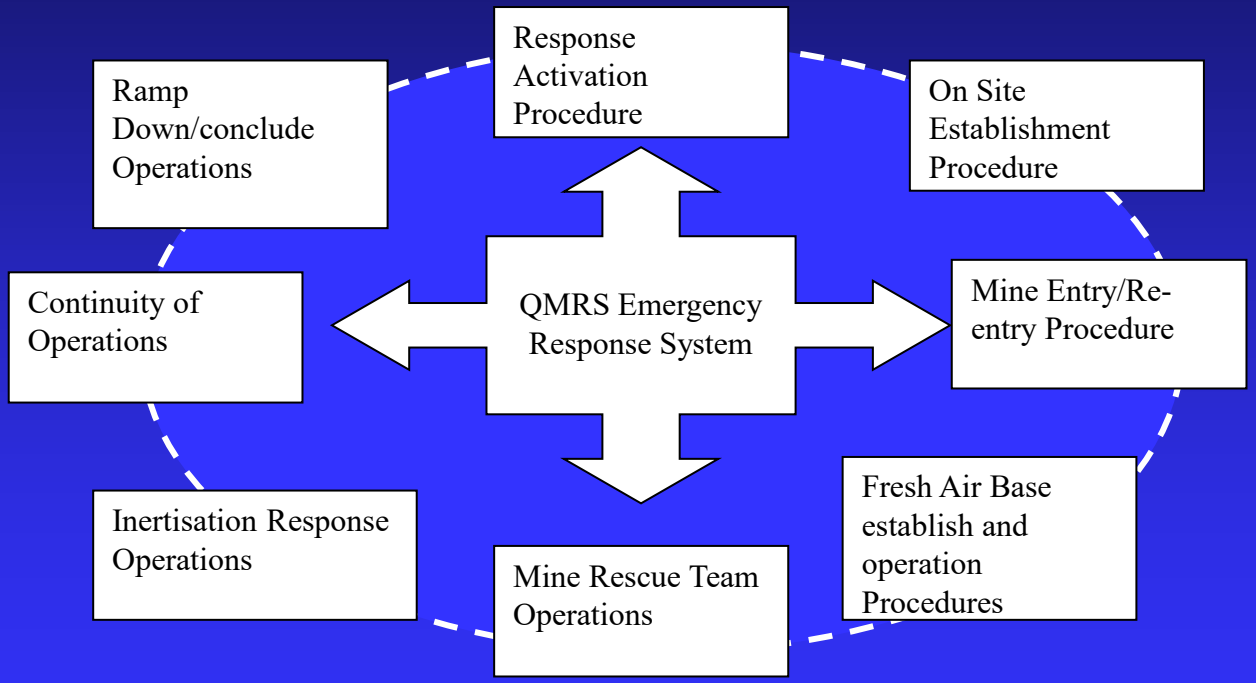
RECOMMENDATIONS

- *QMRS should formalise the guidelines by using a risk based approach to develop a set of mine re-entry TARPS based on explosibility rather than percentage of UEL and LEL of explosive gases.*

Grasstree Level 1 2007

MINES RESCUE EMERGENCY RESPONSE SYSTEM



MANAGING THE KNOWN UNKNOWN

- There are known knowns. These are things we know that we know. There are known unknowns. That is to say, there are things that we know we don't know. But there are also unknown unknowns. There are things we don't know we don't know.

Donald Rumsfeld U.S. Defense Secretary

MANAGING THE KNOWN UNKNOWN

Effective emergency response significantly depends on quantifying and mitigating the known-unknown risks (Un-quantified Hazards) within a constrained time.

MANAGING THE KNOWN UNKNOWN

Consequences and outcomes of a knowledge deficit;

1. Plans and Strategies are developed and implemented placing rescuers at an unacceptable level of risk.
2. Rescue operations are excessively delayed establishing information and facts resulting in;
   - Increased exposure of coal mine workers to the danger
   - Potentially compounding the extent of the danger and the likelihood of its consequence/s being realized.
3. Abandonment of any attempt of rescuing the coal mine workers.

LEGISLATION

CMSHA 219 Purposes of pt 13 Mines Rescue

The main purposes of this part are to—

(a) Ensure each coal mine operator of an underground coal mine provides a mines rescue capability for the mine; and

(b) provide for accreditation of corporations to help coal mine operators of underground coal mines provide a mines rescue capability; and

LEGISLATION

CMSHR 174 Mines rescue agreement

A mines rescue agreement for an underground mine must state the following—

(d) the operational procedures developed by the accredited corporation to be followed by the corporation in carrying out the mines rescue services at the mine.

LEGISLATION

CMSHA 273 Withdrawal of persons in case of danger

(1) If a coal mine is dangerous, all persons exposed to the danger must withdraw to a place of safety.

(6) The minimum number of competent persons necessary to reduce the risk to an acceptable level may be readmitted to the coal mine or part of the coal mine if appropriate precautions are taken so that the risk to those persons is within acceptable limits.

LEGISLATION

CMSHR 366 Withdrawal of persons in case of danger

(1) For section 273[53] of the Act, a part of an underground mine required to be ventilated under section 344(1)(b) that has a general body concentration of methane of at least 2.5% is taken to be dangerous.

(2) For section 273(6) of the Act, and without limiting the subsection—

(a) mines rescue trained persons are taken to be competent persons; and

(b) appropriate precautions are taken to have been taken if the persons are working under mines rescue procedures developed by an accredited corporation.

LEGISLATION

CMSHA 38 How obligations can be discharged if no regulation or recognised standard made

(1) This section applies if there is no regulation or recognised standard prescribing or stating a way to discharge the person's safety and health obligation in relation to a risk.

(2) The person may choose an appropriate way to discharge the person's safety and health obligation in relation to the risk.

(3) However, the person discharges the person's safety and health obligation in relation to the risk only if the person takes reasonable precautions, and exercises proper diligence, to ensure the obligation is discharged.

LEGISLATION

- No process or system for Mine re-entry and knowledge management can discharge a person's health and safety obligation unless it is founded on sound risk management logic and a thorough risk management processes.

THE PROJECT

The objective of the project is to establish a process, and a tool, for both Mines and Mines Rescue Services to quickly obtain the relevant knowledge (and validate it) to make an informed decision on the risk to rescuers entering the mine to preserve life when a mine or part of a mine has become dangerous

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THE PROCESS

Three Stages

- Stage 1 – Risk Management
- Stage 2 – Guideline and Process Development
- Stage 3 – Software development.

STAGE 1- RISK MANAGEMENT

The Question

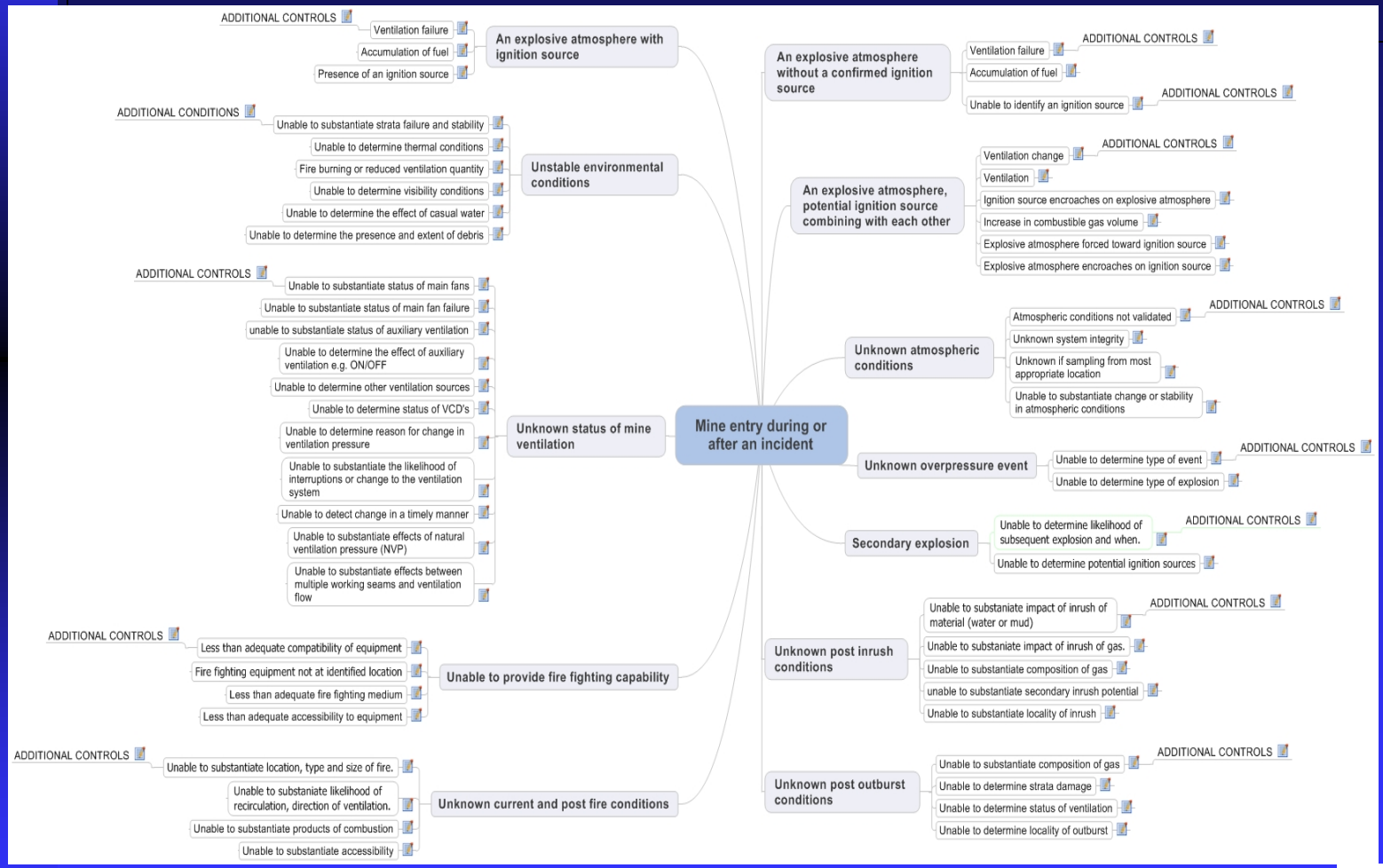
- What would stop a Mines Rescue Team entering a mine or part of a mine to preserve life during or after an incident?

STAGE 1- RISK MANAGEMENT

The RA Team

- QMRS, NSW MRS, Queensland DME, CFMEU ISHR, Operators Representatives, SIMTARS, Mines Rescue Volunteers and other third party industry stake holders.
- 4 Days duration

RISK ASSESSMENT SCHMATIC



STAGE 2 – GUIDELINE AND PROCES DEVELOPMENT

Task Group

- Geoff Nugent (QMRS),
- Seamus Devlin (NSWMR),
- Darren Brady (SIMTARS),
- Dr. David Cliff (MISCH).
- John Grieves (New Hope Collieries).

STAGE 2 – STEPS

1. Categorize controls from Risk Assessment.

2. Develop audit tools from the risk assessment to conduct gap analysis between what information/processes are commonly/typically available at an operation (Qld and NSW) and what is required to comply with developed guidelines..

3. Conduct Post-mortem of previous Emergency and Emergency Exercises

STAGE 2 – STEPS

Continued,

4. Produce draft guidelines.

5. Disseminate guidelines to industry and seek feedback through industry forum.

6. Test guidelines within Level 1 or 2 Emergency Exercise.

7. Scope software opportunities for Information management.

STAGE 2 – GUIDELINE AND PROCES DEVELOPMENT

Funding

- QMRS
- NSWMRS
- NSW Coal Services Health and Safety Trust
- Queensland DME

STAGE 3 – SOFTWARE DEVELOPMENT

ACARP application:

- Develop a functional specification for an information collection and management system appropriate for efficient, effective implementation of the Mine Entry/Re-Entry Guidelines
- Raise awareness of Mine Entry/Re-Entry Guidelines and information collection and management systems appropriate for Emergency Responses

STAGE 3 – KEY PRINCIPLES

- To complete project under the QMRS/NSWMR banner
- To maintain rights to software with QMRS/NSWMR .
- The software will form part of QMRS and NSWMR Emergency Response Management System.
- Software for mine sites must be cost effective and operationally compatible, advancing operational efficiency.

BENEFITS

- A significant improvement in knowledge management both Australian Mines Rescue Services and Underground Coal Mines.
- Universal process for most levels of emergencies.

IMPLEMENTATION

- Mines Rescue Guidelines.
- Implement Guideline and process into Emergency Management Courses
- Review competency standards for emergency management and Ventilation officers
- Promote guideline and tool through industry forums and workshops.