

INCREASING SAFETY OF NOVI HAN RADIOACTIVE WASTE REPOSITORY

(BUL/4/005) B6 New

MODEL PROJECT

CORE FINANCING

YEAR	Expens		Group Activity	Equipment	Fellowships		Scientific Visits		Group Training	Sub-Contracts	Misc. Comp.	TOTAL
	m/d	US \$	US \$	US \$	m/d	US \$	m/d	US \$	US \$	US \$	US \$	US \$
1997	1/15	19,800	0	31,000	0/0	0	0/0	0	0	0	0	50,800
1998	1/26	26,040	0	30,000	12/0	39,600	0/14	4,750	0	0	0	100,400

First Year Approved 1997

OBJECTIVES: The development goal is to increase safety in the generation, handling, and disposal of radioactive waste. The project has two specific goals: to determine the optimal way to bring the Novi Han repository in line with regulatory requirements; and to facilitate the construction of a temporary above-ground storage facility to use while work on the permanent repository is underway.

BACKGROUND: Bulgaria is having a problem with the Novi Han repository, operated since 1964 by the Institute for Nuclear Research and Nuclear Energy (INRNE) for final disposal of radioactive waste. The repository is situated in the area of Losen mountain, about 40 km from Sofia. It is a shallow ground type with concrete vaults for solid low level wastes and biological wastes, an underground concrete structure with stainless tanks for liquid wastes and an underground structure for spent sealed sources. The national regulatory body (Committee on the Use of Atomic Energy for Peaceful Purposes) suspended the license for operation of the repository in 1994 on grounds that it did not meet the currently prevailing safety standards. As a consequence, in October 1995, INRNE initiated a programme to improve the safety of the repository. Three institutions are engaged in this task. Apart from INRNE, the Geological Institute of the Bulgarian Academy of Sciences and Energoprojekt are involved in the programme. INRNE is responsible for reconstruction, upgrading infrastructure, construction of the waste treatment, conditioning and storage facility as well as radiological monitoring and control. The Geological Institute is responsible for the geological, hydrogeological and geochemical aspects of the site and Energoprojekt is responsible for the adaptation of the IAEA guidelines for the design of above ground radioactive waste storage facilities to site specific conditions. The basic infrastructure, such as a laboratory for inactive work, a radiochemical laboratory with hot cells and manipulators, decontamination facilities, waste transport vehicles and mechanical workshops, is available. However, some upgrading is still necessary. The proposal has all the prerequisites for a model project with quantifiable performance indicators.

PROJECT PLAN: The project involves technologies for monitoring, evaluating repository conformity to applicable safety standards, safety assessment and storage facility design focusing on long term radiological safety. All these are proposed to be managed through expert consultations, staff training and scientific visits. An interim waste storage facility should provide all auxiliary facilities, such as a radiological monitoring and control system, waste processing and conditioning facilities for newly received wastes and a strategy for dealing with the waste already in storage. The plan should, however, aim at providing a final long term storage facility. The tasks need to be suitably prioritized according to ground conditions and the outcome of the feasibility study.

NATIONAL COMMITMENT: To enable a meaningful feasibility study to be undertaken as a part of this project, information such as regulatory requirements, an inventory of waste already stored in the repository and elsewhere, and the generation rate in future, and monitoring and geohydrological data of the repository will be provided. INRNE will be responsible for providing qualified staff, and laboratory and support facilities for the smooth conduct of the project.

AGENCY INPUT: (i) Expert services for a feasibility study for the safety upgrading of the existing repository, design inputs for a new interim storage facility; (ii) Software for safety assessment, a computer system, equipment for radiation monitoring, waste compactor and manipulators for spent sealed source and other waste handling; (iii) Fellowships, training and scientific visits as required.

PROJECT IMPACT: This is a project directly concerned with the safety of radioactive waste disposal, an issue of considerable public concern. The greatest impact that this project can make is to demonstrate the feasibility of upgrading waste repositories and to prove that technologies are available for the safe management of radioactive wastes.