EUROPEAN COMMISSION
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DIRECTORATE H - Nuclear Energy
Radiation Protection

Main Findings of the Commission's Article 35 verification in Bulgaria

Kozloduy nuclear power station

Date: 26 November to 3 December 2007

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INTRODUCTION

Article 35 of the Euratom Treaty requires that each Member State shall establish facilities necessary to carry out continuous monitoring of the levels of radioactivity in air, water and soil and to ensure compliance with the Basic Safety Standards.

Article 35 also gives the European Commission the right of access to such facilities in order that it may verify their operation and efficiency.

The Directorate-General for Energy and Transport (DG TREN) and in particular its Radiation Protection Unit (TREN H4) is responsible for undertaking these verifications.

The main purpose of the verifications is to provide an independent assessment of the adequacy of monitoring facilities for:

- Liquid and airborne discharges of radioactivity into the environment by a licensed nuclear site (and control thereof).
- Levels of environmental radioactivity at the site perimeter and in the atmospheric, aquatic and terrestrial environment around the site, for all relevant exposure pathways.
- Levels of environmental radioactivity on the territory of the Member State.

Moreover, in follow-up to the Food and Veterinary Office[1] inspection mission DG(SANCO)8129/2006 in November 2006, it was decided to also verify the level of

[1] Of the European Commission's Health and Consumer Protection Directorate-General (DG SANCO)

implementation of European Union legislation laying down maximum permitted levels of radioactivity in agricultural products for human consumption[2].

In order to conduct the above verification activities, a DG TREN team visited, from 26 November to 3 December 2007:

- The Kozloduy Nuclear Power Station (KNPS) and its surrounding area.
- The Public Exposure Monitoring Laboratory (PEML) of the National Centre for Radiobiology and Radiation Protection (NCRRP) of the Ministry of Health located in Sofia.
- The Radiation Control Departments (RCD) of the Regional Inspectorates for the Protection and Control of Public Health (RIPCPH) of the Ministry of Health located at Vratsa (in the vicinity of Kozloduy) and at Varna (on the Black Sea coast).
- The Environmental Monitoring Directorate (EMD) and the Laboratory and Analytical Activities Directorate (LAAD) of the Executive Environment Agency (EEA) of the Ministry of Environment and Waters located at Sofia.
- The Regional Laboratory of Environment and Water (RLEW) of the Ministry of Environment and Waters located at Vratsa.
- The Bulgarian Customs Offices at Sofia airport and at the maritime port of Varna.

During their activities at the KNPS the verification teams were accompanied by representatives of the Bulgarian Nuclear Regulatory Agency, the licensing authority of the KNPS. The other activities were attended by representatives of the Ministry of Health and the Ministry of Environment and Waters.

Furthermore, representatives of three other entities having responsibilities in radiation protection in Bulgaria were present during the verification activities: the Ministry of Agriculture and Food Supplies, the National Institute for Meteorology and Hydrology and the National Civil Protection Service. With respect to the latter two, the verification team received the opportunity, at Orjahovo, to rapidly visit the Institute's sampling facilities as well as the Civil Protection's radiation monitoring equipment.

With due consideration to the scope of the verification mission and taking into account the relatively short time available for the execution of the programme, emphasis was put on:

- The operator’s (KNPS) statutory monitoring and control facilities for liquid and airborne discharges of radioactivity into the environment.
- The operator’s statutory environmental radioactivity monitoring programme.
- The operator’s analytical laboratories for discharge and environmental samples, including aspects of quality assurance and control as well as document control.
- The independent discharge monitoring programme as performed by the competent authority (regulatory control).

[2] Council Regulation 90/737/EEC and Commission Regulation 1635/2006/EC
Commission Recommendation 2003/274/EC

- The independent environmental radioactivity monitoring programmes around the KNPS site as performed by the competent authorities (check monitoring).
- The competent authorities' analytical laboratories for environmental samples, including aspects of quality assurance and control as well as document control.
- The infrastructure and procedures put in place at Sofia airport and at the maritime port of Varna to ensure the radiological surveillance of imported foodstuffs.

The present report gives an overview of the main findings of the verification team and corresponding recommendations.

Recommendations are addressed to the Bulgarian Nuclear Regulatory Agency, the Ministry of Environment and Waters, the Ministry of Health and the Bulgarian Government.

MAIN FINDINGS

The proposed verification programme could be completed within the time allocated. In this regard the verification team appreciated the advance information supplied, as well as the additional documentation received during the verification.

1. Main findings with respect to the operator's radioactive discharge monitoring programme and related regulatory control

The verification activities performed at the facilities for monitoring and sampling of liquid and airborne discharges of radioactivity into the environment:

1.1 Confirmed the existence and functionality of monitoring and sampling facilities.

1.2 Confirmed that, in general, discharges of liquid and airborne radioactivity are monitored and sampled in accordance with regulatory obligations.

1.3 Established that the monitoring and sampling facilities are, in general, adequate and that the programmes of sampling of liquid and airborne discharges are satisfactory.

1.4 Established that quality assurance and control is implemented through a compilation of written standard operation procedures and associated working instructions.

However,

1.5 With respect to point 1.2, for airborne discharges, the verification team noted that, despite the latest authorisations for reactor units 5 and 6, respectively issued in August and October 2007 and containing statutory limits for the discharge of tritium and carbon-14, facilities for the monitoring and sampling of these radionuclides, at the time of the visit, were not present.

It is recommended that the Ministry of Economy and Energy (the sponsoring authority) and the Nuclear Regulatory Agency (the licensing authority) take all steps necessary to equip the Kozloduy NPS with operational facilities for monitoring and sampling airborne discharges of tritium and carbon-14, for all stacks for which a discharge authorisation is in force.

1.6 With respect to points 1.3 and 1.4, for airborne discharges through stack VS-4 on the spent fuel storage facility, the verification team noted that the settings of activity warning and alarm thresholds were not in accordance with the values as specified in the related operating procedures.

It is recommended that the Nuclear Regulatory Agency requires its inspector in charge of radiation protection matters at Kozloduy NPS, to perform a systematic check and validation of the warning and alarm threshold settings on the facilities that continuously monitor airborne discharges.

1.7 With respect to points 1.3 and 1.4, for liquid discharges, the verification team noted that those samples that are taken from the discharge control tanks are not representative, due to the absence of prior homogenisation of tank contents. It was also noted that the recording of the volumes discharged lacks in precision. Thus the source term of individual discharges into the environment is not satisfactorily established.

It is recommended that the Nuclear Regulatory Agency requires the operator of the Kozloduy NPS to conduct a meticulous accountancy of the activity released into the environment from liquid discharges.

1.8 With respect to points 1.3 and 1.4, for liquid discharges, the verification team noted that the decisional procedure that leads to a discharge is flawed. Although invested with the responsibility to initiate a discharge, operational staff relies on a 'green light' telephone call from the laboratory section without having countersigned the laboratory's sample analysis record. Countersigning takes place at a later point in time. This *modus operandi* has the potential to lead to misunderstandings and subsequent uncontrolled discharge operations.

It is recommended that the Nuclear Regulatory Agency requires the operator of the Kozloduy NPS to reinforce the decisional chain that leads to a discharge of liquid effluents into the environment.

1.9 With respect to point 1.3, for liquid discharges, the verification team noted the absence of devices that, during routine discharge operations, would automatically interrupt a discharge should an activity concentration above defined discharge limits for the discharge control tanks occur. The purpose of the monitors currently present on the discharge lines is limited to recording emergency situations: they are only instrumental in detecting releases with (very) high activity concentrations. Moreover, the procedure to send an operator to manually close a discharge valve is not efficient nor allows timely intervention.

It is recommended that the Ministry of Economy and Energy and the Nuclear Regulatory Agency consider the benefit of installing additional means of liquid discharge control for routine discharges at the Kozloduy NPS. Current provisions are unsatisfactory insofar that the absence of automated emergency closure of discharge tank valves may lead to uncontrolled release of activity into the environment.

1.10 With respect to regulatory control, the verification team noted that the Nuclear Regulatory Agency, as licensing authority enforcing discharge limits for radioactive effluents on the Kozloduy NPS, reduces the validation of the operator's statutory discharge reporting to paper checks whether the data provided are in compliance with the regulatory discharge limits. Independent check monitoring is not in place. This is

contrary to the generally accepted good practice that calls for the regulator to implements a check sampling and analysis programme to corroborate the operator's declarations.

It is recommended that the Nuclear Regulatory Agency, in order to fully discharge its responsibilities as the licensing authority having competence in discharge control, puts in place a comprehensive and independent check monitoring programme on the discharges of radioactive effluents from the Kozloduy NPS.

2. Main findings with respect to the operator's analytical laboratories for discharge samples and related regulatory control

The verification activities performed at the analytical laboratories for liquid and airborne discharges samples:

2.1 Established that the laboratories that were verified are well equipped and satisfactorily staffed with adequately trained personnel.

2.2 Established that quality assurance and control in these laboratories is implemented through a compilation of written standard operation procedures and associated working instructions.

2.3 Established that calibration and quality maintenance of the measurement devices in these laboratories is properly ensured.

However,

2.4 With respect to point 2.2, more in particular where it concerns the EP-1 laboratory, the verification team noted a shortcoming in health physics procedures insofar that samples are transferred between the controlled and clean parts of the laboratory without being duly monitored and cleared. It was also noted that the physical segregation between both parts of the laboratory leaves room for improvement. Both findings indicate that insufficient precautions are taken to avoid cross-contaminations that may interfere with the quality of the measurements conducted in the clean zone.

It is recommended that the Nuclear Regulatory Agency requires its on-site inspector in charge of radiation protection matters, to perform a systematic check and validation of the procedures covering sample transfers from contamination areas to clean laboratory zones within the Kozloduy NPS.

2.5 The verification team took note of the procedures applicable to accounting and reporting of results that are below detection limit of the measurement devices. In this context the verification team should like to recall that the European Commission issued Recommendation 2004/2/Euratom wherein substitution rules for values below the detection limit are presented. These rules apply independently from the degree of measurement precision (detection limit) achieved and are proposed to avoid unnecessary over- or underestimation of discharged activities. These substitution rules are in line with ISO standard 11929.

It is recommended that the Nuclear Regulatory Agency considers the benefits of revising its regulatory requirements for substitutions of analytical results below detection limits by bringing these requirements in line with Commission Recommendation 2004/2/Euratom and ISO standard 11929.

3. Main findings with respect to the operator's environmental monitoring programme (and related regulatory control)

The verification activities performed at the facilities for monitoring and sampling the environment on and around the Kozloduy NPS site:

3.1 Confirmed the existence and functionality of monitoring and sampling facilities as defined in the regulatory obligations.

3.2 Confirmed that levels of radioactivity in the environment are monitored and sampled in accordance with regulatory obligations.

3.3 Established that the monitoring and sampling facilities as well as the sampling programme are satisfactory.

3.4 Established that quality assurance and control is implemented through a compilation of written standard operating procedures and associated working instructions.

However,

3.5 With respect to points 3.3 and 3.4, where it concerns AISARC (Automatic Information System for Ambient Radiation Control – 8 continuously operating dose rate monitoring stations) the verification team noted that the system's detector calibration procedure, as performed by the Bulgarian Metrological Institute, results in the delivery of a single calibration certificate without details about the individual monitoring stations and lacking relevant quality assurance and control information.

It is recommended that the Nuclear Regulatory Agency requires the Kozloduy NPS operator, in conjunction with the Bulgarian Metrological Institute, to review the calibration procedure for the AISARC dose rate monitors to ensure consistency with generally accepted good practice, e.g. as identified in ISO standard 17025.

4. Main findings with respect to the operator's analytical laboratories for environmental samples (and related regulatory control)

The verification activities performed at the analytical laboratories for environmental samples:

4.1 Established that the laboratories are well equipped and satisfactorily staffed with adequately trained personnel.

4.2 Established that quality assurance and control is implemented through a compilation of written standard operation procedures and associated working instructions.

4.3 Established that calibration and quality maintenance of the measurement devices in these laboratories is properly ensured.

However,

4.4 With respect to point 4.2, the verification team noted that the implementation of quality assurance and control is based on the ISO 17025 standard, without however having obtained any formal accreditation for the analytical methods in place. However, the team was informed that management was giving consideration to seeking such an accreditation in the future.

It is recommended that the Nuclear Regulatory Agency encourages the management of the Kozloduy NPS to achieve accreditation of the analytical methods employed in its environmental laboratories.

5. Main findings with respect to the environmental monitoring programmes of the Ministry of Environment and Waters.

The operational responsibility for implementation of the programmes lies with the Executive Environment Agency, including the operation of the BULRAMO national radiation monitoring system.

The verification activities performed:

5.1 Confirmed the existence and functionality of monitoring and sampling facilities as defined in the relevant programmes.

5.2 Confirmed that levels of radioactivity in the environment are monitored and sampled in accordance with the relevant programmes.

5.3 Established that the monitoring and sampling facilities as well as the sampling programme are satisfactory.

5.4 Established that quality assurance and control is implemented through a compilation of written standard operating procedures and associated working instructions.

However,

5.5 With respect to point 5.4, the verification team noted that the BULRAMO detector calibration procedure, as performed by the Bulgarian Metrological Institute, results in the delivery of a single calibration certificate without details about the individual monitoring stations and lacking relevant quality assurance and control information.

It is recommended that the Executive Environment Agency, in conjunction with the Bulgarian Metrological Institute, review the calibration procedure for the BULRAMO dose rate monitors to ensure consistency with generally accepted good practice, e.g. as identified in ISO standard 17025.

6. Main findings with respect to the Executive Environment Agency laboratories at Sofia and Vratsa.

The verification activities performed at the laboratories:

6.1 Established that the laboratories are well equipped and satisfactorily staffed with adequately trained personnel.

6.2 Established that quality assurance and control is implemented through a compilation of written standard operation procedures and associated working instructions.

6.3 Established that calibration and quality maintenance of the measurement devices in these laboratories is properly ensured.

However,

6.4 With respect to points 6.2, the verification team noted that the Sofia laboratory, in its role as reference laboratory having obtained accreditation by the Bulgarian Accreditation Service for several of its methodologies, has the responsibility to coordinate the activities of the seven Regional Laboratories of Environment and Waters (RLEW). In this context the Sofia laboratory may, on an informal basis, carry out a parallel analysis of samples taken and measured by the regional laboratories in order to confirm results or to qualify (new) methodologies. The verification team, noting the utility of such intercomparisons, believes there is room for improvement: putting in place a formal programme of systematic quality controls would be beneficial for the whole network.

It is recommended that the Executive Environment Agency, in the framework of general quality assurance of its laboratory network, strengthens the referential role and responsibilities of the Sofia laboratory through the implementation of a formal programme of network laboratory intercomparisons.

7. Main findings with respect to the Public Exposure Monitoring Laboratory of the National Centre for Radiobiology and Radiation Protection of the Ministry of Health located at Sofia

The verification activities performed at the laboratory:

7.1 Established that the laboratory is small and equipped with one gamma spectrometer and two single-position total beta activity counters.

7.2 Established that the laboratory does not implement a quality assurance system based on controlled standard operating procedures and associated working instructions.

7.3 Established that the laboratory is in charge of conducting four distinct environmental radioactivity monitoring programmes that respectively address radiological surveillance of the Kozloduy NPS, foodstuffs of animal and non-animal origin in the Sofia region, wild food products (mushrooms and berries) and drinking water at national level.

7.4 Established that laboratory's main duty is to perform national dose assessments.

However,

7.5 With respect to points 7.1 to 7.4, the verification team noted that analytical equipment and processing software present in the laboratory, although functional, are out of date and that back-up systems are not available (a single gamma spectrometer operated with Maestro software on a MS DOS 5 personal computer, total beta activity counters dating from the late 1960s). This leaves the laboratory vulnerable to possible hardware breakdowns that would be compounded by probable difficulties in obtaining spare parts.

It is recommended that the Ministry of Health, in order to preclude a possible extensive loss of measurement capacity, provides the NCRRP with the appropriate budgetary means to acquire state-of-the-art equipment in numbers that are in equation with its statutory responsibilities.

7.6 With respect to point 7.2, the verification team noted that the laboratory, although nominated by the Ministry of Health as being a high-level reference laboratory, is not

accredited for its analytical methodologies. The verification team however also noted the high degree of professionalism of laboratory staff, reflected in the results obtained from regular (inter)national intercomparison exercises and proficiency tests.

It is recommended that the Ministry of Health, in order to ensure the achievement and durability of high levels of quality assurance and control, provides the NCRRP with those resources it takes to acquire ISO/IEC/EN 17025 accreditation.

7.7 With respect to point 7.2, and further to point 7.6, the verification team noted that the laboratory, due to lack of personnel and means, is not fulfilling its obligation as a reference laboratory providing assistance in matters of quality assurance and control for the five regional laboratories (of the RIPCPH) that conduct radiological surveillance programmes. The team was informed that in the past the NCRRP laboratory used to organise proficiency tests for the RIPCPH laboratory network.

It is recommended that the Ministry of Health, in the framework of general quality assurance of its laboratory network, effectively restores the executive responsibility of the NCRRP as reference laboratory for the RIPCPH network.

7.8 With respect to points 7.1 and 7.3, the verification team noted that the laboratory is not equipped with the appropriate measurement devices that would allow it to discharge its statutory responsibility to assess tritium and gross alpha activity in drinking water.

It is recommended that the Ministry of Health, where it imposes a monitoring programme on a laboratory, also provides the laboratory with the appropriate assets to effectively implement the programme.

7.9 With respect to points 7.3 and 7.4, the verification team noted that, although one of the main responsibilities of the laboratory is to perform national dose assessments, these assessments are based solely on the results of the monitoring programmes as implemented by the NCRRP. It is also noted that the regional laboratories (of the RIPCPH) do not communicate their radiological surveillance results. The verification team takes the point of view that not taking into account all available data outside the Sofia region and the Kozloduy area does not constitute a representative dose assessment for the population as a whole.

It is recommended that the Ministry of Health certifies a representative national dose assessment by enforcing and controlling effective and efficient data communication channels from the RIPCPH laboratories to the NCRRP (centralisation of information).

In this context it is furthermore recommended that the Ministry of Health provides the means to establish, at the NCRRP, a central database for the results arising from the various environmental radioactivity monitoring programmes conducted by its laboratories.

8. Main findings with respect to the Radiation Control Departments of the Regional Inspectorates for the Protection and Control of Public Health of the Ministry of Health located at Vratsa and at Varna

The verification activities performed at the laboratories:

8.1 Established that the laboratories are small and equipped with one gamma spectrometer and two single-position total beta activity counters.

8.2 Established that the laboratories do not implement a quality assurance system based on controlled standard operating procedures and associated working instructions.

8.3 Established that nearly all bookkeeping related to sampling, sample processing and sample measurement is paper-based and well organised.

However,

8.4 With respect to points 8.1 and 8.2, the verification team observes that, when taking into account the size of the labs and the restricted number of samples that are handled, this is not to be perceived as a shortcoming, except where it concerns maintenance of the gamma spectrometry devices. It was noted that detector quality assurance lacks a systematic and documented control of detector efficiency and resolution; it was also noted that the frequency of background checks was not well defined either.

It is recommended that the Ministry of Health requires its RIPCPH laboratories to put in place controlled standard operating procedures and related working instructions to properly address the quality assurance and control of their gamma spectrometers.

8.5 With respect to point 8.3, the verification team noted that data relating to and resulting from the environmental radioactivity monitoring programmes are partly archived on floppy disks.

It is recommended that the Ministry of Health considers the benefits of reviewing the status of the analytical and informatics infrastructure of the RIPCPH (with radiation control departments) and, where deemed necessary, to initiate a modernisation programme that aims at improving general quality assurance.

8.6 With respect to point 8.3, the verification team noted that one of the statutory duties on the RIPCPH is to issue yearly reports on their environmental monitoring activities to the Ministry of Health. The scope of this reporting obligation is however restricted to mentioning 'anomalies' and for this reason does not cover the data resulting from the routine monitoring. Hence, the Ministry of Health has no direct access to day-to-day information on the levels of radioactivity in the environment as assessed by its laboratory network. This is perceived by the verification team as a weakness in the role of the Ministry as a supervisory body.

It is recommended that the Ministry of Health removes value thresholds from the reporting obligation it enforces on the RIPCPH laboratories.

This recommendation is closely linked to the recommendations made under section 7.9 above.

9. Main findings with respect to implementation of post-Chernobyl EU legislation

Council Regulation 90/737/EEC and Commission Regulation 1635/2006/EC

Within the short time allocated the verification activities indicated that:

9.1 For Sofia airport and Varna maritime port as dedicated EU entry points, infrastructure and procedures are in place that allow implementation of radiological checks to

establish compliance with the maximum permitted levels of radioactivity that govern the import of agricultural products originating in third countries and intended for human consumption.

9.2 Formal agreements are in place between the Bulgarian Customs Agency and the Ministry of Health (for non-animal products) and the Ministry of Agriculture and Food Supplies (for animal products) that lay down the responsibilities and *modus operandi* of the border controls.

Commission Recommendation 2003/274/EC

9.3 The Ministry of Health, through its laboratory network, conducts a radiological monitoring programme specifically addressing a well-defined range of wild (non-cultivated) mushrooms and berries. The verification team noted that this monitoring aims at establishing a radiological baseline upon which the Ministry of Health will decide whether to prolong this type of surveillance.

It is recommended that the Ministry of Health, irrespective of the outcome of the current monitoring programme, sustains its efforts with respect to the radiological monitoring of wild food products of non-animal origin under Commission Recommendation 2003/274/EC.

9.4 The Ministry of Agriculture and Food Supplies, though the Central Laboratory for Veterinary and Sanitary Examinations, conducts an environmental radioactivity monitoring programme addressing products of animal origin which also incorporates wild products. However, the verification team noted that the programme does not include carnivorous lake fish.

It is recommended that the Ministry of Agriculture and Food Supplies, to be in line with Commission Recommendation 2003/274/EC, incorporates carnivorous lake fish into its environmental radioactivity monitoring programme.

10. Other observations

10.1 With respect to the Ministry of Health

From sections 7 and 8 above it emerges that the laboratories that operate for the Ministry of Health, should a radiological emergency occur, will fail to effectively deal with the resulting increase in sample numbers. The infrastructure of the laboratory network is insufficient to adequately face such a situation, apart from providing limited assistance to the other governmental bodies involved in radiological emergency preparedness.

This structural weakness jeopardises the radiological emergency response capabilities of the Ministry of Health. Hence the Ministry of Health is not in a position to satisfactorily discharge its statutory responsibility in matters of radiological emergency response.

10.2 With respect to national dose assessments

It is noted that the various ministries performing environmental radioactivity monitoring programmes do not communicate the results thereof to the Ministry of Health whose National Centre for Radiobiology and Radiation Protection (NCRRP) is statutorily empowered with the evaluation of the dose to the Bulgarian population.

The absence of data transmission obligations from the various ministries currently conducting monitoring programmes to the Ministry of Health entails that relevant information is withheld from the NCRRP and that, hence, the latter cannot satisfactorily discharge itself from its responsibility in protecting the health of the general public against the dangers of ionising radiation.

10.3 With respect to the organisation of environmental radioactivity monitoring in Bulgaria

It is noted that the various (laboratory-based) environmental monitoring programmes that are currently implemented in Bulgaria are in many cases overlapping if not partially redundant. The ministries involved are thus duplicating efforts. The resources that Bulgaria invests into the radiological monitoring of the environment are therefore not optimally put into effect.

Economies of scale could be generated if the overall responsibility for the national monitoring programme would be devolved to a single executive body with decisional and regulatory powers on the scope and execution of the programme.

Where deemed appropriate, such a body may delegate, after mutual consultation, well-defined parts of the implementation of the programme to specialised actors in the field of radiation protection.

The development of a centralised database management of the results of the national monitoring programme (and possibly sub-programmes) would not only result in more realistic national dose assessments but also significantly enhance transparency and hence facilitate the implementation of Article 36 of the Euratom Treaty.

10.4 With respect to the implementation of Article 36 of the Euratom Treaty

Article 36 of the Euratom Treaty stipulates that "The appropriate authorities shall periodically communicate information on the checks referred to in Article 35 to the Commission so that it is kept informed about the level of radioactivity to which the public is exposed."

It is noted that this obligation on Bulgaria as Member State to report to the Commission has not yet been fulfilled: during the verification activities it transpired that none of the authorities having competence in radiation protection had been formally invested with this responsibility.

It is also noted that the practical implementation of Article 36 as described in Commission Recommendation 2000/473/Euratom is not yet fully integrated in the various environmental radioactivity monitoring programmes that are currently conducted in Bulgaria.

10.5 Recommendations

Based on sections 10.1 to 10.4 above, the following recommendations are addressed to the Bulgarian Government:

10.5.1 It is recommended that the Bulgarian Government reviews the statutory emergency preparedness and dose assessment responsibilities of the Ministry of Health.

10.5.2 It is recommended that the Bulgarian Government, in relation to Articles 35 and 36 of the Euratom Treaty, addresses the current complexity of ministerial responsibilities in the area of radiological surveillance of the environment.

10.5.3 It is recommended that the Bulgarian Government, as a matter of urgency, nominates a national competent authority invested with the responsibility to implement Commission Recommendation 2000/473/Euratom.

CONCLUSIONS

11.1 The verification visit was successful and the objectives of the review were met. Within the remit of verification activities under Article 35 of the Euratom Treaty it has been demonstrated that the facilities necessary to carry out continuous monitoring of levels of radioactivity in the air, water and soil around the Kozloduy NPS site and on the territory of Bulgaria are adequate. The Commission could verify the operation and efficiency of a selected number of these facilities.

11.2 Some shortcomings were noted and lead to recommendations by the Commission to the Bulgarian competent authorities with the aim to achieve improvements. It should be noted that these recommendations do not discredit the fact that environmental radioactivity monitoring in Bulgaria is in conformity with the provisions laid down in Article 35 of the Euratom Treaty.

11.3 However, the verification team identified a number of structural and organisational issues at national level that lead to recommendations by the Commission to the Bulgarian government.

11.4 The Commission would appreciate being kept informed about the actions the Bulgarian government and competent authorities may undertake in the framework of the recommendations made.

11.5 Finally, the verification team acknowledges the excellent co-operation it received from all persons involved.

[signed]

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