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**Radiation protection**

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## **Main Findings of the Commission's Article 35 verification in Estonia National Environmental Radioactivity Monitoring**

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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 Estonia on 1 to 4 June 2010. The aim of the verification was to check the operation and efficiency of the facilities and associated analytical laboratories for continuous monitoring of the level of radioactivity in air, water and soil in the territory of Estonia. The verification scope also covered the on-site facilities monitoring liquid and aerial discharges of radioactivity into the environment. 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:

- Environmental radioactivity monitoring arrangements at the Sillamäe tailings pond remediation site
- Estonian national environmental radiation monitoring and sampling programme
- Analytical laboratory of the Radiation Safety Department of the Environmental Board
- Discharge monitoring at the North Estonia Medical Centre

The team carried out verifications of monitoring systems and sampling facilities at several locations in Estonia. 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. More detailed information concerning the verification is available at the technical report of the verification.

Recommendations are addressed to the Estonian competent authority, the Radiation Safety Department of the Environmental Board (EB-RSD).

## **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 environmental radioactivity monitoring at the Sillamäe tailing pond remediation site**

The verification activities performed at the Sillamäe site:

- 1.1 Confirmed the existence and functionality of the discharge monitoring and sampling programme, as defined in the regulatory obligations.
- 1.2 Established that quality assurance and control is implemented through a compilation of written procedures and working instructions.

However,

- 1.3 With respect to the point 1.1 above, the verification team was informed that although Sillamäe monitoring programme has been successfully implemented for several years, there is no decision on long-term future financing of the programme.

*The verification team points out that the Sillamäe site requires long-term radiological surveillance. In order to ensure a continuous and credible monitoring programme also in the future the responsibilities need to be defined very clearly and sufficient resources need to be allocated for the monitoring programme.*

### **2. Main findings with respect to the Estonian national environmental radiation monitoring and sampling programme**

The verification activities performed at the Radiation Safety Department of the Environmental Board (EB-RSD) and at the selected monitoring sites:

- 2.1 Confirmed the existence and functionality of the national environmental monitoring and sampling programme, covering the Estonian territory as defined in the regulatory obligations.
- 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 the data centre of the automatic monitoring system is quite old and does not have a graphical display of radiation readings received from the automatic stations.
- 2.4 With respect to the point 2.1 above the verification team noted that the monitoring equipment at the automatic stations is getting old.

*The verification team supports the planned modernisation of the system data centre and monitoring equipment, especially creation of a user friendly graphical data display.*

- 2.5 With respect to point 2.1 above the verification team noted that there is no reliable airflow measurement at the high-volume air sampling system located at the Harku Meteorological station.

*The verification team supports the efforts to equip the station with an airflow meter.*

### **3. Main findings with respect to the analytical laboratory of the Radiation Safety Department of the Environmental Board (EB-RSD).**

The verification activities performed at the analytical laboratory of the Radiation Safety Department of the Environmental Board (EB-RSD):

- 3.1 Established that the laboratory is well equipped and staffed with adequately trained personnel.
- 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 the point 3.2 above, the verification team noted that the current laboratory quality accreditation covers only the gamma spectroscopy analysis.

*Verification team supports the ongoing work towards accreditation of other analysis methods used in the laboratory.*

- 3.4 With respect to the point 3.1 above, the verification team noted that the mobile measurement vehicle of the laboratory was out of order and there did not appear to be sufficient personnel resources for mobile measurements during a possible radiological emergency situation.

*The verification team recommends making sure that there is enough trained staff to operate the mobile and hand-held monitoring instruments in case of an emergency. In addition, in order to restore mobile measurement operations capability, the team recommends repairing the detector mounted on the vehicle as soon as possible.*

#### **4. Main findings with respect to discharge monitoring of the North Estonia Medical Centre**

The verification activities performed at the North Estonia Medical Centre:

- 4.1 Confirmed that there are no gaseous radioactive discharges from the hospital.
- 4.2 Confirmed that due to short half-lives and fairly low amounts of discharged liquid radioactivity there is neither site environmental nor liquid discharge monitoring being carried out by the hospital.

However,

- 4.3 With respect to the point 4.1 and 4.2 above the verification team noted that the future developments of the nuclear medicine operations in the hospital are likely to lead to increase in the amounts of radioactivity used in the hospital.

*The verification team points out that should the amounts of radioactivity used in the North Estonia Medical Centre increase there will be a need to assess the possible doses to the general public due to the discharges and consider establishing a discharge monitoring programme or installation of dose reduction measures (delay tank).*

#### **CONCLUSIONS**

The verification visit was successful and the objectives of the review were met. Within the remit of the 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 Estonia are adequate. The Commission could verify the operation and efficiency of these facilities.

A few recommendations and suggestions have been formulated. These recommendations do not detract from the general conclusion that the Estonian national monitoring network is in conformity with the provisions laid down under Article 35 of the Euratom Treaty.

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

V. TANNER

Team Leader