



# REQUIREMENTS DOCUMENT

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RD-011	REQUIREMENTS FOR MEDICAL SURVEILLANCE AND CONTROL OF PERSONS OCCUPATIONALLY EXPOSED TO RADIATION: MINING AND MINERALS PROCESSING	0

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## 1. GENERAL REQUIREMENTS

### 1.1 Policy

A formal policy, approved by the National Nuclear Regulator (NNR), shall be established for medical surveillance and control of persons occupationally exposed to radiation. The policy must make commitments to provide assurance that the health of persons occupationally exposed to radiation is not adversely affected by such exposure.

### 1.2 Medical Surveillance and Control Programme

A medical surveillance and control programme shall be in place to meet the requirements contained in this document.

### 1.3 Procedures

The medical surveillance and control programme must be carried out in accordance with formal authorized procedures.

### 1.4 Responsibilities

1.4.1 The responsibilities of professional and management personnel in respect of implementation of the medical surveillance and control programme must be clearly assigned.

1.4.2 It shall be obligatory for persons who are occupationally exposed to radiation to comply with the requirements of this document.

### 1.5 Facilities

The Holder shall provide all the facilities necessary to conduct the medical surveillance and control programme.

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## 1.6 Records

- 1.6.1 Documented records of the results of the medical surveillance and control programme shall be maintained.
- 1.6.2 Personal medical records must be maintained under the supervision of an Appointed Medical Practitioner or an Appointed Medical Practitioner-in-training.
- 1.6.3 The documented records must be maintained in accordance with the quality management requirements of the authorisation and retained for the required time periods specified.

## 1.7 Staff

The Holder shall establish and lay down the staffing requirements to execute the medical surveillance and control programme. The services of sufficient personnel must be engaged to fulfil these requirements.

### 1.7.1 Appointed Medical Practitioners and an Appointed Medical Practitioner-in-training

- 1.7.1.1 The Holder must appoint a Medical Practitioner as the Appointed Medical Practitioner to oversee the implementation of the medical surveillance and control programme.
- 1.7.1.2 The Holder must ensure that Appointed Medical Practitioners receive the appropriate training to the satisfaction of the NNR in the areas specified below:

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<ul style="list-style-type: none"> <li>- The biological effects of exposure to ionizing radiation.</li> <li>- Radiation physics, the nature of radiation hazards and the principles of radiation protection.</li> <li>- The categorisation of employees in respect of radiation exposure and the hazards of contamination with radioactive material.</li> <li>- The purpose and nature of medical surveillance and control programmes and procedures applicable to the Holder.</li> <li>- The principles of occupational health.</li> </ul> <p>1.7.1.3 A Medical Practitioner who has not been trained in the above may be appointed in terms of paragraph 1.7.1.1 provided:</p> <ul style="list-style-type: none"> <li>- The appointment is made as an Appointed Medical Practitioner-in-training.</li> </ul>			

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<ul style="list-style-type: none"> <li>- The Appointed Medical Practitioner-in-training practices under the supervision of an identified Medical Practitioner (hereinafter referred to as the supervisor) who has successfully completed the above training.</li> <li>- The Appointed Medical Practitioner-in-training will complete the necessary training within a period not exceeding six months from the date of appointment.</li> </ul> <p>1.7.1.4. Appointed Medical Practitioners and Appointed Medical Practitioners-in-training must be registered with the South African Medical and Dental Council.</p> <p>1.7.1.5 Appointments shall be in writing, clearly specifying the responsibilities of the appointee and the written acceptance of the appointment shall be obtained.</p> <p>1.7.1.6 Appointments shall be made subject to the approval of the NNR.</p> <p>1.7.1.7 The services of an Appointed Medical Practitioner or the Appointed Medical Practitioner-in-training shall at all times be available within a reasonable timescale.</p>			

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1.7.1.8 In the absence of an Appointed Medical Practitioner, Appointed Medical Practitioner-in-training or supervisor of the Appointed Medical Practitioner-in-training, the relevant responsibilities must be transferred in writing to a locum tenens who meets the necessary requirements.

1.7.1.9 The appointment of Medical Practitioners who do not meet all the basic requirements of this document, will be considered on a case by case basis by the NNR.

**1.7.2 Nurses**

1.7.2.1 Nurses who are employed for duties in the medical surveillance and control programme must be registered or enrolled with the South African Nursing Council.

1.7.2.2 Registered nurses given direct programme responsibilities in terms of this document must be supervised by an Appointed Medical Practitioner or Appointed Medical Practitioner-in-training and must be trained in occupational health.

1.7.2.3 Enrolled nurses must be supervised by a Registered Nurse.

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## 2. **MEDICAL SURVEILLANCE AND CONTROL OF PERSONS OCCUPATIONALLY EXPOSED TO RADIATION**

### 2.1 **Protocols**

Documented protocols approved by the Appointed Medical Practitioner or the supervisor of the Appointed Medical Practitioner-in-training must be established for implementation of the medical surveillance and control programme requirements for persons occupationally exposed to radiation. The protocols must include the following:

#### 2.1.1 **Categorization of Personal Exposure and Risk**

The working conditions under which individuals will be employed must be categorized, taking into account:

- projected levels of annual radiation dose and rates of accrual.
- radiation types.
- potential for contamination.
- potential for inhalation risks.
- actual dose received by a person designated as occupationally exposed to radiation.
- non-radiation occupational health risks.

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- special work conditions that would place an additional burden on the worker and his physiology.
- Details of such categorization must be recorded in the "Personal Exposure and Risk Record" within the medical file for each person.

### 2.1.2 Medical Surveillance Programme

The medical surveillance programme to be implemented for the various categories identified in 2.1.1 must provide for;

2.1.2.1 A health evaluation prior to the individual working in conditions where he will be occupationally exposed to radiation.

2.1.2.2 An ongoing health surveillance programme.

2.1.2.3 Additional surveillance:

- following absence from work for an extended period of time due to illness.
  - following an incident where a worker has been overexposed.
  - following an incident where excessive contamination with radioactive material has occurred.



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- upon request by the Appointed Medical Practitioner or Appointed Medical Practitioner-in-training.
- when requested by the NNR.

### 2.1.3 **Management of Persons Excessively Exposed to Radiation**

- 2.1.3.1 The necessary means must be provided and maintained to ensure proper medical management of radiation casualties.
- 2.1.3.2 It must be the responsibility of the Appointed Medical Practitioner or Appointed Medical Practitioner-in-training to care for the health of the individual concerned.
- 2.1.3.3 The Appointed Medical Practitioner, in consultation with the head of the radiation protection function and Holder management, shall decide on additional requirements for further examinations, decontamination measures or remedial treatment.
- 2.1.3.4 The Appointed Medical Practitioner-in-training in consultation with his/her supervisor, the head of the radiation protection function and Holder management, shall decide on additional requirements for further examinations, decontamination measures or remedial treatment.
- 2.1.3.5 The date, the estimated radiation dose and the intake of radioactive material, together with the circumstances giving rise to the exposure, must be recorded in the Dose Register and the Personal Medical File.
- 2.1.3.6 The NNR must be notified of such occurrences.

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## 2.2 Records

The following records must be maintained:

### 2.2.1 Personal exposure and risk record

The working condition category must be entered into a personal record for each individual as part of the health documentation. This categorization must be validated annually.

### 2.2.2 Dose Register

This register must record the following for each individual:

- any radiation dose received during previous employment.
- radiation dose received during employment.
- effective doses or equivalent doses in excess of the limits prescribed by the authorisation conditions and the date or dates on which such doses were received.

### 2.2.3 Personal Medical File

This file must contain details of:

- personal medical history.

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- family history.
- occupational history.
- radiological history.
- details of clinical examinations.
- Details of special investigations.

#### **2.2.4 Health Register for Persons Designated Occupationally Exposed to Radiation**

2.2.4.1 This register must be kept in a form approved by the NNR and must contain at least the following:

- names of all persons occupationally exposed to radiation.
- dates and certifications, by an Approved Medical Practitioner or Appointed Medical Practitioner-in-training, of medical fitness for a set period as determined by the categorisation of working conditions.

2.2.4.2 Certification must be by an Appointed Medical Practitioner or an Appointed Medical Practitioner-in-training.

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2.2.4.3 The register must be under the control of the staff member responsible for authorizing access to areas where potential radiation hazards exist.