

Fifth Review Meeting
Joint Convention on the Safety of Spent Fuel
Management and on the Safety of Radioactive
Waste Management
11–22 May 2014

Country Group 3

Rapporteur's Written Report

Erica Brewitz, SSM, Sweden



Country Group 3

CONTRACTING PARTIES

Australia, Bosnia & Herzegovina, Ghana,
Japan, Kyrgyzstan, Norway, Romania,
Saudi Arabia, Spain, Switzerland

OFFICERS TO THE COUNTRY GROUP

Chair:	Mr Don Howard	Canada
Vice Chair:	Mr Günther Hillebrand	Austria
Rapporteur:	Ms Erica Brewitz	Sweden
Coordinator:	Mr Nikolay Grozev	Bulgaria

Switzerland – General discussions

- CPs from Country Group 3 present: Australia, Bosnia & Herzegovina, Ghana, Japan, Norway, Romania, Saudi Arabia, Spain and Switzerland.
- Other CPs present: Argentina, Austria, Belgium, Canada, China, France, Germany, Hungary, Italy, Korea, Rep. of, Poland and USA.
- ENSI's project Oversight Culture was initiated 2012 to prompt a process of self-reflection within ENSI on its own oversight culture. 15 measures have been identified and are today implemented in the daily work.

Switzerland – General discussions

- People on the local level do not have the right to put a veto on a decision made by the Federal government in the site selection process of deep geological repositories, but they have a right to challenge a decision at the national level. However, there seem to be a shared sense of national responsibility to take care of SF and RW.
- Neighbouring countries can take part in the process in the same way as the Swiss population, and comment on all the documents published for a public hearing. All statements made during a hearing will be evaluated.

Switzerland – General discussions

- Switzerland's policy on accepting import of DSS that were manufactured in the country, is that those DSS are accepted, if the manufacturer still is in business. However, should DSS be sent back today (all manufacturers are gone), Switzerland would still accept them. A situation with sent back DSS has not occurred yet.
- The NPP operators are responsible for the conditioning, and storage, of RW. Before conditioning the operators have to prove that they fulfil the WACs set by Nagra. ENSI reviews the documentation and issues a permit before conditioning can begin.

Switzerland – General discussions

- The issue of ageing effects on dual purpose casks is of increasing interest to not only the NPP owners but also ENSI. No specific research is performed today in Switzerland, but ongoing work is followed and ENSI has started internal project to clarify issues with respect to ageing of DPCs, and to identify fields for future actions.

Switzerland – Progress on issues identified in the 4th review meeting

Identified Challenges

- Approval of the Waste Management Programme:
 - Submitted in 2008 by Nagra, reviewed by ENSI and NSC in 2011
 - Approved by the Federal Council in 2013.
- Continue site selection process (stage 2) for SF/HLW and LILW repositories:
 - Stage 2, Selection of at least two siting regions per repository, is ongoing (2012–2017).

Switzerland – Progress on issues identified in the 4th review meeting

Identified Challenges

- Implementation of recommendations and suggestions listed at the IRRS mission 2011:
 - An IRRS Follow-Up Mission was performed in April 2015, in which all earlier recommendations and suggestions addressed to ENSI could be closed.
 - A few issues are still open, among them the new recommendation that the government should strengthen ENSI's independent regulatory authority empowered to issue legally binding technical safety requirements and licence conditions in its oversight domain.
- Development of the Regulatory Guideline ENSI-G17 "Decommissioning of nuclear installations":
 - The guideline entered into force in April 2014.

Switzerland – Progress on issues identified in the 4th review meeting

Identified Planned measures to improve safety

- Continue updating regulatory guidelines to reflect IAEA and WENRA guidelines:
 - The new Regulatory Guideline ENSI-G17 "Decommissioning of nuclear installations" complies with WENRA's Safety Reference Levels in the field of decommissioning and corresponding IAEA Safety Standards
 - Updated and published 9 further new or revised guidelines.
- Enhance and maintain regulatory competence for the decommissioning projects:
 - ENSI has established a new decommissioning section. The ENSI-G17 guideline for decommissioning is in place. ENSI is performing resource planning and training activities and has an intensified international cooperation.

Switzerland – Progress on issues identified in the 4th review meeting

Identified Planned measures to improve safety

- Ensure maintenance of technical competence in light of nuclear phase-out:
 - Developed a human capital management program at the regulatory body, including competence portfolios.
 - Requested the Muhleberg NPP to maintain technical competence in light of the final shut-down 2019. They have developed a program.
 - The regulatory research and international cooperation strategies that have been decided upon helps the regulator to maintain competence.

Switzerland – Overview

Type of liability	Long-term management policy	Funding of liabilities	Current practice/ Facilities	Planned facilities
Spent fuel	Direct disposal Ban on reprocessing as part of the Energy Strategy 2050 (currently in parliamentary discussion)	Always in the responsibility of the NPP-owners After final shutdown: Waste Management Fund	10-year moratorium for reprocessing Interim Storage	Deep geological repository for SF and HLW
Nuclear fuel cycle wastes	Deep geological disposal	Always in the responsibility of the NPP-owners After final shutdown: Waste Management Fund	Interim Storage	Deep geological repository for L/ILW or for SF and HLW
Application wastes	Deep geological disposal	Federal State collects and manages waste	Annual collection Conditioning and interim storage at PSI	New interim storage at PSI Deep geological repository for L/ILW
NORM and non-fuel cycle mining & milling wastes	Conventional disposal or deep geological disposal	Federal State collects and manages waste	Case by case basis	-
Decommissioning	No longer used facilities must be decommissioned	Always in the responsibility of the NPP-owners After final shutdown: Decommissioning Fund (for NPPs)	Lucens experimental NPP and Geneva RR entirely decommissioned Shut down research reactors are being decommissioned	Pilot incinerator plant at PSI "Proteus" research reactor at PSI Research reactor in Basel
Disused sealed sources	Recycling if possible, otherwise management as radioactive waste	Polluter pays principle Orphan sources: Federal State covers cost	Annual collection Export for recycling or conditioned and stored at PSI	Deep geological repository for L/ILW

Switzerland – Challenges

- Continue site selection process for SF/HLW and LILW repositories
 - Review of Stage 2.
 - Review of applications for geological field investigations (Stage 3).
- Review of the updated Radioactive Waste Programme 2016, together with the Plan for Research, development and demonstration and Cost estimates for decommissioning and disposal.
- Review of Final Decommissioning Plan for Mühleberg NPP.
- Implementation of the recommendations to the Government from the follow-up IRRS mission 2015.

Switzerland – Good practices

- Development of a broad systematic and participative model for regional stakeholder engagement in the siting process for deep geological repositories with the attendance of neighbouring countries as full participants. However, neighbouring countries do not participate in a potential referendum.
- ENSI's project for Oversight Culture with the regulatory body today allows for an in-depth review of the regulatory organization that can lead to improving the safety at the licensee.

Switzerland – Suggestions

- No suggestions were identified during the meeting.

Switzerland – Progress related to lessons learnt from the Fukushima Daiichi accident

Requests from ENSI:

- The NPP operators to implement an immediate measure: Backfit of external hook-up points for water injection in the spent fuel pool (2012/2013).
- Design reevaluations of the spent fuel pools cooling systems and protection against external events were performed in 2012.
- Backfit of additional temperature and level measurements for the spent fuel pools were made in 2014.
- Backfit of additional SFP-cooling systems designed against DBE and DBF are planned (KKB, 2017, KKM, 2020)

Switzerland – Progress related to lessons learnt from the Fukushima Daiichi accident

- The Action Plan Fukushima describes ENSI's oversight activities related to Fukushima. The goal is to have all identified actions implemented by the end by 2015.

Switzerland – Planned measures to improve safety (Section K)

- Enhance and maintain a regulatory competence for the decommissioning projects.
- Ensure maintenance of technical competence in light of nuclear phase-out.

Switzerland – Conclusions

- Good progress of the site selection process for geological repositories, with wide public participation.
- With the decision to shut down Mühleberg NPP in 2019, Switzerland has its first decommissioning of a commercial power reactor.
- The adoption of the new European Basic Safety Standards Directive (2013/59/Euratom) into national law is being made by Revision of the Radiological Protection Ordinance (RPO). Results in new nuclide specific clearance levels.

Switzerland – Conclusions

- The Energy Strategy 2050 is being developed. It states that nuclear phase-out does not mean a ban on technology, it is still possible to construct nuclear facilities other than NPPs, and there are no fixed time limits for operation of the existing NPPs. But it does ban reprocessing of spent fuel.

Positive highlight

- Switzerland has a comprehensive database for RW, MIRAM, which helps quantify and comprehensively characterise all radioactive waste that has been already produced and will arise in the future. MIRAM also provides the basis for long-term safety analyses and the planning of the deep geological repositories and interim storage capacities.