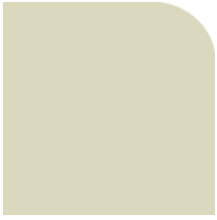


ETSON

EUROPEAN
TECHNICAL SAFETY
ORGANISATIONS
NETWORK

ETSON ANNUAL REPORT

2019



FOREWORD

2019 was the first year after ETSON renewed and updated its strategy. It was therefore dedicated to implementing changes as ETSON strives to become a more visible and engaged organisation in the field of nuclear safety in Europe.

In that light, ETSON has made relevant steps in developing and strengthening relations to other organisations in the nuclear field, especially with the IAEA and the European Commission.

While continuing these efforts ETSON will promote its key message that compliance with regulations is only meaningful if safety assessment practices are robust and successfully benchmarked among the leading TSOs in that area. ETSON will also point out that technical expertise for safety assessments is an asset that is to be maintained and developed in a continuous and coordinated manner. This is where ETSON can make a difference in Europe.

At the same time, ETSON fostered its core competency and that is to share knowledge and experiences among the TSO member via the permanent ETSON expert groups and dedicated workshops. ETSON has also continued its efforts to bring together young experts (Junior Staff Programme) from the TSO members such that their career can benefit from the ETSON network.

In 2019, the ETSON Communication Group was built up to promote the ideas and the added value of ETSON. One of the first action of this group will be dedicated to the revision of the ETSON intranet, to make it a practical working tool for ETSON members.

Since the recognition at international level for stronger impact has been enhanced by the ETSON contribution to the IAEA TSO Forum in 2019, ETSON again promotes its participation in the TSO activities including the hosting of the next conference in 2022 in Russia.

In addition, there are still some targets to be worked on in the following years like getting acceptance from all ETSON members' national safety authorities.

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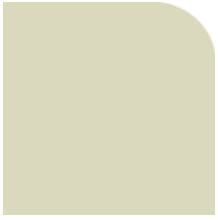
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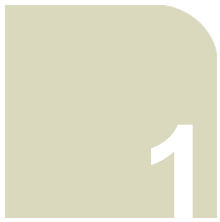
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ORGANISATIONAL MATTERS

1.1 ETSON Network Extension

In 2019, no new TSO joined the ETSON network. However, discussions with several European TSOs and Safety Authorities with embedded TSOs regarding an accession to the ETSON network continue.

1.2 General Assembly and Board Meetings

Two general assembly meetings together with board meetings were held: On 4 and 5 of July 2019 in Prague, Czech Republic, and on 5 and 6 of November 2019 in Cologne, Germany.

The ETSON organization is presented in the Annex.

1.3 Accounting and Fee Payment

The Association collected the annual fees of 2000 Euros from the 16 ETSON members. The funds are dedicated to the ETSON Award, the promotion of ETSON and limited research actions among ETSON members.

1.4 ETSON Strategy

ETSON agreed on the Terms of Reference (ToR) for the newly founded Communication Group (ECG) and established the group in parallel to the Knowledge Management Group on the board level.

ETSON continues to develop and deepen relations with international organisations in the area of nuclear safety such as DG ENER, JRC, SNETP and WENRA in order to increase the effective use of ETSON expertise in technical safety assessments and nuclear safety research management in Europe.

The annual EUROSAFE Forum has been fully integrated into ETSON. In that process, the EUROSAFE Programme Committee (EPC) has been transformed into an ETSON management group and the former EUROSAFE newsletter will be integrated into a new format of the ETSON news.

ETSON also defined internal rules and processes to increase efficiency within ETSON. These rules shall also help to initiate internal ETSON projects. One example of these rules is that a new research project needs at least the support of one third of all ETSON members.



ETSON ACTIVITIES

2.1 Technical Board on Reactor Safety (TBRS) - Expert Groups

The TBRS oversees the 14 expert groups of ETSON and provides Technical Safety Assessment Guides and technical reviews of proposed publications and workshops. It also provides recommendations on the technical programme and strategy of ETSON.

Each of the expert groups is dedicated to a specific field of competence where ETSON members seek an in-depth exchange of knowledge and experiences:

N°	Technical issue
1.	OEF, including Incident and Precursor Analysis
2.	Mechanical Systems
3.	External hazards (man-made and natural hazards)
4.	Severe Accidents
5.	Environmental Safety related Qualification of Componentes
6.	Safety passive systems
7.	Human and Organizational Factors
8.	Probabilistic Safety Assesment (PSA)
9.	Lifetime-Management (Ageing Management)
10.	Thermal Hydraulic Analyses (Transients, Accidents)
11.	Safety Concepts, Defense-in-Depth
12.	Fuel behaviour
13.	Emergency Preparedness and Response
14.	Waste Management and Decomissioning

The expert groups especially focus on safety assessment practices in the respective fields and identify common approaches. These common approaches are then published as Technical Safety Assessment Guides (TSAGs) which serve as reference point for safety assessments performed by member TSOs and others. TSAGs also contribute to the harmonization of safety assessment practices. Safety assessment principles that are more general are described in the Safety Assessment Guide (SAG). Both SAG and TSAGs can be downloaded from the ETSON webpage (www.etson.eu/).

In 2019, the Safety Assessment Guide was updated and offers now a more concise view on the general safety assessment principles. It also considers documents such as IAEA TECDOC 1835, the Vienna declaration on Nuclear Safety, the EU Directive 2014/87/Euratom and INSAG-25.

The assessment of safety culture in different countries, lessons learned on PSA following the Fukushima Daiichi accident and sump clogging were other focal points of the TBRS in 2019.



ETSON ACTIVITIES

2.2

ETSON Research Group (ERG)

The ETSON Research Group (ERG) shares information on the member's research programmes and based on that coordinates research activities as well as identifies and prioritizes research needs within the ETSON network. The ERG also develops common position on research strategies that are communicated toward international organisations.

In 2019, two internal ETSON research projects have been initiated to promote the collaboration of ETSON members. The HYDROGEN project (7 months) deals with the combustion simulation that plays an important part of NPP accidents analysis. The objective of this project is to address more realistic conditions, to rank existing models and to identify knowledge gaps. ETSON supports this activity with 30.000 €. The BARCO project (12 months) aims at assessing approaches and methodologies used by teams of emergency preparedness and response bodies in different countries. ETSON supports this activity with 24.000 €

2.3

Communication Group

The ETSON Communication Group (ECG) was fully established in 2019 in order to increase the recognition of ETSON's values and activities at the international level as well as to support ETSON's internal and external communication. Mr Denis Mistryugov (SEC NRS) presents the chairman of the group which includes three subgroups:

- The "Internal and External Relations Team" shall support internal communication and promote ETSON visibility externally
- The "Technical Support Team" is tasked to maintain the ETSON webtools (intranet and websites), to provide technical and informational assistance to ETSON members and groups as well as for ETSON publications
- The "Informational and Digital Support Team" will support the EUROSAFE Forum and ETSON events regarding promotion and organization as well as develop and publish the ETSON News and digital media content.

Each team will comprise of approximately 4 to 6 representatives of different ETSON members. The ECG is also in charge of improving the intranet according to the needs of the other ETSON groups.

2.4

Knowledge Management Group

The KMG is tasked to develop, implement, maintain and manage common knowledge and cooperation tools for the exchange of assessment and R&D results among the member TSOs. In addition, KMG aims at developing good practices for knowledge management based on experiences gained in member TSOs.

In 2019, the new chair of KMG, Ms Francine Blardat (IRSN), initiated a new work program for KMG started to engage with JRC on cooperation projects in the area of knowledge management.

2 ETSON ACTIVITIES

2.5 Junior Staff Programme

The Junior Staff Programme (JSP) brings together young experts from all ETSON members. The JSP aims at improving the long-term partnership of the member TSOs, establishing a network for cooperation between young experts from different countries, and encouraging intercultural interaction.

The main yearly event of the JSP presents the summer school, which is hosted by one of the ETSON members. The 2019 edition of the JSP summer school took place in Bologna (Italy) from 2 to 6 of September and was hosted by ENEA. The one-week event was dedicated to the topic “Innovative systems for safety functions – including passive systems, on Gen III+, Gen IV, SMRs, floating power plants and other new designs”. 28 young experts from 11 TSOs shared their knowledge and expertise in 5 sessions.

In addition, the participants were tasked to discuss practical issues and applications in two mini-workshops.

The programme was complemented by a technical visit to the facility of SIET (Piacenza) which presents a R&D facility in the area of thermal-hydraulic experiments for qualification of systems and components and validation of models.



Round table discussion in the speakers' corner

Participants of the 2019 JSP summer school in Bologna, Italy



2

ETSON ACTIVITIES

2.6 EUROSAFE Forum

The 2019 edition of the EUROSAFE Forum was organized and hosted by GRS and held on 4 and 5 of November in Cologne (Germany). It attracted more than 220 participants from 28 countries representing TSOs, academia, regulatory bodies and industry. The first day was dedicated to the topic effectiveness of peer reviews (Hans Wanner, ENSI & WENRA) and the ETSON science slam in which four young scientists presented their work and competed for the ETSON award. The second day was dedicated to three technical sessions: Nuclear safety assessment and research, Waste management, decommissioning and disposal as well as Radiation protection, environment and emergency preparedness and response. A round table discussion on the topic “Networking needed?” and the TSO Café where TSOs could present their organisations were also important parts of the conference programme.

2.7 Workshops

In 2019, ETSON organized two workshops in which TSOs presented their work and shared their knowledge and experiences on specific topics.

One workshop was dedicated to fusion safety issues and took place at LEI in Kaunas, Lithuania, on 27th of May. Five organisations participated in the workshop that, amongst other, focussed on the ITER and the DEMO installation as well as selected deterministic and PSA aspects.

Another workshop aimed at safety implications of NPP load following operation and was hosted by VUJE in Trnava, Slovakia, on 16 and 17 of May. The workshop was attended by 16 participants from 9 organizations and covered topics such as the country specific status of LFO and operating experience of load following operation.



Participants of the science slam during the award ceremony



ETSON EXTERNAL RELATIONS

3.1 IAEA

ETSON took part in the IAEA General Conference (16 to 20 September 2019) and was present at the conference with its own booth.

In 2019, ETSON contributed to the TSO Forum by supporting the implementation of the IAEA TECDOC-1835 “Technical and Scientific Support Organizations Providing Support to Regulatory Functions for TSOs” published in January 2018. The TECDOC describes the core characteristics and functions of a TSO supporting regulatory bodies. The document can be used as a reference publication for existing TSOs as well as for authorities that aim at developing technical and scientific support at the national level (e.g. embarking countries). For the implementation of the IAEA TECDOC-1835, ETSON members (GRS, IRSN, SEC NRS) developed a self-assessment tool (excel-based) that is being tested and promoted by the IAEA. The regulatory authority and TSO in South Africa have also begun to test the self-assessment tool.

The ETSON member SEC NRS will host the next TSO conference of the IAEA in 2022 in Russia.

ETSON and the IAEA have discussed and agreed on ways to strengthen the role of TSO experts within IAEA missions.

3.2 European Commission

JRC – Joint Research Centre

Following the cooperation agreement between ETSON and JRC of October 2018, both organisations have begun to draft cooperation projects in 2019..

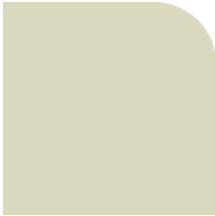
DG ENER

ETSON finalized a project by the DG Energy on the harmonization of nuclear safety practices at the European level. Ten ETSON members participated in the project which aimed at supporting the Commission in the technical implementation of the nuclear safety directive.

ETSON and DG ENER are in discussions on further cooperation projects.

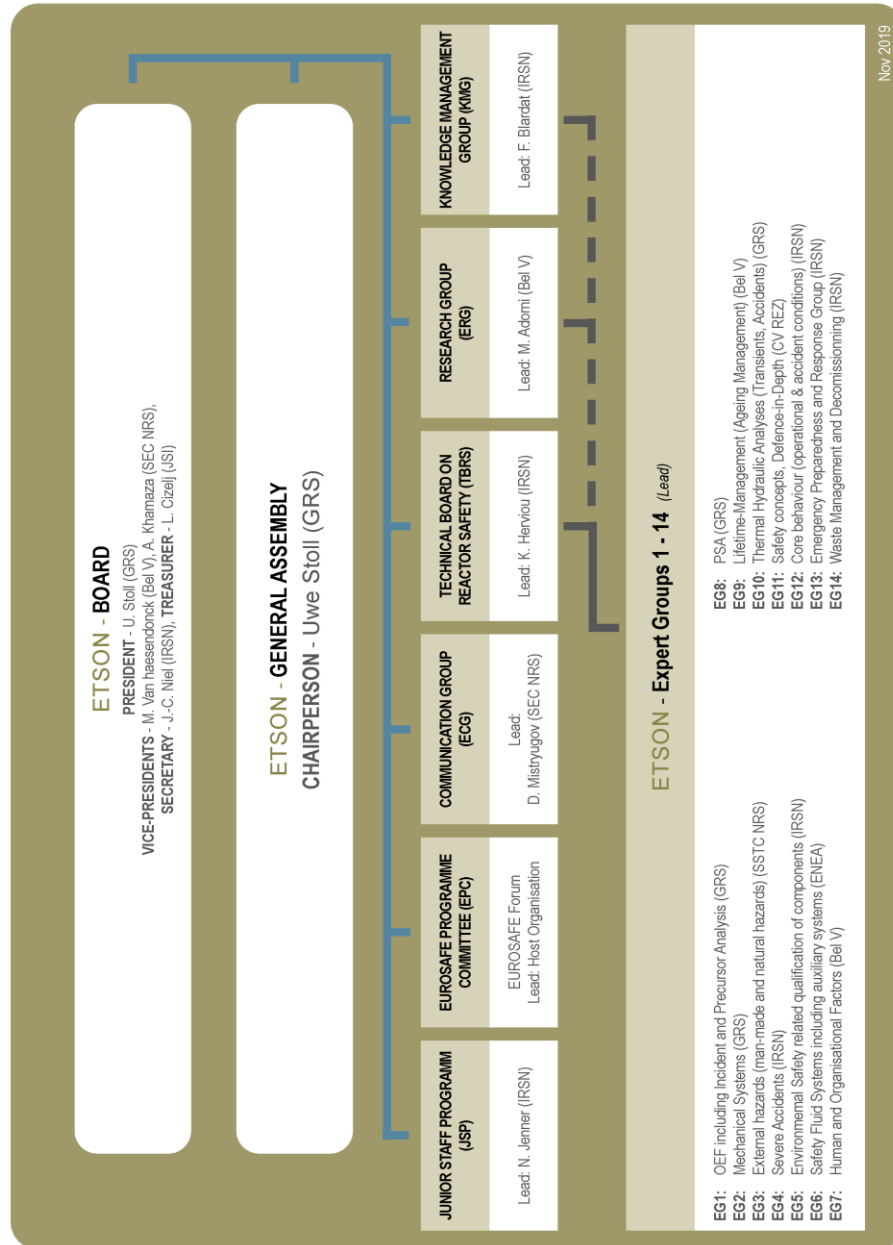
3.3 WENRA

ETSON and WENRA have shared their views on a possible cooperation and identified topics that may serve for future cooperation projects. It is agreed to have additional common meetings to go further.



ANNEX

2019 ETONS organisation





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