



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

ITALY

Rome

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

Dates	15 – 18 November 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 Italy on 15 – 18 November 2022 to review:

- Facilities for routine monitoring of environmental radioactivity in Rome;
- Facilities for emergency monitoring of environmental radioactivity in Rome;
- 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 Italian 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 Rome 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 for the monitoring of levels of radioactivity in air, water and soil in Rome in the event of a radiological emergency are adequate. The Commission could verify the availability of a representative part of these facilities.

- (3) The verification team wishes to make the following recommendations:

- a. The team noted that currently there is no air sampler in central Rome. The sampler operated by ARPA Lazio is out of order – the closest air sampling site is in Viterbo, some 80 km from the Rome centre (TR 7.2).

The verification team recommends installation of a medium-volume automatic air sampler in central Rome. The sampler should have capability to collect particulate matter and also gaseous radioactive iodine, and preferably be equipped with an alarming detector on the collection filter and a battery for electrical back-up.

- b. The verification team notes that the ARPA Lazio laboratory does not carry out Sr-90 analysis on milk samples (TR 7.5.1).

The verification team recommends that the ARPA Lazio laboratory prepares a method for analysing Sr-90 in milk.

- c. The verification team noted that ENEA Casaccia laboratory carries out calibration measurements when gamma spectroscopy system stability is controlled, but there are no long-term trend graphs prepared for system efficiency, energy, and resolution stability (TR 7.6.1).

The verification team recommends that the ENEA Casaccia laboratory initiates a practise of maintaining long-term trend graphs of gamma spectroscopy system stability parameters (energy, efficiency, and resolution (FWHM of the Co-60 peak at 1332 keV)).

- d. The verification team noted, that the IZSLT laboratory does not maintain long-term trend graphs of the HPGe-detector stability parameters (TR 7.7).

The verification team recommends that the IZSLT laboratory initiates a practise of maintaining long-term trend graphs of gamma spectroscopy system stability parameters (energy, efficiency and resolution (FWHM of the Co-60 peak at 1332 keV)).

- e. The verification team noted, that the IZSLT laboratory has no formalised plan for carrying out food radioactivity monitoring in the event of an emergency, when the number of samples can be much higher and some of the samples may contain elevated radioactivity levels (TR 7.7).

The verification team recommends that the IZSLT laboratory prepares a contingency plan, which defines the practical sample management procedures in a situation where the number of incoming samples significantly increases, and some of the samples contain elevated amounts of radioactivity.

- (4) These remarks aside, the verification team nevertheless concludes that the verified parts of the monitoring facilities and the monitoring system for environmental radioactivity in Rome conform to the provisions laid down under the Article 35 of the Euratom Treaty.
- (5) The detailed verification findings are compiled in the 'Technical Report' that is addressed to the Italian competent authority through the Permanent Representation of Italy to the European Union.
- (6) The Commission services kindly request that the Italian authorities submit, by the end of 2024, a progress report on their implementation of the recommendations, as well as on any significant changes in the set-up of the monitoring systems, in particular installation of a medium-volume automatic air sampler in central Rome (TR 7.2). The Commission will take this report into account when considering whether a follow-up verification would be necessary.
- (7) Finally, the verification team acknowledges the excellent co-operation it received from all persons involved in the activities it performed.

V. Tanner

Team Leader