

## **2003 International ISOE ALARA Symposium**

**Radiological Work Management Successes in Reducing Refueling/Services Outage Duration & Dose**  
Hyatt Orlando  
Irlo Bronson Memorial Highway  
Kissimmee, Florida 34747  
January 12-15, 2003

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### **AGENDA**

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#### **Sunday, January 12, 2003**

8:00 - 10:00 a.m. Registration for International ISOE ALARA Symposium **Florida Hall West**

8:30 - 11:30 a.m. **Herman Cember Short Course on ICRP 66 Lung Model** **Paradise E & F**

Noon - 1:00 p.m. Lunch (on your own)

1:00 – 5:00 p.m.

#### **French & US Experience with PWR Reactor Vessel Head Inspection, Repair and Replacement**

**Purpose:** To provide a practical (nuts and bolts) industry workshop on management issues related to PWR Reactor Vessel Head Inspection, Repair and Replacement. The workshop has been designed to provide information sharing on all aspects of PWR Reactor Vessel Head work planning, scheduling, training, execution, and lessons learned.

#### **Overall Goal:**

To brief PWR utility management teams of recent technical issues on PWR Vessel Head Inspections prior to the Spring 2003 outages. (This is similar to the two-day INPO PWR Rx Head Workshop held August 2002.)

#### **Specific Goal:**

Share EDF, French Experience, on Reactor Vessel Head Replacement.

#### **Technical Experts:**

<b>Didier Lhomme</b> <b>EDF Project Manager</b> <b>PWR Head Replacement Project</b> <b>Paris, FRANCE</b>	<b>Alain Rocher</b> <b>EDF Project Manager</b> <b>PWR Head Replacement Project</b> <b>Paris, FRANCE</b>
<b>Mark Lane*</b> <b>North Anna Nuclear Power Station</b> <b>Dominion Energy</b> <b>Virginia, USA</b>	<b>Leonard Rollings</b> <b>Surry Power Station</b> <b>Dominion Energy Virginia, USA</b>
<b>Robert Pell</b> <b>Radiation Protection Manager</b> <b>Davis Besse Nuclear Power Station</b> <b>First Energy, Ohio USA</b>	<b>Gary Sturm</b> <b>Palisades Nuclear Power Station</b> <b>Nuclear Management Company</b> <b>Michigan, USA</b>

**Agenda:**

- 1:00 Topic I: **PWR Reactor Vessel Head Inspections & Crack Identification**  
Session Moderator: David Wood, D.C. Cook, Radiological and Environmental Superintendent
- a. Palisades & Oconee Experience Gary Strum
  - b. Davis Besse NPP Robert Pell
  - c. Surry NPP Leonard Rollings
  - d. North Anna NPP Leonard Rollings/Eric Rozek(NATC)
  - e. Bugey & Belleville NPP Didier Lhomme and Alain Rocher
- 2:00 Topic II: **PWR Reactor Vessel Repair Process and Lessons Learned**  
Session Moderator: David Wood, D.C. Cook, Radiological and Environmental Superintendent
- a. Framatone approach
  - b. Westinghouse approach
  - c. Equipment
  - d. Robotics
  - e. Dose Results
- 3:00 Coffee Break
- 3:15 Topic III: **PWR Reactor Vessel Head Replacement Experience**  
Session Moderator: David Moss, INPO Manager, Radiation Department
- a. North Anna Experience: with significant weld failures after one fuel cycle, Fall 2002. Result: Ordered replacement PWR Head from EDF, France.
  - b. Davis Besse Experience with Midland Head Replacement.
  - c. Other US PWR plants to Replace Rx. Head and unique issues identified to date.
- 4:00 Topic IV: **EDF Utility Experience with Comprehensive Utility Management Plan to Replace 56 PWR RX Heads from 1994 to 2008**  
EDF Experience: In 1991, cracks were detected on the Bugey Unit 3 reactor vessel head penetrations. After successful replacement of the reactor vessel head, a full inspection and replacement program was initiated in 1994 for all Électricité de France (EDF) reactor vessel heads (900 Mw to 1300 Mw units). As of 2002, 41 vessel heads have been replaced. The EDF PWR reactor vessel head replacement program is expected to be completed by 2008.
- 4:15 Open Discussion and Questions
- Preliminary Handouts provided to workshop attendees:
- 1. Surry PWR Head Critique and ALARA Report
  - 2. North ANNA PWR Head Replacement power point presentation
  - 3. EDF PWR Reactor Head Management Plan Summary
- 6:00 – 8:00 p.m. Symposium Registration **Florida Hall West**
- 6:00 – 7:00 p.m. **Opening Reception:** **Paradise 3 Ballroom**  
Reception Honoree: Honorable Greta Joy Dicus:  
2002 Radiation Protection Professional of the Year

**Monday, January 13, 2003**

6:30 – 9:00 a.m. Registration & Continental Breakfast

**Florida Hall West**

**ISOE Continuing Education Lecture**

7:00 a.m. **Public Health Basis for Radiation Safety**  
**Professor Herman Cember,**  
**University of Illinois, Urbana-Champaign**  
**Illinois, USA**

**Paradise 4 Ballroom**

**Plenary Session I:**

***The Future of Radiation Safety Globally***

**Paradise 4 Ballroom**

8:00 a.m. **Welcome**  
**David Wood** **Carl Goran LINDVALL**  
**Radiological & Environmental Superintendent** **Manager Health Physics**  
**D.C. Cook NPP, American Electric Power** **Barseback Draft AB**  
**Michigan, USA** **LODDEKOPINGE, SWEDEN**

8:10 a.m. **Current Experience with Risk Informed Regulatory Inspections and the New ICRP Proposals**  
**Honorable Greta Joy Dicus,**  
**US Nuclear Regulatory Commissioner, ICRP Member**  
**Washington DC**

9:00 a.m. **Resurgence of Nuclear Energy in the US.**  
**Ralph Andersen**  
**Chief Health Physicist**  
**Nuclear Energy Institute**  
**Washington, D.C.**

9:45 a.m. Coffee Break

10:00 a.m. **10<sup>th</sup> Year Anniversary of the Information System on Occupational Exposure (ISOE), OCED/NEA, IAEA**  
**Dr. Stefan Mundigl**  
**ISOE Joint-Secretariat**  
**OCED Nuclear Energy Agency**  
**Paris, FRANCE**

10:30 a.m. **The Way Forward: Modernizing the System of Radiological Protection**  
**Michael Boyd**  
**CRPPH Expert Group (EGRP)**

**Plenary Session I:**

**Paradise 4 Ballroom**

**The Future of Radiation Safety Globally**

- 11:00 a.m.    **IAEA Programs on Occupational Dose Information Sharing**  
**Dr. Khammar MRABIT**  
**Head, Radiation Monitoring and Protection Services Section**  
**Division of Radiation and Waste Safety**  
**Department of Nuclear Safety**  
**International Atomic Energy Agency**  
**Vienna, AUSTRIA**
- 11:30 a.m.    **World Class ALARA Performance: Byron Nuclear Station, Exelon-Nuclear**  
**Donald G. Goldsmith**  
**Site, Radiation Protection Manager**  
**Byron Nuclear Station**  
**Exelon-Nuclear**  
**Illinois, USA**  
*Presentation of 2002 World Class ALARA Performance ISOE Award to Donald goldsmith, RPM, Byron Nuclear Station, by Richard Warnock, NATC Chair.*
- 12:00 p.m.    Lunch    (On your own)

**Monday Afternoon, January 13, 2003**

**Session II:**

**Paradise 4 Ballroom**

**FRENCH & US EXPERIENCE WITH PWR REACTOR HEAD INSPECTIONS,  
REPAIR & REPLACEMENTS**

Session Chairs: David Wood, D. C. Cook NPP & Jean-Yves Gagnon, Gentilly-2, Hydro Quebec

1:00 p.m.      **French Experience (EDF) with PWR Reactor Head Inspection & Replacement  
1992-2002**

**Mr. Didier LHomme  
EDF Project Manager  
PWR Head Replacement Project  
Paris, FRANCE**

2:00 p.m.      **North Anna & Surry Experience with PWR Head Inspection,  
Repair & Replacement\***

<b>Mark Lane*</b>	<b>Leonard Rolling</b>
<b>North Anna Nuclear Power Station</b>	<b>Surry Power Station</b>
<b>Dominion Energy</b>	<b>Dominion Energy</b>
<b>Virginia, USA</b>	<b>Virginia, USA</b>

2:45 p.m.      Coffee Break

3:00 p.m.      **Davis Besse Experience with PWR Head Inspection & Replacement**

**Robert Pell  
Radiation Protection Manager  
Davis Besse Nuclear Power Station  
First Energy  
Ohio, USA**

4:00p.m      **Palisades Experience with Cracking of Control Rod Drive Upper Housing**

**Gary Sturm & Terry Brown  
Palisades Nuclear Power Station  
Michigan, USA**

4:30 p.m.      **Panel Discussion with RPMs & Project Managers**

Panel Moderator: David Wood, D.C. Cook, Radiological and Environmental  
Superintendent  
(Including North Anna, Surry, Davis Besse, Palisades, Point Beach, Millstone, and  
Barsebach Sweden)

5:00 p.m.      Session Adjournment

6:00- 7:30 p.m.      **Vendor Reception & Exhibition      (sponsored by NSA)      Florida Hall**

Tuesday, January 14, 2003

7:00 – 8:30 a.m. Registration & Continental Breakfast

Florida Hall Foyer

Session III:

Paradise 4 Ballroom

**ALARA BEST PAPERS From 2002 ISOE Portoroz, Slovenia**  
**Symposium & Related Papers**

Session Chair: Christian Lefauve, European Technical Center, Paris, France

8:00 a.m. **Portoroz Best Paper:**

**Fuel Decontamination at Ringhals 1 with the New Decontamination Process  
ICEDEC™**

**E. Fredriksson, R. Ivars, A. Rosengren, Westinghouse &  
G. Granath, Ringhals AB,  
SWEDEN**

8:30 a.m. **Ultrasonic Fuel Cleaning Experience at South Texas Project**

**William Bullard,  
South Texas Project  
Texas, USA**

9:00 a.m. **Portoroz Best Paper:**

**Analysis of Doses Associated with Spent Fuel Shipments  
From French Nuclear Power Plants: ARE THEY ALARA?**

**J.P. Degrange, C. Benhamou, L. d'Ascenzo – CEPN, FRANCE  
Leroy & E. Vrignaud, Electricite de France , FRANCE**

9:30 a.m. **Portoroz Best Paper:**

**Impact of Main Radiological Pollutants on Contamination Risks (ALARA)  
Optimisation of Physico Chemical Environment and Retention Technics during  
Operation and Shutdown**

**A. Rocher, J. L. Brettell, & M. Berger,  
Electricite de France,  
Paris, FRANCE**

10:00 a.m. Coffee Break (sponsored by Symposium Vendors)

Florida Hall West

**Session IV:**

**Paradise 4 Ballroom**

**ALARA Innovations Session**

Session Chair: Richard Warnock, San Onofre NPP, Southern California Edison Company

- 10:30 a.m.    **The Effective use of Tungsten as a Shielding Material in Nuclear Applications**  
**Kenneth Ohr, Robert Thompson Jr., & Donald Barker**  
**Quad Cities Nuclear Power Plant**  
**Exelon Corporation**  
**Illinois, USA**
- 11:00 a.m.    **EPRI Radiation Protection Technology**  
**Program Highlights and Collaboration**  
**Howard Ocken,**  
**Electric Power Research Institute**  
**California, USA**
- 11:30 a.m.    **INPO Radiation Protection Initiatives in 2003**  
**David Moss**  
**INPO, Manager of Radiation Protection**  
**Atlanta, USA**

12:00 p.m. Lunch (sponsored by Symposium Vendors)

**Florida Hall West**

**Session V:**

**Paradise 4 Ballroom**

**ALARA Challenges**

Session Chair: Eric Goldin, San Onofre NPP, Southern California Edison Company

- 1:30 p.m.    **Radiological Work Management Aspects Influencing Dose Reduction**  
**at the Ignalina Nuclear Power Plant During Outages**  
**Gintautas Klevinskas, MSc.**  
**Head of Supervision & Control**  
**Radiation Protection Centre**  
**LITHUANIA**
- 2:00 p.m.    **Innovative ALARA Techniques Used at Hanford**  
**Jerald Eby**  
**Fluor Hanford**  
**Richland, Washington, USA**
- 2:30 p.m.    **Radiological Remote Monitoring Systems Process & Procedure**  
**Stan Robinson**  
**Innovative Industrial Solutions**  
**Arkansas, USA**
- 3:00 p.m.    Coffee Break (Sponsored by Symposium Vendors)

**Florida Hall West**

**Session VI:**

**Paradise 4 Ballroom**

**ALARA Experience with New Chemistry Approaches**

Session Chair: Bob Hite, Diablo Canyon, California, USA

- 3:30 p.m.      **Zinc Injection at Palisades (PWR)**  
                    **Gary Sturm & Johann Geyer**  
                    **Palisades Nuclear Power Plant**  
                    **Michigan, USA**
- 4:00 p.m.      **Quad Cities Source Term Challenges and Lessons Learned**  
                    **Donald Barker & Kenneth Ohr**  
                    **Quad Cities Nuclear Power Plant**  
                    **Exelon Corporation**  
                    **Illinois, USA**
- 4:30 p.m.      **An FPL Turkey Point 3,4 ALARA Success:**  
                    **Shutdown CRUD Contamination Deposition-**  
                    **Causes, Effects, & Elimination Success Path**  
                    **Ray Fackler, Turkey Point 3,4, FPL**  
                    **Stan Wisla, St. Lucie, FPL**  
                    **Pat Robinson, (n,p) Energy, Inc.**  
                    **FLORIDA, USA**
- 5:00 p.m.      **Session Adjournment**

**Optional Workshop**

**Paradise 4 Ballroom**

- 5:00-6:30 p.m.      **Workshop on Review of Operating Events with Faster Shutdown Sequences**  
                            **and Source Term Impacts**
- Optional              **Moderator: Ray Fackler, Turkey Point 3, 4, Florida Power & Light (FPL)**  
                            **Cindy Connelly, Chemistry Supervisor, Turkey Point 3, 4, FPL, Stan**  
                            **Robinson, Innovative Industrial Solutions, & Pat Robinson, (n,p) Energy, &**  
                            **Dick Warnock, SONGS.**

**Wednesday, January 15, 2003**

7:00 – 8:00 a.m. Continental Breakfast

**Garden Foyer West**

**Session VII:**

**Paradise 4 Ballroom**

**Global ALARA Information Sharing**

Session Chair: Khammar Mrabit, Co-Secretariat, IAEA, VIENNA, AUSTRIA

8:00 a.m. **French & EC Proposals for Improvements in the Global INEX  
Classification System (Operational Events)**

**Dr. Christian Lefaure  
ISOE European Technical Center Director  
Paris, FRANCE**

8:30 a.m. **Future Directions of the ISOE Program: ICRP ISOE Expert Group Report**

**Carl Goran LINDVALL  
Manager Health Physics  
Barseback Draft AB  
LODDEKOPINGE, SWEDEN**

9:00 a.m. **Radiological Lessons Learned ISOE Programs for Training the Next Generation  
of Radiation Safety Professionals & Technicians**

**David W. Miller  
North American ALARA Center  
D.C. Cook, American Electric Power  
Michigan, USA**

9:30 a.m. Coffee Break

**Session VIII:**

**Paradise 4 Ballroom**

**ALARA Experience with Major Projects: Steam Generator  
Replacements/Plant Decommissioning, etc.**

Session Chair: Stefan Mundigl, ISOE Co-Secretariat, NEA, PARIS, FRANCE

10:00 a.m. **Calvert Cliffs Steam Generator Replacement  
Dose Results & Lessons Learned**

**Patricia Jones  
Calvert Cliffs Nuclear Power Station  
Maryland, USA**

10:30 a.m. **South Texas Project Steam Generator Replacement**

**William Bullard  
South Texas Project  
Texas, USA**

11:00 a.m. **ALARA Design Review for Remote Handled Waste at the Waste Isolation Pilot Plant**

**Tom Goff**  
**Waste Isolation Plant**  
**Carlsbad, New Mexico, USA**

11:30 a.m. **San Onofre Nuclear Generating Station Unit 1 Decommissioning Materials Management, Radiation Exposure Management and Issues**

**Dr. Eric M. Goldin, CHP**  
**San Onofre Nuclear Generating Station**  
**California, USA**

12:00 p.m. Lunch (on our own)

**Wednesday Afternoon, January 15, 2003**

**Session IX:**

**Paradise 4 Ballroom**

**Internal ALARA**

Session Chair: Tom Goff, WIPP

1:00 p.m. **Improved Worker Comfort, Protection and Efficiency-  
Advanced Polymer Technology for Anti-Contamination Clothing**

**John Steward, CHP**  
**OREX, Texas, USA**

1:20 p.m. **Developments in Anti-Contamination Clothing Approaches  
Europe and North America**

**Gregg Johnstone**  
**UniTech Services Group**  
**Illinois, USA**

1:40 p.m. **Use of HEPA Filtered Ventilation for Radiological Work at Hanford**

**Jerry Eby**  
**Fluor Hanford**  
**Richland, Washington, USA**

**Session X:**

**Paradise 4 Ballroom**

**International ALARA Reports & Studies Session**

Session Chair: Sergio Zorrilla, Laguna Verde

- 2:00 p.m.      **ALARA Program Highlights at Gentilly-2**  
                    **Jean-Yves Gagnon**  
                    **Health Physicist**  
                    **Centrale Nucleaire Gentilly**  
                    **Becancour, QUEBEC, CANADA**
- 2:20 p.m.      **German Approaches to Monetary Value of person Sievert Saved**  
                    **Bob Hite**  
                    **Radiation Protection Manager**  
                    **Diablo Canyon, California, USA**
- 2:40 p.m.      **Update on International Epidemiology Radiation Workers Study**  
                    **Richard Warnock, CHP**  
                    **NATC Chair**  
                    **San Onofre Nuclear Generating Station**  
                    **California, USA**

**Session XI:**

**Paradise 4 Ballroom**

**Future Global Occupational Dose Reduction Information Exchange Initiatives**

Session Chair: Monica Gustafsson, IAEA ISOE Technical Center, VIENNA, AUSTRIA

- 3:00 p.m.      **ALARA Success with Liquid Waste Solidification, Stabilization and Minimization**  
**Using NOCHAR RETROBOND Polymer Technology**  
                    **Dennis Campbell, Nochar, Inc.**  
                    **Ward Brunkow, The Chamberlain Group, Ltd.**
- 3:20 p.m.      **USA Plant Culture and the ALARA Philosophy**  
                    **Ira Seybold**  
                    **Westinghouse/ BNFL**  
                    **Pittsburgh, PENNSYLVANIA USA**
- 3:40 p.m.      **Symposium Summary,**  
**Announcement of Best Paper Awards for 2004 ISOE Symposium in Lyon, FRANCE**  
                    **Christian Lefaure**  
                    **Deputy Director, CEPN**  
                    **ISOE European Technical Center Regional Director**  
                    **PARIS, FRANCE**
- 5:00 p.m.      **Symposium Adjournment**  
                    **Richard Warnock,**  
                    **NATC ISOE Chair,**  
                    **San Onofre Nuclear Generating Station**  
                    **California, USA**