

## PROPOSED POSITION: Air Quality, Meteorology and Radiological Health Risk Assessment

|                            |  |  |
|----------------------------|--|--|
| <b>Company:</b>            | Airshed Planning Professio   | <b>Qualifications:</b> <ul style="list-style-type: none"><li>• Bachelor of Science in Engineering, Chemical Engineering: University of Natal, 1982</li><li>• Master of Science in Engineering, Chemical Engineering: University of Natal, 1984</li><li>• Philosophiae Doctor in Engineering, Chemical Engineering: University of Natal, 1984</li><li>• Accredited Inspectorate Authority (AIA) for completion of risk assessments as partial fulfilment of Major Hazard Installation Regulations (Reference MHI013)</li></ul> <b>Memberships:</b> <ul style="list-style-type: none"><li>• South African Institute of Chemical Engineers (Fellow: No. 4533)</li><li>• American Institute of Chemical Engineers (Senior Member: No. 0090107071)</li><li>• National Association of Clean Air</li></ul> <b>Committees:</b> <ul style="list-style-type: none"><li>• SANAS Risk Assessment Specialist Technical Committee</li><li>• Technical Committee on Air Quality Standards Setting</li><li>• SANS Air Quality Standards Specialist Technical Committee (Chairman of Working Group 1)</li></ul> |
| <b>Name:</b>               | LUCIAN BURGER  |  |
| <b>Nationality:</b>        | South African  |  |
| <b>Profession</b>          | Chemical Engineer  |  |
| <b>Position</b>            | Managing Director  |  |
| <b>Date of Birth</b>       | 24.05.1960   |  |
| <b>Specialisation</b>      | Meso and Micro Meteorology<br><br>Emission Inventories<br><br>Air Pollution Control Measures<br><br>Atmospheric Dispersion<br><br>Acute/Chronic Heath Risk Assessment<br><br>Process Risk Assessment |  |
| <b>Start date with APP</b> | 2003 – Managing Director   |  |
| <b>Experience:</b>         | 20 years   |  |

**Dr Lucian Burger** is currently the Managing Director of Airshed Planning Professionals (Pty) Ltd and serves on the board of directors of Riscom (Pty) Ltd and Environmental Management Services (CC). Airshed Planning Professionals is a technical and scientific consultancy providing scientific, engineering and strategic air pollution impact assessment and management services and policy support to assist clients in addressing a wide variety of air pollution related risks and air quality management challenges. Riscom specialises in quantitative process risk assessments, including hazan, hazop, what-if analyses, detailed risk assessments, Major Hazard Installation and incident investigations, and other risk related studies. Software design and development of air pollution dispersion models, dynamic process outflow and evaporation models, consequence models and database applications are maintained in Environmental Management Services. He completed his bachelor's degree (cum laude) in chemical engineering at the University of Natal in 1982. His postgraduate studies (MSc Eng and PhD) were specifically focussed on the development of dispersion modelling theory and related software applications. These degrees were completed in 1984 and 1986, respectively. Air pollution consultation consulting services started in 1990 with an international contract on the evaluation and validation of transport models as applied to the Chernobyl accident of April 1986 (International Atomic Energy Agency). Since then, numerous atmospheric dispersion studies have been completed locally and internationally, ranging from environmental impact assessments, risk and hazard assessments, meteorological studies, process designs, to the development of toxic gas evacuation response systems, and other related software. Memberships include the South African Institute of Chemical Engineers (Fellow: No. 4533), the American Institute of Chemical Engineers (Senior Member: No. 0090107071), Accredited Inspectorate Authority (AIA) for completion of quantitative risk assessments (MHI 013).

### Relevant Project Experience:

- Development and maintenance of the HAWK Real-Time Dispersion Model, which forms part of the NECSA Emergency Planning System. This model was specifically modified to include all forms of radioactive exposures, including external and internal.
- Team member and South African representative to the Atmospheric Transport Model Evaluation Study (ATMES Project). This was an international evaluation and validation of transport models as applied to the Chernobyl accident in April 1986. The study was initiated by the International Atomic Energy Agency (IAEA), jointly with the World Meteorological Organization (WMO) and the Commission of the European Communities (CEC). The WIZARD V1.0 (developed during L Burger's PhD) was also evaluated for its applicability and performance as applied to long-range dispersion.
- The development of Real-Time Dispersion Model for Koeberg Power station. The original intention was to use the model in a similar fashion as at the NECSA premises.
- Derivation Of Koeberg-Specific Dispersion Coefficients For Use In Gaussian Dispersion Models. A computerised methodology was developed to estimate the horizontal and vertical dispersion parameters in the format required by the COSYMA model.
- Proposed Corridor Sands Heavy Minerals Mine and Processing facility (Mozambique): Scope included emission inventory of proposed mining activities, meteorological analysis, dispersion simulations and a health impact assessment.
- Proposed Moma Heavy Minerals Mine and Processing facility (Mozambique): Scope included emission inventory of proposed mining activities, meteorological analysis, dispersion simulations and a health impact assessment.
- Detailed air impact assessment of the Namakwa Sand Heavy Minerals Mine for an EIA and the development of an EMPR.

Signature:



Date: 6 July 2006

**PROPOSED POSITION: Air Quality, Meteorology and Radiological Health Risk Assessment**

Signature:

A handwritten signature in black ink, appearing to read "B. G. G." or similar, written in a cursive style.

Date: 6 July 2006