



EUROPEAN COMMISSION
DIRECTORATE-GENERAL FOR ENERGY

Directorate D - Nuclear energy, safety and ITER
D.3 – Radiation protection and nuclear safety

Verification under the terms of Article 35 of the Euratom Treaty

Main Conclusions

LATVIA

Riga

Routine and emergency radioactivity monitoring arrangements Monitoring of radioactivity in drinking water and foodstuffs

Dates	11 – 13 October 2022
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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 standards¹.

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

The Radiation Protection and Nuclear Safety Unit (ENER D.3) of the EC's Directorate-General for Energy (DG ENER) is responsible for undertaking these verifications.

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 from a site;
- Levels of environmental radioactivity at the site's perimeter and in the marine, terrestrial and aquatic environment around the site, for all relevant pathways;
- Levels of environmental radioactivity on the territory of the Member State.

A verification team from DG ENER visited Latvia on 11 – 13 October 2022 to review:

- Facilities for routine monitoring of environmental radioactivity in Riga;
- Facilities for emergency monitoring of environmental radioactivity in Riga;
- Measuring laboratories, in particular infrastructure, analytical methods, quality assurance and control aspects;
- Reporting of the environmental monitoring programme results.

This document gives an overview of the verification team's main conclusions on the environmental surveillance systems in place and recommendations for their improvement. More detailed information concerning the verification is available in the technical report (TR) of the verification.

¹ Council Directive 2013/59/Euratom of 5 December 2013 laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation, and repealing Directives 89/618/Euratom, 90/641/Euratom, 96/29/Euratom, 97/43/Euratom and 2003/122/Euratom (OJ L 13 of 17.1.2014)

MAIN CONCLUSIONS

The verification team successfully completed every verification planned for the visit. The information supplied by the Latvian authorities in advance of the visit, as well as the additional documentation received during and after the verification, was useful.

- (1) The verification activities that were performed demonstrated that the facilities necessary for the monitoring of levels of radioactivity in air, water and soil in Riga are partially inadequate. The Commission could verify the operation and efficiency of a representative part of these facilities.
- (2) The verification activities that were performed demonstrated that the facilities necessary for the monitoring of levels of radioactivity in air, water and soil in Riga in the event of a radiological emergency are partially inadequate. The Commission could verify the availability of a representative part of these facilities.
- (3) The verification team wishes to make the following recommendations:

Monitoring programme for environmental radioactivity

- a) There is no air sampling system in Riga. Air sampling is performed periodically in Baldone (for one week each month) at 40 km distance from Riga. This periodical sampling is not sufficient to assess the radiological quality of air in the capital city Riga. (TR section 7.2)

The verification team recommends an air sampling system to be installed in Riga; the system should operate continuously and facilitate monitoring of particulate radioactivity and monitoring of gaseous radioactive iodine in air in the event of a nuclear emergency.

- b) There is no soil or terrestrial biota sampling in Riga. Soil sampling is performed in Baldone and Salaspils. (TR section 7.2)

The verification team recommends including sampling and analysis of radioactivity in either soil or terrestrial biota (grass) in the regular monitoring programme in Riga.

State limited liability company "Latvian Environmental, Geological and Meteorological Centre" (LEGMC) radioactivity laboratory

- c) LEGMC laboratory has no pre-planned arrangements for managing radioactivity samples in an emergency situation, when the number of environmental samples increases, and the samples may contain elevated levels of activity. (TR section 7.3.1)

The verification team recommends, that the LEGMC drafts an internal preparedness plan for laboratory operation in an emergency situation, taking into account the increased number of incoming environmental samples with elevated levels of activity.

Institute of Food Safety, Animal Health, and Environment (BIOR) radioactivity laboratory

- d) There are no pre-planned arrangements for managing radioactivity samples in an emergency situation, when the number of food samples increases, and the samples may have higher levels of activity than in a routine situation. The BIOR laboratory has sufficient space for storing and managing increased number of incoming (radioactive) samples in the event of an emergency, and by reducing the counting times the laboratory analytical capacity could be increased to facilitate higher sample throughput, but there is no formalised plan for this type of situation. In addition, the number of trained staff is a limiting factor. (TR section 7.4.1)

The verification team recommends, that BIOR drafts an internal preparedness plan for laboratory operation in an emergency situation, taking into account the increased number of incoming food samples with elevated levels of radioactive contamination.

- e) There is no systematic programme for controlling the performance stability of the liquid scintillation counter. (TR section 7.4.3)

The verification team recommends that the BIOR laboratory logs the liquid scintillation counter performance parameters (efficiency, quenching) in a long-term trend graph by performing e.g. a weekly control measurement.

- f) The BIOR laboratory has a Baltic Scientific HPGe gamma spectroscopy system. The system is quite old (1996), but functional. The original software provided with the detector system is still used. (TR section 7.4.4)

The verification team recommends renewal of the HPGe-detector system in the near future.

- g) The BIOR laboratory does not have an activity standard for carrying out calibration of the HPGe-system – the original factory calibration is still being used. There is no systematic approach to monitoring system stability either. (TR section 7.4.4)

The verification team recommends that BIOR acquires a multinuclide standard activity source for controlling the HPGe-detector calibration in terms of efficiency, energy and resolution (peak FWHM).

The verification team recommends that the BIOR laboratory logs the HPGe-detector performance parameters in a long-term trend graph by performing e.g. a weekly control measurement.

Radiation Safety Center (RSC)

- h) RSC has no equipment to monitor radioactive particulate material or gaseous radioactive iodine in air in central Riga. The nearest such monitoring station is in Baldone, about 40 km from Riga. (TR section 7.5.1)

The verification team recommends that the RSC, in cooperation with the LEGMC, implements a mobile or fixed capability for monitoring particulate radioactivity and gaseous radioactive iodine in air in Riga.

- i) Data from the river monitoring station Daugava (LV0023) is received in the EURDEP system without identification that it is a water monitoring station. This leads to a situation where the data is presented as ambient dose rate on the EURDEP map. (TR section 7.5.2)

The verification team recommends that the RSC remove the Daugava water monitoring station (LV0023) from the Latvia EURDEP files.

- (4) The detailed verification findings are compiled in the 'Technical Report' that is addressed to the Latvian authorities through the Permanent Representation of Latvia to the European Union.
- (5) The Commission services kindly request that the Latvian authorities submit, before the end of 2024, a report on their implementation of the recommendations, as well as on any significant changes in the set-up of the monitoring systems. The Commission will take this report into account when considering whether a follow-up verification would be necessary.
- (6) Finally, the verification team acknowledges the excellent co-operation it received from all persons involved in the activities it performed.

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