



MINISTRY OF ENVIRONMENT,
WATERS AND FORESTS

Cabinet of the Minister

Reg.No. 9328 /CPP/ 17.12.2015

Subject: EIA procedure for the investment proposal for construction of National disposal facility for low and intermediate radioactive waste initiated by State enterprise "Radioactive Waste" -

Dear Ms. Vassileva,

With regard to the documents submitted by the Ministry of Environment and Water OBOC-1/July 30, received and registered by the Ministry of Environment, Waters and Forests at 11.09.2015 and the electronic correspondence carried out in October-November 2015 in connection with the project, we inform you as follows:

At the level of the year 2011, under the procedure of environmental impact assessment in transboundary context, Romania assessed the first transmitted documentation for this project, for which the Ministry of Environment and Waters in Bulgaria issued EIA Decision No. 21-9/2011.

According to the provisions of article 6 of the Convention on environmental impact assessment in transboundary context, adopted at Espoo on 25 February 1991, there is a requirement that the parties have to ensure that the final decision on the proposed activity has taken into account the outcome of the environmental impact assessment, including the environmental impact assessment documentation, the public and authorities comments received, in accordance with article 3 para. 8 and art. 4, para. 2, of the Convention and the outcome of consultation with the affected side, in accordance with article 5 of the Convention.

MS. IVELINA VESSELINOVA VASSILEVA
Minister
Ministry of Environment and Water,
Republic of Bulgaria



EIA Decision No. 21-9/2011 issued by the Ministry of Environment and Waters in Bulgaria does not respond to all requirements submitted by the address no. 4126/LB/19.09.2012 transmitted by the Romanian side in 2011 with regard to transboundary effects. The decision was subject to the justice courts of Bulgaria and the new notification of this project in the year 2015 was a result of the solution given by these courts, concerning the reconsideration of EIA Decision No. 21-9/2011 issued by the Ministry of Environment and Waters in Bulgaria.

Through civil sentence nr. 15645 Sofia 26.11.2013, issued by appellate court in Bulgaria, it is required the resumption of the procedure for environmental impact assessment for this project (including the procedure for environmental impact assessment in transboundary context) as a result of the need to ensure the participation of the public in Bulgaria in the procedure, as well as a reevaluation on the protection of human health, the prevention and reduction of pollution, conservation of biodiversity and the transboundary effects caused by the project. Extracted from the sentence nr. 15645/26.11.2013:

“Numerous questions have not been clarified and discussed in their entirety, that are of significance for the protection of the environment for the present and future generations and for the protection of human health, preventing and reducing pollution, conserving biodiversity, transboundary effects, etc. By finding that the act is issued under considerable violations of administrative procedural rules, which requires its cancellation and return of the administrative file for reconsideration, the Supreme Administrative Court, the three member panel ruled the right decision”.

From the documents analyzed by the Romanian Party, respectively the terms of reference, the revised environmental impact assessment report and the responses submitted by Bulgarian Party to the Romanian request No. 3715/GLG/27.05.2015 arise a number of issues for which have not been formulated answers and therefore we still request further responses to the following:

1. In the document entitled „Answers to the questions of Romanian Ministry of Environment, Waters and Forests”:



- Pct. 9 lit.c *“How do you intend to ensure long-term monitoring of emissions from radioactive waste, as well as those of R-222 and R-220 resulting from barriers?”*
- Pct. 9 lit e) *„How is planned to be conducted the environmental radioactivity monitoring in and around the repository in the last 10 years of its operation (under Part VI, the estimated life of the repository is 60 years) in the area where already exist containers which have reached the age of 50 years and for which we already know that their security is compromised?”*

- In accordance with point 28 of the outline of the subcrustale seismic Vrancea, of the source Radulian, M.Mîndrescu, N.Panza, G.F.Popescu, E, Utale., (2000) Characterization of Romanian seismic zones, Pure Applied Geophysics, 157, 57-77 (contour used in calculations of hazard for versions 2006 and 2013 of seismic zoning Map of the territory of Romania) median distance from the seismic source Kozloduy subcrustal Vrancea is 303 km (minimum distance of 249 km, maximum 360 km of distance).

For the earthquake of 4 March 1977 the EIA report mentions values of IMSK 6 ... 7. Converted in values of maximum horizontal acceleration of land, it means the median values ranging from 0.07 g and 0.12 g. Median plus standard deviation ranges between 0.11 g and 0.21 g (it is generally a very high variability of maximum acceleration values for the same value of macroseismic intensity). The EIA report says that it has been used a seismic coefficient of 0.1.

It is necessary to clarify certain matters relating to the meaning of this coefficient was identical in the two States. At the same time it should be noted what is the average recurrence interval or the average period of recovery of the value of the maximum acceleration of the land for the seismic coefficient.

Point 29. Where there is water flowing through the waste storage cells, according to the IAEA rules, cracks should not be accepted.

- Point 30. The two periods of average return of 95 years and 475 years are recommended by EN 1998-1 for the status and condition of service limit and state-limit (safety of life). Acceleration values specified in the EIA



documentation for return periods of 95 years and 475 years lower values are determined in Romania (at Bechet jud. Dolj county), village in the area monitored by the 30 km), respectively of 0.125 g and 0.21 g under technical regulation "seismic design Code-part I-design provisions for buildings. Call sign P 100-1/2013 ". For the return of the 225-year-old at Bechet was 0.16 g value, near the superior izoline value enhancement of 0.20 g of "seismic zoning map of the territory of Romania". The given answer does not mean clearly the values of the acceleration that are used for designing the facility/warehouse/cells where you will store the radioactive waste, so as to ensure compliance with the rules imposed by the IAEA, taking into account the effects of a potential strong earthquake from Vrancea subcrustal seismic source.

In addition, from the analysis of the revised RIM, the following request answers:

2. It is starting from a false premise that the project will have no impact across borders, and the argument about the "considerable" distance towards protected areas located in the Romania (19.5 km respectively) cannot be taken into account when the objective has such nature (repository of radioactive waste). The answer given by the Bulgarian side is represented by a simple conclusion that the project will not have a cumulative impact, nor across borders, that isn't supported by a related study and cannot be justified by a guess. Taking into account that Bulgaria is a Member State of the European Union, for this project is required to comply with art. 6 (3) and (4) of the Habitats Directive (92/43/EEC) concerning the assessment of the impact of this project on biodiversity and revised EIA report request reconsideration, request made by Romania and the MEWF through address no. 3715/GLG/27.05.2015 (page 2, point a, b and c) and the Verdict no.15645 issued from 26.11.2013 by the Court of Bulgaria.
3. In the EIA study, you have been several times stating that the measures values of environmental factors such as: air, water, vegetation, soil, animal species are within legal limits. This is the reason why you concluded that it is not necessary a cumulative impact study of all the activity form the Kozloduy nuclear facilities area.



Please submit the possibility of an event, an attack or an extreme natural disaster, highly, which can occur and affect at the same time all the nuclear facilities in the area.

4. In the EIA study, you stated that the NDF presence does not interfere with the Romanian farms (especially those who practice organic farming and who are often accessing European funds) or with those developing tourism linked to the Danube, but also you indicate that local Bulgarian tourism on the Danube may be affected due to negative perception linked to the production of nuclear energy. Please provide clarification and identical measures adopted by the project owner to protect farmers from Romania and Bulgaria.
5. In the EIA study, you have stated many times that NDF operation does not impact on a larger area than 3 km and then is no need to monitor outside this perimeter, or any Romanian nearby are.

However, you also stated that there are regular updates, regarding the condition and the operation of the objective, for the mayors of the Bulgarian localities who are in the NDF are, same area as the Romanian localities are. Please explain why does appear to be a double standard?

In the same time we would like to reiterate our response request to the comments of responsible authorities from Romania:

National Commission for Nuclear Activities Control

- Transmission to the Romanian authorities of the assay results of European Commission on the implementation of Article 37 of the Euratom Treaty related to this project.
- Periodic transmission to the Romanian authorities of the monitoring program results, both before and after the commissioning of the new repository.

Ministry of Health

In the geographical given context, where in the area of influence of NPP Kozloduy in the 30 km perimeter are living 75,793 inhabitants in 18 rural villages in the territory of Dolj and Olt counties, we ask to further consider **the cumulative**



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impact on human health of the proposed landfill radioactive and the existing and future reactors.

“Romanian Waters” National Administration

Is maintaining its standpoint regarding the necessity to describe the ground waters and the Danube River’s qualitative monitoring system in the future disposal facility for radioactive waste area of influence.

Considering the lack of representative information on the relevant environmental issues, ordered by The civil verdict no. 15645, Sofia 26.11.2013, issued by the Court of appeal of Bulgaria, from revised documentation and also the incomplete answers of the Bulgarian party, we inform you that in accordance with article 4 of the Espoo Convention it is mandatory for you to provide us with all information requested. After acceptance by the authorities of Romania, Ministry of Environment, Waters and Forests will establish the organization of public debates in accordance with article 3 paragraphs 1 and 8 of the Espoo Convention and/or transboundary consultation between the two parties in accordance with article 5 of the Espoo Convention.

We retransmit the address no. 5656/LB/13.02.2012 whereby it was found that the Bulgarian part did not take into account the requirements of the Romanian part in the final decision EIA No. 21-9/2011 in accordance with the provisions of article 6 of the Espoo Convention.

Please accept, Ms Minister, the assurance of my highest consideration and esteem.

Yours sincerely

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MINISTER
Cristiana PAȘCA PALMER





Ministry of Environment and Forests
Cabinet of Minister



Nr. 4126/UB
Date: 19.09.2011

September 16th, 2011

Ref.: EIA on Investment Proposal for Construction of a National Disposal Facility for Low and Intermediate Radioactive Waste

Dear Ms. Karadjova,

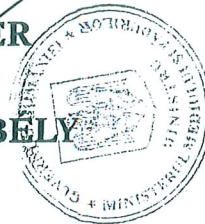
Following our bilateral consultation process for the project "Construction of National Repository for Low and Intermediate Level Radioactive Waste Disposal – NRRAW", in accordance with the Espoo Convention, and your letter OBOC-2454 from 14.09.2011 by which you request the Romanian standpoint until 21st of September 2011, at the latest, please find attached the document entitled "Romania's point of view on the EIA documentation and on the document received from Bulgaria as a response to public comments and the authorities in Romania for the Bulgarian project at Kozloduy".

Please accept, Dear Minister, the assurances of my highest consideration and esteem.

Yours sincerely,

MINISTER

László BORBÉLY



Ms. Nona Karadjova
Minister
Ministry of Environment and Water
Republic of Bulgaria

[Handwritten signature] 20.09.2011

Romania's point of view on the EIA documentation and on the document received from Bulgaria as a response to public comments and the authorities in Romania for the Bulgarian project "Proposal for investment to build a National Disposal Facility for Low and Intermediate Short-Lived Radioactive Wastes" at Kozloduy

The Environmental Impact Assessment Procedure in transboundary context provided by the In the context of the transboundary environmental impact assessment procedure concerning the project "Proposal for investment to build a National waste disposal storage for low and intermediate short-lived wastes", the Romanian authorities, and the Romanian public have carefully and in good faith analysed, all documents and answers provided by Bulgaria (the Party of origin). Romania appreciates the constructive approach of the Bulgarian authorities within this procedure, and hopes that this will continue in the future. Romania also believes, that in the context of the events that took place at the beginning of this year in Asia, all countries need to strictly act in accordance with the precautionary principle in relation with nuclear projects. It is clear that the environmental assessment of such projects has to take into account not only national, european and international environmental legislation, but also IAEA recommendations and other international regulations in this field. Moreover, models of best practices in the European Union such be followed.

The Romanian party understands the need to solve the problem of low and intermediate radioactive waste deriving from the operation and decommissioning of the six nuclear power groups of Kozloduy NPP and from the future nuclear power plant at Belene. This cannot be done outside the fundamental principles of IAEA on radioactive waste management, namely:

- Principle 3: Protection beyond national borders, which states that "radioactive waste must be managed so as to take into account effects on human health and the environment, both domestically and across borders" and
- Principle 5: The burden on future generations, which states that "radioactive waste will be managed so as not to impose an excessive burden on future generations"

The Romanian party is also convinced that the Bulgarian party understands the sensitivity that such a project has. It is noteworthy that the Romanian public overwhelmingly expressed its wish not to have this project being built so close to the Romanian-Bulgarian state border. This underlines the importance of guaranteeing that the project does not endanger the human health, property or the environment. Abnormal functioning or other possible incidents/accidents, are therefore of utmost concern for Romania.

It is the view of Romania that the guarantees mentioned above need to take the following form in order to ensure a safe implementation and functioning of the project in order to avoid a transboundary negative impact on the Romanian environment and human health:

I. Site location in relation to soil and water taking into account the close distance from the Romanian border

- There is a need to have clear and sound information on Radiana site characteristics in order to demonstrate that the repository will not allow any leakages of radionuclids and thus the potential impact on the population and environment will be below the level imposed by the Bulgarian nuclear regulatory body.
- At Radiana site the phreatic level is at very low depth. The interception depth of short-lived radionuclids at Radiana site is not scientifically based. A presentation of the radionuclids transport model through unsaturated zone results (dependence of radionuclides concentration from penetration depth), for different time periods, is needed.
- The unconfined (phreatic) aquifer formed in terrace deposits (T2) of the Danube is recharge by the confined depth aquifer. The piezometric level of the phretic aquifer is only

1 meter below the depth level of the repository. Special scenarios for simulating the variations of the piezometric level for different recharge conditions should be developed.

II. Technical solution, overall concept, engineering barriers

- The proposed project of NRRAW provides, according to IAEA Principles, defence in "depth" against release of radionuclides by the seven engineering and natural barriers of NRRAW so as if one barrier doesn't fulfill its function, the other barriers will contain the radionuclides. However, we believe that NRRAW modules (which represent one of the engineering barriers) are very large (117 m long, 35.5 m wide and 10 m height), which may lead to cracks in the base plate, even if it has a thickness of 1.000 mm (considering the experience of radioactive waste repository at Drigg in the UK).
- NRRAW is built in the trenches and has the room walls (with thickness of 500 mm) below ground level. We believe that the waterproofing walls in the NRRAW modules must provide impermeability for a very long period, until 2390 (considering the experience of La Manche repository in France).
- In accordance with the best practice, fiber-reinforced concrete containers with guaranteed durability of 300 years are currently being used for final disposal. Because the use of classical reinforced concrete containers is provided at NRRAW it is necessary to demonstrate an equivalent sustainability of these containers.

III. Resistance to earthquakes

- The Bulgarian legislation for the nuclear/radiological and civil buildings has to reflect/be compatible/consistent with IAEA guidelines, namely Eurocode 8, and the site seismic data needed to assess seismic hazard on site and to classify seismic/earthquake resistance of buildings are updated/reviewed in accordance with the requirements applicable to current guidelines (IAEA, Eurocode 8).

IV. Nuclear safety

- Safety Assessment Reports should be drafted and sent for analysis to Romania, and bilateral consultations should be considered after drafting these Reports.
- To remove uncertainties about the long lived radioactive waste disposal from Novi Han (which may exist in intermediate storage in Novi Han), we require to the Bulgarian party to transmit the revised inventory of waste resulting from radioactive waste characterization.

V. Impact subsequent to closure

- According to the response at paragraph 75 of the document mentioned as response to SITON comments, it appears that the preliminary assessment report was prepared for the NRRAW Safety Repository. As the Romanian side has no access to such documentation, we believe that the information in this report, which may clarify some of the questions raised by the Romanian side, should become available for information.
- Radiological safety assessment must be elaborated on long term and has to include all possible accidents impacting Romanian population. The estimated doses must confirm the stated doses limits. The EIA report should assess the consequences of possible accidents both in operation and post closure phase.

VI. Emergency situations

- A special plan for dealing with emergency situations together with the Romanian authorities needs to be developed. Such plan should include:

- The creation of a direct communication line between local Bulgarian and Romanian authorities in order to inform in real time about the site status and evolution, in case of an unpredicted radiological event.
- Special unique notification messages for emergency situations.
- Periodical bilateral drills between emergency authorities in order to test the time response of the communication line in case of accidents.
- The emergency plan including the mandatory measures in case of heavy precipitation, earthquake, plane crash, terrorist attack etc.

VII. Monitoring

- A continuous post-project analysis, in accordance with art. 7 of the Espoo Convention, is required by Romania.
- Project monitoring is essential for verifying the effectiveness of measures taken to reduce environmental impact. EIA report should include a monitoring scheme: indicators, frequency, reporting format and content of the public report.
- We ask for results of the monitoring process in order to comply with the Habitat and Birds Directives, taking into account that on the Romanian border we have some Natura 2000 sites designated.
- The result of hidrological monitoring process (monitoring the flowing direction, the chemical and radiochemical status of water) should be transmitted to the Romanian party.
- We require the waste inventory of the repository together with the monitoring results.

VIII. Conclusions

- We do not dispute the quality of the specialists who prepared this report, nor the technical and scientific level of the people who have checked in detail this material otherwise compulsory within the International and European norms and prescriptions. But it is impossible to accept that, all nuclear and/or radiological safety design features, in terms of objectives, essential functions, principles and requirements that led to the technical project certified by the Bulgarian Regulating Authority are not at least formally outlined, suggested or performed. Not to mention the safety design criteria which were not, do not contain, nor will they be subject to any particular secret as long as nuclear safety philosophy and its instrument of investigation, the safety culture, are still crucial in supporting nuclear activities.
- Impact assessment report for the investment "Construction of Low and Intermediate National Repository for Radioactive Waste Disposal" does not have information on description of the forecasting methods used to assess the effects on the environment.
- In particular, the responses of the Bulgarian side can not be accepted as satisfactory, as long as it recognizes that a preliminary report of safety assessment for NRRAW repository has already been prepared, a document which can not be elaborated in any country in the world in the absence of a technical project of future installations, conceptual or detailed, but certified by competent authorities. Such a report represents a set of formal statements, referential, concerning at least: the design, authorization, the methodology to approach nuclear/radiological safety, detailed features regarding the site characterization/alternatives and specific requirements, postulated accidents, the source term. Such report should have been made available to the Romanian side.
- A health impact assesment study on human health for the Romanian residents within the 30 km influence area in normal operation conditions as well as in each emergency situation, taking into account the continuous operation of the objective and the cumulative impact with the NPP Kozloduy. The study should be further ellaborated and transmited during the next development stages.
- The documentation has to be examined by an independent experts mission from IAEA.

We understand that the Bulgarian environmental authorities undertook the EIA transboundary consultation process on the basis of available documentation. Taking into account the complexity of the nuclear field, it is expected, according to the Bulgarian legal requirements that relevant information on the project and its radiological impact will be furthermore drafted and agreed. Under these conditions, we are confident that the specific questions raised by the Romanian experts can and will be clarified in a later stage of project development.

Considering all the above, but also other projects in the nuclear field developed by both Romania and Bulgaria, we suggest the conclusion a bilateral agreement under art. 8 of the Espoo Convention that could help both parties in better implementing the Convention, but also setting the ground for a model cooperation in this field in the world, taking into account the current status of cooperation on the basis of the existing bilateral agreements in the nuclear field between Bulgaria and Romania.



5056/15
B-02-2012

February 9th, 2012

To: Ms. Nona Karadjova, Minister

Ministry of Environment and Water, Republic of Bulgaria

Ref.: EIA on Investment Proposal for Construction of a National Disposal Facility for Low and Intermediate Radioactive Waste, letter No.99-00-467 dated 17.11.2011

Dear Ms. Karadjova,

We hereby confirm we have received your letter No.99-00-467 dated 17.11.2011 by which you convey the final decision for the project “Construction of National Repository for Low and Intermediate Level Radioactive Waste Disposal – NRRAW “.

Consequently, we translated the document into Romanian and informed the interested authorities and citizens. The Romanian party considers that the extreme closeness of the project to Romanian populated areas and the Danube River requests special attention from the Romanian authorities who need to ensure they take all measures possible in order to protect the population and the environment.

The analysis of the document shows that Romania is mentioned in the Bulgarian final decision under items 1 and 5 of the “reasons”. It is also mentioned under item 15 of the “conditions” of which we will speak below. Item 1 indicates that there is no impact on the Romanian territory and health of the population, and item 5 indicates how the Romanian public was involved in the procedure. However, neither of these items reflects the complexity of the issues raised by Romania during the transboundary procedure.

The final decision, in accordance with point 6 (g) of the 5th MOP Decision V/4 on review of compliance, should “provide a summary of the comments received pursuant to article 3, paragraph 8, and article 4, paragraph 2, of the Convention and the outcome of the consultations as referred to in article 5, and should describe how they and the outcome of the environmental impact assessment have been incorporated or otherwise addressed in the final decision, in the light of the reasonable alternatives described in the environmental impact assessment documentation ”.

Considering the above mentioned and based on our analysis of the provisions of the final decision, we would like to detail our stand point, as follows:

- Under *Short description of the investment proposal*, item 5 of the “reasons”, the input from interested parties from both Bulgaria and Romania is addressed. This may be misleading in terms of understanding how the Romanian point of view and concerns

Paula

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were taken into account. Therefore we consider that the decision does not fulfill the requirements of art. 6 of the Espoo Convention, namely the reasons and considerations on which the decision is based, such as the position of the Romanian public and authorities. Item 5 does not reflect the real situation regarding the participation from the Romanian side, because in the framework of this procedure a number around 600 public comments against the project was received. These opinions were transmitted to the Bulgarian side in due time.

- Under *For the technical design phase*: items 2 and 6 provide for a control system for an early detection of radioactive emissions and elaboration of auto-monitoring plan. In accordance with our letter no. 4126/LB/19.09.2011 and the attachment to this letter, our request regarding the transmission to Romania of the results of the monitoring process was not provided in the text of the decision.
- Under *For the technical design phase*: under item 8, it is mentioned that an Intermediate Safety Analysis Report of NDF shall be prepared. However, there is no provision concerning future bilateral consultation with the Romanian party, after the drafting process, as we have expressed in our final statement (letter no. 4126/LB/19.09.2011 and the attachment to this letter), at item IV Nuclear safety, first indent.
- Under *Before Commissioning*, item 15 provides that analysis of the potential radiological impact on the population of Romania shall be carried out and sent to us in accordance with art. 37 of the EURATOM Treaty (Article 37: Each Member State shall provide the Commission with such general data relating to any plan for the disposal of radioactive waste in whatever forms will make it possible to determine whether the implementation of such plan is liable to result in the radioactive contamination of the water, soil or airspace of another Member State.). Taking into account that much of the information requested by the Romanian interested parties was not available (allegedly because it was not mandatory at this stage in accordance with the Bulgarian legislation) during the Espoo Convention consultations, we were in the position to accept the existing information and to provide you with a point of view. Taking into account that our point of view could not be based on all the information needed, we asked to maintain an open dialogue on all the issues of nuclear importance that were not clarified during the EIA transboundary procedure. We strongly reiterate this position because we believe that art. 37 of the EURATOM, in principle (not being an environmental focused piece of legislation), excludes important factors such as biodiversity, valued species, areas of special environmental sensitivity or importance (wetlands, NATURA 2000 etc.)
- Under *Before Commissioning*, item 14 of the final decision, we did not find any reflection regarding items VI Emergency situations and VII Monitoring from our letter no.



4126/LB/19.09.2011 and the attachment to this letter, such as the immediate notification of Romania, in case of emergency situations. We underline that this has to be taken into account in order to create a solid ground for our cooperation during unexpected and undesired events for this type of projects.

- The decision lacks strong provisions concerning immediate notification of Romania in case of serious events, such as: emergency situations, detection of radioactive leaks or exceeded radioactive limits.
- *Under During the project implementation*, item 18 of the final decision is referring to the implementation of the project which will be analyzed in accordance with the EIA Convention. This item must include a provision on how Romania is going to be informed about the monitoring results.

Given these circumstances, we reiterate our request for the beginning of negotiations of a bilateral agreement under art.8 of the Espoo Convention focused on nuclear projects and the post project analysis of such projects.

Please accept, Dear Minister, the assurances of my highest consideration and esteem.

MINISTER

László BORBÉLY



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DM 09.02.2012

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