

The International Expert Conference on Nuclear Technology

Jahrestagung Kerntechnik  
Annual Meeting  
on Nuclear Technology

46<sup>th</sup>

Estrel Convention  
Center Berlin  
Germany

5-7 May  
2015

## Key Topics

Outstanding Know-How &  
Sustainable Innovations

Enhanced Safety &  
Operation Excellence

Decommissioning Experience &  
Waste Management Solutions

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## Programme

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DAtF





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# Programme Overview

Tuesday | May 5<sup>th</sup> 2015

| 09:00  | 10:15  | 10:30 | 12:00 | 12:30 | 13:00 | 16:00  | 16:30 | 19:00 | 23:00                                 |
|--|--------|-------|-------|-------|-------|--|-------|-------|---------------------------------------|
| <b>Industrial Exhibition</b>   |        |       |       |       |       |  |       |       |                                       |
|  | Coffee |       | Lunch |       |       | Coffee   |       |       |                                       |
| <ul style="list-style-type: none"> <li>09:00 – 12:30   TOPS Sustainable Reactor Operation – Safe, Efficient and Valuable<br/>Room: Parisation Management – Valuable<br/>Page: 22</li> <li>09:00 – 12:30   FOCS Radiation Protection<br/>Room: ECC 5<br/>Page: 24</li> <li>09:00 – 12:30   FOCS Experiences on Postoper- sioning in Germany<br/>Room: ECC 4<br/>Page: 32</li> <li>09:00 – 12:15   FOCS Qualification for Konrad –<br/>Room: ECC 3<br/>Page: 34</li> </ul> |        |       |       |       |       | Plenary Session  |       |       | Social Evening in the Exhibition Area |
| <b>Outstanding Know-How &amp; Sustainable Innovations</b>  |        |       |       |       |       | TOPS = Topical Session<br>FOCS = Focus Session<br>TECS = Technical Session<br>CAMP = Campus<br>WORK = Workshop<br>D = Contributions in German<br>tsiE = translated simultaneously in English |       |       |                                       |
| <b>Enhanced Safety &amp; Operation Excellence</b>  |        |       |       |       |       |  |       |       |                                       |
| <b>Decommissioning Experience &amp; Waste Management Solutions</b>   |        |       |       |       |       |  |       |       |                                       |

Programme Overview

## Plenary Session | Topics

- Policy**
  - ▶ International Developments
  - ▶ German Energiewende and European Energy Market – Risk or Opportunity?
- Economy**
  - ▶ E.ON’s Strategy: Managing Regulation and Political Uncertainty
  - ▶ Vattenfall’s Visions Concerning Climate Policy and the Place of Nuclear
  - ▶ Long-Term Stability and Profitability in Electricity Generation
- Communications**
  - ▶ Pragmatism and Ideology: Opinion Shaping in Nuclear
  - ▶ Why Miracles Come From Nuclear? Nuclear Communications Beyond Energy
- Waste Management**
  - ▶ Re-Start of the Selection Process for a HAW Final Repository in Germany – a Snapshot of the Status-Quo
- Competence**
  - ▶ From Enhanced Safety to Advanced Designs



# Programme Overview

## Wednesday | May 6<sup>th</sup> 2015

| 08:00  | 08:15  | 09:30   | 10:00   | 10:30                | 11:15  | 11:30 | 12:00 |
|--|--|---|---|----------------------|--|-------|-------|
| Industrial Exhibition                                    |  |   |   |                      |  |       |       |
|  |  | Coffee  |   | Lunch                |  |       |       |
| 08:00 – 11:30   FOCS<br>Implementing New Safety Require- |  |   | ▶ Room: ECC 5 <input type="checkbox"/><br>◉ Page: 9 |                      |  |       |       |
|  | 08:15 – 12:00   TECS<br>Reactor Physics, Thermo and    |   |   |                      | ▶ Room: ECC 3 <input type="checkbox"/><br>◉ Page: 10 |       |       |
|  | 08:00 – 11:30   WORK<br>Preserving Competence   Part 1 |   |   |                      | ▶ Room: ECC 1 <input type="checkbox"/><br>◉ Page: 11 |       |       |
|  |  | 09:30 – 15:30   CAMP<br>Nuclear Energy Campus |   |                      |  |       |       |
| 08:00 – 17:45   TECS<br>Operation and Safety of Nuclear  |  |   |   | Installations, Fuel  |  |       |       |
| 08:00 – 15:45   TECS<br>Radioactive Waste Management,    |  |   |   | Storage and Disposal |  |       |       |

## Thursday | May 7<sup>th</sup> 2015

| 08:00   | 08:30  | 08:45 | 09:00  | 10:00  | 10:30 | 11:00   | 11:30  | 12:30 |
|---|--|-------|--|--|-------|---|--|-------|
| Industrial Exhibition   |  |       |  |  |       |   |  |       |
|   |  |       | Coffee   |  |       |   |  |       |
| 08:00 – 13:00   TOPS<br>CFD-Simulations for Reactor Safety            |  |       |  | ▶ Room: ECC 2 <input type="checkbox"/><br>◉ Page: 17 |       |   |  |       |
|   | 08:00 – 13:00   TECS<br>Know-How, New Build and Inno-  |       |  |  |       |   | ▶ Room: ECC 5 <input type="checkbox"/><br>◉ Page: 19 |       |
|   | 08:00 – 11:00   WORK<br>Preserving Competence   Part 2 |       |  |  |       |   | ▶ Room: ECC 1 <input type="checkbox"/><br>◉ Page: 12 |       |
| 08:30 – 12:30   TOPS<br>Current Issues and Lear-<br>Reactor Operation |  |       |  |  |       | ▶ Room: ECC 4 <input type="checkbox"/><br>◉ Page: 30  |  |       |
|   |  |       | 09:00 – 11:30<br>Comprehensive<br>Spent Fuel<br>Acceptance |  |       | TOPS ▶ Room: ECC 3 <input type="checkbox"/><br>sive Solutions for Waste and<br>Management: The Key to Public<br>from New Build to Phase Out<br>◉ Page: 39 |  |       |
|   |  |       | 08:45 – 11:00<br>Decommissioning<br>of Nuclear Instal-     |  |       | TECS ▶ Room: Paris <input type="checkbox"/><br>lations ◉ Page: 40   |  |       |





# Plenary Session

Tuesday | May 5<sup>th</sup> 2015

13:00 – 23:00 ▶ ECC A

**13:00 D Welcome and Opening Address**

Dr. Ralf Güldner

President of DATf, Germany

## Policy

**13:20 D German Energiewende and European Energy Market – Risk or Opportunity?**

Thorsten Herdan

Head of the Department Energy Policy, Federal Ministry for Economic Affairs and Energy, Germany

**13:50 E Euratom Supply Agency – a Small Energy Union?**

Dr. Ute Blohm-Hieber

Head of Unit Nuclear Fuel Market Operations, Euratom Supply Agency, European Commission, Luxembourg

## Economy

**14:20 E E.ON's Strategy: Managing Regulation and Political Uncertainty**

Dr.-Ing. Leonhard Birnbaum

Member of the Board of Management – Markets, Services, E.ON SE, Germany

**14:40 E Vattenfall's Visions Concerning Climate Policy and the Place of Nuclear**

Mats Ladeborn

Head of Nuclear Power Development, Vattenfall AB, Sweden

**15:00 E Long-Term Stability and Profitability in Electricity Generation**

Jacek Cichosz

President of the Management Board, PGE EJ1, Poland

## Communications

**15:20 E Pragmatism and Ideology: Opinion Shaping in Nuclear**

Ann S. Bisconti, PhD

President, Bisconti Research, Inc., USA

**15:40 E Why Miracles Come From Nuclear? Nuclear Communications Beyond Energy**

Dr. John Barrett

President and Chief Executive Officer, Canadian Nuclear Association, Canada

16:00 *Coffee Break*



## Waste Management

### 16:30 Re-Start of the Selection Process for a HAW Final Repository in Germany – a Snapshot of the Status-Quo

|              |   |   |
|--------------|---|---|
| Key Note     | Ursula Heinen-Esser                           | Chairperson of the Commission<br>„Storage of High-Level Radioactive Waste Materials“  |
| <b>16:45</b> |   |   |
| Panel        | Ursula Heinen-Esser<br>Prof. Dr. Dirk Bosbach | Chairperson of the Commission<br>  Director of the Institute of Energy and Climate Research IEK-6: Nuclear Waste Management and Reactor Safety, Forschungszentrum Jülich GmbH |
|              | Jochen Stay<br>Dr. Hannes Wimmer              | Spokesperson of .ausgestrahlt<br>  Chairman of the Board of Managing Directors, GNS Gesellschaft für Nuklear-Service mbH  |
| Moderator    | Johannes Pennekamp                            | Business Editor, Frankfurter Allgemeine Zeitung   |

## Competence

### 17:40 From Enhanced Safety to Advanced Designs

|           |                        |  |
|-----------|------------------------|--|
| Panel     | Yves Brachet, PhD      | President EMEA Region, Westinghouse Electric Company, Belgium                                |
|           | Dr. Erwin Fischer      | Member of the Management Board, E.ON Kernkraft GmbH, Germany                                 |
|           | Nick Hanigan           | Director of Waste Management and Decommissioning National Nuclear Laboratory, United Kingdom |
|           | Dr. Abdelmajid Mahjoub | Director General, Arab Atomic Energy Agency, Tunisia   |
|           | Dr. Stefan Nießen      | Vice President Research & Innovation, AREVA GmbH, Germany                                    |
| Moderator | Dr. Astrid Petersen    | Chairperson of KTG, Germany  |

### 18:30 Closing Remarks and Outlook

|  |                     |                             |
|--|---------------------|-----------------------------|
|  | Dr. Astrid Petersen | Chairperson of KTG, Germany |
|--|---------------------|-----------------------------|

18:40 *Break*

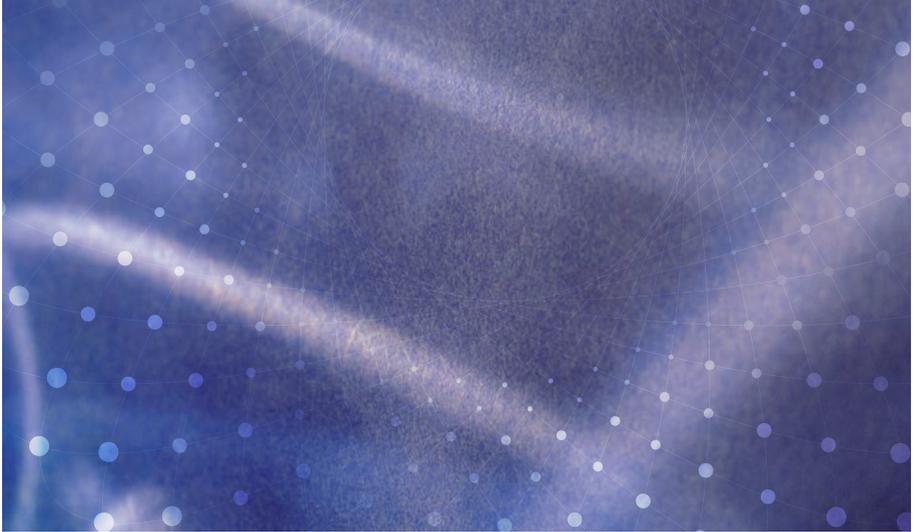
### 19:00 **Social Evening**

– 23:00 DATF-Reception and Meet-and-greet in the Exhibiton Area

  Contributions will be held in German/English and simultaneously translated in English and German. The DATF-President and the KTG-Chairperson will lead through the programme.



# Key Topic | Outstanding Know-How & Sustainable Innovations



## Focus Session

- Implementing New Safety Requirements in Europe  
6 May | 08:00–11:30 | Page 9

## Topical Sessions

- Nuclear Know-How Beyond Power Generation  
6 May | 13:00–16:00 | Page 16
- CFD Simulations for Reactor Safety Relevant Objectives  
7 May | 08:00–13:00 | Page 17

## Technical Sessions

- Reactor Physics, Thermo and Fluid Dynamics  
6 May | 08:15–12:00 | Page 10
- Know-How, New Build and Innovations  
7 May | 08:00–13:00 | Page 19

## Workshop

- Preserving Competence  
Part 1 6 May | 08:00–11:30 | Page 11  
Part 2 7 May | 08:00–11:00 | Page 12

## Campus

- Nuclear Energy Campus  
6 May | 09:30–15:30 | Page 14



Wednesday | May 6<sup>th</sup> 2015

🕒 08:00 – 11:30 ▶ Room: ECC 5

Focus Session |

## Implementing New Safety Requirements in Europe

The revision of the EU Nuclear Safety Directive has been adopted by the Council. WENRA will complete the revision of its Reference Levels by 2014. The IAEA is pursuing a number of post-Fukushima actions and programmes. These developments and their impact on design and operation of nuclear installations will be presented and discussed by high-level speakers from relevant institutions and companies.

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Coordinator Dr. Christian Raetzke | CONLAR Consulting on Nuclear Law, Licensing and Regulation, Germany

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### 08:00 – 08:30 The Revised EU Nuclear Safety Directive

Massimo Garribba | Director, Nuclear Safety and Fuel Cycle  
European Commission, Luxembourg

### 08:30 – 09:00 The Revision of WENRA Reference Levels and their Implementation by WENRA Regulators

Dr. Hans Wanner | Director, ENSI (Eidgenössisches Nuklearsicherheitsinspektorat), Chairman of WENRA, Switzerland

### 09:00 – 09:30 IAEA Activities Concerning Nuclear Safety After the Fukushima Accident

Gustavo Caruso | Special Coordinator, Nuclear Safety Action Team (NSAT), Department of Nuclear Safety and Security, International Atomic Energy Agency (IAEA), Austria

### 09:30 – 10:00 The Revision of the German Regulations in the Light of Developments in the EU and Worldwide

Kay Nünighoff | Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) mbH, Germany

10:00 – 10:30 *Coffee Break*

### 10:30 – 11:00 The Impact of New Safety Requirements on the Operation of Existing Installations in the Czech Republic

Milan Sýkora | Production Division Project Manager, ČEZ, a. s., Czech Republic

### 11:00 – 11:30 The Impact of New Safety Requirements on the Design of New Nuclear Power Plants in the EU on the Example of EPR

Jürgen Wirkner | Senior Advisor, Department Manager EPR model & Safety/Licensing, AREVA GmbH, Germany

12:00 – 13:00 *Lunch Break*



# Technical Session

Wednesday | May 6<sup>th</sup> 2015

● 08:15 – 12:00 ▶ Room: ECC 3

## Reactor Physics, Thermo and Fluid Dynamics

### Topical Neutron Kinetics and Thermal Hydraulic Developments and Applications

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Chair Dr. Birgit Wortmann | Nuclear Physics Department  
STEAG Energy Services GmbH, Germany

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**08:15 – 08:45 The Use of Neutron Fluence Analyses as Verification of Reactor Pressure Vessel Shielding Design**

Lars Ackermann | Engineer, AREVA GmbH, Germany

**08:45 – 09:15 Validation of MCNP for Skyshine Calculations**

Luc Schlömer | Calculation Engineer, WTI GmbH, Germany

**09:15 – 09:30 VENUS 7: A Recent Evaluation for the IRPhe Handbook**

Dr. Winfried Zwermann | Chief Expert Neutron Transport, Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) mbH, Germany

**09:30 – 10:00 Nuclear Data Uncertainty Analysis With Perturbation Theory and Random Sampling**

Dr. Winfried Zwermann | Chief Expert Neutron Transport, Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) mbH, Germany

10:00 – 10:30 *Coffee Break*

**10:30 – 11:00 Depletion Calculations for a Fast Spectrum Fuel Assembly**

Alexander Aures | Scientific Employee, Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) mbH, Germany

**11:00 – 11:15 Neutronic Modeling of a PWR Konvoi Type Reactor Using PARCS With Few Group Cross Section Generated With SCALE and SERPENT**

Joaquin Ruben Basualdo Perello | Phd Student, Karlsruhe Institute of Technology (KIT), Germany

**11:15 – 11:30 Monte Carlo Neutronics Investigations of VVER-1000 Fuel Assemblies**

Luigi Mercatali | Research Staff Member, Karlsruhe Institute of Technology (KIT), Germany

**11:30 – 11:45 Fundamentals of Heat Removal Accuracy and Application Limits of Analytical and Numerical Calculation Methods: Examples from Nuclear Applications**

Dr. Andre Leber | Group Leader Thermal, WTI GmbH, Germany

12:00 – 13:00 *Lunch Break*

Wednesday | May 6<sup>th</sup> 2015

🕒 08:00 – 11:30

Thursday | May 7<sup>th</sup> 2015

🕒 08:00 – 11:00 ▶ Room: ECC 1



# Workshop

## Preserving Competence

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Coordinator Dr. Wolfgang Steinwarz | Siempelkamp Nucleartechnik GmbH, Germany

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### Wednesday | Part 1

**08:00 – 08:05 Welcome and Opening Address**

Dr. Wolfgang Steinwarz | Siempelkamp Nucleartechnik GmbH, Germany

**08:05 – 08:20 Experimental Studies on Heat Transfer to Supercritical Water Flowing in 2 x 2 Rod Bundles**

Meng Zhao | Karlsruhe Institute of Technology (KIT), Germany  
Responsible Professor Prof. Dr. Ing. Xu Cheng

**08:20 – 08:35 Validation Results of a System for Core State Diagnosis during Severe Accidents in Pressurized Water Reactors**

Sebastian Schmidt | Zittau/Görlitz University of Applied Sciences, Germany  
Responsible Professor Prof. Dr.-Ing. Alexander Kratzsch

**08:35 – 08:50 Personnel Planning in Nuclear Decommissioning Projects**

Madeleine Weber | Karlsruhe Institute of Technology (KIT), Germany  
Responsible Professor Prof. Dr.-Ing. Sascha Gentes

**08:50 – 09:05 Assessment of the Integral Code ASTEC Regarding the Coolability of a Debris Bed**

Christophe D'Alessandro | Universität Stuttgart, Germany  
Responsible Professor Prof. Dr.-Ing. J. Starflinger

**09:05 – 09:20 Experiments on the Dryout Behavior of Stratified Debris Beds**

Simon Leininger | Universität Stuttgart, Germany  
Responsible Professor Prof. Dr.-Ing. E. Laurien

**09:20 – 09:35 Simulation of the Gamma Radiation Distribution Emitted from a PWR Core Under Severe Accident-Like Conditions**

Carsten Brachem | Technische Universität Dresden, Germany  
Responsible Professor Prof. Dr.-Ing. habil. U. Hampel

**09:35 – 09:50 Direct Contact Condensation Experiments at the TOPFLOW Facility**

Tobias Seidel | Helmholtz-Zentrum Dresden-Rossendorf, Germany  
Responsible Professor Prof. U. Hampel, TU Dresden



# Workshop

Wednesday | May 6<sup>th</sup> 2015

🕒 08:00 – 11:30

Thursday | May 7<sup>th</sup> 2015

🕒 08:00 – 11:00 ▶ Room: ECC 1

## Preserving Competence

### 09:50 – 10:05 Investigations on Vertical Gas-Liquid Downward Pipe Flows

Manuel Banowski

Responsible Professor

| Helmholtz-Zentrum Dresden-Rossendorf, Germany

Prof. Dr.-Ing. habil. U. Hampel

Dr. Dirk Lucas

10:05 – 10:30 *Coffee Break*

### 10:30 – 10:45 Coarse-Grid-CFD Method Applied to Two-Phase Flow Problems

Rüdiger Noack

Responsible Professor

| Karlsruhe Institute of Technology (KIT), Germany

Prof. Dr.-Ing. Andreas Class

### 10:45 – 11:00 Tomographic Investigations on the Effects of Gas Entrainment on Centrifugal Pumps

Thomas Schäfer

Responsible Professor

| Helmholtz-Zentrum Dresden-Rossendorf, Germany

Prof. Dr.-Ing. habil. U. Hampel

### 11:00 – 11:15 Detailed Simulation of the Activity Distribution and Radiation Field of the FRJ-2 Research Reactor

Artur Sperling

Responsible Professor

| RWTH Aachen University, Germany

Prof. Dr. Bruno Thomauske

Prof. Dr. Rahim Nabbi

### 11:15 – 11:30 Experimental Investigations of BWR Fuel Elements in Spent Fuel Pools – Improvements and Adjustments

Christine Partmann

Responsible Professor

| Technische Universität Dresden, Faculty of Mechanical Science and Engineering, Germany

Prof. Dr.-Ing. habil. A. Hurtado

Dr.-Ing. C. Schuster

## Thursday | Part 2

### 08:00 – 08:15 CFD Analysis of Heat Transfer at Specific Parts of Fuel Elements during Evaporation in a Partly Filled Spent Pool

Claudia Liersch

Responsible Professor

| Technische Universität Dresden, Faculty of Mechanical Science and Engineering, Germany

Prof. Dr.-Ing. habil. J. Fröhlich

Dr.-Ing. F. Rüdiger

### 08:15 – 08:30 Large Scale CFD Simulations of Spent Fuel Pool Accident Scenarios Using a Porous Body Approach

Ronald Oertel

Responsible Professor

| Helmholtz-Zentrum Dresden-Rossendorf, Germany

Dr.-Ing. E. Krepper

Wednesday | May 6<sup>th</sup> 2015

🕒 08:00 – 11:30

Thursday | May 7<sup>th</sup> 2015

🕒 08:00 – 11:00 ▶ Room: ECC 1



# Workshop

## Preserving Competence

**08:30 – 08:45 System Analysis of Experiments for Specific Measurements and Modeling of Boundary Conditions at the Balance Limits in PWR Spent Fuel Pools**

Hassan Chahi

Responsible Professor

| University of Applied Sciences Zittau/Görlitz, Germany

Prof. Dr.-Ing. W. Kästner

Dipl.-Ing. S. Alt

**08:45 – 09:00 Spatially-Resolved Measurement of Gas Phase Temperature and Velocity in the Subchannels of a Fuel Element During Dry-Out**

Martin Arlt

Responsible Professor

| Technische Universität Dresden, Faculty of Mechanical Science and Engineering, Germany

Prof. Dr.-Ing. habil. U. Hampel

Dr.-Ing. M. Bieberle

**09:00 – 09:15 Gamma-Induced dpa Production in Spent Nuclear Fuel Structures**

Christian Herold

Responsible Professor

| RWTH Aachen University, Germany

Prof. Dr. Bruno Thomauske

Prof. Dr. Rahim Nabbi

**09:15 – 09:30 Simulation Studies on Highly Brilliant Neutron Moderators**

Jan Philipp Dabruck

Responsible Professor

| RWTH Aachen University, Germany

Prof. Dr. Bruno Thomauske

Prof. Dr. Rahim Nabbi

**09:30 – 09:45 Phase-Field Modeling of Binary Alloy Solidification With Convection**

Stefan Meyer

Responsible Professor

| Karlsruhe Institute of Technology (KIT), Germany

Prof. Xu Cheng

*10:00 – 10:30 Coffee Break*

**10:30 – 10:45 Development of a Separation Method for Radionuclides in Aqueous Environmental Samples by an Automated Separation Column System**

Christina Schumacher

Responsible Professor

| Research Center Jülich GmbH, Germany

Prof. Dr. U. W. Scherer

Dr. rer. nat M. Zoriy

**10:45 – 11:00 Experimental Investigation of High Cycle Thermal Fatigue in a T-Junction Piping System**

Karthick Selvam

Responsible Professor

| Universität Stuttgart, Germany

Prof. Dr.-Ing. E. Laurien



## Nuclear Energy Campus

The Nuclear Energy Campus leads through the world of nuclear technology, radioactivity and radiation protection with individual stations. There will be contact persons available at all of the themed stands to offer information in form of short talks, movies, demonstrations or experiments. Besides, information on study options and career perspectives within nuclear industry are provided. The event is oriented towards students undergoing career guidance.

---

Coordinator Dr. Heiko Herbell

| Westinghouse Electric Germany GmbH, Germany

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### 09:30 – 10:00 Welcome Speech and Introduction to Nuclear Energy Campus

Yvonne Schmidt-Wohlfarth

| Spokesperson of the Board, Young Generation German Nuclear Society, Germany

### 10:00 – 11:00 Visit Stations of Nuclear Campus I

Tour in little groups (participants are divided in 6 groups and visit 2 stations per time slot)

*11:00 – 11:15 Coffee Break*

### 11:15 – 11:50 Development of a Nuclear Safety Culture

Conrad Dubé

| Professional and Technical Development Programme Manager, WANO Paris Centre, France

### 11:50 – 12:50 Visit Stations of Nuclear Campus II

Tour in little groups (participants are divided in 6 groups and visit 2 stations per time slot)

*12:50 – 13:45 Lunch Break*

### 13:45 – 14:45 Visit Stations of Nuclear Campus III

Tour in little groups (participants are divided in 6 groups and visit 2 stations per time slot)

### 14:45 – 15:30 Round Table and Panel Discussion: Future Career Perspectives within Nuclear Industry

Participants Members of the KTG Young Generation Board

*15:30 Individual Visit of the Industrial Exhibition, End of Campus*



## Stations of Nuclear Campus

### 1. Fuel Assembly Production: Technics and Perspective

Christian Möllmer  
Dr. Julien Dumond

| Engineer: PWR Core Design, AREVA GmbH, Germany  
| Project Engineer in Thermal Hydraulics Fuel Engineering, AREVA GmbH, Germany

Sebastian Kotzur

| Head of Projects, URENCO Deutschland GmbH, Germany

Dr. Chris Breuer

| Communications & PR Manager, URENCO Deutschland GmbH, Germany

Carsten ter Steege

| Operator, URENCO Deutschland GmbH, Germany

### 2. What Tasks Fulfill Nuclear Power Plants in the Power Supply System?

Carsten George

| Deputy Manager – Mechanical Engineering, Kernkraftwerk Gundremmingen GmbH, Germany

### 3. Decommissioning of Nuclear Power Plants

Thomas Zimmermann  
Helge Gottschling

| KTG Young Generation, Germany  
| KTG Young Generation, Germany

### 4. Safe Disposal - From Power Plant to Final Repository

Burghard Rosen

| Public Relations Manager, GNS Gesellschaft für Nuklear-Service mbH, Germany

### 5. Radioactivity and Radiation Protection

Sven Jansen

| Head of Division Inhouse Radiation Protection, VKTA – Strahlenschutz, Analytik & Entsorgung Rossendorf e.V., Germany

### 6. View Into the Future: Advanced Reactor Concepts of Nuclear Fission and Fusion

Holger Großmann

| Scientific Assistant, Faculty of Mechanical Engineering, Institute of Power Engineering, Chair of Hydrogen and Nuclear Energy, Germany



## Nuclear Know-How Beyond Power Generation

Nuclear physics have opened a very broad field of applications. Most of these applications are just as essential for our modern life as power generation: non-destructive material testing, medical diagnostics and therapy, radioisotope batteries or gamma-irradiation for sterilization or material processing. The session features a range of technologies and applications that will allow to preserve certain nuclear know-how even without any nuclear power plants. Just to avoid sending a misleading signal to politics: the word “certain” was chosen deliberately.

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Coordinator Dr. Stefan Nießen | Vice President Research & Innovation,  
AREVA GmbH, Germany

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### 13:00 – 13:30 FRM II: Neutrons for Industrial and Medical Applications

Dr. Anton Kastenmüller | Technical Director, Technische Universität München,  
Germany

### 13:30 – 14:00 Thermohydraulic Codes Applied to Wind Power and Combustion Engines

Prof. Dr. Andreas Class | Director AREVA Nuclear Professional School,  
Karlsruhe Institute of Technology (KIT), Germany

### 14:00 – 14:30 Radioisotope Battery Technology in Space

Marie-Claire Perkinson | European Aeronautic Defence and Space Company  
(EADS), United Kingdom

Dr. Richard Ambrosi | University of Leicester, United Kingdom

### 14:30 – 15:00 Gamma Irradiation an Indispensable Tool for Sterilization

Reiner Eidenberger | Managing Director, Synergy Health Allershausen  
GmbH, Germany

15:00 – 15:30 *Coffee Break*

### 15:30 – 16:00 Naturally Occurring Radioactive Materials (NORM): A Comparison Between Geothermal Energy, Fracking and Uranium Mining Overburden

Prof. Dr. Thorsten Schäfer | Divisional Head, Karlsruhe Institute of Technology  
(KIT), Germany



Thursday | May 7<sup>th</sup> 2015

🕒 08:00 – 13:00 ▶ Room: ECC 2

## Topical Session

### CFD Simulations for Reactor Safety Relevant Objectives

This session is organized to demonstrate the progress as well as its potential for their application regulatory practice. Current developments, examples (e.g. flow in PWR fuel assemblies, vortex formation at pump inlets, condensation induced water hammer, containment flows) and future needs are presented by worldwide leading technical experts in this area.

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Coordinator Dr. Andreas Schaffrath  
Martina Scheuerer | Gesellschaft für Anlagen- und Reaktorsicherheit  
GRS mbH, Germany

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#### 08:00 – 08:30 CFD Application in Nuclear Reactor Safety

Martina Scheuerer | Team Leader CFD, Gesellschaft für Anlagen- und  
Reaktorsicherheit GRS mbH, Germany

#### 08:30 – 09:00 Current Developments in CFD Codes

Dr. Georg Scheuerer | Managing Director, ANSYS Germany GmbH, Germany

#### 09:00 – 09:30 LES Analysis of Flow in a Simplified PWR Assembly with Mixing Grid

Dr. Ulrich Bieder | Senior Scientist, CEA/Centre de SACLAY, France

#### 09:30 – 10:00 Modelling of Passive Auto-Catalytic Recombiner Operational Behaviour with the Coupled REKODIREKT-CFX Approach

Dr. Stephan Kelm | Group Leader CFD, Forschungszentrum Jülich GmbH,  
Germany

10:00 – 10:30 *Coffee Break*

#### 10:30 – 11:00 Investigation of Surface Vortex Formation at Pump Intakes in PWR

Peter Pandazis | Technical Expert of Cooling Circuit Department,  
Gesellschaft für Anlagen- und Reaktorsicherheit  
GRS mbH, Germany

Dr. Andreas Schaffrath | Head of Division Reactor Safety Research, Gesellschaft  
für Anlagen- und Reaktorsicherheit GRS mbH, Germany

Dr. Frank Blömeling | Technical Expert of Thermal Hydraulic Analyses & Fluid  
Dynamics Group, TÜV NORD SysTec GmbH & Co. KG,  
Germany



# Topical Session

Thursday | May 7<sup>th</sup> 2015

🕒 08:00 – 13:00 ▶ Room: ECC 2

## CFD Simulations for Reactor Safety Relevant Objectives

### 11:00 – 11:30 CFD Simulations of Condensation Induced Water Hammer

Dr. Sabin Ceuca

| Gesellschaft für Anlagen- und Reaktorsicherheit  
GRS mbH, Germany

### 11:30 – 12:00 CFD Simulations of Containment Flows

Dr. Ed Komen

| Group Leader CFD Services, NRG, The Netherlands

### 12:00 – 12:30 CFD for Two-Phase Flows: Status, Recent Trends and Future Needs

Dr. Dirk Lucas

| Department Head Computational Fluid Dynamics,  
Helmholtz-Zentrum Dresden-Rossendorf, Germany

Prof. Dr. Eckhart Laurien

| Head of Division Thermo-Fluid-Dynamics,  
University of Stuttgart, Germany

### 12:30 – 13:00 Examples of CFD Applications Within Licensing and Supervising Procedure

Dr. Reinhard Schoner

| TÜV Süd Industrie Service GmbH, Germany

Thomas Thiele

| TÜV Süd Industrie Service GmbH, Germany

Outstanding Know-How  
& Sustainable Innovations



Thursday | May 7<sup>th</sup> 2015

🕒 08:00 – 13:00 ▶ Room: ECC 5

# Technical Session

## Know-How, New Build and Innovations

### Innovative Concept in Nuclear Technology

Chair Dr. Matthias Lamm

| R & D Manager, AREVA GmbH, Germany

**08:00 – 08:30 Advanced Reactor Concepts and Sustainable Nuclear Energy Strategy – Russian Trends**

Dr. Andrey Gagarinskiy

| Scientific Advisor To Director,  
National Research Centre, Russia

**08:30 – 08:45 On the Use of a Molten Salt Fast Reactor for Transmutation Fulfilling the Requests of the Nuclear Phase Out Decision**

Dr. Bruno Merk

| Senior Scientist, Helmholtz-Zentrum  
Dresden-Rossendorf (HZDR), Germany

**08:45 – 09:00 Modeling SFR Diagrid Expansion Reactivity Feedback by Coordinate Transformation of the Diffusion Equation**

Dr. Armin Seubert

| Research, Gesellschaft für Anlagen- und  
Reaktorsicherheit (GRS) mbH, Germany

**09:00 – 09:30 AREVA's Worldwide Contributions to Safety Improvement**

Marina Welker

| Global Product Sales Developer, AREVA GmbH,  
Germany

**09:30 – 10:00 Adaptive Reactor Control to Minimize Manual Interventions during Flexible Load Operation**

Andreas Kuhn

| Section Manager Training, AREVA GmbH, Germany

10:00 – 10:30 *Coffee Break*



# Technical Session

Thursday | May 7<sup>th</sup> 2015

🕒 08:00 – 13:00 ▶ Room: ECC 5

## Know-How, New Build and Innovations

### Regulatory and Computational Improvements

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Chair Dr. Matthias Lamm | R & D Manager, AREVA GmbH, Germany

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**10:30 – 10:45 Training in a Plant Modernization Project**

Christof Pudelko | Training Manager, AREVA GmbH, Germany

**10:45 – 11:00 Supports for Equipment Components and Piping of Nuclear Power Plants: Advances in the Russian Regulatory Basis**

Dr. Yury Spirochkin | Director On Design Analyses, Engineering Center of Nuclear Equipment Strength, Russia

**11:00 – 11:15 Design of Nuclear Building Structures and Components With Respect to Service Life and Reliability**

Dr. Björn Elsche | E.ON Kernkraft GmbH, Germany

**11:15 – 11:30 Assessment of Containment Reinforced Concrete Structures Exposed to the Accidental Flooding by Using Abaqus FEA-Software: Solutions and Lessons-Learned**

Ulf Ricklefs | Civil Engineer, Welstinghouse Electric Germany GmbH, Germany

### Development of Measuring and Materials Technology for ITER

**11:30 – 12:00 Thermal and Mechanical Design of the Plasma Core CXRS Diagnostics of the ITER Nuclear Fusion Reactor**

Frank Giese | Calculation Engineer, WTI GmbH, Germany

**12:00 – 12:15 Fast Neutron Detection With sic Semiconductor Detector at Elevated Temperatures**

Dora Szalkai | Phd Student, Karlsruhe Institute of Technology, Germany

**12:15 – 12:30 Surface Finish Influence on the Thermal Shock Performance of Beryllium**

Benjamin Spilker | Phd Student, Forschungszentrum Jülich GmbH, Germany

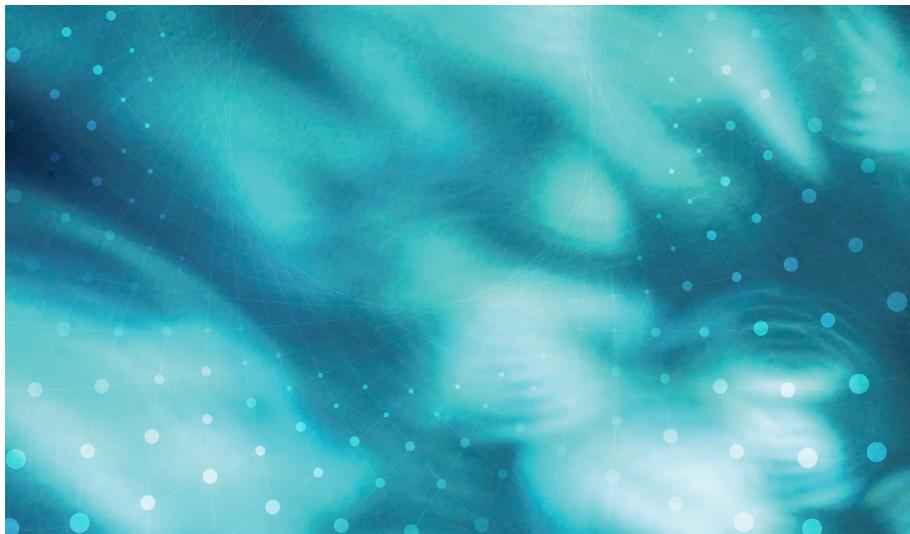
**12:30 – 13:00 Creep Irradiation Testing of Copper Alloy for the ITER First Wall Panels**

Christoph Pohl | Senior Expert, TÜV Rheinland Industrie Service GmbH, Germany

Outstanding Know-How  
& Sustainable Innovations



# Key Topic | Enhanced Safety & Operation Excellence



## Focus Session

- Radiation Protection

5 May | 09:00–12:30 | Page 24

- Current Issues and Learnings from the International Experience of Reactor Operation

7 May | 08:30–12:30 | Page 30

## Topical Sessions

- Sustainable Reactor Operation Management – Safe, Efficient and Valuable

5 May | 09:00–12:30 | Page 22

- Fuel Management During the Last Cycles and Beyond

6 May | 13:00–16:00 | Page 29

## Technical Session

- Operation and Safety of Nuclear Installations, Fuel

6 May | 08:00–17:45 | Page 25



# Topical Session

Tuesday | May 5<sup>th</sup> 2015

🕒 09:00 – 12:30 ▶ Room: Paris

## Sustainable Reactor Operation Management – Safe, Efficient and Valuable

For sure technological standards and developments as well as a strict regulation leads to operational excellence. In addition the human performance and an efficient organization are the requirements for a successful plant operation. This Focus Session provides an overview over best practices and state of the art scientific findings on the relevant topics in the field of efficient organization and responsible human performance. Questions of management systems, organizational setup are being presented and discussed as well as aspects of incorporating lessons learned and training.

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Coordinator Dr. Erwin Fischer | Member of the Management Board,  
E.ON Kernkraft GmbH, Germany

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### Organisational and Regulatory Background

**09:00 – 09:05 Welcome/Opening Remarks**  
Dr. Erwin Fischer | Member of the Management Board,  
E.ON Kernkraft GmbH, Germany

**09:05 – 09:30 Management System and Organisational Setup as Determinants for a Successful Performance of Plant Staff**  
Jürgen Schwarzin | E.ON Kernkraft GmbH, Germany

**09:30 – 09:55 Health, Safety and Environment – First!**  
Matthias Röhrborn | RWE Power AG, Germany

**09:55 – 10:15 Environmental Management – How to Deal with EMAS and OHSAS?**  
Dr. Johann Oswald | E.ON Kernkraft GmbH, Germany

*10:15 – 10:30 Coffee Break*

### Procedures Incorporating Lessons Learned

**10:30 – 11:00 The Process of Evolving Improvement with Feedback of Experience in a NPP**  
Ulrich Sander | EnBW Kernkraft GmbH, Germany

**11:00 – 11:30 German Information Notices – Interdisciplinary Event Assessment Resulting in Recommendations**  
Dr. Dagmar Sommer | Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) mbH, Germany



Tuesday | May 5<sup>th</sup> 2015

⌚ 09:00 – 12:30 ▶ Room: Paris

## Topical Session

### Sustainable Reactor Operation Management – Safe, Efficient and Valuable

#### The “Human Factor”

##### **11:30 – 12:00 Developing and Preserving Requisite Qualification – Training at a Simulator**

Jochen Kruij

- | KSG Kraftwerks-Simulator-Gesellschaft mbH,
- GfS Gesellschaft für Simulatorschulung mbH, Germany

##### **12:00 – 12:30 Tools Supporting Human Performance**

Dr. Stephan Rahlfs  
Frank Heinrich

- | EnBW Kernkraft GmbH, Germany
- | E.ON Kernkraft GmbH, Germany

*12:30 – 13:00 Lunch Break*



# Focus Session

Tuesday | May 5<sup>th</sup> 2015

🕒 09:00 – 12:30

▶ Room: ECC 5

## Radiation Protection

Radiation Protection – a century of safety benefit for jobholders, public and environment. Today, there is a large number of national and international organization and governmental institutions dealing with the protection of occupationally exposed workers, of members of the public and of the general environment. This session presents the most recent status of discussions and developments in the fields of radiation protection during decommissioning, development of codes, standards and regulations.

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|                |                        |  |
|----------------|------------------------|--|
| Coordinator    | Erik Baumann           | Radiation Protection Expert, AREVA GmbH, Germany |
| Co-Coordinator | Dr. Angelika Bohnstedt | Karlsruhe Institute of Technology (KIT), Germany |

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**09:00 – 09:30 In Fact, it Protection of Human Beings and the Environment Against Ionizing Radiation – Some Historical Insights**

Erik Baumann

| Radiation Protection Expert, AREVA GmbH, Germany

**09:30 – 10:00 ALARA – How Much Radiation Protection is Reasonable?**

Dr. Gerhard Frank

| Head of Security and Environment, Karlsruhe Institute of Technology (KIT), Germany

*10:15 – 10:30 Coffee Break*

**10:30 – 11:00 Radiological Protection Targets and Performance Indicators**

Gabriele Hampel

| President Fachverband Strahlenschutz e.V., AXPO Power AG, Switzerland

**11:00 – 11:30 Dose Rate Measurements at the Presence of Surface-near Sources**

Sinisa Simic

| CEO, TO.M.M.A.S GmbH, Germany

**11:30 – 12:00 Incorporation Monitoring of Intakes During the Dismantling of Nuclear Facilities**

Martina Froning

| Forschungszentrum Jülich GmbH, Germany

**12:00 – 12:30 Decommissioning Aspects – EC and IAEA Guidance on Exemption and Clearance Levels and Implications on Clearance in Germany**

Dr. Stefan Thierfeldt

| Division Manager Radiation Protection, Nuclear Technology and Decommissioning, Brenk Systemplanung GmbH, Germany

*12:30 – 13:00 Lunch Break*



Wednesday | May 6<sup>th</sup> 2015

🕒 08:00 – 17:45 ▶ Room: ECC 4

# Technical Session

## Operation and Safety of Nuclear Installations, Fuel

### Operation and Maintenance

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Chair Dr. Jürgen Sydow | Project Manager, TÜV NORD SysTec GmbH & Co. KG, Germany

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**08:00 – 08:15 Replacement of RPV Head Spray System in NPP RH1**

Thomas Glaab | AREVA GmbH, Germany

**08:15 – 08:30 Lessons Learned From Operational Accompanying Temperature Measurements**

Dr. Sven H. Reese | Fatigue Manager, E.ON Kernkraft GmbH, Germany

**08:30 – 08:45 Control Room Technology**

Bernd Lüger | Head Production and Control Systems, Bilfinger Mauell GmbH, Germany

**08:45 – 09:00 Statistical Analysis of Fatigue Data for Austenitic Stainless Steels in Water Environments**

Paul Wilhelm | Doctoral Student, AREVA GmbH, Germany

**09:00 – 09:15 Use of the KIT HYCODES System with a Conservative Source for the Simulation of Hydrogen Distribution and Combustion with/without Spray in a Large Break LOCA in the Korean APR1400**

Peter Roysl | Germany

### PSA

**09:15 – 09:30 A Novel Approach for the Seismic Probabilistic Safety Assessment During the Design Stage of Non-Reactor Nuclear Facilities**

Stefan Eller | Hochschule Zittau/Görlitz, Germany

**09:30 – 09:45 Modeling Software Failures of Digital I&C in Probabilistic Safety Analyses**

Dr. Mariana Jockenhövel-Barttfeld | Safety Engineer Advisor, AREVA GmbH, Germany

**09:45 – 10:00 Analysis of the Spent Fuel Pool of a Nuclear Power Plant, Taking Into Account Tolerable Down Times**

Dr. Günter Becker | RIS A Sicherheitsanalysen GmbH, Germany

10:00 – 10:30 *Coffee Break*



# Technical Session

Wednesday | May 6<sup>th</sup> 2015

🕒 08:00 – 17:45 ▶ Room: ECC 4

## Operation and Safety of Nuclear Installations, Fuel

### Fuel

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Chair Patrick Raymond | Reactor Projects Manager, Commissariat à l'énergie atomique et aux énergies alternatives (CEA), France

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**10:30 – 11:00 Status of the Low Enriched Uranium UMO Dispersion Fuel Development for High Performance Research Reactors**

Dr. Leo Sannen | NMS Institute Manager, SCK-CEN, Belgium

**11:00 – 11:30 Advanced Statistical Design and Evaluation Method**

Steffen Kaefer | Project Engineer, Westinghouse Electric Germany GmbH, Germany

**11:30 – 11:45 Quality Assurance for the Industrialization of the Fabrication Process Implemented in the LECA-STAR Facility in Order to Provide Short Fuel Rods for Experimental Irradiations in MTRs**

Cedric Plantegenest | Quality Engineer, CEA - Cadarache, France

**11:45 – 12:00 Examination of the Irradiated Mixed Carbide and Nitride Fuels as Part of Their Safety Evaluation**

Paul David William Bottomley | Sector Head, European Commission-JRC-Institute für Transurane, Germany

*12:00 – 13:00 Lunch Break*

### Special Issues

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Chair Dr. Anke Traichel | Head of Department Safety, NUKEM Technologies Engineering Services GmbH, Germany

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**13:00 – 13:30 Concept of Modular Heat Exchanger for Spent Fuel Pool Cooling**

Dr. Nader Ben Said | Team Leader, Westinghouse Electric Germany GmbH, Germany

**13:30 – 14:00 A Vision for Nuclear Reactor Safety**

Prof. Francesco D'Auria | Professor, University of Pisa, Italy

**14:00 – 14:15 Emergency Response Exercises with Comprehensive Accident Scenarios at Nuclear Power Plants**

Ole Staack | VMan Emergency Response Sec., ESN Sicherheit und Zertifizierung GmbH, Germany



Wednesday | May 6<sup>th</sup> 2015

🕒 08:00 – 17:45 ▶ Room: ECC 4

## Technical Session

### Operation and Safety of Nuclear Installations, Fuel

**14:15 – 14:30 On a New Method for the Diagnosis of the State of the Reactor Pressure Vessel Inventory During Severe Accidents**

Daniel Fiß

| Scientific Associate, Hochschule Zittau/Görlitz, Germany

**14:30 – 14:45 Further Investigation on Light Gas Layer Erosion Using the Current ASTEC Model Basis**

Vera Koppers

| Research Assistant, Ruhr-Universität Bochum, Germany

**14:45 – 15:00 Assessment of Fission Product Release From Ex-Vessel Molten Pools Based on ACE Experiments**

Kathrin Agethen

| Scientific Associate, Ruhr Universität Bochum, Germany

*15:00 – 15:30 Coffee Break*

#### SA: WASA-BOSS + CESAM

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Chair Dr. Thorsten Hollands

| Safety Manager, Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) mbH, Germany

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**15:30 – 15:45 QUENCH-11 Simulations With the Severe Accident Analysis Code ASTEC V2.0 in CESAM**

Florian Gremme

| Scientific Assistant, Ruhr-Universität Bochum, Germany

**15:45 – 16:00 CESAM: Simulation of a Large Break LOCA Sequence in a German PWR Konvoi with the severe Accident Code ASTEC**

Ignacio Gómez García-Torano

| Phd, Karlsruhe Institute of Technology, Germany

**16:00 – 16:15 Parametric Study on a KONVOI MB-LOCA Scenario for the Determination of Coolability Parameters**

Ailine Trometer

| Research Associate, University of Stuttgart, Germany

**16:15 – 16:30 WASA-BOSS: Athlet-CD Model for Severe Accident Analysis for a Generic Konvoi Reactor**

Polina Tusheva

| Researcher, Helmholtz-Zentrum Dresden-Rossendorf (HZDR), Germany





# Technical Session

Wednesday | May 6<sup>th</sup> 2015

🕒 08:00 – 17:45 ▶ Room: ECC 4

## Operation and Safety of Nuclear Installations, Fuel

- 16:30 – 16:45 WASA-BOSS: Expansion of the Model-Basis in MELCOR**  
Philipp Dietrich | Phd Student, Karlsruhe Institute of Technology, Germany
- 16:45 – 17:00 WASA-BOSS: Investigation of the Coolability of Partly-Damaged BWR Core by Water Injection Into the RPV**  
Dr. Valentino Di Marcello | Researcher, Karlsruhe Institute of Technology, Germany
- 17:00 – 17:15 Simulation of the Fukushima-Daiichi Unit 3 Accident With ATHLET-CD as Part of the Collaborative Research Project WASA-BOSS**  
Mathias Hoffmann | Research Assistant, Ruhr-Universität Bochum, Germany
- 17:15 – 17:30 Contributions for „WASA-BOSS“: Study of Containment Film Cooling With an Advanced Water Film Model**  
Xi Huang | Phd Student, Karlsruhe Institute of Technology, Germany
- 17:30 – 17:45 Advanced Simulations for AGR Nuclear Power Plants Structural Integrity using Code\_Aster**  
Van-Xuan Tran | EDF Energy R & D UK Centre, United Kingdom

Enhanced Safety &  
Operation Excellence



Wednesday | May 6<sup>th</sup> 2015

🕒 13:00 – 16:00 ▶ Room: ECC 5

## Topical Session

### Fuel Management During the Last Cycles and Beyond

Many utilities are currently facing a situation where the fuel and core components are to be effectively managed during the last cycles of operation and beyond. A key aspect is the experiences and strategies for core and fuel optimization with regard to flexibility and fuel cycle costs. Moreover, damaged fuel rods remaining at the plant are to be prepared for safe transportation and disposal. Finally, fuel suppliers and utilities jointly have to ensure that the depleted fuel assemblies can be safely stored in dry storage facilities before final disposal.

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|             |                  |  |
|-------------|------------------|--|
| Coordinator | Ulf Benjaminsson | NF Marketing Manager,<br>Westinghouse Electric Sweden AB, Sweden |
|             | Carina Önnaby    | Product Manager, Westinghouse Electric Sweden AB,<br>Sweden      |

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**13:00 – 13:30 Fuel Related Experiences and Lessons Learned from Barsebäck 1 and 2.**  
Fredrik Winge | Vattenfall/Ringhals

**13:30 – 14:00 PWR End-Of-Life Core Optimization: First Lessons Learned**  
Denis Janin | E.ON Kernkraft GmbH, Germany

**14:00 – 14:30 Evaluation of Intermediate Term Dry Storage of Fuel**  
Björn Andersson | Westinghouse Electric Sweden AB, Sweden

**14:30 – 15:00 Experiences from Potential Reuse Versus Disposal of Fresh BWR Fuel Assemblies**  
Andreas Hüttmann | Vattenfall Europe Nuclear Energy GmbH, Germany

*15:00 – 15:30 Coffee Break*

**15:30 – 16:00 GENUSA Experience in Last-Cycles Fuel Challenges in Spain**  
Sylvia Chohtramani Becerra | GNF ENUSA Nuclear Fuel S.A., Spain  
Robert Schneider | GNF ENUSA Nuclear Fuel S.A., Spain



## Current Issues and Learnings from the International Experience of Reactor Operation

Continuous improvement is the intrinsic target of day-to-day operation of nuclear power plants. Thus, global nuclear safety progressed by a factor of ten every ten years. The session highlights in-depth insights in several presentations into current operational issues from various countries.

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Coordinator Dr. Ludger Mohrbach | VGB PowerTech e.V., Germany

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### 08:30 – 09:00 Material Defects in The Belgian Doel 3 and Tihange 2 Reactors

Arnaud Meert | Head of Service Fuel Management Corporate,  
Electrabel S.A. GDF SUEZ Energy BeLux, Belgium

### 09:00 – 09:30 Extended Requirements on Turbo-Generators Due to Changed Operational Regimes

Matthias Baca | Siemens AG, Germany

### 09:30 – 10:00 Status of Energy Policy in France

Dr. Francois Giger | Manager Strategy, EDF Electricité de France, France  
Yves Gireaud | Manager Strategy, EDF Electricité de France, France

10:00 – 10:30 *Coffee Break*

### 10:30 – 11:00 Backfitting Measures at Swiss Nuclear Power Plants

Martin Richner | Senior Expert Nuclear Safety,  
AXPO Power AG, Switzerland

### 11:00 – 11:30 Challenges of the Post-Operational Period for Nuclear Power Plants

Sebastian Wittmann | E.ON Kernkraft GmbH, Germany

### 11:30 – 12:00 Operation of Nuclear Power Plants in the Spanish Grid

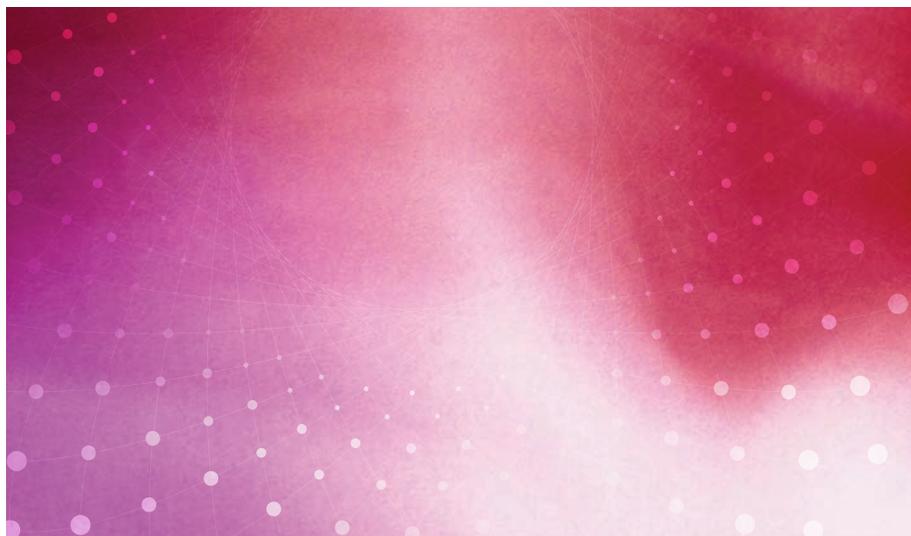
Jose Antonio Prieto | Business Services Director,  
Almaraz-Trillo Nuclear Power Plants, Spain

### 12:00 – 12:30 NUGENIA: A Non Profit International Organization to Promote R&D for the Safe Long Term Operation of GENII and III Nuclear Power Plants

Dr. Abderrahim Al Mazouzi | Senior Project Manager, EDF – EDF R&D, France



# Key Topic | Decommissioning Experience & Waste Management Solutions



## Focus Sessions

- Experiences on Postoperation and Decommissioning in Germany  
5 May | 09:00–12:30 | Page 32
- Qualification for Konrad – What is to Be Done?  
5 May | 09:00–12:15 | Page 34

## Topical Sessions

- End of Life Applications and Infrastructure – Experiences and Way Forward  
6 May | 13:00–16:30 | Page 38

- Comprehensive Solutions for Waste and Spent Fuel Management: The Key to Public Acceptance from New Build to Phase Out  
7 May | 09:00–11:30 | Page 39

## Technical Sessions

- Radioactive Waste Management, Storage and Disposal  
6 May | 08:00–15:45 | Page 35
- Decommissioning of Nuclear Installations  
7 May | 08:45–11:00 | Page 40



# Focus Session

Tuesday | May 5<sup>th</sup> 2015

🕒 09:00 – 12:30 ▶ Room: ECC 4

## Experiences on Postoperation and Decommissioning in Germany

This session provides an overview of current developments and best practices in Germany. Essential questions regarding the decision for the “right” decommissioning and dismantling concept, success factors of an efficient decommissioning as well as the state-of-the-art amongst others during the waste treatment will be discussed. The session addresses representatives of international and national service providers, public authorities and TSOs as well as operators.

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Coordinator Dr. Erich Gerhards | Head of Dismantling and Disposal,  
E.ON Kernkraft GmbH, Germany

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### 09:00 – 09:05 Welcome/Introduction

Dr. Erich Gerhards | Head of Dismantling and Disposal,  
E.ON Kernkraft GmbH, Germany

## Status Quo and Future Challenges

### 09:05 – 09:30 Decommissioning Projects in Germany – Perspectives From the Federal Level

Dr. Bernhard Massing | Federal Ministry for the Environment,  
Nature Conservation, Building and Nuclear Safety  
(BMUB), Germany

### 09:30 – 09:55 The Decision Regarding the “Right” Decommissioning and Dismantling Concept

Katrin Hertkorn-Kiefer | RWE Power AG, Germany

## Factors for Successful Decommissioning

### 09:55 – 10:15 Staff – A Key Component for Successful Decommissioning and Efficient Dismantling

Ernst-Michael Züfle | Germany

10:15 – 10:30 *Coffee Break*



Tuesday | May 5<sup>th</sup> 2015

🕒 09:00 – 12:30 ▶ Room: ECC 4

## Focus Session

### Experiences on Postoperation and Decommissioning in Germany

#### 10:30 – 11:00 Construction and Process Organization in a Nuclear Power Plant – A Constant Change?

Dr. Walter Glöckle

| Ministry of the Environment, Climate Protection and the Energy Sector, Baden-Württemberg, Germany

#### 11:00 – 11:30 Successful Interface Management Among the Remaining Operation, Dismantling and Recycling Management

Andreas Ehlert

| Energietechnische Gesellschaft im VDE (ETG), Germany

### Remaining Operation and Waste Management

#### 11:30 – 12:00 Safety Classifications and Reclassification of Systems

Dr. Heinz-Walter Drotleff

| Entsorgungskommission (ESK), Germany

#### 12:00 – 12:30 Efficient Recycling and Waste Management

Jörg Klasen

| EnBW Kernkraft GmbH, Germany

12:30 – 13:00 *Lunch Break*

🗣️ This session will be held in German with simultaneous English translation.



# Focus Session

Tuesday | May 5<sup>th</sup> 2015

🕒 09:00 – 12:15 ▶ Room: ECC 3

## Qualification for Konrad – What is to Be Done?

Since 2002, regulations with binding conditions for final disposal of ILW/LLW in the Konrad repository exist. Still, there is uncertainty among the responsible waste producers concerning the qualification process of waste packages for final disposal. This comprises both the fabrication of new packages and the qualification of old packages that have accumulated over decades. Involving representatives of the waste producers, responsible authorities and experts, this session will elaborate means and potentials for improvement and acceleration of the qualification process to deliver an annual amount of 10.000 m<sup>3</sup> of radioactive waste starting from 2023.

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|             |                     |  |
|-------------|---------------------|--|
| Coordinator | Dr. Astrid Petersen | Head of Division Waste Management, Project KONRAD, GNS Gesellschaft für Nuklear-Service mbH, Germany |
|             | Iris Graffunder     | Head of Final Disposal Management, Energiewerke Nord GmbH, Germany                                   |

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**09:00 – 09:10** Welcome/Opening Remarks

### Presentations: Boundary Conditions for Waste and Disposal

**09:10 – 09:30** National Waste Management Plan

MinR Peter Hart | Head of the Directorate Nuclear Fuel Cycle, Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB), Germany

**09:30 – 09:55** Final Repository Konrad – What Still Has to be Done

Dr. Jörg Tietze | Bundesamt für Strahlenschutz (BfS), Germany

**09:55 – 10:15** Task and Duties of the Coordinators GNS and EWN

Dr. Astrid Petersen | Head of Division Waste Management, Project KONRAD, GNS Gesellschaft für Nuklear-Service mbH, Germany

*10:15 – 10:30 Coffee Break*

### Panel discussion: Final Disposal of 10.000 m<sup>3</sup> of Radioactive Waste per Year – A Joint Challenge

**10:30 – 10:45** Introduction by Moderator

Andreas Mann

**10:45 – 12:15** Panel Discussion

Panelists Authorities (Gerrit Niehaus | Ministry of the Environment, Climate Protection and the Energy Sector of Baden-Württemberg, Dr. Jörg Tietze | BfS) and independent experts (Dr. Holger Völzke | BAM), waste producers of public and private sector (Thomas P. Wolf | EnBW, Roland Baumann | Siemens, Iris Graffunder | EWN)

Key Topics Qualification of waste packages – rules and regulations, standards and specific solutions, experiences gained and lessons learned

*12:15 – 13:00 Lunch Break*

🗣️ This session will be held in German with simultaneous English translation.



Wednesday | May 6<sup>th</sup> 2015

🕒 08:00 – 15:45 ▶ Room: Paris

## Technical Session

### Radioactive Waste Management, Storage and Disposal

#### Characterization

Chair Werner Stratmann

| Head of Department Nuclear Physics,  
STEAG Energy Services GmbH, Germany

#### 08:00 – 08:30 Gamma-Induced Radiation Damage in Spent Nuclear Fuel

Christian Herold

| Research Associate, Institut NET, RWTH Aachen,  
Germany

#### 08:30 – 09:00 Progress in the Non-Destructive Analysis of Radioactive Waste Drums to Fulfil Storage Acceptance Criteria

Dr. Marina Sokcic-Kostic

| Principal Engineer, NUKEM Technologies Engineering  
Services, Germany

#### 09:00 – 09:30 ANNA - A New Flexible Code for Best-Estimate Neutron Activation Calculations

Lars Ackermann

| Engineer, AREVA GmbH, Germany

#### 09:30 – 09:45 Monte-Carlo Calculations of the Radiation Field in a Rock Salt Horizontal Emplacement Gallery of an Underground Nuclear Waste Disposal Facility

Héctor Saurí Suárez

| Phd Student, Karlsruhe Institute of Technology (KIT),  
Germany

#### 09:45 – 10:00 Determination of Representative Nitrogen Contents for the Activity Calculation of Core Components With Respect to the C-14 Activity

Dr. Philipp Kruse

| Project KONRAD, GNS Gesellschaft für Nuklear-  
Service mbH, Germany

10:00 – 10:30 *Coffee Break*



# Technical Session

Wednesday | May 6<sup>th</sup> 2015

🕒 08:00 – 15:45 ▶ Room: Paris

## Radioactive Waste Management, Storage and Disposal

### Treatment Diagnosis I

Chair Klaus Büttner

| Head of Department Process Engineering, NUKEM Technologies Engineering Services GmbH, Germany

#### 10:30 – 11:00 Pyrohydrolysis: A Universal Tool for the Treatment of Organic Radwaste

Dr. Georg Braehler

| Chief Technology Officer, NUKEM Technologies Engineering Services GmbH, Germany

#### 11:00 – 11:30 Conditioning of 25 m<sup>3</sup> Bead Resin at Sizewell-B NPP

Dr. Matthias Messer

| GNS Gesellschaft für Nuklear-Service mbH, Germany

#### 11:30 – 12:00 Sorbents for Sr-90-Removal

Dr. Alexander Zulauf

| Process Engineering, NUKEM Technologies Engineering Services, Germany

12:00 – 13:00 *Lunch Break*

### Treatment Diagnosis II

Chair Klaus Büttner

| Head of Department Process Engineering, NUKEM Technologies Engineering Services GmbH, Germany

#### 13:00 – 13:30 Shield Test of Fuel Inspection Hot Cell (FIHC) Structures and Embedded Parts with Sealed Co-60 Source

Jan Christian Lewitz

| LTZ Consulting GmbH, Germany

#### 13:30 – 14:00 Qualification Procedure for the Konrad Repository on Example of Disposal of Activated Components of the Forschungs-Neutronenquelle Heinz Maier-Leibnitz (FRM II)

Patrick Halama

| Documentation Management, Energiewerke Nord GmbH, Germany



Wednesday | May 6<sup>th</sup> 2015

🕒 08:00 – 15:45 ▶ Room: Paris

## Technical Session

### Radioactive Waste Management, Storage and Disposal

#### Storage

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Chair Klaus Büttner

| Head of Department Process Engineering,  
NUKEM Technologies Engineering Services GmbH,  
Germany

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**14:00 – 14:30 Lessons Learned from 1000 CASTOR Dispatches**

Wolfgang Reuter

| Project Manager, GNS Gesellschaft für Nuklear-Service  
mbH, Germany

**14:30 – 15:00 Ageing of Elastomeric Seals for Storage Containers**

Anja Kömmling

| PhD Student, BAM Federal Institute for Materials  
Research and Testing, Germany

**15:00 – 15:30 Results and Conclusions from the German P&T Study – a View of the Contributing Helmholtz Research Centres**

Dr. Bruno Merk

| Senior Scientist, Helmholtz-Zentrum  
Dresden-Rossendorf (HZDR), Germany

**15:30 – 15:45 Is the Obligation for Alternative Interim Storage under Section 9 a Para. 2 a Atomic Energy Act Constitutional?**

Dr. Manfred Born

| E.ON SE, Germany



# Topical Session

Wednesday | May 6<sup>th</sup> 2015

🕒 13:00 – 16:30 ▶ Room: ECC 3

## End of Life Applications and Infrastructure – Experiences and Way Forward

The Topical Session is going to cover the “after-life” of nuclear facilities as well as decommissioning related programs in Germany and in Europe with emphasis on European countries. European countries not only have shown different levels of progress in that perspective, but have chosen different ways to deal with the issue depending on their specifics. This session covers topics such as decommissioning know-how transfer, legal framework, support programs as well as re-use concepts.

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Coordinator Thomas Seipolt | Managing Director, NUKEM Technologies Engineering Services GmbH, Germany

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### 13:00 – 13:45 Decommissioning Documents and Pilot Dismantling – Support for the Armenian NPP

Pascal Brüggemann | Senior Engineer, NUKEM Technologies Engineering Services GmbH, Germany

### 13:45 – 14:30 Second Life of a Nuclear Site – Experiences and Lessons Learned

Dr. Thomas Volmar | Plant Manager of Mülheim-Kärlich, RWE Power AG, Germany

15:00 – 15:30 *Coffee Break*

### 15:30 – 16:00 INPP Decommissioning: Progress and Future Challenges

Darius Janulevicius | Acting Director of NPP Ignalina, State Enterprise Ignalina, Italy

### 16:00 – 16:30 Engineering 3D Models for Decommissioning

Alexandr Kanishev | Head of Design Center, CJSC NEOLANT, Russia  
Vladislav Tikhonovsky | Deputy Director General, CJSC NEOLANT, Russia



Thursday | May 7<sup>th</sup> 2015

🕒 09:00 – 11:30 ▶ Room: ECC 3

## Topical Session

### Comprehensive Solutions for Waste and Spent Fuel Management: The Key to Public Acceptance from New Build to Phase Out

Today, solutions for the disposal of radioactive waste from operating and dismantling of NPPs do not only have to be technically feasible, but must be communicable to the public. Especially for planned new builds, the issue of disposal has become a key factor in public acceptance.

This session will offer international comparison of the challenges and advances of waste management as well as disposal and its relevance to the situation of nuclear energy in the respective country.

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|             |                              |   |
|-------------|------------------------------|---|
| Coordinator | Michael Köbl<br>Stefan Weber | GNS Gesellschaft für Nuklear-Service mbH, Germany<br>  Project Manager, RAW Management, GNS Gesellschaft für Nuklear-Service mbH, Germany |
|-------------|------------------------------|---|

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**09:00 – 09:30 The Old and the New in the UK – A Personal Perspective**  
Mike Gull  
| Executive Vice President Projects, UK & Europe  
EnergySolutions EU Ltd, United Kingdom

**09:30 – 10:00 The NDA and its Role in Bringing a Strategic UK Wide Focus to Decommissioning and Waste Management in the UK**  
Dr. Matthew Clark  
| Strategy Implementation Manager, Nuclear Decommissioning Authority, United Kingdom

*10:00 – 10:30 Coffee Break*

**10:30 – 11:00 Radioactive Waste Management in Italy. What to do About ILW While Waiting for a Geological Repository?**  
Angelo Paratore  
| Deputy Director National Repository & Technology Park, SOGIN SpA, Italy  
Marco Nasta  
| Head of Department Nuclear Engineering / Waste Management and Decommissioning Division, SOGIN SpA, Italy

**11:00 – 11:30 What Can Germany Learn From Other National Radioactive Waste Management Programmes?**  
Wolfgang Kickmaier  
Charles McCombie  
Susie Hardie  
| Managing Director, MCM International, Switzerland  
| Partner, MCM International, Switzerland  
| Principal Consultant, MCM International, Switzerland



# Technical Session

Thursday | May 7<sup>th</sup> 2015

● 08:45 – 11:00 ▶ Room: Paris

## Decommissioning of Nuclear Installations

### Decommissioning of Nuclear Facilities – Challenges and Solutions

Chair Stefan Klute

| Head Decommissioning, Project KKM, BKW Energie AG, Switzerland

#### 08:45 – 09:15 Characterization and Remediation of Contaminated Concrete at Nuclear Power Plants

Richard Mcgrath

| Electric Power Research Institute, USA

#### 09:15 – 09:45 Detection of Contaminations in Pipes With OSL-Dosimetry: Test Measurements

Uwe Reichelt

| Scientist, TU Dresden, Germany

#### 09:45 – 10:00 Dismantling of SVAFO Research Reactors R2&R2-0

Hans-Uwe Arnold

| Expert for D&D, AREVA GmbH, Germany

10:00 – 10:30 *Coffee Break*

#### 10:30 – 11:00 Further Dismantling Activities of the Obrigheim NPP Reactor

Dr. Ralf Borchardt

| Head of National Projects, Energiewerke Nord GmbH, Germany



# Programme Committee

Chair Dr. Th. Walter Tromm

| Karlsruhe Institute of Technology (KIT)

Erik Baumann

| AREVA GmbH

Ulf Benjaminsson

| Westinghouse Electric Sweden AB

Gerd-Michael Burow

| RWE Power International

Dr. Erwin Fischer

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Eckehard Göring

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| Energiewerke Nord GmbH

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| E.ON Global Commodities SE

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| E.ON New Build & Technology GmbH

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| Spokesperson of the Board Young Generation  
German Nuclear Society, EnBW Kernkraft GmbH

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| STEAG Energy Services GmbH

Mathias Schuch

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Thomas Seipolt

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| NUKEM Technologies Engineering Services GmbH

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| E.ON Kernkraft GmbH

Dr. Ralf Versemann

| RWE Power AG

Stefan Weber

| GNS Gesellschaft für Nuklear-Service mbH

Christopher Weßelmann

| atw – International Journal for Nuclear Power

Christian Wößner

| DATf e. V. (German Atomic Forum)  
KTG e. V. (German Nuclear Society)



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## Registration Counter

The registration counter will be located at the Large Gallery on the ground floor of the Estrel Convention Center.

### ► Opening hours

|           |            |               |
|-----------|------------|---------------|
| Monday    | 4 May 2015 | 15:00 – 18:00 |
| Tuesday   | 5 May 2015 | 08:00 – 19:00 |
| Wednesday | 6 May 2015 | 07:30 – 19:00 |
| Thursday  | 7 May 2015 | 07:30 – 12:00 |

## Exhibition

The Exhibition will take place in hall ECC B/C/D of the Estrel Convention Center.

### ► Opening hours

|                |            |               |
|----------------|------------|---------------|
| Tuesday        | 5 May 2015 | 09:00 – 23:00 |
| Social Evening |            | 19:00 – 23:00 |
| Wednesday      | 6 May 2015 | 08:00 – 19:00 |
| Thursday       | 7 May 2015 | 08:00 – 13:00 |

## Media Check

The Media Check will be located at the Large Gallery on the ground floor of the Estrel Convention Center.

### ► Opening hours

|           |            |               |
|-----------|------------|---------------|
| Monday    | 4 May 2015 | 15:00 – 18:00 |
| Tuesday   | 5 May 2015 | 07:00 – 20:00 |
| Wednesday | 6 May 2015 | 07:00 – 18:00 |
| Thursday  | 7 May 2015 | 07:00 – 12:00 |

## Catering

A buffet lunch will be served in the exhibition area on Tuesday and Wednesday for all participants.

Coffee Breaks will also be provided in the exhibition area.

### ► Breaks

#### **Tuesday, 5 May 2015**

10:15 – 10:30 Coffee Break  
12:00 – 13:00 Lunch  
16:00 – 16:30 Coffee Break  
19:00 – 23:00 Social Evening

#### **Wednesday, 6 May 2015**

10:00 – 10:30 Coffee Break  
12:00 – 13:00 Lunch Break  
15:00 – 15:30 Coffee Break

#### **Thursday, 7 May 2015**

10:00 – 10:30 Coffee Break



# Further Information

## Date

5 – 7 May 2015

## Venue

Estrel Convention Center Berlin  
Sonnentallee 225  
12057 Berlin, Germany

## Conference and Exhibition Office

CPO HANSER SERVICE  
Hanser & Co GmbH  
Zum Ehrenhain 34  
22885 Barsbüttel, Germany

P: +49 40 6708820

F: +49 40 6703283

► [amnt2015@cpo-hanser.de](mailto:amnt2015@cpo-hanser.de)

## Information and Registration

P: +49 30 498555-30 (Organisation)

P: +49 30 498555-48 (Payment)

F: +49 30 498555-18

► [amnt@inforum-gmbh.de](mailto:amnt@inforum-gmbh.de)

► [www.nucleartech-meeting.com](http://www.nucleartech-meeting.com)

## Host

DAtF (German Atomic Forum)

KTG (German Nuclear Society)

INFORUM Verlags- und Verwaltungsgesellschaft mbH (Organiser)

Robert-Koch-Platz 4

10115 Berlin, Germany

► [www.kernenergie.de](http://www.kernenergie.de)



46<sup>th</sup>

Jahrestagung Kerntechnik  
Annual Meeting  
on Nuclear Technology

The International Expert Conference on Nuclear Technology

Jahrestagung Kerntechnik  
Annual Meeting  
on Nuclear Technology

47<sup>th</sup>

CCH – Congress  
Center Hamburg  
Germany

10–12 May  
2016

## Key Topics

Outstanding Know-How &  
Sustainable Innovations

Enhanced Safety &  
Operation Excellence

Decommissioning Experience &  
Waste Management Solutions

Save the Date

**10–12 May 2016**

CCH – Congress Center Hamburg  
Germany



# Floor Plan | Estrel Convention Center Berlin

Floor Plan





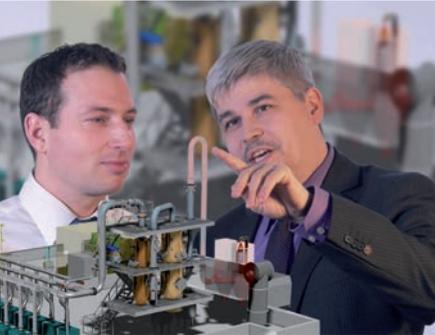
-  Ground Floor
-  First Floor
-  Second Floor
-  Lift
-  Toilet
-  Smoker's Area



Floor Plan

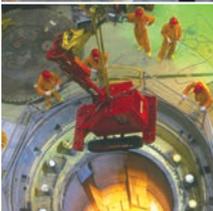
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- Provide spent fuel handling and storage solutions
- Deliver decommissioning innovation and efficiency
- Develop bespoke monitoring systems



Innovation  Solutions  Excellence