

REVIEW OF THE MINES INSPECTORATE

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SUMMARY

This paper reviews the impact on the Mines Inspectorate Branch of the Safety and Health Division of a number of changes made to the structure of the Department of Mines and Energy. It makes reference to the comments made in the Warden's Inquiry Report into the Explosion at Moura No 2 Mine and the subsequent action taken to implement the recommendations concerning the Inspectorate, contained in the report Review of the Mines and Energy Inspectorate.

The Mines and Energy Inspectorates were reviewed during 1996 and recommendations which were accepted by Cabinet in November 1996 are referenced in this paper. Implementation of twenty-one recommendations contained in the report commenced in late January 1997 and all safety and health inspectorates within the Department have now been brought together in a Safety and Health Division. Where the Mines Inspectorate Branch is concerned, the metalliferous and coal inspectorates have been amalgamated with the Chief Inspector of Mines responsible for both areas; a new Mining Technical Services Branch and a new Quality and Data Services Branch have been established and many other matters actioned.

Concurrently mine safety legislation is in the process of being changed in nature from reactive prescriptive to proactive enabling. The role of the mine inspectors will change as a result. Reference is made to key aspects of the restructuring of the Mines Inspectorate and the changing roles and future direction.

The paper concludes that there is an opportunity for a significant improvement in the safety and health performance of the mining industry, and the role that the restructured Inspectorate should play in meeting the challenges of the year 2000, and beyond.

INTRODUCTION

The Department of Mines and Energy (DME) is responsible, amongst other things, for regulating the mining and energy industries in Queensland. The mission of DME is "To facilitate the maximum sustainable development of the State's mineral and energy resources to enhance the social and

economical well being of the Queensland community".

The interest of the Safety and Health Division is in mining safety and health for which a key goal of DME is "To achieve a high standard of occupational health and safety performance in the minerals and energy industries".

During the past decade, DME has been the subject of a number of organisational reviews and restructures. Apart from mines, there are other regulatory functions within DME concerned with explosives, gas and petroleum and electricity. For many years, prior to recent organisational reviews, the various Inspectorates functioned independently and reported directly to the Director-General (formerly Under Secretary) and, in later years, the Deputy Director-General.

Restructuring initially brought the metalliferous and coal inspectorates under a senior technically qualified officer with responsibilities for safety and health functions relating to both sectors of the mining industry.

In the three years during which this arrangement existed, the organisational structure of each inspectorate below the level of Chief Inspector remained separated.

The next major restructuring resulted in separation of the mines inspectorates, according to commodity streams. The net effect over some years was the progressive subordination of a desperate number of regulatory activities which was no longer seen, in their fragmented form, as a core activity of DME. This eroded the status and professionalism of the Inspectorate groups. Within this frame work the Inspectorate was unable to adequately respond to the growth in the industry and delivery of services deteriorated.

In January 1996 the Moura No 2 Wardens Inquiry Report recognised these deficiencies. Shortly afterwards DME was again reviewed and restructured when the present government took office and the resultant organisational structure amalgamates all regulatory safety and health activities into the one Safety and Health Division as a core function of DME.

SIZE OF THE QUEENSLAND MINING INDUSTRY

It is pertinent to reflect briefly on the size of the Queensland mining industry which has a significant impact on the service delivery of the Mines Inspectorate. Statistical data for the year 1995-96 shows that the ex-mine value of mineral and energy production from Queensland was \$6.053 billion of

which \$3.69 billion came from coal production and \$2.02 billion from metalliferous production. Raw coal production amounted to 120.9 Mt from 17 underground mines and 28 open cuts for a saleable output of 93.7 Mt. In addition, some 592M bank cubic metres of overburden were removed in open cuts during the year. Exports of coal totalled 76 Mt, and employment in the coal industry was 10962 persons. During the year, two mines which had been under development reached designed production capacity and five new mines were under development. Exports of coal could increase by 42% to 132 Mt by the year 2000 if some forecasts prove to be correct.

In the metalliferous sector there were only 15 mines with 100 or more persons employed, however, several of these are very large by world standards and collectively account for the majority of persons employed in this sector. In the near future, Mount Isa Mines is expected to be mining copper ores from an average depth of 1500 m. A number of major mines are under development in the Carpentaria - Mount Isa mineral province which collectively will add significantly to mineral production and employment in the industry. A new bauxite mine is also under development at Ely, some 25 km north of Weipa. Magnesite production from the Kunwarara deposit could be increased if the demand for this metal rises, and the oil shale deposits near Gladstone could reach the production stage if initial pilot testing is successful. Coal bed methane and other developments are on the horizon.

ROLE OF INSPECTORS IN THE MINING INDUSTRY

The Mines Inspectorate has, in the past, held the view that its primary role was to facilitate the improvement of safety and health in the mining industry. Encouragement to follow good mining practice and compliance with regulations and rules, sometimes by persuasion, and at times by applying influence, has been (and still is) seen as more successful in achieving results than prosecution, which is a means of last resort.

The mines inspectors (including mechanical and electrical inspectors) for the most part come from the ranks of mine management and are in a unique position of visiting, on a regular basis, a variety of mining operations. During these visits, an inspector obtains a wealth of information and experience relating to accidents and significant incidents, equipment failures, successful and unsuccessful mining practices, various hazards and their effective management, new technologies, standard of management and general supervision, training and many other matters.

Other persons within the industry do not normally have the same opportunity to acquire the breadth of experience of a mines inspector. The mines inspector frequently stays longer in his position than the average mine manager and therefore provides an important link to past experiences at a particular mine. An important continuing role for the inspector is to use this experience, usually gained over a number of years, to assist management and others in improving the mine safety and health performance.

INFLUENCE OF MOURA NO.2 WARDEN'S INQUIRY REPORT

As outlined prior to the current organisational structure of DME, the various inspectorates groups were fragmented in a number of separate divisions, with no clear focus on improving safety and health performance, no shared resources, and no technical support in the Head Office for their activities. There was criticism from some quarters in the mining industry that Inspectorate support of the industry was not seen as a core function of DME and not resourced accordingly.

There was serious criticism in the Moura No.2 Warden's Inquiry Report and the Coroner's Report about the general lack of resources (manpower and funding) for the Mines Inspectorate; lack of professional training and development; inspectorate positions transferred to other DME Divisions and inspectorate vacancies remaining unfilled for long periods; low frequency of inspection at existing mines; and failure to provide the resources needed to service an expanding industry. Mention was also made of the need for DME to develop a common philosophy throughout the inspectorate including a definition of role; numbers and types of skills required; strategies for development, attraction or retention of skills and training, recruitment and remuneration arrangements and other matters.

REVIEW OF MINING AND ENERGY INSPECTORATE

In response to recommendations made in the Moura No.2 Warden's Inquiry Report and the Coroner's Report of 17 January 1996, the Minister for Mines and Energy established a tripartite committee to review the Mines and Energy Inspectorate. This work was completed and a report published in October 1996.

Key recommendations of the report regarding the Mines Inspectorate were:-

- Coal and Metalliferous Inspectorates should be amalgamated to function as a

single inspectorate, with one Chief Inspector and two Deputy Chief Inspectors, one responsible for Coal Mines and one responsible for Metalliferous Mines and Quarries.

- Mines Inspectorate together with Explosives, Gas, Petroleum and Electrical Safety Inspectorates should be grouped together within the Safety and Health Division.
- All Inspectorates within the Safety and Health Division should be supported by a new Technical Services Unit.
- All Inspectorates within the Safety and Health Division should function according to Quality Assurance principles.
- The number of Mines Inspectors should be reviewed to maintain the suggested frequency of inspections at all mines and quarries.
- Remuneration paid to inspectors should be linked to industry mine management to maintain relativity with industry.

Other Recommendations dealt with the other inspectorates in the Safety and Health Division, locations, districts many other issues.

Recommendations within the review report were accepted by the Minister for Mines and Energy and approved by Cabinet in November 1996. Interim funding was provided and in January 1997, a new Safety and Health Division was formed incorporating the Mines, Explosives, Gas and Petroleum Inspectorates, and the Electrical Safety Office.

The Metalliferous and Coal Inspectorates have been amalgamated under a single Chief Inspector, although continue to function under separate Acts, namely the Mines Regulations Act 1964 and the Coal Mining Act 1925. Appointments under an open market recruitment process have been made to all positions within the Inspectorates, Mining Technical Services Branch and the Quality and Data Services Branch. Regional Inspectors responsible for all inspection services have been appointed for Southern Region (Brisbane), Central Region (Mackay) and the Northern Region (Townsville).

A Mining Technical Services Group has been established with a number of specialist Senior Inspectors, and Inspectors from the metalliferous and coal inspectorates representing the mining, electrical and mechanical engineering disciplines. This Group will provide technical support to the

Chief Inspector of Mines and the two Deputy Chief Inspectors, as well as assisting field inspectors through the Regional Inspectors.

Integration of the Mines, Explosives, Gas and Petroleum and Electrical Safety Inspectorates within the Safety and Health Division has been largely completed. All Head Office staff, with the exception of Electrical Safety Office have been centralised into the one location.

Safety and Health Inspectorates within the Division are also being supported by a new Quality and Data Services Unit with specific responsibility for overall control of the quality system, recording of safety and health data and dissemination of information concerning accidents, significant incidents and other matters of concern to the Inspectorate and industry.

A methodology has been established for determining the number of mine inspectors required to maintain an acceptable frequency of underground and surface inspections and audits at mines, and to satisfy other demands on inspectors' time. The number of inspectors needed to deliver an effective and efficient service to industry, and remuneration arrangements, will be reviewed from time to time and an appropriate adjustment made. During times of major industry expansion, this process will be carried out annually in order to provide for any additional funding needed in the budget process.

The separation of coal and metalliferous inspectorates since 1925 resulted in the two proceeding along separate paths, with limited interchange of information and staff. There was reduced opportunity for advancement for many staff and no system for recognition and rewarding performance. Previously the Department did not perceive that the profile of the Inspectorate needed to be raised. As a result the Mines Inspectorates were not supported sufficiently by new technologies nor were they permitted to use technological support agencies to the extent that they should have been. There was little opportunity for training on appointment, professional development, acquisition of more skills and competencies, and no support for membership of professional bodies and active participation in their deliberations. Historically the Mines Inspectorate has largely been reactive, with a structure inconsistent with the industry environment. The outcome was that the Inspectorates were not seen by persons in industry as an attractive organisation to join.

In the future, a revitalised Mines Inspectorate, with appropriate funding, will operate in a new environment and will be relevant to the approaching next century. The Inspectorate will become more professional, with better qualified support staff and services. It will be equipped with

technology to deliver an improved service to industry and be up to date with new developments in mining technology. Field, Regional and Head Office staff will be electronically linked providing access to a range of databases with information of use to both the Inspectorate and industry. Annual work plans and the duties of inspectors will be more clearly defined. Quality assurance principles and best practices will be followed. Where appropriate, uniform standards will be used by all Safety and Health Inspectorates and improved statistical support will be provided for staff at all levels. Appropriate use will be made of sub professional staff. Systems will be developed for the recognition and rewarding of performance. Training needs of the Inspectorate will be addressed including secondments within the Safety and Health Division and staff exchanges with other Inspectorates jurisdictions in both Australia and overseas.

The profile of the Inspectorate will be raised by involvement of staff with professional bodies and through the preparation and delivery of papers at conferences, symposia and the like.

Effective liaison will be maintained with the Workplace Health and Safety Division of the Department of Training and Industrial Relations and also with Mines Inspectorates in other States and overseas.

Encouragement will be given to a self-regulatory approach by industry, with the Inspectorate achieving a balance between inspections and extensive quality based audits. Generally inspections will be used to monitor activities at particular mines. These will be supported by more comprehensive audits as deemed necessary by the inspections and other performance information and data. Inspections will be needed to ensure that adequate standards of safety and health are being maintained, that safety management plans are achieving their objectives; that hazards have been identified and associated risks are being managed; that the lessons of the past are not forgotten, and that competency and training issues are being properly addressed.

Amalgamation of the Metalliferous and Coal Inspectorates is also expected to result in more effective use of resources, with cross inspection of surface operations, as appropriate.

CHANGING ROLE OF THE MINES INSPECTORATE

Up to the present time mine safety and health legislation covering metalliferous and coal mines has been prescriptive, in keeping with the practice in many other countries. Although found wanting in some respects, it did achieve over the years

major improvements in the safety and health performance of the mining industry. The tragic loss of life in major disasters prodded governments to fund research to find safer mining methods; statistics on mining associated-diseases stimulated research to find acceptable exposure limits; and new technologies were developed to limit human exposure to some hazards and to more effectively control other hazards.

The current review of the coal and metalliferous legislation commenced in 1991. Tripartite review groups were established for each sector. The original intent was to develop a single act to cover both the coal and metalliferous sectors. In 1993 this intent was changed to again develop two separate acts.

All work on the new legislation was suspended after the Moura No 2 disaster in 1994 and was recommenced in March 1996 with implementation of legislative changes to deal with the Moura Inquiry recommendations receiving priority. Work on the new Draft Bills and Regulations for both the coal and metalliferous Acts then continued with completion of the Bills and Regulations for promulgation by 30 June 1998. It is anticipated that some key elements of the proposed new legislation will be relevant to aspects of the future role of the Inspectorate. These will include a move to more audit roles, provision of specialist advice, continuous improvement including quality process to best practices and generally a more enabling process, consistent with the pace that industry demonstrates this capacity.

The capture of meaningful safety and health performance has also been a topic of some debate in the occupational health area for many years. The traditional indicators, namely Lost Time Injury Frequency Rate and Fatal Injury Rate, have been shown to be less than adequate. The metalliferous industry is following the coal industry accepting a performance index that is the number of days lost per million hours worked. Current reporting is stressing the significance of the serious injuries that account for only a small percentage of injuries but a large proportion of lost time.

Resources will be allocated to develop an incident reporting system that complements both the injury reporting and interstate incident reporting systems, and other appropriate measures. This project is aimed at sharing information on hazards and their management. The reports from the database will assist the Department and industry in more effective allocation of management attention and resources.

The newly legislated requirement for safety management plans is formalising what good managers have been doing for years. The underground coal mines are examining their operating risks more closely. Importantly the

ownership of the plans stays with the mines, but the inspectorate have an important role in reviewing the plans.

Statutory qualifications, allowing suitable persons with experience to function as mine managers, undermanagers, deputies and mine inspectors, were granted for life. While the exact position of statutory positions in the new legislation has not yet been determined, it is significant to note that previously there was no requirement to upgrade competency to cope with new technology, developments in mining knowledge and new safety and health hazards in the industry. There was no formal process providing for upgrading of competency and ensuring that adequate standards were maintained for all statutory positions.

In addition to completing the recommendations of the Review, a number of immediate goals have been set.

Goal 1 is to have in place a quality Mines Inspectorate respected by all stakeholders and which is the premier regulatory body amongst its peers in Australia and elsewhere in the mining world.

This will be achieved by an ongoing training and development plan, with greater emphasis on teamwork and technical support. There will be specialisation of some staff and greater use of external expertise. Frequent contact will be maintained with industry, the profile of the inspectorate will be raised in professional organisations and there will be increased interchanges with other Australian and overseas inspectorates.

Goal 2 is that service delivery will continue to meet the need of the existing mines and new mines coming into production.

Resources will be adjusted to cope with an expanding industry. The most appropriate technology will be used to assist industry in meeting requirements for statistical data collection, analysis and dissemination of information. Although necessary prescriptive legislation will be retained, it is expected that enabling legislation will play a far greater role in the future.

Goal 3 is the effective application of *SafeGuard* for use in mine audits.

This will enable inspectors to play a more proactive role, carrying out mine audits and inspections to ensure that appropriate management systems, plans and procedures have been developed and are properly used to minimise the risk of injury or disease.

Goal 4 - this final goal is to effectively monitor the safety and health performance of individual mines and of the industry as a whole.

The Mines Inspectorate will use a *safety and health profile* process to establish safety and health performance. Detailed feedback will be provided to industry in an Annual Report with current and historical data and by other means.

PRIORITY WORK PROGRAM 1997-98

The priority work program for the coming year concentrates on completing details of the restructuring, developing internal and external links, completing projects already in progress and implementing any outstanding work from the Moura No.2 Wardens Inquiry Report recommendations.

Recruitment action still outstanding will be completed, and for all inspectors a variety of training and development programs will be established. Rationalised policies and procedures will be implemented and action taken to progress towards technical excellence / best practices status, and for continuous improvement in service delivery to clients. There will be a progressive re-establishment of full operational status of the Inspectorate following the recruitment of new staff combined with new positions and functions.

Projects targeted for completion include the new Coal Mining Bill with Regulations, the new Metalliferous Mining Bill with Regulations, completion of Review of the Warden's Accident Inquiry Project and corporatisation of the Mines Rescue Service.

Co-operation with New South Wales and Western Australia Mines Inspectorates will be further developed and liaison with appropriate overseas jurisdictions will be considered. The reaction of NSW to the *Review of Mine Safety in NSW* will be closely monitored and action taken, if necessary.

The Inspectorate expects to improve communications with industry and to work together to improve the safety and health performance. Inspectorate staff will be provided with a modern information system, already in use in Western Australia, which has the potential to significantly improve the service delivery to industry. Initial work will be carried out on the development of a safety and health profile for the industry, and for each mine, which satisfies the needs and expectations of industry, the unions and the Inspectorate.

THE ROLE OF INDUSTRY

The changes being implemented within the Safety and Health Division will only be fully effective if industry also commits to the overall objectives. There are three aspects of this which are seen as essential to the overall success.

Firstly industry must accept its responsibility for safety and health under more enabling legislation and relinquishment of more prescriptive aspects of regulatory roles can only proceed at the pace industry demonstrates this capacity.

The Inspectorate will keep under review the safety and health performance of mines, with the effectiveness of safety management plans and compliance with prescriptive requirements of legislation being constantly monitored. However, the industry must establish the appropriate culture and self-monitor for this to achieve the desired results.

Secondly, there must be a significant improvement in the safety and health performance of both sectors in the mining industry.

Thirdly, industry and the Inspectorate must continue to work together by exchanging advice and assistance to improve the safety and health performance. Constructive criticism and suggestions for improvement will be provided and accepted at the time of annual reviews of safety and health performance.

CONCLUSIONS

The Queensland Mines Inspectorate is now within one government department and division, and is now a professional organisation with considerable professional qualifications, and many years of senior management mine operating experience.

As a result of action now in hand by DME, the quality of Inspectorate service delivery will be further enhanced. The knowledge and experience of mines inspectors is available to assist the mining industry improve its safety and health performance thus ensuring Queensland's competitiveness in the mining market place.

Into the future the Mines Inspectorate role will include:

- An independent, impartial and dedicated Inspectorate with a clearly defined role and strong identity, recognised and supported by all stakeholders.
- The regulatory role must 'Add Value'.
- A move to 'professional specialisation roles'.

- A move to providing advice and technical service, support and information, through broad base of high expertise and unique experience of Inspectorates.
- A move to more audit role systems in inspection, team processes.
- Use of Safety and Health classification systems / better performance measures.
- Target limited Inspectorate resources towards overall improvement of Safety and Health performance.

This will allow the Queensland DME Safety and Health Division Mines Inspectorate to be best positioned to meet challenges of 2000, and beyond.