Eskom	WORKING PROCEDURE	Allocation Centre 38A	Reference Number KWH-B-015	Rev 7
NNR: NO **No.:**	EXTERNAL DOSIMETRY CONTROL			PAGE 1

KORC	ACCESS	IMPORTANCE CATEGORY	NEXT REVIEW DATE	DATE AUTHORISED
NO	Nuclear Restricted	NSA	2024-07-26	2019-07-26

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A VERWEY	TW MABELANE	T KARSTEN
SENIOR SUPERVISOR RADIATION PROTECTION	SENIOR PHYSICIST RADIATION PROTECTION	RADIATION PROTECTION MANAGER
DATE 2019-07-24	**DATE** 2019-07-25	**DATE** 2019-07-26

THIS PROCEDURE HAS BEEN SEEN AND ACCEPTED BY:

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CATEGORY 3 – PROCEDURE FOR REFERENCE

FCA	ALARA REVIEW	SUPERSEDES
PROTECTION	YES 2019-06-27	KWH-B-015, Rev 6 dd. 2016-08-24 FULL REVIEW

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1.0 PURPOSE

1.1 To describe the issue, preparation and control of legal dosimetry, the process for incidents related to legal dosimetry, restriction of radiation workers and routine reports that are generated by the RP Dosimetry Section.

2.0 SCOPE

2.1 Applicable to:

- Monthly wearing period TLDs.
- Extremity TLDs
- Additional Whole Body TLDs
- Neutron TLDs
- EPDs
- QFDs
- Restrictions

3.0 DEFINITIONS AND ABBREVIATIONS

3.1 Definitions

3.1.1 **Controlled Zone** – A controlled zone in terms of this procedure is an area containing radiological hazards to which access is permitted to radiation workers and special persons. Entry, exit and activities performed within such areas are controlled so as to minimise the hazard to persons working in these areas and to prevent the spread of contamination.

3.1.2 **Dosemeter** – An instrument or device designed to measure the radiation dose received by an individual. The dosemeter may either be a direct reading type, e.g. quartz fibre, or and indirect reading type, e.g. thermoluminescent dosemeter.

3.1.3 **Legal or Principal Dosemeter** – A dosemeter used for assessing a person's legal dose which will be recorded on the Radiation Workers Dose Register. The legal dosemeter at Koeberg is the thermoluminescent dosemeter (TLD).

3.1.4 **QFD Charger** – A portable device that is used to zero QFDs.

3.1.5 **Radiation Worker (Radworker)** – A radiation worker is a person who has responsibilities on site, is required to enter Controlled Zones and meets the criteria specified for a radiation worker.

3.1.6 **Special Person** – A person who, under exceptional circumstances, for reasons approved by the Power Station Manager or his deputy, requires entry to a Controlled Zone, but does not meet all the criteria specified for classification as a radiation worker. A Special Person will receive his dosemeter on the date specified on the Control Zone Pass, after which it will be returned to RPDOS or RPOO.

3.1.7 **TLD** – A thermoluminescent dosemeter is a passive device for measuring ionising radiation, consisting of a sealed holder together with a quantity of special material. This material, when subjected to controlled heating after exposure to radiation, releases measurable quantities of light proportional to the quantity of radiation absorbed.

3.2 Abbreviations

3.2.1 **ACONTROL** – Computerised Access Control and QFD Dose Recording

3.2.2 **CCT** – City of Cape Town

3.2.3 **DBU** – Database Update

3.2.4 **DosiGui** – Dosiserv Global User Interface

3.2.5 **DRD** – Direct Reading Dosemeter

3.2.6 **EPD** – Electronic Personal Dosimeter

3.2.7 **ID** – Identity Document

3.2.8 **KTC** – Koeberg Training Centre

3.2.9 **NNR** – National Nuclear Regulator

3.2.10 **PTE** – Prior To Eskom

3.2.11 **QFD** – Quartz Fibre Dosemeter – A direct reading personal dosemetric device

3.2.12 **RADPRO** – Radiation Protection Dose Management Computer System

3.2.13 **RP** – Radiation Protection

3.2.14 **RPC** – Radiation Protection Certificate

3.2.15 **RPDOS** – Radiation Protection Dosimetry Section

3.2.16 **RPOO** – Radiation Protection Operations Office

3.2.17 **SABS** – South African Bureau of Standards

3.2.18 **SAP (RP)** – Senior Authorised Person

3.2.19 **TLD** – Thermoluminescent Dosemeter

3.2.20 **WBC** – Whole Body Count

4.0 REFERENCES

4.1 Referenced Documents

4.1.1 238-54 Rev 0: Radiological Protection Licensing Requirements for Koeberg Nuclear Power Station

4.1.2 335-2, Rev 4: Koeberg Nuclear Power Station Management Manual

4.1.3 ANSI N 343 – 1978

4.1.4 KAA-500, Rev 13: The Process for Controlled Documents

4.1.5 KAA-637, Rev 6: Access Control to Radiological Controlled Zones

4.1.6 KSA-011, Rev 14: The Requirements for Controlled Documents

4.1.7 KSH-001, Rev 9: The Administration and Quality Control of Radiation Dosimetry

4.2 Applicable Documents

4.2.1 DosiServ User's Manual

4.2.2 KFH-HP-030: Radiation Exposure Limit Waiver

4.2.3 KFH-HP-054: Neutron TLD Assignments

4.2.4 KFH-HP-055: EPD/ QFD Reporting Form

4.2.5 KFH-HP-056: Lost, Damaged or Contaminated Legal Dosimetry

4.2.6 KFH-HP-057: Radiation Overexposure Report

4.2.7 KFH-HP-077: Re-Instatement as a Radiation Worker

4.2.8 KFH-HP-087: Dosimetry Information Request

4.2.9 KFH-HP-100: Special Person Controlled Zone Pass

4.2.10 KGH-010: Radiation Protection Response to Incidents / Alarms

4.2.11 KSH-008: Radiological Protection Records, Data and Information Management

4.2.12 KWH-B-017: TLD Processing and Dose Record Updating

4.2.13 KWH-I-068: Operation, Calibration and Use of the Panasonic TLD Readers

4.2.14 KWH-S-021: Access Control

4.2.15 MGPI Doc No. 13503: Dosiserv Users Manual

5.0 PREREQUISITES

5.1 Only TLDs from the stock of annealed TLDs at the Dosimetry TLD Issue desk must be issued.

5.2 All radworkers must be assigned to a work section.

5.3 All radworkers must be assigned to a company.

6.0 PRECAUTIONS AND LIMITATIONS

N/A

7.0 PROCEDURE

7.1 Issuing Legal Dosimetry to Permanent Radiation Workers

7.1.1 Dosimetry Information Request Form (KFH-HP-087)

7.1.1.1 Before the issue of legal dosimetry, the applicant (radiation worker) must complete the Dosimetry Information Request Form. Check that the form is completed correctly and signed by the applicant and KNPS Head of Section or Supervisor. Check that the postal /e-mail address field is completed correctly.

NOTE: *The identity or passport number must be cross-checked against the person's ID, passport, or other positive identification.*

7.1.1.2 In the case of any previous exposure to ionising radiation:

(1) The applicant must provide RPDOS with a transfer record indicating the current year, 5 year and accumulated lifetime radiation dose totals.

(2) If a record is unavailable, and the applicant has provided an estimate of such radiation dose totals, a Request for Previous Occupational Radiation Exposure Record letter, must be signed by the applicant, before a TLD may be issued.

(3) If the applicant was previously registered as a Radiation worker in South Africa, a SABS bin number must be provided.

(4) Fill in the appropriate SABS bin number on the Dosimetry Information Request Form.

7.1.1.3 If there has been no previous exposure to ionising radiation, or there is no available SABS ID number:

(1) RPDOS must assign the next available SABS bin number to the individual.

(2) Fill in the appropriate SABS number on the Dosimetry Information Request Form.

NOTE: *SABS has allocated a series of numbers for use at Koeberg; these numbers are automatically assigned once the person is added to the system.*

7.1.2 Adding a New Radiation Worker

7.1.2.1 To add a new radiation worker follow instructions on Worker Section in the Dosiserv Manual.

7.1.2.2 Complete all general information fields i.e. the individual's name, date of birth, access code, ID/PP number, Unique number if applicable, Eskom worker or contractor, work section, company, etc.

NOTE: *The date of birth is a mandatory field and must be entered. The entry will not be accepted if the individual is younger than 18 years of age.*

7.1.2.3 Enter the worker ID/PP number corresponding with his / her permit as the access code unless the worker requests a specific access code.

7.1.2.4 Review all the current year radiation exposure dose totals and assign the appropriate dose category (dosimetry tab).

7.1.2.5 Enter the non-Eskom radiation dose totals according to the transfer record and/or Dosimetry Information Request Form in the Initial doses field. Known radiation dose arising from medical radiotherapeutic treatment must also be entered, with the appropriate comment being made.

7.1.2.6 As the following information regarding prospective Radiation workers becomes available, it may be added on the DosiGui – Worker Section, Access control criteria.

(1) The site radiation workers training date, as supplied by the RP Training Team for successful candidates.

NOTE: *Respiratory training and face fit test are also indicated.*

(2) The Radiation worker's medical examination date as supplied by the Medical Section. Check the medical expiry date on the Health Register and correct the End date on RADPRO to correspond with the Medical Expiry date on the Health Register

(3) The respiratory medical approval date.

7.1.3 Baseline Whole Body Count (WBC)

7.1.3.1 Once the individual has been assigned a SABS ID number and TLD a baseline whole body count shall be performed and the relevant data updated on DosiGui. (Access control criteria and non-electronic dose)

7.1.4 TLD Assignments

NOTE: *For any individual remaining a radiation worker over a TLD change-over period, two TLDs must be assigned (one for odd months and one for even months).*

7.1.4.1 To assign TLDs refer to DosiServ Manual. (Medical tab in Worker Information).

7.1.4.2 Label the TLDs as follows:

(1) Pink label for even months.

(2) Yellow label for odd months.

(3) Write or print the individual's name, TLD number, rack number and SABS number on the TLD label.

(4) Verify the TLD has a barcode on the back.

NOTE: *A label printing facility is available.*

7.1.4.3 Place the TLD in a transparent TLD holder and issue the appropriate TLD to the individual. If a second TLD was issued, the second TLD is retained by RPDOS to issue for the next wearing period.

NOTE: *Duplicate TLDs and uncalibrated TLDs cannot be issued since the information is retained in a master file that is automatically checked and updated by the DosiGui software.*

7.1.4.4 Verify that the GotAIITLDs access criteria is fulfilled when two TLDs are assigned. Fulfil manually when one TLD is assigned.

7.1.5 Assign a Rack Number

7.1.5.1 Assign a rack number in the Worker Information Equipment tab.

7.1.6 Worker Check In

7.1.6.1 Check the worker in to have active radworker status. (Access tab) when the following legal requirements have been met:

- Successful medical examination;
- Successful radiation worker training;

- Over 18 years of age;
- Dose limits have not been exceeded;
- A whole body count has been performed.

7.1.6.2 Verify Access Criteria OK on main worker list.

7.2 Issuing Legal Dosimetry to Special Persons

7.2.1 The Special Person must be in possession of a valid Special Person Controlled Zone Pass (KFH-HP-100) and must be accompanied by the escort identified on the Special Person Controlled Zone Pass, when reporting for dosimetry. The escort must be a qualified radiation worker. Check that pages 1 to 3 of the Special Person Controlled Zone Pass has been completed and that all the required signatures have been obtained.

7.2.2 The two categories applicable for Special Persons are:

7.2.2.1 Category A

- 1 mSv per year dose limit
- No entry into airborne contamination zones

7.2.2.2 Category B

- 1 mSv per year dose limit
- Whole body count required before and after entry into the controlled zone.

7.2.3 Follow steps 7.1.2 to 7.1.6, noting the following exceptions:

(1) Set the dose limits as indicated on the Controlled Zone Pass.

(2) No rack number is required for a Special Person.

(3) Select the waived status in the access tab of Worker Information and enter from: and to: dates.

(4) Perform a whole body count if requested by SAP (RP), or if Special Person is a Category B.

(5) Indicate that the individual is a Special Person in the “comments” field in Worker Information.

(6) Link Special Person to RPC indicated on the Special Person Controlled Zone Pass.

(7) Manually fulfill GotAIITLDs access criteria if only one TLD is issued.

7.2.4 Write down all the particulars (Name, SABS number and TLD number) on two labels or print 2 labels. Use Yellow labels for odd months and Pink labels for even months. Place one label on the TLD. Place the TLD in a blue TLD holder for easy identification. Place the second label on the front of the blue holder and issue it to the individual.

7.2.5 Retain the Special Person Controlled Zone Pass in the office and provide the Special Person with a copy of the Special Person Controlled Zone Pass.

7.2.6 Verify that pages1, 2 and 3 of the Special Person Controlled Zone Pass have been completed.

NOTE 1: *For VIP visitors an alternative briefing page, i.e. group briefing, may be used to replace page 2 of Special Person Controlled Zone Pass.*

NOTE 2: *For IAEA. DoE and State inspectors only page 1 of Special Person Controlled Zone Pass needs to be completed as they are governed by a specific protocol.*

7.2.7 The assigned TLD and the Controlled Zone Pass must be returned to RPDOS / RPOO after use.

7.3 Terminations

7.3.1 Termination of Employment as Radiation Worker

7.3.1.1 Upon termination of employment as a radiation worker, proceed as follows:

(1) Request the worker to collect his /her TLD from the rack and report to RP Dosimetry for a termination WBC.

(2) Unassign the TLDs and rack number on DosiGui – Worker Section.

(3) Terminate the individual on DosiGui – Worker Section by changing the status to checked out.

NOTE: *Special Persons are terminated in the same way.*

7.4 Thermoluminescent Dosimetry (TLD) Control

7.4.1 Control of Monthly Worn TLDs

NOTE: *All personnel on temporary assignments to other nuclear facilities for training or other purposes that **require a TLD** must be issued with an additional annealed whole body TLD (not the current assigned wearing period TLDs)*

7.4.1.1 Monthly Dosimetry Change-over

(1) Dosemeters are worn for one calendar month after which they are replaced with annealed, different colour label TLDs. Pink labels for even months and Yellow labels for odd months.

(2) Packing

(a) Only annealed TLDs (personnel and background) may be issued. See KWH-I-068: 7.4 for anneal criteria.

(b) Each TLD is uniquely identified by name, rack number, SABS number and TLD number, and is placed on storage racks in strategic locations, according to a numbering system as specified in 7.4.1.2.

(c) The TLDs must be sorted into rack order according to the Badge Issue Checklist. This is printed from RADPRO. Place the TLDs inside the TLD hangers and clip it on the carry bags in rack order.

(d) Background TLDs are stored at each of the locations for the entire wearing period.

(3) Collection and Preparation for Readout

(a) As near as possible to the last working day of each month, or on the day directed by the Head of Dosimetry, annealed and different colour label TLDs for the next wearing period must be placed on the racks together with the TLDs currently in use. After the “flip over” on RadPro the new month TLDs must be used and the previous wearing period TLDs must be collected.

(b) After collection remove each TLD from the TLD hanger.

- Place the background TLDs in tray 1 and continue filling the trays in rack order.
- While placing each TLD in the tray, visually check the TLD for damage, if a TLD is found to be damaged, it must be placed aside and processed separately.

- Determine whether all the TLDs that were issued for that wearing period were collected. Use the Badge Issue Checklist for this. Initiate any investigations as required to locate missing TLDs.
- The TLDs will be processed according to KWH-B-017.

7.4.1.2 TLD Rack Numbering System

(1) TLDs are distributed to various locations. Each location is identified according to the first digit of the number.

NOTE: *TLDs may not be removed from Koeberg site without prior approval from Radiation Protection.*

The locations are:

Location	Rack Number Series
Chemistry	1000
ESL	2000
KTC	3000
MMS (MSB)	4000
ISI Building	5000
IMS (Cal Lab)	6000
RPOO	7000 / 8000 / 9000

(2) RPDOS will amend the RADPRO database to reflect any changes.

(3) RPDOS must ensure that the rack number changes are also corrected on the affected TLD labels.

7.4.1.3 Restriction of Radiation Workers

The process for controlled zone entry restrictions and unrestriction of radworkers is described in KAA-637, Appendix 2.

NOTE: *For all restrictions a comment must be added in the Comments field on RADPRO – Worker Information tab. The date of the restriction and the reason for the restriction must be included in the comment.*

Reasons for Restriction:

(a) Personnel Contamination

(b) Lapse of administrative certification

(c) RP rule violation and Non Compliance

(d) Anomalies

(e) Medical reasons

(f) Declaration of pregnancy

(g) Requirements to perform an investigation Whole Body Count

(h) Overexposure or a suspected overexposure

(i) Exceeding ninety percent of the yearly dose limits

7.4.1.4 Lapse of administrative certification

- Restrict individual on RADPRO.
- Inform Security to remove individuals access from the Controlled Zone.
- Remove individuals TLD from the rack.

7.4.1.5 Medicals Not Approved

- Upon the receipt of a Health Register indicating Medical not Approved restrict individual on RADPRO.
- Inform Security to remove individual's access to the Controlled Zone.
- Inform RPOO to remove TLD from rack and manually update certification file to indicate that the individuals medical is not approved.

7.4.1.6 Failed Radiation Worker Training

- Upon receipt of radiation worker training record restrict individual on RADPRO.
- Inform Security to remove individual's access to Controlled Zone.
- Inform RPOO to remove TLD from rack and manually update certification file to indicate that the individual failed the radiation worker training.

7.4.1.7 Worker declares pregnancy

- Restrict individual on RADPRO

7.4.1.8 Anomalies

Examples of anomalies:

(a) Outstanding TLDs after TLD change over

(b) Information required

(c) To evaluate a dose discrepancy

(d) To resolve a Dosemeter number

- Restrict the individual on RADPRO.

7.4.1.9 Exceeding ninety percent of the yearly limits

- Restrict the individual on RADPRO

NOTE: *The system automatically prevents access to Controlled Zones for individuals falling into the 90% category. If unrestricted their dose must be closely monitored and their activities must be investigated.*

7.4.1.9 Overexposures

In the event of an overexposure, or a suspected overexposure:

- Restrict the individual on RADPRO
- Withdraw the individual's TLD
- Process the TLD (Emergency Processing – see KWH-B-017). The TLD must be processed not less than 1 hour after over-exposure occurred. For exposures greater than or equal to 0,20 Gray, the dose and dose rate effectiveness factor must be considered.
- If the TLD results indicate an overexposure, initiate Radiation Overexposure Report (KFH-HP-057). The individual will remain restricted pending an investigation. Report the incident in accordance with KGH-010.
- Inform the individual of the results.
- Persons who exceed the annual effective dose legal limit must be sent for a medical examination.
- Before allowing an individual back into the Controlled Zones, an assessment and radiological exposure history evaluation must be performed. The results of the assessment must be recorded on the Re-instatement as a Radiation Worker form (KFH-HP-077).
- A waiver may be obtained for exceeding the yearly effective dose limit of 20 mSv. Complete Radiation Exposure Limit Waiver form. (KFH-HP-030). The Manager Radiation Protection must approve the extension. An effective dose of 50 mSv per year **must** not be exceeded
- If no overexposure has occurred, the badge will be re-issued to the individual and the TLD results, if any, will be entered into the Dose Register. Unrestrict the worker on RADPRO.

7.4.2 Control of Extremity TLDs

7.4.2.1 At the monthly change-over, RPDOS will withdraw all extremity TLDs from RPOO and replace them with annealed extremity TLDs.

7.4.2.2 All extremity TLD numbers must be reflected in DosiGui Equipments.

7.4.2.3 Upon request from RPOO, an adequate supply of extremity dosimetry must be prepared for issue.

7.4.2.4 Extremity TLDs are issued by Radiation Protection in accordance with KWH-S-021 and forwarded to RPDOS for processing, after use.

7.4.2.5 Extremity TLDs will be processed according to KWH-B-017.

7.4.2.6 In the event of a lost or damaged extremity TLD, it must be clearly indicated on the Issue Form (KWH-S-021).

7.4.2.7 In the case of a lost or damaged extremity TLD, RPDOS must assign the highest dose to the individual as the other people that worked with the individual on the same job or use alternative means to assign the dose.

7.4.3 Control of Neutron Dosemeters

7.4.3.1 Neutron dose assessment is carried out by means of the combined use of the UD-802 and UD-809 TLDs.

7.4.3.2 At the monthly change-over, RPDOS will withdraw all neutron dosemeters from RPOO and replace them with annealed TLDs.

7.4.3.3 Upon request from RPOO, an adequate supply of neutron dosemeters must be prepared for issue.

7.4.3.4 Prepare the neutron dosemeters by recording the UD-809 and UD-802 TLD combinations on the Neutron TLD Assignments Form (KFH-HP-054). A neutron dosemeter comprises of a UD-802 TLD with a special ID code, identified with a blue label, and a UD-809 TLD in a special double hanger. The hanger must be clearly numbered with the assigned dosemeter number.

7.4.3.5 All neutron dosemeter numbers must be reflected in DosiGui Equipments.

7.4.3.6 Neutron dosemeters are issued by Radiation Protection in accordance with KWH-S-021 and forwarded to RPDOS for processing, after use.

7.4.3.7 Neutron dosemeters will be processed according to KWH-B-017.

7.4.4 Control of Additional Whole Body Dosimetry Issued at Access Control Points

7.4.4.1 At the monthly change-over, RPDOS will withdraw all additional whole body TLDs from RPOO and replace them with annealed additional whole body TLDs.

7.4.4.2 All additional whole body TLD numbers must be reflected in DosiGui Equipments.

7.4.4.3 Upon request from RPOO, an adequate supply of additional whole body TLDs must be prepared for issue.

7.4.4.4 Additional whole body TLDs are issued by Radiation Protection in accordance with KWH-S-021 and forwarded to RPDOS for processing, after use.

7.4.4.5 TLDs will be processed according to KWH-B-017.

7.5 Control of Quartz Fibre Dosemeters

7.5.1 Distribution

7.5.1.1 QFDs are distributed to various locations off site as part of the Emergency plan. A record is kept of their specific location on RADPRO.

7.5.2 Reading a QFD

7.5.2.1 To read a QFD, hold it up and position the eye piece approximately 1,5 cm from the eye, pointing towards a light source.

7.5.2.2 When looking through the QFD you may adjust the distance of the QFD from the eye to see clearly, and/or select a brighter light source if the scale is not illuminated.

7.5.2.3 Turn the QFD until the scale is horizontal.

7.5.2.4 The cursor position on the scale is the QFD reading. All readings must be rounded off to the nearest ten.

7.5.3 Charging a QFD

7.5.3.1 Using the Fluke Chargers

(1) Holding the QFD with the eye piece uppermost, insert the charging switch end into the socket of a QFD charger / reader unit.

(2) When looking through the QFD, apply a light downward pressure on the QFD. This will illuminate the dosemeter scale allowing the needle and scale to be seen. (Turn the QFD if necessary so that the scale reads from left to right.)

(3) Increase the downward pressure on the dosemeter until the needle suddenly changes position; maintain the pressure, ensuring that the dosemeter is square in the charger.

(4) Move the needle by turning the voltage control knob anti-clockwise towards zero. Adjust the knob slowly until the needle is on the zero line.

7.6 Incidents

7.6.1 Lost, Damaged or Contaminated Legal Dosimetry

7.6.1.1 If a Legal Dosemeter is lost, damaged or contaminated, the individual must complete Lost, Damaged or Contaminated Legal Dosimetry form (KFH-HP-056).

7.6.1.2 Lost Dosimetry

- Restrict the individual.
- All attempts must be made to recover the dosemeter.
- If found outside the controlled zone and undamaged, it can be worn for the remainder of the period.
- If the TLD is found inside the controlled zone it will be read, annealed and handed back to the individual and processed with the applicable wearing period TLDs. Section C of KFH-HP-056 must be completed by RPDOS Supervisor to assess dose.
- If not found issue a replacement dosemeter. Section C of KFH-HP-056 must be completed by RPDOS Supervisor to assess dose.
- Unrestrict individual

NOTE: *If the TLD is found after the wearing period TLDs have been read it must be annealed and placed with the available TLDs. If the TLD was found more than 1 month after it was reported lost RADPRO must be checked to see if the badge is still valid. If not the badge must be placed in the rack of TLDs awaiting ECFs*

7.6.1.3 Damaged Dosimetry

- Restrict the individual.
- Attempt to process the dosimetry device.
- If damaged beyond processing Section C of KFH-HP-056 is to be completed by RPDOS Supervisor to assess dose.
- Issue a replacement dosemeter and unrestrict individual.

7.6.1.4 Contaminated Dosimetry

- Restrict the individual.
- Attempt to decontaminate the dosemeter.
- If the dosemeter cannot be decontaminated Section C of KFH-HP-056 is to be completed by RPDOS Supervisor to assess dose.
- Discard contaminated dosemeter as radwaste.
- Issue a replacement dosemeter and unrestrict individual.

7.6.2 Lost or Damaged EPD or EPD Reading Requiring Investigation

7.6.2.1 If an EPD has been lost or damaged or the EPD is malfunctioning or alarming the individual must immediately report to Radiation Protection.

7.6.2.2 Radiation Protection will investigate and complete the appropriate form (KFH-HP-055) in accordance with KWH-S-021.

7.6.2.3 If the calculated exposure is less than 2 mSv, the dose will be entered onto the Access Control System by the Radiation Protection person completing the form.

7.6.2.4 If the calculated exposure is greater than 2 mSv, or on the discretion of the RP person, the individual's TLD must be withdrawn for processing.

7.6.2.5 The RP Dosimetry Section will be informed and the individual prevented from further entries into any controlled zones, until the investigation has been completed. All further dose evaluations (and appropriate notifications as per KGH-010) must be performed by RP Dosimetry, which will include the processing of the individual's TLD.

7.6.2.6 Part C of the applicable form must be completed and the necessary information entered into the individual's dose register.

7.7 Routine Reports

7.7.1 Badge Pull Report

7.7.1.1 A "Badge Pull Report" is generated daily. All individuals who still hold permanent badge status but with expired medical, training or WBC dates will be listed.

7.7.2 Exposure Watchlist Report

7.7.2.1 These reports may be generated daily if required, in cases of high maintenance activities, or in general, to list all personnel who have reached 80% and 90% respectively of their dose limits. (The system automatically prevents access to Controlled Zones for individuals falling into the 90% category). Personnel falling into these categories will be closely monitored and their activities will be investigated.

7.7.3 Exposure Listing Report

7.7.3.1 Every week two exposure listings are generated for use at RPOO access control. One is used in case of a system power failure. This report is used when performing manual entry to validate if access is allowed. This report lists the necessary details and current status of every qualified radiation worker at Koeberg Nuclear Power Station.

7.7.3.2 The second report is placed outside the access control window for radworkers to check their dose and certification dates.

7.7.4 Legal Dose Records

7.7.4.1 Upon leaving Koeberg site, an individual may request an exposure record from RPDOS.

7.7.4.2 As the latest legal results may not be available, an estimate based on all legal results and DRD readings may be handed or e-mailed to the individual.

NOTE: *After updating the latest legal TLD results, RPDOS must generate and despatch records monthly to radiation workers who have left Koeberg within that applicable period. See 7.7.6*

7.7.5 Termination Radiation Exposure Report

7.7.5.1 These reports contain legal dose information and are generated for terminated radworkers after updating legal doses.

7.7.5.2 A dose record must be submitted / e-mailed within 60 days of termination of radworker status or TLD processing, whichever is the later.

7.7.6 Quarterly Special Person Report

7.7.6.1 A quarterly report must be submitted to the National Nuclear Regulator indicating the name, entry date, purpose of visit, category and total dose for the entry of Special Persons authorised. This report is included in the Quarterly Radioactive Effluent and Radwaste report.

8.0 ACCEPTANCE CRITERIA

N/A

9.0 RECORDS

9.1 Records generated by this procedure:

- Radiation Exposure Limit Waiver KFH-HP-030 (Permanent
- Neutron TLD Assignments KFH-HP-054 (Non-Permanent)
- Lost, Damaged or Contaminated Legal Dosimetry KFH-HP-056 (Permanent)
- Radiation Overexposure Report KFH-HP-057 (Permanent)
- Re-instatement as a Radiation Worker KFH-HP-077 (Permanent)
- Dosimetry Information Request KFH-HP-087 (Permanent)
- Special Persons Controlled Zone Pass KFH-HP-100 (Permanent)
- Pre-Eskom Employment Occupational Radiation Exposure record

9.2 These records must be handled in accordance with KSH-008 requirements

10.0 ATTACHMENTS

Appendix 1 – Justification

APPENDIX 1

JUSTIFICATION

Revision 6

1. Full review.

2. Forms KFH-HP-054, KFH-HP-057, KFH-HP-087 and KFH-HP-100 removed as Attachments and added to Applicable Documents.

3. Special Person form (KFH-HP-100) changed to add Assigned Escort to Section 1 of form and Request Supported by: changed to PSM/PLANT Manager.
(CR 89470-001 CA)

4. Special Person form (KFH-HP-100) and Controlled Zone Conduct form collated into one form.

5. Dosimetry Information Request form (KFH-HP-087) changed to include e-mail address.

Revision 7

1. Full review.

2. Added process to follow for lost, damaged and contaminated dosemeters.

3. Added requirement to issue additional whole body TLDs to workers on temporary assignments to other nuclear facilities for training or other purposes.

4. Added forms: Radiation Exposure Limit Waiver (KFH-HP-030), Lost, Damaged or Contaminated Legal Dosimetry (KFH-HP-056), Re-instatement as a Radiation Worker (KFH-HP-077) as records.