

SUMMARY PROJECT FICHE

Project number: BG9809

Title: Nuclear safety measures for Kozloduy Nuclear Power Plant

Location: Sofia/ Kozloduy Nuclear Power Plant

Objectives:

Reinforce operational safety at Kozloduy Nuclear Power Plant, assist in the implementation of the modernisation of the Kozloduy Units 5 and 6 so as to meet one of the conditions for closure of Units 1-4 as set in the agreement between Bulgaria and the Nuclear Safety Account. Preparation and management of decommissioning and radioactive waste.

Description:

The following sub-projects are foreseen:

1. Design safety and operational safety improvements and assistance to the Operator. This will include:

- 1.1 Steam generator water level and feed water flow control system for one unit in NPP Kozloduy;
- 1.2 Safety related seismic upgrading civil construction works;
- 1.3 Assistance for implementation of the programs for modernisation of Units 5&6;
- 1.4 On-site assistance support for Units 1 to 4 safety upgrading;
- 1.5 Technical assistance for programme implementation.

The first two items will provide the necessary upgrading and will assist NPP Kozloduy in improving the critical issues regarding the stability and readability of the important piping and equipment, as well as in continuing the improvement of the second circuit control system.

The safety related seismic upgrading aims at upgrading of the piping and the equipment from the primary circuit, the main steam line and Feed Water critical lines. The activities will include supply of shock absorbers and implementation of the design measures. The proposed control system is a continuation of the efforts to improve the feed water control and the steam generators behaviour. The implementation of this project will provide the same system for Unit 4, as the one provided through BG9512 Phare Programme.

Other general issue of the Phare support aims at provision of technical assistance to the nuclear power plant operator with a view to achieve and/or maintain a high level of operational safety regarding the two main issues:

- Continuation of the assistance to the NEK (the national electricity company) and to the Operator in realisation of the Programme for Modernisation of the Units 5&6
- Preparation of the implementation of the agreed measures for urgent safety improvements of Units 1 to 4.

As a part of this project the continuation of the activities for transfer of know-how and management skills to the personnel of Kozloduy NPP shall be secured by on site western team assignment through the assistance for the programs for improvement and supporting the general organisation and management of the plant.

The last component of the project will support the Committee of Energy in implementation of the Phare Nuclear Safety Programme as a whole. Particularly, this will secure provisions for short term expert services in support of development and co-ordination of the strategy in the nuclear safety field.

2. Support to the process of decommissioning and waste management and technical assistance for a State Body and funds establishment

Under this sub-project the following activities are foreseen:

- 2.1 Establishment of the State Body for Radioactive Waste Management;
- 2.2 Establishment of Funds for Decommissioning and Radioactive Waste Management;
- 2.3 Pre-Decommissioning stage conceptual design for Units 1&2.

This sub-project aims at the establishment of a radwaste management body, procedures establishment, training, as well as support to establish two National Funds for radwaste management and for decommissioning, through co-financing and preparation of government regulation.

Institutional framework:

For sub-project 1 Recipient institution: National Electricity Company (NEK); Beneficiary: Nuclear Power Plant Kozloduy.

Both recipient and beneficiary have worked with the management and implementation of Phare programmes since 1991. Their capacity to carry out their tasks has been clearly demonstrated.

For sub-project 2: Recipient institution: Committee of Energy - Beneficiary: State Body for Radioactive Waste Management (to be created).

Budget (in MECU):

	Investment DIS	Inst. Building DIS	Total Phare DIS	TOTAL
Sub-project 1	4.2	0.3	4.5	4.5
Sub-Project 2		1.5	1.5	1.5
TOTAL	4.2	1.8	6.0	6.0

Implementation arrangements:

The implementing authority will be the Committee of Energy in close co-operation with NEK and the KNPP Operator. A co-ordination mechanism has been established for this purpose and the involved parties will provide necessary resources (staff and premises) for the implementation of the project. Tendering, contracting and payments will be managed by the Central Finance and Contracts Unit in the Ministry of Finance which shall assure implementation in accordance with the DIS procedures.

Implementation schedule:

Significant preparatory work has been completed under previous programmes of 1995 and 1996 and will assure the timely implementation of the activities described above.

Start of tendering	Start of project activity	Completion
Sub-Project 1		
October 1998	February 1999	December 2000
Sub-Project 2		
November 1998	April 1999	October 2000

Environment:

Sub-project 1 :

Is related to the Safety Assessment Report for NPP Kozloduy Units 3 and 4 and considers the priority issues to be improved. The analysis of the critical events and design basis of defence in depth, as a technical and organisational measures for protection of people and environment, is a part of the Safety Assessment Report. The comments made by the BNSA (the regulator), in the framework of the licensing process and by the international experts, in the frame of IAEA and other missions, are taken into account when implementing the improvement program.

The assessment of the radiological and non-radiological impact of the Programme for Modernisation for Units 5&6 has been made with assistance under the 1996 Phare programme based on the existing Environmental Impact Study.

Sub-project 2 : During the implementation of the projects for the first stage of decommissioning the necessary steps for environmental impact assessment will be addressed.

Conditionalities and sequencing:

Sub-project 1 :

The scope of works shall be co-ordinated with the activities in the framework of the programme for safety improvements of the Units 1 to 4 and the schedule for implementation should follow the general planning of NPP Kozloduy. The implementation also depends on the outage schedules of Unit 3 & 4.

On-site assistance and Modernisation shall follow closely the implementation of Programme for Modernisation and the Programme for safety improvements of NPP Kozloduy. The experience and applicable procedures gained during the previous on-site assistance shall be maintained and utilised.

The projects shall support NPP in managing the safety issues, concerned by the Programme for Modernisation. Under the licensing regulations the Regulator inspects every unit before the outage shutdown in order to review the preparation for the outage and the readiness to implement the required safety upgrades. The inspections are made also before every restart of the units after outage, this is the basis to grant or to reject the license of the unit.

Sub-project 2 :

The sub-project is related to the development of the legislative and institutional framework. Financial constraints - the implementation of the electricity price policy and the “step-by-step” approach to reach the marginal costs is crucial for sustainability of the overall energy sector. The marginal costs should include the costs of decommissioning and radwaste management for the nuclear power plants.

Annexes

1. Log-frame matrix
2. Cost breakdown
3. Implementation time chart
4. Cumulative contracting and disbursement schedule
5. Relation of project with previous Phare activities and with ongoing projects financed from other sources

Cost breakdown (in MECU)

	Investment DIS	Inst. Building DIS	Total Phare DIS	Recipient	TOTAL
Sub-project 1					
1.1	1.7		1.7		1.7
1.2	1.0		1.0		1.0
1.3	1.0		1.0		1.0
1.4	0.5		0.5		0.5
1.5		0.3	0.3		0.3
Total Sub-Project 1	4.2	0.3	4.5		4.5
Item 1		0.5	0.5		0.5
Item 2		0.5	0.5		0.5
Item 3		0.5	0.5		0.5
Total Sub-project 2		1.5	1.5		1.5
TOTAL	4.2	1.8	6.0		6.0