1/7172/2021
JANUARY 2021

Finnish Support Programme to the IAEA Safeguards

Annual Report 2020

stuk
SÄTEILYTURVAKESKUS
STRÅLSÄKERHETSCENTRALEN
RADIATION AND NUCLEAR SAFETY AUTHORITY

Contents

Finnish Support Programme to the IAEA Safeguards 1
1 History and introduction 4
2 Administration and Finance 4
3 Completed tasks in 2020 5
3.1 Support for the 2018 Safeguards Symposium 5
3.2 2020 Emerging Technologies Workshop (ETW) 5
3.3 Consolidation of SAGOR and ASTOR Tasks Recommendations 5
4 Ongoing activities and tasks 6
4.1 Training 7
4.1.1 Spent Fuel Verification Training Course 7
4.1.2 Support for Newcomers States Pursuing a Nuclear Power Programme 7
4.1.3 IAEA Safeguards Traineeship Programme 8
4.1.4 Specialized Training and Visits to Nuclear Facilities (stand-by) 8
4.1.5 Creation of E-learning Modules 8
4.2 R&D of safeguards concepts and verification methods 9
4.2.1 Update of the Physical Model 9
4.2.2 Safeguards by Design (SbD) for Small Modular Reactors 10
4.2.3 Umbrella Task - Technical Assistance on Methodology and Guidance for Implementation of Safeguards at the State-level 10
4.2.4 MSSP Umbrella Task: Support for Instrumentation Technology 10
4.2.5 Field-testing of an Unmanned Surface Vehicle and Next Generation Cerenkov Viewing Device 10
4.2.6 Support for testing of PGET new functionalities in attended, remote and unattended modes 11
4.2.7 Digital Declarations Site Maps (DDSM) 12
4.2.8 Development of safeguards guideline for facilities under decommissioning and post-accident facilities 12
4.2.9 Feasibility study: Use of high intensity neutron generator-based system for fissile particle detection and identification 13
4.2.10 Passive Tag Technology 14
4.3 Support programme coordination and implementation 14
4.3.1 Meetings 14
4.3.2 Pending task proposals at the end of 2020 14

SUMMARY

The Radiation and Nuclear Safety Authority (STUK) coordinates and implements the Finnish Support Programme to the IAEA safeguards (FINSP). FINSP is financed by the Ministry for Foreign Affairs of Finland (MFA). MFA and STUK have made an agreement for implementation of FINSP for the term of three years 2019 – 2021. For 2020 MFA reserved funding of 149 000€. Actual expenditures of the Programme in 2020 was 85 669,49 €.

The results of the FINSP are presented in this report. Main goals of the FINSP are training of IAEA inspectors and development of IAEA safeguards methods and concepts. FINSP had an annual review meeting with the IAEA on 18th October as a videoconference.

The Some goals of the programme were difficult to achieve because of travel restrictions due to the COVID-19 pandemic. Altogether three training events in Finland were cancelled. Two NDA training courses were postponed to the year 2021. FINSP hopes to fulfil the emerged gap of IAEA inspectors training needs in the coming years. A workshop for so called newcomer states was also postponed. To compensate this, FINSP was able to arrange ad-hoc instruction sessions to IAEA trainees and participate to the development of the IAEA guide for newcomers.

At the end of the year 2020 FINSP has 16 active tasks and one stand-by task. Of the active tasks three are practically completed and waiting for an administrative closing decision and/or final report from the IAEA. Two new task proposals were accepted in 2019 and one is pending. Two tasks were completed during 2020.

1 History and introduction

The Member States' Support Programmes (MSSPs) mechanism is specifically developed to support IAEA safeguards R&D needs. IAEA safeguards has no dedicated budget for research and development activities and the IAEA has neither specialized training facilities to train new Safeguards inspectors or to field test emerging technical development. Therefore, the IAEA is making use of voluntary support from the Member States. To meet this need, the Support Programme Mechanism was created. The first Member States Support Programme (MSSP) was established in 1978 by the United States of America. In Finland, different kinds of NDA verification methods were developed in the beginning of 1980's and measurement campaigns were organised in Loviisa and Olkiluoto nuclear power plants in cooperation with the IAEA. Officially FINSP was established on 31 May 1988.

The objective of FINSP is to provide the IAEA support in well managed tasks related to development of safeguards verification methods and safeguards concepts, assisting safeguards implementation in the Member States and provide opportunities and support to the IAEA inspector training.

At the end of 2020, altogether 20 Member States have a MSSP: Argentina, Australia, Belgium, Brazil, Canada, China, Czech Republic, Spain, Finland, France, Germany, Hungary, Japan, Netherlands, Republic of Korea, South Africa, Russia, Sweden, United Kingdom and United States. In addition, European Commission has one.

2 Administration and Finance

FINSP is financed by Ministry for Foreign Affairs of Finland (MFA) and it is implemented and coordinated by STUK. In 2020 STUK has procured outside consultant services to assist in the implementation of the programme.

Cooperation with other MSSPs takes place in a majority of the tasks.

In STUK, FINSP is managed by Director Karim Peltonen and coordinated by Tapani Honkamaa.

In 2020, MFA budgeted altogether 149 000 € for FINSP implementation. Actual expenditures were 85 669,49 €. The expenditures were divided in three main categories: Training, development of methods and concepts and overall implementation. Budgeted and realized costs are shown in Table 1.

	Budgeted	Realized	Difference
Training 5550P-003601	60 000,00	24 823,50	-35 176,50
Development of concepts and methods 5550P-003602	55 000,00	31 532,16	-23 467,84
Implementation costs 5550P-003603	34 000,00	29 313,83	-4 686,17
Total	**149 000,00**	**85 669,49**	**-63 330,51**

Table 1. Budgeted and realized costs of FINSP in €.

3 Completed tasks in 2020

In 2020 three tasks were completed:

3.1 Support for the 2018 Safeguards Symposium

In November 2018, the IAEA arranged a safeguards symposium. The symposium was implemented successfully with support from 17 MSSPs. The Symposium Report was released in July 2019 as Safeguards Technical Report (STR-392)[1]. and the task was officially completed in 2020.

Before the symposium FINSP contributed to the planning of the event and took part in abstract evaluation. FINSP also actively distributed information about the event within Finland and the Finnish delegation was larger than ever before. During the event, multiple Finnish delegates served as session chairs and presenters.

3.2 2020 Emerging Technologies Workshop (ETW)

The Emerging Technologies Workshop took place from 27th to 29th of January 2020 FINSP had a substantial role in workshop planning and contributions. FINSP sponsored a keynote speaker and one session moderator to the workshop. In addition, STUK contributed to the ETW with a presentation on pilot Digital Ledger Technology (DLT)-based (Blockchain) system for Safeguards project implemented in Finland.

3.3 Consolidation of SAGOR and ASTOR Tasks Recommendations

The purpose of the task was to take care of knowledge management at the IAEA and discuss in one document the most relevant questions emerged during the history of 30 years of the SAGOR (Safeguards for Geological Repositories) and ASTOR (Application of Safeguards to Repositories) tasks. The document was written in form of questions and answers. The purpose of the task was not to create any new information, just to consolidate existing information. The final report of the task is not a recommendation and does not express any official position of the IAEA or participating MSSP's.

At the end of April 2019, the IAEA organized a workshop where the main part of the work was accomplished. The workshop was attended by experts from Finland, Sweden, US, Belgium, Germany and the EC. The Questions and Answers document was finalized later in the year 2019.

Finnish experts expressed concerns relating to final disposal has been that the application of safeguards will become too resource intensive for both inspectorates and operators. FINSP recommends utilizing Additional Protocol measures fully and making use of available national findings as much as possible and minimizing IAEA inspection efforts, as stipulated by Comprehensive Safeguards Agreements.

[1] https://www.iaea.org/sites/default/files/19/07/cn-267-symposium-report.pdf

4 Ongoing activities and tasks

At the end of December 2020 FINSP has 14 active tasks and one stand by task. The tasks are listed in Table 2.

ID	Title	MSSP POC	Official Start Date
FIN B 1435	Spent Fuel Verification Training Course	TUPASELA,Topi	02/06/2003
FIN A 1628	Support for Instrumentation Technology Foresight	HONKAMAA,Tapani	25/07/2006
FIN B 1939	Support for Newcomer States Pursuing a Nuclear Power Programme	MARTIKKA,Elina	11/06/2012
FIN B 1949	Specialized Training and Visits to Nuclear Facilities	HONKAMAA,Tapani	23/08/2012
FIN D 1996	Digital Declaration Site Maps (DDSM)	HONKAMAA,Tapani	09/04/2014
FIN C 2290	Update of the Physical Model	HONKAMAA,Tapani	13/07/2017
FIN D 2330	Creation of e-learning modules, supporting the preparation of State declared information	HONKAMAA,Tapani	27/11/2017
FIN A 2390	Field-testing of an Unmanned Surface Vehicle and neXt generation Cerenkov Viewing Device	HONKAMAA,Tapani	26/10/2018
FIN C 2399	Umbrella Task - Technical Assistance on Methodology and Guidance for Implementation of Safeguards at the State-level	MARTIKKA,Elina	22/10/2018
JNT A 2414 FIN	Support for testing of PGET new functionalities in attended, remote and unattended modes	HONKAMAA,Tapani	28/12/2018
JNT C 2415 FIN	Development of Safeguards Guideline for Facilities Under Decommissioning and Post-Accident Facilities	NIITTYMAKI,Henri	28/12/2018
FIN A 2416	Feasibility study: Use of high intensity neutron generator based system for fissile particle detection and identification	HONKAMAA,Tapani	28/12/2018
FIN C 2507	Safeguards by Design for Small Modular Reactors	HONKAMAA,Tapani	18/12/2019
FIN E 2528	Passive Tag Technology	HONKAMAA,Tapani	16/04/2020
FIN B 2566	IAEA Safeguards Traineeship Programme Support	HONKAMAA,Tapani	12/10/2020

Table 2 Active tasks of FINSP on 31/12/2020. FIN B 1949 is a stand-by task and activated on demand.

Five tasks (FIN B 1435, FIN B 1939, FIN B 1949, FIN D 2330, FIN B 2566) are related to training and others related to R&D of conceptual or technical development. Training tasks are explained in paragraph 4.1 and R&D tasks in paragraph 4.2.

4.1 Training

4.1.1 Spent Fuel Verification Training Course

Spent Fuel Verification Training is an elemental part of the training programme of IAEA inspectors. The IAEA training section has established an NDA course, which includes two in-field exercise parts: 1) verification training and 2) Cerenkov observation technologies. Verification training has been hosted by FINSP and Loviisa NPP in the years 2010, 2011, 2013, 2014, 2015, 2016, 2017 and two courses in 2018. The instructors are provided by the IAEA, but Loviisa and STUK provide access to the fuel pond and experts that follow the conduct of the course and declare necessary fuel information, provide their insights about the recommended ways to work safely and efficiently in an NPP environment and offer information about related activities in Finland.

The NDA methods used in the course are SFAT, IRAT and FDET[2]. The conduct of the course has found its path and is efficiently implemented.

In 2020 planned and already tentatively agreed training courses were cancelled due to complications related to the Covid-19 pandemic. Currently FINSP has agreed with the Loviisa NPP, that two courses will be held in Loviisa in late fall 2021. It is also agreed that that the newest method PGET (Passive Gamma Emission Tomograph, approved for the IAEA use in 2017) will be added to the curriculum.

4.1.2 Support for Newcomers States Pursuing a Nuclear Power Programme

IAEA safeguards is challenged by the fact that new member states are pursuing a Nuclear Power Programme and increasing IAEA safeguards workload, while it is not expected that the IAEA safeguards budget will follow accordingly. To mitigate this challenge, the IAEA provides training for the State System of Accounting and Control (SSAC) in these States (a.k.a. "Newcomer Countries"). By experience, a functional operator-regulator relationship combined with a strong regulatory authority mandate in a State will also make IAEA safeguards implementation more effective and efficient.

The Finnish SSAC has a good reputation and STUK is a fully established 3S regulatory body. Therefore, the IAEA suggested that STUK can be an example on how cooperation between the operator, the regulator and the IAEA could be efficiently implemented. This could be best done by arranging specific training workshops in Finland. As a result, FINSP hosted the first interregional Safety, Security and Safeguards course in STUK and in

[2] For more information about these methods, please see the IAEA report "Safeguards Techniques and Equipment 2011 Edition" https://www-pub.iaea.org/MTCD/Publications/PDF/nvs1_web.pdf

Olkiluoto in 2014 and another in 2018. The next course was scheduled to be held in Finland in September 2020, however the course was postponed to 2021.

Practical coordination of the course is the responsibility of the IAEA Nuclear Infrastructure Development Section in the Department of Nuclear Energy. The IAEA Technical Cooperation Fund provides resources for this task. The course advocates balanced approaches of Safety, Security and Safeguards. In addition, Emergency Preparedness and Public Relations are discussed.

FINSP was invited to the videoconference "Virtual Consultancy Meeting on Development of the IAEA Publication on Enhancing National Safeguards Infrastructure to Support the Introduction of Nuclear Power from 10 to 13 November 2020". STUK provided a presentation in the meeting, commented the draft document made by the IAEA and provided text to the annex document describing the "Finnish Case". Experts from Belarus and Turkey also participated in the meeting.

4.1.3 IAEA Safeguards Traineeship Programme

The IAEA has an ongoing traineeship programme. Candidates are accepted from developing countries and they typically spend a few months working at the IAEA Vienna headquarters. The programme consists of training and practising at the IAEA, writing a study on a specific subject and multiple visits to nuclear sites. In 2020 IAEA received Trainees from Ecuador, Ghana, Eswatini, Togo, Kyrgyzstan and Nepal The programme was difficult to arrange due to evolving pandemic conditions, and the IAEA had to invent new and creative methods to provide meaningful training content to the trainees. Most of the planned site visits were cancelled. Eventually the lock down of the Austrian society in November 2020 prevented even normal working routines at the Vienna International Center. Under these circumstances the IAEA and FINSP arranged a videoconference where STUK safeguards experts provided insight in how nuclear material safeguards is arranged in Finland. STUK experts also offered to provide mentoring to the trainees, if they would like to ask some details later. The trainees returned to their home countries in late November 2020. Feedback was positive and this kind of support is expected to be continued in the following years.

4.1.4 Specialized Training and Visits to Nuclear Facilities (stand-by)

The task can be utilized for short IAEA staff visits to Finland and is activated when needed. No specific visits were arranged in 2020.

4.1.5 Creation of E-learning Modules

There were no activities in this task in 2020.

Finland is leading the way in the area of spent fuel disposal. Two high level delegations from the IAEA visited Finland and Repository of Spent Nuclear Fuel at the end of 2020, DG Grossi in November and DDG Aparo in December. In the Picture DDG Aparo and DIR-SGOC Barroso in Onkalo site together with Posiva ltd hosts (credits Posiva ltd)

4.2 R&D of safeguards concepts and verification methods

A goal in the IAEA R&D plan is "To continually improve the Department's performance and productivity to effectively carry out the Agency's verification mission". This requires that the IAEA shall keep up with technology and innovating, with the help of MSSP's. Also, the IAEA is facing new demands and challenges. One specific issue important to Finland is safeguards for geological repositories, which is a challenge for the safeguards community.

4.2.1 Update of the Physical Model

The Physical Model was developed as a basic technical tool to aid the enhanced information analysis in the context of the strengthened safeguards. The model consists of 10 chapters describing the peaceful use of nuclear energy from mines to disposal. It should have use for preparatory work to aid enhanced information analysis in the evolving 21st century safeguards system. The Physical Model is expected to be a 'work-in-progress' document, subject to periodic review and update based on technical advances, experience accumulated through Physical Model application and new requirements related to the development of State-level safeguards approaches.

The update of the Physical Model is conducted through consultancy meetings and consultations with Member State and IAEA experts. FINSP has taken part in the update of the chapters, where Finland has specific expertise. These include spent fuel handling and waste management. From FINSP point of view, the task has been practically completed

since 2019, but the IAEA keeps it open for updating other chapters, where FINSP has no specific role.

4.2.2 Safeguards by Design (SbD) for Small Modular Reactors

The SMR task was offered to FINSP, because there is a lot of interest in SMR's in Finland. Active Finnish SMR developers are Lappeenranta University of Technology (LUT), Fortum power company and the Technical Research Centre of Finland (VTT). STUK is an active member of the SMR regulators forum. This task will identify the key technical challenges for safeguards implementation involving SMRs, and steps that can be taken to support incorporating Safeguards by Design principles into SMR designs.

The kickoff meeting of the task was held on 11th Dec 2020 with participation from the IAEA SGCP, LUT, VTT and STUK. FINSP will start the work by testing if the existing DIQ for Research Reactors can be applied for Finnish designs. It was also discussed that the duration of the task can be extended, since the planning of the designs is evolving and can still take some years.

In the Finnish licensing process the applicant shall present the plans how the safeguards is arranged in the facility. SbD will support the generation of this plan. During the operation effective and efficient implementation of safeguards is required to guarantee economic use of SMRs based on planned concepts.

4.2.3 Umbrella Task - Technical Assistance on Methodology and Guidance for Implementation of Safeguards at the State-level

The IAEA is gaining experience in conducting in-depth acquisition path analysis (APA) and in updating and developing customized State-level Approaches (SLAs). While performing APA and SLA development processes the State evaluation groups (SEGs) and Operations Divisions are identifying aspects that would require further conceptual and/or practical technical assistance.

FINSP participated and contributed to a workshop arranged in Vienna in February 2020.

4.2.4 MSSP Umbrella Task: Support for Instrumentation Technology

The task implements a mechanism through which Member State Support Programmes and staff of the IAEA Technology Foresight project may communicate and collaborate with R&D organizations (government and private). The task cooperates with States' experts on relatively small issues, including provision of technical information on various nuclear activity detection subjects, soliciting technical proposals, conducting technical proposal reviews, equipment evaluations, field testing and identifying suitable forms of funding for promising technologies.

This task had no specific activities in 2020.

4.2.5 Field-testing of an Unmanned Surface Vehicle and Next Generation Cerenkov Viewing Device

This task was accepted in October 2018 and in November 2018 a field test was arranged in Loviisa nuclear power plant. The IAEA tested 3 floating robots in the Loviisa NPP spent

fuel storage. During the test robots navigated autonomously in the pool, carrying the payload called XCVD (Expanded Cerenkov viewing device). XCVD is a Camera, which can observe ultraviolet light emanating from the spent fuel in the water. Currently, the IAEA inspectors mostly use the Cerenkov viewing devices handheld, which is labor intensive and not ergonomic. Verification of large storages will take several hours or even days. The use of autonomous robots in these facilities would be a real cost saver for the IAEA. With an advanced image recognition algorithm, the XCVD can also do the verification in a more reliable way than human eye.

In 2019 the IAEA wrote a technical travel report about the campaign, which was reviewed by FINSP. The test proved that the robots are promising but deployment of the technology still requires lots of detailed development work.

In 2019 and 2020 the IAEA has taken steps forward with the selected technology provider and the IAEA provided design documentation of the finalised product to the FINSP for comments. Experts from STUK and TVO (operator of Olkiluoto NPP) provided comments to the IAEA, and preliminarily agreed to arrange the next field test in summer 2021 in Olkiluoto NPP. The campaign preparations will include more in-depth safety analysis on how to operate the instrument inside a nuclear facility.

4.2.6 Support for testing of PGET new functionalities in attended, remote and unattended modes

The task proposal was approved in December 2018. The task arranged a test campaign in Olkiluoto spent fuel storage in July 2019. The campaign was the first opportunity to verify spent BWR fuel with long (almost 40y) cooling times. Passive Gamma Emission Tomography (PGET) was used in a modular verification system together with another novel method - PNAR (Passive Neutron Albedo Reactivity). The PNAR test campaign results were reported to the IAEA on 14th Nov in connection with EPGR LLLC (Encapsulation Plant Geological Repository Low-Level Liaison) meeting.

The first commercial PGET unit was delivered to the IAEA in 2019. This instrument was planned to be tested in March 2020 in Loviisa NPP, but due to COVID-19 travel restrictions, the campaign was postponed. The campaign was successfully arranged in June 2020. The results indicate that the new design performs better than the prototype design. Data quality seem to be improved in the sense that the level of background noise is decreased, and no faulty detector channels were observed. The new design is also more compact and easier to handle. The IAEA got the confirmation that the new commercial PGET instrument fits its intended purpose.

The campaign result paved the way for wider application of the PGET method within the IAEA. Also, the European Commission follows the progress of this task closely, since they also plan to deploy PGET instruments in the future.

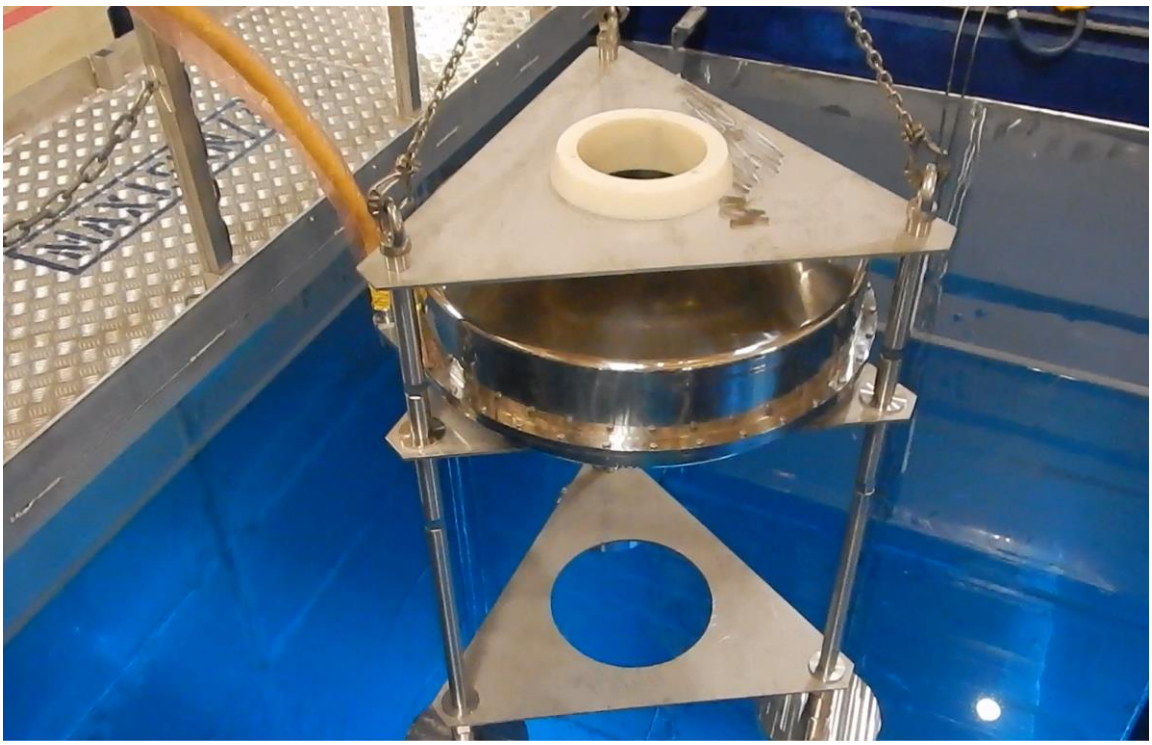

Figure 2. Setting up the measurement campaign with a commercial PGET at Loviisa Spent Fuel Storage, June 2020 (Picture Fortum).

4.2.7 Digital Declarations Site Maps (DDSM)

The task started in 2014. The goal is to establish process through which nuclear operators can report additional protocol site maps in a digital format, which could be directly compatible with the IAEA Geospatial Information Systems (GIS). Digitalization would significantly save IAEA person resources and enhance effectivity and efficiency.

In 2019 STUK provided DDSM as a part of its official declaration to the IAEA in a separate package. The DDSM was also sent to the European Commission. The IAEA evaluated the package and only minor issues were found. The practice continued in 2020. No issues from the IAEA evaluation were received, so the process is now well established.

Olkiluoto Nuclear Operators (the NPP operator TVO and the implementer of the Final Disposal project Posiva) will submit their DDSMs after commissioning of the Olkiluoto 3 reactor. During the commissioning period there are lots of changes at the site, so it is best to start using the new reporting procedure after the commissioning of the new unit.

4.2.8 Development of safeguards guideline for facilities under decommissioning and post-accident facilities

The task was accepted in December 2018. The results of the two consultancy meetings held in 2019 continued to improve the existing DIQ templates and fulfilled a major goal to establish a draft DIQ completion guideline. The outcome of these two consultancy meetings were positive and objectives were achieved. As results of participants' discussions, some key safeguards considerations were made for facilities under

decommissioning. For Finland, and especially considering the Triga Mark II Research Reactor (VTT, FiR1) currently under decommissioning activities, these considerations (e.g. regarding essential equipment) were beneficial.

The task continued in 2020 and a third workshop took place in Vienna on 3-6 Feb 2020. The consultancy meeting managed to establish and review an adequate DIQ example for geological repository and spent fuel encapsulation plant.

4.2.9 Feasibility study: Use of high intensity neutron generator-based system for fissile particle detection and identification

This project was approved in December 2018. The background to the project proposal is that the Finnish startup *NeutronGate* is developing and commercializing a high-intensity neutron generator. With this device it is possible to make Fission Track analyses, previously mainly available in a reactor. The IAEA analytical laboratory has no reactor at Seibersdorf, therefore the IAEA must procure neutron irradiation services from various research reactors of the Member States.

Fission Track is one of the analytical methods utilized by the IAEA. A sample is placed on a suitable planchet and exposed to neutron flux. The substrate is chosen so that the halves of the atom born in the fission reaction leave a microscopic trace therein. Based on the traces, the particle can be located and the amount of nuclear material it contains can be estimated.

Until now, Fission Track has required the use of a nuclear reactor because of the high neutron flux required by the process. If a relatively small size neutron generator can replace the nuclear reactor, then analyses can be done entirely in the IAEA laboratory, and time-consuming, risky and cumbersome delivery of samples to the reactors can be completely avoided. Compared to this, the substantially longer irradiation time required by the generator would not be a major problem.

In addition, the generator can provide neutrons in short pulses, allowing time-sensitive and camera-based signal acquisition, synchronized with the neutron beam, to perform completely new types of analysis, such as real-time separation of uranium and plutonium particles, particle size scans and analysis of isotope ratios. Accumulation of data can be observed in real time and irradiation can be finished when the desired result is obtained. In the proof-of-concept phase a special scintillation material was tested for localisation of particles.

The first proof-of-concept phase was finalised in 2020. In 2019 the IAEA provided some standard environment samples containing well defined uranium particles for irradiation to the *NeutronGate* test facility. Irradiations took place in 2019 at *NeutronGate* test facility in Riihimäki, Finland. *NeutronGate* provided its report by the end of 2019. The IAEAs fission track analysis was delayed due to the societal lock out in Austria and they were able to provide their assessment report in September-October 2020.

The following conclusions were drawn:

1. Fission tracks are visible, but the neutron flux of the test system should be increased before the method is viable for IAEA use. It is expected, that the

NeutronGate method can generate required neutron fluences, but this is to be confirmed and a new instrument must be built for that purpose.

2. The tested scintillation material has unwanted background effects and is not suitable for the purpose.

A decision to continue the project is now pending. New tests are not foreseen in early 2021.

4.2.10 Passive Tag Technology

Passive Tags are a new type of technology, which can make safeguards implementation substantially more efficient and effective. Passive Tags are small, cheap, remote readable from large distances, radiation resistant and can be attached to almost anything. Feasibility of these tags in nuclear material processes must be evaluated and tested. A crucial thing is to make sure that the tag always follows the safeguarded item.

FINSP is interested in the technology, since it may provide solutions to track spent fuel disposal canisters, especially underground. However, there are multiple issues, which may prevent the use of passive tags for this purpose.

The meeting with the IAEA has been delayed due to the COVID-19 pandemic. Therefore, no activities were conducted in this task in 2020.

4.3 Support programme coordination and implementation

4.3.1 Meetings

The annual review meeting was held on 18th of September 2020 via teleconference.

4.3.2 Pending task proposals at the end of 2020

FINSP has four open task proposals at the end of 2020:

1. 20/SPC-002 COMPASS: Comprehensive Capacity Building Initiative for SSACs and SRAs

2. 19/CTR-008 Comprehensive Inspection Exercise (CIE) for New Inspectors

3. 20/ISF-004 Transactional Trade Data and Open Source Data for Enhanced State Evaluation

4. 20/TSI-006 Support for an Improved Passive Seal System (IPSS)

Of these tasks especially the first and last one are the most promising, where FINSP may contribute in the future. The oldest task proposal is “19-CTR-008, Comprehensive Inspection Exercise (CIE) for New Inspectors”. The acceptance of this task is subject to availability of financial resources and nuclear facility time.