



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

CROATIA

Zagreb

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

Dates 1-3 October 2019

Verification team Mr Vesa Tanner, DG ENER
Ms Mihaela Mihaila, DG ENER

Reference HR 19-05

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 by a site;
- Levels of environmental radioactivity at the site 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.

For the purpose of such a review, a verification team from DG ENER visited Croatia on 1 - 3 October 2019. This mission dealt with

- Facilities for routine monitoring of environmental radioactivity in Zagreb;
- Facilities for emergency monitoring of environmental radioactivity in Zagreb;
- Measuring laboratories, in particular infrastructure, analytical methods, quality assurance and control aspects, as well as reporting.

The present document gives an overview of the main conclusions by the verification team concerning relevant aspects of the environmental surveillance and corresponding suggestions. More detailed information concerning the verification is available in the technical report (TR) of the verification.

MAIN CONCLUSIONS

All verifications that had been planned by the verification team were completed successfully. The information supplied by the Croatian 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 to carry out monitoring of levels of radioactivity in air, water and soil in Zagreb are adequate. 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 to carry out monitoring of levels of radioactivity in air, water and soil in Zagreb in the event of a radiological emergency are adequate. The Commission could verify the availability of a representative part of these facilities.

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)

- (3) The verification team recommends the following:
- a) With regard to the Laboratory for Radioecology of the Ruđer Bošković Institute (section 6.2 of the TR):
 - Maintain long-term trend graphs of gamma spectroscopy system maintenance parameters (resolution and energy stability).
 - b) With regard to the Civil Protection Directorate (section 6.3 of the TR):
 - Proceed to make the data transmission from the BITT radiation monitoring network stations operational as soon as possible.
 - Set up documented procedures for the mobile and hand-held radiation monitoring equipment distribution, operation, data gathering and transmission of data to the central monitoring authority in the event of an emergency.
 - c) With regard to the IMROH Radiation protection unit laboratory (section 6.4 of the TR):
 - Maintain long-term trend graphs of gammaspectroscopy system maintenance parameters (resolution and energy stability).
 - Acquire an additional mobile system for monitoring radioactive iodine in air in the event of an emergency.
 - In co-operation with the Civil Protection Directorate, create duly formalised and documented procedures for the operation of the mobile monitoring equipment in the event of an emergency. The document should also contain procedures for staff training, exercises and stand-by arrangements.
 - Renew the two medium-volume air sampling systems in the near future. Particular attention should be paid on the accuracy of the total flow measurement and electrical back up.

Notwithstanding these remarks the verified parts of the monitoring facilities and the monitoring system for environmental radioactivity in Zagreb conform to the provisions laid down under the Article 35 of the Euratom Treaty.

- (4) The detailed verification findings are compiled in the 'Technical Report' that is addressed to the Croatian competent authority through the Permanent Representation of Croatia to the European Union.
- (5) The Commission services kindly request that the Croatian authorities submit, before the end of 2021, a report on their implementation of the recommendations, and about any significant changes in the set-up of the monitoring systems. Based on this report the Commission will consider the need for a follow-up verification.
- (6) Finally, the verification team acknowledges the excellent co-operation it received from all persons involved in the activities it performed.

V. Tanner
Team Leader