

ETSON PROGRESS REPORT

2013



FOREWORD

As safety and security are a growing concern to the public and to policy makers, in Europe and elsewhere, it is essential that the technical and scientific basis for regulatory decisions reaches the highest achievable level of quality and reliability. The development of Technical Safety Organisations (TSOs) contributes to this objective by providing in depth knowledge-based expertise in the field of nuclear and radiation safety and security.

The aim of the European Technical Safety Organisations Network (ETSON) is to promote principles, values and good practice that guarantee the independence of judgment in safety assessments produced by TSO's, and the quality of their services and of their research activities in the field of nuclear safety and security. By so doing, ETSON also contributes to the European harmonisation of nuclear safety practice on the basis of scientific excellence.

An expanding network

A number of European Countries and the European Commission have made significant efforts over the last decades in order to build up a sustainable TSO capacity in the EU. The

development of ETSON emphasises the importance of the European dimension of nuclear safety assessment practice, and encourages initiatives to further bring together expertise and research. Today, ETSON consists of 11 members, including three associate members, and is integrating two new members, from Slovenia and Bulgaria. Thus, the role of TSOs is more and more internationally recognized, notably by the European Commission and the IAEA community. Through its expert working groups, ETSON elaborates and makes publicly available Technical Safety Assessment Guides which provide concrete harmonized guidance for the assessment of safety files, and contributes to the establishment of a European strategic research agenda for nuclear safety in the context of the H2020 EURATOM Framework Programme of the European Commission. The recent adoption of a reinforced European directive on nuclear safety, which *inter alia* identifies the importance of science based expertise, paves the way for new initiatives by ETSON and its members to contribute to European achievements in this field.



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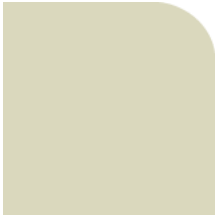
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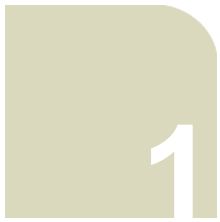
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ORGANISATIONAL MATTERS

1.1 ETSON network extension

During the General Assembly meeting in St Petersburg, on 2nd & 3rd of July 2013, two TSO became new ETSON members. The first one is the Jozef Stefan Institute (JSI) from Slovenia and the second one is the Institute for Nuclear Research and Nuclear Energy (INRNE) from Bulgaria. The two TSOs are full members of ETSON.

Discussions are engaged with other European TSOs to enlarge the network.

1.2 General Assembly and Board meetings

The year 2013 was an opportunity to further strengthen the overall functioning of the association.

Two General Assemblies coupled with Board meetings were held:

- On the 2nd and 3rd of July in St Petersburg (Russia);
- On the 6th of November 2013, in Köln (Germany), on the fringe of the EUROSAFE Forum 2013.

1.3 ETSON statutes

The ETSON statutes have been modified during the St Petersburg General Assembly. The main changes are :

- Give equal rights to all members (“Full” and “Associated”) for all decision topics except representation of ETSON,
- Increasing the Board from 4 to 5 members including a vice-president from associated members (art.11),
- Give more flexibility of TSO definition (art 3.2 and art. 5),
- Distinguishing the Secretary from the ETSON Sherpa’s Group (ESG) (art.11.1-4), ETSON is allowed to “propose, decide and initiate new activities and projects” in research (art.3.2) suppressing the transition phase MoU-Association (art. 5).



ETSON General Assembly Meeting, St Petersburg (Russia), 2 July 2013

The revised statutes have been approved and signed by ETSON members.

1.4 Accounting and fee payment

The Association has collected the annual fees of 2000 Euros from all ETSON members. For 2013, the ETSON budget was 20000€.

The money is dedicated to the external promotion of ETSON.

2

ETSON ACTIVITIES

2.1 ETSON Technical Board on Reactor Safety - Expert Groups

All ETSON members stressed the importance of the ETSON expert groups. The Technical Board on Reactor Safety (TBRS) proposed generic terms of reference. The main rôle of the TBRS is to manage the different expert groups and and to propose to the General Assembly the Technical Safety Assessment Guides for validation before publication. The ETSON organization is presented in Annex 1. ETSON Expert Groups exist for the following topics:

EX N°	Technical issue
1.	OEF, including Incident and Precursor Analysis
2.	Mechanical Systems
3.	Electrical Systems
4.	Severe Accidents
5.	Environmental qualification
6.	Safety Fluid Systems, including auxiliary systems
7.	Human and Organizational Factors
8.	PSA
9.	Lifetime-Management
10.	Thermal Hydraulic Analyses (Transients, Accidents)
11.	Safety concepts, Defense-in-Depth
12.	Core Behavior (operational and accident conditions)
13.	Emergency Preparedness

A new expert group dedicated to Decommissioning and Waste Management has been created. The first meeting occurred during EUROSAFE in Cologne. Although not dealing with

reactor safety, for the moment this group is placed under the TBRS umbrella. The opportunity to create a dedicated Technical Board will be discussed later. ETSON will consider creating a link between this new group and the EU platform on waste (IGDTP) and also SITEX.

2.2 ETSON Publications

SAG and TSAGs:

In 2012 ETSON efforts have been focused on the revision of the Safety Assessment Guide (SAG) and the finalisation of three technical assessment guides (TSAG).

In 2013 the SAG and the three following TSAGs have been published :

- TSAG Event review and precursor analysis
- TSAG Deterministic severe accidents analysis
- TSAG Human and organisational factors in nuclear facilities design and modification processes

These four documents can be downloaded on ETSON website.

Progress Report:

ETSON published the 2012 ETSON Progress Report. It is available on the ETSON Website for [download](#).

2.3

ETSON Research Group

A methodology has been prepared to coordinate the answers to the H2020 EURATOM call in order to promote ETSON projects.

The relevant topics for ETSON are: Gen II-III safety, Emergency tools, Innovative NPPs (Gen III+, Gen IV).

ETSON Research Group is in charge of ETSON coordination concerning the H2020 call.

The Annex 2 presents the EURATOM Fission 2013 projects and the ETSON participation. ETSON and its members are involved in 72 % of the current EURATOM European projects.

2.4

ETSON Knowledge Management

A new EUROS SAFE website is under preparation, according to the ETSON website design.

A dedicated area has been created on the ETSON intranet website for the different ETSON groups (research and expertise).

Members have pursued the ETSON Database project; The main goal is to promote access of all the databases of the ETSON members through a unique tool connected to all ETSON members databases..

It has been decided to contact the Joint Research Center to present the project of the creation of an European Database dedicated

to nuclear safety analyses and radioprotection. If the JRC would be interested, it could participate as a user of the database and as a financial contributor.

2.5

ETSON PING

The PING continues to promote a place for exchanges. More resources will be devoted to launch new projects and finalize them. It has been proposed to invite RISKAUDIT and ENSTTI into the PING to strengthen it. The PING should also focus its efforts to enhance ETSON visibility. The ETSON General Assembly approved the PING revised terms of reference.

2.6

ETSON JSP

The ETSON Junior Staff Programme (JSP) brings together young experts from all ETSON members and associates. The JSP aims at improving the long-term partnership of the member TSOs, establish a network for cooperation between young expert from different countries, and to encourage intercultural interaction. The main yearly events within this framework are the ETSON Junior Staff Summer Workshop.

JSP SUMMER WORKSHOP 2013 (25-30.08.2013)

- Subject: Accident Management
- Attendees: 42 from 9 TSOs and 2 people from regulatory bodies
- Lectures and working groups: 40 presentations by the young professionals themselves
- Location: Kaunas in Lithuania, hosted by LEI

It was decided that VTT (Finland) will host the ETSON JSP Summer Workshop 2014. The general topic will be "Fuel Management".

2.7 ETSON Workshops

ETSON members have decided to share feedbacks from the European stress tests in order to better understand what the main observations were and which common actions could improve harmonisation of safety assessment methodologies and practices. ETSON organized a workshop on this topic during two days in Garching, Germany 24-25.03.2013. Eight ETSON members participated.

A program of workshop for 2014 was agreed. It has been decided that the ETSON Research Group will organize a workshop dedicated to post Fukushima R&D to prepare the ETSON contribution to the TSO conference 2014.

Another workshop will be organized in 2014, dedicated to the H2020 and the way to answer to the european calls.



ETSON RELATED INITIATIVES

As part of their activities, ETSON members have been involved in different initiatives in 2013.

3.1 EUROS SAFE Forum

On 04 and 05 November 2013, the EUROS SAFE Forum 2013 with the title: "Safe Disposal of Nuclear Waste" was held in Cologne with great success. More than 350 participants from 28 countries participated to the conference. ETSON members were highly involved in the preparation of the Forum. The programme and additional information can be found [here](#).

ETSON members decided in November 2012 to create an ETSON Award in the framework of the EUROS SAFE Forum. The Award rewards annually a paper written by a group of young engineers among the Technical Safety Organisations (TSOs). The Award is officially attributed at the annual EUROS SAFE Forum.

In 2013, 6 papers have been submitted to the ETSON award with researcher from GRS, VTT, LEI, IRSN, Bel V, SSTC, SEC NRS and NRI Rez.. The winners are M. Vepsä (VTT) and M. Heckötter (GRS) with their paper "Experimental investigation and numerical analyses of reinforced concrete structures subjected to external missile impact". They received the 2500 € award for their paper.

Because of the IAEA TSO Conference in Beijing in 2014, it has been decided to cancel the EUROS SAFE Forum in 2014. The next Forum will take place in Brussels in 2015.

3.2

EUROS SAFE Tribune

All ETSON members participated in the publication of two issues of the EUROS SAFE Tribune in 2013:

- EUROS SAFE Tribune #23, published in July 2013. The overall theme of this issue was: " Nuclear safety: Towards enhanced robustness ".
- EUROS SAFE Tribune #024, published in November 2013. This issue focusses on "Stress tests for enhancing nuclear safety ".

The preparation of the EUROS SAFE Tribune #025 and #26 are on the way.

3.3 ENSTTI

In 2010 the main goal of ENSTTI was the training and tutoring of European TSOs and Regulators Authorities. In 2013, ENSTTI opened its offer to non-European organizations at the request of the European Commission and IAEA. Moreover ENSTTI is now involved in European projects (NUSHARE, SITEX). In 2013, ENSTTI organizes 17 courses with 243 trainees (118 trainers) and 15 tutees (23 tutors).

4 ETSON EXTERNAL RELATIONS

4.1 European institutions

The ETSON General Assembly recognized the need to consolidate the relations with the European Commission.

ETSON sent the TSO position about the new European safety directive to the Commissioners and to ENSREG.

A contact between ETSON and WENRA (Western European Nuclear Regulators' Association) has been organized. The ETSON presentation to WENRA was successful and well received. Further contacts are needed to come to more specific proposals for collaboration. Possible collaborations topics are: emergency preparedness and natural hazard issues. Two ETSON research groups concerned are Severe Accident and Emergency Preparedness. It has been decided to propose to bring these two groups together with the WENRA's groups in order to consolidate the European regulatory level. WENRA develops guides and requirements and ETSON will assess these requirements. ETSON is now waiting for WENRA's answer concerning a possible collaboration.

4.2 IAEA

ETSON took part in the following IAEA activities:

- TSO Forum: Vienna 07-08 March 2013
- General Conference: Vienna 16-20 September 2013

Through the TSO Forum, ETSON members

are participating in the preparation of a document especially devoted to the definition of the TSOs, their missions and objectives.

A working group will prepare recommendations to the steering committee about security aspects.

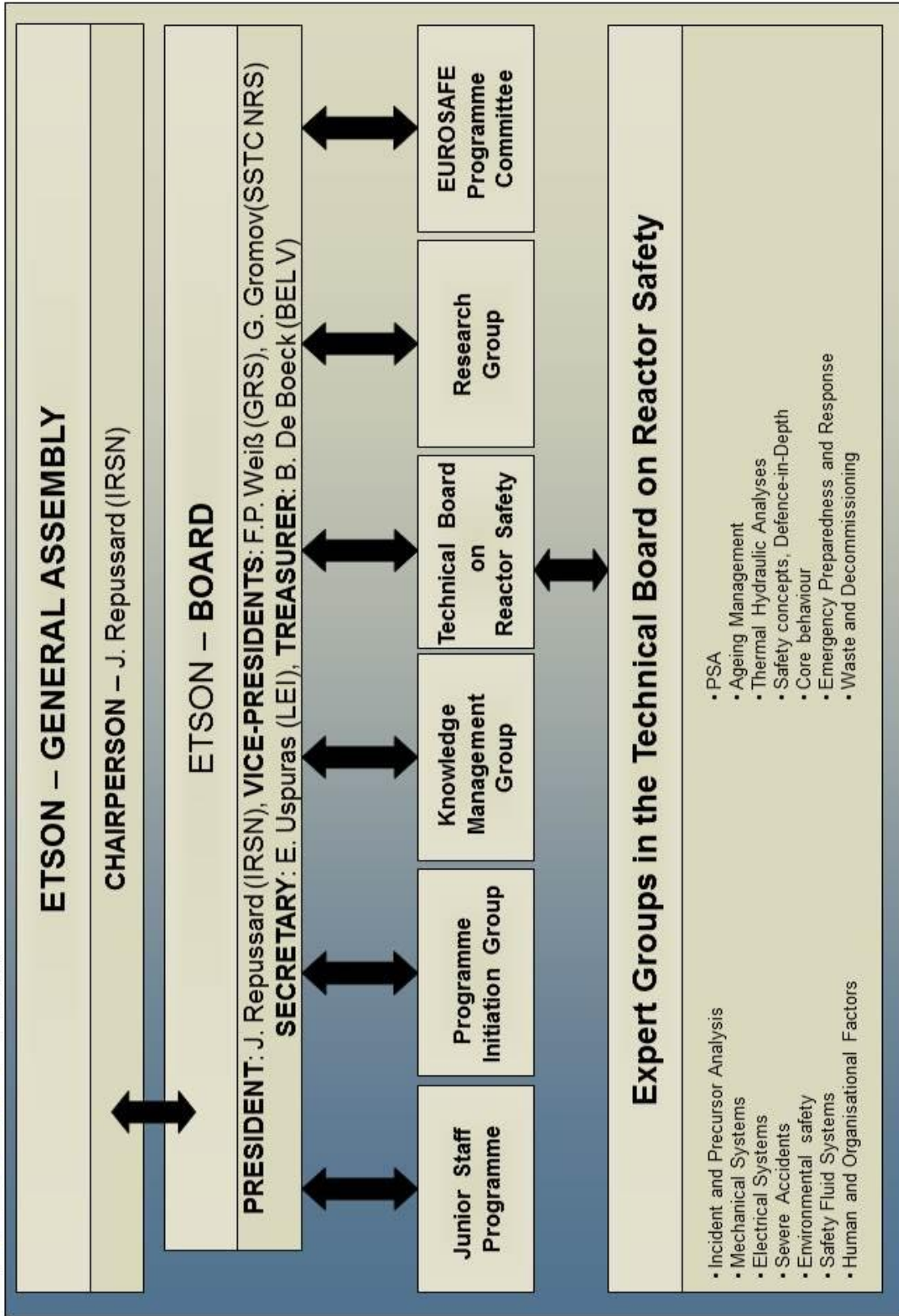
The information about Fukushima related activities in TSOs will be collected.

The feedback from the TSOs about the use of IAEA Safety Standards will also be collected.

ETSON is also involved, through the TSO Forum, in the preparation of the International TSO conference organized in Beijing October 2014, in link with AIEA. This conference is the third international conference dedicated to the Technical Safety Organizations. The first one occurred in Aix en Provence, France (23-27 April 2007) and the second one in Tokyo, Japan (25-29 October 2010).

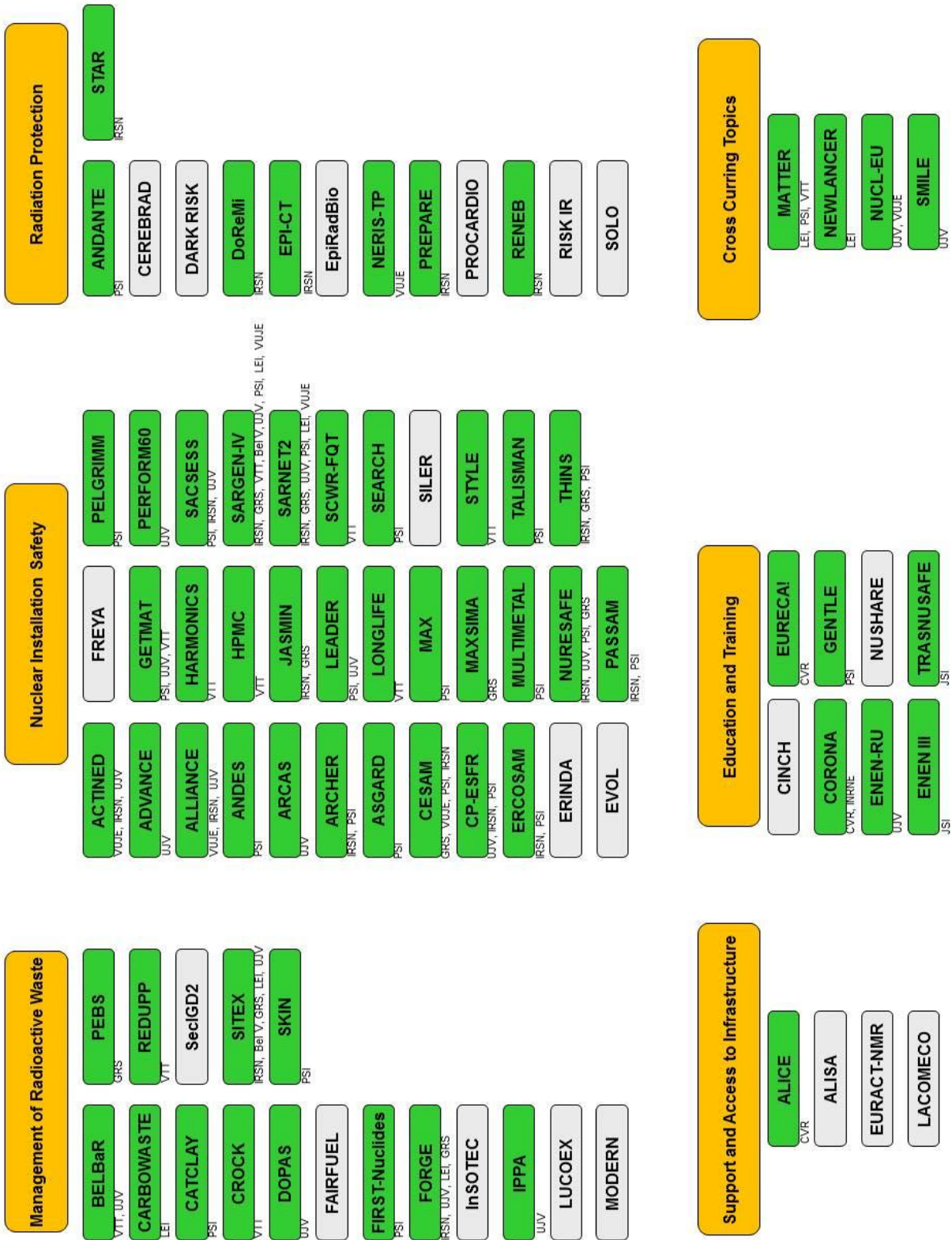


5 ANNEXS



Annex 1 : ETSON organization

ETSON & FP7 EURATOM FISSION 2013



Annex 2 : 2013 ETSO participation in EURATOM fission projects (green)

ETSON

EUROPEAN
TECHNICAL SAFETY
ORGANISATIONS
NETWORK

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