

6th International Symposium –  
Release of Radioactive Materials from Regulatory Requirements

# Provisions for Exemption and Clearance

21 – 23 September 2009, Wiesbaden, Germany



## Scope

Since 1998 TÜV NORD has organized several symposia on the subject of release of radioactive material from regulatory control. During the 2nd and 4th international symposia in Hamburg (1999 and 2006), the events concentrated specifically on discussions between more than 240 international clearance-experts. This was very fruitful for the process of harmonisation of clearance levels and release procedures on a global level.

In the meantime, the IAEA has issued a first draft for the revision of the International Basic Safety Standards (DS 379). For exemption and clearance the relevant values were taken from EU RP 65 (as in the current BSS) and from IAEA safety guide RS-G-1.7 respectively. The IAEA plans to use the values for clearance also for exemption for unlimited quantities. Which may also become the basis for revision of the European Basic Safety Standards. As very many nations are interested in using of the planned regulations for exemption and clearance, TÜV NORD has decided to organize a follow up conference to the 4th International Symposium of 2006 (a 5th symposium was held in 2007 with German as the conference language and participants from Austria, Switzerland, Sweden and Germany).

## General Symposium Arrangements

The symposium consists of oral and poster presentations selected by the programme committee from submitted abstracts. Oral presentations will take place during plenary sessions. The conference language is English, a translation service will not be available.

Poster presentations are also included in the symposium, and the programme will be completed by technical papers from invited speakers on general topics. As an additional feature, a technical exhibition will run alongside the symposium programme. Excursions of technical interest are also planned.

The proceedings will be available at the beginning of the symposium. If you are interested in submitting a poster, attending the symposium, or participating as an exhibitor, please provide details on the attached reply form.

The conference is planned for 21 – 23 September of 2009 in the Kurhaus of Wiesbaden. Wiesbaden is conveniently close to Frankfurt Airport.

## Organised by

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TÜV NORD SysTec, Germany  
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## With the support of

International Atomic Energy Agency,  
European Commission,  
OECD/Nuclear Energy Agency,  
German Swiss Radiation Protection  
Association

## Day 1, 21.09.2009

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- 10.00 Welcome, opening remarks**  
J. Feinhals, TÜV NORD SysTec, Germany
- 10.15 Regulatory authorisation for clearance and exemption – possible approaches in the context of the ICRP 103**, H. Riotte, OECD/NEA, invited

### Section A: Overview of national legislations

- 10.45 Clearance in Germany – new regulations in the radiation protection ordinance**  
R. Sezig, Federal Ministry for the Environment Nature Conservation and Nuclear Safety, Germany, invited
- 11.05 The exemption and clearance legislation for radioactive waste in the UK**  
S. Chandler, Department of Energy and Climate Change, U.K.
- 11.25 The system of exemptions and clearance levels in the Czech Republic**, K. Petrová, State Office for Nuclear Safety, Czech Republic, et al.
- 11.45 The clearance of residual materials arising from nuclear facilities in Spain**  
J. López de la Higuera, CSN, Spain
- 12.05 The French policy for exemption and clearance (inquiry)**  
N.N., ASN, France
- 12.25 Lunch**
- 13.25 The actual application of clearance system in Japan**, S. Kawasaki, JNES, Japan, et al.
- 13.45 Clearance and exemption in U.S.**, R. Meck, U.S.
- 14.05 Panel discussion**
- 15.00 Postersession and coffee break**

### Section B: Applications of international regulations for exemption and clearance

- 16.00 Harmonisation of the application of the concepts of exemption and clearance through 50 years of IAEA standards development**  
D. Louvat, IAEA, invited
- 16.30 Control and management of inadvertent radioactive material in scrap metal – outcomes of the International Conference 2009**,  
L. Ramos, CSN, Spain

# Programme

## B1: Exemption levels

- 17.00 **Review of methodologies and development of software to calculate exemption an A<sub>1</sub> and A<sub>2</sub> values**, K. Jones, Health Protection Agency, U.K., et al.
- 17.30 **Challenge for risk-informed reasonable exemption levels for surface contamination**, H. Ogino, Central Research Institute of Electric Power Industry, Japan, et al.
- 18.00 **End of first day presentations**
- 19.00 **Reception at the industrial exhibition and poster exhibition**

Day 2, 22.09.2009

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## B2: Best practice in clearance

- 08.30 **The Swedish nuclear industry guideline for clearance**, A. Larsson, Studsvik Nuclear AB, Sweden, et al.
- 08.50 **Towards a harmonisation of the execution of German clearance regulations**, L. Hornung, Federal Office for Radiation Protection, Germany, et al.
- 09.10 **Application of the Monte Carlo method to verify clearance of pipes at the Greek research reactor** A. Savidou, Institute of Nuclear Technology and Radiation Protection, Greece, et al.
- 09.30 **Panel discussion**
- 10.00 **Coffee break**

## B3: Release of materials during decommissioning of nuclear facilities

- 10.30 **Clearance of materials generated during dismantling processes in Spain**, T. Ortiz, Enresa, Spain, et al.
- 10.50 **Waste management-concept during dismantling of the nuclear power plant Stade in Germany** G.-U. Bacmeister, E.ON Kernkraft, Germany, et al.
- 11.10 **Contribution to renewable type society in the near future in Japan – recycling of dismantled metal from Tokai 1**, M. Sekiguchi, Japan Atomic Power Company, Japan, et al.

- 11.30 **Application of a box clearance monitor during the decommissioning of the research reactors "SAPHIR" and "DIORIT"**, G. Butterweck, PSI, Switzerland, et al.

- 11.50 **Panel discussion**

- 12.20 **Lunch**

## B4: Release of sites

- 13.20 **Must foundation structures be completely removed or can they remain in the ground – examples from decommissioning practice**, L. Weil, Federal Office for Radiation Protection, Germany, et al.
- 13.40 **Clearance of sites – aspects keeping the "10 $\mu$ Sv-concept"**, L. Hummel, TÜV SÜD, Germany
- 14.00 **Clearance of buildings: appropriate averaging areas and efficient statistical methods for the nuclear power plant Würgassen**, T. Riemann, TÜV NORD EnSys, Hannover, Germany, et al.
- 14.20 **Panel discussion**
- 15.00 **Postersession and coffee break**

## B5: Long-term storage alternative

- 16.00 **Long-term interim storage and release of radioactive material**, R. Meister, Ministry of Interior Mecklenburg-Vorpommern, Germany, et al.
- 16.30 **Radioactive waste: from cradle to cradle** J. Welbergen, COVRA, Netherlands, et al.

## B6: Clearance at accelerator sites

- 17.00 **Clearance of accelerators and removal of accelerator parts from controlled areas** C. Küppers, Öko-Institut, Germany
- 17.30 **Release of activated material from CERN's high energy accelerators**, D. Forkel-Wirth, CERN, et al.
- 18.00 **End of second day presentations**
- 19.30 **Dinner in the Rhine Valley**

Day 3, 23.09.2009

**C: Outlook towards an international regime**

- 08.30 EU Policy and legislative requirements on exemption of practices from notification and authorisation and clearance of materials arising from authorised practices**, A. Janssens, EC
- 09.00 Perspective of clearance values – clearance of materials and sites**, J. Feinhals, TÜV NORD SysTec, Germany
- 09.20 The IAEA activity concentration values for exclusion, exemption and clearance – an analysis of numerical values and open questions**, L. Hornung, Federal Office for Radiation Protection, Germany, et al.
- 09.40 Review of the relevance of the scenarios used in the derivation of the exemption levels in the BSS to modern waste disposal practices**, S. Mobbs, Health Protection Agency, U.K., et al.
- 10.00 Coffee break**
- 10.30 Panel discussion**
- 12.00 Departure of busses for the excursions**

**Programme Committee**

- A. Janssens, European Commission (Chairman)
- L. Baekelandt, FANC, Belgium
- H.-F. Beer, PSI, Switzerland
- H. Efraimsson, SSM, Sweden
- D. Louvat, IAEA
- R. Meck, NRC, USA
- S. Mobbs, NRPB, UK
- M. Okoshi, JAEA, Japan
- H. Riotte, OECD/NEA
- R. Sefzig, BMU, Germany

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www.tuev-nord.com/english/clearance.asp

A list of hotels where we have reserved a limited number of accommodations is included with your “Confirmation of Course Registration”.

(Please fill out and send to TÜV NORD Akademie)

I/we would like to take part in the symposium:

**6th International Symposium –  
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Regulatory Requirements**

**21 – 23 September 2009, Wiesbaden, Germany**

For reasons of security, we require your full name, address and Passport or other ID No

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**I wish to take part in the following technical excursion:**

- Nuclear Power Plant Mülheim-Kärlich
- Nuclear Power Plant Kahl
- Research Center GSI
- Nuclear Power Plant Obrigheim

I/We accept the organiser’s conditions of entry.

Place/Date

Stamp/Signature



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### Participants

The Symposium is directed towards scientists, engineers, technicians and lecturers in the technical and scientific fields who work within the area of radiation protection, or whose tasks require knowledge in this area – for example radiation protection officers in companies or other organisations. The symposium will also be of interest to public authorities, independent experts and inspectors, and applicants for planning permissions in the field of atomic energy.

### Fees

The fee of 890,00 € will cover a copy of the proceedings, three lunches, and two special evening events. Reductions are available for authors with accepted papers (740,00 €) and representatives of authorities (490,00 €, limited availability, IAEA grants are available for some national consultants). For more information visit our website: [www.tuev-nord.com/english/clearance.asp](http://www.tuev-nord.com/english/clearance.asp)

### Venue

Kurhaus Wiesbaden  
Kurhausplatz 1  
65189 Wiesbaden  
Germany  
Tel.: +49 (0)611 1729290

### Evening events

Two evening events are planned during the symposium:

On 21 September there will be a reception in the exhibition room.

On 22 September we will have dinner in the Rhine Valley.

For additional guests who are not attending the symposium itself, there will be a charge of **75,00 €** plus VAT for the reception and a charge of **175,00 €** plus VAT for the dinner.

### Technical Excursions:

The following technical excursions are planned for 23 September following the official lectures.

1. Nuclear Power Plant Mülheim-Kärlich  
(in decommissioning phase)
2. Nuclear Power Plant Kahl (prototype reactor)
3. Research Center GSI  
(large-scale particle collision experiments )
4. Nuclear Power Plant Obrigheim  
(in decommissioning phase)

The availability is limited.

Please select your preference on the reply form.

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## Poster Presentations

Submission of applications for poster presentations is possible until 10 August 2009.

- **The use of Type A and Type B uncertainties in the interpretation of clearance measurements**  
S. Thierfeldt, Brenk Systemplanung GmbH, Germany, et al.
- **Regulatory control of exposure to historic NORM residues in Spain**  
M. Garcia-Talavera, CSN, Spain, et al.
- **Clearance of nuclear sites by in-situ-gamma-spectrometry: comparison of software models and results from a soil phantom**  
T. Wilhelm, TÜV SÜD Energietechnik GmbH, Germany
- **Inspection and decontamination of expansion joints of a chemical building for demolition**  
A. Eissler, Wiederaufarbeitungsanlage Karlsruhe Rückbau- und Entsorgungs-GmbH, Germany, et al.
- **Radiological assessment for clearance of decommissioning metal waste from Korean research reactor**  
Sang-Bum Hong, Korea Atomic Energy Research Institute, Korea, et al.
- **Site release of decommissioning project of KRR-1&2**  
Sang-Bum Hong, Korea Atomic Energy Research Institute, Korea, et al.
- **From analytical results to representative nuclide vectors – possibilities and mistakes**  
M. Bothe, Verein für Kernkraftstechnik und Analytik Rossendorf e.V, Germany
- **Numerical modeling of the water pathway for radionuclides in weakly contaminated rubble deposited after clearance**  
R. Merk, Federal Office for Radiation Protection, Germany
- **Developments in the technology used for clearance measurements. The RTM644 example**  
C. Günther, Rados, Technology GmbH, Germany, et al.
- **Development of new Swedish regulations for clearance – problems encountered, issues raised and the way forward**  
H. Efraimsson, Swedish Radiation Safety Authority, Sweden
- **Provisions for exemption and clearance: The Po-210 case in Hamburg**  
F. Meissner, TÜV NORD SysTec GmbH & Co. KG, Germany, et al.
- **Findings of the control and monitoring of liquid releases from centre of isotopes of Cuba**  
Z. Amador Balbona, Centre of Isotopes, Cuba, et al.
- **Findings of the control and monitoring of airborne releases from the Centre of Isotopes of Cuba**  
Z. Amador Balbona, Centre of Isotopes, Cuba, et al.
- **The upper confidence limit (UCL) as a test value and its application in monitoring radioactivity**  
L. Hummel, TÜV SÜD, Germany
- **Development of a procedure for the clearance of oils**  
K. Döscher, TÜV SÜD Energietechnik GmbH, Germany
- **Principles and problems of disposal**  
M. Jensen, Swedish Radiation Safety Authority, Sweden
- **Reduction of exemption levels by BSS 115 and the consequences on direct decommissioning**  
H. Sander, E.ON Kernkraft GmbH, Germany
- **Marsame: multi-agency radiation survey and assessment of materials and equipment manual**  
R. Meck, U.S. NRC, U.S.
- **The application of the concept of clearance in the management of radioactive waste in Cuba. Ten years of experience**  
M. Salgado Mojena, Centre for Radiation Protection and Hygiene, Cuba, et al.
- **Application of clearance concept in Romania**  
D. Dogaru CNCAN, Romania
- **Implementation of the legislative framework concerning exemption and clearance levels**  
S. Seferlis, Greek Atomic Energy Commission, Greece
- **Practice of removal of non-radioactive materials in Germany**  
M. Bothe, Verein für Kernkraftstechnik und Analytik Rossendorf e.V, Germany, et al.