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Organisation de Coopération et de Développement Economiques
Organisation for Economic Co-operation and Development

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English - Or. English

**NUCLEAR ENERGY AGENCY
COMMITTEE ON THE SAFETY OF NUCLEAR INSTALLATIONS**

**NEA/SEN/SIN/IAGE(2004)5
For Official Use**

Working Group on Integrity and Ageing of Components and Structures (IAGE WG)

CSNI Workshop on "International developments and co-operation on Risk-Informed In-Service-Inspection (RI-ISI) and Non-destructive Testing (NDT) Qualification"

Final Programme

**Hosted by SKI
Stockholm, Sweden
April 13-14, 2004**

JT00158444

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English - Or. English



OECD NUCLEAR ENERGY AGENCY

CSNI Workshop on

**" International developments and cooperation on
Risk-Informed In-Service-Inspection (RI-ISI) and Non-destructive Testing
(NDT) Qualification "**

**Hosted by SKI.
Stockholm, Sweden
April 13-14, 2004**

Final Programme

Deadline for Registration: **March 1, 2004**
Deadline for Papers: **March 29, 2004**

On-line information and registration are available www.nea.fr/html/nsd/workshops/RISI2004/index.html

1. ORGANISATION AND HOST

The CSNI Workshop on "International development and cooperation on Risk-Informed In-Service-Inspection (RI-ISI) and Non-destructive Testing (NDT) Qualification" will be held from April 13 to 14, 2004 in Stockholm, Sweden hosted by SKI, Swedish Nuclear Power Inspectorate.

More information is available at www.nea.fr/html/nsd/workshops/RISI2004/index.html

2. OBJECTIVES OF THE WORKSHOP

The objective of the Workshop is to address the present situation, regulatory, utility and industry aspects, as well as experiences and R&D activities in member countries on

- risk based/risk informed in-service inspections developments, and
- qualification of NDT system to be used for inspections

The workshop is expected to facilitate an exchange of information on these topics. A large number of OECD countries are actively working in these areas at the moment.

Regulators, Researchers and Industry representatives need to exchange information and views on the current regulation and technical issues associated with RI-ISI and NDT qualifications by discussing and contrasting different approaches taken for further optimization of in-service inspections in nuclear power plants. The workshop will also cover R&D-activities performed by international and regional Task Groups.

3. BACKGROUND OF THE WORKSHOP

At the December 2000 meeting, the CNRA (OECD/NEA Committee on Nuclear Regulatory Aspects) discussed the increasing interest for RI-ISI and issues related to NDT qualifications with regard to recent events. The CSNI (OECD/NEA Committee for the Safety on Nuclear Installations) decided to first issue a questionnaire to understand the current status in its member countries. Outcomes from the questionnaire led the CSNI to propose this workshop to complement and to synthesize R&D-activities done by others organizations.

4. SCOPE, CONTENT AND OUTLINE OF THE WORKSHOP

Several sessions with ample time for discussion will address the following topics:

- Risk-Informed In-Service-Inspection perspectives
- Important aspects of RI-ISI applications
- Experiences with RI-ISI applications
- Non-Destructive-Testing qualification

The following aspects will be covered:

- Overview of the present ISI practices and plans (based on the survey)
- North American, European and Asian regulatory, utility and industry perspectives
- PSA requirements for use in RI-ISI applications
- Failure potential assessments and failure probability estimations
- SRM/PFM model requirements
- Qualitative vs. quantitative risk models
- Overview on present NDT qualification requirements and practices (based on the survey)
- Link between RI-ISI and NDT qualification
- North American, European and Asian NDT qualification experiences

A final session will summarize the discussions and develop conclusions and recommendations for possible further actions by the CSNI and the CNRA.

Invited papers are the preferred format for this workshop. The Organizing Committee has selected speakers who will cover the different aspects listed above. Ample time will be available for discussion among participants. It is essential that the perspectives of regulators, utilities, industry and researchers be presented. All the participants are expected to take part in the discussion and in the formulation of conclusions in the final session.

The questionnaire, distributed to member countries, will give the participants a clear view on the current status and issues.

Proceedings of the meeting will be prepared. A compilation of answers to the survey will also be published. Conclusions and recommendations including possible future actions will be developed and presented to CNRA and CSNI members.

5. PARTICIPATION IN THE WORKSHOP

As usual for CSNI workshops, participation is restricted, for reasons of efficiency, to experts (utilities, industry representatives, research organizations, safety authorities, regulatory agencies, and observers) nominated by members of the NEA Committees. Representatives of the IAEA and of the EC are invited.

The meeting is opened to a small number of experts from non-OECD countries. The participation of these experts could be arranged by the NEA Secretariat.

Participants should fill in the attached registration form or the electronic registration form (www.nea.fr/html/nsd/workshops/RISI2004/index.html) by **March 1, 2004** and send it to:

OECD-NEA
 Mr. Eric Mathet
 Nuclear Safety Division
 Le Seine St-Germain
 12 bd des Iles
 F-92130 Issy-Les-Moulineaux
 France
 Telefax: +33 1 45 24 11 10
 E-mail: eric.mathet@oecd.org

The Organizing Committee will confirm the acceptance of registration for the workshop. There is no registration fee for the Workshop.

Although registration is free, all attendees must register so that participants can be assured of proper seating, handout materials, identification badges, and coffee break consumables.

6. ORGANIZING COMMITTEE OF THE WORKSHOP

The Organizing Committee organized the sessions and the final programme for the workshop. The tentative agenda is enclosed in this document.

The Organizing Committee members are:

| | | | |
|------------------------|----------|---------------|-----------|
| Mr. Lars SKANBERG | SKI | SWD | Chairman |
| Mr. Claude FAIDY | EDF | FR | |
| Dr. Arne ERIKSSON | JRC-EC | International | |
| Dr. Walter NEUMANN | HSK | SWT | |
| Dr. Syed ALI | NRC | USA | |
| Ms. Deborah A. JACKSON | NRC | USA | |
| Mr. Eric MATHET | OECD-NEA | International | Secretary |

Contact address:

Mr. Eric Mathet
Nuclear Safety Division
OECD Nuclear Energy Agency
Le Seine St-Germain
12 Boulevard des Iles
F-92130 Issy-les-Moulineaux
France

Tel +33 1 45 24 10 57

Fax +33 1 45 24 11 29

E-mail : eric.mathet@oecd.org

7. MEETING ARRANGEMENTS

Location

The Workshop will be held at Lindkvist Conference Centre (same building as SKI offices) in downtown Stockholm. The address is

Klarabergsviadukten 90, Stockholm, Sweden.

More information at http://www.ski.se/se/index_english.html.

Language of the workshop

The official language of the Workshop will be English.

Equipment available for the presentation

The meeting room is equipped for overhead projection of transparencies. It is also possible to project directly from a personal computer (available in the room), using Powerpoint97.

Transportation

To get from the Arlanda airport to the hotel:

- taxi (400 SEK, ask for the fixed price before) or
- the Arlanda train to the Central station (160 SEK)
- bus to the Central Station (80 SEK)

Accommodation

Participants have to make their own reservation.

The following hotels are listed for information. No special arrangements have been made.

Situated 5-10 minutes walk from SKI office:

- *Rica City Hotel – Kungsgatan* (newer and normal hotel standard)
Address: Kungsgatan 47
- *Rica City Hotel – Slöjdgatan* (older but renovated – no alcohol former religious owner)
Address: Slöjdgatan 7
Reservations only: Tel: +46 8 723 7272
Fax: +46 8 723 7279
reservations@rica.se
www.rica.se – on-line reservation – I recommend on-line reservation for best prices.
Cost approximate SEK in September 2003:
Single/double room SEK: 1.600/1.900 (lower price rooms might be without window)
Week-end Single/double: 900/1.300

Situated 5 minutes walk from SKI:

- *Nordic Light Hotel* – good standard newly built – modern style
(Opposite side of the street a twin hotel *Nordic Sea* with lower prices 100-200 SEK)
Address: Vasaplan 7
Reservations only: Tel: +46 8 505 634 20
Fax: +46 8 505 630 40
Bokning@nordichotels.se
www.nordichotels.se – on-line reservation
Cost approximate SEK in September 2003:
Single/double room SEK : 2.500/2.900 (lower price rooms might be without window)
Week-end Single/double: 1.100/1.600

Underground: Rådmanngatan (two stops from SKI office, no changes)

Walking distance: 15 min from Central Station and our office

- *Hotel Birger Jarl – 2 minutes walk from underground 15 min to SKI*

Address: Tulegatan 8

Reservations only: Tel: +46 8 674 18 10

Fax: +46 8 673 73 66

www.birgerjarl.se – on-line reservation

Cost approximate SEK in September 2003:

Single/Double room SEK: 1.600/1.900

Week-end single/double: 1.000/1.200

- More available at
<http://www.destination-stockholm.com/>
<http://www.stockholm-hotels-sweden.com/>
<http://www.hotels-stockholm.com/>

Lunch

Lunch will be taken in a restaurant near the conference centre cost-free for workshop participants.



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**Hosted by SKI.
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**PARTICIPANT REGISTRATION FORM
Or PREFERABLY ON-LINE REGISTRATION FORM**

To be sent as soon as possible to
OECD-NEA
Mr. Eric Mathet
Nuclear Safety Division
Le Seine St-Germain
12 bd des Iles
F-92130 ISSY-LES-MOULINEAUX
FRANCE
Telefax: +33 1 45 24 11 29
E-mail: eric.mathet@oecd.org

Surname (Family Name) ¹:

Given Name (s):

Title or Function:

Institution, Organization or
Company (full address):

Telephone No. :

Telefax No

E-mail address:

Title of the paper (if any)

Hotel where you are staying (Please make your own hotel reservation)

.....
.....

1. (Please indicate whether Prof., Dr., Mr., Mrs., Miss, Ms.)



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Tentative Agenda

Tuesday, April 13

8:30 - 9:30 Registration

9:30 | Welcome | Mr. Victorsson, Deputy Director General (SKI, SWD)
 Mr. Mathet (OECD-NEA)

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|---|
| <i>Topic 1 Risk Informed In-Service-Inspection</i> |
|---|

9:50 | Overview on present ISI practices and future plans | Mr. Skanberg (SKI, SWD)

SESSION 1: RI-ISI perspectives

Motive and incentive for RI-ISI, prerequisites, possibilities and limitations for application to different plant parts/components (piping systems, PRV, SG-tubes, containment), defence-in-depth and safety margin considerations, treatment of high consequence components[⊕]

10:10 | US NRC perspective | Dr. Ali (USNRC, USA)

10:40 | NRW Task Force perspective | Dr. Neumann (HSK, SWT)

11:10 - 11:30 *Coffee break*

11:30 | ENIQ perspective | Dr. Chapman (UK)

12:00 | Korean perspective | Dr. Choi (KINS, KR)

12:30 - 13:30 *Lunch break*

SESSION 2: Important aspects of RI-ISI applications

13:30 | PSA requirement for use in RI-ISI applications | Mr. Lydell – Mr. Fleming
Scope, level of detail, quality, uncertainty analysis (ERIN, USA)

14:00 | Failure potential assessments and failure probability estimations | Mr. Schulz (GRS, GER)
Use of historical data, plant data bases/international data bases, expert panels, other sources, treatment of the unexpected

14:30 | SRM/PFM model requirements | Dr. Brickstad (SKI, SWD)
Verification, validation, benchmarking, assessments

15:00 | Qualitative vs. quantitative risk models | Dr. Neumann (HSK, SWT)
Comparisons, differences in risk ranking and Identification of risk significant elements/components, etc.

15:30 - 16:00 *Coffee break*

⊕ Each paper will cover these topics and give the organisation's type and the organisation's view. However, the authors could focus on one or several of those topics, which they consider to be important.

SESSION 3: Experiences with RI-ISI applications

| | | |
|-------|--|-------------------------|
| 16:30 | US NRC experience <i>Lessons learned from the assessment and review of applications to use RI-ISI including considerations of recent degradation experience</i> | Dr. Ali (USNRC, USA) |
| 17:00 | US Industry experience 1 <i>Changes in ISI-program scope and extent, Experience so far of efficiency and effectiveness to reduce risk using semi quantitative approaches. Extension of RI ISI to “Break Exclusion Regions” - Motivations and justifications</i> | Mr. O’Regan (EPRI, USA) |
| 17:30 | <i>End of the first day</i> | |

Wednesday, April 14

SESSION 3: Experiences with RI-ISI applications (Continued)

| | | |
|---------------|---|--|
| 9:00 | US Industry experience 2 <i>Changes in ISI-program scope and extent, Experience so far of efficiency and effectiveness to reduce risk using semi quantitative approaches</i> | Mr. Billington (Westinghouse, BLG) |
| 9:30 | US Industry experience 3 <i>Changes in ISI-program scope and extent, Experience so far of efficiency and effectiveness to reduce risk using semi quantitative approaches</i> | Mr. Lydell (ERIN, USA) |
| 10:00 | European regulator experience <i>Lessons learned from the assessment and review of applications to use RI-ISI in Spanish NPPs</i> | Mr. Castelao – Dr. Figueras (CSN, SPN) |
| 10:30 - 11:00 | <i>Coffee break</i> | |
| 11:00 | European industry experience 1 <i>Experience on RI-ISI applications in Spanish NPPs Results and impact on ISI programs</i> | Mr. Bros (Tecnatom, SPN) Mr. Francia (UNESA, SPN) |
| 11:30 | European industry experience 2 <i>Experience from Pilot Studies of RI-ISI applications in Finland. Regulatory requirements and industry expectations</i> | Mrs. Simola (VTT, SF) |
| 12:00 | European industry experience 3 <i>Experience from Pilot Studies of RI-ISI applications in Sweden. Regulatory requirements and industry expectations</i> | Mr. S. Olsson (OKG, SWD) |
| 12:30 - 13:30 | <i>Lunch break</i> | |

SESSION 4: Conclusions on experiences on RI-ISI and needs for further developments

| | |
|---------------|---|
| 13:30 | Panel discussions <p style="text-align: center;"><i>Experiences so far and needs for further developments: criteria for acceptability, etc. List will be drafted by the OC to stimulate the discussion</i></p> |
| 14:30 - 15:00 | Coffee break |

Topic 2 NDT Qualification

SESSION 5: Requirements and experiences on NDT qualification

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|-------|---|---|
| 15:00 | Overview on present NDT qualification requirements and practices | Mr. Skanberg (SKI, SWD) |
| 15:20 | Link between RI-ISI and NDT qualification <p style="text-align: center;"><i>Input from NDT qualification to RI-ISI analysis vs. RI-ISI targets as basis for qualifications</i></p> | Mr. Shepherd (Mitsui Babcock, UK) |
| 15:40 | US NDT qualification experience | Mr. Ammirato (EPRI, USA) |
| 16:00 | Spanish experience on NDT qualification. Industry and regulator views | Mr. Francia (UNESA, SPN) Dr. Figueras (CSN, SPN) |
| 16:20 | European NDT qualification experience | Dr. Eriksson (JRC, EC) |
| 16:40 | VVER NDT qualification experience | Dr. Zdarek (Rez, CR) |

FINAL SESSION: General discussion – Summary and Conclusions

| | | |
|-------|-------------------------|----------------------|
| 17:00 | Discussions | Input from the floor |
| 18:00 | Closure of the Workshop | |