

# NATIONAL NUCLEAR REGULATOR



## LICENCE DOCUMENT

No.	Title	Rev.
LD-1077	REQUIREMENTS FOR MEDICAL AND PSYCHOLOGICAL SURVEILLANCE AND CONTROL AT KOEBERG NUCLEAR POWER STATION	1

APPROVED:

  
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ACTING CHIEF EXECUTIVE OFFICER

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Doc No.	TITLE	REV.	PAGE
LD-1077	REQUIREMENTS FOR MEDICAL AND PSYCHOLOGICAL SURVEILLANCE AND CONTROL AT KOEBERG NUCLEAR POWER STATION	1	2 of 9

## 1. GENERAL REQUIREMENTS

### 1.1 Policy

A formal policy, approved by the National Nuclear Regulator, shall be established for medical surveillance and control of persons occupationally exposed to radiation and for persons employed in certain functions. The policy must make commitments:

- 1.1.1 To provide assurance that the health of persons occupationally exposed to radiation is not adversely affected by such exposure.
- 1.1.2 To subject employees with responsibility for certain functions identified by the National Nuclear Regulator, which could have a significant adverse impact on nuclear safety, to pre-employment medical screening and on-going medical surveillance in order to ensure that their health status, and any changes thereto, do not present any unacceptable impediment to their satisfactory performance.

### 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 authorised 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, as well as persons employed in the specified functions, to comply with the requirements of this document.

### 1.5 Facilities

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

### 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 and psychological records must be maintained under the supervision of an appointed medical practitioner.

Doc No.	TITLE	REV.	PAGE
LD-1077	REQUIREMENTS FOR MEDICAL AND PSYCHOLOGICAL SURVEILLANCE AND CONTROL AT KOEBERG NUCLEAR POWER STATION	1	3 of 9

1.6.3 The documented records must be maintained in accordance with licence binding quality management requirements and retained for the required time periods specified.

## 1.7 Staff

The licensee 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

- 1.7.1.1 Appointments shall be made in writing and the responsibilities of the appointee clearly specified.
- 1.7.1.2 Appointments shall be made subject to approval by the National Nuclear Regulator.
- 1.7.1.3 The services of an appointed medical practitioner shall at all times be available within a reasonable timescale.
- 1.7.1.4 In the absence of an appointed medical practitioner, his responsibilities must be transferred in writing to a locum tenens who meets the necessary requirements.
- 1.7.1.5 The appointment of overseas medical practitioners will be considered on a case by case basis by the National Nuclear Regulator.

### 1.7.2 Nurses

- 1.7.2.1 Nurses who are employed on duties involved in the medical surveillance and control programme must be registered or enrolled with the South African Nursing Council.
- 1.7.2.2 Registered nurses must be supervised by an Appointed Medical Practitioner and must be trained in occupational health.
- 1.7.2.3 Enrolled nurses must be supervised by a Registered Nurse.

### 1.7.3 Appointed Psychologists

- 1.7.3.1 Appointments shall be made in writing and the responsibilities of the appointee clearly specified.
- 1.7.3.2 Appointments shall be made subject to approval by the National Nuclear Regulator.
- 1.7.3.3 Appointed Psychologists must support the Appointed Medical Practitioner in decision making on psychological aspects of medical surveillance and control.

Doc No.	TITLE	REV.	PAGE
LD-1077	REQUIREMENTS FOR MEDICAL AND PSYCHOLOGICAL SURVEILLANCE AND CONTROL AT KOEBERG NUCLEAR POWER STATION	1	4 of 9

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

### 2.1 Protocols

Protocols must be established for implementation of the medical surveillance and control requirements for persons occupationally exposed to radiation. The protocols must include the following:

2.1.1 The working conditions under which individuals will be employed in must be categorised, 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 as a radiation worker.
- non-radiation occupational health risks.
- special work conditions that would place an additional burden on the worker and his physiology.

Details of such categorisation must be recorded in the personal exposure and risk record within the medical file for each person.

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

2.1.2.1 A health evaluation for the period 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.
- upon request by the Appointed Medical Practitioner.
- when requested by the National Nuclear Regulator.

### 2.2 Management of radiation casualties

2.2.1 The necessary means must be provided and maintained to ensure proper medical management of radiation casualties.

2.2.2 It must be the responsibility of the Appointed Medical Practitioner to care for the health of the individual concerned.

Doc No.	TITLE	REV.	PAGE
LD-1077	REQUIREMENTS FOR MEDICAL AND PSYCHOLOGICAL SURVEILLANCE AND CONTROL AT KOEBERG NUCLEAR POWER STATION	1	5 of 9

2.2.3 The Appointed Medical Practitioner, in consultation with the head of the health physics function and facility management, shall decide on additional requirements for further examinations, decontamination measures or remedial treatment.

2.2.4 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.

2.2.5 The National Nuclear Regulator must be notified of such occurrences.

### 2.3 Records

The following records must be maintained:

#### 2.3.1 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 categorisation must be validated annually.

#### 2.3.2 Dose Register

This register must record the following for each individual:

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

#### 2.3.3 Personal Medical File

This file must contain details of:

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

#### 2.3.4 Radiation Workers Health Register

2.3.4.1 This register must be kept in a form approved by the National Nuclear Regulator and must contain at least the following:

- names of all radiation workers
- dates and certifications, by an approved medical practitioner, of medical fitness for a set period as determined by the categorisation of working conditions.

<b>Doc No.</b>	<b>TITLE</b>	<b>REV.</b>	<b>PAGE</b>
<b>LD-1077</b>	<b>REQUIREMENTS FOR MEDICAL AND PSYCHOLOGICAL SURVEILLANCE AND CONTROL AT KOEBERG NUCLEAR POWER STATION</b>	<b>1</b>	<b>6 of 9</b>

2.3.4.2 Certification must be by an Appointed Medical Practitioner.

2.3.4.3 The register must be under the control of the staff member responsible for authorising access to potential radiologically hazardous areas.

2.3.4.4 Both the Dose Register and the Radiation Workers Health Register must be maintained and kept available for inspection by the National Nuclear Regulator for a period of 50 years after the date of the last entry in the register. Registers must be endorsed with this requirement.

### **3. MEDICAL AND PSYCHOLOGICAL CONTROL OF LICENSED OPERATORS**

3.1 Eskom must implement a programme of medical and psychological surveillance and control for licensed operators and candidates, in accordance with which:

3.1.2 Eskom must ensure that the state of health of persons recruited for, and appointed to, licensed operator posts is compatible with the requirements of the posts and is maintained throughout the tenure of the appointment.

3.1.3 Eskom must produce the necessary procedures to establish, implement and maintain medical and psychological surveillance and control requirements for licensed operators.

3.1.4 An Appointed Medical Practitioner and an Appointed Psychologist must carry the responsibility for Eskom to ensure control over the programme.

3.1.5 The Licensed Operator shall:

- comply with the requirements of the medical and psychological surveillance and control programme, and
- inform the Appointed Medical Practitioner or Appointed Psychologist of any changes in his/her physical and psychological state of health that might affect his/her ability to perform the required job function.

3.2 Eskom must implement a protocol for the medical and psychological examination and control of licensed operators and develop and maintain the necessary supporting documentation.

3.2.1 The protocol must be prepared by an Appointed Medical Practitioner and an Appointed Psychologist, in conjunction with the National Nuclear Regulator and must include the development of procedures to perform such examination and control.

3.2.2 The protocol must provide for a comprehensive pre-employment health evaluation to determine fitness to work as a licensed operator, and must involve both medical and psychological evaluations.

Doc No.	TITLE	REV.	PAGE
LD-1077	REQUIREMENTS FOR MEDICAL AND PSYCHOLOGICAL SURVEILLANCE AND CONTROL AT KOEBERG NUCLEAR POWER STATION	1	7 of 9

- 3.2.3 Final certification by both the Appointed Medical Practitioner and the Appointed Psychologist must be performed within a period of 3 months before commencement of work.
- 3.2.4 Prospective licensed operators must sign an agreement to inform the Appointed Medical Practitioner and/or Appointed Psychologist of any changes in his/her physical and psychological state of health that are not of a transient nature or that might affect his/her ability to perform his/her required job function.
- 3.2.5 The protocol must provide for a comprehensive medical and psychological review of the state of health of a licensed operator and a certification of fitness to work must be performed at the following times:
- 3.2.5.1 biannually, but at intervals not exceeding 7 months.
- 3.2.5.2 following an absence from work for an extended period of time (14 days) due to illness.
- 3.2.5.3 when any changes in the physical and/or psychological state of health of the operator occur which are not of a transient nature.
- 3.2.5.4 at any other time stipulated by the National Nuclear Regulator
- 3.2.6 The protocol must make provision for the suspension of an operator from the Active Position Register.
- 3.2.6.1 Prompt action must be taken on any medical or psychological aspect that could endanger the operation of any nuclear related process under the control of a licensed operator.
- 3.2.6.2 If found unfit for certification;
- the operator must be suspended immediately from the Active Position register and removed from operator duties. The Appointed Medical practitioner and/or Appointed Psychologist, as appropriate, must immediately enter the suspension in the Operators' Health Register.
  - the operator must be informed of the reason for such action.
  - the National Nuclear Regulator must be informed immediately of any suspensions or removals from the Active Position Register.
  - Eskom must provide to the National Nuclear Regulator, within one week, a full report indicating the reason(s) for the suspension, together with a proposed plan for remedial action. This must be followed by regular progress reports to the National Nuclear Regulator until the suspension has been resolved.
  - approval must be obtained from the National Nuclear Regulator prior to the reinstatement of any licensed operator who has been suspended from active duty.
  - only the National Nuclear Regulator can issue, suspend or remove operator licences.
  - prior to re-instatement, the Appointed Medical Practitioner and/or Appointed Psychologist, as appropriate, must certify in the Operators' Health Register that the evaluation does not reveal any disability which

Doc No.	TITLE	REV.	PAGE
LD-1077	REQUIREMENTS FOR MEDICAL AND PSYCHOLOGICAL SURVEILLANCE AND CONTROL AT KOEBERG NUCLEAR POWER STATION	1	8 of 9

might impair judgement or result in inability to perform his/her required function.

- 3.3 Disqualifying conditions in respect of medical fitness of candidate and licensed operators must be used as primary disqualifiers.
- 3.4 Disqualifying conditions in respect of psychological fitness of candidate and licensed operators must be used as primary disqualifiers.
- 3.5 No person will be allowed to work as a licensed operator unless certified in the Operators' Health Register by an Appointed Medical Practitioner and an Appointed Psychologist.
- 3.6 Health evaluations performed abroad must be with prior written agreement between Eskom and the National Nuclear Regulator and the responsible local Appointed Medical Practitioner must then certify these and enter them in the Operator' Health Register.
- 3.7 Eskom must maintain, in a form approved by the National Nuclear Regulator, the following documents:
  - 3.7.1 **Operators' Health Register** that must make provision for the following:
    - 3.7.1.1 Names of all operators.
    - 3.7.1.2 Certification, by the Appointed Medical Practitioner and Appointed Psychologist.
    - 3.7.1.3 Certification, with date, of any suspension.
  - 3.7.2 **Personal Medical Record** that must contain at least the following:
    - 3.7.2.1 Personal medical history.
    - 3.7.2.2 Family history
    - 3.7.2.3 Occupational history
    - 3.7.2.4 Radiological history
    - 3.7.2.5 Details of clinical examinations
    - 3.7.2.6 Summary of psychological record and test results
    - 3.7.2.7 Details of special investigations

This is a confidential medical record and must be controlled as such by the Appointed Medical Practitioner.
  - 3.7.3 **Personal Psychological Record** that must contain at least the following:
    - 3.7.3.1 Records of tests and psychological test results.
    - 3.7.3.2 Details of psychological evaluations and re-evaluations
    - 3.7.3.3 Details of ongoing psychological monitoring
    - 3.7.3.4 Details of psychological reviews
    - 3.7.3.5 Records of interviews
    - 3.7.3.6 Details of special investigations
    - 3.7.3.7 Certification of psychological fitness



<b>Doc No.</b>	<b>TITLE</b>	<b>REV.</b>	<b>PAGE</b>
<b>LD-1077</b>	<b>REQUIREMENTS FOR MEDICAL AND PSYCHOLOGICAL SURVEILLANCE AND CONTROL AT KOEBERG NUCLEAR POWER STATION</b>	<b>1</b>	<b>9 of 9</b>

This is a confidential record and must be controlled as such by the Appointed Psychologist.

- 3.8 Eskom must allow free access to these records, the radiation workers, licensed operators and candidates by the National Nuclear Regulator's medical and psychological consultants for the purposes of audits, tests, surveillances, and interviews.