



Main Findings of the Commission's Article 35 Verification

TRILLO Nuclear Power Plant

Area: Trillo-NPP site, Guadalajara, Spain
Date: 27 June to 02 July 2004

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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 standards.

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

For the EC, the Directorate-General for Energy and Transport (DG TREN) and, in particular, its Radiation Protection Unit (TREN H.4) is responsible for undertaking these verifications.

For the purpose of such a review, a verification team from DG TREN visited the Trillo nuclear power station located at “Cerrillo Alto” (Guadalajara), north east of Madrid, Spain.

The visit included meetings with the CSN (Consejo de Seguridad Nuclear), CIEMAT (Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas) and LMA (Laboratorio de Medidas Ambientales S. L.).

The verification activities took place from 27 June to 02 July 2004.

The verification activities encompassed the following topics:

- Discharges of radioactivity into the environment.
- Levels of environmental radioactivity at the site perimeter and in the terrestrial and aquatic environment around the site, for all relevant exposure pathways.

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, it was agreed that emphasis would be put on:

- The operator's monitoring and control facilities for gaseous and aqueous discharges of radioactivity into the environment.
- The implementation of the statutory environmental radioactivity monitoring programme as performed by the operator.
- The operator's effluent and environmental laboratories, including aspects of quality assurance and control as well as document control.
- The independent environmental monitoring programmes as performed by the Spanish competent authority (CSN).

The present report gives an overview of the Main Findings of the verification team and corresponding recommendations.

These recommendations are addressed to the Spanish competent authority.

1. Main Findings with respect to the operator's radioactive effluent monitoring programme and related regulatory control

The verification activities performed at the facilities for monitoring and sampling of gaseous and aqueous discharges of radioactivity into the environment:

- 1.1 Confirmed the existence and functionality of monitoring and sampling facilities as defined in the regulatory obligations.
- 1.2 Confirmed that discharges of gaseous and aqueous radioactivity are monitored and sampled in accordance with the Technical Operating Specifications delivered by the regulatory authority and the Off-site Dose Calculation Manual from the site operator.
- 1.3 Established that the monitoring and sampling facilities are adequate and that the programmes of sampling of gaseous and aqueous discharges are satisfactory.
- 1.4 Established that quality assurance and control is implemented through a compilation of written procedures and working instructions.

However,

- 1.5 The verification team noted that analytical results for individual nuclide activity (in discharge samples) that are below the lower limit of detection (LLD) are substituted by and reported as a zero value. This procedure entails a small but systematic underestimation of the activities discharged.
- 1.6 Further to point 1.5 above it is reminded that the European Commission issued Recommendation 2004/2/Euratom ⁽¹⁾ wherein substitution rules for values below the LLD are presented. These substitution rules are in line with ISO standard 11929-7:2005.

It is recommended that CSN consider the benefits of revising its regulatory requirements for substitutions of analytical results below LLD by bringing these requirements in line with Commission Recommendation 2004/2/Euratom and ISO standard 11929-7:2005.

2. Main Findings with respect to the operators' analytical laboratory for discharge samples and related regulatory control

The verification activities performed at the analytical laboratory for gaseous and aqueous discharges samples:

- 2.1 Established that the laboratory is well equipped and satisfactorily staffed with adequately trained personnel.
- 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 point 2.2, the verification team noted a few minor issues, in which there is room for improvement. These are discussed in the Technical Report of the verification visit.

It is recommended, that CSN advises its on-site inspectorate to review the issues identified in the Technical report and require remedial action wherever deemed necessary.

¹ Official Journal L 002, 06/01/2004 P. 0036 - 0046

3. Main Findings with respect to the operators' environmental monitoring programme

The verification activities performed at the facilities for monitoring the environment around the Trillo NPP:

- 3.1 Confirmed the existence and functionality of monitoring and sampling facilities as defined in the regulatory obligations.
- 3.2 Confirmed that the levels of radioactivity in the environment are monitored and sampled in accordance with the Technical Operating Specifications delivered by the regulatory authority and the Off-site Dose Calculation Manual from the site operator.
- 3.3 Established that the monitoring and sampling facilities are in general adequate and that the programmes of sampling are satisfactory.
- 3.4 Established that quality assurance and control is implemented through a compilation of written procedures and working instructions.

However,

- 3.5 With respect to point 3.3, the verification team noted that the sampling procedure for rainwater, at the NPP meteorological station (ref. TR13), does not fully ensure representativeness of the sample taken: the positioning of the collection canister is such that evaporation of the sample is not adequately controlled.

It is recommended that precipitation collectors are positioned or designed in such a manner as to minimise evaporation of the samples taken and thus increase their representativeness.

4. Main Findings with respect to the LMA analytical laboratory for environmental samples

The verification activities performed at the analytical laboratory for environmental samples (LMA Laboratories), contractor to the Trillo NPP:

- 4.1 Established that, for routine matters, the laboratory is well equipped and staffed with adequately trained personnel.
- 4.2 Established that quality assurance and control is implemented through a compilation of written procedures and working instructions.

However,

- 4.3 With respect to point 4.1, the verification team noted that would technical problems arise with the gamma spectrometry devices, the necessary competence is not available

at the lab. Optimal use of the systems and appropriate quality assurance are therefore not ensured.

It is recommended, in order to put in place a robust quality assurance and control system for the gamma spectrometry devices (and their analytical result), that the LMA Effluent Laboratory ensures the availability of the necessary competence.

- 4.4 With respect to point 4.2, the verification team noted that, despite written procedures and working instructions being present at the laboratory, the control over data handling and management is unsatisfactory and may easily lead to unnoticed clerical errors in measurement results and their reporting.

It is recommended that CSN submit the quality assurance and control procedures of the LMA Environmental Laboratory to an audit and require remedial action wherever deemed necessary.

- 4.5 With respect to point 4.2, the verification team noted that the laboratory does not participate in any intercomparison exercises. Participating in such exercises is an integral part of overall quality assurance and control and is generally considered as being good practice.

It is recommended that the LMA Environmental Laboratory participate in intercomparison exercises and interlaboratory proficiency tests.

5. Main Findings with respect to the environmental monitoring programme as performed by the regulator (CSN/CIEMAT)

The verification activities performed at the CSN headquarters and the CIEMAT laboratory:

- 5.1 Established that the environmental monitoring programme as decided by the regulator and implemented by various (contracted) actors is globally satisfactory.
- 5.2 Established that the CIEMAT laboratory is well equipped and satisfactorily staffed with adequately trained personnel.
- 5.3 Established that at CIEMAT quality assurance and control is implemented through a compilation of written procedures and working instructions.

6. Conclusions

All verification activities that had been planned were completed successfully. In this regard, the information supplied in advance of the visit, as well as the additional documentation received during and after the verification activities, was useful.

The information provided and the verification findings led to the following conclusions:

- (1) The verification activities that were performed demonstrated that the facilities necessary to carry out continuous monitoring of levels of radioactivity in the air, water and soil around the site of Trillo NPP are adequate. The Commission could verify the operation and efficiency of these facilities.
- (2) A number of recommendations are formulated, mainly in relation to general quality assurance and control. These aim at improving some aspects of the environmental surveillance in and around the Trillo NPP site. They do not detract from the general conclusion that the Trillo NPP site is in conformity with the provisions laid down under Article 35 of the Euratom Treaty.
- (3) The Commission would appreciate being kept informed about the actions the Spanish competent authority may undertake in the framework of the recommendations made.

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

[signed]

V. Tanner
(Team Leader)