Status of National Arrangements on Dose Registry

"Regulatory provisions on NDR & its' implementation"

Soma Shill

Principal Scientific Officer

Bangladesh Atomic Energy Regulatory Authority (BAERA)

Bangladesh

REGIONAL WORKSHOP ON ON THE MANAGEMENT OF NATIONAL DOSE REGISTRIES

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Introduction

Bangladesh has long since been using atomic energy and related technology in different fields for the overall socio-economic development of the country and their uses are increasing gradually.

Regulatory Infrastructure

•The government enacted “Bangladesh Atomic Energy Regulatory Act (ACT No 19, June 2012) for establishing an effective regulatory body as well as for introducing Nuclear Law to ensure safe use of nuclear and radiation sources in the country.

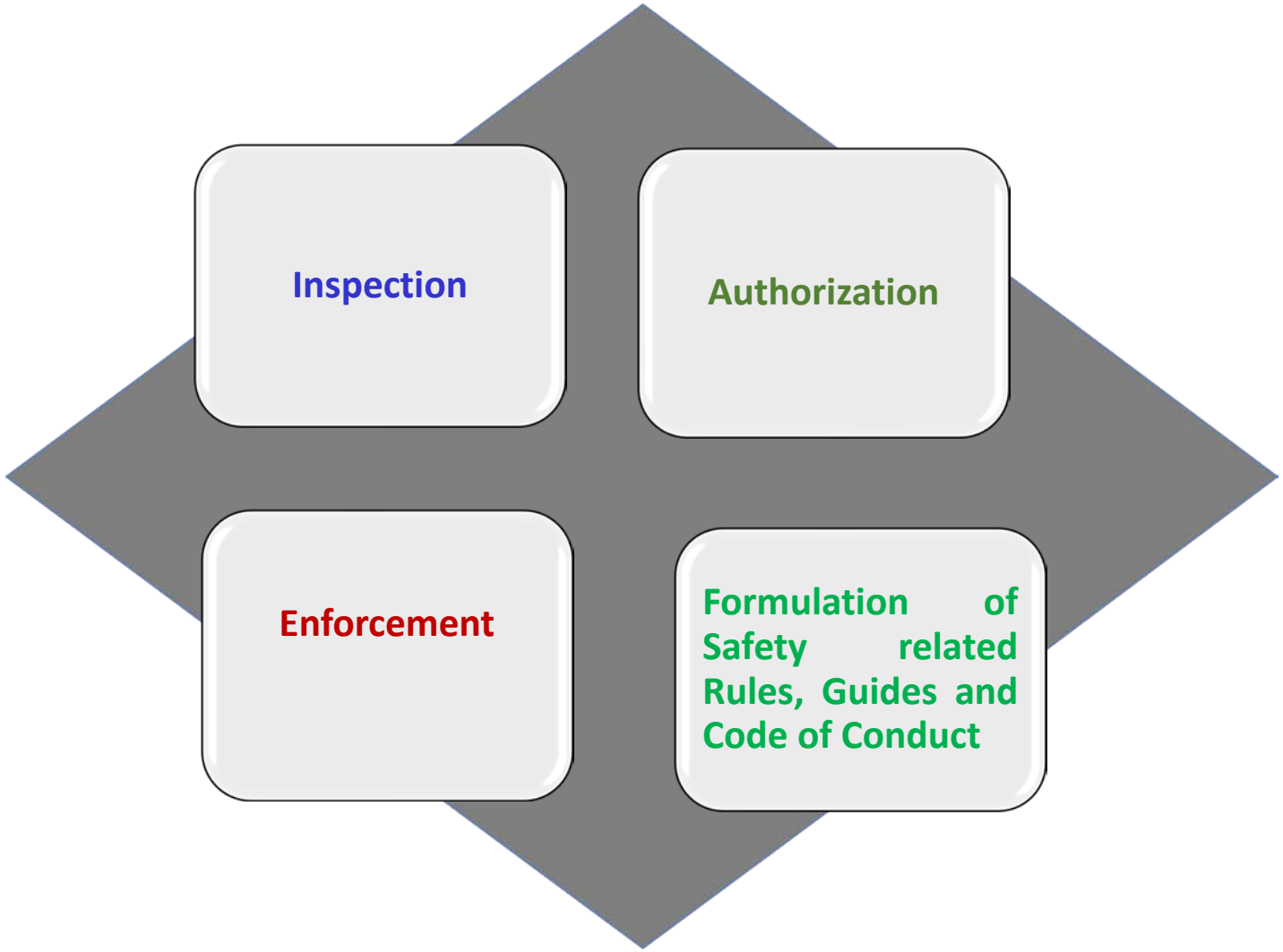
•The BAER Act-2012 has been formulated based on IAEA Handbook of Nuclear Law and NSRC Act-1993.

• The Government established Bangladesh Atomic Energy Regulatory Authority (BAERA) under section 4 of Bangladesh Atomic Energy Regulatory Act-2012 on 12th February 2013.

BAERA Building

Regulatory Framework

Regulatory Authority oversees through…



➢In addition to its regulatory functions in developing regulations, licensing and operating experience feedback analysis, regulatory authority ensures that the operating organization is fulfilling its responsibility in terms of nuclear and radiation safety.

Legal Instruments for Radiation Control

BAER Act 2012

An Act entitled “Bangladesh Atomic Energy Regulatory Act (BAER) Act was passed by the parliament in 2012 which replaced the previous NSRC Act -1993.

NSRC Rules 1997

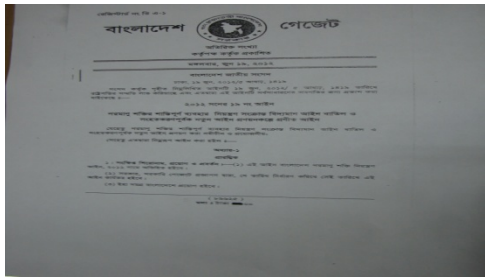
Nuclear Safety and Radiation Control Rules was passed by the Ministry in 1997

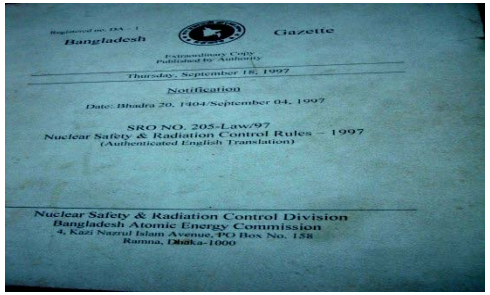
Regulatory Guides

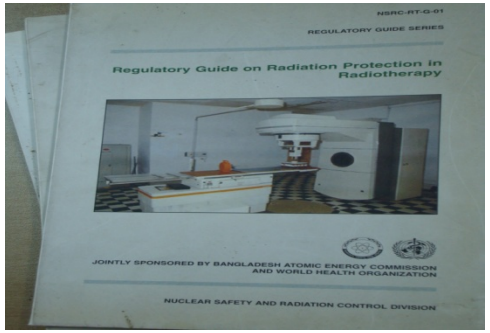
Regulatory Guide on Radiation Protection in Medical Diagnostic X-Ray

Regulatory Guide on Radiation Protection in Nuclear Medicine

Regulatory Guide on Radiation Protection in Radiotherapy







Application of Radiation in Bangladesh

Medical (Diagnostic x-ray, Nuclear Medicine and Radiotherapy)

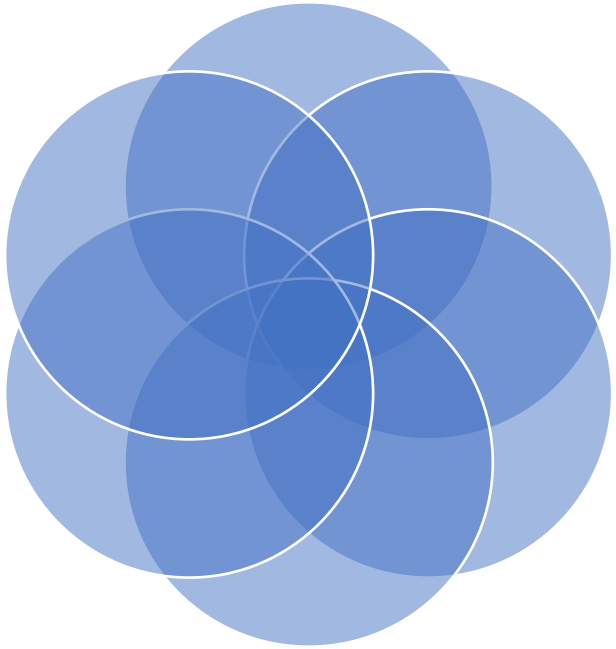
Industrial (Nuclear Gauge, Well Logging, Radiography, etc.)

Research and Education (Academic Institutes, Research Institutes)

Research Laboratories (RTML, ICDDRB etc)

Agriculture

Consumer Products



Control of Occupational Exposure

Licensees shall ensure for all workers that:

- Occupational exposure be limited and optimized.
- Suitable and adequate facilities, equipment and services for protection be provided.
- Appropriate protective devices and monitoring equipment be provided and properly used.
- Appropriate training be provided as well as periodic retraining and updating.

Personnel Monitring/Regulatory Inspection

Legal Basis- Regulatory provisions for the NDR

- At present, there is no requirement for the National Dose Registry of occupational workers in the country, but there are provisions for ensuring the monitoring of occupational exposures, in the existing regulatory framework:
  - monitoring of occupational exposures is required by regulations;
  - recording of occupational exposures is required by regulations; and
  - control of occupational exposures is required by regulations.

This, as required in: NSRC Rules 1997; **Rules-20.1, 20.2, 22.7**

- requirements for the monitoring and recording of occupational exposures in planned exposure situations are established in the NSRC Rules-1997 (Rule-58). And also, the authorization holder is responsible for maintaining medical record for each worker, including occupational exposure records (Rule-59 of NSRC Rules-1997). The authorization holder shall transfer the record to BAERA after this retention period or after exemption from his licensed responsibility (Rule-75 of NSRC Rules-1997).

Any requirement applicable for authorization of the NDR:

- No requirement yet. Both the regulatory body and the technical service provider have the Record Keeping system at present.

Operational Technical Service Providers (TSPs) in the country

- Bangladesh Atomic Energy Commission (BAEC) has Health Physics Division (HPD). The HPD provides service on control of occupational exposure by monitoring occupational radiation workers and workplace throughout the country in accordance with NSRC Rules. HPD uses TLD for individual monitoring of radiation workers, who are being monitored quarterly.
- TSP has only the record keeping system for the occupational exposure data maintenance at present.

Dosimetry service characteristics

At present, there is only external dosimetry service in the country.

- Monitoring periods used for external dosimetry: Quarterly basis per year
- Calibration procedures for external dosimetry: By SSDL, BAEC
- Extremity dosimetry: Measurement of extremity dose of nuclear medicine workers using TLD
- Internal dosimetry: Internal dosimetry is not in the stage of providing service yet, only in the stage of development and method validation through IAEA projects.
- Software for internal dosimetry analysis:
- Dose assessment methodologies for internal dosimetry:
- Calibration procedures for internal dosimetry:
- Dose estimation of internal dose using the results of workplace monitoring:

Dosimetry service characteristics

- Monitoring requirements for emergency exposure situations and recording arrangements:

There is requirement of Monitoring Programme for the accident and emergency situations in Rule-56.2 (c) of NSRC Rules-1997.

Rule 59.1(b) has the requirement for Exposure Record:- record doses received by a worker during normal operation, planned special exposure and accidental and emergency exposure together but these shall be distinguishable.

Provision for Quality Management System for TSPs

No provisions for Quality Management System for TSPs in the regulation.

- Provide info on
  - What system?
  - Certification:
  - Accreditation and scope:
  - Qualified staff:
  - Training requirements:

General characteristics of the NDR

There is no NDR in my country at present. I hope from this workshop I will have hands on experience in establishing NDR and gather knowledge about all its challenges in the implementation stages. With this knowledge, I hope I will be able to implement NDR in my country following proper administrative process.


Thank
You!