

Nuclear Reactor Regulation
Karin Rantamäki

November 8, 2017

Reactor Safety Committee Meeting 1/2017

Date September 26, 2017, 9:30-16:00

Place STUK, Laippatie 4, Meeting room Röntgen 4386

Participants	Lasse Reiman	Chair
	Lennart Carlsson	Member
	Philippe Jamet	Member
	Gabor Petofi	Member
	Ralph Schulz	Member
	Karin Rantamäki	Secretary
	Petteri Tiippa	
	Kirsi Alm-Lytz	
	Tomi Routamo	Items 4-
	Tapani Virolainen	Items 4-
	Janne Nevalainen	Items 1-4
	Simon Burck	Items 1-4
	Pia Oedewald	Items 5-
Absent:	Richard Donderer	Member
	Keijo Valtonen	Member

1 Opening and adoption of agenda

Lasse Reiman opened the meeting at 9:40 and welcomed everyone.

The agenda was approved and can be found in Appendix 1.

2 Approval of the minutes of the previous RSC meeting (2/2016)

The minutes of the previous meeting were approved.

3 Current status of Finnish nuclear field

Petteri Tiippa gave a short briefing on current activities in the nuclear field in Finland. Issues covered were legislation renewal, current status of new and operating power plants and the research reactor.

The nuclear energy act and lower level legislation and regulations are updated. The nuclear energy act is in the parliamentary process. The Nuclear Energy Decree was just sent to public hearing. Small changes are also made to STUKs regulations. The YVL-guides are also under review.

There are three licencing cases going on: the Olkiluoto 1 & 2 licence renewal application for 20 years operation was submitted in January 2017 and the Olkiluoto 3 operating licence application was submitted in April last year. The safety evaluation of the Olkiluoto 3 is expected to be ready during this year and the one for Olkiluoto 1&2 is expected

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early 2018. Fennovoima's construction license application for Hanhikivi-1 NPP was submitted in June 2015.

The work on FH1 (Fennovoima's Hanhikivi 1) is divided into three branches: site evaluation, organisational inspection and review of technical design. The review of the technical design has not progressed due to delays in submitting documents. The aim is to finish the safety evaluation by mid 2019. The review takes about 18 months from the time the documents have been submitted.

The research reactor FiR1 has applied for decommissioning licence (a change in the operating licence). Posiva is constructing the final disposal facility for spent fuel. In addition the mining company Terrafame is planning to submit a licence application to extract uranium at Talvivaara.

Normal oversight includes the operating plants. All the four operating units are implementing several improvements and modification works. The time is very interesting with a lot of work.

4 Feedback on last meetings topic, Seismic design of NPPs and sites

Simon Burck gave a follow-up presentation on the seismic design basis of Fennovoima's Hanhikivi plant. He briefly discussed the regulatory requirements and the previously discussed seismic ground response spectrum. He explained some problems and errors found related to the calculation of the spectrum. STUK has gained understanding on the spectrum presented by Fennovoima, especially an explanation was found for the two-peaked shape of the spectrum. He also explained the calculation procedure. Due to the errors found in the calculation, a recalculation of the spectrum is ongoing.

He finished the presentation by discussing STUKs requirements issued to Fennovoima concerning the seismic design basis and with an overview of the time schedule to finalize the handling of the seismic design basis. Fennovoima has proposed to use the seismic design spectrum presented in YVL-guide B.7 as an example of a seismic design basis. The justification of the proposed YVL B.7 based design spectrum is included in the ongoing recalculation work.

The committee suggested to compare the spectra with other sites where Rosatom is building plants.

The presentation slides can be found in Appendix 2.

5 Oversight of organizational issues

Oversight of organizational issues was chosen as the main subject for the meeting because it is a topical issue for which STUK wished to get advice from a broader forum. Tomi Routamo gave a presentation on the issue of organisational problems and related weakening of working atmosphere and explained the background. The status in the organization had evolved for a longer period and deteriorated after major reorganisation including laid-offs of personnel. At the time the licensee did not consider decreasing trends in questionnaires and surveys on safety culture and working climate as a safety issue, but rather as separate issues.

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Routamo explained that STUK has considered the issue important and presented some of the inspection activities and actions STUK has taken during the past years. STUK has presented remarks in several inspections. However, STUK's earlier actions had not been powerful enough.

During the licence renewal process STUK asked the utility to take prompt actions on the improvement of the safety culture. STUK felt that the licensee was content with the situation as there has not been any direct safety impacts, nothing has happened yet. The management team in the utility seemed not to share a coherent view of the situation. STUK's concern is that even though real safety issues have not occurred yet, ignoring signs that may affect the safety culture could eventually lead to worsening of safety. Thus, corrective actions are needed to prevent such a situation to arise.

After the presentation the committee discussed the situation. The organisation of the licensee was explained as well as its bodies performing safety oversight inside company. The use of indicators and measures related to the organisational issues were discussed e.g. collection and use of indicators by the licensee and regulator, signs of deteriorating safety culture in number of events and in their root causes.

The presentation slides can be found in Appendix 3.

Philippe Jamet gave a presentation on a French example. Deterioration of the quality of operation, as well as poor management and internal communication were observed on the plant. This occurred in the context of a general reorganization of operation by the owner. However, others plants implemented the new organization without difficulty, which suggest that other factors were significant in the NPP concerned. The indications found (e.g. number of events) were more clear than in Finland.

The president of EDF has an independent body that may perform independent inspections on the NPPs. The observation of the internal inspection was in line with observations of ASN and OSART-mission. He explained the actions ASN took on the licensee. The actions contained among others a visit by the President of ASN with direct communication to the staff of the plant, public communication, as well as reinforced surveillance, followed by several positions of ASN.

Reinforced surveillance requires fine tuning in communications with the media and the public. There are many details and aspects that need to be taken into account in the communication. ASN had never doubts about whether the situation was improved.

The presentation slides can be found in Appendix 4.

Gabor Petofi presented the Hungarian situation. The main case he discussed was from 2003 as this case was closer to the Finnish situation. He presented results from IAEA missions in relation to safety management. When looking back, HAEA has observed indications of safety culture problems already during five preceding years. Some of the indications are similar to the case in Finland. Dr. Petofi also presented necessary actions on organisation and safety culture seen by HAEA.

The presentation slides can be found in Appendix 5.

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Ralph Schulz presented the Swiss situation. No similar cases have been observed which he considered surprising. Switzerland faces similar boundary conditions as other European countries e.g. related to economical pressure. He presented some organisational safety indicators from the Swiss NPPs. The Swiss authority collects indicators systematically and sometimes they trigger actions on the NPP, however, not very often. He discussed the Swiss oversight on human and organisational factors on a general level including the data sources used by the authority.

The presentation slides can be found in Appendix 6.

Lennart Carlsson presented the Swedish situation. The change into a matrix organisation caused some disturbance in Sweden also. He used a case in a Swedish NPP as a positive example and presented results from the case. He described some good practices used by the licensee.

The presentation slides can be found in Appendix 7.

Summary of the discussion on the organisational issues

It is difficult to observe weak symptoms on organisational and safety culture issues. Improvements on safety culture and working climate take time. However, a roadmap should be available.

Actions may be divided into two categories.

1. Actions directly related to this case
 - a. good to link the actions to the renewal of the operating license, it also relates to the operating license application
 - b. it is important to emphasise that the utility should present the proposal for improvements and verify that the performance is improving. STUK should also require reporting of the improvements.
 - c. The availability of results of WANO-missions should be considered for comparison (WANO was said to be willing to share the information with the authority if the utility agrees)
2. General actions for consideration
 - a. need for more systematic corporate level oversight on safety
 - b. continue inspections, meetings with the management and corporate level, etc.
 - c. consider meetings/discussions with the utility staff rather than conducting additional questionnaires

Pia Oedewald explained the actions the utility has recently taken on organisational issues. The situation seems to go into a better direction. She also discussed the actions STUK has taken.

The committee supported STUK's list of actions with some remarks. Concerns were raised on the web-survey as the committee regards this as the responsibility of the utility. Direct interviews were considered better. STUK was encouraged to follow that actions in long-term plans are proceeding. It was also suggested to consider e.g. having

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more resident inspectors including HF-experts on the site for a while. More frequent and/or longer inspections performed by larger teams including HR specialists might also be considered. It would be important to try to re-establish a group-thinking of the whole plant personnel – both the management and the staff are responsible for the good safety culture – they are all in the same boat. The committee also emphasised that it has to be kept in mind that it is the utility who has the responsibility and this has to be made clear. Also, they have to be given the room to do so. Sensitivities with regards to publicity and media attention were noted.

Petteri Tiippa thanked the participants for their contribution. STUK got a lot of good insights to think about.

6 Any other business

No other business.

7 Next meeting, all

The next meeting will be March 20, 2017. The subject of the meeting will be discussed internally at STUK and the committee will then be informed. Presentations of the RSC members can be sent to the secretary a few days before the meeting. She will distribute them to the whole group after the meeting

8 Closing of the meeting

The meeting was closed at 16:00.

Distribution RSC members
PT, KiA, ToR, TV, JN, SBu, PoE, NSAC (YTN)

Appendices

1. RSC meeting 1/2017 agenda
2. Follow-up on the Design Basis Earthquake for Fennovoima Hanhikivi 1 NPP, presentation slides by STUK
3. Oversight of topical organizational issues, presentation slides by STUK
4. Reinforced Surveillance of NPP by ASN (2000 – 2001), presentation slides by Philippe Jamet
5. Organizational issues in NPPs in Hungary, presentation slides by Gabor Petofi
6. STUK RSC - STUK's questions concerning organizational issues, presentation slides by Ralph Schulz
7. Organizational Modifications, presentation slides by Lennart Carlsson