



EUROPEAN COMMISSION

DIRECTORATE-GENERAL ENERGY & TRANSPORT
Directorate H – Nuclear Energy
TREN.H.4 – Radiation Protection

Main Findings of the Commission's Article 35 verification in Italy

LATINA - NPP LAZIO ITALY

Date: 15 to 19 May 2006

Verification team: Mr C. Gitzinger (team leader)
Ms A. Godeanu-Metz
Mr E. Henrich

Reference of report: IT-06/4B

INTRODUCTION

Article 35 of the Euratom Treaty requires that each Member State shall establish the 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 the right of access to such facilities in order that it may verify their operation and efficiency.

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 levels of environmental radioactivity on the territory of the Member State.

For the purpose of such a review a verification team from the European Commission visited Latina Nuclear Power Plant from 15 to 19 May 2006. Particular emphasis was put on:

- Liquid and airborne discharges of radioactivity into the environment (and control thereof).
- 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.

The visit also included meetings with representatives of the national authority having competence in the field of radiation protection. A closing meeting was held, with all parties involved during the visit, on the premises of the Agency for Environmental Protection and Technical Services (hereafter APAT).

The present report gives an overview of the main findings of the verification team concerning relevant aspects of the radiological environmental surveillance on and around the site of the Latina nuclear power plant, as well as the regional radiological surveillance in the Lazio region and contains corresponding recommendations.

Recommendations are addressed to the Italian competent authority.

MAIN FINDINGS

The proposed verification programme could be completed within the time allocated. In this regard the verification team appreciates the advance information supplied, as well as the additional documentation received during and after the verification.

1 Main findings with respect to the Latina NPP

1.1. Radioactive discharges

SOGIN applies general QM procedures to all work performed at Latina NPP.

However,

1.1.1 With regard to point 1.1 above the verification team was informed that SOGIN plans to extend this QM approach to all decommissioning sites under its responsibility.

The verification team endorses the application of general QM procedures by SOGIN to all Italian NPPs.

1.1.2 Airborne discharges

The team visited the NPP's facilities for monitoring airborne discharges in the east stack. It was informed that air from the biological shield is transported by natural convection. The team was informed that in the context of decommissioning activities, due to the low levels of radioactivity involved, the NPP has an allowance of 60 days of gaseous discharges without control.

1.1.3 Liquid discharges

The team visited and verified the existence and functionality of the monitoring and sampling provisions as defined in the regulatory obligations.

1.1.4 New control room

The team verified that alarms from the online liquid discharge monitoring detector arrive in the control room.

However,

1.1.5 With regard to point 1.1.2 above the verification team

Suggests considering re-installation of isokinetic sampling for aerial discharge monitoring in case a modification of the system is foreseen.

2 Main findings with respect to Latina NPP environmental radioactivity monitoring

2.1. On site environmental monitoring programme

2.1.1 On site gamma dose rate monitor

The verification team noted that the device is mounted somewhat higher than the 'standard' height of 1 m. Transmission of data to the laboratory is continuous; data are recorded on paper as well.

2.1.2 Aerosol sampler

The verification team noted that the device is already of age and that flow rate estimates are based on old tests. The filter holder ring vibrated strongly.

2.1.3 TLDs

The team was informed about the TLD monitoring concept.

2.1.4 Precipitation

The verification team noted that the sample container was not marked.

2.1.5 Ground water

The verification team was informed about the provisions of ground water sampling.

2.1.6 Water sampling from the inlet and outlet sea-water channels

The verification team was informed that water sampling in the inlet channels is no longer mandatory, serving only to have a supplementary control of the water in both channels.

However,

2.1.7 With regard to point 2.1.1 above the verification team

suggests to lower the detector mounting to a height of 1 m above the roof surface.

2.1.8 With regard to point 2.1.2 above the verification team

suggests regular checking of the air flow rate to ensure that flow rate estimates are reasonably accurate. It also suggests fixing the vibration problem.

2.1.9 With regard to point 2.1.4 above the verification team

suggests marking sample containers with such information as date and time of sampling, sample type, sample location etc.

2.2. Off site environmental monitoring programme

2.2.1 Sea water and sediment sampling

The verification team visited the location of sea water sampling and noted its easy accessibility. Due to time constraints the location for sediment sampling could not be visited.

2.2.2 Mussels

The verification team was shown the location and the special device used for detaching mussels from the concrete pillars.

2.2.3 Milk

The verification team verified the milk sampling at a farm comprising 4 cows and some 50 sheep at Via Valmontorio. The animals are fed with hay and graze the local pasture.

2.3.4 Vegetables

The verification team visited the fruit and vegetable stand at Via S. Maria at Borgo Sabotino. The owner confirmed that his products are of local origin.

2.3.5 Fish

The verification team saw some of the fishermen at the site of the mussels sampling. However, at the time of the visit no fish had been caught that would have to be handed over to SOGIN.

The verification activities performed with regard to off-site environmental monitoring as put in place by SOGIN do not give rise to particular remarks.

2.3. Independent control by the regulator

2.3.1 The verification team was told that a full system of control by the regulatory body including monitoring of discharges and environmental media independently from the operator has not yet been setup.

However,

2.3.2 With regard to point 2.3.1 above the verification team

strongly recommends setting up an independent monitoring system for discharges and environmental media.

3 Main findings with respect to Latina NPP analytical laboratory

3.1 Sample reception

The team checked the sample register book and noticed that samples are correctly labelled. Registration data of the samples at the sample reception are transferred into a log book. They are not transferred electronically in a laboratory data base.

3.2 Sample measurement

The measurement results are added to the sample registration document. In most cases additional calculations are performed in order to derive the final activity value. The final calculations are made using Excel spreadsheets, where also all sample data are recorded.

3.3 Laboratory equipment

The team verified the adequacy of the analytical systems in place, including various aspects of quality assurance and control (working instructions, methodologies, calibration, maintenance, bookkeeping of results, reporting etc.).

3.4 Gamma spectrometry

The verification team noted that the laboratory is adequately equipped for fulfilling its regulatory obligations with respect to effluent and environmental samples' analysis. At the time of the visit a written procedure for energy checks was not available at the measurement place.

3.5 Alpha spectrometry and beta measurement

The verification team verified the existence and functioning of the alpha detectors.

3.6 Calibration sources

The verification team checked the availability of the sources' information sheets and certificates for 2005 and 2006.

3.7 Environmental TLD laboratory

The verification team witnessed the read-out of one TL dosimeter. The results are printed on paper, and manually transferred to a computer.

3.8 Quality assurance

The laboratory is not accredited; however, quality control is implemented through a compilation of comprehensive written working instructions and source documents. The team noted that all procedure manuals and data result sheets were available at all workstations but that the documentation is very complex and not easy to handle.

The laboratory participates in the national proficiency programme organised by APAT.

3.9 Archiving

Excel spreadsheet files are used for electronic storage of the results, in parallel to the archive on paper. Gamma spectra are archived on CD-ROM together with a paper copy of the analysis results. No written procedure for archiving was available.

3.10 Traceability

The team successfully followed the tracing of three historical samples (dating from December 2005).

3.11 Reporting

SOGIN provides APAT every six months with an intermediate report, whilst an annual report is submitted with the results of the airborne and liquid discharge control and of the environmental radioactivity monitoring.

However,

3.12 With regard to point 3.1 above the verification team

suggests transferring all registration data of the samples already at the sample reception in a log book and electronically in the laboratory data base.

3.13 With regard to point 3.4 above the verification team

advises setting up written procedures for energy checks and making them available at the workplace.

3.14 With regard to point 3.8 above the verification team

suggests splitting the procedures document for gamma spectrometry into several individual documents containing separately calibration, check and measuring information, thus allowing a better overview of the particular procedure.

3.15 With regard to point 3.9 above the verification team

suggests the development of a written procedure for archiving.

4 Main findings – Environmental radioactivity monitoring

4.1 Regional environmental monitoring

The verification team was informed that in some regions the agreed programme is only implemented in a very basic way. In particular, in Lazio, at present no regional monitoring programme is implemented and no samples are taken and analysed by ARPA Lazio.

Only APAT, through its laboratory and other laboratories of the RESORAD network, carries out and collects measurements on milk and sedimentable mineral organic detritus (SMOD) in the Lazio region.

However,

4.2 With regard to point 4.1 above, although on a technical level there is consent among the participants of the various national and regional agencies and a document has been drafted accordingly by APAT, in reality the monitoring situation is far from being satisfactory. Therefore, the verification team

puts strong emphasis on the need to implement a regional monitoring programme as foreseen in the documents drafted by APAT.

4.3 National environmental monitoring

4.3.1 Laboratory based system - RESORAD

The verification team visited the APAT premises at Castel Romano to discuss the co-ordination work by APAT and was shown the laboratories involved in this task.

The verification team acknowledges that due to the fact that the national system consists of collecting data from regional programmes, a severe limitation exists as to the availability of such data to APAT. The team was informed that an automated system is being set up giving the laboratories involved in the network the possibility to directly transfer their data to the national database 'DBRad' at APAT

4.3.2 National telemetric networks

4.3.2.1 REMRAD

The verification team visited the premises of APAT, i.e. the data centre and the Lazio automatic air monitoring station and was given a demonstration.

4.3.2.2 GAMMA

Four dose rate monitors are installed in Lazio (Cittareale, Poggio Moiano, Priverno and Vetralla).

However,

4.3.3 With regard to point 4.3.1 above the verification team

encourages the finalisation of the automatic data transmission system in particular with a view to speed up the data transmission process and to avoid manual input errors.

CONCLUSIONS

All verifications that had been planned by the verification team 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, 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 air, water and soil around the Latina nuclear power plant site, as installed by the operator, are adequate. The Commission could verify the operation and efficiency of these facilities.
- (2) The verification team strongly recommends the regulatory authority setting up a monitoring system for discharges and environmental media independent from the one run by the operator.
- (3) A number of topical recommendations are formulated. These recommendations aim at improving some aspects of discharge monitoring from, and environmental surveillance around the Latina site. The recommendations do not discredit the fact that environmental monitoring around the Latina site is in conformity with the provisions laid down under Article 35 of the Euratom Treaty.
- (4) Under the co-ordination of APAT a detailed monitoring programme for environmental radioactivity has been elaborated for the whole of Italy. As far as concerns the implementation of the regional/provincial programmes they are under the responsibility of the regional/provincial authorities. The verification noted that the facilities for monitoring environmental radioactivity on a regional scale on the territory of the Lazio region are present only in a very limited form. On the basis of this verification finding the Commission requests the Italian authorities to correct this situation as a matter of high priority, i.e. to implement the said monitoring programme. This observation is valid as well for other regions that may not have yet implemented this programme in its full extent.
- (5) The Commission services will closely follow up the progress made by the Italian authorities with respect to points (2) and (4).
- (6) Finally, the verification team acknowledges the excellent co-operation it received from all persons involved in the activities it performed.

[signed]

C. GITZINGER

Team Leader