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## **Main Findings of the Commission's Article 35 verification in Slovakia**

### **Slovak National Monitoring Network For Environmental Radioactivity**

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<b>Date:</b>	10 to 15 April 2005
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#### **INTRODUCTION**

Article 35 of the Euratom Treaty requires that each Member State shall establish the 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 main purpose of verifications performed under Article 35 of the Euratom Treaty is to provide an independent assessment of the adequacy of monitoring facilities for:

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

For the purpose of such a review a verification team from the European Commission visited different sites of for monitoring environmental radioactivity in Slovakia, from 10 to 15 April 2005. With due consideration of 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 national environmental radioactivity monitoring programme in Slovakia as performed by the competent authorities.
  - The competent authorities' analytical laboratories for environmental samples, including aspects of quality assurance and control as well as document control.
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The nuclear power plants of Jaslovske Bohunice and Mochovce were not included in this verification.

The team carried out verifications of: the monitoring systems at the Slovak Hydro-meteorological Institute – Bratislava, the State Veterinary and Food Institute – Nitra, the Regional Public Health Authority – Košice, the Regional Public Health Authority – Banska Bystrica, and the Public Health Authority – Bratislava.

These verifications covered both the on-line and the off-line environmental radioactivity monitoring facilities.

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

Recommendations are addressed to the Slovak competent authority, the Public Health Authority in Bratislava.

## **MAIN FINDINGS**

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

### **1. Main findings with respect to the Slovak Hydro-meteorological Institute at Bratislava**

The verification activities performed at the institute:

- 1.1 Confirmed the existence and functionality of the on-line dose rate monitoring system, covering the Slovak territory as defined in the regulatory obligations.
- 1.2 Confirmed the existence and functionality of a data centre for the on-line radiation monitoring in general accordance with regulatory obligations.

Note: The verification team acknowledges that the data collection system also receives monitoring results from the military on-line radiation monitoring system (11 detectors of another type).

*The verification team strongly recommends combining the various on-line dose rate monitoring systems into a single system that allows easier comparison as well as efficient operation, servicing and data communication to all involved partners.*

*The verification team points out that relying on one person for a sophisticated operational task may lead to problems in case of extended absence of this person.*

## **2. Main findings with respect to the analytical laboratory of the Public Health Authority at Bratislava**

The verification activities performed at the analytical laboratory of the Public Health Authority at Bratislava:

- 2.1 Confirmed the existence of a national monitoring plan for the measurement of radioactivity levels in surface water, drinking water, milk and foodstuff.
- 2.2 Established that the laboratory is satisfactorily equipped and staffed with adequately trained personnel. The laboratory is currently being refurbished and will, after its completion, seek ISO 17025 accreditation.
- 2.3 Established that quality assurance and control is implemented through a compilation of written procedures and working instructions.

However,

- 2.4 In the sample preparation laboratory, there is no provision for archiving samples. Measurement results are manipulated and stored in Excel spreadsheets. The final approved results are recorded in a (paper) logbook. No back up system is in place.

*The verification team recommends that the Public Health Authority creates an archive for retaining samples after analysis for an appropriate period of time.*

*The verification team recommends that the Public Health Authority upgrades the system for the treatment of raw analytical data, authorisation of final analytical reports, and back-up of data and results.*

- 2.5 In the gamma spectrometry laboratory the team noted that no archiving of spectra is performed on a routine basis although back-up copies are sometimes made on diskette. There is no electronic link between the “spectrum accumulation PC” and the “data PC”.

*The Verification team recommends introducing improved and automated data handling as well as regular spectrum back-up and archiving. It encourages having the laboratories accredited to ISO 17025.*

## **3. Main findings with respect to the State Veterinary and Food Institute at Nitra.**

The verification activities performed at the Institute in Nitra:

- 3.1 Established that the laboratory is satisfactorily equipped and staffed with adequately trained personnel for the collection, preparation of and measurement of milk samples. The laboratory has ISO 17025 accreditation for gamma spectrometry and plans to obtain accreditation for Sr-90 measurements in the near future.
- 3.2 Established that quality assurance and control is implemented through a compilation of written procedures and working instructions.

However,

- 3.3 With respect to point 3.1 above, the verification team noted that the electric power supply system is not backed-up e.g. by a uninterruptible power supply and that the old multi-channel analyser (gamma spectrometry) would lose all spectra information of sample measurement in case of electric power failure.

*The Verification team recommends that the operator fits its environmental monitoring stations with uninterruptible power supply systems.*

#### **4. Main findings with respect to the Regional Public Health Authority at Banska Bystrica**

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

- 4.1 Established that the programme of activities performed by the laboratory, including measurements of ambient gamma dose rate, drinking water, river water and of filters from air samplers, in the framework of the national environmental monitoring programme is satisfactory.
- 4.2 Established that the laboratory is well equipped and satisfactorily staffed with adequately trained personnel.
- 4.3 Established that quality assurance and control is implemented through a compilation of written procedures and working instructions and that the laboratory aims at working in compliance with ISO standards. It participates also in international inter-comparison exercises. The institute is in the process of obtaining certification for its QA system.

However,

- 4.4 With respect to point 4.3 above, the verification team noted that for data management resulting from gamma spectrometry, there is no electronic database.

*The Verification Team recommends that the competent regulatory authority considers the benefit, in the framework of general quality assurance and control, of requiring the laboratory for environmental samples of the Regional Public Health Authority at Banska Bystrica to seek accreditation under ISO 17025.*

*The Verification team recommends that the laboratory puts in place a back-up system for measurement data and final results in an electronic format (e.g. by creation of a Laboratory Information Management System).*

- 4.5 With respect to point 4.3. above, the verification team noted that with regard to water sampling there was no justification of the choice for the sampling points and with regard to air sampling, the filters are prepared by another institute and that the sampling details and conditions are not known to the Regional Public Health Authority.

*The Verification team recommends that the competent regulatory authority requires the laboratory for environmental samples of the Regional Public Health Authority at Banska Bystrica to check the representativity of the drinking water sampling points. The team*

*further recommends that the air filter-kits be prepared in future by the institute which will measure the filters or that the measuring institute be provided with sufficient information concerning sampling conditions.*

## **5. Main findings with respect to the Regional Public Health Authority – Košice.**

The verification activities performed at the laboratory of the Regional Public Health Authority – Košice:

- 5.1 Established that the programme of activities performed by the laboratory, including measurements of ambient gamma dose rate, drinking water, river water and of filters from air samplers, in the framework of the national environmental monitoring programme is satisfactory.
- 5.2 Established that the Radiology Division Laboratory of the RPHA (gamma spectrometry) is understaffed.
- 5.3 Established that quality assurance and control is implemented through a compilation of written procedures and working instructions. The laboratory is not accredited.
- 5.5 With respect to point 5.2. and 5.3 above, the verification team acknowledged that relying on just one person for gamma spectrometry may lead to problems in case of extended absence of this person.

*The Verification team recommends reviewing the allocation of personnel resources to the gamma spectrometry laboratory and having the laboratory accredited to ISO 17025.*

- 5.6 With respect to point 5.3 above, the verification team noted that analysis results are manually written into the central sample book without signature.

*The Verification team recommends supplying the signatures of the responsible staff at each step of the sampling, measurement, analysis and data handling process, so as to keep a continuous track of responsibilities. The team also suggests exploring the possibility of using a Laboratory Information Management System that would include sampling and sample information with unique sample identifiers and that would be connected to the measuring devices as well as generate the reports.*

## CONCLUSIONS

- (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 on the territory of Slovakia are adequate. The Commission could verify the operation and efficiency of these facilities.
- (2) However, at the time of the visit, several areas of the national monitoring programme had only been implemented very recently, making it difficult to assess over an extended period of time the quality and effectiveness of the programme in those areas. It was also noted that laboratories are being refurbished and equipment is currently out of operation which could usefully be re-installed.
- (3) It was noted that the responsibilities for sampling, sample preparation and measurements are spread over different national and regional institutes. The team strongly encourages that the national environmental radioactivity monitoring programme and associated responsibilities be clearly defined in appropriate legal acts.
- (4) Several recommendations have been formulated, mainly in relation to quality assurance and quality control. In addition, staffing problems have been addressed for some areas. The team recommends that all laboratories pursue accreditation under ISO 17025 and regularly participate in intercomparison exercises.

These recommendations do not detract from the general conclusion that the Slovak national monitoring network is in conformity with the provisions laid down under Article 35 of the Euratom Treaty.

- (5) The Commission would appreciate being kept informed about the actions the Slovak competent authorities may undertake in the framework of the recommendations made.
- (6) Finally, the verification team acknowledges the excellent co-operation it received from all persons involved.

*[signed]*

C. GITZINGER

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