
Summaries of CNS Conferences, Seminars, and Workshops

Second International Conference on Radioactive Waste Management

The Second International Conference on Radioactive Waste Management was sponsored by the Canadian Nuclear Society and cosponsored by ANS.

The conference was held in Winnipeg, 7–11 September 1986, and attracted an attendance of nearly 300; about 180 from Canada, 60 from the U.S., and 50 from other countries.

During the three-day conference, 128 technical papers were presented in twenty-four technical sessions covering topics of transportation, storage and disposal of radioactive wastes, geoscience research, waste forms characterization, environmental assessment, facility design, uranium tailings management, regulatory affairs, and public attitudes. Many countries have made considerable progress in resolving scientific, technological, and socio-political issues since the first CNS-sponsored international conference on radioactive waste management held in Winnipeg in September 1982.

The theme for this year's conference was 'Demonstrated Results Providing Direction for the Future.' A special emphasis was placed on large-scale *in situ* experimental facilities able to demonstrate the concepts of safe management of radioactive waste and to provide confidence in our ability to predict the long-term performance of waste management systems. A technical tour to the Underground Research Laboratory and Whiteshell Nuclear Research Establishment was conducted at the conclusion of the Conference.

The following papers were presented:

'The Hades Demonstration Project for Radwaste Disposal in Deep Clay.' L.H. Baetsle, A. Bonne, P. Dejonghe (SCK/CEN Mol, Belgium)

'Disposal of Low and Intermediate Level Waste in Rock Caverns at Shallow to Intermediate Depth.' N.L. Mansson, M. Bechai, P.K.M. Rao (Ontario Hydro, Toronto, Ontario)

'Design and Performance Assessment of an Above Grade Disposal Structure.' R.R. Blickwedehl (Dames & Moore, West Valley, New York)

'Inground Containers at BNPD.' P.J. Armstrong (Ontario Hydro, Toronto, Ontario)

'Geological Investigation for High Level Radioactive Waste Isolation in Japan.' K. Doi, M. Yamakawa (Power Reactor & Nuclear Fuel Development Corporation, Tokyo, Japan)

'The Development of Radioactive Waste Disposal Sites in the United Kingdom.' H. Beale (Nirex Ltd, United Kingdom)

'Disposal Concepts for Radioactive Wastes in Clay or Till Deposits.' M. Bechai, N.L. Mansson, P.K.M. Rao (Ontario Hydro, Toronto, Ontario)

'Development of Waste Containment Structure for Niagara Falls Storage Site.' M.G. Jones, P.E. and R.B. Barber (Bechtel National, Inc, Oak Ridge, Tennessee)

'Radioactive Waste Management at the Nevada Test Site.' N.E. Rothermich (Reynolds Electrical and Engineering Co Inc, Las Vegas, Nevada)

'A Concrete Cask Design for Storage, Transportation and Disposal.' J. Freire-Canosa, S.J. Naqvi, G.S. Kellay, G.A. Menten (Ontario Hydro, Toronto, Ontario)

'Vertical Migration of Iodine, Technetium and Neptunium in Peat.' M.I. Sheppard, D.H. Thibault (AECL, Whiteshell, Manitoba)

'Hydrogeologic Studies for CRNL's Proposed Shallow Land Burial Site.' R.W.D. Killey, J.S. Devgun (AECL, Chalk River, Ontario)

'Geotomography to Map Water Movement in a Nuclear Waste Repository.' W. Daily, A. Ramirez (Lawrence Livermore National Lab, Livermore, California)

'Hydrogeologic Setting of the Cluff Mining Tailings Management Area.' W.A. Meneley (W.A. Meneley Consultants Ltd); T.M.R. Meadley (Amok Ltd, Saskatoon, Saskatchewan)

'Investigations on Radionuclide Retardation at ASSE Salt Mine – R&D Program and First Results.' W. Bode, C. Wolfrum (Gesellschaft fuer Strahlen, FRG)

- 'Surface Chemistry of Radionuclide-Mineral Interactions.' R.I. Haines, D.G. Owen, D.C. Doern (AECL, Whiteshell, Manitoba)
- 'On Groundwater Travel Times in Granite and Gneiss.' O. Brotzen (FBAB, Sweden)
- 'Comparison of Surface and Downhole Electrochemical Measurements in Canadian Shield Groundwaters.' J.D. Ross, M. Gascoyne (AECL Whiteshell, Manitoba)
- Radionuclide Migration Studies in the Laboratory.' T.T. Vandergraaf, D.M. Grondin, P. Vilks, D.J. Drew (AECL Whiteshell, Manitoba)
- 'Carbonate Sorption Capacity of Iron Hydroxide and Soil Material.' E.J. Reardon, R.D. Kellerman, R.W. Gillham, H. Johnston (University of Waterloo, Waterloo, Ontario)
- 'Transuranic Package Transporter (TRUPACT) – Large Volume Shipments Begin in 1988.' L.H. Harmon, J.M. McGough (US Department of Energy, Washington, DC)
- 'Design and Testing of a Cask for Transporting Irradiated CANDU Fuel.' K.E. Nash (Ontario Hydro, Toronto, Ontario)
- 'Rail Transport of Commercial Spent Fuel in the United States.' J.E. Van Hoomissen, B.F. Judson (General Electric Company, San Jose, California)
- 'Systems for Transporting Used Candu Fuel by Road, Rail and Water.' A.P. Shetler (Ontario Hydro, Toronto, Ontario)
- 'Transuranic Waste Transportation Tracking System.' J.J. Tappen (Westinghouse Electric Corporation, Albuquerque, NM)
- 'Radioactive Material Packaging Database (RAMPAC).' K.L. Driscoll (Westinghouse Electric Corporation, DOE, Albuquerque, NM)
- 'Spent Fuel Storage and Transportation Experience for the Idaho.' National Engineering Laboratory, C.P. Gertz, D.H. Schoonen (US Department of Energy, Idaho Falls, Idaho)
- 'Strength of and Volume Changes in a Sand-Bentonite Buffer.' J. Graham, D.A. Dixon (AECL, Whiteshell, Manitoba); M.N. Gray (University of Manitoba, Winnipeg, Manitoba)
- 'Erosion of Clay-Based Grouts in Simulated Rock Fractures.' H.T. Chan (Ontario Hydro, Toronto, Ontario)
- 'Backfill Formulations for a Nuclear Waste Disposal Vault.' R.N. Yong, P. Boonsinsuk, G. Wong (McGill University, Montreal, Quebec); S.C.H. Cheung (AECL, Whiteshell, Manitoba)
- 'Evaluation of Backfill Materials for a Shallow-Depth Repository.' L.P. Buckley, G.M. Arbique, N.B. Tosello, B.L. Woods (AECL, Chalk River, Ontario)
- 'Pneumatic Emplacement of Basalt-Bentonite Packing.' M.J. Leroch, J.M. Markowitz (Westinghouse Electric Corporation, Madison, Pennsylvania)
- 'Ionic Diffusion in Compacted Bentonite-Based Materials.' S.C.H. Cheung, D.W. Oscarson, M.N. Gray (AECL Whiteshell, Manitoba)
- 'Pressures Acting on Waste Containers in Bentonite-Based Materials.' D.A. Dixon, M.N. Gray, P. Baumgartner, G.L. Rigby (AECL Whiteshell, Manitoba)
- 'Hydraulic Compression of Shaft Backfill at the Backfill / Rock Interface.' H.T. Chan, H.S. Radhakrishna (Ontario Hydro, Toronto, Ontario)
- 'Ideology, Risk and Public Consultation: Planning for Canada's Nuclear Waste.' P. Falconer (Winnipeg, Manitoba)
- 'Public Consultation and the Canadian Nuclear Fuel Waste Management Program.' R.A. Anderson, R.S. Dixon, M.A. Greber, J.A. Hillier (AECL, Whiteshell, Manitoba)
- 'The Ontario Public's Opinion About Nuclear Fuel Waste Management.' M.A. Greber (AECL, Whiteshell, Manitoba)
- 'Tale of Three Cities.' D.J. Lechel (Roy F. Weston, Inc, Albuquerque, New Mexico)
- 'Social Considerations Relative to the Siting of a Low-Level Radioactive Waste Disposal Facility in Canada.' B. Franklin (AECL, Ottawa, Ontario)
- 'Nuclear Waste Management: Socio-Ethical Dimensions.' (Social Issues Committee, CNA, Toronto, Ontario)
- 'Research into the Long-Term Environmental Effects of Uranium Tailings.' R.D. John (National Uranium Tailings Program, CANMET, Ottawa, Ontario)
- 'Approaches to Risk Assessment for Canadian Uranium Mill Tailings.' D.B. Chambers, R.A. Knapp, M.L. Murray (SENEC Consultants Ltd, Willowdale, Ontario); R.W. Holmes (National Uranium Tailings Program, EMR, Ottawa, Ontario)
- 'Radionuclide and Heavy Metal Concentrations in Water, Sediments and Biota in the Vicinity of Cluff Mining Operations.' T.P. Hynes, T. Meadley, N.A. Thompson, R.M. Schmidt (Amok Ltd, Saskatoon, Saskatchewan)
- 'Uranium Tailings Management and Waste Waters Control at Key Lake.' L.S. Price (Key Lake Mining Corporation, Saskatoon, Saskatchewan)
- 'Radioactive Waste Management in OECD Countries:

National Programs and Joint Activities.' J.P. Olivier (OECD/NEA, France)

'Progress on Developing Low-Level Waste Management Facilities.' M. Ginniff (NIREX, United Kingdom)

'Overview of the FRG Activities on Spent Fuel Disposal.' K.D. Closs, K. Einfield (FRG)

'Site Investigations for Intermediate- and High-Level Waste Disposal.' Issler, C. McCombie (NAGRA, Switzerland)

'Evaluation of the IRAD Flexible Probe Sonic Extensometer.' H.D. Glenn, W.C. Patrick, N.L. Rector, L.S. Butler (Lawrence Livermore National Lab, Livermore, California)

'Mechanical and Thermomechanical Behaviour of Lac Du Bonnet Granite: Some Laboratory Observations.' A. Annor, R. Jackson (CANMET/AECL, Ottawa, Ontario)

'Testing of Methods and Equipment for Deep Borehole Studies.' T. Aikas, A. Nikula, V. Ryhanen (Finland)

'IN SITU Experiments in Fractured Granite.' M. Kumata, H. Kumura, K. Shimooka, A. Nakagoshi, S. Muraoka, H. Nakamura (Japan Atomic Energy Research Institute, Japan)

'Rock Displacements Measured during URL Shaft Sinking.' P.M. Thompson, P.A. Lang (AECL Whiteshell, Manitoba)

'A Similarity Solution for Coupled Deformation and Fluid Flow in Discrete Fractures.' A. Wijesinghe (Lawrence Livermore National Lab, Livermore, California)

'Structural Discontinuity Mapping by Geophysical Methods.' N.M. Soonawala, J.G. Hayles (AECL Ottawa, Ontario)

'Sensitivity Studies of Thermal and Mechanical Parameters of Basalt.' W.W. Chen, I.J. Dempster (Rockwell Hanford Operations, Richland, Washington)

'Safe and Compact Storage and Transportation of Tritium as Titanium Tritide.' J.M. Miller, W.J. Holtslander, W.R. Taylor (AECL, Chalk River, Ontario)

'Impact of Transportation Considerations in the Selection of Low-Level Waste Repositories.' A.K. Bhattacharyya, R. Janti (Dept of Environmental Resources, Harrisburg, PA); P.K. Niyogi (US Nuclear Regulatory Commission, Rockville, Maryland)

'Preparations to Transport, Receive, and Store the Damaged TMI-2 Core^a.' R.C. Schmitt, H.W. Reno (Idaho National Engineering Lab, Idaho Falls, USA)

'The Impacts from a Monitored Retrievable Storage Facility on Transportation.' G.W. McNair (Pacific Northwest Laboratory, Richland, Washington)

'An Historical Summary of Transportation Accidents and Incidents Involving Radioactive Materials.' C.E. Coppin (Westinghouse/Joint Integration Office, Albuquerque, New Mexico)

'The Projected Impacts of Transportation of Radioactive Material to the First United States Repository Site – An Overview.' J. Cashwell, S. Neuhauser (Sandia National Labs, Albuquerque, New Mexico); P.C. Reardon (Science Applications Inc, Albuquerque, New Mexico); G. McNair (Battelle Pacific Northwest Laboratories, Richland, Washington)

'Ocean Transport of Low-Level Radioactive Waste Off Taiwan.' C. Chung, C.M. Tsai (Institute of Nuclear Science, Taiwan)

'Characterization of Radioactive Wastes Incorporated in a Cement Matrix.' E.R. Merz, D. Dyckerhoff, R. Odoj (Institute of Chemical Technology, Julich, FRG)

'Immobilization of Neutralized Cladding-Removal Waste in a Cement-Based Grout.' T.L. Sams, E.W. McDaniel, T.M. Gilliam (Oak Ridge National Laboratory, Oak Ridge, Tennessee)

'Development of Concrete Mixtures for Radioactive Waste Disposal.' R.D. Hooton (Ontario Hydro, Toronto, Ontario)

'Effect of Cement on Radioactive Waste-Form Performance in Multicomponent Systems Tests at 200°C.' R.B. Heinmann (AECL Whiteshell, Manitoba)

'Radionuclide Isolation Efficiency of Normal- and High-Density Concrete.' A.T. Jakubick (Ontario Hydro, Toronto, Ontario)

'Computer Modelling of the Central Storage of Used Fuel.' B.R. Reynolds (Ontario Hydro, Toronto, Ontario)

'Safety and Cost Assessments for Disposal in a Prototype Shallow Land Burial Facility.' D.G. Hardy, D.F. Dixon (AECL, Chalk River, Ontario)

'The Concept Assessment Engineering Study (CAES) of Nuclear Fuel Waste Disposal Centres (NFWDC): Study Plan and Technical Specifications.' P. Baumgartner (AECL Whiteshell, Manitoba)

'Licensing of Uranium Mine and Mill Waste Management Systems.' L.G. Chamney (Atomic Energy Control Board, Ottawa, Ontario)

'Environmental Benefits from Regulatory Compliance at the Durango, Colorado Umtra Project Site.' D.J. Lechel (Roy F. Weston Inc, Albuquerque, NM)

'Various Strategies in the Management of Wastes from Uranium Mining and Milling.' L. Farges, J. Pradel, P. Zettwoog (Commissariat à l'Energie Atomique, France)

'Criteria for Remedial Works at Inactive Uranium Mill Tailings Piles.' J.A. Caldwell (Jacobs Engineering, Albuquerque, New Mexico); T.R. Wathen (Morrison-Knudsen Engineering)

'Regulatory Criteria for the Disposal of Radioactive Wastes.' K.P. Wagstaff (Atomic Energy Control Board, Ottawa, Ontario)

'Provincial Program for the Environmental Regulation of Uranium Mining in Saskatchewan.' R.G. Barsi (Saskatchewan Environment, Prince Albert, Canada)

'Decommissioning of Uranium Mines and Mills – Canadian Regulatory Approach and Experience.' W. Whitehead (Atomic Energy Control Board, Ottawa, Ontario)

'Preliminary Dose Assessment of On-Site Burial of Decommissioning Waste.' S.B. Russell (Ontario Hydro, Toronto, Ontario)

'Spreadsheet Modelling of Radiological Impacts from Radioisotope Disposal in Municipal Waste Systems.' W. Eedy, P. McKee, W. Snodgrass (Beak Consultants Ltd, Mississauga, Ontario); R. Maloney (Atomic Energy Control Board, Ottawa, Ontario)

'Safety Assessment for a Double-Barrier In-Ground Container for Waste Storage.' L.L. Wang (Ontario Hydro, Toronto, Ontario)

'The Cosmos Assessment Code for a SLB Repository at CRNL.' C.I. Bretzlaff, R.G. Jarvis, J.M. Laurens, S.R. Wilkinson (AECL Chalk River, Ontario)

'Modelling the Long-Term Evolution of Radioactive Waste Disposal Environments.' C.J.G. Frizelle, J.E. Mutton, P.S. Upton (Dames & Moore, Twickenham, United Kingdom); B.G.J. Thompson (Dept of the Environment, London, United Kingdom)

'The Practical Application of Variance Reduction Techniques in Probabilistics Assessments.' J.R. Walker (AECL Whiteshell, Manitoba)

'Probabilistic Model for Performance Assessment of Long-Term Effects of Uranium Tailings.' R.W. Holmes (National Uranium Tailings Program, Ottawa, Ontario); D.B. Chambers, B.E. Halbert, D.I. Beals (Senes Consultants Ltd, Toronto, Ontario)

'Seepage and Transport Modelling for a Uranium Tailings Dam in Northern Saskatchewan.' L. Lam, S.L. Barbour, W.A. Meneley (University of Saskatchewan, Saskatoon)

'Acidification and Radionuclide Leaching in Unsaturated Uranium Mill Tailings.' T.W. Constable (Environment Canada, Burlington, Ontario); W.J. Snodgrass (IEC Beak Consultants Ltd, Mississauga, Ontario)

'A Modelling Study of Alternatives for the Manage-

ment of Uranium Refinery Wastes.' A. Buchnea (MacLaren Plansearch Inc, Toronto, Ontario); J.B. Davis (Golder Associates Ltd); D. Moffett (Eldorado Resources Ltd)

'Progress of the Swedish Waste Management Program.' H. Forsstrom (Swedish Nuclear Fuel and Waste Management Co, Sweden)

'Overview of the Uranium Mill Tailings Remedial Action Project.' J.A. Turi (us Dept of Energy, Washington, DC)

'The Rabbit Lake Open Pit Tailing Disposal System.' A.R. Morrish (Eldorado Resources Ltd, Saskatoon, Saskatchewan)

'Investigations of Metal Matrices for Nuclear Fuel Waste Disposal.' P.M. Mathew (AECL Whiteshell, Manitoba)

'Localized Corrosion of Nickel Alloys in Chloride Environments.' J. Postlewaite, R.J. Scoular, M.H. Dobbin (University of Saskatchewan, Saskatoon, Saskatchewan)

'Welding and Inspection of Nuclear Fuel Waste Disposal Container.' P.Y.Y. Maak, M.D.C. Moles (Ontario Hydro, Toronto, Ontario)

'The SYNROC Demonstration Plant. D.M. Levins, K.D. Reeve, E.J. Ramm, J. Kable, G. Tapsell (Australian Atomic Energy Commission Research Establishment, Sydney, Australia); A.E. Ringwood, S.E. Kesson (Australian National University, Canberra, Australia)

'Hydrothermal Dissolution of Non-Metallic Materials for Nuclear Fuel Immobilization Containers.' M. Onofrei, D.K. Raine (AECL, Whiteshell, Manitoba)

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'Evaluation of Synroc-C as a Second Generation Waste Form.' J.W. Shade (Battelle, Pacific Northwest Labs, Richland, Washington)

'Titanium Corrosion Under Canadian Nuclear Fuel Waste Disposal Conditions.' B.M. Ikeda (AECL, Whiteshell, Manitoba)

'Computer Modelling of Alpha-Radiolysis of Aqueous Solutions in Contact with Used UO₂ Fuel.' J.C. Tait, L.H. Johnson (AECL, Whiteshell, Manitoba)

'Storage of Irradiated Candu Fuel in Dry and Moist Air.' K.M. Wasywich (AECL, Whiteshell, Manitoba); J. Freire-Canosa, C.R. Frost (Ontario Hydro, Toronto, Ontario)

'Effect of Alpha Radiolysis of Water on Candu Fuel Oxidization.' S. Sunder, D.W. Shoesmith, L.H. Johnson, M.G. Bailey, G.J. Wallace (AECL, Whiteshell, Manitoba)

'Solubility of Unirradiated Uranium Oxide in Granitic Groundwater.' K. Ollila (Technical Research Centre of Finland Reactor Lab, Finland.)

'Chemistry of Uranium Colloids in Groundwater Environments.' C.H. Ho, N.H. Miller (AECL, Whiteshell, Manitoba)

'The Effect of Precipitation on Radionuclide Release from Used Fuel.' F. Garisto, N.C. Garisto (AECL, Whiteshell, Manitoba)

'Characterization of Corrosion Deposits and the Assessment of Fission Products Released from Used Candu Fuel.' J.D. Chen, R. Taylor, D.G. Hartrick, N.L. Pshyshlak, K.M. Wasywich, A. Rochon (AECL, Whiteshell, Manitoba); P.A. Beeley (Queen's University, Kingston, Ontario); C.R. Frost (Ontario Hydro, Toronto, Ontario); K.I. Burns (AECL, Chalk River, Ontario)

'Finite-Element Thermohydrogeological Modelling for Canadian Nuclear Fuel Waste Management.' T. Chan, N.W. Scheier, J.A.K. Reid (AECL, Whiteshell, Manitoba)

'Ground-Water Flow and Radionuclide Transport Analyses for a Crystalline Reference Area.' A. Brandstetter, A. Andrews, J.M. Doesburg, A.B. Gureghian, L.L. Loebel, C.J. Noronha, S.B. Steidl (Battelle Project Management Division, Columbus, Ohio)

'Reducing Radiation Doses from ^{129}I Disposal of Isotopic Dilution.' L.H. Johnson, D.M. LeNevue (AECL, Whiteshell, Manitoba)

'The Effect of Colloids on Actinide Migration.' P. Vilks, D.J. Drew (AECL, Whiteshell, Manitoba)

'Mechanism of Oxidation and Dissolution of Candu Fuel in Groundwater.' S. Sunder, D.W. Shoesmith, M.G. Bailey, G.J. Wallace (AECL, Whiteshell, Manitoba)

'Time-Dependent Biosphere Processes in Nuclear Fuel Waste Disposal Assessments.' P.A. Davis (AECL, Whiteshell, Manitoba)

'Predicting Human Food and Water Ingestion Rates and Inhalation Rates for Use in Environmental Assessment Models.' R. Zach (AECL, Whiteshell, Manitoba)

'Pathway-II: A Computer Code for Radiological Environmental Pathways Analysis.' R.M. Zimmermann, T.F. Kempe, K.J. Donnelly (Ontario Hydro, Toronto, Ontario)

'Refining Generic Plant/Soil Concentration Ratios.' S.C. Sheppard (AECL, Whiteshell, Manitoba)

'A Natural Analog for a Fuel Waste Disposal Vault.' J.J. Cramer (AECL, Whiteshell, Manitoba)

'A Probabilistic Risk Assessment of an Underground Radioactive Waste Disposal Facility.' B.G.J. Thompson (Dept of the Environment, London, United Kingdom)

'Modelling Aspects in Vault Chemistry.' N.C. Garisto (AECL, Whiteshell, Manitoba)

'Effect of Joints on Uplift Above a Nuclear Waste Repository.' B.W. Dial, D.E. Maxwell (Science Applications International Corp, San Leandro, California); E.G. McNulty (Office of Nuclear Waste Isolation); M. Reeves (INTERA Technologies Inc.)

'Management of Combustible Radioactive Wastes in Ontario Hydro.' L.S. Krochmalnek, R. Kohout (Ontario Hydro, Toronto, Ontario)

'Demonstration of a Continuous Pyrohydrolysis Waste Volume Reduction System.' C.D. Desjardins (Research and Productivity Council, Fredericton, NB); P. Buckley (AECL, Chalk River, Ontario)

'Design Considerations for a Hot Cell Overpack Welder for the Waste Isolation Pilot Plant.' B.R. Nair, R.V. Richardson (Westinghouse Electric Corp, Madison, Pennsylvania); J.A. Mullally (Westinghouse Electric Corp, Carlsbad, New Mexico)

'Studies on Tritiated Waste Management System.' H. Amano (Institute of Plasma Physics, Nagoya, Japan); T. Okamoto, T. Utsunomiya, T. Moriya, T. Shimbo (Mitsui Construction Co Ltd, Japan)

'Proposed Decommissioning Strategy for the Cluff Mining Tailings Management Area.' T.M.R. Meadley (Amok Ltd, Saskatoon, Saskatchewan); W.A. Meneley (W.A. Meneley Consultants Ltd)

'Design Considerations for Stabilization of Inactive Uranium Mill Tailings Piles.' M.J. Bone (Roy F. Weston Inc, Albuquerque, NM)

'Conceptual Design of Remedial Actions at Three Navajo Sites.' W.C. Knight, V. Fry (Jacobs Engineering, Albuquerque, NM); R. Sena (US Dept of Energy)

'Geotechnical Considerations of the Salt Lake City UMTRA Project.' R.E. Rager (Sargent Hauskins and Beckwith, Albuquerque, New Mexico); M.W. Roshek (Utah Dept of Transportation, Salt Lake City, Utah)

'Alternative Site Cover Design Comparisons for the Gunnison UMTRA Project.' M.J. Bone (Jacobs Engineering Group Inc, Albuquerque, NM)

'Cost Benefit Analysis of Close-Out Options for a Uranium Mill Tailings Area.' M.J. Roberts, A. Buchnea (MacLaren Plansearch Inc); M.P. Fillion (Eldorado Resources Ltd)

'An Analysis of the Need for Low-Level Radioactive Waste Disposal in Canada and the Alternatives for Establishing Disposal Facilities. D.J. Cameron, B.J. Franklin, R.W. Pollock, R.L. Zelmer (AECL, Ottawa, Ontario)

'Proposed Management Procedure for Low-Level Radioactive Wastes Produced by National Research Council (CNR) Laboratories with Respect to Italian Regulation.' L. Petrella, A. Russo (National Research Council, Italy, Rome)

'Ontario Hydro's Options for Long Term Management of Radioactive Wastes.' P.K.M. Rao (Ontario Hydro, Toronto, Ontario)

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