

4 September 2017

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COMMISSION'S ARTICLE 35 VERIFICATION - Developments and actions taken

Dear Sir,

The attachment contains final responses of the competent authority of Finland (Finnish Radiation and Nuclear Safety Authority, STUK) to European Commission's main conclusions related to the Commission Article 35 verification in Finland in 2015. Loviisa NPP replies have been added to the supplementary summary.



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COMMISSION'S ARTICLE 35 VERIFICATION - Developments and actions taken

Article 35 of the Euratom Treaty verification team from DG ENER visited Finland from 29 September to 2 October 2015. Final report was submitted to the Finnish competent authority (STUK) in May 2017. The Commission Services asked the Finnish competent authority to inform them, within three months, of any developments and actions taken as a result of the verification. Below, four technical recommendations and suggestions given by the verification team are listed and answers for developments and actions taken are given.

STUK's laboratories (Section 9.2 of the TR)

The verification team recognizes that STUK's performance in monitoring environmental radioactivity requires a very high level of staff competence. This high level of competence is achieved through an appropriate programme of education, training and retraining. The verification team stresses the importance of maintaining the current level of competence and continuing the policy of adequate education, training and retraining.

Developments and actions taken:

- STUK has been maintaining the current level of staff competence in the area of environmental monitoring within the limits of state budget and continues to do so in the future. Moreover, improving know how at STUK has been identified as a key strategic objective in STUK's new strategy for the years 2018 – 2022.
- To address national competencies in the area of radiation protection and safety STUK has together with Finnish universities established a national radiation safety research programme (CORES).
- In the area of radiation protection, requirements for education and training will be given in new forthcoming (in year 2018) Radiation Act and Radiation Decree. The requirements are being transposed to the national legislation from the European Union Basic Safety Standard.
- In the area of use of nuclear energy and nuclear safety, achieving high level of competence is addressed by recruitment, and training programmes for staff in relevant organizations. Key instruments for developing competence in Finland in the area of nuclear safety are national safety research programme (SAFIR) and national training course on nuclear and waste safety (YJK Course).
- Link to reports:
<http://tem.fi/documents/1410877/3437250/Report+of+the+Committee+for+Nuclear+Energy+Competence+in+Finland+23052012.pdf>
<http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L:2014:013:FULL&from=EN>

Discharge monitoring at the Loviisa NPP (Section 9.6 of the TR)

A key aspect of monitoring routine discharges to the environment is that the samples taken for analysis are representative of the actual discharge. The verification team notes with satisfaction that the Loviisa NPP has entered into a re-examination of the representativeness of samples taken for monitoring liquid effluent discharges as well as of samples taken for monitoring gaseous effluent discharges. The verification team asks that the Commission Services be informed, within three months, about the outcome of these investigations and the actions taken to ensure the representativeness.

Developments and actions taken:

Loviisa NPP has identified challenges related to the representativeness of the discharge samples and started to investigate them. STUK will also focus its surveillance activities to the representativeness of the discharge samples.

Answer from Loviisa NPP:

An investigation was conducted to evaluate whether or not additional mixing of releases control tanks is needed before sampling. The investigation proved that the radioactivity distribution in the water is homogeneous if the release and related sampling is done within 16 hours after the tank is filled.

During the review Loviisa explained that modelling of the air flow in the ventilation stack is not mixed in an optimal way to ensure representative air sample in the two parallel sampling points. According to the modelling, the mixing could be improved significantly by installing an air deflector in the ventilation channel. The deflector was installed after outage 2016.

Loviisa NPP laboratory for analysis of discharge samples (Section 9.7 of the TR) *It is crucial that Loviisa NPP continues to ensure that routine analysis can be adequately guaranteed. The verification team notes that the laboratory of the Loviisa NPP has only limited possibility to exchange experience and compare performance with other similar laboratories. The verification team therefore recommends a review of the quality assurance programme, including exploring possibilities for experience exchanges with other laboratories, also with reference laboratories, and increased access to national and international intercomparison exercises, particularly for low-activity samples.*

Developments and actions taken:

It is known that annual intercomparison exercises including water from reactor are routinely analysed but low-activity samples need to be included in the program. STUK's surveillance activities will address the co-operation and exchange of information with other NPP and environmental laboratories.

Answer from Loviisa NPP:

Loviisa NPP has strong contacts with other NPP's radiochemistry laboratories and research organisations, including exchange of experience also in the matter of quality issues. Loviisa NPP personnel participates in several international meetings/conferences/workshops/trainings for example NKK(Mätrumsmöte), NKS(Nordic Nuclear Safety Research) gammaworkshop, NRC and

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RANC. NKK Mätrungsmöte is held 1/year having participants from Nordic NPP and research organisations as well as Swedish authorities. Therefore we conclude that Loviisa NPP has good possibility to exchange experience and compare performance with other similar laboratories.

Loviisa NPP participates in an annual intercomparison exercise within Finland, - 7 laboratories participate, including authority's laboratories (STUK). Laboratory also takes part in other international intercomparisons, when applicable, for example 2015 Loviisa took part of IAEA intercomparison, also with low activity water sample. Loviisa NPP also participates to intercomparisons arranged by NKS workshops and by NKK (Mätrungsmöte).

Loviisa NPP laboratory effluent radioactivity measurements, including QA program, has been reviewed by independent reviewer 2008.

On-site and off-site environmental monitoring at Loviisa NPP (Section 9.8 of the TR)

The verification team takes note of the fact that STUK conducts the programme of environmental radioactivity monitoring around the Loviisa NPP. The verification team supports the review of the environmental monitoring programme in the surroundings of the Loviisa NPP that STUK has started in close contact with Fortum Power & Heat Oy, the operator of the Loviisa Nuclear Power Plant.

Developments and actions taken:

- Environmental monitoring programme in the surroundings of the NPP has been reviewed and a new YVL guide C.7 has been published in December 2016 "Radiological monitoring of the environment of a nuclear facility". The requirements in the YVL guide are based on Nuclear Energy Act (990/1987), Nuclear Energy Decree (161/1988), Radiation Act (592/1991) and Radiation Decree (1512/1991).
- Link to the YVL guide C.7: <https://www.stuklex.fi/en/ohje/YVLC-7>