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GENERAL NOTICE

NOTICE 471 OF 1995

SAFETY IN MINES RESEARCH ADVISORY COMMITTEE

CALL FOR RESEARCH PROJECT PROPOSALS

SUBMISSION FOR PROPOSALS FOR RESEARCH PROJECTS IN MINE SAFETY ARE INVITED IN THE FIELDS AS STIPULATED BELOW OR IN ANY ADDITIONAL FIELDS

(The committee is not obliged to accept any of the proposals and each proposal will be considered on its merits.)

GOLD AND PLATINUM MINES

1. SAFETY/HEALTH RISK Fall of ground injuries and fatalities.

Description: Optimal reduction of rockfall and rockburst risk in deep level mining not realised due to insufficient fundamental knowledge of rock fracture processes and the behaviour of highly fractured rock.

SUGGESTED RESEARCH TOPIC

Title: Deep gold mine fracture zone behaviour.

Primary outputs:

1. To gain sufficient knowledge of the fundamental physics of fracture initiation and growth so as to characterize and model the fracture zone around deep level gold mine excavations and engineer the fracture zone.
2. To study and model the interaction of seismic waves with the fracture zone so as to improve the design of rockburst 'resistant' mining strategies.
3. To produce appropriate reports outlining the knowledge gained and how it is to be used to pursue the goal of reducing fall of ground injuries and fatalities.

Envisaged scope of possible research project:

1. Determine fundamental rock fabric parameters that characterize the mechanisms of fracture initiation in different rock types, using physical and numerical models.
2. Develop three dimensional numerical representations of fracture processes at micro and at macro level of detail.
3. Determine the physics of time dependent deformation mechanisms relating to both 'slow' (or creep-like) movements and to rapid, dynamic propagation of fractures associated with violent rock failure.
4. Develop numerical representations of dynamic fracture propagation processes in two and three dimensions.
5. Construct numerical models of the interaction between seismic waves and the fracture zone to determine support influences and to assess strategies which may be used to engineer the fracture zone.
6. Calibrate numerical representations of deformation mechanisms and fracture zone models against physical models and underground observations.

2. SAFETY/HEALTH RISK Fall of ground injuries and fatalities.

Description: To effectively design local and regional support systems and mining layouts, in order to reduce fall of ground related accidents on the mines of the Bushveld Complex, it is essential to have a good basic understanding of the geotechnical structure and properties of the rock mass.

SUGGESTED RESEARCH TOPIC

Title: Geotechnical definition of the rock mass environment of the Bushveld Complex mining horizons.

Primary output: A report detailing the geotechnical parameters, and their regional distribution, that control the rock mass environment of the Bushveld Complex to enable the improved design of regional and local support systems for the reduction of rockfall accidents.

Envisaged scope of possible research project:

1. Review of existing data including previous SIMRAC work and possible access to mine data with regard to geotechnical parameters.
2. Definition of geotechnical structures (joints etc.) and parameters critical to the analysis of rock mass stability within the mining horizons of the Bushveld Complex and their influence on rock engineering design.
3. Determination of the variation in strength and behaviour of rock types that constitute the mining environment of the Bushveld Complex.
4. Determination of the mechanisms of variation in the virgin stress field.
5. Determination of the influence of the geotechnical environment on the incidence and source mechanisms of seismicity of the Bushveld Complex.
6. Definition of the regional variation in geotechnical parameters and stress environment for the establishment of geotechnical design areas.

3. SAFETY/HEALTH RISK Fall of ground injuries and fatalities.

Description: The presence of widely varying rock mass behaviour in stopes due to differing geotechnical areas across the gold mining industry makes the choice of support, particularly stope face support, site specific. Consequently, the interaction between the rock mass behaviour in the different geotechnical areas and support systems needs to be better understood if an optimal reduction in rockfalls and rockburst accidents is to be realised by the introduction of appropriate support systems.

SUGGESTED RESEARCH TOPIC

Title: Stope face support systems.

Primary output: Recommended stope support criteria for the various defined geotechnical areas.

Envisaged scope of possible research project:

1. Define geotechnical areas across the gold mining industry on the basis of differing rock mass behaviour, without duplication of current and past SIMRAC work.
2. Assess performance of existing support systems within the different geotechnical areas by means of appropriate accident analysis, without duplication of current and past SIMRAC work.

3. By use of numerical models, evaluate the rock mass/support interaction in the various geotechnical areas and at different mining depths.
4. Verify models by means of underground observations and measurements.
5. Recommend stope support criteria for the various defined geotechnical areas.
6. Identify and assess impediments to successful implementation of stope face support systems within the various geotechnical areas (eg changes in mining/support cycles/methods, in-stope hydraulic prop transportation/installation methods/systems, rockbolting or mechanization).

4. SAFETY/HEALTH RISK Fall of ground injuries and fatalities.

Description: The optimal reduction of rockbursts in deep level mining through the selection of the most appropriate mining layout for a particular area is not realised due to insufficient knowledge of the relationship between mining layout, geological structures and seismicity.

SUGGESTED RESEARCH TOPIC

Title: Identification of the most appropriate deep level mining layout using seismological procedures.

Primary output: A report providing guidelines and the most appropriate deep level mining layout to adapt in different geological and geotechnical environments, as well as a methodology to determine the seismic risk associated with mining in the vicinity of geological structures such as faults and dykes.

Envisaged scope of possible research project:

1. Use data from gold mines covered by modern mine-wide and local seismic networks to study the relationships between seismic event occurrences/quiescence and different mining layouts (such as longwalling, mini-longwalling, scattered mining and updipping) in their respective geological environments.
2. Physical characterisation of relevant geological structures.
3. Develop and verify methodology to determine seismic risk associated with mining in the vicinity of geological structures.
4. Evaluate mining layouts in terms of relative seismic risk and produce guidelines for the selection of appropriate mining layouts for deep level mines.

5. SAFETY/HEALTH RISK Fall of ground and rockburst injuries and fatalities.

Description: Rockfalls and rockbursts are the biggest categories of fatalities and injuries on South African gold and platinum mines. The application of risk assessment technology to the process for specifying strategies to address these hazards has the potential to reduce fatalities and injuries by enabling the more effective management of the risks.

SUGGESTED RESEARCH TOPIC

Title: Application of risk assessment technology to specifying strategies to minimise the risks related to rockfalls and rockbursts in gold and platinum mines.

Primary output: Report providing guidance on the use of risk assessment techniques for defining strategies to address the hazard associated with rockbursts and rockfalls.

Envisaged scope of possible research project:

1. Review and identity existing processes for specifying strategies to address the hazards associated with rockbursts and rockfalls.
2. Conduct two case studies, one on a mine where rockbursts are dominant and one on a mine where falls of ground are dominant, integrating risk assessment techniques to specify strategies, including for example stope and gully support, face profile maintenance, sequencing, training, monitoring for conformance, for addressing rock related problems within a homogenous section of the mine as defined by, for example hangingwall type or mining method.
3. Evaluate benefits and recommend methodology for integration of risk assessment techniques into the process of specifying strategies designed to reduce rockfall and rockburst fatalities and injuries.

COAL MINES

1. SAFETY/HEALTH RISK

Description: Lung diseases caused by respirable dust in the environment. Danger of coal dust explosions.

SUGGESTED RESEARCH TOPIC

Title: Dust capture effectiveness of scrubber systems on mechanical miners.

Primary output: Equipment designs and ventilation systems that enable the capture efficiency of scrubbers mounted on mechanical miners to be increased.

Envisaged scope of possible research project:

1. This project will address the problem of inefficient capture of dust by scrubbers. Even though present-day scrubbers have high efficiencies in removing the dust from the air that passes through them, their effectiveness in removing the dust from the environment is low due to insufficient capture efficiencies.
2. Alternative methods like using exhaust ducting to take the air out of the heading will also be looked at and practically engineered to come up with workable methods.
3. It is envisaged that this project will be involved with implementing the research findings from completed work into dust and through collaboration with mines and manufacturers so as to increase the amount of dust collected by the scrubber systems. To enable this to be done, ventilation aspects, positioning of scrubber inlets and all ancillary ventilation systems will have to be balanced on a site specific basis.
4. This will mean that assistance and close co-operation with involved mines would be required.
5. From the information gained in this way generic rules can be obtained which can be used in drawing up guidelines.

2. SAFETY/HEALTH RISK

Description: Lung diseases caused by respirable dust in the environment. Danger of coal dust explosions.

SUGGESTED RESEARCH TOPIC

Title: Design and develop the electrical interlocking of air jet fans for mechanical miners.

Primary outputs: Method and hardware allowing the interlocking of the mechanical miners and the air jet fan so that—

(i) the requirements of the DMEA guidelines can be met; and

(ii) a mechanical miner cannot operate unless the air jet fan is working when required. In addition, the operation of the air jet fan can be curtailed, depending on the position of the mechanical miner relative to the position of the air jet fan.

Envisaged scope of possible research project:

1. This project will be involved with the development of an electronic or other method whereby the operation of the air jet fan is linked to that of the mechanical miner.
2. Evaluate first generation interlocking systems to direct further work.
3. Various practical in-mine transmission systems will be investigated to determine the most suitable method.
4. A proximity device for determining system will also be investigated.
5. By combining the most suitable methods and incorporating the necessary decision-making processes equipment will be sourced to meet the output.
6. The equipment will be tested and evaluated at a collaborating mine after which final design changes will be presented to SIMRAC to enable manufacturers to incorporate it into already established systems or to allow them to manufacture new commercially viable systems.

(Period of project 12–18 months maximum. The project will require a longer period to allow for equipment to be manufactured and tested.)

3. SAFETY/HEALTH RISK

Description: Fires and explosions.

SUGGESTED RESEARCH TOPIC

Title: Improve methane detection and removal on mechanised coal sections.

Primary output: Recommendations on methane monitoring, detection and removal in mechanised sections; correct positioning of methanometers, protective measures and reduced maintenance requirements for sensors exposed to harsh environments, minimize false alarms, and efficient ventilation.

Envisaged scope of possible research project:

1. Take an innovative approach to problems in all mechanised sections including continuous miners, roadheaders and longwalls, developing the data logger system for on-board and off-board applications, to provide full data on heading conditions. Actual methane levels will be applied with the ventilation to evaluate the ventilation effectiveness in diluting and reducing the methane, these requirements change with the stage of mining.
2. Develop a data base of environmental conditions, i.e. methane and dust, around continuous miners under a range of operating conditions in different seam heights and mining layouts.
3. The sourcing and addition of alternative sensors to methane on to the data logger system, to provide a portable complete environmental monitoring station.
4. There will be input from this project to dust and ventilation projects.

The project will be medium term, planned for 2–3 years, requiring about 6–8 man-years of Project Manager, Engineers and Graduate Engineers.

4. SAFETY/HEALTH RISK

Description: Reduce the methane hazard.

SUGGESTED RESEARCH TOPIC

Title: Method to measure methane emission.

Primary output: A straightforward means of determining coal face methane emissions under conditions of known seam gas content, mining method and excavation rate.

Envisaged scope of possible research project:

1. A thorough review of methane prediction work completed in—
   (a) South Africa
   (b) Worldwide
   including techniques for determining seam gas content, gas pressure and *in situ* permeability.
2. Make recommendations on the optimum method of measuring the above parameters in South African coal mines.
3. Recommend further research to ensure that the South African Industry can, within a specified period, obtain the necessary tools to predict methane emission rates in any mining situation.
4. The project is short term, planned for 12 months, and requires about 1 man-year of effort.

5. SAFETY/HEALTH RISK

Description: Fires and ignition hazards in coal mines

SUGGESTED RESEARCH TOPIC

Title: Optimize awareness of hazards in underground coal mines caused by electrical ignitions and fires through appropriate training guidelines.

Primary output: Training guidelines for the safer use of electricity by mine engineers, supervisors and artisans in coal mines with specific regard to electrical ignition and fire hazards.

Envisaged scope of possible research project:

1. Twelve month project.
2. The main role of the project leader would be to co-ordinate industry knowledge residing with mining groups' specialist engineers and to utilize this information to develop guidelines for the training of mine engineers, supervisors and artisans in the recognition of the hazards associated with electrical ignitions and fires.
3. Take the following into account:
    1. The ever increasing use of electrical machinery underground in coal mines.
    2. System design.
    3. System design authorization.
    4. Section transformer capacity (also consider transformers in parallel).
    5. Section protection practices.
    6. Influence of electrical system fault levels.
    7. Section cabling practices.
    8. Cable support and management.
    9. Cable coiling.
    10. Conveyor equipment must be included.
    11. Other.

Project staff must have a good understanding of engineering practices in the SA Coal mining industry

Refer to the report on the analysis of causes of fires produced under Project COL 031 ('Review of practices for the prevention, detection and control of underground fires in coal mines')

NB. Copies of Final Project Report for COL 031 available from:

Mr L. Naude
Department of Mineral and Energy Affairs
Private Bag X59
PRETORIA
0001.

6. Safety/Health Risk

Description: Injury or fatality caused by underground machinery or transport in coal mines.

Suggested Research Topic

Title: Guidelines for the development of training manuals focused on the safer use of conveyors, shuttle cars and tractor trailers.

Primary output: A report providing guidelines focused on the development of training manuals on the safer use of conveyors, shuttle cars and tractor trailers.

Envisaged scope of possible research project:

1. A twelve month project.
2. The investigation should utilize the results of the 1995 Project COL 203 ('Quantify the nature and magnitude of the contribution of engineering and human factors to the risk of injury or fatality caused by underground machinery or transport and delineate the essential causes') relating specifically to conveyors, shuttle cars and tractor trailers commonly in use in the Coal Mining Industry.

Project staff must have a good understanding of engineering practices in the SA Coal mining industry.

NB. Copies of the Final Report for Project COL 203 are available from:

Mr L. Naude
Department of Mineral and Energy Affairs
Private Bag X59
PRETORIA
0001.

7. SAFETY/HEALTH RISK Fall of ground injuries and fatalities.

Description: Optimum design of coal mines requires detailed knowledge of both the strength of pillars as well as the load imposed upon them. While extensive research has been conducted into pillar strength, little has been done on loading mechanisms.

SUGGESTED RESEARCH TOPIC

Title: Investigate factors influencing pillar loading, to enable the safe design of pillar sizes.

Primary outputs:

1. Identification of factors influencing pillar load.
2. *In situ* measurement of parameters required to assess load, including convergence, pillar load, foundation stability and overburden stiffness.
3. Methodology for the application and limitations of loading design.

Envisaged scope of possible research project:

1. The current theory and knowledge of pillar loading will be documented together with the known applications in collieries.
2. Pillar loading is a function of panel geometry, depth, strata chracteristics and thickness. The overburden stiffness is of primary importance. All factors influencing load require documentation together with known and verified examples.
3. *In situ* measurement of significant parameters will be made by instrumentation and monitoring. Experiments will be required to specifically measure these parameters.
4. Analysis of the input parameters required for current numerical codes will be conducted. Documentation of the methodology for obtaining significant input parameters will be required. Application of the codes and their limitations will be assessed.
5. Application and limitations of the loading systems design will be summarized in a final report.

8. SAFETY/HEALTH RISK Fall of ground injuries and fatalities.

Description: Falls of ground remain a significant cause of fatalities and injuries in coal mines. Knowledge of roof deformation and behaviour is vital to ensure the design of optimum support systems. Over design is a waste of valuable resources, while under design impacts negatively on safety.

SUGGESTED RESEARCH TOPIC

Title: Review of current design methodologies to improve the safety of roof support systems, particularly in the face area, in collieries.

Primary outputs:

1. Report on the comparison of current design methodologies of roof support systems in collieries, focusing on face area support.
2. Application of overseas techniques to increase the understanding of roof behaviour.
3. Evaluation of design methodology with the aim of providing practising rock engineers in collieries with improved design inputs.

Envisaged scope of possible research project:

1. Identify the principal causes of fall of ground accidents, particularly in the face area, in collieries.
2. Study documentation of world-wide roof support design methods. The emphasis should be on roof behaviour and deformation. Significant parameters influencing stability should be identified.
3. Conduct field trials monitoring roof behaviour to confirm relevant parameters influencing roof behaviour conditions: Particular emphasis should be placed on the effect of road width on stability.
4. Identify factors necessary for instability and suggest methods to ameliorate them.
5. Optimize design methods incorporating developed methodology.

9. SAFETY/HEALTH RISK Fall of ground injuries and fatalities.

Description: The incidence of fatalities and injuries increases in pillar extraction panels. Long or short walling have been shown to be the safest extraction methods, but are capital intensive. Engineering the extraction system to complement strata behaviour has the potential to increase the safety of high extraction systems.

SUGGESTED RESEARCH TOPIC

Title: Review the understanding of caving mechanisms around high extraction systems and determine the effect of the mechanism on the safety of the systems.

Primary output: Knowledge of caving and roof behaviour in high extraction systems in both bord and pillar and longwall mining.

Envisaged scope of possible research project:

1. Review South African and relevant international studies of caving due to high extraction methods. Highlight known factors influencing caving and identify shortcomings in knowledge.

10. SAFETY/HEALTH RISK Fall of ground injuries and fatalities.

Description: Design of safe, economic and productive workings requires a knowledge of the fundamental behaviour of the rock mass. Research into the basic understanding of all parameters that influence coal mine workings is essential before applied solutions to practical problems can be found. Knowledge of the pre-mining state of stress is an essential prerequisite for safe mining layout design.

SUGGESTED RESEARCH TOPIC

Title: Determine the principal stresses around coal mine workings to ensure safe mine design.

Primary output: Report identifying the principal stresses around coal mine workings for use in mine design criteria.

Envisaged scope of possible research project:

1. Evaluation of existing low stress measurement techniques world-wide.
2. Selection of the most appropriate method, or development of a suitable method.
3. *In situ* stress measurements in selected coal fields.
4. Stress measurements in the areas around high extraction panels.

11. SAFETY/HEALTH RISK Fall of ground injuries and fatalities.

Description: Despite numerous precautions, 77 per cent of all fall of ground incidents occur at the coal face.

SUGGESTED RESEARCH TOPIC

Title: Identify the causes of unsafe acts or neglect resulting in fall of roof or sidewall accidents in coal mines.

Primary output: A report indicating the reasons for unsafe acts or neglect resulting in roof or sidewall accidents in coal mines.

Envisaged scope of possible research project:

1. Find answers to the following questions:
   - ► why do people go under unsupported roof?
   - ► why are joints not treated correctly?
   - ► can dangerous conditions be recognized timeously?
   - ► are temporary support installation procedures adequate?
   - ► is visibility on the face adequate?

12. SAFETY/HEALTH RISK Fall of ground injuries and fatalities.

Description: Salamon's design formula was based on square pillars. While equivalent rectangular pillar formulae have been suggested, collapses have occurred with rectangular pillar geometries overseas. The use of rectangular pillars is increasing in South Africa, highlighting the need for further research into the strength of rectangular pillars.

SUGGESTED RESEARCH TOPIC

Title: Evaluation of design procedures to ensure the safety of rectangular pillars.

Primary outputs:

1. Survey of the current knowledge of rectangular pillar strength.
2. Report examining strength due to rectangular pillars by laboratory, numerical simulation and *in situ* experiments.

Envisaged scope of possible research project:

1. Report on the current knowledge worldwide of rectangular strength.
2. Investigate by suitable method, laboratory and/or numerical modelling the influence of rectangular geometries on the strength.
3. *In situ* instrumentation and monitoring of rectangular and square pillars for confirmation of previous step. Recently mined and previously formed pillars would require examination.
4. Report on the findings of the investigation.

13. SAFETY/HEALTH RISK Fall of ground injuries and fatalities.

Description: As pillars age, failures even at relatively high safety factors have been known to occur. Very little is known about the time dependent decay in strength of coal pillars. Factors like the effects of weatherability, scaling, etc. have never been quantified.

SUGGESTED RESEARCH TOPIC

Title: Determination of the time related coal pillar strength decay due to weathering.

Primary outputs:

1. A method of evaluating the stability of old areas of existing mines.
2. Determination of safe pillar sizes for long term stability.

Envisaged scope of possible research project:

1. Analysis of known pillar failures.
2. Re-survey of old workings to determine changes in pillar dimensions over time.
3. Petrographical analysis of different coals to determine the content of weatherable materials.
4. Accelerated weathering in laboratory.

OTHER MINES

1. SAFETY/HEALTH RISK Fall of ground injuries and fatalities.

Description: Falls of ground remain a significant cause of fatalities and injuries in diamond mines. Knowledge of roof deformation and behaviour is vital to ensure the design of optimum support systems. Ground conditions in diamond mines are often vastly different to those experienced in coal and gold mines.

SUGGESTED RESEARCH TOPIC

Title: Review of current design methodologies to improve the safety of roof support systems, particularly in the face area, in diamond mines.

Primary outputs:

1. Report on the comparison of current design methodologies of roof support systems in diamond mines, focusing on face area support.
2. Application of overseas techniques to increase the understanding of roof behaviour.
3. Evaluation of design methodology with the aim of providing practising rock engineers with improved design inputs.

Envisaged scope of possible research project:

1. Identify the principal causes of fall of ground accidents in diamond mines particularly in the face area.
2. Study documentation of world-wide roof support design methods. The emphasis should be on roof behaviour and deformation. Significant parameters influencing stability should be identified.
3. Conduct field trials monitoring roof behaviour to confirm relevant parameters influencing roof behaviour conditions. Particular emphasis should be placed on the effect of tunnel or stope width on stability.
4. Identify factors necessary for instability and suggest methods to amelilorate them.
5. Optimise design methods incorporating developed methodology.

2. SAFETY/HEALTH RISK

Ore handling from drawpoints and through orepasses on Other mines (that is, mines other than Coal, Gold and Platinum).

Description: On Other mines, a wide variety of material types are loaded from drawpoints and handled through orepass systems. Hazards arise from mudrushes, large rocks requiring blasting in drawpoints, tipping arrangements, dust control in orepasses, hang-ups in orepasses, and loading arrangements from orepasses.

SUGGESTED RESEARCH TOPIC

Title: Investigation into drawpoints, tips, orepasses and chutes on Other mines.

Primary outputs:

1. Identify various ore and waste types handled.
2. Identify various ore handling arrangements.
3. Identify hazards involved.
4. Recommend methods of reducing hazards or further research required in particular areas.

Envisaged scope of possible research project:

1. Investigate typical mining operations handling—
   - diamond, chrome, base metal, iron ore, other materials and waste;
   - both operating with backfill material and without.
2. Compile a survey on ore and waste materials handled and the associated hazards.
3. Compile a survey on drawpoint layouts and practices and the associated hazards.
4. Compile a survey on orepass systems and the associated hazards.
5. Investigate and recommend suitable practices to reduce hazards.
6. Identify areas for further focussed research.

GENERIC

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1. SAFETY/HEALTH RISK

Description: Fires and explosions leading to irrespirable atmospheres.

SUGGESTED RESEARCH TOPIC

Title: Development of a guideline to assist mines in providing comprehensive training to employees in the use and care of self-contained self-rescuers (SCSR's).

Primary output: A detailed guideline, or framework, which would enable mine managers to addres comprehensively and cost-effectively the training needs of employees in the use and care of SCSR's. The output must clearly draw the distinction between and address the different requirements of the logical training elements (or modules) of—

- technical training
- retention of training
- emergency response training.

Envisaged scope of possible research project:

An analysis of incidents (real or simulated) leading to the activation of SCSR's, as well as recent experience gained from supervising SCSR-assisted escape simulations, suggests that prevailing levels of training retention are inadequate. In the event of the development of irrespirable atmospheres, an attempted escape may be jeopardised by a lack of activation and donning skills.

Statutory requirements in respect of training require that "... the directions for use (of a self-rescuer) are integrated in the training programme and instructions relevant to-survival-in the event of-an irrespirable atmosphere" [Regulation 24.20.1 (e) of the Minerals Act] and that "... training shall be repeated at intervals not exceeding six months ..." [Regulation 24.20.2 (a)]. Although these regulations are not prescriptive and therefore facilitate the compilation of mine-specific codes of practice, mine management's stated responsibility lacks qualification.

Data obtained from incident analysis must constitute an essential input to the emergency response training element. User care of SCSR's must be promoted through appropriate motivation leading to increased perception of user ownership of the survival strategy.

This work must be conducted with due regard to, and preferably in close conjunction with, other work aimed at monitoring the functional performance of SCSR's, in order to achieve the maximum synergistic benefit from each.

The guideline would assist mine management in complying with training regulations, especially if the standard of training implementation, once transferred to the mines, were to be monitored on a service basis.

2. Safety/Health Risk

Description: Safety hazards caused by fires and ignitions in mines.

Suggested Research Topic

Title: Investigate the need for a central fire testing facility for mines.

Primary outputs:

(i) An assessment of whether mines require a central fire testing facility;

(ii) if so, a recommendation regarding the required features and capabilities of such a facility; and

(iii) an estimation of the likely cost and construction period thereof.

Envisaged scope of possible research project:

1. A fire testing facility should be capable of reproducing representative underground conditions in which fires may occur in gold and platinum, coal, base metal and other mines. It should allow full-scale and representative tests to be conducted on types and configurations of materials and their operational environments to ascertain whether their burning and gas- and smoke-generating characteristics make those materials and environments appropriate for underground use.
2. This short-term project will investigate whether a new, central fire testing facility for the mining industry is needed. The suitability of facilities currently available at the CSIR and elsewhere will be assessed.
3. If it appears that currently available facilities are inadequate and that a new facility is indeed justified, the project will, on the basis of current and anticipated requirements of the mining industry, establish the essential features and capabilities required of this facility, and estimate the likely cost and construction and commissioning periods thereof. Here, due cognisance will be taken of experience in the design, construction and commissioning of similar facilities elsewhere in the world.

3. SAFETY/HEALTH RISK

Description: Training provision in the mining industry may not have focussed adequately on health and safety training.

SUGGESTED RESEARCH TOPIC

Title: Investigations into Health and Safety education and training aspects of the mining industry.

Primary output: Accessible report on the above topic to be made available to all stakeholders.

Envisaged scope of possible research project:

1. The establishment of a data base of all courses that are being provided by the various mining companies, the state and non-governmental organisations.
2. To develop guidelines and checklists for the scrutiny by stakeholders of training programmes.
3. To assist the Mining Qualifications Authority (MQA) in evaluating present Health and Safety Training in the Mining Industry and in the development of Industry and National competency standards.

Closing date for proposals: ***4 August 1995.***

Application forms are obtainable from:

Mr L. Naude
DEPARTMENT OF MINERAL AND ENERGY AFFAIRS
Private Bag X59
PRETORIA
0001.

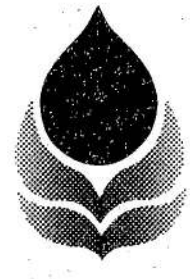
Tel.: (012) 317-9000 X 021.
Fax: (012) 322-0810.

Use it

Don't abuse  it

water is for everybody

Werk mooi daarmee

Ons leef  daarvan

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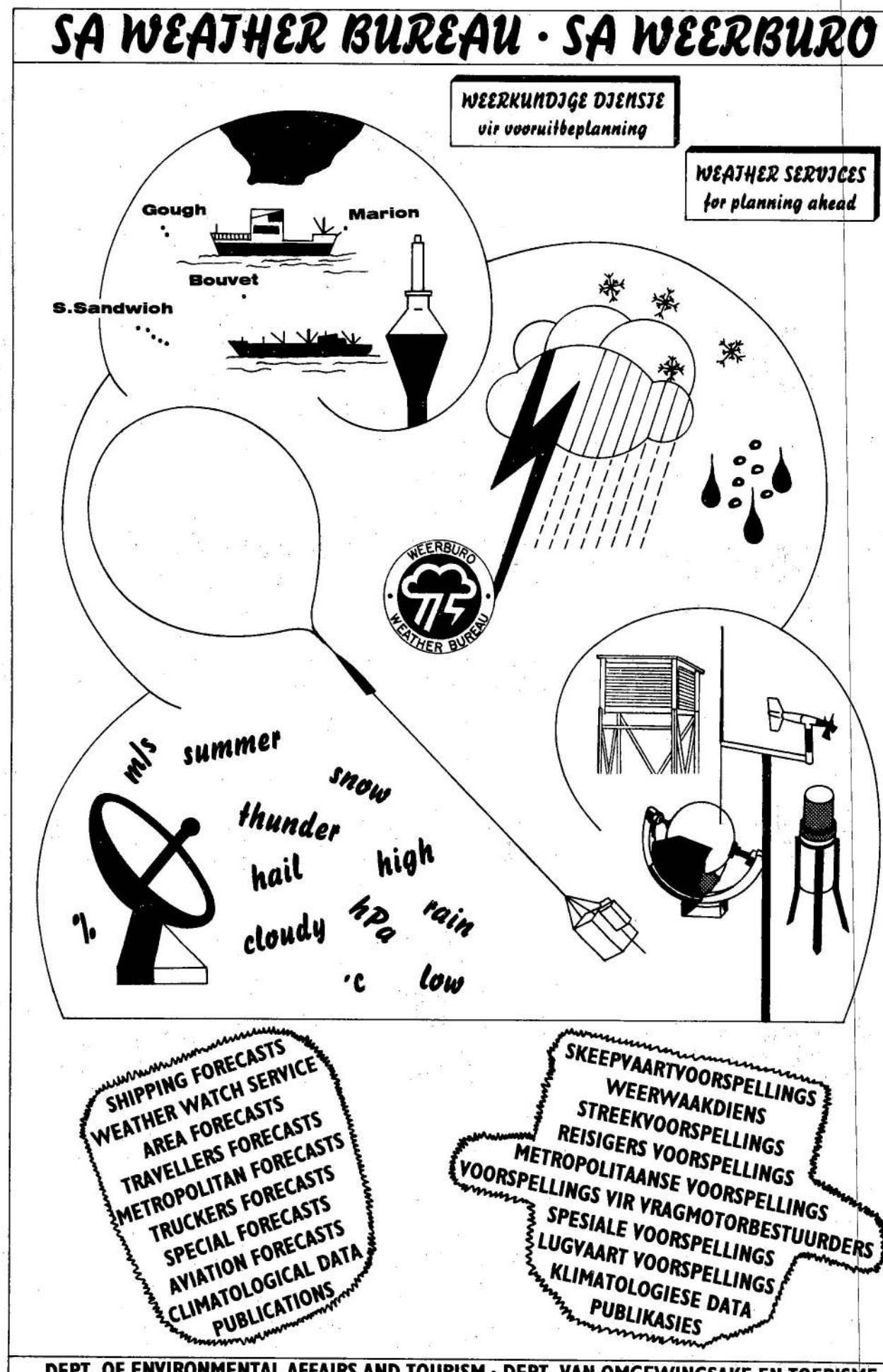

CONTENTS

No.		Page No.	Gazette No.
	GENERAL NOTICE		
Mineral and Energy Affairs, Department of			
General Notice			
471	Safety in Mines Research Advisory Committee: Call for research project proposals	1	16470

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