Regulatory competence building framework for nuclear facilities in Mongolia, Status review and suggestion

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1. Introduction

A regulatory body shall be effectively independent from organizations or bodies charged with the promotion of nuclear technologies or responsible for facilities or activities. An enhanced framework of regulatory staff is needed to ensure nuclear and radiation safety. Currently Mongolia does not have a nuclear power plant or any nuclear facilities. But there is a plan to use nuclear energy for peaceful purposes. The Mongolian parliament enacted a State policy for utilization of radioactive minerals and nuclear energy and Nuclear Energy Law. The aim of this paper is to investigate the regulatory competence building framework for nuclear facilities in Mongolia. This investigation concludes with suggestions to achieve the effective regulatory control of nuclear facilities and activities in Mongolia.

2. Nuclear regulatory framework

2.1 Legal framework

The Mongolian parliament enacted a State policy for utilization of radioactive minerals and nuclear energy on June 25th, 2009. The legislative basis for nuclear and radiation safety in Mongolia is the Nuclear Energy Law (the Law), enacted on 16 July 2009.

2.1.1. State policy for utilization of radioactive minerals and nuclear energy

The purpose of this policy is to study a radioactive mineral resources comprehensively, to mine and process that resources and export them for the peaceful purposes, furthermore to use the nuclear energy in a wide area of economics and society and to produce the nuclear power by the pure technology which is auspicious with human health and environment [1]. To make assessment of the role of nuclear energy of Mongolia in line with its energy supply, balance and export potential and to formulate justification for building nuclear power plant, aiming to start its construction within 10 years. To arrange regulatory framework and national infrastructure to ensure nuclear and radiation safety would be compliance with the international standards. State administrative authority in charge of nuclear energy affairs which is responsible to develop nuclear science, to provide human resources, to prepare and to maintain complete regulatory policy for radiation safety and protection maintain their functions and duties under prime Minister [1].

2.1.2. Nuclear Energy Law

The purpose of this law shall be to regulate relation pertaining to the use of radioactive minerals and nuclear energy on the territory of Mongolia for peaceful purposes, ensuring nuclear and radiation safety, and protecting public, society and environment from negative impact of ionizing radiation [2].

Nuclear Energy Law has 8 chapters as follows:

1. General provisions
2. State settlement of radioactive minerals and nuclear energy exploitation sector /Competence and responsibility of State great parliament, the Government, the Nuclear energy commission, the Nuclear energy agency, state inspector, local administrative/
3. Special license
4. Deposit development agreement and investment agreement
5. Requirements for ensuring nuclear and radiation safety
6. Prevention from nuclear and radiation accident, compensation of damage
7. International guarantee and control over implementation of nuclear energy legislation
8. Enforcement

2.1.3. Law of Mongolia on its Nuclear-Weapon-Free Status

Law of Mongolia on its Nuclear-Weapon-Free Status adopted on 3 February 2000. The purpose of the present law is to regulate relation pertaining to the preservation of the territory of Mongolia, including its air space, land waters, and sub-soil free from nuclear weapon, which constitutes an important factor ensuring Mongolia's security [3].

On 25th September of 1992, the Mongolian government declared itself a single State nuclear-weapon-free zone when Mongolian President Punsalmaagin Ochirbat announced before the 47th session of the UN General Assembly that Mongolia's territory would be a NWFZ and that it would work to have its status internationally recognized.

2.1.4. Regulations

- Radiation Safety Standard (1983)

- Basic Regulation on Radiation Sanitation (1983)
- Transport Regulation for Radioactive Sources (1987) based on IAEA regulation 1985.

3. Regulatory Body Establishment and Independence

3.1 Nuclear Energy Agency (NEA)

Regulatory agency of the Government of Mongolia was established by No 64th resolution of the Government of Mongolia on "Establishing regulatory and implementing agency of the Government" on 24th of December 2008.

Basic duties of NEA are:

- To implement state policy on exploitation of radioactive minerals and nuclear energy, utilization of nuclear technology and development of nuclear research
- To ensure nuclear and radiation protection and safety
- To implement professional control and inspection

Nuclear and Radiation Regulatory Department /NRRD/ of the Nuclear Energy Agency /NEA/ is a Regulatory body in Mongolia. The main responsibility of NRRD are:

- to ensure nuclear safety on nuclear facility /uranium exploring and mining field/
- to ensure radiation safety of radiation sources
- to develop nuclear and radiation safety regulation and standards
- to assess applications
- to maintain authorization /licensing/
- to maintain inspection /verify compliance/
- to maintain enforcement /ensure compliance with requirements/

4. Staff Training

- There is 29 staff working at the NRRD. The NEA will have 96 staffs which are adopted by the No 96th resolution of Government on 12th December 2009. 34 of them will be staff of NRRD.
- 4 inspectors participated for the fellowship training and 4 inspectors completed Post Graduate Educational Course on Radiation Protection and Safety of Radiation Sources under the IAEA projects and 2 technicians are studying on this course.

Conclusion

Functions and powers of Regulatory Authority and principles of nuclear and radiation safety have been described within Nuclear Energy Law of Mongolia. But this law is more focused to regulate relations pertained to use of radioactive minerals and nuclear energy for peaceful purposes. The basic regulations /1983, 1987/, which are in still in force, pre-date the Law and are not based on current international standards and the Code of Conduct.

The regulatory body does not have a sufficient number of personnel with the necessary qualifications, experience and expertise to undertake its functions and responsibilities for nuclear facilities. Training program is not sufficiently comprehensive or structured and neither does it ensure that staff members are kept aware of technological developments and new principles and concepts, in particular in the areas of uranium mining and nuclear facilities.

The Nuclear Energy Agency /NEA/ empowered under the Law as the regulatory body. The regulatory functions are assigned to the Nuclear and Radiation Regulatory Authority /NRRA/ of NEA .

Suggestions

1. There is need to develop social regulation such as nuclear and radiation safety law and safety regulation and standards for nuclear installation and different types of radiation application. Nuclear industry generate negative externalities /radiation risk, public concerns, radiological contamination of environment/. Nuclear safety regulation shall provide nuclear safety as public good to the socially acceptable level.
2. The regulatory body should be able to make independent regulatory judgements and decisions, free from any undue influences that might compromise safety, such as pressures associated with changing political circumstances or economic conditions, or pressures from government departments or from other organizations [4,5].
3. Mongolia should become a contracting party of the Convention on Nuclear Safety. It helps to achieve a high level of safety in its civil nuclear programme and to establish and maintain effective defences in nuclear installations against potential radiological hazards, and to prevent accidents having radiological consequences.
4. It is essential that regulatory body apply a systematic approach to identify current and desired competencies, determine the gaps, and design and implement training programmes to address the desired regulatory body competencies. The recommended approach is for regulatory body to apply the competency model described in TECDOC-1254 to determine which competencies are applicable for appropriate categories of staff [6].

References:

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