



Business from technology

Experience with the European TSO Network (ETSON), as an example of a regional TSO network

International Conference on the Challenges faced by TSOs in Enhancing Nuclear Safety and Security, Tokyo, 25-29 October 2010

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Topics discussed in this presentation

- Roles and General Objectives of a Technical and Scientific Safety Organisation (TSO)
- Background for establishing the European TSO Network (ETSON)
- Establishment of the European TSO Network (ETSON)
- Objectives of the ETSON Association
- Activities of ETSON to reach its objectives
- Examples of current activities of ETSON and Eurosafe
- ETSON Expert Groups
- Safety Assessment Guide Subgroup - Activity areas
- ETSON Support Services to national and international organisations
- Conclusions

Roles and General Objectives of a Technical and Scientific Safety Organisation (TSO)

- In the Lead-in presentation in the session for Topical Issue 1 the roles, functions and values that guide TSOs were discussed in general.
- Three different national approaches for establishing a TSO were discussed:
 1. The TSO is integrated to the regulatory body itself
 2. The TSO is established as an external organisation solely to support the regulatory body
 3. The TSO is providing technical and scientific support both to the regulatory body and the nuclear industry
- Especially in the third approach the TSOs should follow 2 basic principles
 1. **Independence** of the expert opinions of the TSO
 2. If a TSO also provides services to a domestic or foreign licensee (utility or vendor) it has to do so **in full transparency** so that when providing services to a regulatory body it is able to demonstrate that conflicts of interest are excluded.

Background for establishing the European TSO Network (ETSON)

- Two general background issues were important for establishing the ETSON network.
 - Closely related to the organisation of the EUROSAFE conferences the French, German and Belgian TSOs invited representatives from other European organisations (TSOs and Safety Authorities) to participate in planning of these conferences and perform joint tasks that provided benefits both to TSOs and regulatory bodies.
 - The three TSOs together with other European TSOs and safety authorities have actively co-operated in the nuclear safety assistance programmes of EU directed to the East European countries and to the former Soviet Union states.
 - These two previous activities have created active collaborative links between the various parties.

Establishment of the European TSO Network (ETSON)

- Initially the TSOs from France, Germany and Belgium started the preparations for establishing the ETSON network.
- During the preparations three additional TSOs have joined the ETSON network and the founding six members of **European TSO Network (ETSON) Association**, officially established in August 2010 include the following six organisations from France, Germany, Belgium, Finland, Czech Republic and Lithuania:
 - Institut de Radioprotection et de Sûreté Nucléaire (IRSN)
 - Gesellschaft für Anlagen- und Reaktorsicherheit (GRS)
 - Bel V, a subsidiary of the Federal Agency for Nuclear Control
 - VTT Technical Research Centre of Finland
 - ÚJV Nuclear Research Institute
 - LEI Lithuanian Energy Institute
- In addition there are a few additional candidates being considered for members or associated members of the Association.

Objectives of the ETSON Association

- Form a suitable forum for voluntary exchanges on analyses and R&D in the field of nuclear safety by sharing experiences and exchanging technical and scientific opinions,
- Contribute to fostering the convergence of technical nuclear safety practices within the European Union and beyond,
- Further the planning of nuclear safety research programmes and facilitate their implementation,
- Facilitate the application of the European directive on the nuclear safety,
- Work together in safety assessment and research projects funded separately and organized by the respective members in dedicated consortia.

Activities of ETSON to reach its objectives

- Promote the formation of a European scientific and technical network in the nuclear safety field,
- Foster the dialogue between ETSON and the European Nuclear Safety Authorities as well as other European Union Institutions, the IAEA and other international organizations,
- Support among members with respect to safety expertise,
- Develop a strategy for European research programmes and its promotion to the Member States of the European Union and,
- Support the EUROSAFE junior staff programme and similar other programmes furthering management and transfer of knowledge,
- In addition, ETSON proposes, decides and launches new activities, especially support of European nuclear regulators, to be realized under the members' responsibility with separate funding.

Examples of current activities of ETSON and Eurosafe

- **Eurosafe** has organized **annual forums** since 1999
- The general aim of these annual conferences is to contribute to fostering the convergence of technical nuclear safety practices in a broad European context.
- The conferences provide to technical safety and research organisations, safety authorities, power utilities, the rest of the industry, international organisations and non-governmental organisations with a platform for the presentation of recent analyses and R&D in the field of nuclear safety.
- Furthermore, the conferences provide an opportunity to share experiences, exchange technical and scientific opinions, and conduct debates on key issues in the fields of nuclear safety and radiation protection.
- The theme of the Eurosafe Conference 2010 is “*Innovation in Nuclear Safety and Security*” from the point of view of different international organisations, utilities, authorities and European (TSOs).

ETSON Expert Groups

- In order to intensify the interaction between the ETSON partners and to organise joint projects, expert groups in the main fields of competence of the ETSON partners have been established with the aim to:
 - exchange information on safety analyses and R&D,
 - exchange information on their technical nuclear safety practices and make proposals to harmonise them as far as practicable,
 - contribute to the definition of nuclear safety research programmes in defining research needs in their fields of expertise,
 - organise cooperation teams for joint projects to respond quickly to specific requests on behalf of the project management of the network, □
 - keep each other informed about new developments in their fields of expertise and within their respective organisation, and
 - continue work related to Safety Assessment Guide with the aim to produce a comprehensive set of documents related to specific topics of the guide.

Safety Assessment Guide Subgroup - Activity areas

1. Operational Experience Feedback (OEF), including Incident and Precursor Analysis
2. Mechanical Systems
3. Electrical Systems
4. Severe Accidents
5. Environmental Qualification
6. Safety of Fluid Systems, including auxiliary systems
7. Human and Organizational Factors
8. Probabilistic Safety Assessment (PSA)
9. Lifetime Management
10. Thermal Hydraulic Analyses (Transients, Accidents)
11. Safety Concepts, Defence-in-Depth
12. Core Behaviour (operational and accident conditions)

ETSON Support Services to national and international organisations

- ETSON has established the **Project Initiation Group (PING)** to support the provision of joint expert services by ETSON members to European and international organisations in the areas of nuclear safety, radiation protection, waste management, decommissioning and security.
- The main objectives of ETSON PING are:
 - to establish a common project consortium agreement,
 - to co-ordinate the acquisition and initiation of projects,
 - to offer the ETSON resources to the market,
 - to organize the composition of joint project teams,
 - to support the members with additional resources and coordination services,
 - to initiate contract and project planning, and
 - to establish standard documents, procedures and processes (including lessons learned, best practises)
- It is recommendable to establish links between ETSON activities and other international networks, such as the Global Nuclear Safety and Security Network (GNSSN) of IAEA.

Conclusions

- The European TSOs have comprehensive long-term experience on co-operation in topics related to exchange of information and participation in joint projects.
- The established ETSON network will reinforce the common activities between the partners of the network.
- ETSON will continue general co-operation regarding exchange of information and furthering of harmonization of nuclear safety practices, for example by preparation of common safety assessment guidance.
- In addition, the ETSON network is aiming to provide joint expert services to European and international nuclear safety authorities and other organisations.