

ESTABLISHMENT OF NATIONAL DOSE REGISTER IN SOUTH AFRICA

**INTERNATIONAL ATOMIC ENERGY AGENCY EXPERT MISSION
20 – 24 AUGUST 2012**

OPENING MEETING NOTES

VENUE: NNR OFFICES, CENTURION

ATTENDEES:

Mr E Smit (Radcon, Chairperson)
Mr H Suman (IAEA)
Mr M Souphy (IAEA/FANC)
Mr A Muller (NNR)
Mr P Mohajane (NNR)
Mr S Pheto (NNR)
Mr J Boulton (NNR)
Mr P Maine (SABS)
M Maree (Eskom)
Mr R Erasmus (SSA)
Mr J le Roux (Necsa)
Mr Z Zituta (Goldfields)
Mr D Venter (Harmony Gold)
Mr M Khoatane (AngloGold Ashanti)
Mr M Vermeijs (AngloGold Ashanti)
Mr M Strauss (Parc RGM)

1. OPENING AND WELCOME

The chairperson, Mr Smit welcomed the participants to the meeting and indicated the importance of a centralised dose register and how the NDR project was initiated between the two Regulatory Bodies.

2. BACKGROUND

Mr Muller presented some additional background information on the NDR project. He stated that a Working Group under the Joint Cooperative Committee between the Regulatory Bodies had been tasked to investigate options to establish a NDR in the country. The Regulators conducted a Self Assessment against IAEA standards in 2010 and actions plans were

developed to address deficiencies in the regulatory infrastructure. One of the recommendations emanating from the Self Assessment was that a NDR should be established. He also presented the international practice with respect to a NDR, national requirements regarding dose records, the different role players in the country and benefits of having a NDR. Mr Muller presented the outcome of a joint NNR-Radcon study which included recommendations on the preferred software for a NDR and the location for the NDR. A formal proposal provided to the IAEA at the end of March 2012 resulted in the Expert Mission to South Africa of which the scope and the programme for the week include:

- meeting all Dosimetry Service Providers (DSPs) and other stakeholders
- analysing dose records infrastructure and arrangements
- reviewing the legal & regulatory requirements for the NDR
- reviewing the different databases used in the country in terms of compatibility and resources required for the NDR
- discussing the adequacy, reliability and security of the host IT infrastructure
- discussing access control to and accessibility of information in Regulatory Authority Information System (RAIS)
- discussing quality control systems at stakeholders
- providing an indication of the financial implications on establishing a NDR
- presenting preliminary observations and recommendations of the Expert Mission

3. RSA NDR PROJECT AND IAEA EXPERT MISSION

Mr Suman presented the international safety requirements related to dose registers and indicated that the Draft EU BSS requires that the results of individual monitoring must be submitted to a national dose register established by each EU member state.

Mr Suman stated that the IAEA was conducting a mission to provide assistance to South Africa in assessing the feasibility of using RAIS to establish a NDR in the country. The IAEA had developed a highly customizable software for regulatory purposes and a NDR model has recently been added in RAIS. He indicated that the expert mission would focus on the following:

- analysis of the different data structures used by the different DSPs in South Africa
- provision of advice on the scope and elements that the NDR should include
- identification of the possible NDR data structure in RAIS
- identification of means for data exchange between the DSPs and RAIS NDR
- identification of training needs

Mr Suman discussed the various considerations that have to be made when establishing a NDR, including:

- Dosimetry Service Providers, employer, also multiple and simultaneous employers
- short term employment, outside workers, foreign workers

- classification of work activities (UNSCEAR 2008, or national classification)
- exposure types and classification thereof
- regulatory requirements
- operation of NDR (Regulatory Body or other organization)
- multiple instances of RAIS in the country
- means for data submissions by the DSPs
- unique identification of workers and facilities
- export data format

4. RAIS OVERVIEW

Mr Suman stated that the Regulatory Authority Information System (RAIS) is a software tool developed by the IAEA to assist the regulatory bodies in managing their regulatory programme. The current version of the tool is a web application interacting with a RAIS database on a SQL server. RAIS promotes a consistent and common approach to the regulatory control, in accordance with IAEA Safety Standards and Code of Conduct, while offering high flexibility to match national needs and circumstances. Access control is provided through two roles namely functional roles, where interface elements are accessible by a user with corresponding access rights, and data roles controlling the specific data sectors which are accessible by a user.

Authorized representatives of facilities may submit data online, which might include inventory data, periodic audits, application of authorization and notification of changes in their facilities. Data submissions are subject to validation by authorized RAIS users.

Mr Suman stated that worldwide 71 countries are using RAIS (by July 2012), of which 29 countries are from Africa. Training had been provided to more than 450 persons, in the form of more than 18 regional and 19 national workshops. The IAEA provides technical assistance to countries by means of expert missions (installation, customization, data import). Between September 2009 and July 2012 twenty six servers for RAIS 3.1 Web had been provided to Member States together with off -site support.

5. INTERNATIONAL EXPERIENCE IN ESTABLISHING A NDR

Mr Souphy presented the Belgium experience with regards to the establishment of a NDR and also provided some information on the radiological passbook for external workers in Belgium. The National Dose Register in Belgium is located at FANC (Federal Agency for Nuclear Control) and makes provision for professionally exposed persons, students and apprentices as well as persons undergoing dosimetric surveillance at NORM practices. The NDR covers employees of facilities situated in Belgium, employees of a Belgian employer,

independent workers submitted to the Belgian social security, and missions with risk of exposure in Belgium or abroad.

He presented the contents and basic data of the National Dose Register as well as the access which is achieved through identification and authentication by e-ID. Mr Souphy also presented the integration of the NDR with the Social Security Services, the classification of dose subtypes and meaning of the different codes, as well as the main data fields.

The Belgium NDR project was started in May 2009 and a test of a pilot system with a limited number of users was conducted from November 2009 to February 2010. Feedback from the test together with challenges and proposed solutions was presented, of which the most frequently observed problems included:

- Robustness
- Delegation model
- Missing Information
- Information origin
- Integration aspects

6. DISCUSSION

The following general points were discussed by participants

- a web based NDR, with adequate firewalls
- a unique identification number in the database
- legal liability on records submitted by DPSs/organisations
- a process of data verification by submitting organisation
- the hardware and software required for RAIS
- the classification of work activities
- the inclusion or not of foreign workers in the database
- database management, resources, access control etc.
- NORM existing registers, mining houses, different data fields and informing other NORM facilities about NDR project
- confidentiality of dose records and data security requirements
- dose duplication in current fragmented record keeping system
- historical doses and capturing thereof
- dose types including internal and extremity doses

7. CONCLUSION

In general all participants indicated acceptance of the topics that should be explored during the mission, a willingness to participate in the NDR project, and to provide data to the NDR in the existing legal and regulatory framework. The rest of the Expert Mission would be

devoted to discussing and reviewing specific topics with Dosimetry Service Providers and other relevant stakeholders, which would culminate in proposals and recommendations by the IAEA experts for the next phases of the project.

8. CLOSURE

Mr Smit closed the meeting and thanked the participants for their input and contribution during the meeting, as well as for their commitment to the NDR project.

NDR CLOSING MEETING NOTES

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1. OPENING AND WELCOME

Mr Smit welcomed the participants, and stated that good discussions took place during the meetings and visits to Dosimetry Service Providers and stakeholders on the relevant topics related to occupational exposures.

2. IAEA EXPERT MISSION OBSERVATIONS AND CONCLUSIONS

Mr Suman presented the preliminary conclusions made by the IAEA expert team. He reiterated the objectives of the IAEA Expert Mission, and indicated which organisations participated in the feasibility study. He highlighted the points discussed during the week, which included:

- regulatory framework for NDR
- scope of dose register at each DSP

- types of doses measured and recorded
- identification of workers, facilities and work activities by the DSPs
- possible formats for data export and means of data transfer

He proceeded to present an overview of the existing dosimetry and dose databases systems at the organisations visited in South Africa throughout the week. A summary of the estimated number of radiation workers and dose records, number of organisations having a register, dose types recorded, foreign workers and the high turn-over rate of workers was provided.

Mr Suman stated that the IAEA review concluded that although there are currently no specific legal or regulatory requirements relating to NDR in SA, the overall impression is that all stakeholders are supportive of the establishment of a NDR, and would not object to submitting dosimetry data when requested. Conditions attached to authorisations or directives can be used to require submittal of data to the NDR.

The presentation included an overview of the identification of workers at the different organizations by means of industry numbers, National ID for South African citizens, passport or other ID for foreigners, SABS BIN number, Landauer number, and an ESKOM number. He proposed that the NDR contains all these IDs in addition to a new unique RAN for workers as well as a unique RAN for facilities. The NDR will also accommodate the work activities which will be populated with existing data, and a classification scheme will be built up gradually.

The structures of dose registers of other NORM facilities, which were not present in the meetings, are not known, and these data structures need to be confirmed. The issue of receiving multiple dose records for the same worker in overlapping periods will also be addressed in the design of the NDR. The proposed NDR data fields will include facility data fields, worker data fields and dose data fields. Excel files seem the commonly accepted format for data transfer and specific templates will be prepared, together with tools for data verification/checking and QC procedures.

Mr Suman proposed three mile stones in the development of the NDR for South Africa as follows:

Milestone 1

Facilities and workers data uploaded;
NDR designed;
NDR implemented

Milestone 2

Upload module completed;
Sample set of data;
Kick-off the pilot project, which could run for a few months

Milestone 3

Confidence in NDR achieved;
Concluding the pilot project;
Official NDR kick-off

He indicated that IAEA assistance could be provided to achieve these three milestones by means of an IAEA expert mission for each milestone.

3. DISCUSSION

The participants indicated a willingness to participate in the NDR project and accepted the proposals following the analysis conducted by the IAEA experts. The following queries and comments were raised and discussed:

- for some mines the company number or different operations (locations) could be used
- dose duplications and records from which organisation/provider to be entered in the NDR
- some NORM facilities perform beta measurements
- treatment of historical data and where to import from
- NNR resources to work with IAEA experts (IT and database administrator)
- uploading or submittal of data and verification thereof
- pilot project and NDR timescales
- role and participation of NDR Steering Committee

4. WAY FORWARD

It was agreed that all presentations during the expert mission would be made available to the Steering Committee members and other relevant participants. The minutes of the opening and closing meeting and the IAEA mission report would also be circulated to participants. The next steps in the project and actions would be finalized and communicated to Steering Committee members as appropriate.

5. CLOSURE

Mr E Smit closed the meeting and thanked the participants for their contributions during the meeting, the cooperative atmosphere in which the meetings were conducted, and for those participants that attended most of the Expert Mission meetings. A special word of thanks was conveyed to the IAEA experts, for the conduct of the feasibility study, the guidance and recommendations regarding the NDR.