

Project Additional Information:

PROJECT: PHB1.03- 96: KOZLODUY UNITS 5&6, MODERNIZATION PROGRAMME:
ENVIRONMENTAL IMPACT STUDY FOR THE PURPOSES OF THE EUROPEAN COMMISSION,

The environmental action plan was developed in a form of recommended actions, with identification of the organisations responsible for carrying out those actions and an indication of the timescales on which the actions would, ideally be performed. Some of the recommendations were related to actions which were underway or already planned at the time the project was undertaken, however they were included in the EAP for reasons of consistency. The main points in the EAP, and their benefits, were specified as follows:

1 Revision of Bulgarian National Standards for Radiation Protection

Recommended Action:

Complete the revision of the current Bulgarian national standards for radiation protection (ONRZ-92), making them consistent in all major respects with ICRP Publication 60, the 1996 IAEA Basic Safety Standards and the 1996 relative European Directive.

Benefits:

A better framework in which to carry out radiation protection at KNPP, and at all other facilities in the Republic of Bulgaria where ionizing radiation and radiation sources are used.

2 Revision of KNPP Radiation Protection Procedure

Recommended Action:

Complete the planned revision of the KNPP Radiation Protection Procedure, making it consistent with the revised Bulgarian national standards (and hence with ICRP Publication 60, the 1996 IAEA Basic Safety Standards and the 1996 European Directive).

Benefits:

A better framework in which to carry out radiation protection at KNPP; to be used in implementing items in the Modernization Programme.

3 Organization for Radiation Protection and Quality Assurance in KNPP EP-2 unit

Recommended Action:

In EP-2, set up an independent Nuclear and Radiation Safety Department and an independent QA Department which report directly to the Plant Manager.

Benefits:

Ensuring that production concerns do not override radiation protection and QA procedures.

4 Regulatory Limits on Routine Discharges of Airborne Radioactive Effluents

Recommended Action:

Establish new annual and monthly (or quarterly) limits on airborne discharges during normal operations. The limits should be close to operational needs, should be based on the ALARA principle, and should be clearly related to dose constraints. Ideally, there would be separate limits for Unit 5, Unit 6 and SB-III, as well as a limit for EP- 2 as a whole.

Benefits:

Increased transparency in regulatory control; further encouragement of best practices by KNPP.

5 Regulatory Limits on Routine Discharges of Liquid Radioactive Effluents

Recommended Action:

Establish more detailed annual and quarterly limits on liquid discharges during normal operations. Limits are required for specific radionuclides (eg. caesium-I 37, cobalt-60). The limits should be clearly related to constraints on doses via all exposure pathways, to ALARA, and to operational needs. Ideally, there would be separate limits for various parts of the KNPP site (e.g. Units 5&6, SB-III), as well as a limit for the whole site.

Benefits:

Increased transparency in regulatory control; further encouragement of best practices by KNPP.

6 Radiation Monitoring Systems

Recommended Action:

Carry out the following items in the Modernisation Programme: develop and implement a centralized radiation monitoring computer system; install equipment for measuring activity of gas releases ; design and implement systems for monitoring radionuclide composition of releases through air ducts ; upgrade AKRB detectors .

Benefits:

Increased availability and reliability of information on the radiological situation in restricted access areas (RAA) and about airborne and liquid effluents. Data availability in the event of an accident.

7 Qualitative Assessment of Operational and Maintenance Radiation Protection Procedures

Recommended Action:

Carry out a qualitative assessment of written operational and maintenance radiation protection procedures, including calibration procedures. Revise these to be consistent with new Radiation Protection Procedure.

Benefits:

More efficient radiation protection, more cost-effective maintenance and improvement of reliability of equipment.

8 Monitoring of Radioactivity in the Environment during Normal Operations

Recommended Action:

Establish a more extensive programme of routine monitoring of on-site. soils.

Benefits:

Identification of decommissioning problems; input to full environmental audit.

9 Non-Radiological Environmental Monitoring

Recommended Action:

Establish a programme of routine monitoring of on-site air quality, soils and groundwater. Monitor incinerator emissions. Publish results annually.

Benefits:

Making non-radiological monitoring more consistent with radiological monitoring; input to full environmental audit.

10 Regulatory Environmental Monitoring

Recommended Action:

Review the radiological and non-radiological environmental monitoring programmes carried out by regulatory authorities, and if necessary revise these to be better coordinated and focused. Publish results annually, preferably in a joint report.

Benefits:

More efficient monitoring of the environmental situation; better information for the public.

11 Optimisation of Radiation Protection of the Workforce

Recommended Action:

Establish dose constraints for workers in EP-2 and carry out qualitative ALARA assessments for selected routine and maintenance operations in the restricted access area. Use these constraints in implementing Item 4.5.3.1.2 of the Modernisation Programme.

Benefits:

Cost-effective dose reduction; strengthening of the safety culture.

12 Quality Assurance in On-Site Operations

Recommended Action:

Establish and implement a comprehensive QA Programme for EP-2, consistent with the latest IAEA standard. Establish a system of regular auditing to ensure that the programme is being adhered to.

Benefits:

Improvements in efficiency and accountability; strengthening of the safety culture.

13 Emergency Response: Romanian Population in the 30 km Zone

Recommended Action:

Consider the inclusion in the KNPP emergency plan of arrangements and procedures for directly notifying the Romanian population in the 30 km emergency planning zone.

Benefits:

Consistency of approach to protection of Bulgarian and Romanian populations. Rapid communications channels at local and national levels.

14 Emergency Response: Interfacing of On-Site and Off-Site Arrangements

Recommended Action:

Make the interface between the on-site and off-site arrangements more transparent and seamless. Review the number of plans and procedures, with a view to reduction. Review bureaucratic systems, with a view to streamlining.

Benefits:

Ensuring good coordination of on-site and off-site actions in the event of an emergency.

15 Emergency Response: Food Intervention Levels and Agricultural Countermeasures

Recommended Action:

Establish intervention levels, in terms of radionuclide concentrations in foods, to be used as a basis for taking actions to restrict the distribution and consumption of contaminated crops and animal produce in the event of an accident. These levels should take account of international guidance and practice. Review and revise plans for agricultural countermeasures, recognizing that in some emergencies these will be the only countermeasures needed, that plans should be flexible (e.g. appropriate actions will vary with the season of the year) and that disposal of contaminated foodstuffs may be required.

Benefits:

Improved protection of the population and their food supplies, without unnecessary disruption of agriculture.

5.16 Regulatory Roles and Responsibilities

Recommended Action:

Consider simplifying regulatory roles and responsibilities, and strengthening independence of regulators from those they are regulating. (Example of possible simplification: make Ministry of Environment responsible for ensuring maintenance and monitoring of air, surface water, groundwater and soil quality (radiological and non-radiological).)

Benefits:

More efficient and transparent regulation.