



Annual CNS Conference Conférence annuelle SNC

COVER

CNS

COMMITTEE

SPONSORS

DISPLAYS

2004 June / juin 6–9, Toronto, Ontario, Canada

Sunday June 6**19:00-21:00**

Conference Reception

Monday June 7**07:30-08:30**Speakers' Breakfast &
Delegates' Continental Breakfast**08:30-12:00****Session 1: Plenary I:****The Security of Supply Challenge**

Co-Chairs: P. Tighe (Atomic Energy of Canada Limited), J. Rippon (Nuclear Safety Solutions)

12:00-14:00

CNS Luncheon

Marvin Fertel, Senior VP and Chief Nuclear Officer, Nuclear Energy Institute,
"Actions Underway to Facilitate the Plans for New Nuclear Plants in the USA"**14:00-17:00****Session 2A: Environment, Health and Medical Issues**

Co-Chairs: H. Sills (HS&A)

D. Moore (Babcock & Wilcox Canada)

Session 2B: Control Room & Operations ICo-Chairs: H. McRobbie (Canadian Nuclear Safety Commission),
L. Lupton (AECL)**Session 2C: Safety Analysis & Licensing**Co-Chairs: H. Huynh (Hydro-Québec),
P. Girouard (AECL)**Session 2D: Reactor Physics & Thermalhydraulics**Co-Chairs: G. Hotte (HQ),
D. Jenkins (AECL)**Session 2E: New Fuel Design I**Co-Chairs: F. Doria (AECL),
R. Chun (Bruce Power)**17:00** CNS Annual General Meeting**Tuesday June 8****07:30-08:30**Speakers' Breakfast &
Delegates' Continental Breakfast**08:30-12:00****Session 3A: Control Room & Operations II**Co-Chairs: T. Shorter (AECL),
B. Patterson (Human Factors Practical)**Session 3B: Risk Assessment & Safety Analysis**Co-Chairs: A. Oliva (CANDU Owners Group),
F. Didomizio (General Electric)**Session 3C: Project Management**Co-Chairs: F. Doyle (COG),
K. Stratton (New Brunswick Power)**Session 3D: Plant Improvement & Life Extension**Co-Chairs: J. Nickerson (AECL),
B. Ferguson (Bruce Power)**Session 3E: New Fuel Design II**Co-Chairs: M. Liska (Bruce Power),
J.H.K. Lau (AECL)**09:00-10:00** CNA Annual General Meeting**10:00** CNA Board Meeting**12:00-14:00**

Women in Nuclear (WIN) Workshop & Luncheon

14:00-15:15**Session 4: Plenary IIA:****Future Challenges**

Co-Chairs: P. Mason (GEC), M. Lees (BWC)

15:45-17:00**Session 5: Plenary IIB:****The Communication Challenges**

Co-Chairs: P. Mason (GEC), M. Lees (BWC)

18:00Reception: Cocktail & Music followed by
Nuclear Achievement Awards Banquet &
Inukshuk Draw**Wednesday June 9****07:30-08:30**Speakers' Breakfast &
Delegates' Continental Breakfast**08:30-10:10****Session 6: Plenary IIIA:****Industry and Technical Challenges**Co-Chair: P. Spekkens (OPG),
P. Lamarre (Canatom NPM)**10:40-12:00****Session 7: Plenary IIIB:****Meeting the People Challenges**Co-Chair: P. Spekkens (OPG),
P. Lamarre (Canatom NPM)**12:00-14:00**

YGN Luncheon – Guest Speaker:

Duncan Hawthorne, CEO, Bruce Power,
"The Aging Industry: Planning for Succession :
Bruce Power's Future Growth Prospects"**14:00-17:00****Session 8A: Control Room & Operations III**Co-Chairs: K. McGuigan (OPG),
G. Jamieson (University of Toronto)**Session 8B: ACR Design & Licensing**Co-Chairs: E. Williams (Bruce Power),
W. Garland (McMaster University)**Session 8C: Plant Inspection & Maintenance**Co-Chairs: R. Eagles (New Brunswick Power),
S. Stock (OPG)**Session 8D: Quality Management of Scientific Codes**Co-Chairs: J.C. Wren (AECL),
D. Lee (BWC)Nuclear Energy: Meeting the Challenges
L'énergie nucléaire: à la hauteur des défis

GUIDE

SEARCH

AUTHORS

SESSIONS

PROGRAM

**SESSION 1 PLENARY I – THE SECURITY OF SUPPLY CHALLENGE
PLÉNIÈRE I – DÉFI DE L'APPROVISIONNEMENT FUTUR**

Co-chairs/Présidents: P. Tighe (Atomic Energy of Canada Limited), J. Rippon (Nuclear Safety Solutions)

Welcome/Bienvenue

J. Whitlock (Atomic Energy of Canada Limited, CNS President) and
B. MacTavish (CANDU Owners Group, Conference Chair)

The Electricity Market & Ontario's Demand/Supply Picture
D. Rochester (Independent Electricity Market Operator)

Planning for Life Extension Consideration at Ontario Power Generation
P. Charlebois (Ontario Power Generation)

Plans to Meet the Future Supply Challenge, *A. Johnson (Bruce Power)*

New Brunswick Power Overview & Point Lepreau Generating Station Performance
R. White (New Brunswick Power)

The Québec Scene: Gentilly-2 Perspective
R. Pageau (Hydro-Québec)

Will There Be a Future Uranium Supply Shortage?
R. Pollock (Cogema)

SESSION 2A ENVIRONMENT, HEALTH AND MEDICAL ISSUES ENVIRONNEMENT ET SANTÉ

Co-chairs/Présidents: H. Sills (HS&A), D. Moore (Babcock & Wilcox Canada)

Point Lepreau Refurbishment: Environmental Assessment Experiences and the Role of the Public
C. Hickman, P. McKay, K. Duguay, E. Eagles (New Brunswick Power), and P. Tume (Atomic Energy of Canada Limited)

Development and Implementation of the Waste Diversion Program at
MDS Nordion's Cobalt Operations Facility
T. Wasiak (MDS Nordion)

Outside the Box Thinking: Overview of an Environmental Qualification Test –
From a Test Lab Perspective, *T. Mitton (RCM Technologies Canada Corp.)*

Removal of CH₃I from Flowing Airstreams by Activated TEDA Charcoal
J.C. Wren and C.J. Moore (Atomic Energy of Canada Limited)

The Anatomy of High Hazard Work - Highly Radioactive Particle Removal
from the Divider Plate of a Steam Generator
A. Khan (Nuclear Safety Solutions Ltd.)

What Becomes of Nuclear Risk Assessment in Light of Radiation Hormesis?
J.M. Cuttler (Cuttler & Associates Inc.)



SESSION 2B CONTROL ROOM & OPERATIONS I SALLE DE COMMANDE ET EXPLOITATION DE CENTRALE I

Co-chairs / Présidents: H. McRobbie (Canadian Nuclear Safety Commission), L. Lupton (Atomic Energy of Canada Limited)

An Experience of Human Factors Evaluation on the Human Machine Interfaces in CANDU for Periodic Safety Review, *T.I. Jang, H.K. Lim (Chungbuk National University, Korea), and Y. H. Lee (Korea Atomic Energy Research Institute)*

An Optimized Three-stage Unit Cooldown
C. Lorencez, D. Redden, G. Round (Ontario Power Generation)

Improving the PSA Quality in the Human Reliability Analysis of Pre-accident Human Errors
Dae-Il Kang, Won-Dea Jung, Joon-Eon Yang (Korea Atomic Energy Research Institute)

Lessons Learned – The Columbia Space Shuttle Accident
E. Davey (Crew Systems Solutions) and B. Patterson (Human Factors Practical)

Human Errors and Failures in Engineering Systems
*R.B. Duffey (Atomic Energy of Canada Limited),
J.W. Saull (International Federation of Airworthiness)*

A Method for Determining the Content of Knowledge Training for Nuclear Professionals
C.K. Scott (Atlantic Nuclear Services Ltd.)



SESSION 2C SAFETY ANALYSIS & LICENSING ANALYSE DE SÛRETÉ ET RÉGLEMENTATION

Co-Chairs/ Présidents: H. Huynh (Hydro-Québec), P. Girouard (Atomic Energy of Canada Limited)

Hot and Steamy (but untrue) Stories of the Boiler Emergency Cooling System (BECS)
C. Lorencez and A. Bramble (Ontario Power Generation)

N290.13 Requirement for Environmental Qualification of Equipment for CANDU
Nuclear Power Plants, *H. Bordeleau (Services H. Bordeleau)*

Bruce Power Fire Protection Improvement Program –
The Challenges of Meeting Current Requirements in Existing Plant and During Restart Projects
C.D. McCulloch and E.L. Williams (Bruce Power)

Approach Regarding the Implantation of S-98 Reliability Program at the Gentilly 2
Power Plant Considering AP-913 Equipment Reliability Process
D. Komljenovic, R. Vaillancourt, and D. Messaoudi (Hydro-Québec)

Insights from the Risk-informed Inservice Inspection and the Break Exclusion Region Programs
in the USA, *V.B. Dimitrijevic, R.T. Turcotte (AREVA, Framatome ANP Inc.), and
J.H. Moody, G. Eivers (J.H. Moody Consulting Inc.)*

Development of a New Fuelling Machine Snout Safety Lock for CANDU 6 and
Pickering Type Fuelling Machines
R. Anderson (Atomic Energy of Canada Limited)



SESSION 2D REACTOR PHYSICS & THERMALHYDRAULICS PHYSIQUE DES RÉACTEURS ET THERMOHYDRAULIQUE

Co-Chairs/ Présidents: G. Hotte (Hydro-Québec), D. Jenkins (Atomic Energy of Canada Limited)

A Multigrid Method for Spatial Neutron Kinetics
Thai Sinh Nguyen and W.J. Garland (McMaster University)

Computation of Surface Fluxes in the Lattice Code DRAGON
P. Dufour, G. Marleau, and J. Koclas (École Polytechnique de Montréal)

Physics Experiments in the ZED-2 Reactor in Support of the Advanced CANDU Reactor
M.B. Zeller (Atomic Energy of Canada Limited)

Revisiting the Stamm'ler Self-shielding Method
Alain Hébert (École Polytechnique de Montréal)

Moderator-system and Shield-cooling System Heat Loads after Reactor
Shutdown for CANDU 6 Reactors
K. Aydogdu (Atomic Energy of Canada Limited)

Dryout Point Prediction Model for Bilaterally Heated Vertical Narrow Annuli
Under Low Flow Conditions
Aye Myint, Wenxi Tian, Zhihui Li, Li Hao and Dounan Jia (Xi'an Jiaotong University, China)



SESSION 2E NEW FUEL DESIGN I NOUVELLE CONCEPTION DU COMBUSTIBLE I

Co-Chairs/Présidents: F. Doria (Atomic Energy of Canada Limited), R. Chun (Bruce Power)

Bruce Power New Fuel Project CANFLEX-LVRF Project Overview

M. Liska and D. McArthur (Bruce Power)

Design & Qualification of the Bruce CANFLEX-Low Void Reactivity Fuel Bundle – An Overview

J.H. Lau, F.J. Doria, H. Chow, L.K.H. Leung, S. Palleck, K.S. Sim, Z. He (Atomic Energy of Canada Limited), and P. Purdy (Bruce Power)

Low Void Reactivity Fuel (LVRF)

P.G. Boczar, J.D. Sullivan (Atomic Energy of Canada Limited)

Thermalhydraulics Studies In Support of Qualification of Low Void Reactivity Fuel

L.K.H. Leung, M.K.Y. Ip, D.E. Bullock, U.P.M. Senaratne, and Y. Guo (Atomic Energy of Canada Limited)

SEU Blending Project, Concept to Commercial Operation – Part 1: Process Development

M.S. Ioffe, S. Bhattacharjee, A.J. Oliver, and E. Özberk (CAMECO)

SEU Blending Project, Concept to Commercial Operation – Part 2: Engineering Design

D.G. Ingalls, M.S. Ioffe, A.J. Oliver, T.P. Smith, and E. Özberk (CAMECO)



SESSION 3A CONTROL ROOM & OPERATIONS II SALLE DE COMMANDE ET EXPLOITATION DE CENTRALE II

Co-Chairs/Présidents: Tina Shorter (Atomic Energy of Canada Limited),
B. Patterson (Human Factors Practical)

On-Line Monitoring at Nuclear Power Plants
A. Osgouee (Ontario Power Generation)

Monitoring Displays – A Comparison of Nuclear and Aviation Practice
E. Davey (Crew Systems Solutions)

Enhancing Training in the Main Control Room
K. McGuigan, K. O’Leary, and K. Canavan (Ontario Power Generation)

Automated Validation Testing on the Bruce Power Training Simulators
B. Williams (Bruce Power)

Electromagnetic Noise Levels of Korean CANDU and PWR Plants
*In-Koo Hwang (Korea Atomic Energy Research Institute),
Seong-Tack Jeon (Wolsung Nuclear Station, Korea), and
Yang-Mo Kim (ChungNam National University, Korea)*



SESSION 3B RISK ASSESSMENT & SAFETY ANALYSIS ÉTUDE DES RISQUES ET ANALYSE DE SÛRETÉ

Co-Chairs/Présidents: A. Oliva (CANDU Owners Group), F. Didomizio (General Electric)

Experience with the Application of Risk-based Safety Goals in Canada
K. Dinnie (Nuclear Safety Solutions Ltd.)

Analytical Evaluation of Probabilistic Safety Margins
J.C. Luxat (McMaster University, formerly of Nuclear Safety Solutions Ltd.)

Moving Along the Risk-informed Path – Drivers and Challenges
*S. Petrella, F. Dermarkar, D. Austman (Ontario Power Generation), and
R. Chun (Bruce Power)*

Update on Seamless Calandria Tube Development and Qualification
A. Usmani, J. Theaker, M. Léger, B. Novak, and S. Buligan (Atomic Energy of Canada Limited)

Safety Basis of the Advanced CANDU Reactor
M. Bonechi, H. Johal, Z. Bilanovic, V. Lau, C. Xu, and C. Nie (Atomic Energy of Canada Limited)

Review of the ACR-700 Heat Removal Capabilities
K.F. Hau, B.M. Lekakh, T. Mahendralingam, and S. Ford (Atomic Energy of Canada Limited)

The Adsorption Kinetics of Gaseous I₂ on Stainless Steel During Iodine-assisted Corrosion
J.C. Wren, J.M. Ball, and G.A. Glowa (Atomic Energy of Canada Limited)



SESSION 3C PROJECT MANAGEMENT GESTION DE PROJETS

Co-Chairs/Présidents: F. Doyle (CANDU Owners Group), K. Stratton (New Brunswick Power)

Qinshan CANDU Commissioning - A Successful Partnership
*S. Alikhan, J. Thomson (Atomic Energy of Canada Limited), and
Gu Jun, Jiang Guoyuan (Third Qinshan Nuclear Power Company, China)*

Work Program Analysis – Defining the Capability/Risk Plan
W.A. Hrinivich (Bruce Power)

Conversion of Pickering B Reactors to Cobalt Production
J. Norton (MDS Nordion), J. Slack (MASLA International Inc.), A. Mo (Ontario Power Generation)

Cost Estimating for Large Nuclear Projects
A. Duggal and M. Hunt (Atomic Energy of Canada Limited)

Waste Remediation Projects at Chalk River Laboratories
C.A. Fahey, W.R.C. Graham, D.S. Cox (Atomic Energy of Canada Limited)

Refurbishment of Point Lepreau Nuclear Generating Station: Management of Refurbishment Waste
P.S. Tume, C.M. Cottrell (Atomic Energy of Canada Limited), and C. Hickman (New Brunswick Power)

Dry Storage Programs
R. Brandt and H. Michael (Wardrop)



SESSION 3D PLANT IMPROVEMENT & LIFE EXTENSION AMÉLIORATION DE CENTRALE ET PROLONGATION DE VIE

Co-Chairs/Présidents: J. Nickerson (Atomic Energy of Canada Limited), B. Ferguson (Bruce Power)

Point Lepreau Refurbishment – Update 4

R.M. White, E.R. Eagles, C.N. Hickman, R. Baker, P.D. Thompson (New Brunswick Power), and J.Q. Howieson, N. Ichiyen (Atomic Energy of Canada Limited)

Equipment Reliability Process Improvement and Preventive Maintenance Optimization

D. Messaoudi, G. Abdulnour (Université du Québec à Trois-Rivières), and R. Vaillancourt, D. Komljenovic, M. Croteau (Hydro-Québec)

Application of Plant Life Management Program and Experience at NRU

J. Nickerson, R. Dam, J. Arnold, and D. See Hoyer (Atomic Energy of Canada Limited)

The Replacement of the Bleed Condenser Relief Valves at Pickering 'B' Nuclear Station

H.I. Higdon and F. Lee (Ontario Power Generation)

Enhancing PLiM/LCM Through Integration Strategies

R.F. Dam, P. Watson, and J.H. Nickerson (Atomic Energy of Canada Limited)

Switchgear Obsolescence

C.S. Irish (Nuclear Logistics Inc.)



SESSION 3E NEW FUEL DESIGN II **NOUVELLE CONCEPTION DU COMBUSTIBLE II**

Co-Chairs/Présidents: M. Liska (Bruce Power), J.H.K. Lau (Atomic Energy of Canada Limited)

CANFLEX-LVRF Fuel Performance Qualification

K.S. Sim, M.R. Floyd, S.J. Palleck, F.J. Doria, J.H.K. Lau (Atomic Energy of Canada Limited)

WIMS-AECL Validation for 43-Element Bruce-B Low Void Reactivity Fuel

B.P. Bromley, R.T. Jones, M.B. Zeller, H. Chow (Atomic Energy of Canada Limited)

Leaching Behaviour of Dysprosium-doped LVRF Fuel

S. Sunder, N. Tosello (Atomic Energy of Canada Limited)

Implementation of CANFLEX-LVRF Fuel Bundle Manufacture for Bruce –

From “Bench Scale” to Production, *A. Pant (Zircotec Precision Industries)*

Criticality Safety Issues Associated with the Introduction of Low Void Reactivity Fuel in the Bruce Reactors – A Management and Technical Overview

J.W. Thompson (Nuclear Safety Solutions Ltd.), G. Austman, F. Iglesias, H. Schmeing, C. Elliott (Bruce Power), and G. Archinoff (CANDESCO Research Corporation)

Safety Benefits of Low Void Reactivity Fuel in Bruce B

G.H. Archinoff (CANDESCO Research Corporation), O. Nainer (Bruce Power),

H.H. Wong, D.R. Novog (Nuclear Safety Solutions Ltd.), and T.V. Tran (Atomic Energy of Canada Limited)



SESSION 4 PLENARY IIA – FUTURE CHALLENGES
PLÉNIÈRE IIA – DÉFIS À VENIR

Co-Chairs/Présidents: P. Mason (General Electric Canada), M. Lees (Babcock & Wilcox Canada)

Bruce A Restart Projects, Units 3 and 4 – Lessons Learned
R. Mottram (Bruce Power)

The Nuclear Option: An Essential Energy Ingredient for Ontario
K. Petrunik (Atomic Energy of Canada Limited)

The Nuclear Path Forward
E.S. Grecheck (Dominion Energy Inc.)

Positron Emission Tomography – What's all the hype?
K. Gulenchyn (Hamilton Health Sciences Centre – McMaster University)



SESSION 5 PLENARY IIB – THE COMMUNICATION CHALLENGES PLÉNIÈRE IIB – DÉFIS DES COMMUNICATIONS

Co-Chairs/Présidents: P. Mason (General Electric Canada), M. Lees (Babcock & Wilcox Canada)

Update from the NWMO

E. Dowdeswell (Nuclear Waste Management Organization)

What's Happening at the CNA: Current Priorities

M. Elston (Canadian Nuclear Association)

The Port Hope Low-level Radioactive Remediation Project:

Building Community Acceptance at the Local Level

R. Austin (Mayor of Port Hope)



SESSION 6 PLENARY IIIA – INDUSTRY AND TECHNICAL CHALLENGES
PLÉNIÈRE IIIA – DÉFIS TECHNIQUES DE L'INDUSTRIE

Co-Chairs/Présidents: P. Spekkens (Ontario Power Generation), P. Lamarre (Canatom NPM Inc.)

Status of Cernavoda Unit 2 NPP and Challenges of Initiating Work on Unit 3
I. Rotaru (SN Nuclearelectrica S.A., Romania)

Canada's Role in the Generation IV International Forum
S.J. Bushby, S.D. Guindon (National Research Canada)

Commercial Aspects of SEU Production
R. Steane (CAMECO)

Future Technical Challenges for CANDU
P.J. Fehrenbach, L.R. Lupton (Atomic Energy of Canada Limited)



SESSION 7 **PLENARY IIIB – MEETING THE PEOPLE CHALLENGES**
PLÉNIÈRE IIIB – DÉFIS DES RESSOURCES HUMAINES

Co-Chairs/Présidents: P. Spekkens (Ontario Power Generation),
P. Lamarre (Canatom NPM)

The UNENE Initiative and World Nuclear University
R.M. Mathur (University Network of Excellence in Nuclear Engineering)

Establishing Nuclear Education at UOIT
T. Slobodian (University of Ontario Institute of Technology)

Review – 3rd International Youth Nuclear Congress
M. McIntyre (Atlantic Nuclear Services Ltd.)



SESSION 8A CONTROL ROOM & OPERATIONS III **SALLE DE COMMANDE ET EXPLOITATION DE CENTRALE III**

Co-Chairs/Présidents: K. McGuigan (Ontario Power Generation), G. Jamieson (University of Toronto)

Qinshan Plant Display System: Experience To Date,
*Li Bin, You Jiangdong, Chen Weili, Wang Haidong, Liu Wangtian (Third Qinshan Nuclear Power Corporation),
and R. Lockwood, R. Doucet, D. Trask, and R. Judd (Atomic Energy of Canada Limited)*

A Fresh Approach to Enhanced and New Operator Workstations and Control Rooms
Jean-Yves Fiset (Systèmes Humains-Machines Inc.)

Development of the Advanced CANDU Reactor Control Centre
S. Malcolm and R. Leger (Atomic Energy of Canada Limited)

Advanced CANDU Reactor Distributed Control System Design
R. Brown and R. Basso (Atomic Energy of Canada Limited)

Off-line Tools to Support CANDU Annunciation Maintenance
R. Basso (Atomic Energy of Canada Limited)

A Java Applet to Simulate a CANDU Reactor
E. Varin and J. Desarmenien (École Polytechnique de Montréal)



SESSION 8B ACR DESIGN & LICENSING **CONCEPTION ET RÉGLEMENTATION DU RÉACTEUR CANDU AVANCÉ**

Co-Chairs/Présidents: E. Williams (Bruce Power), W. Garland (McMaster University)

Overview of the ACR-700 Reactor Assembly Design

L. Dimitrov, B. Ajmera, and G. Young (Atomic Energy of Canada Limited)

Designing for World Class Capacity Factor

E. Choy, R. Lalonde, and K. Wittan (Atomic Energy of Canada Limited)

ACR-700 Modularization Program and Construction Sequence Method

E. Choy, M. Elgohary, R. Ricciuti, N. Fairclough, and

S.K.W. Yu (Atomic Energy of Canada Limited)

Approach to Development of Licensing Basis for Future Power Reactors in Canada

G. Zrentkowski, A.O. Banas, D. Miller (Canadian Nuclear Safety Commission)

Licensing the ACR-700 in the USA: Progress on the Pre-application Review

R. Ion, V. Langman, V.G. Snell (Atomic Energy of Canada Limited), and

C. Reid (Bechtel Power Corporation)

Licensing the ACR-700 in Canada: Progress on the Pre-licensing Review

N.K. Popov, V.G. Snell, and J.E. West (Atomic Energy of Canada Limited)



SESSION 8C PLANT INSPECTION & MAINTENANCE INSPECTION ET MAINTIEN DES CENTRALES

Co-Chairs/Présidents: R. Eagles (New Brunswick Power), S. Stock (Ontario Power Generation)

Probability of Potential Cracks in Feeder's Welds and Radius Bends After a Partial Inspection
D. Komljenovic, R. Vaillancourt, and M. Croteau (Hydro-Québec)

Integrated Assessment Approach to Ensure Removal of Decay Heat with RCW Out of Service
*S. Ghelbereu, R. Istrate (CNE-Prod, Romania), and
R. Gold, R.F. Dam, C. Ongendangenda, R. Sequeira, B. Zhai (Atomic Energy of Canada Limited)*

Controlling Microbially Influenced Corrosion Through Piping Geometry
*P. Angell, C. Schefski (Atomic Energy of Canada Limited), and
R. Richard, G. Mills, S. Pestonji (Ontario Power Generation)*

SYSTEMS™: Systematic Approach for the Development of Strategies for Maintenance and Surveillance
J.X. Yang, L. McCrea, R.F. Dam, J.H. Nickerson (Atomic Energy of Canada Limited)

Equipment Reliability Process based on the Institute of Nuclear Power Operations (INPO)
AP-913 Guidelines in Conjunction with a Preventive Maintenance Living Program
M.L. Harazim (Framatome ANP Inc.) and B.J. Ferguson (Bruce Power)

Using the System Maintenance Datastore to Characterize Lifetime Maintenance for PLiM
P. Watson, R.F. Dam, J.H. Nickerson (Atomic Energy of Canada Limited)

The Bruce B Delayed Neutron (DN) Monitoring System for Failed Fuel Detection:
Twenty Years of Operating Experience, Recent Improvements, and Planned Upgrades
H. Schmeing, C. Hogg (Bruce Power)



SESSION 8D QUALITY MANAGEMENT OF SCIENTIFIC CODES ASSURANCE DE QUALITÉ DES LOGICIELS SCIENTIFIQUES

Co-Chairs/Présidents: J.C. Wren (Atomic Energy of Canada Limited), D. Lee (Babcock & Wilcox Canada)

Qualification of DRAGON for Reactivity Device Calculations in the Industry Standard Toolset
R.S. Davis (Atomic Energy of Canada Limited)

Qualification of the Reactor Physics Toolset for the Design and Analysis of the Advanced CANDU Reactor
H. Chow, R.T. Jones (Atomic Energy of Canada Limited)

PIRT Efforts in Support of ACR-700 Computer Code Validation
H.E. Sills, A. Abdul-Razzak, N.K. Popov, E. Lemoine (Atomic Energy of Canada Limited)

Validation of DRAGON Side-step Method for Bruce-A Restart Phase-B Physics Tests
Wei Shen, C. Ngo-Trong, R.S. Davis (Atomic Energy of Canada Limited)

Automatic Assistance in Source Code Preparation and Quality Assurance by Dimensional Analysis
R.S. Davis (Atomic Energy of Canada Limited)

Efficient Management of Data Files with FillForm
R.S. Davis (Atomic Energy of Canada Limited)

