



**EUROPEAN COMMISSION**  
DIRECTORATE-GENERAL FOR ENERGY

Directorate D - Nuclear Energy, Safety and ITER  
**D.3 – Radiation Protection and Nuclear Safety**

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## **Verification under the terms of Article 35 of the Euratom Treaty**

### **Main Conclusions**

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# **CZECH REPUBLIC**

## **Dukovany Nuclear Power Plant**

### **Discharge and environmental monitoring and national environmental radioactivity monitoring network in the vicinity**

<b>Dates</b>	2-5 October 2017
<b>Verification team</b>	Mr Vesa Tanner, DG ENER Mr Agris Ozols, DG ENER Mr Alan Ryan, DG ENER Mr Raf Van Ammel, DG JRC
<b>Reference</b>	CZ 17-03

## 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 standards<sup>1</sup>.

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 the Czech Republic on 2 – 5 October 2017. This mission dealt with

- Facilities for monitoring discharges of gaseous and liquid radioactive effluents into the environment at the Dukovany nuclear power plant;
- Facilities for monitoring environmental radioactivity in the vicinity of the Dukovany nuclear power plant;
- 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 recommendations. 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 Czech Republic 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 continuous monitoring of levels of radioactivity in the gaseous and liquid discharges at the Dukovany nuclear power plant 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 around the Dukovany nuclear site are adequate. The Commission could verify the operation and efficiency of a representative part of these facilities.

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<sup>1</sup> Council Directive 96/29/Euratom of 13 May 1996 laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionizing radiation (OJ L 159 of 29/06/1996) and 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) A few technical recommendations and suggestions are formulated, in particular the following:
- a. Concerning the SÚJB regional centre in Brno (Section 8.3.1 of the TR), the verification team recommends that SÚJB considers improving the Brno laboratory capabilities in an emergency situation where the number of incoming samples significantly increases, both in terms of sample management and LSC counting capacity. In addition, the verification team suggests more frequent participation in inter-laboratory comparison exercises
  - b. Concerning the ČEZ laboratory at the Dukovany NPP (Section 8.3.2 of the TR) the verification team recommends that the plant laboratory investigates the possibility of having additional intercomparison exercises with other nuclear power plant laboratories. As a matter of good laboratory practise, the verification team suggests long-term trend analysis of HPGe-detector calibration parameters, in particular resolution (FWHM of the <sup>60</sup>Co peak at 1332 keV).
  - c. Concerning the SÚJB regional centre in České Budějovice (section 8.3.4 of the TR) the verification team recommends introducing control charts for all detectors in order to follow up the analytical equipment performance (stability of energy calibration, efficiency calibration and resolution (FWHM)). In addition, the verification team recommends increasing participation in interlaboratory comparison exercises (possibly at international level) to benchmark the laboratory's analytical performance.

Notwithstanding these remarks the verified parts of the Dukovany NPP discharge monitoring system, on-site environment monitoring facilities and the national monitoring system for environmental radioactivity in the plant vicinity are in conformity with the provisions laid down under the Article 35 of the Euratom Treaty.

- (4) The detailed verification findings and ensuing recommendations are compiled in the 'Technical Report' that is addressed to the Czech Republic competent authorities through the Czech Republic Permanent Representation to the European Union.
- (5) The Commission services request a report on the implementation of the recommendations, and about any significant changes in the set-up of the monitoring systems from the Czech Republic authorities before the end of 2019.
- (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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Team Leader