

# Nuclear safety

Sûreté nucléaire  
Reaktorsicherheit  
Ядерная безопасность

The EBRD functions as the administrator of the Nuclear Safety Account (NSA) and the Chernobyl Shelter Fund (CSF). It administers the two Funds in accordance with the respective Fund Rules and provides technical, project management, financial, legal and administrative services. It reports to Contributors through the Assembly of Contributors of the NSA and CSF respectively, which exercise overall supervision of the management of the respective Fund, approve six-month work programmes and the yearly financial statements, and decide on the financing of individual projects.

More specifically, the EBRD makes available Bank staff and other experts to the projects, prepares and administers grants, liaises with the Contributors, Donors, governments of the recipient countries, concerned authorities and utilities, and other public and private entities, prepares annual financial statements of each Fund, and prepares the meetings of each Assembly.

The EBRD receives compensation from the Funds for all costs it incurs, and for the fees and expenses of consultants it engages in connection with the administration of the Funds.

## The Nuclear Safety Account

At their Munich Summit in July 1992, the G-7 heads of state and government offered the countries of the region a multilateral programme of action to improve safety in their nuclear power plants (NPPs). This was to comprise immediate measures in: operational safety improvements; near-term technical safety improvements to plants, based on safety assessments; and enhancement of regulatory regimes. It was also to create the basis for longer-term safety improvements by considering the scope for replacing less safe plants by the development of alternative energy sources and the more efficient use of energy; and by examining the potential for upgrading plants of more recent design.

The G-7 advocated setting up a supplementary multilateral mechanism to address immediate operational and technical safety improvement measures not covered by bilateral programmes, and invited the international community to contribute to the funding.

In February 1993 the G-7 officially proposed that the EBRD set up a Nuclear Safety Account, to receive contributions by donor countries to be used for grants for safety projects in the region. The EBRD's Board approved this proposal and the Rules of the NSA in March 1993. Under these rules, the Bank prepares projects and submits them for approval to the Assembly of Contributors.

As of 31 December 1997, pledges to the NSA totalling ECU 260.6 million had been made by the European Community and 14 countries: Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, the Netherlands, Norway, Sweden, Switzerland, the United Kingdom and the United States of America.

## Nuclear Safety Account activities

Priority is given to those reactors presenting a high level of risk that can be significantly reduced by short-term safety improvements, and that are necessary to ensure the continuing national electricity supply in the region. This means that emphasis is put on existing RBMK and VVER 440/230 reactors and on the purchase of equipment, as opposed to studies, which a number of donors already fund. Agreements are sought with the countries concerned on conditions for transition towards new regulatory regimes based on in-depth safety assessments, development of the power sectors and the early shutdown of high-risk reactors on safety and economical grounds.

## The Chernobyl Shelter Fund

At the G-7 Denver Summit of 1997, the G-7, the European Community and Ukraine endorsed the setting up of a supplemental multilateral funding mechanism to assist Ukraine in transforming the existing Chernobyl sarcophagus into a safe and environmentally stable system, with measures as described in the "Chernobyl Unit 4 Shelter Implementation Plan" dated 31 May 1997 (SIP). The G-7 and the European Community pledged US\$ 300 million and called upon concerned governments and other donors to join the initiative to ensure full implementation of the SIP.

The SIP was developed in the spring of 1997 under the joint sponsorship of the EC's Tacis programme and the US Department of Energy. To achieve its aim the SIP addresses five major goals in parallel: (i) reduce the potential for collapse of the Chernobyl 4 Shelter; (ii) reduce the consequences of a Shelter collapse, should one occur; (iii) improve nuclear safety of the Shelter; (iv) improve worker industrial safety and environmental protection at the Shelter; and (v) develop long-term strategy and study for conversion to an environmentally safe site. It is likely that the SIP will take about 8-9 years to complete at a cost in the region of US\$ 760 million.

The EBRD's Board approved the participation of the Bank in September 1997 and the Rules of the Chernobyl Shelter Fund in November 1997. The Pledging Conference in New York in November 1997, co-chaired by President Kuchma of Ukraine and US Vice President Gore, attracted 13 new donor countries to join the G-7 and the European Community in making pledges in favour of the CSF. The CSF became operational in December 1997 when the required eight contributors had entered into contribution agreements with the EBRD.

As of 31 December 1997, the Bank had concluded contribution agreements totalling ECU 262.7 million with the European Community and 15 countries: Austria, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Netherlands, Norway, Sweden, the United Kingdom and the United States of America. Subsequently, contribution agreements with Kuwait and Switzerland were also concluded. In addition, the Bank had been in discussion for the conclusion of contribution agreements with the countries that made pledges at the Pledging Conference in New York (Ukraine, Israel, Luxembourg and Spain) and a number of other countries that expressed their intention in New York to support this important project.

## Ongoing projects

As of 31 December 1997, projects in Bulgaria, Lithuania, Russia and Ukraine had been approved by the Assembly of Contributors, and grant agreements had been signed by the relevant governments, the utilities and the EBRD.

### Bulgaria

An ECU 24 million project for Units 1-4 (VVER 440/230s) at Kozloduy NPP in Bulgaria was signed in June 1993. The project is currently being implemented, with completion expected by summer 1998. According to the Grant Agreement, the Bulgarian government is committed to shutting down Units 1-2 and subsequently

Units 3-4 when a set of investments in the power sub-sector has been completed. These investments are delayed, however, and are not expected to be completed before 2003 at the earliest.

Safety assessment of Ignalina NPP completed

**Lithuania**

An ECU 34.8 million project of 20 short-term safety upgrades for Ignalina NPP (two RBMK 1500 reactors) in Lithuania was signed in February 1994. This is currently being implemented and completion is expected in 1998.

The NSA has also provided funds for the in-depth safety assessment of the plant. The Safety Analysis Report and its independent review were completed in February 1997. A panel of international safety experts issued a report of recommendations on the results of the in-depth safety assessment, which was endorsed by the Government of Lithuania, the regulatory authority and the plant. A comprehensive action plan is being implemented by the utility, which will seek a new operating licence for Unit 1 by spring 1999.

The Lithuanian government has agreed that operation of the two units at the plant will not be prolonged beyond the time when the reactor channels will have to be changed (around the year 2000 for Unit 1). Moreover, Unit 1 will be closed unless a new licence can be granted by the Safety Authority, taking into account the findings of the international safety experts, and the level of electricity demand justifies additional safety upgrades on a least-cost basis.

A draft least-cost development plan of the Lithuanian power sector has recently been completed. It identifies a set of investments in existing thermal plants which needs to be implemented in order to ensure normal functioning of the sector without Ignalina NPP.

**Russian Federation**

Agreements were signed in June 1995 by the EBRD and the government of the Russian Federation, Leningrad NPP, Rosenergoatom (jointly with the Novovoronezh and Kola NPPs) and the Nuclear Safety Authority (RF Gosatomnadsor). A Joint Committee was set up to monitor the progress of implementation of the Agreements.

Of the total grant, Leningrad NPP (four RBMK 1000 reactors) will receive ECU 30.4 million, and Rosenergoatom with Novovoronezh and Kola NPPs (four VVER 440/230 reactors) will be granted ECU 45.1 million. These projects include 41 short-term safety upgrades. As of end of 1997, 14 out of 15 supply contracts had been signed at Leningrad NPP. At Kola and Novovoronezh NPPs, 2 out of 26 contracts had been awarded. Completion of all the projects is expected by the end of 1998.

Specific support is being provided to the RF Gosatomnadsor, in the form of a grant worth ECU 0.9 million, to facilitate the licensing process of the short-term safety upgrades with support of technical safety organisations (TSOs).

The NSA Agreements provide also for transition towards new regulatory regimes of 10 designated units with RBMK and VVER 400/230 reactors based on in-depth safety assessments. According to provisions of the Agreement, longer-term operating licences will only be issued if the plant operators can demonstrate that the safety levels of the plant comply with internationally recognised safety principles, internationally formulated safety guidelines and established practices. In any case, licences will not be valid beyond the original design lifetime of the reactors.

In addition, preparation of a least-cost investment plan for the development of relevant parts of the Russian power sector has been launched in the framework of the NSA Agreements. This is intended to identify alternative projects which would enable early closure of high-risk reactors.

**Ukraine**

An ECU 118.1 million project for Chernobyl NPP was signed in November 1996 and is currently being implemented. This project is part of the comprehensive programme to support Ukraine's decision to close Chernobyl NPP by 2000. This is in accordance with the Memorandum of Understanding between Ukraine and the G-7/European Community. The NSA project will address preparation for closure of Units 1, 2 and 3 through two decommissioning facilities (liquid radioactive waste treatment and interim spent fuel storage) as well as immediate safety measures at Unit 3 prior to closure.

### Chernobyl Shelter Fund activities

The Chernobyl Shelter Fund has been formally operational only since 12 December 1997, the date of the first meeting of the Assembly of Contributors.

However, the project preparations were advanced in parallel with the negotiations of the Rules of the Fund and the Framework Agreement, which was signed between the EBRD and the government of Ukraine in November 1997.

The requests for proposals for the project management unit consultant and all four early technical projects were released to short-listed companies in mid-December. Subject to the ratification of the Framework Agreement by Ukraine's parliament and timely conclusion of the specific grant agreements, the first contract awards are planned for March 1998.

Implementation of the Shelter Implementation Plan (SIP) requires a very high level of technical leadership and project management experience, which will be exercised through a project management unit staffed by members of Chernobyl NPP and a Western consultancy. An international advisory group of experts from a variety of fields of expertise will provide a forum for consultation on key technical issues. There would also be an EBRD-appointed in-country project monitor to assist the Bank's operations leader and a licensing consultant assisting the regulatory inspection and approval process. The joint Ukraine-EBRD committee will oversee the project.

Additionally, CSF activities are currently also focusing on completing administrative arrangements for the management of the Fund, including the conclusion of contribution agreements and assistance to the continuing effort to mobilise additional resources to cover anticipated total project costs of about US\$ 760 million over an 8-9 year period.