

The ETSON and EUROSAFE

## SUMMER SCHOOL NUCLEAR REACTOR SAFETY ASSESSMENT

ETSON will for the first time hold a **Summer School for young staff** of the Network's institutions and its EUROSAFE partners.

The **Summer School** is a combination of lectures and **interactive elements**, such as group work. Apart from imparting knowledge, the objective of the Summer School is to give participants the opportunity to get to know each other and the respective organisations.

The programme of the Summer School has been **devised by members of the Junior Staff Programme (JSP)** of ETSON. Lecturers will be scientists from ETSON and EUROSAFE.

The event will be held on the premises of **GRS**, which is located on the campus of Munich Technical University in the vicinity of the research reactors. It is planned to visit the FRM II Munich Research Reactor as part of the event.

Participation in the Summer School is **free**; the participants will have to pay for their own travel and accommodation.

Participants should have **basic knowledge of reactor physics and technology** and should be nominated by their parent institutions. In order to enable participants to work effectively, numbers are limited to around 40.

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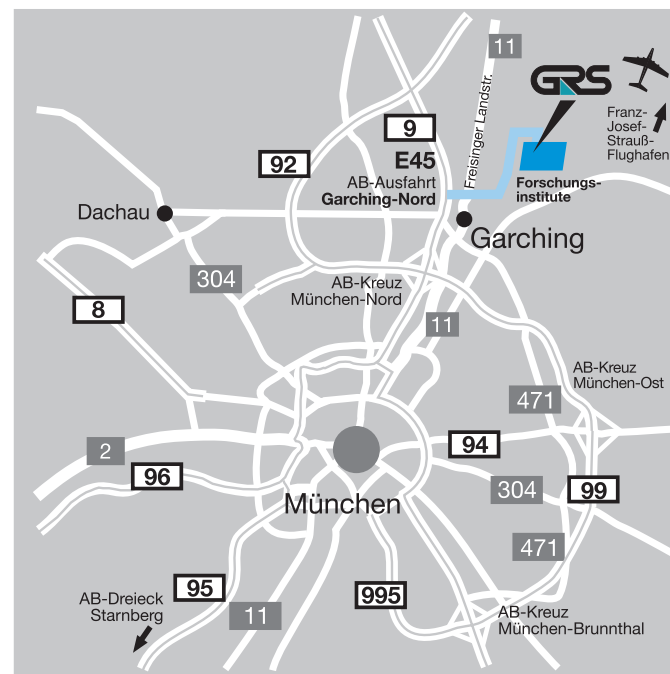
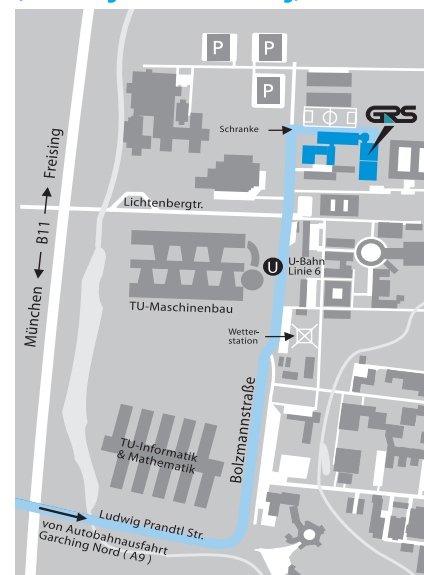
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### Research Institutes Garching (Forschungsinstitute Garching)

**GRS Garching**  
Forschungsinstitute  
85748 Garching b. München

**Motorway E 45 (A9):**  
exit Garching-Nord, direction  
Garching, look out for sign  
Forschungsinstitute, then  
follow sign GRS.

**From Munich railway  
station:** any S-Bahn to  
Marienplatz, then change to  
underground U6 for Garching-  
Forschungszentrum.



# SUMMER SCHOOL NUCLEAR REACTOR SAFETY ASSESSMENT

Devised by the Junior Staff Programme (JSP) Members



25 - 29 AUGUST 2008  
GARCHING CAMPUS, GERMANY

## MONDAY 25 AUGUST

### ROLE OF THE TECHNICAL SAFETY ORGANISATIONS

Chair: Ulrich Erven (GRS)

- 12:00 - 13:00 **Registration and quick lunch**
- 13:00 - 13:30 **Welcome**  
GRS General Management (GRS)
- 13:30 - 15:30 **Role of safety authorities and TSOs for regulatory control, interactions with utilities (including presentation of IRSN, GRS, BEL V)**  
Edouard Scott de Martinville, Ulrich Erven, Benoît De Boeck (IRSN, GRS, BEL V)
- Coffee**
- 16:00 - 16:45 **ETSON, EUROSAFE Approach**  
Edouard Scott de Martinville (IRSN), Andrew Worrall (Nexia Solutions)
- 16:45 - 17:30 **The Junior Staff Programme**  
Amélie de Hoyos (IRSN), Stefan Weber (GRS), Olivier Destin (BEL V)
- 19:00 **Welcome dinner**

## TUESDAY 26 AUGUST

### SAFETY OF NUCLEAR REACTORS

Chair: Andrew Worrall (Nexia Solutions)

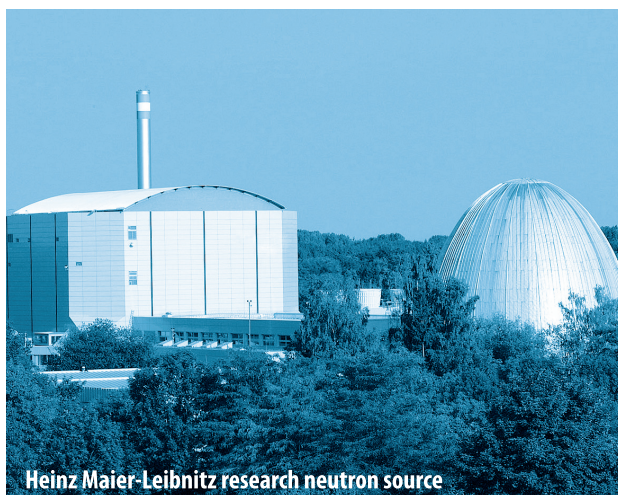
- 09:00 - 10:30 **PWR/BWR technology**  
Reinhard Stück (GRS)
- Coffee**
- 11:00 - 12:30 **Principles of nuclear safety**  
**Defence in depth**  
Claude Mayoral (IRSN)
- Lunch**
- 13:30 - 15:30 **Principles of nuclear safety**  
**Deterministic + probabilistic approaches**  
Benoît De Boeck (BEL V), Marina Röwekamp (GRS)
- Coffee**
- 16:00 - 18:00 **Operational safety: important aspects**  
Pierre Barras (BEL V)
- 18:00 **Adjournment**

## WEDNESDAY 27 AUGUST

### NUCLEAR ACCIDENT ANALYSIS

Chair: Rémy Bertrand (IRSN)

- 09:00 - 10:00 **Initiating events, categories of incidents/accidents**  
Rémy Bertrand (IRSN)
- 10:00 - 10:45 **Internal hazards**  
Marina Röwekamp (GRS)
- Coffee**
- 11:15 - 12:30 **Loss-of-coolant accidents**  
Sébastien Israel (IRSN)
- Lunch**
- 13:30 - 14:30 **Transients, steam line break**  
Tomasz Skorek (GRS)
- 14:30 - 15:30 **Steam generator tube rupture**  
Sébastien Israel (IRSN)
- 15:30 - 18:00 **Visit to Heinz Maier-Leibnitz research neutron source (FRM II)/ Visit to GRS Simulation Centre**
- 18:00 **Dinner**
- 19:00 **Group work**
- 20:00 **Presentation of results**
- 21:00 **Adjournment**



Heinz Maier-Leibnitz research neutron source

## THURSDAY 28 AUGUST

### NUCLEAR ACCIDENTS / MULTILATERAL TOOLS

Chair: Jean Chipot (IRSN)

- 09:00 - 10:00 **Reactivity-initiated events**  
Vincent Georgenthum (IRSN)
- 10:00 - 10:45 **Severe accidents**  
Jean Chipot (IRSN)
- Coffee**
- 11:15 - 12:30 **The Chernobyl and TMI accidents**  
Klaus Kotthoff (GRS)
- Lunch**
- 13:30 - 14:30 **The Chernobyl and TMI accidents (contd.)**  
Klaus Kotthoff (GRS)
- 14:30 - 15:30 **Multilateral tools**  
Pieter De Gelder (BEL V)
- Coffee**
- 16:00 - 16:45 **Safety assessment: guidelines and methodology**  
Heinz Liemersdorf (GRS)
- 16:45 - 18:00 **Incident example for group work**  
Pieter De Gelder (BEL V), Pascal Quentin (IRSN)
- 18:30 **Dinner with ETSON Directors**

## FRIDAY 29 AUGUST

### SAFETY ASSESSMENT

Chair: Heinz Liemersdorf (GRS)

- 09:00 - 10:30 **Group work: analyses of the introduced example**  
Pieter De Gelder (BEL V), Heinz Liemersdorf (GRS), Pascal Quentin (IRSN)
- Coffee**
- 10:45 - 12:00 **Continuation of group work**  
Working Groups
- Lunch**
- 13:00 - 14:00 **Discussion and feedback**  
Pieter De Gelder (BEL V), Heinz Liemersdorf (GRS), Pascal Quentin (IRSN)
- 14:45 - 15:00 **Final résumé of Summer School**
- 15:00 **End of Summer School / Transfer to airport**