

# Status of National Arrangements on Dose Registry

“Regulatory provisions on NDR & its’ implementation”

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Executive Office of the Nuclear Energy Commission

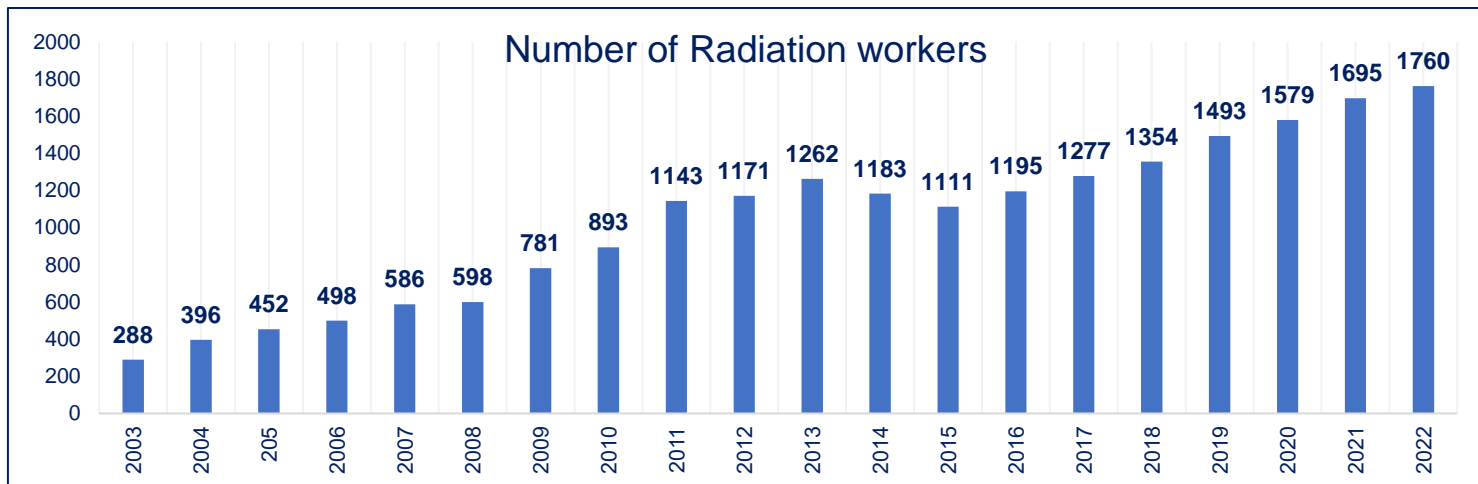
**MONGOLIA**

# Legal Basis- Regulatory provisions

- According to the Article 11<sup>1.1.5</sup> of the Law on Nuclear Energy (2009), the Nuclear and Radiation Inspection Department (NRID) of the Ministry of Education and Science is responsible for the occupational exposure of radiation workers and maintaining a database of occupational doses.
- Article 43. Requirements on Occupational Exposure.
  - 43.1. The radiation workers shall be covered by the individual dose control of occupational irradiation.
  - 43.2. The governmental organization responsible for occupational exposure shall keep in the archive the integrated record of individual doses for 50 years.
- Criteria and/or reference standards for authorization and/or approval of dosimetry services:
- According to the “Basic Regulation on Radiation Protection and Safety” (2016) which is based on IAEA GSR Part 3, the Regulatory body provides authorization or approval of service providers for individual monitoring and calibration services;
- TSP: RADIATION CONTROL LABORATORY of National Reference Laboratory for Food Safety under the Mongolian Agency for Standardization and Metrology (MASM) → Before 2023.01.01 It was under General Agency for Specialized Inspection (GASI).
  - Types of dosimetry services available: External dosimetry
  - Radiation types for which dosimetry services can be provided: Gamma and X-Ray
  - Types of personal dosimeters provided: TLD-100

# Operational Technical Service Providers (TSPs) in the country (RADIATION CONTROL LABORATORY - RCL)

Main activity		
In the field of public radiation control	in medical radiation control	In the field of occupational exposure
<ul style="list-style-type: none"> <li>➤ Analysis of foodstuffs, consumer goods, manufactured goods, and external environment /Soil, sediment, drinking waters, and other water samples/</li> <li>➤ Analysis of building materials and mining samples</li> <li>➤ Radon accumulation in the housing</li> </ul>	<ul style="list-style-type: none"> <li>➤ Measurement of quality control of X-ray diagnostic radiology equipment</li> </ul>	<ul style="list-style-type: none"> <li>➤ Estimating occupational exposure doses for radiation workers in Mongolia, every month</li> <li>➤ Maintaining dose record for 50 years</li> <li>➤ Measurement of the workplace</li> </ul>



Total of 398 radiation sources user organizations

# Dosimetry service characteristics

- Monitoring periods used for external dosimetry: Monthly
- Calibration procedures for external dosimetry: HARSHAW 6600<sup>+</sup> TLD system being used. For the determination of its reader conversion factor /RCF/ RCL cooperates with the Dosimetry Calibration Laboratory /SSDL of Mongolia/. Validation measurements are performed in RCL using Sr-90, exposing at doses 0.5 mSv and 1 mSv in order to test the HARSHAW 6600 plus reader functionality.
- Extremity dosimetry: Not yet established
- Internal dosimetry: Not yet established
- Software for internal dosimetry analysis: Not yet established

# Dosimetry service characteristics

- Dose assessment methodologies for internal dosimetry: Not yet established
  - Calibration procedures for internal dosimetry: Not yet established
  - Dose estimation of internal dose using the results of workplace monitoring: Not yet established
  - **Monitoring requirements for emergency exposure situations and recording arrangements:**
- According to “Basic Regulation on Radiation Protection and Safety”:
- 4.4.1. The government shall establish a programme for managing, controlling and recording the doses received in an emergency by emergency workers.
  - 4.4.5. Response organizations and employers shall ensure that no emergency worker is subject to an exposure in an emergency in excess of 50 mSv other than:
    - 1. For the purposes of saving life;
    - 2. Preventing serious injury;
    - 3. When undertaking actions to prevent severe deterministic effects;
    - 4. Actions to prevent the development of catastrophic conditions that could significantly affect people and the environment;
    - 5. When undertaking actions to avert a large collective dose.
  - 4.4.5. Workers who receive doses in an emergency exposure situation shall not normally be precluded from incurring further occupational exposure. However, qualified medical advice shall be obtained before any further occupational exposure if such a worker has received a dose exceeding 200 mSv or at the request of the worker

# Provision for Quality Management System for TSPs

# RADIATION CONTROL LABORATORY

- Accredited according to the MNS ISO/IEC 17025 standard in 2013, 2016 and 2019 (MNS ISO/IEC 17025:2018).
- Following MNS ISO/IEC 17025 National Reference Laboratory for Food Safety has 25 quality procedures of measurement and all the measurements follow those procedures.
- Has three qualified staff

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GASHI.MNS

MNAS  
Accreditation  
system  
Т.Н. 06  
MNS ISO/IEC 17025

IAC-MRA

Хүснэгт Аюулгүй Байдал Үндэсний Лавлагаа  
Лабораторийн Ерөнхий захирлын 2023 оны  
А.02 дугаар тушаалын 2 дугаар хавсралт  
Март 05/01

**СХЭГ-ЫН ХҮНСНИЙ  
АЮУЛГҮЙ БАЙДЛЫН  
ҮНДСЭНИЙ ЛАВЛАГАА  
ЛАБОРАТОРИЙ**

Улаанбаатар 17042, Хан-Уул дүүрэг,

Чингисийн иргэн чөлөө 73

Телеф: 70005972, Факс: 70006946

**МЭРГЭЖЛИЙН ШАРЛАГЫН ХҮВИЙН ТҮН  
CERTIFICATE OF OCCUPATIONAL EXPOSURE**

Бүртгэлийн дугаар

Байгууллагын код: ТЛД22-6667

Хүсэлт гаргасан байгууллагын нэр: Цомгийн энергийн комиссын ажлын алба

Аргын стандарт: MNS 5518:2005

(Method of test)

Зориулалт: 2022 оны 12 сарын МШХТХ-ын хэмжээт

(The specific aim)

Хүлээн авсан огноо	Хэмжээт дууссан огноо	Хэвлэсэн огноо
2022 он 12 сар 28 өдөр	2022 он 02 сар 28 өдөр	2023 он 02 сар 03 өдөр

№	Хүргэлэгчийн нэр (The client)	Довмгиртийн дугаар (Job number)	Ажиллагсан хонго	ХЭМЖЭЭЛТИЙН ДҮН (TWA value in dB)	
				Нр(10) м.зн	Нр(0.07) м.зн
1		3023	15 хонго	x	x
2		2757	15 хонго	x	x
3		2319	15 хонго	x	x
4		2328	15 хонго	x	x
5		2345	15 хонго	x	x
6		3327	15 хонго	x	x
7		916	15 хонго	x	x
8		3417	15 хонго	x	x
9		2318	15 хонго	x	x
10		2337	15 хонго	x	x
11		2330	15 хонго	x	x
12		2374	15 хонго	x	x
13		2447	15 хонго	x	x
14		3335	15 хонго	x	x

Шарлаглагч

(The auditor)

Циравтай ажиглагчид авч болон цацрагийн түвшний үндсэн хэвлэл нь аливаа дараалсан 3 жилийн  
өмнөхөөр жилд 20мВ, гэхдээ авч ажж жилд 50 мВ-ээс хэтрэхгүй байх.

Тайлбар:

(Remarks)

(А) - 0.05 мВ-ээс бага тун  
(Б) - Довмгирч байгаагүй  
Нр(10) - Шингэсэн тун  
(А1) - Довмгирчийн мэдээллийн урсгал  
(П) - Довмгирчийн шингэсэн, гэхдээ дууссан  
Нр(0.07) - Арьсны гадаргууд шингэсэн тун

Салал тайлбар:

(Printed and interpreted)

ХЯНАСАН: АХЛАХ ШИНЖЭГЧ:

(Signed by)

БАТАЛСАН: ЛАБОРАТОРИЙН ЭРХЛЭГЧ:

(Signed by)

Циравтай  
Лаборатори  
Т.Н. 06  
Х. 06  
СЭРМӨН  
СЭРМӨН

/Б.УТАНБААТАР/

/Х.ИДЭРМӨНХ/

Энэ шинжлэлтийн дүн нь зөвхөн шинжлэгч хийсэн дээдэлд хамаарна,  
Шинжлэлтийн дүгд лабораторийн зөвлөөрөлгүй хуульчлахыг хориглоно

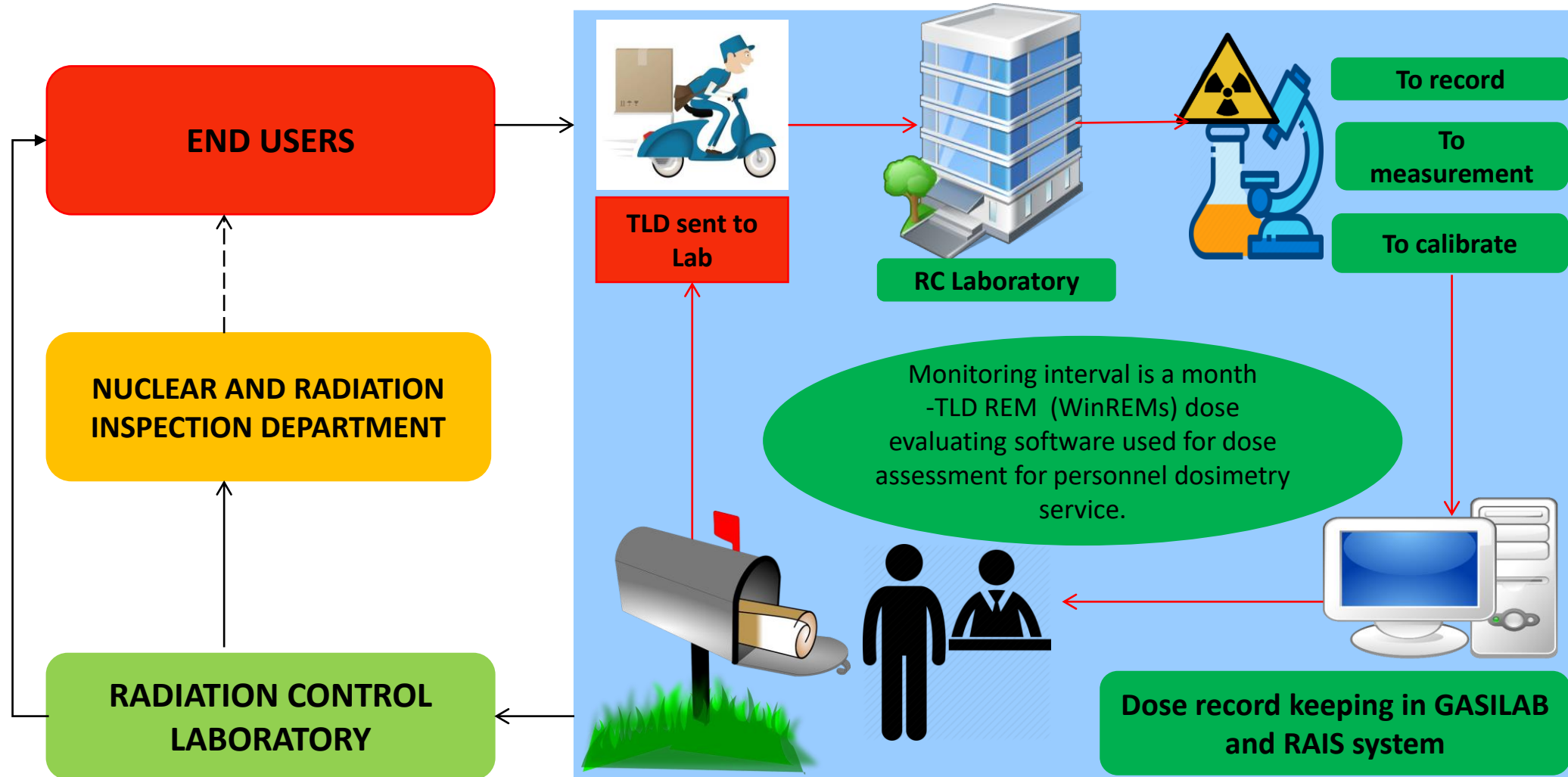
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# General characteristics of the NDR

- Establishment date: 1999 (Harshaw 4500)
- Responsible body/organization: Mongolian Agency for Standardization and Metrology and NRID
- RCL and NRID is responsible for estimating occupational exposure doses for radiation workers in Mongolia, every month; Maintain dose record for 50 year
- Dose records are being maintained by NRID on a national online data system that is backed up to ZIP and CD.
- The NRID evaluates the individual dose monthly and sends the results to the employers.
- Additionally, once per year, the workers would receive a full report containing the dose results for one calendar year.

# General characteristics of the NDR





# General characteristics of the NDR

- Types of doses are recorded in the NDR: Hp0.07, Hp10 (mSv)
- Procedure applicable for overexposure and/or in an emergency situation: If the monthly occupational exposure exceeds the permissible dose limit, it must be confirmed by an NRID.
- Time period for submitting data to the NDR: Monthly
- Retainment period of the NDR data: 50 years
- Number of currently registered occupationally exposed workers (in your service in the country or from all services): 1760

THANK YOU FOR YOUR KIND  
ATTENTION