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**AIDS HELPLINE: 0800-0123-22 Prevention is the cure**

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## GENERAL NOTICE

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### NOTICE 2109 OF 2001

## Safety in Mines Research Advisory Committee

### *Invitation to submit project proposals*

SIMRAC was established in terms of the Mine Health and Safety Act (29/1996) to conduct research and surveys regarding, and for the promotion of, health and safety in the South African mining industry. Suitably qualified agencies and/or persons are invited to submit proposals in response to the project specifications in this Notice. In soliciting research projects for the 2002/2003 SIMRAC research programme, SIMRAC has the following goals:

- to indicate the current SIMRAC research interests and the areas prioritised for research support to commence in the 2002/2003 cycle;
- to invite research ideas in response to these defined priority areas of research; and
- to invite applications for postgraduate funding<sup>1</sup> for research which will promote the health and safety within the South African mining industry.

A consultative process has resulted in SIMRAC formulating a co-ordinated, long-term occupational health and safety research programme and identifying priority areas for research to commence in the 2002/2003 cycle. The intention is to conduct *fewer but more comprehensive and longer-term projects that may extend over several research cycles*. Researchers and agencies are invited to submit innovative research proposals in the indicated format as an expression of interest and capacity to conduct SIMRAC research within the areas identified. Proposals can be specific to one sector (gold, coal, platinum or "other" mines), or generic to all sectors. Proposed research must be risk-based, needs-driven, well-designed, ethical and must have the potential to add to existing knowledge, practice or technology, involve the end users and implement/transfer outputs.

### Submission of Proposals

1. Proposals must be submitted in accordance with the format stipulated herein and available from SIMRAC Project Support Services (SIMPROSS). Contact Mrs C Gomes at telephone 011 358 9190, fax 011 403 1821, e-mail [cgomes@simpross.co.za](mailto:cgomes@simpross.co.za) or visit the SIMRAC website <http://www.simrac.co.za> to download the submission template.
2. Anyone who has queries regarding the aims and objectives of the thrusts listed in this notice can contact the following people:  
Rock Engineering: Duncan Adams at [dadams@simpross.co.za](mailto:dadams@simpross.co.za) (011 358 9184)  
Machinery Engineering: Alec Gumbie at [agumbie@simpross.co.za](mailto:agumbie@simpross.co.za) (011 358 9186)  
Occupational Health: Mary Ross at [mross@simpross.co.za](mailto:mross@simpross.co.za) (011 358 9183)  
Organisational issues: Paul vd Heever at [pvdheever@simpross.co.za](mailto:pvdheever@simpross.co.za) (011 358 9180)  
SIMRAC Chairperson: Harold Motaung at [gottsemang@mepta.pwv.gov.za](mailto:gottsemang@mepta.pwv.gov.za) (012 317 9158)
3. Researchers are reminded to take note of past work done by SIMRAC in the different thrust areas. (Details are available on the SIMRAC website <http://www.simrac.co.za>).
4. The closing time and date for the receipt of the proposals is **12:00 on Thursday 1 November 2001**. Late entries will NOT be accepted.

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<sup>1</sup> Guidelines for SIMRAC postgraduate research and Ethics Guidelines are obtainable from [nwoods@simpross.co.za](mailto:nwoods@simpross.co.za)



5. A proposal in the correct SIMRAC format can be emailed to [cgomes@simpross.co.za](mailto:cgomes@simpross.co.za) prior to the closing time and date. Alternatively, two copies of each proposal, in a form suitable for photocopying **plus** a disk or CD with the proposal in MS Word or rtf format, should be deposited in the repository labeled "SIMRAC Proposals" at the SIMPROSS Offices<sup>2</sup>.
6. SIMRAC may at its sole discretion decide to recommend the acceptance, rejection or amendment of any proposal and to commission the team to develop the proposal on the basis of which the contract is awarded. SIMRAC shall not furnish any reasons for its decisions regarding proposals.
7. Every proposal accepted by SIMRAC would be subject to a standard set of Terms and Conditions, which on acceptance of the final detailed proposal will form part of the contract applicable to the project. All prospective proposers should peruse a set of the standard terms and conditions prior to submitting a proposal. Contact Mrs C Gomes at telephone 011 358 9190, fax 011 403 1821, e-mail [cgomes@simpross.co.za](mailto:cgomes@simpross.co.za) or visit the SIMRAC website <http://www.simrac.co.za> to download the draft terms and conditions.
8. In compiling proposals, prospective proposers should provide details of methods, identifiable outputs and estimated costs as indicated herein.
9. SIMRAC will endeavour to solicit the services of South African organisations to undertake projects, but will consider proposals from overseas-based organisations if expertise, cost considerations and local capacity building components compare favourably.
10. SIMRAC requires full disclosure regarding all subcontractors included in the proposal.
11. Each successful proposer may, during the contract period or shortly after its completion, be required to provide:
  - A competent spokesperson with appropriate materials to make not more than two separate presentations, on an annual basis for the duration of the project, and
  - A technical paper on the project for publication in the SIMRAC Symposia proceedings and a poster presentation, without additional remuneration or reimbursement of costs.These activities must be detailed and costed within the project.
12. Where relevant, proposers may obtain copies of earlier project reports and other information from SIMRAC Project Support Services (SIMPROSS) at the website address or from contacts listed (1 and 2).
13. Proposers are advised that all SIMRAC projects may be subjected to technical and financial audits and all relevant information and expenditures should be recorded.
14. All proposed project costs must be expressed in South African Rands. Fluctuations in the exchange rate and purchase of forward cover should be considered when costing the proposal.
15. SIMRAC will take all reasonable steps to ensure that confidentiality of proposals is maintained during the adjudication process. If an unsolicited proposal is not accepted within the programme, SIMRAC may invite additional proposals on the topic and will negotiate possible collaboration with the original proposer.
16. Successful proposers will be contacted before the end of November 2001 to develop detailed proposals to be considered in February 2002 for commission of projects. SIMPROSS staff and SIMRAC members will facilitate the development of final proposals.

<sup>2</sup> SIMPROSS Offices, 2nd Floor, Braamfontein Centre, 23 Jorissen Street, Cnr. Bertha Street, Braamfontein

## **SIMRAC Health and Safety research programme**

The SIMRAC research programme is aimed at addressing research needs to overcome persistent barriers to improved occupational health and safety performance in the mining industry. SIMRAC has identified the following nine major thrust areas for its 2002/3 research programme:

### **1. Behavioural Safety**

Recommendations on developing a pervasive occupational health and safety culture in the mining industry are being developed by the Mine Health and Safety Council, and could be complemented by examining the relationship between risk-taking behaviour or lifestyle outside the workplace and risk-taking behaviour in the workplace.

### **2. Rock falls**

Rockfalls are the single largest contributor to safety related fatalities in the South African mining industry. Incidents of rockfalls occur in all mining situations from shallow to ultra deep mines. Emphasis in any new projects should be placed on eliminating, controlling or minimising the risk of rockfalls in the face area and in tunnels that access the mineral deposit or in the roadways created in the ore body. Projects around identification and understanding of rockfall hazards, design and implementation of new and effective support systems, and better understanding and application of blasting techniques, related to safety, will be considered. Solutions for combating the rockfall problem made in completed SIMRAC projects will be considered for information and technology transfer, piloting and implementation.

### **3. Rock bursts**

Rockbursts are consistently the second largest contributor to fatalities in gold mines. The depth of mining is increasing and a concomitant increase in seismicity and associated rockbursting is anticipated. Different reef types show different trends in terms of fatalities and this requires greater understanding and if necessary individual strategies. The effort to model dynamic rock fracture and seismicity on mines is important and may be one of the most significant tools for understanding rockmass behaviour more comprehensively and in real time in order to take proactive decisions will be useful. This may involve monitoring of the rockmass in new and novel ways by adapting existing technology. Projects which give fresh ideas for more effective support in stopes and accessways under rockbursting conditions will be considered. SIMRAC has spent considerable effort and expense on test facilities for evaluating different support systems under dynamic loading conditions. Projects around the use of such facilities that will increase the understanding and effectiveness of stope support will therefore be considered.

#### **4. Explosions and Fires**

The consequences associated with flammable gas explosions, coal dust explosions and fires are significant. Projects relating to eliminating, controlling and minimising the risk of explosions and fires in mines will be considered, as well as projects relating to emergency preparedness and response, and monitoring of risk areas.

#### **5. Machinery and transport systems.**

A high degree of risk is associated with the use of transport systems (trackless, trackbound and shaft) and machinery such as conveyors, scrapers, fixed machines, tools and equipment. Projects relating to eliminating, controlling and minimising the risk of mine accidents in this area will be considered. Areas highlighted by sectoral mine accidents statistics include trackless mobile machinery and conveyors in coal mines, "other" mines and platinum mines, and scrapers and shaft conveyances in gold mines (although a significant amount of research has already been conducted on shaft conveyances).

#### **6. Airborne Pollutants**

A major improvement in the health of miners in all commodities would be achieved by the control of airborne hazards with the prevention of pneumoconiosis and other diseases and injuries associated with exposure to dust, gases and fumes. Extensive research has been conducted in this field but the problem has not been eliminated. While the elimination, control and minimising of risks associated with airborne pollutants remains a priority, projects related to respiratory protective equipment for all processes and commodities will be considered. As a partner in the WHO/ILO initiative, SIMRAC is prioritising the elimination of silicosis in the South African mining industry. Additional areas of interest are diesel particulate exposure and control and the influence of hazardous gaseous exposure on health, safety and performance.

#### **7. Physical hazards**

Physical agents include noise, vibration, temperature, illumination and radiation. SIMRAC has targeted noise and vibration for innovative research, to complement previous research conducted in these areas.

#### **8. Occupational Diseases**

The accumulation of relevant occupational disease data by analysis and review of existing data, or appropriate research to provide data will be considered. It should be noted that a national mining occupational disease database is already being implemented. One focus area identified by the Mine Health and Safety Council is the effect of HIV/AIDS on occupational disease. Of particular concern is the effect of HIV/AIDS on tuberculosis and silicosis. Modeling has indicated the potential for improved occupational health and safety by reducing the rate at which miners become newly infected with HIV and slowing the progression of HIV. Other diseases of interest are asthma and skin disease, with particular emphasis on the causative relationship and their effect on work.

### **9. Special Projects**

A number of additional topics have been identified by SIMRAC that require investigation or surveys to qualify the prevalence of risks in the mining industry, and to determine whether or not these risks could be meaningfully addressed through further research. These topics include: the accident categories "handling of material" and "slipping and falling", chemical hazards, ergonomic issues (particularly the lack of basic gender relevant data necessary for assessing the scope of workloads and hazard exposure and effects) and the occupational-physiological interface (i.e. effect of nutrition on occupational health and safety)

#### **Each proposal must:**

- Address only one research area which must be specified;
- Be in the format indicated;
- Be not more than 1 page of A4 in length;
- Be in arial text font size 11; and
- Be submitted in electronic format copy in Word or Rich Text Format.

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