Role of the Bulgarian Nuclear Regulatory Body on the Development of the Novi han Repository

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Introduction

The Novi han repository was constructed at the end of the 1960s in accordance with the Russian design (so called RADON type facility). It was commissioned in 1964 and since then it had been in operation for disposal of institutional radioactive waste, that was generated on the territory of the Republic of Bulgaria.

In 1994 the facility was temporary stopped from operation by the Inspectorate on the Safe Use of Atomic Energy (ISUAE) to the Committee on the Use of Atomic Energy for Peaceful Purposes (CUAEPP). The main objective for this measure was the necessity of implementation of upgrading measures that would improved the safety of the repository.

From 1998 until now the operator has been performing actions in this direction and the licenses that were issued by the ISUAE were on the performance of upgrading measures, as well as on the use of external services related to the safety of the Novi han repository.

I Bulgarian Nuclear Safety Authority

The Committee on the Use of Atomic Energy for Peaceful Purposes is a State Body to the Council of Ministers. Its staff is set by the Council of Ministers (Act on the Use of Atomic Energy for Peaceful Purposes - AUAEPP, Article 12, Paragraphs 1 and 2).

The Committee on the Use of Atomic Energy for Peaceful Purposes:

a. takes part in the development of concepts and programmes, co-ordinates and finances researches and developments, in the field of atomic energy utilisation;

b. determines criteria and requirements for safe atomic energy utilisation and nuclear material accounting, storage and transportation;

c. determines criteria and requirements for training, qualification and capacity of the staff, working in the field of atomic energy utilisation;

d. collects and delivers to the corresponding authorities and organisations information about events concerning nuclear and radiation safety;

e. co-ordinates the supervision activities on the safe atomic energy utilisation;

f. determines measures and manages the restoration of affected by radioactive sources areas of the environment;

g. establishes the international collaboration of the Republic of Bulgaria in the field of atomic energy utilisation, and takes part in the work of international organisations in this field.

The activities under Paragraph 1, are carried out in co-operation with the other authorities, within the framework of their competency (AUAEPP, Article 13, Paragraph 2).

The state control over the safe atomic energy utilisation and nuclear material accounting, storage and transportation is carried out by the Committee on the Use of Atomic Energy for Peaceful Purposes, through the Inspectorate on Safe Use of Atomic Energy (AUAEPP, Article 17).

II Responsibilities of the Bulgarian Nuclear Safety Authority

2.1. State Policy in the Field of the Safe Use of Atomic Energy

The CUAEPP has been involved in the preparation of the Republic of Bulgaria for the signature and the subsequent ratification of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management. According to the Act on the Ratification of the Joint Convention (May 2000) the CUAEPP is the Regulatory Body and at the same time the responsible entity for the preparation of the national reports under this Convention.

2.2. Development of Concepts and Programmes

The Bulgarian Nuclear Safety Authority (CUAEPP) has participated in the development of the following national documents that were approved by the Government:

- National Strategy on the Safe Management of SNF and RAW (1999)
- Comprehensive Programme on the Development of a Legislative Basis on SNF and RAW Management (CM Decision 777 of 10 Dec. 1999)
- Programme on Strengthening the Control in the Field of RAW Management (Decision 539 of 1998).

2.3. Co-ordination and Financing of Research Studies

The CUAEPP has supported through its research fund a series of investigations in the field of RAW management. The main ones are the following:

a. Investigation of the Radionuclides Migration and Sorption in the Geological Strata near Novi han Repository (1992)

b. Study on Detail Characterisation of the Design of the Novi han Repository (1995)

c. Probabilistic Assessment of the Emergency Situations (1995)

d. Development of a Monitoring System (1995)

e. Study on Siting of LILW Disposal Facility(1998-1999).

The BNSA has also co-ordinated the accomplishment of the following international projects related to the upgrading of the Novi han repository:

a. C2/SER/9904 "Assessment of the Design of an Above Ground Temporary Storage Facility at the Novi han Repository" (EC, DG. ENV, 2000)

b. Upgrading the Monitoring Programme of the Novi han Repository (EC, DG.ENV, Proposed Project, 2001)

c. "Control over the Gamma Well" .

2.4. Definition of Requirements on the Safe Use of Atomic Energy

The *Act on the Use of Atomic Energy for Peaceful Purposes* (AUAEPP) is currently being amended. One of the aspects that will be emphasised in the draft of the new Act will be:

a. principles of safe management of RAW

b. responsibilities of the entities that produce and/or manage RAW;

c. Fund on Safety and Storage of RAW and Fund on Decommissioning of Nuclear Facilities

d. licensing regime.

It is envisaged that the new Atomic Act will stipulate:

a. clear definition of the responsibilities of all physical and legal entities, performing activities with RAW

b. responsibility on the protection of the future generation (National registry of the RAW disposal facilities)

d. responsibilities of the state on institutional control over RAW disposal facilities

e. establishment of a State RAW Management Agency.

The *Basic Safety Standards-92* are currently being amended in accordance with the IAEA Safety Series No. 115 and the EC Directive 96/29/EURTAOM. The draft BSS is expected to be approved by the Government at the end of 2000.

CUAEPP Regulations

a.*Regulation No. 7 on Collection, Storage, Processing, Transportation and Disposal of RAW on the Territory of the Republic of Bulgaria* (CUAEPP, 1992) is envisaged to be replaced by a new CUAEPP Regulation on the Safety of RAW Management, that will comply will the IAEA and EC recommendations and will stipulate requirements on the siting, design, construction, operation, and decommissioning of RAW management facilities.

b. *Regulation No.46 (CUAEPP, MH, 1976) on Transport of Radioactive Substances* will be updated until 2002 in accordance with the IAEA ST-1 (as amended) recommendations and the acquis in this field (e.g. EC Directive 92/3/EURATOM).

2.5. Definition of Criteria and Requirements on Training and Qualification of Personnel

The BNSA has elaborated and put into force normative acts that define the main requirements on the training and qualification of the personnel working in the field of atomic energy, i.e. :

- Regulation No. 6 (CUAEPP, 1989) on Requirements and Criteria on Training, Qualification and Authorisation of Personnel, Working in the Field of Use of Atomic Energy (currently being amended)

- Regulation No. 5 (CUAEPP, 1988) on Issuance of a License on Use of Atomic Energy (to be amended)

- Regulation No. 46 (CUAEPP, MIA, 1976)

- Regulation No. 7 (CUAEPP, 1992).

2.6. Collection and Provision of Information on Events, Related to the Radiation Protection and Nuclear Safety

The BNSA collects and disseminates information related to the radiation protection, radiological events, etc. This is achieved through the:

- preparation and publication of the CUAEPP Annual Report

- operation of the National Monitoring System, that has access to the CUAEPP website

- maintenance of a database of the radiological events and accidents

- development of a national spent nuclear fuel (SNF) and RAW inventory

- submission of reports to the neighbouring countries with information on Novi han repository. These reports are provided to Greece, Turkey, Romania as part of Conventions or bilateral agreements.

2.7. Co-ordination of the Control over the Use of Atomic Energy

The BNSA controls the use of atomic energy in the Republic of Bulgaria by performing the following type of inspections:

a. ISUAE Inspections

b. Complex Inspections, jointly with inspectors from other competent authorities. i.e.:

- Ministry of Health (radiation protection)
- Ministry of Internal Affairs (physical protection)
- Civil Protection Service (emergency planning)
- other competent authorities.

2.8. Definition of Measures and Leading Remediation Actions

In case of a radiation accident the CUAEPP in co-ordination with the competent authorities defines the remediation actions and leads their implementation.

During the last few years the main events with radioactive sources of RAW are as follows:

- sources of ionising radiation with unknown owner
- sources in scrap, that is planned to be melted
- contaminated area as a result of an accident.

2.9. International Co-operation of the Republic of Bulgaria

The BNSA co-ordinates the international co-operation of the Republic of Bulgaria in the field of the use of atomic energy for peaceful purposes. The BNSA has co-ordinated and has participated in the following IAEA projects:

- BUL/4/005"Increasing Safety of the Novi han Repository" (1997-2000)
- BUL/9/018 "Strengthening the Capabilities of the BNSA" (1997-2000)
- International Programmes - ISAM (1997-2001)
- Regional Projects, e.g. RER/4/021 "LILW Management in CEEC" (1997-2000).

The CUAEPP has also co-ordinated the European Commission Projects in the field of RAW management, for example the EC project No. C2/SER/990094.

III Achievements

The main achievements in the field of RAW management in the Republic of Bulgaria during the last few years could be summarised as follows:

1) Financial means have been provided for the reconstruction of the Novi han repository that allowed speeding up the upgrading measures

2) Upgrading activities are implemented on the repository's site

3) Feasibility study on upgrading and reconstruction has been developed for the modernisation programme of the Novi han repository. This study is going to be approved by the operator of the repository.

4) The recommendations of the IAEA experts are taken into consideration and implemented subsequently

5) Closer and more direct discussions have been held between the BNSA and the INRNE aiming at achievement of more effective dialogue between the operator and the regulator

6) ISUAE has provided specific guidance to the Novi han operator (INRNE-BAS) on emergency planning, radiation protection, and monitoring

7) Significant efforts have been put on the improvement of the emergency planning and preparedness and on the physical protection of the Novi han repository site

8) New projects (IAEA, EC) for the Novi han repository are planned to be performed for the period 2001-2002.

IV Future Challenges

The future challenges related to the Novi han repository concern the commissioning of the repository after its upgrading. The commissioning of the facility will depend on the:

a. preparedness of the facility

b. elaboration of necessary documentation

c. justification of the implementation in practice

e. clarification of the administrative measures and means

f. clear definition of the interfaces between the producers of institutional RAW and the operator of the Novi han repository

During the preparation of the repository for commissioning special attention to be paid on:

a. development of an overall upgrading project

b. temporary storage of the SSS

c. RAW account and control

d. radiation protection

e. monitoring

f. safety assessment

g. physical protection

h. quality assurance programme.