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

**Latvian National Monitoring Network
for Environmental Radioactivity**

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Verification team: Mr V. Tanner (team leader)

Mr C. Gitzinger

Ms A. Godeanu-Metz

Mr E. Henrich (national expert on secondment – Austria)

Ms Å. Wiklund (national expert on secondment – Sweden)

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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 the 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 for monitoring environmental radioactivity in Latvia, from 21 to 24 March 2006. 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:

- Structure of the national environmental monitoring and sampling programme,
- Analytical laboratories of the Radiation Safety Centre and the National Diagnostic Centre,
- On-line automatic monitoring systems,
- Environmental monitoring programmes at the Salaspils Research Reactor and at the radioactive waste repository Radons at Baldone.

The team carried out verifications of monitoring systems and sampling facilities at the Radiation Safety Centre (Riga), Riga Clinical Hospital, Salaspils, Baldone, Jekabpils, Jurmala, Talsi, Ventpils, Daygavpils and Demene. These verifications covered both on-line and off-line environmental and foodstuffs radioactivity monitoring provisions.

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

Recommendations are addressed to the Latvian competent authority, the Radiation Safety Centre in Riga.

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 data centre of the Radiation Safety Centre (RDC) in Riga

The verification activities performed at the RDC data centre:

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

However,

- 1.3. With respect to the point 1.2 above the verification team noted that the RDC is required to maintain continuous stand-by arrangements for emergency situations with a fairly small number of staff trained for this purpose.

It is recommended that the RDC considers the possible need to increase the number of trained staff for the handling and maintenance of the on-line monitoring system central database during emergency situations.

2. Main findings with respect to the analytical laboratory of the Radiation Safety Centre (RDC) in Riga

The verification activities performed at the RDC analytical laboratory:

- 2.1 Established that the laboratory is satisfactorily equipped and staffed with adequately trained personnel. The laboratory is in process of seeking ISO 17025 accreditation.
- 2.2 Established that quality assurance and control is implemented through a compilation of written procedures and working instructions.

However,

- 2.3 With respect to the point 2.1 above the verification team noted that a mobile radiation measurement vehicle is available, but apparently the RDC staff limitations would limit its use during an emergency situation.

It is suggested that the RDC makes sure there is enough trained staff to operate the vehicle on a continuous basis during emergency situations.

- 2.4 With respect to the point 2.1 above the verification team noted that the laboratory has staff shortages and apparent difficulties in attracting qualified personnel.

The verification team points out that an adequate number of qualified staff is crucial to laboratory operation and wishes to encourage the RDC to make every effort to increase the number of trained personnel at the laboratory.

- 2.5 With respect to the point 2.2 above the verification team noted that in the sample preparation laboratory there is no provision for archiving samples.

It is recommended, as a matter of good laboratory practise, that the RDC considers storage of environmental samples in a systematic and formalised manner.

3. Main findings with respect to the National Diagnostic Centre (NDC) of the Food and Veterinary Service in Riga

The verification activities performed at the NDC in Riga:

- 3.1 Confirmed the existence of a national monitoring plan for the measurement of radioactivity in foodstuffs.
- 3.2 Established that the laboratory is satisfactorily equipped and staffed with adequately trained personnel for the collection, preparation and measurement of food samples. The laboratory is in process of seeking ISO 17025 accreditation.
- 3.3 Established that quality assurance and control is implemented through a compilation of written procedures and working instructions.

However,

- 3.4 With respect to the point 3.2 above the verification team noted that the laboratory has staff shortages and apparent difficulties in attracting qualified personnel.

It is recommended that the NDC ensures adequate staffing and trained replacement staff for the main functions of the radiological analysis unit.

- 3.5 With respect to the point 3.3 above the verification team noted that peak width control is not a part of routine control of gamma spectrometry systems.

It is recommended that, in order to detect possible detector degradation as early as possible, the NDC controls and documents also the peak width (FWHM) on a regular basis.

- 3.6 With respect to the point 3.3 above the verification team noted that some of the gamma spectrometry data input operations and analysis calculations are performed manually.

It is suggested to use modern gamma spectroscopy analysis software and a centralised data system, which would avoid multiple manual inputting of data from the measurement systems.

4. Main findings with respect to Salaspils Research Reactor (SRR) site

The verification activities performed at the SRR site:

- 4.1 Confirmed the existence and functionality of monitoring and sampling facilities as defined in the regulatory obligations.
- 4.2 Established that the site laboratory is satisfactorily equipped and staffed with adequately trained personnel for the collection, preparation and measurement of environmental samples. The laboratory has ISO 17025 accreditation for some of the measurement methods.
- 4.3 Established that quality assurance and control is implemented through a compilation of written procedures and working instructions.

However,

- 4.4 With respect to the point 4.1 above the verification team noted that the sewage discharge radioactivity is monitored only once a year and there are no automatic monitoring systems for radioactivity in liquid discharges.

It is recommended that the RDC considers more frequent monitoring of the sewage tank. Should the SSR facility operation be continued beyond the current plans, the verification team recommends the RDC to consider automatic sewage sampling or installing a continuous liquid discharge monitoring system at the SRR.

- 4.5 With reference to point 4.1 above the verification team noted that surface water and precipitation are sampled only a few times per year.

The verification team suggests carrying out more frequent sampling of surface water and precipitation.

- 4.6 With reference to point 4.2 above, the verification team noted that some of the laboratory operational equipment is outdated and some of the new equipment available was not operational.

It is recommended, in order to maintain laboratory measurement capability, that the new equipment and analysis software be made operational as soon as possible and the obsolete equipment removed from the laboratory.

- 4.7 With respect to the point 4.3 above the verification team noted that there is no systematic back-up of the data from the site perimeter radiation monitors.

It is recommended to implement a data back-up procedure for the measurement data.

- 4.8 With reference to point 4.3 above the verification team noted that no systematic data back-up procedure was in place in the SRR analytical laboratory.

It is suggested, as a matter of good laboratory practise, that a systematic data back-up system for all sampling and measurement data is implemented.

- 4.9 With reference to point 4.3 above, the verification team noted that no systematic record of detector calibrations was available.

It is recommended to maintain systematic records of detector calibrations in order to have long term data on detector stability.

5. Main findings with respect to the environmental radiation monitoring provisions at the Radons site in Baldone

The verification activities performed at the Radons site:

- 5.1 Confirmed the existence and functionality of monitoring and sampling facilities as defined in the regulatory obligations.
- 5.2 Established that quality assurance and control is implemented through a compilation of written procedures and working instructions.

However,

- 5.3 With reference to point 5.1 above the verification team was informed that the reliability of the data transmission between the PMS station in Baldone and the network data centre in Riga is poor.

It is recommended to improve the data transmission reliability of the PMS station in Baldone.

6. Main findings with respect to national environmental radiation monitoring network in Latvia

The verification activities performed at the facilities for monitoring radioactivity in the environment:

- 6.1 Confirmed the existence and functionality of monitoring and sampling facilities as defined in the regulatory obligations.
- 6.2 Confirmed that the levels of radioactivity in the environment are monitored and sampled in accordance with regulatory obligations.
- 6.3 Established that the monitoring and sampling facilities are in general adequate and that the programmes of sampling are satisfactory.
- 6.4 Established that quality assurance and control is implemented through a compilation of written procedures and working instructions.

However,

- 6.5 With reference to point 6.2 above the verification team was informed, that due to insufficient analytical capacity there is currently no programme for monitoring radioactivity in drinking water in Latvia.

The verification team supports the current efforts to implement the relevant provisions of the monitoring programme in order to provide sampling and analysis of drinking water.

- 6.6 With reference to point 6.3 above the verification team noted that not all PMS stations have adequate electrical power back-up.

It is recommended to provide all PMS stations with sufficient back-up systems for electrical power.

- 6.7 With reference to point 6.3 above the verification team noted that outsourcing network maintenance appears to have resulted in a lack of specific technical expertise at the RDC.

The verification team points out that although network maintenance has been outsourced it is important to maintain an adequate level of technical knowledge of the measurement network also within the RDC permanent staff.

- 6.8 With reference to point 6.3 above the verification team noted that not all AAM gamma dose rate detectors are equipped with local dose rate displays.

The verification team points out that a local dose rate display on each station is important in the event of a failure of the communication lines between the station and the RDC.

- 6.9 With reference to point 6.3 above the verification team noted that the AAM station in Daugavpils was not operational during the verification visit.

It is recommended that the RDC returns the Daugavpils AAM station in normal operation as soon as possible.

- 6.10 With reference to point 6.3 above the verification team noted that the high-volume air sampler "Snow White" in Daugavpils was not operational during the verification visit.

With regard to the aerosol measurement programme, it is recommended that the RDC defines a long-term solution that guarantees continuous surveillance. This is in particular valid for regions close to nuclear power plants.

CONCLUSIONS

- 7.1 The verification visit was successful and the objectives of the review were met. Within the remit of verification activities under the 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 Latvia are adequate. The Commission could verify the operation and efficiency of these facilities.
- 7.2 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 full accreditation under ISO 17025 and regularly participate in intercomparison exercises.
- 7.3 These recommendations do not detract from the general conclusion that the Latvian national monitoring network is in conformity with the provisions laid down under Article 35 of the Euratom Treaty.
- 7.4 The Commission would appreciate being kept informed about the actions the Latvian competent authorities may undertake in the framework of the recommendations made.
- 7.5 Finally, the verification team acknowledges the excellent co-operation it received from all persons involved.

V. TANNER

Team Leader