

## **PROGRAM**

### **Monday, June 9th, 1986**

Plenary Session with CNA

SESSION A: Fuel and Fuel Channel Materials

**Chairman:** A.D. Lane, AECL CRNL

SESSION B: Reactor Physics and Radiation

**Chairman:** A. Harms, McMaster University

SESSION C: Safety and the Environment

**Chairman:** E.C. Card, W.L. Wardrop & Associates Ltd.

### **Tuesday, June 10th, 1986**

CNS Annual Business Meeting

SESSION D: Fusion I

**Chairman:** A.B. Meikle, CFFTP

SESSION E: Thermohydraulics I

**Chairman:** D.A. Meneley, University of New Brunswick

SESSION F: Economic and Social Issues

**Chairman:** T.R. Lassau, Ont. Research Foundation

SESSION G: Fusion II

**Chairman:** R.A. Bolton, Hydro Quebec IREQ

SESSION H: Thermohydraulics II

**Chairman:** D.B. Primeau, AECL CANDU Ops.

SESSION I: Operations

**Chairman:** P. Stevens-Guille, Ontario Hydro

## **SESSION A: FUEL AND FUEL CHANNEL MATERIALS**

**Chairman:** A.D. Lane, AECL CRNL

- 3 Slightly enriched uranium fuel cycle: Performance aspects.  
G.M. MacGillivray and I.J. Hastings, AECL CRNL
- 5 FEAST: A two-dimensional non-linear finite element code for calculating stresses.  
M. Tayal, AECL CANDU Ops.
- 15 Pressure tube elongation rates in CANDU fuel channels.  
C.O. Poidevin, M. Natesan and R. Rao, Ontario Hydro
- 22 Development of failure maps for integrity assessment of pressure tubes.  
P.S. Kundurpi and G.H. Archinoff, Ontario Hydro
- 30 Metallographic examination of a CANDU fuel bundle heated under severe accident conditions.  
R. Choubey, D.J. Wren, A.E. Unger and K.J. George, AECL WNRE, and P.J. Fehrenbach, AECL CRNL
- 39 Conceptual design for an irradiated fuels tomography facility.  
L.R. Lupton, P.J. Fehrenbach, N.A. Keller and S. Gowans, AECL CRNL

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**Chairman:** A. Harms, McMaster University

- 45 Selecting a MAPLE research reactor core for 1-10 MW operation.  
H.J. Smith, M-F Roy and P.A. Carlson, AECL WNRE
- 51 Assessment of beam tube performance for the MAPLE research reactor.  
A.G. Lee, AECL WNRE
- 57 Safety and licensing aspects of the MAPLE-X reactor at the Chalk River Nuclear Laboratories.  
K.D. Cotnam, AECL CRNL
- 63 A non-intrusive neutron method for gadolinium poison concentration monitoring.  
E.M.A. Hussein, D. O'Connor and M. Mosher, University of New Brunswick
- 69 Comparison of commissioning test results with physics simulations in a CANDU reactor.  
A.U. Rehman, M.Z. Farooqui, G.V. Guardalben and A.L. Wight, Ontario Hydro
- 76 A review of applications of radiolysis in the adsorbed state.  
L.W. Dickson and A. Singh, AECL WNRE

## **SESSION C: SAFETY AND THE ENVIRONMENT**

**Chairman:** E.C. Card, W.L. Wardrop & Associates Ltd.

- 83 A safety review of the NRU effluent heat recovery project.  
P.R. Ballantyne, AECL CRNL
- 89 Chalk River area seismicity and its implications for low-level radioactive waste disposal facility siting.  
J.S. Devgun, AECL CRNL
- 99 A systematic approach to the analysis of waste management systems.  
A. Buchnea, MacLaren Plansearch Inc.
- 104 Ra 226 and Pb 210 concentration ratios in terrestrial and wetland plants on inactive and abandoned uranium mill tailings in Canada.  
M. Kalin and M.P. Smith, Boojum Research Ltd.
- 105 A highly selective method for removing natural radioactivity from drinking water.  
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- 116 The potential in Canada for fusion by polarized nuclei.  
D. Giusti, Consul-Tech Engineering Ltd. and D.G. Andrews, University of Toronto
- 122 Irradiation of lithium-based ceramics for fusion blanket application.  
I. J. Hastings, J.M. Miller, R.A. Verrall, S.R. Bokwa and D.H. Rose, AECL CRNL
- 128 Two-dimensional model of current density and temperature in the T.F. coils of the Tokamak de Varennes during long pulse operation.  
G. Le Clair, M.P.B. Technologies Inc., G.W. Pacher, I.R.E.Q. and H.D. Pacher, INRS-Energie
- 132 Concepts for fusion fuel production blankets.  
P. Gierszewski, Canadian Fusion Fuels Technology Project

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- 145 STGEN simulations of top blowdown tests of RD-12 steam generator.  
C.S. Kim, W.K. Liauw and J.Y. Stambolich, Ontario Hydro
- 156 Analysis of fuel element to pressure tube contact using the mini-smartt computer code.  
D.B. Reeves, P.S. Kundurpi, G.H. Archinoff, A.P. Muzumdar and K.E. Locke, Ontario Hydro
- 163 Effect of gas flow in the insulating annulus on fuel channel temperatures in a severe accident in a CANDU reactor.  
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- 168 Thermal behaviour of CANDU fuel channel under steam flow conditions: An alternative solution.  
H.E.S. Fath and K.M. Al-Sabti, University of Technology, Baghdad
- 175 Cathena simulation of the Wolsung D<sub>2</sub>O spill incident of 1984 November 24.  
D.J. Richards and T.E. MacDonald, AECL WNRE, and S.D. Grant, AECL CANDU Ops.

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S.L. Iverson, AECL WNRE
- 187 Energy and exergy analyses of a nuclear steam power plant.  
M.A. Rosen and D.S. Scott, University of Toronto
- 197 Innovative design and construction methods to reduce nuclear plant construction time.  
P.D. Stevens-Guille, W.J. Penn and N. Fairclough, Ontario Hydro
- 203 The necessity for nuclear power: the oxygen-CO<sub>2</sub> balance.  
J.W. Harding
- 207 Frightened at false fire: nuclear energy, the news media and the public.  
D. Mosey, Ontario Hydro

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**Chairman:** R.A. Bolton, Hydro Quebec IREQ

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R.R. Bell, Monserco Limited
- 219 Ontario Hydro Research Division tritium handling system.  
W.T. Shmayda, Ontario Hydro
- 225 Safety issues relating to the design of fusion power facilities.  
R.R. Stasko and K.Y. Wong, Canadian Fusion Fuels Technology project and S.B. Russell, Ontario Hydro
- 232 Bulk getters for tritium storage.  
N.P. Kherani and W.T. Shmayda, Ontario Hydro
- 237 The CRNL tritium laboratory — a Canadian resource.  
W.J. Holtlander and J.M. Miller, AECL CRNL

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**Chairman:** D.B. Primeau, AECL CANDU Ops.

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- 250 The onset of subcooled nucleate boiling in nuclear fuel bundles.  
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- 258 Circumferential drypatch spreading on a simulated CANDU fuel string with non-uniform axial heat flux.  
C.W. Snoek, AECL CRNL
- 265 Prediction of void fraction in steady horizontal stratified flow.  
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- 273 Air-water flooding in a 90° elbow with a slightly inclined lower leg.  
P.T. Wan and V.S. Krishnan, AECL WNRE
- 279 Numerical simulation of a confined jet under suction and counter-momentum for the Canadian MAPLE Research Reactor.  
S.Y. Shim and D.K. Baxter, AECL WNRE

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**Chairman:** P. Stevens-Guille, Ontario Hydro

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- 297** Steam generator level controllability.  
W.G. Schneider and J.T. Boyd, Babcock and Wilcox Canada
- 303** Use of acoustic emission to locate the garter springs of a CANDU fuel channel.  
N. Badie and A. Sinclair, University of Toronto and H. Licht, AECL CRNL
- 311** Leakage from biological shield cooling system in Pickering NGS A.  
C.O. Poidevin, E. DiStanislao and J. Mildner, Ontario Hydro