

Learning from others

Using Operating Experience to Improve the Safety of Nuclear Power Plants

Objectives

The objectives of the EU Clearinghouse are to allow effective and efficient implementation of lessons learned from events in order to improve the safety of NPPs through:

- Analysing particular events of interest to draw lessons learned and recommendations.
- Analysing families of events to draw generic lessons learned and recommendations.
- Strengthening co-operation between EU Safety Authorities, Technical Support Organisations and the international OE community
- Improving the collection and dissemination of event reports.
- Strengthening EU resources in OE.
- Support to the long-term EU research and policy needs on NPP Operational Experience Feedback.



Rising oil prices, diminishing supplies of fossil fuels and concerns about global climate change and air quality have moved the topic of clean, reliable energy, high up the political agenda. In the European Union almost 30% of total electricity produced comes from nuclear power plants. Maintaining and improving standards of nuclear safety are paramount for the future use of nuclear power.

Learning from the past and from others is a common process used within industries where safety and high reliability is demanded. Today some 440 nuclear reactors produce electricity around the world. Operating experience (OE) gained from these nuclear power plants is a valuable source of information which allows operators to continually improve their knowledge and the safety of these nuclear installations. This collective experience has been accumulated through approximately 14,000 operating reactor-years to date, world wide.

In the European Union, a regional initiative has been established to enhance nuclear safety through improvement of the use of lessons learned from OE. Its Centralised Office is located at the European Commission's Joint Research Centre (JRC) in Petten, the Netherlands. This organisation is known as the European Clearinghouse on OE for nuclear power plants. The 'Clearinghouse' Centralised Office is comprised of

Contact:

Benoit Zerger

European Commission, Joint Research
Centre

Institute for Energy and Transport

Email: benoit.zerger@ec.europa.eu

experts from the JRC and member states that have joined the organisation. Membership is mainly composed of nuclear safety regulatory authorities and their Technical Support Organizations within the EU region.

Currently seventeen European nuclear safety regulatory authorities are represented (Belgium, Bulgaria, Czech Republic, Finland, France, Germany, Hungary, Lithuania, The Netherlands, Poland, Romania, Slovak Republic, Slovenia, Spain, Sweden, Switzerland and the UK), three European Technical Support Organisations (Belgium, France and Germany), the IAEA, the OECD-NEA and Areva.

Main activities of the EU Clearinghouse

The Clearinghouse is more than a classical network. Its Centralised Office gathers nuclear safety experts performing the following technical tasks in support to the EU Member States:

- “Topical Studies” providing in-depth assessment of either particularly significant events or either families of events. These studies are drafted by experts on the topic and based on an analysis of usually hundreds of event reports.
- Trend analysis of events in order to identify priority areas.
- Improvement of the quality of event reports submitted by the EU Member States to the International Reporting System jointly operated by the OECD-NEA and the IAEA.
- Reporting every three months the main events having occurred in NPPs.
- Database: a European central OE repository being developed in order to ensure long term storage of OE and to facilitate information retrieval.
- Further to these activities, the EU Clearinghouse is participating to several international cooperation projects on OE, mainly through the IAEA and the OECD-NEA working groups.



Organisation of the EU Clearinghouse

The EU Clearinghouse is organised around a Centralised Office located at the Institute for Energy and Transport of the JRC (Petten, The Netherlands). The work programme is prepared by the Centralised Office (JRC) in coordination with the members, is approved by the Steering Committee and is executed by the Centralised Office with the support of the members when necessary.

The Technical Board is the forum for discussion on the work performed by the Centralised Office. It is composed of all the members and observers to the Clearinghouse.

The Steering Committee is the decision body of the Clearinghouse. It is composed exclusively of the participating European Nuclear Safety Authorities and of the JRC.



CLEARINGHOUSE - JRC-IET-Petten - 4-5 March 2014

Examples of generic topics covered

In-depth topical studies on:

- Reactivity management events
- Events related to maintenance
- Fuel failure events
- External events (natural and man-induced)
- Events related to construction and commissioning of new nuclear power plants
- OE related to the supply of NPP components
- Events related to plant modifications
- OE related to ageing of components