



COMMISSION OF THE EUROPEAN COMMUNITIES

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**REPORT FROM THE COMMISSION**

**Third Progress Report  
on the implementation of the Chernobyl Shelter Fund  
December 2003**

**pursuant to Article 3 of the Council Decision 98/381/EC concerning the Community contribution to the European Bank for Reconstruction and Development for the Chernobyl Shelter Fund**

{SEC(2004) 919}

## 1. INTRODUCTION

Following the accident of 26 April 1986 the Shelter enclosing the remains of Chernobyl Nuclear Power Plant (ChNPP) Unit 4 was constructed under exceedingly hazardous conditions. It was not intended to be a permanent solution and, in fact, it is increasingly unstable, it has deteriorated and allows the ingress of rainwater. There is a risk of collapse due to seismic disturbance, extreme weather or further deterioration of the structure with possibility of contamination of the surrounding zone.

In May 1997 a group of international experts from the EU, USA and Japan finalized a multidisciplinary construction management program designated as the Shelter Implementation Plan (SIP). The SIP foresaw to carry out remedial work on the Shelter directed towards making it physically stable and environmentally safe. Under the management of the European Bank for Reconstruction and Development (EBRD), the Chernobyl Shelter Fund (CSF) was constituted to finance and implement the SIP.

The initial cost estimate of the project (made in 1997) amounted to approximately USD 758 million (USD 768 million including the licensing support) and a construction time of seven years (1998-2005). A first pledging conference was held in New York in November 1997. Twenty five countries pledged some USD 400 million including Ukraine's USD 50 million in-kind contribution. This sum was sufficient to undertake work on the first tasks of the SIP. The project started effectively in April 1998 with the setting up of the Project Management Unit (PMU).

The Council Decision 98/381/EC of 5 June 1998 concerning the Community contribution to the European Bank for Reconstruction and Development for the Chernobyl Shelter Fund<sup>1</sup> represented the legal basis for a Community contribution to the CSF of a USD 100 million pledge made at the 1997 G7 summit in Denver. This was paid over the years 1999/2000 within the TACIS financial envelope.

A second pledging conference was held in July 2000 in Berlin. Some USD 320 million were pledged by twenty two countries carrying the total amount pledged in the two conferences close to the estimated cost of 768 million USD. The Community pledged a second contribution of 100 million euro which was approved by the Council decision 2001/824/EC<sup>2</sup>.

According to Art. 3(2) of the Council Decision 98/381/EC, the Commission presented a first progress report on the implementation of the CSF in October 1999<sup>3</sup>, a second report was presented in September 2001<sup>4</sup>. The present report updates the information provided in the previous ones based mainly on the progress communicated to the Assembly of Contributors by the EBRD. Further details are provided in the Commission Staff Working Document SEC(2004) 919.

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<sup>1</sup> OJ L 171, 17.6.1998, p. 31

<sup>2</sup> OJ L 308, 27.11.2001, p. 25

<sup>3</sup> COM(1999)470 of 12.10.1999

<sup>4</sup> COM(2001)251 of 29.05.2001

## **2. THE SHELTER IMPLEMENTATION PLAN**

The purpose of the SIP is to bring the existing Shelter to an environmentally safe condition and to remove the potential problems of collapse and continued water ingress. To achieve its objective the SIP addresses five major goals in parallel:

1. Reduce the potential for collapse of the Shelter;
2. Reduce the consequences of a Shelter collapse, should one occur;
3. Improve the nuclear safety of the Shelter;
4. Improve worker industrial safety and environmental protection at the Shelter;
5. Conversion to an environmental safe site.

The SIP will lead to a solution which will create a safe confinement and stabilisation of the current structure for at least several decades until optimum conditions may be created for the ultimate disposal of the radioactive material contained under the shelter.

## **3. WORK IMPLEMENTATION**

In 1996 an International Group of Experts elaborated a study of alternative solutions to convert the Chernobyl unit 4 and its present shelter (Ukritiye) into an environmentally safe condition. The study<sup>5</sup> proposed a Recommended Course of Action comprising three phases:

Phase 1: Stabilization and other short term measures;

Phase 2: Preparation for conversion into an environmentally safe site;

Phase 3: Conversion into an environmentally safe site.

So far, project implementation was related essentially to Phase I, which was made up of the following elements:

- Consolidation and re-evaluation of the existing Shelter knowledge base and execution of new surveys as a basis for the design and remediation works;
- Execution of option studies and preliminary engineering to determine the technical strategy for both structural improvements and engineering safety systems for implementation in Phase II;
- Establishment of a technical infrastructure for the implementation activities in Phase II comprising a contractors' operational base and the procurement of safety related equipment and systems;
- Repair of the main roof support beams B1/B2 to remove the most significant risk of structural collapse.

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<sup>5</sup> "Chernobyl unit 4 – short and long term measures – final report", Tacis Services, DGIA, European Commission, Brussels, November 1996.

All tasks related to Phase I of the project have been completed. A major project review was held at the conclusion of Phase I corresponding to the SIP Programmatic Milestone P1, at which stage the technical strategy for stabilization and confinement in phase II were determined. Phase II (preparation for conversion into an environmentally safe site) started in May 2003.

#### **4. REVISED SCHEDULE AND COST ESTIMATE**

##### **4.1 New Safe Confinement Schedule**

During the CSF assembly in Slavutych in July 2003, the PMU presented the revised schedule for the completion of the NSC. The design team estimated that the detailed design, the process concerning the approval of both the concept and detailed design and the construction of the NSC will take 5 years.

The major milestones are summarized as follows:

- Schedule starts with delivery of Conceptual Design Report and Sanitary Compliance Report (December 2003).
- Design activities
  - Detailed design - 1 year
  - Regulatory approval – 1 year in 2 phases
- Construction Activities – 3 years
- NSC commissioning – 3/4<sup>th</sup> quarter 2008.

It was pointed out that the overall schedule is ‘aggressive’. The completion of the project with the commissioning of the NSC by the 3<sup>rd</sup> quarter of 2008 does not include provision for contingency. The major risks of delays concern the approval and decision process and the availability of resources to execute the project.

The NSC will provide the facility for further deconstruction work and the removal of the Fuel Containing Material (FCM) which will continue well beyond 2008. However the Bank considers that most of this work is beyond the scope of the present project. Deconstruction of the existing structure is not considered within the current schedule, it is estimated that it will take at least another 4 to 6 years to complete.

##### **4.2 Revised Cost Estimate**

During the Assembly of Contributors in London on 2 December 2003, The EBRD made a presentation of the revised cost estimates and current situation of the CSF. The cost estimate of USD 1059 million (995 million plus USD 64 million for potential additional work) was the first one based on actual design work, which will replace the original SIP estimate<sup>6</sup>. A better

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<sup>6</sup> In its *CSF Report on Financial Situation and Requirements* of 7 April 2004 the Bank provided a new SIP cost estimate of USD 1091 million.

cost estimate will only become available once the market response for the largest element (the New Safe Confinement) has been received. According to the Bank, the current estimate contains conservative assumptions with regard to escalation, contingency and risk.

It was recalled that the PMU estimate is in 2003 USD, as opposed to the original SIP figure which was in 1997 USD. Furthermore, the PMU consortium estimate includes conservative projections for the contingency for the New Safe Confinement<sup>7</sup>, escalation and risk (USD 194.242 million) as well a USD 28 million allocation for required work not included in the 1997 SIP estimate (removal of the ventilation stack, interim radwaste storage and the Owner's Engineer).

The Bank pointed out that, without the contingency for the NSC, escalation and risk and the allocation for the required work not included in the 1997 SIP estimate, the 2003 baseline cost (USD 772.832 million) compares very closely to the 1997 SIP estimate (USD 758.168 million).

## **5. FINANCIAL OVERVIEW**

The total sum pledged to the CSF at the conferences of New York in 1997 and Berlin in 2000 amounted to some USD 717 million (€754 million based on the exchange rates of 2000), including Ukraine's in-kind contributions of USD 50 million. Following the pledges, as at 31 October 2003 the contribution agreements between the Contributors and the EBRD amount to some €615 million. The payments received to the CSF totalled some €480 million by the end of November 2003.

Although a large part of the fund is still uncommitted, the Bank indicated that there is a possible shortfall when considering the initial pledge of some USD 717 million and the current cost estimate by the PMU consortium for the project, which amounts to USD 995 million. The shortfall would amount to some USD 278 million, plus possibly USD 64 million for potential additional work concerning deconstruction activities. However these figures are still under review.

The Bank indicated that additional commitments need to be made available for the effectiveness of the future grant agreements for the New Safe Confinement, currently scheduled for the fourth quarter of 2004. Contributors are likely to be called again in the near future to make new contributions for the completion of the project. However no new payments into the fund would be required before 2005, these should be planned in principle for the 2006-2007 timeframe.

The Bank was requested to prepare a report detailing all funds needed for Chernobyl: Nuclear Safety Account, radioactive waste management and the SIP. Details on when the commitments and disbursements are to be made should also be provided.

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<sup>7</sup> Contingency had been included in the Baseline Costs, except for the NSC.

## 6. SUMMARY OF DEVELOPMENTS AND CONCLUSIONS

The EBRD reported a good performance of the PMU following its reorganisation in 2002. Phase I of the SIP (stabilization and other short term measures) is complete and Phase II (preparation for conversion into an environmentally safe site) has started.

The situation with the nuclear regulator (SNRC) has improved during the reporting period. However regulatory approvals remain one of the major risks as they are on the critical path or are closely linked to activities which have the potential to become critical. It is therefore essential that SNRC continues to be provided with the required level of support to ensure that delays are avoided and a proper regulatory and licensing process is fully implemented.

A co-ordinated approach to the overall waste problem is being developed which requires a strong involvement of the Ukrainian authorities. In particular a solution for the high level radioactive solid wastes needs to be worked out. For this class of waste it has been proposed to rely on part of the EC funded Industrial Complex for Solid Radwaste Management (ICSRM) project originally dedicated to the decommissioning of the Units 1 to 3. This is under investigation but will, in any case, imply additional cost and delays. The TACIS Nuclear Safety programme may have to assist in supporting these additional costs.

The schedule for the completion of the Shelter Implementation Plan, which had been foreseen for 2007, is significantly delayed. The completion of the project, with the commissioning of the New Safe Confinement, is now foreseen for 3/ 4<sup>th</sup> quarter 2008.

The baseline cost of the project did not increase significantly, however, inclusion of required works not foreseen in the initial budget (€28 million), potential additional works (€64 million), addition of escalation, risk and contingency (€194 million), may bring the total to over 1 billion euro.

Considering that the pledges during the two donors' conferences amount to some USD 717 million, there is currently a shortfall for completion of the project in the order of USD 278 million (excluding €64 million for potential additional works).

The EBRD will require new commitments from contributors prior to the signature of the contract for the New Safe Confinement, which is currently scheduled for the fourth quarter 2004. However the payment of the new contributions would only probably be required by 2006-2007.