ANNEX 1

SPECIAL NUCLEAR SAFETY PROJECT FICHE

1. Basic information

1.1 Désirée Number: BG 01.10.01

1.2 Title: Phenomena investigation and development of Severe Accident Management Guideline

1.3 Sector: IN & EN

1.4 Location: Bulgaria

2. Objectives:

2.1 Overall objective:

At present the Kozloduy Nuclear Power Plant (KNPP) operational documentation complies with the Western standards, this means that this documentation comprises instructions for normal operation; instructions in emergency conditions; instructions for return to normality; emergency plan for the site, and national emergency plan. The only document that is still required is the Severe Accident Management Guideline (SAMG). It is widely recognised that SAMG constitutes an important tool for training operators and personnel of the NPP to face the consequences of an accident. The Bulgarian National Emergency Plan requires such a document as well as the modernisation programme of the KNPP that is currently under way. The preparation of the SAMG could rely on the huge amount of information already accumulated in Bulgaria on the analyses of potential main severe accidents.

2.2 Project purpose:

The main purpose of this project is to produce a "Severe Accident Management Guideline" that is ready for approval by KNPP and for endorsement by the Bulgarian Nuclear Safety Authority (BNSA). This document should provide the NPP operators and experts involved in emergency management with a systematic approach for accidents involving a partial or complete melting of the reactor core. The development phases of such accidents should be part of the guidelines. This systematic approach is usually developed in Western countries (EU and the USA).

2.3 Accession Partnership and NPAA priority:

This project will create conditions for accomplishment of the medium-term priorities of the NPAA in sectorial policies and in the Accession Partnership. It is part of a comprehensive nuclear safety policy being implemented at the national level. The Council Report on Nuclear Safety in the Context of Enlargement of June 2001 concluded in the first general recommendations, that, "all candidate states with nuclear power plants should complete their plant-specific safety improvement programmes according to the presented plans". In the second general recommendations, the WPNS also states that "completion of plant-specific, in-depth safety analysis reports to Western standards that notably cover plant-specific severe accident vulnerability analyses including all levels of defence in depth" should be performed (recommendations of type I). In this context the preparation of the SAMG would constitute an important safety improvement.
3. Description of the Project:

The project will support the detailed definition of the SAMG. This should comprise the following items, as necessary and complementary to any existing SAMG, particularly existing for Kozloduy 5&6:

- Definition of the "severe accidents";
- List of initial events that would require the use of the SAMG;
- The relationship between the SAMG and other emergency documents;
- The analysis of the development phases of a severe accident and their analytic validation using licensed models established for the KNPP;
- The methodology for the SAMG verification;
- Validation of the SAMG
- The emergency team organisational structure;
- The methodology for training personnel and the organisation of training courses.

4. Institutional framework:

The project would support the work of the Kozloduy Nuclear Power Plant (KNPP).

5. Detailed budget (in M €)

<table>
<thead>
<tr>
<th>Project Components</th>
<th>Investment Support (IS)</th>
<th>Institution Building (IB)</th>
<th>Total Phare ( IS + IB)</th>
<th>National Co-financing</th>
<th>IFI</th>
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</tr>
</thead>
<tbody>
<tr>
<td>TOTAL</td>
<td>2.50 M€</td>
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<td>2.50 M€</td>
<td>-</td>
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<td>2.50 M€</td>
</tr>
</tbody>
</table>

6. Implementation arrangements

The decentralised implementation scheme (DIS) with ex-ante Commission control will be followed for the project. The CFCU will be the Implementing Agency responsible for tendering, contracting, and accounting:

6.1 Implementation Agency: Central Finance and Contracts Unit (CFCU)
Ministry of Finance
102, Rakovski St.
Sofia, Bulgaria
Bus: +359 2 9859 2771
Bus Fax: +359 2 9859 2773
E-mail: cfcu@inet.bg

6.1.1 Beneficiary: Kozloduy NPP

6.1.2 Contacts:
Mrs. Meglena Kouneva,
Deputy Minister, Ministry of Foreign Affairs,
Chief Negotiator, National Contact Point
Bus: +359 2 73 99 22 or +359 2 7143 2208
Bus Fax: +359 2 971 2906
Ms. Bisserka Benisheva,
Head of European Integration Directorate at Ministry of
Foreign Affairs
Bus: +359 2 73 74 12 or 7143 2353 (secretary)
Bus Fax: +359 70 75 89
Tel/fax: +359 70 34 46
6.2 Twinning: not applicable
6.3 Non-standard aspects: not applicable
6.4 Contract: One PHARE technical assistance contract

7. Implementation schedule

7.1 Start of tendering/call for tender: 2 Q. 2002
7.2 Start of project activity: 3 Q. 2002
7.3 Project completion: 3 Q. 2004

8. Conditionality and sequencing

The Kozloduy NPP in co-operation with the Bulgarian Nuclear Safety Authority (BNSA) will prepare the Terms of Reference (ToR), with final approval together with the Commission. Due regard is to be given to available results from past and ongoing projects on VVER accident analysis under other PHARE and TACIS programmes.

The project will be sequenced as follows:

1 Q. 2002: start of implementation procedures, choice of contract letting procedure, completion of a detailed Technical Project Description Sheet, also the ToR.
2 Q. 2004 production of the draft SAMG
3 Q. 2004: approval of the SAMG by KNPP and the BNSA.
1. Basic information

1.1 Désirée Number: BG 01.10.02

1.2 Title: Enhancement of safety assessment capabilities available to Bulgarian nuclear safety authority (BNSA)

1.3 Sector: IN & EN

1.4 Location: Bulgaria

2. Objectives:

2.1 Overall objective:

The Kozloduy Nuclear Power Plant (KNPP) is currently engaged in a safety improvement programme for Kozloduy 3&4 that are subject of Bulgaria's commitment to early closure. This safety improvement is expected to be completed by the end of 2002 through the implementation of several investment projects. In parallel, the KNPP is upgrading the safety and reliability of KNPP-5 and 6 that is partially supported by EURATOM funds. These improvements require the agreement of the Bulgarian licensing authority (BNSA). The overall objective of the project is therefore to provide BNSA with all necessary support so that it can accomplish the corresponding licensing tasks in the most effective and independent manner.

2.2 Project purpose:

The first aim of the project is to review the safety cases for KNPP-3, 4, 5 and 6, including regulatory reviews and approvals of plant-specific, in-depth analysis reports in compliance with widely applied practices within the EU. The second aim is to develop a modern well-documented quality management system and implementation of this system at the BNSA. The third aim is to proceed with regulatory review and assessment of the measures in order to ensure reactor pressure vessel integrity.

2.3 Accession Partnership and NPAA priority:

This project will create conditions for accomplishment of the medium-term priorities of the NPAA in sectoral policies and in the Accession Partnership. It is part of a comprehensive nuclear safety policy being implemented at the national level. The Council Report on Nuclear Safety in the Context of Enlargement of June 2001 concluded in the first general recommendations, that, "all candidate states with nuclear power plants should complete their plant-specific safety improvement programmes according to the presented plans". In the second general recommendations, the WPNS also states that "completion of plant-specific, in-depth safety analysis reports to Western standards that notably cover plant-specific severe accident vulnerability analyses including all levels of defence in depth" should be performed (recommendations of type I). In this context the support to be given to BNSA would largely contribute to reinforce the capacity of the national nuclear safety regulatory authority to license measures to increase the safety of the Kozloduy nuclear reactors.

3. Description of the Project:

The project should contribute to resolving the following issues:
• Review of the safety cases for KNPP-3, 4, 5 and 6 including: all relevant operating modes; all relevant internal and external hazards using up to date plant and site data; plant-specific severe accident vulnerability analyses including all levels of defence in-depth;
• Development of a modern well-documented quality management, considered as a good practice within the EU and implementation of this system at the BNSA; this activity could be performed through the hiring of a EU consultant highly specialised in this area;
• Regulatory review and assessment of the measures to ensure that:
  • the reactor pressure vessel surveillance programme for the KNP-3, 4, 5 and 6,
  • and supporting analyses
  provide adequate safety margins with respect to reactor pressure vessel structural integrity for all design basis events over the designed life time of the plant.

4. Institutional framework:

The project would support the work of the BNSA.

5. Detailed budget (in M €)

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102, Rakovski St.
Sofia, Bulgaria
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6.1.1 Beneficiary: Committee on the Use of Atomic Energy for Peaceful Purposes
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Ms. Bisserka Benisheva,
Head of European Integration Directorate at Ministry of Foreign Affairs
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Tel/fax: +359 70 34 46

6.2 Twinning: not applicable

6.3 Non-standard aspects: Due to the specific character of the project, a significant part of the work under this project will have to be contracted to Technical Safety Organisations. Non standard aspects, in line with the "new rules for contracts in the field of nuclear safety" COM(2000)493 final might arise.

6.4 Contract: One technical assistance PHARE contract

7. Implementation schedule

7.1 Start of tendering/call for tender: 1 Q. 2002
7.2 Start of project activity: 2 Q. 2002
7.3 Project completion: 4 Q. 2003

8. Conditionality and sequencing

The Bulgarian Nuclear Safety Authority (BNSA) will prepare the Terms of Reference (ToR), with final approval together with the Commission, and with due regard to the work programme being implemented by the KNPP in the field of nuclear safety.

The implementation of this project must be closely co-ordinated with the project BG/TS/15 funded from the 1999 PHARE nuclear safety programme. The development of a modern well-documented quality management system is to give due consideration to the results of the project BG/RA/03.

Finally, the timetable must be timed in accordance with the closure commitments undertaken by Bulgaria with regard to the KNPP Units 3&4.

The project will be sequenced as follows:

1Q. 2002: start of implementation procedures, choice of contract letting procedure, completion of a detailed Technical Project Description Sheet, also the ToR.
2 Q. 2003 production of the draft review of the safety cases for KNPP-3, 4, 5 and 6
3 Q. 2003 end of the task concerning the development of a modern well-documented quality management system;
4 Q. 2003 end of the task dealing with assessment of the measures to ensure reactor pressure vessel structural integrity