



# WORKSHOP SAFETY IMPLICATIONS OF NPP LOAD FOLLOWING OPERATION

16 - 17 MAY 2019 | TRNAVA, SLOVAKIA

**Over the past decade, load following operation (LFO) has become increasingly frequent for nuclear power plants in various European countries. To a large extent, this development has been driven by a growing use of intermittent renewables. As more and more countries consider an increased use of renewables to reduce their CO2 emissions, LFO will presumably become even more common in years to come. Accordingly, the potential implications of LFO for nuclear safety have become a topic of interest for all parties involved. This is also reflected by the IAEA's technical report on NPP non-baseload operation issued in 2018 as the latest example of an increasing number of publications related to LFO.**

## **OBJECTIVE OF THE WORKSHOP**

On behalf of ETSON, VUJE invites representatives from member organisations and other experts in related fields to engage in a two-day workshop focussing on LFO and potential safety implications. The workshop aims at exchanging knowledge and experiences on LFO and related safety issues as well as discussing possible R&D needs. Furthermore, the insights gained during the workshop will be made available in a subsequent ETSON publication.

## **INTRODUCING A NEW APPROACH**

To reach this objective as effective as possible, the workshop will primarily consist of round-table sessions on four main topics. Participants are encouraged to provide short contributions of approximately 5 to 10 minutes, covering the questions related to each topic in the workshop's programme. Each session will also provide the opportunity to discuss the insights shared. The goal is to gather input on all four topics from the countries represented in the workshop. Apart from the round-table sessions, invited speakers will elaborate on specific issues related to LFO.

# PROVISIONAL PROGRAMME

## 16 May 2019

**10:30 - 12:30** **Presentation at JAVYS Information Center**  
(Bohunice site)

**12:30 - 13:30** **Lunch** (VUJE site)

**13:30 - 14:00** **Opening session**  
Welcome by VUJE,  
introduction of the participants

**14:00 - 16:00** **Topic 1:**  
**Country-specific status of LFO**

- What is the extent of LFO today?
- Has it increased recently?
- Are there estimations on future LFO needs?

Invited lecture **Ancillary services in Slovak regulatory area**  
(Andrej Hanzel, VUJE)

**16:00 - 16:30** **Coffee Break**

**16:30 - 18:30** **Topic 2:**  
**Feasibility of LFO**

- What is the technical capability of the NPPs to perform LFO?
- What is the design basis for power gradients?
- Were there any plant modifications affecting LFO capability?

Invited lecture **Belgian NPP power modulation: safety issues?**  
(Olivier Smidts, Bel V)

Invited lecture **Flexible operation of KWU-designed NPPs**  
(Tatiana Salnikova, Framatome)

**19:30** **Dinner**

## 17 May 2019

**8:30 - 10:30** **Topic 3:**  
**Operating experience of LFO**

- Has the operating experience related to LFO been assessed?
- Were there any operational/NPP service time issues due to LFO?
- Were there any safety issues?

Invited lecture **Testing of Load Following Regimes at Ukrainian NPPs. Licensing Approach and Challenges**  
(Iurii Ovdiienko, SSTC NRS)

Invited lecture **Safety related aspects of LFO**  
(Stéphanie Graff, IRSN and Cédric Laville, IRSN)

**10:30 - 11:00** **Coffee Break**

**11:00 - 13:00** **Topic 4:**  
**Need for investigations**

- Are there any research projects in place or planned related to LFO?
- What issues shall be addressed in future (including potential international collaborations)?

**13:00 - 14:00** **Lunch**

**14:00 - 15:00** **Summary Session**

## VENUE AND ORGANISATION

The workshop will take place on the premises of **VUJE, room C41, Okružna 5, Trnava, Slovak Republic**. Buses leave on 16 May at 10:30 from VUJE to **JAVYS Information Center, 919 31 Jaslovské Bohunice** (GPS: N 48.491156 E 17.676203). Participants should be nominated by their organisations by 22 March 2019. To nominate participants or in case of any questions, please contact **Alena Brezna** (Alena.Brezna@vuje.sk), **Tomas Kliment** (Tomas.Kliment@vuje.sk) or **Justus Oldenburg** (Justus.Oldenburg@grs.de).