



GOVERNMENT OF ROMANIA  
MINISTRY OF ENVIRONMENT AND FORESTS  
Cabinet of the Minister



No.: 28/ /LB/ 22-02-2012

To: Ms. Nona KARADJOVA, Minister of Environment and Water, Republic of Bulgaria

Ref: Notification for investment proposal for „*Facility for treatment and conditioning of solid radioactive wastes with a high volume reduction factor at Kozloduy NPP*”

Dear Ms. Karadjova,

We have the pleasure to inform you that we received your address no. 26-00-4189, dated 13.01.2012 and the notification form, concerning the investment proposal for „*Facility for treatment and conditioning of solid radioactive wastes with a high volume reduction factor at Kozloduy NPP*”.

In response to the notification, we express our willingness to participate in the transboundary environmental impact assessment procedure regarding this project.

We have disseminated the notification to the Romanian competent authorities and you will find our comments to the notification received (comments may be provided by the affected party according to the *Guidance on the practical application of the Espoo Convention*).

Please include in the ToR for this project our requests provided for in the attached document.

We also would like to note that we will participate in the scoping procedure too, when you will send us the ToR for this project for further comments from Romania as possible affected party.

In our future letters we must agree on the time schedule for a possible public hearing on the Romanian territory regarding this project.

Looking forward to receive all the necessary information that will ensure the Romanian participation in the transboundary environmental impact assessment procedure regarding this project, please accept, Ms. Minister the assurance of my highest consideration and esteem.

Yours sincerely,

MINISTER  
László BORBÉLY





Annex

**IDENTIFIED NUCLEAR SAFETY AND ENVIRONMENT PROTECTION  
ISSUES**

**A. We kindly request to include in the Terms of Reference issued for the PMF project and than to be treated in the EIA Report, the following aspects:**

1. The types of solid waste to be treated in PMF, the volume, the flows that generated them and the radiological characteristics; please specify if in the PMF there will be treated only Bulgarian waste or third parties waste as well ?
2. The predicted life time of the PMF installation, the dismantling time of installation and the way of treating the waste which result from dismantling the installation.
3. The legal limits for the radioactive effluents which are discharged in environment (surface/underground waters, in air, etc, and the monitoring method of these effluents).
4. Specify the annual processing capacity considering that from mathematical calculations result a value which is different from the capacity of 250 tons/year mentioned in the Notification.
5. During the treatment process you are using other substances as well, (e.g. ammonium, nitrogen), please, specify the storage capacity of such substances on the facility site.
6. We kindly request the following data related to the water used in technological process:
  - a) complete information about cooling water e.g: the source of cooling water, the cycle provided (closed/opened), the way of discharging, the temperature characteristics and other pollution indicators if the cooling water will be discharged in surface water;
  - b) complete information about the characteristics of the water used in the process as a wastewater e.g: the source of supply (potable water/surface water/technological water with special treatment etc), the place of discharge, the values of the pollution indicators expressed in concentration-mg/l and total annual loading –kg/y of pollutant.
  - c) the operating way of the PMF installation (continuously or discontinuously) considering the different data mentioned (nominal flow of 0,625 m<sup>3</sup>/h leads to 15mc/day and 5475 m<sup>3</sup>/year of water consumption ), while the water consumption mentioned in the Notification is 2500m<sup>3</sup>/year.
7. Considering the existing natural protected areas ROSCI 0045 Coridorul Jiului and ROSPA 0023 Confluenta Jiu Dunare please specify the sensitive areas which could be affected by the pollution.



8. Please specify the European legislation that regulates the radioactive waste treatment and which will be used in the project.
9. Please specify if the PMF is an incineration plant considering the definition of the incineration plant (equipment or technical unit fixed or mobile designed for thermal treatment of the waste with or without recovering the heat; thermal treatment means incineration by oxidation or other thermal treatment procedure e.g pyrolysis, gasification or plasma processes.
10. Explain why under the chapter "Results" (pag.7) and chapter "Additional Informations/ Comments" (pag.10) of the Notification it is mentioned the Directive nr.76/2000/CE for waste incineration, considering that in this Directive, under art.2, the radioactive wastes are excluded.
11. Please specify what "almost fully" means, within the statement from the chapter "Results" (pag.8) "*the rest amount of the radioactivity together with the fly ash from the flue gas are caught almost fully in the filter*; What is the percentage of radioactivity released ?
12. We kindly request to assess the radiological impact on environment and human health within a radius of 30 km from the PMF installation, considering the importance of this issue in taking the decisions, and also considering that population on the Romanian territory in area of influence of the PMF is around 23 communities.
13. Please include in the EIA Report an analysis of dispersion of all types of pollutants emitted within a radius of 30 km around the plant, considering all possible impacts on environmental and human health of the pollution resulted from the treatment process.
14. Please assess the cumulative impact (radioactive and non radioactive) of all 3 projects developed in Kozloduy area (PMF, dismantling of NPP and the nuclear deposit) because of a likely cumulative transboundary impact on Romania:
  - a) considering the dismantling period of time -2011-2035 mentioned in the Notification for the project "Dismantling of units 1-4 of Kozlodui NPP" please present a timetable of the development of all 3 projects, specifying the construction period of time, the normal operation period of time, the dismantling period and recovery of the site period. We are very much interested what the cumulative impact of all 3 projects is in the overlapping periods.
  - b) specify in detail the sources of pollution, an estimation of the radioactive and non radioactive emissions, the impact on environmental and human health in Romania, the legal requests for monitoring of the pollution, the constructive and management measures proposed in order to reduce the cumulative impact of pollution on environment and human health in Romania;
  - c) specify the additional measures to be implemented in case of identification of a cumulative and synergistic effects.



**B. The plasma melting facility, PMF, is an advanced technology related to radioactive wastes processing.** In Europe, such installations are built and operated in Belgium (CILVA) and in Switzerland (ZWILAG). Despite of these, there are some sensitive aspects that should be assessed in the frame of Environment Impact Assessment, documentation which will be issued at later stage:

1. The problem of radioactivity concentration in the resulted slag: is claimed attention and special treatment on how the waste slag will be conditioned so that packages can be interim stored in a safe manner on-site KNPP, including specifying how the conditioning of such packages will be done in order to meet the wastes acceptance criteria, WAC, associated to the Low and Intermediate level Wastes Final Repository which is expected to be built nearby NPP Kozloduy site.
2. The problem of qualitative and quantitative emission limits authorized for chemicals: further details are needed regarding the alignment of Bulgarian regulations associated to emission limits allowed for toxic and hazardous chemicals (as stated by the Bulgarian side in the notification), in terms qualitatively and quantitatively, with European legislation and regulatory requirements equivalent in Romania.
3. The problem of accident and hazard analyses: a special attention has to be pay to risk analysis (e.g., HAZOP) and those of postulated accident (design basis accident) that have to quantify all possible scenarios associated with fire and explosion hazard, with nearby human activities, including the associated common cause events (e.g., earthquake, flooding), given that the PMF installation processes metallic materials melt at high temperatures, which might change the risk level from radioactive hazard to industrial hazard or both, in some accident conditions, which can significantly affect the environment over considerable distances.
4. The problem of technical specifications for operation and degradation management measures: it must be rigorously and systematically address a set of technical specifications related to operation of that objective, including the development of specific programs for aging management for relevant systems, structures and components, taking into account the terms source, the characteristics of the technological process, the extended lifetime of the PMF installation, the ultimate heat sink, the safety design criteria and the possible negative environmental impact on large areas, in case of failures or accidents resulting from the neglect of these issues.
5. From the point of view of the environmental impact, incineration of radioactive waste is regarded as a method with a higher environmental impact than other volume reducing methods (such as supercompaction, for ex.), because it can lead to emission of radioactive and non-radioactive pollutants. Therefore, we kindly request the future documentation to detail the characteristics of the waste to be incinerated, in terms of volume, source and level of activity.
6. The future technical documentation should also include a facility conceptual decommissioning plan, including the management of radioactive waste generated during this activity.



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Pollution Control and Impact Assessment Directorate



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7. *“Construction is planed to start in January and to finish in August 2013”*. Taking into account the long period of time which is necessary in general to get all the agreements and permits for a new nuclear facility and keeping in mind that plasma melting is a relatively new technology, please let us know if the mentioned terms are fix or they can be changed.
8. The Environmental Impact Assessment Report which will be sent to Romanian Ministry of Environment and Forests should include the potential radiological and non-radiological releases, for all the facility operating conditions.
9. We kindly ask you to mention the foreseen PMF's lifetime and how it was correlated with the decommissioning plan of the 4 Units of KNPP.