

IPPAS 2012: follow-up mission of the international nuclear security peer-review - STUK's final report

31 May 2013



© Radiation and Nuclear Safety Authority 2013

31 May 2013

IPPAS 2012: follow-up mission of the international nuclear security peer-review – STUK's final report

An international IPPAS peer-review (International Physical Protection Advisory Service) follow-up mission was carried out in Finland 16 - 27 April 2012 to assess the national nuclear security regime for the use of nuclear energy and radiation. The review was commissioned by the Ministry of Employment and the Economy (MEE). The original IPPAS review took place 22 June - 3 July 2009. The follow-up mission reviewed the status of implementation of the recommendations and suggestions from 2009. The scope of the follow-up included information security and the research reactor as new review topics. According to the follow-up review team the implementation of previous recommendations had progressed well. The follow-up resulted in a few new recommendations for further development of the national nuclear security regime. The review also identified good practices.

1 Follow-up: implementation of previous recommendations progressed well

The IPPAS peer-review (International Physical Protection Advisory Service) in 2009 considered Finland's existing nuclear security regime—the measures taken to protect nuclear facilities, nuclear materials and other radioactive materials from unlawful activities—to be comprehensive. The main recommendations of the review dealt with revision of the nuclear security legislation to ensure better protection of classified information, developing a formal Design Basis Threat (DBT), and increasing the resources in the Radiation and Nuclear Safety Authority (STUK) for nuclear security.

The follow-up mission team reported that the majority of the previous recommendations had been implemented or were in the process of being implemented: the nuclear energy act was revised to better protect classified information, the DBT was very close to being finalised, the nuclear security resources in STUK had been strengthened, and nearly all other recommendations would be addressed in connection of the entry-into-force of the revised or new regulatory guides (STUK YVL and ST guides).

2 IPPAS assessed legislation, regulatory control, and nuclear security systems at the facilities

IPPAS is an international peer-review programme organised by the International Atomic Energy Agency (IAEA). IPPAS missions compare a state's regulatory framework, regulatory requirements and control, cooperation between authorities, nuclear security systems at nuclear facilities, as well as security measures for radioactive materials in medicine, industry and research, with international treaties, IAEA's recommendations and guides, and with internationally recognised good practices. By the time of this report IPPAS missions had been implemented since 1996 all together 58 times in 37 countries. Finland is the second Western European state to receive a follow-up mission.

The IPPAS follow-up team in Finland consisted of seven experts coming from the UK, France, Sweden, Hungary, Germany, and USA, as well as one of the IAEA. The team assessed legislation, regulatory requirements and control, and cooperation between authorities, by reviewing the materials provided in advance by Finland and by discussing with the authorities during the mission. It assessed also nuclear security systems at the Olkiluoto and Loviisa nuclear power plants, the Otaniemi research reactor, and in a hospital where radioactive materials are used in diagnostics and in treatment of patients. In Olkiluoto the team was also presented

31 May 2013

with plans for the nuclear security system of the future final disposal facility for spent nuclear fuel.

The team prepared its report and presented it to STUK and MEE at the end of the mission on 27 April 2012. The IAEA delivered the final report to MEE on 26 July 2012.

3 **New recommendations on information security, good practices in cooperation**

The majority of the new recommendations in the follow-up were related to regulatory requirements and guidance on information security, which was not at all included in the scope of the original mission in 2009, and to the drafts of the revised and new regulatory guides (STUK YVL and ST guides) in preparation. After the original mission the IAEA had published a revised version of its *Recommendations on the Physical Protection of Nuclear Material and Nuclear Facilities, IAEA NSS 13, 2011*, which was now used in the follow-up as new reference.

The IPPAS team identified as good practices the regulatory control implemented and planned for the potential uranium ore concentrate production facility at Talvivaara and the detection and assessment concept developed by STUK in cooperation with other authorities, by which STUK can provide expert support to first responders in incidents related to radioactive materials. The team documented good practices also during its visits to the facilities. Its report further commends the close cooperation between the nuclear power plants and the law enforcement authorities.

The recommendations of the follow-up mission may be categorised as follows:

- legislation
- regulatory requirements and control
- cooperation between authorities
- state of nuclear security systems based on facility visits:
 - nuclear power plants Loviisa and Olkiluoto
 - plans for the final disposal facility
 - Otaniemi research reactor
 - hospital.

4 **The recommendations have been processed and will be implemented as part of the regulatory control of security of the nuclear facilities, nuclear materials and other radioactive materials**

STUK appointed a responsible department/unit and person for each recommendation and suggestion. The responsible persons prepared an IPPAS action plan: present status, actions taken and planned, and their time line. The action plan is classified, as is the report of the IPPAS team.

4.1 **Legislation: background checks also in the use of radioactive sources and in nuclear material transports**

Revision of the legislation on trustworthiness and background checks is in progress. During the revision process STUK has proposed to include the possibility for having background

31 May 2013

checks made also for people working with high-activity radioactive sources and for people participating in nuclear material transports.

4.2 Regulatory requirements and control: revised and new STUK YVL and ST guides will be issued

The IPPAS recommendations have been taken into account in the revision of the regulatory guide on the security at the nuclear facilities (YVL A.11), in the development of the regulatory guide on the information security at the nuclear facilities (YVL A.12), and in the development of the regulatory guide on the security of radioactive materials (ST 1.11). The recommendations will be taken into account in the development of the guide on the security of transport of radioactive materials, prepared in cooperation between STUK and the Ministry of Transport and Communications. The revised and new guides will be issued as soon as possible, guides YVL A.11 and ST 1.11 are ready, and guide YVL A.12 will be during the year 2013. The DBT for nuclear facilities, nuclear materials and other radioactive materials is ready, and in the meanwhile has entered into force 30 May 2013.

When revised and new YVL guides and DBT have been issued, they apply to new nuclear facilities as such. With regard to existing facilities and facilities under construction, STUK requests them to perform an assessment of how they comply with the up-to-date requirements and of any required changes, and to present an action plan. STUK will review the assessment and the plan and make a decision on the application of the up-to-date requirements to each facility. This is also in accordance with the principle of continuous improvement of the nuclear security systems as well as reasonably achievable.

STUK develops the regulatory control of nuclear security and its coordination through cooperation between STUK's different departments and units. The cooperation involves application of requirements and performing the inspections in practice.

4.3 Cooperation between the authorities: improvement of the national coordination

When participating in the national emergency preparedness planning and in the revisions of the security strategies of the society, STUK endeavours to enhance the coordination of the emergency preparedness planning related to nuclear power plants as well as the coordination of the national detection architecture and response planning related to radioactive materials.

4.4 State of nuclear security systems based on facility visits: STUK oversees the implementation of IPPAS recommendations and new regulatory requirements

The nuclear facilities delivered to STUK their responses to the recommendations of the IPPAS follow-up at the end of the year 2012. The responses included the actions taken and plans made in order to address the recommendations. STUK reviewed the presented actions and plans. STUK will assess the actions and oversee the implementation of the plans as part of its regulatory control activities, including on-site inspections. After entry-into-force of the revised and new regulatory guides (YVL A.11 and A.12) and the DBT, the effectiveness as a whole of the nuclear security systems of the facilities will be assessed in light of the up-to-date requirements. The nuclear facilities have been well informed of the developing requirements and they have already taken them into account in ongoing projects and in planning new projects.

31 May 2013

After entry-into-force of the new regulatory guide on the security of radioactive materials (ST 1.11), STUK will determine the necessary actions resulting from the recommendations given by the IPPAS team based on its visit to the hospital. The recommendations will be taken into account comprehensively: STUK oversees the implementation of the new ST guide in all use of radiation in accordance with its inspection programme and in accordance with risk-informed, graded approach.