1. OUR NEED

Assistance is required from suitable consultants to determine whether Silicosis poses a health risk to employees in or at mines in Namibia and to submit remedial proposals to the Ministry of Mines and Energy.

2. SCOPE OF ASSIGNMENT

2.1 Visit all underground and surface mines in Namibia.

2.2 Collect all relevant samples and have it analysed in laboratories for silica particles.

2.3 Gather information from relevant authorities such as the Ministry of Mines and Energy, the Ministry of Health and Social Services and the Ministry of Labour.

2.4 Scrutinise existing legislation with a view to make recommendations.

2.5 The exercise is to be completed within a four month period from date of securing the tender.

2.6 The consultants will be expected to work with a Namibian student currently studying occupational health in London, as part of the capacity building component of the project. The student will be part of the team in the investigation process and, also in the laboratory testing of all samples collected from the mines. The student is expected to write a dissertation on this subject matter and the consultant is expected to supervise this work. All costs related to this component should be estimated and included in the tender price.

3. PROJECT COST ESTIMATION

Tenderers are requested to submit an estimated cost for the complete project.
4. PROJECT COORDINATOR

The project coordinating official shall be Mr. J Crafford, Inspector of Mines at the Ministry of Mines and Energy. Contact numbers:

Tel : +264 61 284 8258
Fax : 238643
E-mail : cinspectormme.gov.na
Cell : 0812431523

5. RESULTS REQUIRED FROM THE ASSIGNMENT

Successful completion of the assignment should result in an appropriate governance model.

6. BACKGROUND INFORMATION

6.1 Facts about Silicosis

Silicosis is a common and important dust disease. It has been known by many other names, such as miner’s phthisis, stonecutter’s disease, potter’s asthma and grinder’s rot. All types of mining in which the ore is extracted from quartz rock can produce silicosis. That includes the mining of gold, copper, lead, zinc, iron, anthracite and coal. But mining is not the only industry whose workers may develop silicosis. Workers in foundries, tunneling, sandstone grinding, sandblasting, concrete breaking, granite carving and china manufacturing also encounter silica.

Silicosis develops from breathing silica dust on the job. It occurs in direct proportion to the percentage and the concentration of silica in the air and to the duration of exposure. Large silica particles are stopped by the tiny hairs, mucous membranes and other protective mechanisms of the upper respiratory tract and bronchi, but the smallest dust particles are carried to the airways and lungs’ tiny air sacs. Special defence cells engulf the dust and try to digest it. However, it often finds its way to the pulmonary lymph nodes and may block the vessels that carry lymph in and out of the nodes. Silica may injure the special defence cells. Fibrosis, an abnormal formation of wispy, fibre-like scar tissue in the lungs may result. If someone inhaled relatively low concentrations of dust for 10 to 20 years, one will likely have chronic or simple silicosis. That is the commonest and mildest form of the disease. The accumulated dust and tissue reaction cause small cell masses to be scattered throughout the lungs. Those cell masses have little effect but one may experience breathlessness during exercise.

Simple silicosis has the potential of developing into a more serious condition called complicated silicosis. Some 20 to 30 percent of all simple silicosis victims progress to that advanced stage. If one has complicated silicosis, one will likely experience breathlessness, weakness, chest pain, a cough and increased amounts of sputum. In progressive massive fibrosis, it spreads throughout the lungs and restricts their function. This condition often leads to heart disease.
Acute silicosis is a third form of the disease. It is seen in people whose occupations entail a concentrated exposure to silica dust over a relatively short period of time. If one is a sandblaster or rock driller, one may suffer acute silicosis. A rapidly progressive disease, acute silicosis usually leads to severe disability within five years of diagnosis. Early symptoms include breathing difficulty, weight loss, fever and coughing. Unfortunately many victims are young and otherwise healthy people.

Silicosis does not cause other diseases but other diseases may occur and aggravate silicosis in an affected person. Tuberculosis is a possible complication of silicosis. Chronic bronchitis occurs in a high proportion of advanced silicosis but less commonly with simple silicosis. Although pneumonia is no more frequent in people with silicosis than the general population, the chances for recovery are considerably decreased.

6.2 Prevention

The means of preventing silicosis must be specifically designed for each industry and each job after careful consideration. Dust control is essential. The wetting down of mines and improved ventilation have helped in the past. In workplaces where dust concentrations cannot be reduced to safe levels, masks are a necessity. Through regular chest X-rays and thorough examinations, a medical practitioner can detect early signs of silicosis.

Silicosis is a permanent condition irreversible by any treatment. Yet, if the disease is diagnosed in its early stages, a person with silicosis can lead a near normal life.

7. THE NAMIBIAN MINING INDUSTRY

Mining plays a major role in the Namibian economy accounting for 12.6% of GDP, 6% of formal employment and 45% of export earnings in 1998. The mineral potential is rated above average in Africa, while the total potential for mining operations, including factors of political risk and all pertinent economic parameters, places Namibia amongst the top five countries on the continent. In this context, Namibia is a major producer of base and rare metals such as copper, lead, zinc, tin, tantalum, cadmium, arsenic, antimony and lithium. Precious metals include gold and silver. Industrial minerals are made up of fluorspar, salt and sulphur. Nuclear fuel is produced in the form of uranium oxide. Namibia produces world class dimension stone such as granite, marble and aragonite. The country is a top producer of gemstone quality diamonds, tourmaline, garnets and various other semi-precious stones. A substantial number of workers are employed in various stone cutting, grinding and engraving works.
Labour statistics for the total Namibian mining industry for the period 1990 to 1999 are as follows:

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