

Status of National Arrangements on Dose Registry

“Regulatory provisions on NDR & its’ implementation”

GAYDAA’ & AHMAD FROM EMRC & JAEC

JORDAN

Legal Basis- Regulatory provisions

Requirements and provisions for the NDR:

► In law:

Radiation protection and nuclear safety No. (43) for the year 2007 Act (4/b)

(Protect the environment, human health and property from the hazards of contamination and exposure to ionizing radiation in accordance with the provisions of this law)

► In regulation

Radiation protection regulation No.(108) for 2015

Artc (8) :

A) all authorised facilities must provide all protection tools for the worker and personal dosimeter for each one.

B) All authorized facilities for Dosimetry provider must do calibration and maintenance for the dosimeters service.

Artc (18) :

If happened any accident or incident must the authorized facilities must do investigation, determined the reasons of this and submit the report to the EMRC through one week.

► Instructions

for Authorization Of DSP

► Code of practice

(personal monitoring during activities resulting of External And Internal Exposure)

CONT

▶ Any requirement applicable for authorization of the NDR:

- 1) The authorization holder should inform each worker of the results of the individual monitoring.
- 2) The authorization holder should have electronic mechanisms and systems in place to keep and maintain records of occupational exposure.
- 3) submitting records of occupational exposures to the NDR should not prevent authorization holders from providing the EMRC with reports of occupational exposures as stipulated in the authorization conditions

▶ Criteria and/or reference standards for authorization and/or approval of dosimetry services:

All the DSPs take their calibrations from the manufacturing company

▶ Validity period:

Monitoring periods used for external dosimetry: normally done quarterly (three (3) Months) and monthly related to classification of worker .

. Types of dosimetry services available:

- Internal dosimetry
- external dosimetry

CONT

- ▶ Radiation types for which dosimetry services can be provided:

Photon, beta and neutron

- ▶ Types of personal dosimeters provided:

- Internal dosimetry (whole body counter)
- external dosimetry:
 - I. Active dosimetry (direct reading)
 - II. TLD, OSL

Operational Technical Service Providers (TSPs) in the country

- ▶ For typical list of TSP, please refer GSG-7 Section 8
- ▶ List here all TSPs and their scope of service & indicate TSP maintains the NDR



External Dosimetry

- Active: EPD
- Passive: TLD



Internal Dosimetry

- Direct Method (Whole Body Counter: Apix, in-vivo Canberra and Genie 2000)
- Indirect Method (Blood and urine Samples)



Irradiators

- Commercial Irradiator
- Research Irradiator

Dosimetry service characteristics

- Monitoring periods used for external dosimetry:

Category A workers Shall be measured monthly and category B workers shall be measured quarterly. (every 3 Months)

- Calibration procedures for external dosimetry:

The manufacturing company is doing calibration.

- Extremity dosimetry:

In process to do this

- Internal dosimetry:

▶ Not yet

- Software for internal dosimetry analysis:

Dosimetry service characteristics

- ▶ Dose assessment methodologies for internal dosimetry:

- ▶ Calibration procedures for internal dosimetry:

SSD Lab.



Secondary Standard Dosimetry Laboratory •

Member of the International Network of Calibration Laboratories (SSDL Network IAEA/WHO) •

Neutron Lab.



ISO 9001 •

- ▶ Dose estimation of internal dose using the results of workplace monitoring:



► Monitoring requirements for emergency exposure situations and recording arrangements:

❖ **Preventive arrangement**

❖ **Regular monitoring**

❖ **Quickly response**

Provision for Quality Management System for TSPs

- ▶ Provide info on
 - ▶ What system?
 - ▶ Certification:
- ▶ **The JAEC covered and certified by:**
- ▶
 - **International organization for Standardization ISO 9001.**
 - **International organization for Standardization ISO 17025.**
 - **International Accreditation for SSDL and the most labs.**
- ▶ Accreditation and scope:
- ▶ Qualified staff:
- ▶ Training requirements:

General characteristics of the NDR

- Establishment date:

September /2017

- Responsible body/organization:

The EMRC (Energy and Minerals Regulatory Commition)

- Role of the NDR:

- ✓ Its keeps records of occupational doses in accordance with the law.
- ✓ The NDR data will be used for tracking a registered worker's accumulative dose based on data provided by the authorization holder.
- ✓ It will assist in minimizing the possibility of a worker receiving a dose greater than the dose limit while moving from one employer to another or from one site to another

- Occupational categories included in the NDR:

Diagnostic Radiology (DR), Radiotherapy (RT), Nuclear Medicine (NM), Research Reactor (RR), Well Logging (WL), Industrial Radiography (IR), Nuclear Gauge (NG), GIF-Gamma Irradiation Facility, Transportation, Waste Managers and etc

CONT

- Responsible organisation (individual) for submitting the required information to the NDR:

The DSPs.

- Information is required by the NDR:

The authorization holder should provide name of DSP , Names of workers, Age , Gender, practice, Dose equivalent (Deep dose equivalent and shallow dose equivalent), beginning and end dates of the dose record's

- Types of doses are recorded in the NDR:

HP (10) for deep dose and HP (0.07) for shallow dose.

General characteristics of the NDR

- ▶ Procedure applicable for overexposure and/or in an emergency situation:

1) Every emergency or accidental exposure to radiation doses and accidental intake of radioactive materials shall be recorded together and clearly distinguished from normal exposure;

2) An emergency or accidental exposure to radiation doses shall be reported immediately to the Authority with a report of the investigation of causes and consequences of the exposure

- ▶ Time period for submitting data to the NDR:

Quarterly and monthly.

- ▶ Retainment period of the NDR data:

Minimum 10 years following the year to which data is related

- ▶ Number of currently registered occupationally exposed workers: (in your service in the country or from all services)

Actually The NDR Is not completed here and not organized and we are in progress by using RAIS .

General characteristics of the NDR

- ▶ Type of database to establish a NDR and maintenance arrangements (e.g., in-house developments, off the shelf, etc.) :

As I mentioned before we don't have NDR Database we just receive the reports from DSP.

- ▶ Difficulties when establishing the NDR:

No Data

- ▶ Reporting mechanism to occupationally exposed workers or organisations:

No Data

- ▶ Management system of the NDR (collection of exposure data):

No data



Introduction of 2022 Annual Report / Newsletter

- ▶ Brief information on the content of the report:

We don't have Annual Report / Newsletter

- ▶ Samples of the analysis on exposure data: