

**State Coat of Arms**  
**REPUBLIC OF BULGARIA**  
**MINISTRY OF ENVIRONMENT AND WATER**

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**D E C I S I O N**  
**ON ENVIRONMENTAL IMPACT ASSESSMENT**  
**No. 8-6/2013**

Pursuant to Article 99 para 2 of the Environmental Protection Act, Article 19, para 1 of the *Ordinance on the conditions and procedure for performance of environmental impact assessment* (“EIA Ordinance”) and in conjunction with Article 31 of *the Biological Diversity Act* and Article 39, para 12 and 13 of the *Ordinance on the conditions and procedure for performance of assessment of the compatibility of plans, programmes, projects and investment proposals with the subject and objectives for preservation of protected territories* (“CA Ordinance”),

**I H E R E B Y A P P R O V E**

*The implementation of investment proposal for Decommission of Units 1 - 4 of Kozloduy NPP*

**Contracting authority:** State Enterprise Radioactive Waste

**Seat:** 1797 Sofia, 52A G. M. Dimitrov Blvd., floor 6

Short description of the investment proposal:

The investment proposal envisages decommissioning of Units 1 to 4 of Kozloduy NPP. Units 1 to 4 of Kozloduy NPP are with reactors of the WWER-440/230 type and are commissioned during the period from 1974 (Unit 1) to 1982 (Unit 4). The general characteristics of power units 1 to 4 are as follows:

- The reactors of are of the water-water reactor type operating with pressurized water, with two circuits – primary and secondary. Units 1 to 4 have a capacity of 440 MW each.
- The fuel for Units 1 to 4 is UO<sub>2</sub>, with enrichment of up to 3.6%, <sup>235</sup>U.
- Units 1 to 4 have six main coolant loops of the primary circuit, with six main circulation

pumps and six steam generators.

- Each of the WWER-440 reactors and the primary coolant circuit is located in a concrete structure of hermetically sealed premises.

The territory planned for the needs of decommissioning Units 1 to 4 of Kozloduy NPP is situated on the site of the nuclear power plant. Same is located at a straight-line distance of 120km from the city of Sofia, equaling 200 km by road. It is situated in the northwestern part of Bulgaria on the right bank of the Danube River, at a distance of 5km to the southeast of the town of Kozloduy. The site is located opposite 694<sup>th</sup> kilometre along the line of the Danube River, at a distance of 3.7km to the south of the river's water course and the state border with Romania.

The activities of decommissioning Units 1 to 4 are planned on the territory of these Units as the generated waste is to be transported to sites on which it will be stored safely and temporarily. The area of the entire site is about 3.2 km<sup>2</sup>, and when adding the channels of circulation and service water supply, it reaches 5.2 km<sup>2</sup>. The main structures of auxiliary buildings of Units 1 to 4 of Kozloduy NPP are located within an area of 1.4 km<sup>2</sup>. From administrative point of view, Units 1 to 4 are separated from Units 5 and 6.

The initial strategy for decommissioning includes the preparation and operation of the Safe Enclosure Zone (SE) of the reactor compartments (RC) and of the auxiliary buildings for a period of 35 years, and as a last stage, the performance of deferred dismantling is envisaged. In the process of analysis and assessment, while taking into account all technical, economic and social aspects and based on international experience, this strategy is updated to a strategy of continuous dismantling. The main characteristic of this alternative is the continuous dismantling of equipment and facilities and the continuous process of waste management, as well as control (monitoring) of SE, conforming to all requirements for environment protection and radiation protection.

The continuous dismantling is a selected combination of the two possible alternative options:

- Immediate dismantling of certain facilities and equipment;
- Deferred dismantling of other facilities and equipment.

The updated strategy does not provide for fixed dates for completion of the activities/stages. Within the concept of continuous dismantling, deferred dismantling does not provide for long-duration safe storage. The adopted approach has the purpose of attaining smooth transition between the individual stages.

According to the Strategy for continuous dismantling of Units 1 to 4, the auxiliary buildings (AB) and the ventilation stacks (VS) are excluded from the Safe Enclosure Zone, which

allows their use as facilities for radioactive waste management. The auxiliary buildings remain with a special status, for the purpose of being used for the individual phases of the decommissioning activities. The scope of SE is limited to the reactor compartments of the Units, to a part of the sanitary building and their connecting trestle bridges.

The updated strategy for continuous dismantling in the course of decommissioning Units 1 to 4 of Kozloduy NPP comprises the following two stages:

- Stage 1: preparation and controlling of the Safe Enclosure of Reactor Compartments 1 and 2 and dismantling of the equipment falling beyond the Safe Enclosure Zone;
- Stage 2: deferred dismantling of the equipment within the Safe Enclosure Zone and exemption of the building from regulatory control. The dismantling commencement is complied with the terms set in the Strategy for Spent Nuclear Fuel and Radioactive Waste Management by 2030.
- The last stage of the decommissioning process is closure and reclamation.

Stage 1 includes the phases of Safe Enclosure Preparation and Safe Enclosure Control, as well as dismantling of the equipment outside the SE Zone.

#### **A. Activities during the Phase of Safe Enclosure Preparation**

The activities performed during the preparation of RCs of Units 1 to 4 for SE, and respectively of Units 3 and 4, are grouped as follows:

- Activities outside the SE Zone;
- Activities along the borders of the SE Zone – isolation of all unnecessary connections of RC to the machine hall and of such connections to AB-1; dismantling of equipment and devices located on the border of the isolated contaminated circuits, the integrity of which cannot be guaranteed for the SE period, implementation of construction measures for SE preparation;
- Activities in the SE Zone – marking of the systems which remain in operation during the Units' decommissioning with signs; isolation of all systems which are not needed for SE (ventilation, electric, controls and instruments (C&I), technological); isolation of the operating part of the systems which remain functioning during SE within the part which does not remain in operation (ventilation, electric, C&I, technological) removal of fluids from the systems; removal of hazardous materials, removal of combustible materials; removal of iodine filters; replacement of aerosol filters remaining in operation during SE; switch-off/disconnection of all electric systems, which are put out of operation in SE; removal of the insulation of the systems which are subject of decontamination; conservation of the systems

and equipment, which may be used during or after SE (manipulation systems, hoisting equipment); arranging of ventilation zones (sections); adaptation of the existing systems which are necessary for SE.

## **B. Activities during the Safe Enclosure Control Phase**

### **Safe Enclosure of Reactor Compartment 1 and Reactor Compartment 2**

The phase is characterized by minimum control and management activities: periodic inspections rounds and testing of the equipment; replacement of aerosol filters; maintenance of the buildings and facilities remaining in operation; renovation of the operation systems during the SE period (if necessary); installation of heaters in the steam generator confinements (if necessary).

## **C. Dismantling of the equipment outside the Safe Enclosure Zone (machine hall)**

Dismantling of the equipment outside the Safe Enclosure Zone is planned by starting with the equipment in the non-contaminated buildings and in the Machine Hall (MH) of Units 1 -4, namely:

- Dismantling of non-contaminated equipment;
- Dismantling of turbines;
- Dismantling of the secondary circuit;
- The plan of Kozloduy NPP for dismantling of the equipment from Units 1 to 4 of Kozloduy NPP outside the SE Zone follows the usual practice of projects for decommissioning of nuclear power units. For dismantling the equipment in the machine halls and other auxiliary buildings there shall be used conventional, predominantly manual or remotely controlled tools and cutting machines. Smaller components and equipment will be initially removed in order to make additional space for removal and maneuvering with large components.

The end of Stage 1 is determined based on the dismantling completion outside the Safe Enclosure Zone. The performance of Stage 2 starts before the completion of Stage 1, as per the terms underlying the Strategy for SNF and RAW management by 2030 for the purpose of ensuring smooth transition between the two stages.

During Stage 2 dismantling of the equipment in the Safe Enclosure Zone will be carried out. It is envisaged for the large equipment of the primary circuit of the Units to be dismantled in whole and stored in a repository specially built on the site for temporary storage of transitional RAW (“decay storage”). Dismantling of the reactors and active components

around them will be performed. It is planned to dismantle the reactor buildings last, in whole (without cutting) following a reverse order relative to their installation order, as for their removal from the pits and transferring to the transport corridor, the 250-ton cranes located in the RC will be used. The inner reactor building equipment will be returned inside the reactor building and will be transported to the repository and stored in one common container with the reactor building. It is planned for the reactor buildings to be stored in concrete or reinforced concrete containers specially developed for that purpose. At the end of this stage, the site and the building will be exempted from control in order to be used for other industrial purposes.

The end of Stage 2 will be determined as per the completion of dismantling and the activities related to the release of the buildings from regulatory control.

In the course of implementation of the above stages: Decommissioning Preparation Stage, Stage 1 and Stage 2 of Decommissioning and the Stage of Closure and Reclamation, various types of waste management activities will be performed. After sorting the dismantled materials, depending on their contamination degree, they may be:

- Exempted from control and transported out of the site of Kozloduy NPP, without or after decontamination;
- Stored until the process of natural radioactive decay is completed;
- Delivered as RAW for appropriate processing and conditioning.

Activities of decommissioning preparation are planned – including radiological survey and removal of any hazardous and other waste remaining from the Units' operation.

Upon decommissioning of the Units decontamination will be carried out in order to reduce the exposure of the staff and the population through removal of decay and contamination products contained in the deposits, passivation layer and dust of the facilities as well as for providing an opportunity for a possible reuse and recycling of the materials, and for attaining compliance with the criteria for acceptance of radioactive waste for disposal.

### **Closure and Reclamation Stage**

For the final phase of closure and reclamation, in long-term aspect the strategy provides for the final state of the industrial site on which Units 1 to 4 of Kozloduy NPP are decommissioned to be determined as “brown lawn”. It will be achieved with the performance of the following activities: dismantling of the equipment, which is not intended for any further use; exemption of the buildings and facilities which remain in operation from regulatory control; processing and removal of all radioactive waste from the site's territory,

and bringing the site to a state appropriate for the needs of nuclear energy or other economic activities.

For implementation of these stages, the necessary accompanying projects are planned, divided into several types:

- Projects for supply of equipment – control instrumentation, equipment for volume reduction and dismantling, for treatment and conditioning;
- Projects for management, control, survey, analysis, training, including supply and implementation of software, etc., upon improvements and modernizations of the existing management systems;
- Projects for construction of facilities.

**The project for construction of Size Reduction and Decontamination Workshop Facility (SRDWF)** is intended for reduction of the size of dismantled materials through cutting; decontamination of dismantled materials through mechanical, chemical or electrochemical methods; packaging of materials in pallets/containers for decontamination to be transported to the facility for exemption from control. The site will be located within the internal perimeter of Kozloduy NPP, its anticipated dimensions being 72.00m x 52.00m.

**The project “Design and construction of sites for management of materials from decommissioning activities at Units 1 to 4 of Kozloduy NPP** envisages the construction of sites for temporary safe storage and management of the materials and waste generated in the course of decommissioning Units 1 to 4 of Kozloduy NPP. The selection is focused on sites on the territory of Units 1 -4 of Kozloduy NPP, as two of these are planned for temporary safe enclosure of radioactive materials (RAM) subject to exemption from regulatory control and one site for storage of non-radioactive waste (dismantled materials exempted from regulatory control).

The sites are located within the site of Kozloduy NPP and fall within a controlled access zone. They are outdoor and equipped with systems for stormwater /surface water drainage.

Site 1 must be constructed in two separate parts:

- Site 1a – to the north of the Receiver Site, on land area with dimensions 60x30 m, and
- Site 1b – to the south of the Receiver Site on land area of 1816 m<sup>2</sup>.

Site 2 is with dimensions 55x58m and is located between DGS-2 (diesel generator station) and Sanitary Building 2. Site 2 will be connected to the existing road infrastructure through development of a new road and new crossroad.

Site 3 will be constructed on the existing Transformer Site of Units 1 and 2” on an area with dimensions 292x38m.

For Sites 1a, 1b, and 2 there will be designed and developed a System for drainage of surface/ stormwater and its collection and discharge in drainage pits with lining of stainless sheet iron, and with connections both to a tank and to the existing sewage system of Kozloduy NPP, for their discharging. A zone for positioning of a transport tank car is planned in the designs of Sites 1a, 1b, and 2 for pumping out the water near the tank.

For non-contaminated waters a system is planned for drainage of surface water, with connection to the existing sewage of Kozloduy NPP (surface water drainage system).

A drainage system for storm and surface waters will be constructed on Site 3 for their discharge in the existing sewage (surface drainage system) on the site of Kozloduy NPP.

For support of the activities of decommissioning Units 1 to 4 of NPP, various projects and supply of the necessary facilities are planned to be implemented:

- Project- supply of mobile equipment for water decontamination and purification;
- Project – facility for retrieval and immobilization of spent ion-exchange resins;
- Project - measurement instruments for exempting waste from control and monitoring;
- Project – supply of equipment and control of liquid and gaseous releases.

A change in the consumption of water, electric and heat energy during the activities of decommissioning, as compared to the post-operation phase is not expected. The main share of water consumption is of the water for sanitary and domestic needs of the staff. Main consumers of electric and heat energy are the systems which continue to function with post-operation status (for instance, the ventilation systems of reactor compartments).

The consumption of water from groundwater sources is insignificant in respect of the total amount of water used by Kozloduy NPP. For drinking and domestic needs water is used mainly from the urban water supply network of the town of Kozloduy, as to that end a contract is signed with Water Supply and Sewage EOOD – town of Vratsa.

In the course of decommissioning Units 1 to 4, water will be used for drinking and domestic needs and for technological purposes. The use of surface and groundwater will be implemented in compliance with the conditions stipulated in the issued water use permits.

With the reactors’ decommissioning the necessity of coolant water is no longer necessary. The consumption of chemically purified water will remain unchanged in respect of its consumption after shutdown. Demineralized water is necessary for all processes of decontamination. Increased consumption of water is forecasted due to the increase of water consumption in the laundries, bathrooms, and for cleaning floors and passages.

The generated waste water is discharged in the Danube River through Hot Channel -1 (HC-1) and Hot Channel -2 (HC-2), and in the main drainage channel (MDC). Recipient of the waters from MDC is also the Danube River. Kozloduy NPP EAD is holder of issued permits for wastewater discharge.

***Conditionally clean industrial wastewater*** – the coolant water streams after leaving the condensers (circulation water) and after the consumers of service water are discharged in HC 1 by way of a system of low pressure channels.

Apart from circulation and service water in low pressure channels (and for Units 1 - 4 also directly in HC 1) also water of the ***industrial wastewater*** type

The total mass of the main facilities to be dismantled in the machine hall, which are related to the dismantling of Units 1 and 2 (Steam turbines, Condensers, Regenerative heaters (low pressure heaters, high pressure heaters), Ejectors, Coolants, Other heat exchangers) is 6306.5t.

For the four decommissioned units the respective quantities will be doubly greater.

The dismantling of conduits, valves, pumps and tanks is expected to generate more major, useful materials to be isolated, such as electric engines, electric parts, cables – total approximate mass of 32391.

For **Decommissioning Stages 1 and 2** it is expected that about **80%** of conventional wastes will be waste for recovery. This waste will be temporarily stored on the territory of the industrial site on places designated for such purpose (Site 3) and after accumulation of certain quantities they will be delivered, under contract for subsequent treatment to specialized companies holding permits for work with waste. **The industrial waste** from dismantling will be sorted on site and will be directed for the respective method of recovery or disposal.

At the **Closing and Reclamation Stage** the site will be used for new production or auxiliary capacities, and if this is not applicable, a biological reclamation project will be implemented. Within this stage, waste from fertilizer packages will be separated, as well as domestic waste from the everyday life activities of the workers. Their amounts will be insignificant and will be managed as per the established practices.

The investment proposal does not affect any protected areas in the meaning of the Protected Areas Act and does not fall within the borders of any protected areas in the meaning of the Biological Diversity Act.

The nearest protected areas are BG0000533 “Kozloduy Islands”, BG0000614 “Ogosta River” and BG0000508 “Skat River” for protection of the natural habitats and of the wild flora and fauna included in the list of protected areas adopted by Decision No. 122/2007 of the Council



of Ministers (SG, issue 21/2007) and protected area BG0002009 “Zlatiyata” for protection of wild birds, declared by Order No. RD- 548/05.09.2008 of the Minister of Environment and Water (SG, issue 83/23.09.2008).

Taking into consideration the provision of Art. 31, para. 1 of the **Biological Diversity Act** and Art. 2, para. 1 of the **CA Ordinance**, the investment proposal is subjected to assessment of its compatibility with the subject and objectives of conservation in the protected areas. After evaluation pursuant to Art. 39, para. 3 of the **CA Ordinance** that the investment proposal is likely to exert a significant negative impact on natural habitats, populations and habitats of species being subject of conservation in the protected areas and the instructions given pursuant to Art. 39, para. 5 of said ordinance, a report on environmental impact assessment in respect of the protected areas is prepared (EIAR). The expected impacts of the investment proposal on the subject and objectives of the protected areas located in the close vicinity are examined in detail and assessed in EIAR.

Based on the following motives (factual grounds):

1. In the presented EIA Report a review is made of the existing state of the environment components and factors and an analysis is performed of the expected impacts from the implementation of the investment proposal on environment and people’s health. The conclusion of the EIA experts is that based on the analysis and assessment of the investment proposal, of the conducted research, studies and consultations, as well as of the estimation of the impact of the site on the components of environment and the factors influencing the latter, the approval of the investment proposal is recommended along with the implementation of the prescribed measures and recommendations due to the following:

- The radiological impacts are brought down to a considerably lower level as compared to those upon the shutdown of the Units and are substantially reduced as compared to the period of operation of the Units. The radiological impacts are with a trend to be brought down to even lower levels through the consistent application of the ALARA principle (as low as reasonably achievable), which has been successfully applied to all activities at the site of Kozloduy NPP hitherto;
- Non-radiological impacts from the activities of decommissioning Units 1 to 4, such as the generation of non-radioactive waste and emissions of harmful substances in the ambient air as a result of transport activities, are assessed as insignificant and having local significance, and also limited in terms of time;
- Most of the impacts are expected to be negligibly low, as through the implementation of the proposed measures for reduction, restriction or prevention of harmful impacts, they will

be additionally decreased. In that regard, no cumulative impacts are expected from the activities of decommissioning Units 1 to 4 of Kozloduy NPP, the operation of Units 5 and 6 of Kozloduy NPP and National Radioactive Waste Repository;

- No transboundary impact on the components and factors of environment is expected;
- With controlling the processes of decontamination of materials and compliance with the adopted technology of decommissioning of Units 1 to 4 of Kozloduy NPP in performance of the measures for prevention, reduction or termination of the harmful impact on environment from the implementation of the investment proposal, no negative impact on ambient air in the examined territory is expected;
- In the area of the construction and installation activities and especially during the excavation works, the disposal of excavated earth mass and the subsequent reclamation of the land, in consequence of increasing the dust content in the ambient air, insignificant microclimatic changes will be observed in respect of the light and heat characteristics within the work day until completion of the construction stage. The impact will be local, of short duration, without cumulative effects on atmospheric processes;
- the activities of dismantling the equipment in the reactor compartment and the subsequent transportation of a part thereof to the Size Reduction and Decontamination Workshop Facility will be performed indoors, in premises equipped with filtering ventilation system with efficiency factor of 99.97%, and therefore the impact on ambient air will be insignificant;
- the analysis of the investment proposal and the possibilities for ambient air pollution within the 30-kilometre zone around Kozloduy NPP shows that during the construction and operation of the Size Reduction and Decontamination Workshop Facility and on the sites for management of materials from the activities of decommissioning Units 1 to 4, there will be generated a quantity of waste products that is by multifold smaller as compared to that in the period of regular operation of the Units of Kozloduy NPP. In relation thereto, no substantial changes are expected in the values of meteorological elements and the state of ambient air. Taking into account the distribution of frequencies of the prevailing winds in the region, the probability of transfer of aerosols within the 30km zone around Kozloduy NPP is strongly limited in all directions;
- while complying with the technology and controlling of the processes of decontamination and dismantling, decommissioning may be performed in a manner safe for the environment and for the population, as it is expected for the radioactive aerosol emissions to be within the admissible limits and the ambient air pollution in the area of Kozloduy NPP to be lower than that in the regular operation period;

- the emissions of non-radioactive substances in the ambient air during the processes of decommissioning of Units from 1 to 4 of Kozloduy NPP will be below the statutory permitted levels;
- since currently as well the used water quantities are below 50% of the permitted water quantities, the water supply will continue to be provided by the same water sources. The scope of this impact will be local, within the water abstraction facilities (for groundwater). Irrespective of the impact's insignificance, it will be negative and direct, with a limited territorial scope and low degree within the limits of the established zone of impact around the water abstraction facilities. It will be temporary (only for the duration of the stage of decommissioning preparation) and short-term.
- No additional impact is expected on the quality of the Danube River. No impact is expected also on the chemical state of groundwater body **BG1G00000N2034** (Neocene porous water), since the possibly infiltrating small quantities will be detained in the comparatively powerful zone of aeration without reaching the level of groundwater beneath;
- the activities of removal of the liquid and solid RAW from the place of their initial storage will significantly contribute to minimizing the impacts during work with radioactive materials. The impact on surface and groundwater from the work with radioactive materials is insignificant;
- In compliance with all technological and regulatory requirements, the impact of the treatment and conditioning of RAW on surface and groundwater is not to pose any threat to the ecosystems and health of the population in the affected area;
- The liquid releases in environment as a result of the operation of reactors 1 to 4 of Kozloduy NPP will be low. The resulting annual radioactivity values will be within the norms with sufficient reserve. The reduced impact on surface and groundwater may be viewed as a positive effect of the Units' decommissioning as compared to their period of operation;
- Among the positive impacts from decommissioning Units 1 to 4 is the elimination of thermal pollution of the Danube River caused by the coolant waters during the period of operation. After completion of decommissioning, the cleanliness of surface and groundwater in the affected area will be improved. The impact on environment for Bulgaria is assessed as insignificant and no transboundary impact to Romanian territory is expected;
- For the needs of the investment proposal only territories within the site of Kozloduy NPP are planned for use. The activities along the border of the SE zone will be performed indoors and do not pose any threat to the soils both on the site of Kozloduy NPP, and the adjoining

lands. A significant part of the activities in the SE zone are not related to generation of sources of impacts on soils. Decontamination will be performed in an indoor room, as given the efficient performance of the planned activities, it is not anticipated to entail any impact on soils both within the site of Kozloduy NPP, and the adjoining lands;

- Upon implementation of the decommissioning activities no impact is expected from non-radioactive and radioactive factors on land use, and they will not influence the use of lands in the region;
- The impact on soils at the stage of decommissioning will be much lower as compared to the period of regular operation of Kozloduy NPP;
- The impacts from excavation and embankment works, compaction, sealing, insulation, will be mainly mechanic. The impacts from this type of activities on soils are assessed as negative, direct and after the completion of the construction activities they will be direct, positive, long-term, taking into account recycling and reclamation;
- The analysis of supposed sources of impacts on soils related to decommissioning Units 1 to 4 and the period after completion of decommissioning shows that the planned activities do not constitute a source of soil contamination. After completion of decommissioning a decrease is expected in the radiological and non-radiological emissions in environment (air and water). No consequences are expected for lands and soils, nor transboundary impact on the lands in neighbouring Romania;
- The impact on geological environment is assessed as negative, direct, short-term for the period of the dismantling works;
- Given the proper performance of the decommissioning activities and application of the Programme of Radioactive Waste Management on the site of Kozloduy NPP the process can take place without any danger of polluting landscape components, as no negative impacts on landscape are expected. No cumulative impact on landscape is expected also from the activities on the NPP's site, nor a transboundary effect;
- no transboundary impacts are expected on protected areas on the territory of Romania;
- the forecasted impacts on the flora and fauna as a result of the implementation of the investment proposal are assessed as slight, mainly indirect or such arising in the event of emergency and force majeure situations, which cannot be avoided without the implementation of special measures, apart from the best available practices in decommissioning Units 1 to 4 of Kozloduy NPP and the protective and monitoring activities being applied hitherto;
- during the decommissioning of Units 1 to 4 of Kozloduy NPP no transboundary impacts

on the flora and fauna are expected;

- no harmful impacts are expected on the material and cultural heritage in Bulgaria due to the fact that the implementation of the decommissioning activities at all stages of the investment proposal and in the course of implementation of the accompanying projects will be limited to the site of Kozloduy NPP, where no monuments of culture or archaeological sites are identified. No transboundary impact on monuments of culture or archaeological finds is expected within the 30-kilometre zone of Kozloduy NPP on the territory of Romania;
- upon implementation of the decommissioning activities throughout the period there will be performed redistribution of the existing residual activity, which will change the location, quantities and degree of radiation, within the operating site of Kozloduy NPP and under particular circumstances in the environment ;
- no significant influence will occur on the gamma radiation background, both on the territory of the country and on the territory of the Republic of Romania, because of:
  - the protection of the zones with the relevant control limits and admissible values of gamma radiations, as well as their control values and admissible limits on exterior walls of premises containing radioactivity;
  - compliance with the gamma radiation limits in and around the newly established buffer zones and temporary storage zones and the capacity limits of the RAW storage facilities;
  - provision of adequate biological protection of the radioactive equipment being removed out of the SE Zone during the treatment and transportation of RAW;
  - out of the reactors' sites and within the regulated radiation monitoring zones the limit admissible values of radioactive substances emissions are complied with as regards wastewater and the lowest atmospheric layer;
- the impact of non-ionizing radiation during the reactors' decommissioning will be limited to the scope of hygiene protection zones and inessential in respect of the environment;
- additional impacts on environment by non-ionizing radiation are not expected in the course of performance of the decommissioning activities;
- the noise impact depending on the noise levels upon decommissioning will be continuous, but diminishing in time, with temporary increases. The levels of the generated total noise from the site of Electricity Production - 1 in environment will not exceed the set norms, including in the nearest populated areas in the country and in Romania;
- the influence of vibrations will be constant, diminishing in time, with temporary increases, limited within the borders of the site of Electricity Production -1 and insignificant for the environment, including for the nearest populated areas in the country and in Romania;

upon adherence to all technological and regulatory requirements the impact of the processes related to the treatment and conditioning of RAW and of conventional waste on environment and on the population will be insignificant. No transboundary impact from harmful substances to neighbouring countries is expected;

- non-radioactive waste to be generated in the implementation of the investment proposal do not differ in their composition and classification from the waste generated at “zero alternative”;
- given the compliance with the Waste Management Act and the secondary legislation on its application, the Rules on ensuring safety in the management of non-radioactive waste and the measures specified in this decision, no significant impacts can be expected on the components of environment and human health;
- all activities to be performed during the decommissioning period are complied with the requirements for occupational health and safety and protection of the population’s health;
- upon performance of the activities at the preparatory stage of decommissioning the radiological impact on people as a result of radiation does from noble gases or inhalation of <sup>131</sup>I will absolutely insignificant as compared to that resulting from the respective releases during regular operation. The decommissioning activities are planned in advanced, as this includes also the elaboration of plans-time schedules for the works of equipment dismantling. The high level of safety culture and the systematic application of the ALARA principle (as low as reasonably achievable) is also to be taken into account, as it minimizes the specific risk of radiation load for the staff;
- effective dose of the population in the 30-km zone of Kozloduy NPP including on Romanian territory in cases of limiting accidents during the implementation of the investment proposal will be much lower than the requirements of the International Documents ICPR 103 and the requirements of the Ordinance on Radiation Protection Norms, 2012;
- the use of collective and personal protection equipment will minimize the adverse health effect which will be local and with short-term effect;
- the health risk for the population approaches zero, given the fact that the hazardous /radioactive materials, as well as the construction activities, which are a source of conventional harmful impact, will not go beyond the territory of the site of the Units;
- the health status of the population within the 30-km zone of Kozloduy NPP on the territory of Romania does not differ from that of the entire population in Bulgaria. The implementation of the investment proposal will not exert any negative impact on the state of the environment and will not contribute to any harming of the health of Kozloduy NPP’s staff

and of the population within its surrounding 30 km zone, including on the territory of Romania.

- During the construction activities in the preparatory stage and the stage of decommissioning Units 1 to 4 of Kozloduy NPP, the construction sites and the insignificantly increased traffic will be sources of noise, dust and toxic gases. The emissions will be much lower than the limit values for noise and hygiene norms for dust and toxic gases. The population will not be subjected to any health risk, but it is possible to experience temporary discomfort which will be insignificant;
- As per the selected alternative of “continuous dismantling”, during both stages of decommissioning of the Units, the staff of highly qualified and experienced experts who have serviced the shut down Units will be reassigned to employment in the new activities of their decommissioning, as preservation and provision of job positions for the dismissed experts will be achieved;
- With the adopted Alternative of “continuous dismantling” a smaller negative social and socioeconomic effect is expected as compared to that with the other assessed alternatives;
- the activities of decommissioning of the four shut down Units of Kozloduy NPP cannot exert any economic and social impacts on economy and the population of the Romanian part within the reviewed 30-km. impact zone of Kozloduy NPP.

2. The result of the performed assessment of the degree of impact is that the investment proposal will not exert a significant negative impact on natural habitats, populations and species habitats, subject of conservation in the protected areas specified hereinabove, due to the following motives:

2.1. The implementation of the investment proposal under Alternative 2 “Continuous dismantling“ will not lead to any significant negative impact on the subject and objectives of conservation in the nearest protected areas BG0000533 Kozloduy Islands, BG0000614 Ogosta River, BG0000508 Skat River, BG0000527 Kozloduy and BG0000199 Tsibar for conservation of natural habitats and of the wild flora and fauna, since:

- the implementation of the investment proposal is not related to utilization of any areas within the scope of protected areas, and therefore it will not cause any distortion of the **integrity, structure and functions** thereof, as well as to significant negative indirect and direct impacts on **natural habitats, species habitats**, being subject of conservation therein;
- the implementation of the investment proposal will not lead to **fragmentation** of natural habitats and habitats of species being subject of conservation in the protected areas located in the immediate vicinity, since its implementation will be carried out on the already existing

site of Kozloduy NPP, wholly outside the borders of the protected areas;

- as per the research conducted in 2010 and 2011 it is established that the radioactivity in the analyzed samples falls within the normal limits which presupposes that there will be no change in the **number and structure** of populations of species being subject of conservation in the protected areas as of the implementation of the decommissioning as per the selected alternative;
- it is not expected of the activities of decommissioning Units 1 to 4 of Kozloduy NPP to cause any **noise** load which may entail to **disturbance** of a significant degree leading to leaving of species, given the fact that the implementation of decommissioning will be performed indoors within the site of Kozloduy NPP.

2.2. The implementation of the investment proposal will not lead to any significant negative impact on the subject and objectives of conservation in the nearest protected area BG0002009 Zlatiyata for conservation of wild birds, given the following circumstances:

- The implementation of the investment proposal following the selected Alternative 2 “Continuous dismantling” will not lead to distortion of the **integrity, structure and functions** of protected area BG0002009 Zlatiyata for conservation of wild birds since it is not related to the utilization of any areas from its scope;
- According to the research conducted by the authors of EIAR, the site of Kozloduy NPP remains at about 19 km to the east of the main migration way across the protected area and therefore the decommissioning implementation is not expected to lead to destruction of any key territories of significance for the **migration** of wild birds;
- the investment proposal will be implemented on the already existing industrial site of Kozloduy NPP, and therefore, no significant negative impact is expected on major **nesting and feeding habitats** and **resting places** of the birds being subject of conservation in the protected area, nor **fragmentation** of their habitats;
- no impact of **disturbance** of birds is expected during decommissioning, given the fact that its implementation will take place indoors within the site of Kozloduy NPP;

2.3. No significant negative impact is expected on the subject of conservation of the six protected areas located in the vicinity as a result of the **cumulative impact** from the implementation of the present investment proposal along with past, current and future plans, programmes, projects and investment intentions.

3. Danube Region River Basin Management Directorate with centre Pleven (RBMD) expresses a statement with ref. No. 6613/28.12.2012, that the investment proposal is admissible from the viewpoint of attaining the environment objectives and the measures for



achieving good state of the waters and the zones of their protection, underlying the River Basin Management Plan (RBMP ) of the Danube Region. As regards the EIA Report, RMBD is of the opinion that the investment proposal is admissible in relation to RBMP in the Danube Region and there are no bans provided for under the Water Act in respect of this type of proposal and therefore it expresses a positive statement as regards the quality of the EIA Report.

In the conclusion of its statement, DRBD, in the meaning of Art. 4a, para. 1 of the *EIA Ordinance* (ref. No. 3072/14.05.2012), provides motivated assessment that the implementation of the investment proposal will not exert any negative impact on waters and water ecosystems and that it is admissible from the viewpoint of the environmental objectives and measures for attaining good state of the water, as stipulated in RBMP of the Danube Region.

4. In relation to the provision of Art. 14, para. 2, i. 1 of the *EIA Ordinance*, the Ministry of Health (MH) by letter with ref. No. OVOS-289/25.03.2013 of MOEW expresses a statement that the analyses, inferences and assessments made in the report provide grounds to suppose that, given the adherence to all recommendations, no health risk for the population is expected to arise. MH gives a positive assessment of the EIA Report while drawing attention to some technical errors made. In this respect and on the occasion of some corrections made in the EIA Report, MH, by its letter with ref. No. OVOS-289/13.05.2013 of MOEW confirms the expressed by its statement (ref. No. 04-09-299/25.03.2013) positive assessment of the EIA documentation in its part referring to the health and hygiene aspects of environment and the risk to human health.

5. In pursuance of the provisions of *Convention on Environmental Impact Assessment in a Transboundary Context*. Republic of Bulgaria notifies Romania as a country concerned by the investment proposal. In response, by Letter No. 5850/L.B./03.08.2010, the Romanian side expresses a wish to participate in the EIA procedure. In the course of the EIA procedure assignment on the EIA scope is provided to Romania in response of which by letter No. 2830/RP/31.07.2012, the Ministry of Environment and Forests of Romania expresses a statement. By letter with ref. No. 99-00167/20.06.2013. MOEW provides information to Romania in respect of the access to the EIA report and its appendices in English language, as well as about the public discussion meetings held on Bulgarian territory with provided opportunity for participation of the public and the institutions of the concerned country. By letter No. 3037/RP/06.08.2013 the Ministry of Environment and Climate Change of Romania provides commentaries on the EIA documentation. In response, by letter with ref. No.

OVOS-289/10.09.2013 MOEW sends the statements to the Contracting authority in relation to the remarks set forth on the part of Romania on the EIA report, as again addresses a request about a necessity of holding a public discussion meeting on Romanian territory. Within the specified term until 25.09.2013 no response has been received by MOEW from the Ministry of Environment and Climate Change of Romania.

By letter No. 4348/14.10.2013 the Ministry of Environment and Climate Change of Romania informs MOEW that it is not necessary to hold a meeting for public discussion of the EIA report on Romanian territory and proposes some conditions to be included in the decision on EIA. Same are reviewed on the session of High Expert Ecological Council and accepted.

6. In the course of the EIA procedure consultations are conducted with the stakeholders and the concerned authorities. Public access is provided to the EIA report and all appendices thereto and public discussion meetings are held on 15.07.2013 and 16.07.2013 in the municipalities determined as affected – Kozloduy and Miziya. In the course of the public access to the EIA documentation at SE RAW 13 written statements with opinions and suggestions are received, as no others are deposited in the course of the public discussion meetings.

In pursuance of the requirements under Art. 17, para. 5 of the **EIA Ordinance** with ref. No. OVOS-289/24.07.2013 a written statement is received in MOEW from the Contracting authority in respect of the suggestions, recommendations and opinions resulting from the public discussion of the EIA Report.

In respect of statement with ref. No. 99-00-167/19.08.2013 of MOEW submitted to the Ministry of Environment and Climate Change of Romania on the EIA Report, in response the Contracting authority, by letters with ref. Nos: OVOS-289/02.09.2013 and OVOS-289/09.09.2013 of MOEW and in accordance with Art. 17, para. 6 of the **EIA Ordinance** is of the opinion that no supplementing of the EIA Report is necessary, as per the motives set forth on each of the written commentaries.

Within the envisaged under the **CA Ordinance** one-month term for access of the public to the EIA Report (as of 15.05.2013), no motivated written statements have been submitted with information in the meaning of Art. 39. para. 10 of said ordinance, respectively, Art. 17, para. 7 of the **EIA Ordinance**, in respect of the nearest protected areas BG0000533 Kozloduy Islands, BG0000614 Ogosta River, BG0000508 Skat River, BG0000527 Kozloduy, BG0000199 Tsibar for conservation of natural habitats and of the wild flora and fauna and protected area BG0002009 Zlatiyata for conservation of wild birds.

7. By its Decision 1-6/2013 of 16.10.2013, the High Expert Ecological Council suggests the

approval of the implementation of the investment proposal under the following additional **conditions**:

***1. For the decommissioning preparation phase:***

1. Review and if necessary, update, of the safety analysis report and the emergency plans for Units 1 to 4 of Kozloduy NPP, prepared in accordance with the Safe Use of Nuclear Energy Act (SUNEA) and the secondary legislation thereto, with the aim of providing measures, by including the new activities and processes in the course of decommissioning and encompassing actions for prevention of large-scale accidents and incidents and limitation of their effects in the course of decommissioning Units 1 -4.
2. The operator is to perform a classification of the enterprise under the provision of Art. 103 of the Environmental Protection Act (EPA).
3. Preparation of environment management plan in order to guarantee a systematic approach to the management of ecological and social issues and impacts related to the envisaged activities.
4. For control of the efficiency of the mitigating measures being applied for prevention or restriction of the harmful impacts, to be determined measurement points; measurement frequency; methodology to be used in such measurements; expected values in order to register any differences between the existing and forecasted level.
5. Elaboration of a Programme for proper non-radiation monitoring to be coordinated with Regional Inspectorate for Environment and Water (RIEW) – Vratsa, Danube Region RBMD with centre Pleven and the Executive Environment Agency (ExEA).
6. An assessment is to be performed and measures are to be provided for safe storage of the used hazardous chemicals in accordance with the requirements of the ***Ordinance on the procedure and method for storage of hazardous chemical substances and mixtures (Decree of the Council of Ministers No. 152 of 30.05.2011, promulgated in SG, issue 43 of 07.06.2011)*** and the conditions for control of the exposure, as specified in the chemicals safety datasheets.
7. Prior to the commencement of the activities of decommissioning of the facilities and systems the Contracting authority is to prepare its own assessment for possible cases of imminent threat of ecological damages and for inflicted ecological damages, for the activities falling within the scope of application of the ***Act of environmental responsibility with regard to the prevention and recovery of environmental damage*** as per appendix No. 1of ***Ordinance No. 1*** of 29.10.2008 ***for the type of preventive and recovery measures in the cases envisaged under Act of environmental responsibility with regard to the prevention***

***and recovery of environmental damage and the minimum amount of the expenses for their implementation*** (promulgated, SG, issue 96/07.11.2008) and to submit same to RIEW-Vratsa.

II. In the course of decommissioning:

1. During the installation and construction activities are to be used efficient collective and personal protection equipment in order to minimize the adverse health effect.
2. The activities of decommissioning are to be performed as per the elaborated plans-time schedules for the works of dismantling the equipment, as for each of the activities or groups of activities of decommissioning there shall be envisaged, depending on their complexity, the elaboration of a working package/ procedure with detailed description of the activities.
3. The ALARA principle is to be applied systematically whereby the specific risk of radiation load of the staff is to be minimized.
4. The recommendations contained in the safety analysis report drawn up in accordance with SUNEА are to be fulfilled during the period of decommissioning, in compliance with contemporary standards, criteria and global experience in decommissioning of nuclear facilities.
5. Monitoring plan is to be applied in order to guarantee that no unforeseen impacts arise, and that the suggested mitigating measures have an adequate effect.
6. The radiation protection requirements and standards are to be complied with in the performance of all planned activities, as in accordance with the Radiation Protection Concept are to be established monitoring programmes, instructions, rules, etc., for reduction of the radiation impact on environment .
7. The requirements and main provisions of the elaborated Complex RAW Management Programme in Kozloduy NPP, ID No. ДОД.ЕД.ПМ.387, are to be observed.
8. Immediate notification of the Romanian authorities in the impact zone of Kozloduy NPP as early as in the initial phase of any accident in NPP, caused by the decommissioning of Units 1 to 4, as well as provision of recommendations for population protection under the same conditions under which this is performed in respect of Bulgarian population.
9. With the aim of informing local population, information should be regularly provided to the Romanian authorities on the monitoring results in the zone of impact of Kozloduy NPP.

***III. Appendix: Plan for implementation of measures under Art. 96, para 1, i. 6 of EPA***

No.	MEASURES	IMPLEMENTATI ON PERIOD	IMPLEMENTATIO N RESULTS
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No.	MEASURES	IMPLEMENTATION PERIOD	IMPLEMENTATION RESULTS
<b>Measures for reduction, prevention or termination of the harmful impacts from radioactive exposure of the staff (ALARA principle)</b>			
1.	Upon planning and performance of the decommissioning activities there should be taken into account the results from the project “Quantitative assessment of materials and radiological survey of Units 1 to 4 of Kozloduy NPP (Project 11C).	Preparation and conducting of the decommissioning activities	Protection of the staff’s health and provision of safe occupational conditions.
2.	Compliance with the normative and the introduced regulatory administrative levels of the effective dose of the staff and population through continuous radiation control and optimization of the control limits of the equivalent dose of gamma radiation in the respective zones on the site of Kozloduy NPP and CH of the Units.	During the preparation and period of decommissioning	Protection of the health of the staff and the population and provision of safe occupational conditions.
3.	Maximal exemption of all components/ equipment of category 3 and their subsequent treatment, after temporary storage for decomposition (Updated strategy for decommissioning of Kozloduy NPP).	During decommissioning	Protection of the staff’s health and provision of safe occupational conditions.
4.	Programme for dismantling of the Units is to be introduced and a database is to be created for traceability of each single component of the decommissioning activities	During decommissioning	Protection of the staff’s health and provision of safe occupational conditions.
5.	Introduction of additional measures for optimization of radiation protection during decommissioning activities upon a prescription by a regulatory authority, including the preparation of database of occupational dose exposures.	During decommissioning	Protection of the staff’s health and provision of safe occupational conditions.
<b>Measures for reducing, prevention or termination of the harmful impacts of radioactive releases in the atmosphere</b>			
1.	Elaboration of radiation monitoring programme based on the principle of conservativeness in aerosol sampling with periodic update of the sampling points and if	During the preparation and period of	Protection of ambient air from radiological impact.

No.	MEASURES	IMPLEMENTATION PERIOD	IMPLEMENTATION RESULTS
	necessary, inclusion of new ones, depending on the location of the decommissioning activities. Same shall be coordinated with RIEW-Vratsa, Danube Region RBMD with centre Pleven and ExEA.	decommissioning	
2.	Exercise of control over the gaseous releases in the environment from the activities at the Size Reduction and Decontamination Workshop Facility (SRDWF), by applying the validated under NPP radiation monitoring programme methodologies for its implementation .	During the preparation and period of decommissioning	Protection of ambient air from radiological impact.
3.	Design and development of a radiation monitoring system based on the type, quality and degree of contamination and the degree of contamination of the materials supplied to SRDWF.	During the preparation and period of decommissioning	Protection of environment and human health.
4.	Upon designing the SRDWF there shall be taken into account the following additional radiation levels: <ul style="list-style-type: none"> <li>• Equivalent dose per 1.0m of the exterior walls of SRDWF: not exceeding 1 (μSv/h;</li> <li>• Equivalent dose for the population: not exceeding 0.10 μSv/y.</li> </ul>	During the preparation and period of decommissioning	Protection of environment and human health.
5.	Activities of pre-conditioning of the waste, through implementation of contemporary technological solutions on decontamination and size reduction under conditions of hermetical sealing and ventilation, as required (project for SRDWF).	Preparation for decommissioning	Protection of ambient air from radiological impact.
6.	Use of capturing and filtering installations for all decommissioning activities potentially related to aerosol formation.	During decommissioning	Protection of ambient air from radiological impact.
7.	Mounting of reliable filtering ventilation system in SRDWF, which is to ensure efficient protection from the dispersion of radioactive aerosols in the environment	During decommissioning	Protection of ambient air from radiological impact.

No.	MEASURES	IMPLEMENTATION PERIOD	IMPLEMENTATION RESULTS
	through installing of HEPA filters with efficiency factor of 99.97%.		
<b>Measures for reduction, prevention or termination of harmful impacts from radioactive soil contamination</b>			
1.	Pre-operation radiation monitoring of the soil component.	Preparation for decommissioning	Prevention of soil and environment contamination.
2.	Update of the locations of the sampling points, for radiation monitoring of soils, in accordance with the decommissioning activities.	Preparation for decommissioning	Protecting the purity of soils and the environment.
3.	In the project for construction of Sites for management of materials from the activities of decommissioning Units 1 to 4, the necessary measures for constant radiation control and environment protection shall be envisaged.	During the preparation and period of decommissioning	Protecting the purity of soils and the environment.
4.	Subject to update is the number of sampling points of the radiation monitoring of dredge residues of the drainage channels, as per the decommissioning activities.	During the preparation and period of decommissioning	Protecting the purity of soils and the environment.
<b>Measures for reduction, prevention or termination of the harmful impacts from radioactive releases in surface and groundwater</b>			
1.	Efficient management of liquid radioactive waste (LRAW).	During the preparation and period of decommissioning	Protecting surface and groundwater from radiological impact.
2.	Operating instructions are to be elaborated for exercising of technological radiation control of liquid releases related to the dismantling and decontamination of the facilities.	During the preparation and period of decommissioning	Protecting surface and groundwater from radiological impact.
3.	Elaboration of programme for radiation monitoring based on the principle of conservativeness in sampling	During the preparation and at	Protecting surface and groundwater from

No.	MEASURES	IMPLEMENTATION PERIOD	IMPLEMENTATION RESULTS
	wastewaters with periodic update of the sampling points and inclusion of new ones, if necessary, as per the location of the decommissioning activities. Same shall be coordinated with RIEW-Vratsa, Danube Region RBMD with centre Pleven and ExEA.	the stage of decommissioning	contamination
4.	There shall be exercised continuous control and maintenance of the special sewage system for prevention of leaks of radioactively contaminated water.	During decommissioning	Protecting surface and groundwater from radiological impact.
<b>Measures for reduction, prevention or termination of harmful impacts in relation to the radioactive waste management</b>			
1.	Construction of SRDWF (Project12), while implementing the appropriate measures for safety and environment protection.	Preparation for decommissioning	Environmentally friendly and safe management of RAW; protection of human health.
2.	Design and construction of Sites for management of materials from the activities of decommissioning Units 1 to 4 (Project 19), while implementing the appropriate measures for safety and environmental protection.	Preparation for decommissioning	Environmentally friendly and safe management of RAW and conventional wastes; protection of human health.
3.	Supply of a facility for treatment of liquid RAW (Danube plant), while implementing the appropriate measures for safety and environment protection.	Preparation for decommissioning	Environmentally friendly and safe management of RAW; protection of human health.
4.	Operation of a facility for immobilization of spent ion-exchange resins (Project5 a), while implementing the appropriate measures for safety and environment protection.	Preparation for decommissioning	Environmentally friendly and safe management of RAW; protection of human health.



No.	MEASURES	IMPLEMENTATION PERIOD	IMPLEMENTATION RESULTS
5.	Operation of measurement facilities for exemption of control and monitoring of the waste (Project 6a), while implementing the appropriate measures for safety and environment protection.	Preparation for decommissioning	Environmentally friendly and safe management of RAW; protection of human health.
6.	Supply of equipment for removal of the liquid phase of the vat residue tank (VRT) in AB-1 (Project9a), while implementing the appropriate measures for safety and environment protection.	Preparation for decommissioning	Environmentally friendly and safe management of RAW; protection of human health.
7.	Operation of a facility for extraction and processing of the solidified phase of the tanks with concentrate from evaporators (Project96), while implementing the appropriate measures for safety and environment protection.	Preparation for decommissioning	Environmentally friendly and safe management of RAW; protection of human health
8.	Supply of various types of containers for transportation and storage of the materials obtained during the dismantling works of Units 1 to 4 of Kozloduy NPP (Project116), while implementing the appropriate measures for safety and environment protection.	Preparation for decommissioning	Environmentally friendly and safe management of RAW; protection of human health
9.	Supply of mobile equipment for decontamination and purification of waters (Project4a), while implementing the appropriate measures for safety and environment protection.	Preparation for decommissioning	Environmentally friendly and safe management of RAW; protection of human health.
10.	Exercise of control over the quantities and processes of treatment of liquid and solid RAW, obtained in dismantling of the facilities as well as control of the sites for temporary storage of containers with waste.	During the preparation and within the process of decommissioning	Environmentally friendly and safe management of RAW; protection of human health.
<b>Measures for reduction, prevention or termination of the harmful impacts from non-radioactive</b>			

No.	MEASURES	IMPLEMENTATION PERIOD	IMPLEMENTATION RESULTS
<b>pollution of ambient air</b>			
1.	The use of capturing and filtering mobile assemblies for all decommissioning activities related to potential formation of aerosols.	During decommissioning	Protection of ambient air from non-radiation impact.

No.	MEASURES	IMPLEMENTATION PERIOD	IMPLEMENTATION RESULTS
2.	<p>Upon transportation and storage of bulk materials the following measures are to be complied with:</p> <ol style="list-style-type: none"> <li>1. Upon storage of sand – use of windproof partitions or embankments; surface covering; restriction of the height of the stored material; restriction of the activities at high wind speeds;</li> <li>2. Construction of indoor warehouses for storage of zeolite:</li> <li>3. Optimization of the conditions for loading and unloading through reduction of the unloading height, use of grooves, etc.; automatic change of the unloading height depending on the change of the embanked material height;</li> <li>4. Upon transportation of the materials the following requirements shall be adhered to: use of enclosed vehicles or vehicles covered with canvas, including in-house transport; the transport connections shall be regularly cleaned and asphalted depending on the degree of contamination.</li> </ol>	During decommissioning	Protection of ambient air from. Preventing the dispersion of sporadic dust emissions.

No.	MEASURES	IMPLEMENTATION PERIOD	IMPLEMENTATION RESULTS
<b>Measures for reduction, prevention or termination of the harmful impacts from non-radioactive pollution of soils</b>			
1.	The existing network for radiation monitoring of soils shall be used also for non-radiation parameters of the soils, such as soil acidity, presence of total forms of heavy metals, etc.	Preparation for decommissioning	Protecting the purity of soils and the environment.
2.	Non-radiation monitoring of dredge residues in drainage channels shall be envisaged.	During the preparation and period of decommissioning	Protecting the purity of soils and the environment.
<b>Measures for reduction, prevention or termination of the harmful impacts from non-radioactive pollution of surface and groundwater</b>			
1.	Continuous control for organized and complied with the licensing conditions of the release of wastewater flows in the existing and newly built (e.g., for SRDWF) sewage system of Kozloduy NPP.	During the preparation and process of decommissioning	Protecting surface and groundwater from pollution.
2.	Measures shall be implemented for prevention of unregulated leaks from the sewage system into <b>groundwater.</b>	During the decommissioning preparation	Protecting surface and groundwater from pollution.
3.	Given the sensitivity of the region to pollution with biogenic elements, the control of wastewater for biogenic elements from Units 1 to 4 shall continue. In the event of systematic pollution, an installation of a module for biological wastewater treatment is to be planned, including denitrification stage.	During decommissioning	Protection of the surface and groundwater purity
<b>Measures for reduction, prevention or termination of the harmful impacts from the management of radioactive waste and hazardous substances</b>			
1.	The management of construction waste generated during the decommissioning of Units 1 to 4 is to be complied with the requirements of the Ordinance on management of construction waste and use of recycled building	Preparation for decommissioning	Environmentally friendly construction waste management.

No.	MEASURES	IMPLEMENTATION PERIOD	IMPLEMENTATION RESULTS
	materials (promulgated in SG, issue 89/134.11.2012).		
2.	Separate collection and transportation of waste shall be ensured and their mixing is not to be allowed through the elaboration of Working Instruction and procedures for their implementation.	Preparation for decommissioning and Stages 1 and 2	Environmentally friendly waste management.
3.	The waste generated by the activity on the site shall be delivered based on the written contracts to entities holding the relevant document under Art. 35 of WMA.	Preparation for decommissioning and Stages 1 and 2, Closure and reclamation	Environmentally friendly waste management.
4.	The issue with the obsolete chemical substances and mixtures is to be resolved by stages and they shall be treated as hazardous waste.	Preparation for decommissioning and Stages 1 and 2	Environmentally friendly waste management
5.	Database shall be created for the generated quantities of waste, the generation sources and the companies to which the waste is delivered for subsequent treatment in order to facilitate the reporting of waste in accordance with the requirements set forth under WMA.	Preparation for decommissioning and Stages 1 and 2	Environmentally friendly waste management
6.	The delivery and acceptance of industrial, construction and hazardous waste shall be performed only based on written contract with entities holding a permit, a complex permit or registration document under Art. 35 for the relevant activity and a site for waste with the relevant code, as per the Ordinance under Art. 3 for classification of waste, in compliance with Art. 8 of WMA.	Preparation for decommissioning and Stages 1 and 2	Environmentally friendly waste management.
7.	Updated safety datasheets (SDS) shall be requested from the supplier and kept available, pursuant to Art. 31 of Regulation (EC) 1907/2006 (REACH), ( <i>as amended by Regulation (EC) 453/2010 concerning the format and content</i> ) of the hazardous chemical substances and	Preparation for decommissioning and Stages 1 and 2	Minimization of the negative impact of hazardous substances and mixtures.

No.	MEASURES	IMPLEMENTATION PERIOD	IMPLEMENTATION RESULTS
	mixtures on the places of their storage. Hazardous chemical substances and mixtures shall be used in accordance with the exposure control measures and safe use, as specified in SDS.		
<b>Measures for reduction, prevention or termination of the harmful impacts the earth's recesses</b>			
1.	Monitoring of geological environment is to be performed in respect of its stability.	During decommissioning	Prevention of caused by technological processes and engineering and geological processes and phenomena.
2.	Control shall be exercised for protection of groundwater and surface water from chemical pollution as prevention for the geological environment protection.	Permanent	Protection of geological environment.
<b>Measures for reduction, prevention of termination of the harmful impacts on biodiversity</b>			
1.	Upon performance of the construction activities for building, equipping and commissioning of sites for management of materials from the decommissioning of Units 1 to 4, the road infrastructure and 300 m. of railway, no additional impact is to be allowed on the flora in the adjoining areas.	Preparation for decommissioning	Protection of biodiversity
2.	It is recommended for the plant samples from the conducted radiation monitoring to be used also for determining non-radiation parametres, such as content of heavy metals within a 3-kilometre zone.	During decommissioning	Protection of biodiversity
<b>Measures for minimization of the risks and consequences of fires</b>			
1.	For the purpose of mitigating the harmful impacts and risk of fires for the environment and the population in the performance of the Units' decommissioning activities, the requirements under the relevant decommissioning procedures shall be observed in order	During the preparation and throughout the period of decommissioning	Protecting human health and the components of environment.

No.	MEASURES	IMPLEMENTATION PERIOD	IMPLEMENTATION RESULTS
	to prevent the occurrence of any fires, as well as the fire protection measures.		
2.	Within the elaboration of Safety Analysis Report (SAR) upon decommissioning, and assessment of the risk of fires shall be assessed and appropriate measures shall be suggested for preventing the occurrence of fires and diminishing their consequences.	During the preparation and throughout the period of decommissioning	Protection of human health and the components of environment.
<b>Emergency planning in relation to the changes, consistent with the risk of accidents related to decommissioning</b>			
1.	The internal emergency plans of the Units shall be interrelated with the Emergency Plan of Kozloduy NPP, prepared in accordance with SUNEA and its subordinate legislation and shall be strictly applied to all accidents scenarios, including in respect of limiting accidents from the point of view of the risk for the staff, population and the environment.	During decommissioning	Protection of environment and the population.

**This Decision refers only to the investment proposal, which has been the subject of the performed EIA following the procedure provided for under the Environmental Protection Act. Upon extension or amendment of this investment proposal the Contracting authority must promptly notify MOEW at the earliest possible stage.**

**Pursuant to Art. 99, para. 8 of the Environmental Protection Act the EIA Decision loses its legal effect if within 5 (five) years as of its issue date, the implementation of the investment proposal has not started.**

**Upon a change of the Contracting authority, the new Contracting authority shall notify MOEW thereon on a mandatory basis pursuant to Art. 99, para. 7 of the Environmental Protection Act.**

**Upon establishment of any non-fulfilment of the conditions and measures under the EIA Decision the responsible persons shall be prosecuted pursuant to Art. 166, i. 2 of the Environmental Protection Act.**

**The concerned persons may appeal the decision as provided for under the Code of**

**Administrative Procedure within 14 day-term as of its notification.**

Pursuant to Art. 60, para. 1 of the Code of Administrative Procedure the contracting authority State Enterprise Radioactive Waste has submitted a request to MOEW with ref. No. OVOS-289/17.09.2013 for admission of the preliminary execution of the EIA Decision in respect of investment proposal "Decommissioning of Units 1 to 4 of Kozloduy NPP.

After I have examined the request in which the protection of especially important state and public interests is motivated, as well ensuring the life or health of the citizens related to the timely implementation of the investment proposal, I find that same are justified by the existence of the following prerequisites:

By Decision of the Council of Ministers No. 839 of 20 December 2008 and Decision of the Council of Ministers No. 1038 of 19.12.2012 Units 1 to 4 of Kozloduy NPP are declared as radioactive waste management facilities and are delivered for management and administration to State Enterprise Radioactive Waste. Thereby the process of decommissioning of the nuclear facilities Units 1 to 4 of NPP has started.

The decommissioning of Units 1 to 4 of Kozloduy NPP is a commitment assumed by the Bulgarian government before the European Commission and is financed by funds of International Fund Kozloduy, administered by the European Bank for Recovery and Development (EBRD).

The delay of the process of decommissioning of Units 1 -4 of Kozloduy NPP will lead to non-fulfillment of the Strategy for management of SNF and RAW by 2030 and to violation of the terms under grant agreements executed with EBRD which in turn, may give rise to penal procedures against the Republic of Bulgaria for non-performance or delay as regards commitments assumed before the European Commission.

The process of decommissioning covers all administrative and technical activities initiated in order to exempt the nuclear facility from regulation, including the closure of the facility for disposal of radioactive waste or spent nuclear fuel.

Pursuant to Art. 39 of the Safe Use of Nuclear Energy Act, one of the conditions for issuance of License for decommissioning of the nuclear facility is the existence of a decision on environmental impact assessment.

Upon delay of the implementation of the investment proposal for decommissioning of Units 1 to 4 of Kozloduy NPP an interest of the state will be affected, which is expressed in the non-performance of a commitment assumed before the European Commission which will entail financial penalty. The public interest will also be affected, since through the processes of dismantling and decontamination of the nuclear facilities a higher level of safety and



protection of environment and human health is pursued.

The process of decommissioning of Units 1 to 4 of Kozloduy NPP is a priority task of SE RAW under the Strategy for management of SNF and RAW by 2030, including in order to accelerate maximally the terms for commencement of active dismantling activity in the machine hall of Units 1 to 4 (dismantling of equipment and systems of category III) before obtaining of license for decommissioning.

Any delay of the process of decommissioning Units 1 to 4 of Kozloduy NPP will inflict a hardly repairable harm to our country, which will have not only financial expression, but will also entail damages to human health and the environment.

Now and therefore, finding the request of the Contracting authority tenable, as well as given the existence of the prerequisites of Art. 60, para. 1 of the Code of Administrative Procedure,

### **I RULE AS FOLLOWS:**

I hereby admit the preliminary execution of this decision for the purpose of defending especially important state and public interest related to the timely implementation of the investment proposal; ensuring the health of the **citizens**, since the delay of its implementation may entail a considerable or hardly repairable harm.

**This ruling is subject of appeal before the Supreme Administrative Court as provided for under the Code of Administrative Procedure within three days as of its notification.**

Date: 31. October, 2013

MINISTER: [ill. Sgd.]

ISKRA MIHAYLOVA

[Round seal of the Ministry of Environment  
And Water of the Republic of Bulgaria]