

G4SR-4 International Conference Technical Program (subject to change)

| Technical Session A | | Wednesday October 5 13:00-14:45 | | | | | | |
|---------------------|----|---|--|--|-----------------|---|----|--|
| Room (capacity): | | A1 Toronto (180) | A2 Montreal (150) | A3 Ottawa (80) | A4 Windsor (80) | | | |
| Track: | 1 | Safety Assessment, Regulation and Standards Initiatives | Molten Salt Reactor Research & Development | Advanced Reactor and SMR Deployment I | 5 | SMR Manufacturing and Supply Chain | | |
| | # | Title | # | Title | # | Title | | |
| Co-Chair 1 | | Robert Ion (robertion.mev200@gmail.com) | | Aleksandar Delja (aleksandar.delja@cnsccsn.gc.ca) | | Jaleh SOLTANLOU (Jaleh.Soltanlou@brucepower.com) | | Youssef A. Ballout (Youssef.Ballout@inl.gov) |
| Co-Chair2 | | Sara DARA (Sara.DARA@kinectrics.com) | | | | | | |
| 13:00-13:25 | 47 | An Integrated Safety Assessment Methodology for Advanced Small Modular Reactors / Wilson Lam, wilsonlam.cns@gmail.com | 2 | Results of a Phenomena Identification and Ranking Table (PIRT) Exercise for a Severe Accident in Molten Salt Small Modular Reactors / David Hummel, david.hummel@cnl.ca | 81 | Technical and non-technical issues and challenges to realize nuclear power and SMR safety-in-design to levelized the perception as part of lower carbon national energy portfolio/ akira.tokuhiro@ontariotechu.ca | 69 | Canada needs to vertically integrate its fuel supply chain to progress as a Tier 1 nuclear supplier nation / Mario Pieries, mario.pieries@hatch.com |
| 13:25-13:50 | 54 | The CNSC's Approach to Regulatory Collaboration for Small Modular Reactors / Sarah Eaton, sarah.eaton@cnsccsn.gc.ca | 30 | Progress in Coupling Computational Thermodynamics and Computational Fluid Dynamics to Support Molten Salt Reactor Applications / Nikolas Scuro, nikolas.scuro@ontariotechu.net | 14 | How to implement Nuclear Power in Saskatchewan, despite the past? / Francisco Sahagun, francisco.sahagun@outlook.com | 70 | What we can learn from adjacent industries for innovation in advanced manufacturing for serial production of Small Modular Nuclear Reactors / Mario Pieries, mario.pieries@hatch.com |
| 13:50-14:15 | 63 | Regulatory Considerations and Implications in Deployment of SMRs at Industrial Sites / Brian Gihm, brian.gihm@hatch.com | 78 | Selection and Qualification of Graphite Grades for IMSR400 Operations/ mivanova@terrestrialenergy.com | 36 | Deployment of Small Modular Reactors in Saskatchewan / Hani Al Anid, h.alanid@calian.com | 82 | Accelerating the adoption of advanced manufacturing technologies for Gen IV nuclear reactors through international collaboration/ isabella.vanrooyen@pnnl.gov |
| 14:15-14:40 | 33 | CSA Group Standards Initiatives for Small Modular Reactors / Larisa Logan, larisa.logan@csagroup.org | 50 | Studies of natural convection in molten salt around vertical tubes / Per Nilsson, per.nilsson@seaborg.com | 84 | SMR Development and Deployment activities in New Brunswick/ pauldthompson8901@outlook.com | 13 | Modularity-at-scale for cost competitive deployment of nuclear energy / Efe Kurt, efe.kurt@inl.gov |

| Technical Session B | | Wednesday October 5 15:15-17:00 | | | | | | |
|---------------------|----|--|----|---|----|---|----|---|
| Room (capacity): | | B1 Toronto (180) | | B2 Montreal (150) | | B3 Ottawa (80) | | B4 Windsor (80) |
| Track: | 1 | The Application of Safety, Security and Safeguards in SMRs | 2 | High-Temperature Gas-Cooled Reactor Research & Development | 3 | Advanced Reactor and SMR Deployment II | 6 | SMR Economics, Financing, and Business Models |
| | # | Title | # | Title | # | Title | # | Title |
| Co-Chair 1 | | Robert Ion (robertion.mev200@gmail.com) | | Hazem Mazhar (hazem.mazhar@cnsccsn.gc.ca) | | Mohamed Yazid Mokeddem (mohamedyazid.mokeddem@cnsccsn.gc.ca) | | Dawn M. Scates (dawn.scates@inl.gov) |
| Co-Chair2 | | Atfield, Julian (julian.atfield@cnl.ca) | | | | | | Jane Akpan (janeuel@yahoo.co.uk) |
| 15:15-15:40 | 41 | XDOSE: A Tool for Radiological Consequences / Peter Maka, peter.maka@kinectrics.com | 77 | Flownex Validation for Steady-State Temperature Calculation of the HTR-10 Benchmark Problem/ taesung.ha@kinectrics.com | 67 | USE OF BOUNDING SITE INFORMATION TO INFORM DEVELOPMENT OF TRANSPORTABLE NUCLEAR POWER PLANTS (TNPP) / Marcel de Vos, marcel.devos@live.com | 42 | Economic Considerations for Factory Fabrication of SMRs / Megan Moore, megan.moore@cnl.ca |
| 15:40:16:05 | 75 | Implementation of the IMSR400 Holistic & Integrated Approach to Nuclear Security and Safeguards / Robert Ion, rion@terrestrialenergy.com | 27 | RELAP5-3D Simulation of Oregon State University High Temperature Test Facility Lower Plenum Mixing Test / TARIQ JAFRI, tariq.jafri@cnl.ca | 57 | Transportation Security Considerations of Small Modular and Mobile Reactors / Ross Peel, ross.peel@kcl.ac.uk | 62 | Updated Hatch SMR deployment evaluation framework / Brian Gihm, brian.gihm@hatch.com |
| 16:05:16:30 | 49 | A Prediction and Verification Methodology for Small Modular Reactor Safeguards / Xiaolin Wang, xiaolin.wang@cnl.ca | 39 | Weldability of Incoloy 800H gas-tungsten arc welds with Incoloy 625 filler material in the application of HTGRs / Lin Xiao, lxiao48@hotmail.com | 80 | Considerations and Optimization of Hydrogen Production using Small Modular Reactors and Renewable energy sources/ akira.tokuhiro@ontariotechu.ca | 65 | Impacts of vSMRs on Canada's Remote Communities and Industries / Turner Ward, turner.ward@hatch.com |
| 16:30-16:55 | 10 | A Risk-Informed Framework for Small Modular Reactor Fuel Qualification and Safety Margin Evaluation / Nhu Thuy Tran, thuy.tran@cnl.ca | 61 | Overview of HTTF modelling and benchmark efforts for code V&V for gas-cooled reactor applications / Aaron Epiney, aaron.epiney@inl.gov | 79 | Considering commitments to replace electricity generation with nuclear energy: estimates of climate change impact costs using a modified VENSIM DICE model/ | | #N/A |

| Technical Session C | | Thursday October 6 08:00-09:45 | | | | | | |
|---------------------|------------------|--|-------------------|--|----------------|---|-----------------|--|
| Room (capacity): | C1 Toronto (180) | | C2 Montreal (150) | | C3 Ottawa (80) | | C4 Windsor (80) | |
| Track: | 2 | Research & Development Initiatives on SMR Fuel Qualification, Source Term Prediction, and Flux Detectors | 9 | Nuclear Hybrid Energy Systems and Co-generation I | 7 | Public Policy, Engagement and Education | 11 | Standards, Innovation, and Knowledge Management |
| | # | | Title | | # | | Title | |
| Co-Chair 1 | | Khumsa-Ang, Kittima (Naid) (kittima.khumsa-ang@cnl.ca) | | Megan Moore (megan.moore@cnl.ca) | | Rayner, Jeremy (jeremy.rayner@usask.ca) | | |
| Co-Chair2 | | | | Hiroyuki SATO (sato.hiroyuki09@jaea.go.jp) | | | | |
| 08:00-08:25 | 55 | Advancement in Post-Irradiation Examination Techniques and Gap Assessment for Advanced Fuel and Small Modular Reactors / Peng Xu, peng.xu@inl.gov | 3 | Study of an HTGR-renewable Hybrid System for Grid Resilience / Hiroyuki Sato, sato.hiroyuki09@jaea.go.jp | 9 | Accelerating the deployment of SMRs in Canada: the importance of intermediaries / Jeremy Rayner, jeremy.rayner@usask.ca | 40 | CSA N293S1:21, Supplement No.1 to CSA N293-12: Fire protection for nuclear power plants (application to small modular reactors) / Cherie Zou, cherie.zou@csagroup.org |
| 08:25-08:50 | 59 | Recent Advances in Thermodynamic Calculations to Support Source Term Analyses in Multiple Reactor Designs / Markus Piro, markus.piro@ontariotechu.ca | 26 | Feasibility and benefits of nuclear reactor hybrid energy systems: a remote community case study / Pronnapa Sanongboon, pronnapa.sanongboon@cnl.ca | 22 | Indigenous Engagement: The shift from mitigating risk to recognizing value / Eric McGoey, eric.mcgoey@opg.com | 12 | Mapping the Innovation Ecosystems for the Deployment of Small Modular Reactors in Canada and Mexico. An Innovation Policy approach through Strategic Niche Management and Social |
| 08:50-09:15 | 83 | Manufacture of a High Temperature Neutron Flux Detector for Generation IV Reactors/ martin.shaw@ultra-ncs.com | 15 | Assessment of Nuclear Renewable Hybrid Energy System (NR-HES): Technical-Economic Approach / Ayman Mahmoud Mahmoud, ayman.mahmoud@cnl.ca | 51 | Public Perception of SMRs in the Yukon: Engagement Approaches and Results / Kieran Potter, k.potter@calian.com | 31 | MOOK: The Knowledge Management method applied to a GENIV project. The continuation of a successful story / Gilles Rodriguez, gilles.rodriguez@cea.fr |
| 09:15-09:40 | 1 | YOUR NEW SMR MUST NOT BE THERMAL / Peter Ottensmeyer, ottensmeyer@sympatico.ca | 19 | Business Model for a Nuclear Hybrid Energy System / Ayman Mahmoud Mahmoud, ayman.mahmoud@cnl.ca | 20 | Broadening Nuclear Education and Outreach for the New Nuclear Era / Jeremy Hopwood, Jerry.hopwood1@gmail.com | 60 | Task Allocation Optimization for Human – Machine Control for Minimally Staffed Control Rooms / carlos sanchez, carlos.sanchez@hatch.com |

| Technical Session D | | Thursday October 6 10:15-12:00 | | | | | | |
|---------------------|------------------|---|-------------------|---|----------------|--|-----------------|---|
| Room (capacity): | D1 Toronto (180) | | D2 Montreal (150) | | D3 Ottawa (80) | | D4 Windsor (80) | |
| Track: | 2 | Water-Cooled SMR Research & Development | 9 | Nuclear Hybrid Energy Systems and Co-generation II | 7 | Modelling, System Analysis, Critical Parameters Simulation for AR and SMR | 3 | Innovative SMR designs, SMR/AR Spent Fuel Evaluation and Management |
| | # | | Title | | # | | Title | |
| Co-Chair 1 | | Paul Chan (Paul.Chan@rmc.ca) | | Pronnapa (Lek) Sanongboon (pronnapa.sanongboon@cnl.ca) | | Ayman Mahmoud | | Hazem Mazhar (hazem.mazhar@cnsccsn.gc.ca) |
| Co-Chair2 | | | | Megan Moore (megan.moore@cnl.ca) | | | | |
| 10:15-10:40 | 7 | CODE DEVELOPMENT OF SEVERE ACCIDENT SEQUENCE ANALYSIS FOR KOREAN SMALL INTEGRAL REACTOR AND ITS APPLICATION / Rae-Joon Park, rjpark@kaeri.re.kr | 23 | Value-At-Risk for Stochastic Optimization of Integrated Energy Systems in HERON / Paul Talbot, paul.talbot@inl.gov | 56 | Control systems modelling of Small Modular Reactors within Nuclear-Renewable Hybrid Energy Systems / Otavio Lopes Alves Esteves, otavio.lopesalvesesteves@ontariotechu.net | 76 | Cuboid CANDU Reactor: Technical & Economic Advantages / Ibrahim Attieh, iattieh@hotmail.com |
| 10:40-11:05 | 16 | Severe Accident Analysis of a Generic Integral Pressurized Water Reactor with MELCOR / Andrew Morreale, andrew.morreale@cnl.ca | 24 | Multimarket Control and Operation of an Advanced Nuclear Reactor within an Integrated Energy Park / Konor Frick, konor.frick@inl.gov | 11 | A System-Level Study of MMR integration to ICE-Harvest Systems: Safety and Performance / Marin Vratonjic, vratonm@mcmaster.ca | 37 | PRELIMINARY SPENT FUEL WASTE EVALUATION AND MANAGEMENT FOR SMALL MODULAR REACTORS / George Xu, george.xu@cnl.ca |
| 11:05-11:30 | 46 | A Neutronic Investigation of a High Performance Two-Batch Natural Circulation Soluble Boron Free Small Modular Reactor / Steven Wijaya, steven.wijaya@kaist.ac.kr | 43 | USNC Micro Modular Reactor for hybrid hydrogen production applications / Jan Van Ravenswaay, jan.vanravenswaay@usnc.com | 38 | McMaster Transient Critical Heat Flux Facility's Nodalization and CHF Simulation Using ASYST / Yang Liu, liuy514@mcmaster.ca | 48 | LEU-based Molten Salt and Metal Reactor (MSMR) for Ultra-micro Miniaturization / eunhyug Lee, eunhyug@kaist.ac.kr |
| 11:30-11:55 | 73 | Variable Frequency Drives in Nuclear Power Plants / Marcus Schmitt, Marcus.Schmitt@framatome.com | 52 | Small Modular Reactor Deployment for Hybrid Energy Systems and Hydrogen Production at Remote Mines / Megan Goodland, megan.goodland@hatch.com | 44 | Flow Regimes and Transition Criteria for Vertical Downward Two-Phase Flow in a Narrow Rectangular Channel/ vikrantcoep@gmail.com | | #N/A |