



July 2025 Collaboration Update

Message from Rachna Clavero

Dear Conexus members, participants and partners:

As we enjoy the long, hot days of summer, there's been no cooldown in the momentum across the nuclear industry. At Conexus, our team is hard at work preparing for our 2025 Conexus Collaboration Week (CCW), taking place September 28-October 2 in Toronto, Canada. We look forward to seeing many of you there in person for a productive and energizing week of workshops, plenaries, peer group meetings and shared learning.

Our theme for CCW 2025 is *Forging the Future Together*. This theme is timely, given the upcoming refurbishment of CANDU facilities internationally, as our Canadian members successfully complete life extension projects and undertake planning for potential second refurbishments.

The longevity of these facilities is due in no small part to the CANDU industry's remarkable commitment to collaboration. Through a shared approach, the industry moved beyond competitive interests to prioritize collective learning, innovation and safety. By pooling resources, expertise, and operational experience, over the past 40+ years Conexus members have achieved significant benefits – billions of dollars in savings, regulator confidence, streamlined problem-solving, enhanced safety margins, and optimized plant performance across all reactors.

As the fleet evolves, we are reviewing our Research and Development program to ensure that our programs and projects are focused on our members' needs today and into the future. We are also supporting our members in modernization of the regulatory framework to support new builds and refurbished units, with development and maintenance of a briefing book highlighting key regulatory areas requiring modernization. The book provides an avenue for the Canadian industry voice at the regulatory table, and input to CNSC and other regulatory bodies' planning processes.

Looking ahead, continued support for international collaboration is crucial. Nuclear safety is a global responsibility. Sharing best practices with other operators worldwide and learning from one another's experiences strengthens the entire industry. It allows us to anticipate emerging challenges, validate approaches, and ultimately improve the safety, reliability, and sustainability of nuclear energy not just in Canada, but globally. Continued collaboration isn't just beneficial;

it's essential for a secure and responsible nuclear future, as the industry balances management of the operating fleet while advancing new builds and new nuclear technologies.

For decades, the CANDU fleet has thrived thanks to this powerful combination: a deeply ingrained safety culture *and* a commitment to collaboration. This collaborative spirit keeps CANDU technology at the forefront, builds public trust, and helps us forge a sustainable, prosperous future – together.

Rachna Clavero
President and CEO

Get Ready for Conexus Collaboration Week 2025



Forging the
Future
Together | CCW
2025



Join us for CCW 2025, on September 28-October 2, 2025 at our biennial conference bringing together members, participants, and partners for a full week of connection, insight, and innovation.

This year's theme, Forging the Future Together, highlights the importance of collaboration as the industry works to optimize CANDU performance, integrate new technologies, and strengthen global partnerships.

What to expect:

- **Technical Peer Groups:** Share OPEX, align on challenges, and build collective expertise
- **Workshops and Deep Dives:** Focused sessions on refurbishment, obsolescence, innovation, and more
- **Global Perspectives:** Engage with participants from across Canada and international organizations
- **Innovation Highlights:** Explore technologies and approaches shaping the next era of nuclear

- **Networking Opportunities:** Connect with peers, experts, and emerging leaders in the industry

Why attend:

Whether you are a returning participant or attending for the first time, CCW offers a unique opportunity to learn from peers, gain practical insights, and contribute to industry-wide progress. Past attendees have called it "an energizing space for meaningful conversations" and "a must-attend for anyone serious about nuclear collaboration and innovation."

Register now and view the full program at our event website:

<https://site.phedloop.com/event/CCW2025/home>

For questions, contact the CCW Planning Team at CCW@ConexusNuclear.Org.

[View Event Website](https://site.phedloop.com/event/CCW2025/home)

[View Program](#)

Collaboration spotlight: Conexus R&D - Turning Innovation into Tangible Impact

Conexus' Research & Development (R&D) program enables our members to collaboratively address current operational challenges while advancing the science and tools needed to extend plant life, improve safety, and reduce costs.

Every year, Conexus members collaborate on hundreds of work packages. Our collaborative R&D framework enables utilities to share the costs and benefits of innovation, while benchmarking performance across the fleet.

This quarter, we highlight three R&D projects that demonstrate how applied research is delivering real-world impact, from robotics, to corrosion modelling, to advanced inspection techniques.



Conexus R&D Team

Advancing Inspection Reliability

Field Trials of Magnetic Biasing Probes Under the Chemistry, Materials & Components (CM&C) Program: this four-year project addressed the challenge of detecting flaws in steam generator tubing where inner diameter magnetite is present. Two magnetic biasing array probes were developed for 12.9 mm and 15.9 mm steam generator tubing, followed by laboratory validation and field trials at Darlington and Bruce Power.

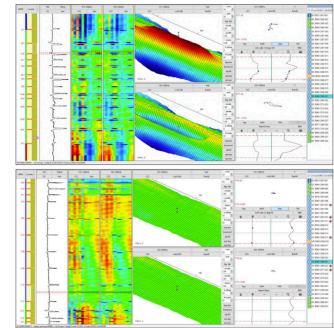


Figure 27: (Top) AMBA480 response to a U-bend fret near support CU2 on tube R088C068 on frequency mix C-Scan #121; (Bottom) AMBA480 residual signal from a clean location near support CU11 on the same channel.

Results:

- Achieved significantly improved flaw detection in steam generator tubes compared to conventional X-Probes, increasing detection of potential degradation issues.
- Delivered new inspection capabilities allowing for enhanced outage planning and support of CIQB qualification, reducing delays and uncertainty.
- Improved confidence in steam generator health and inspection reliability across the fleet, helping utilities avoid costly rework and maintaining high safety margins.

Reducing Corrosion Risk

Modelling of Dissolved Oxygen (DO) Effects on Flow Accelerated Corrosion (FAC)

This work created a new CANDU-specific model to better understand how dissolved oxygen and hydrazine interact across the secondary system. Using historical and station-specific data from Darlington, Gentilly-2, and Point Lepreau, the model supports optimization of chemistry controls to

reduce FAC. Follow-on work on model improvement using data from other CANDU utilities has been initiated.

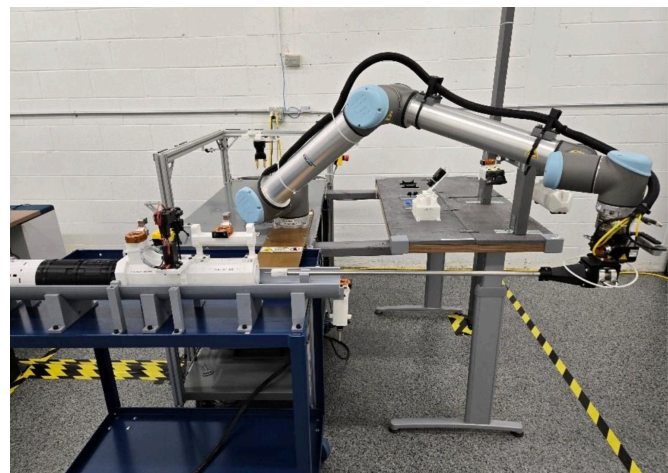
Results:

- Developed a CANDU-specific model that enables more accurate station-level dissolved oxygen (DO) targets, improving chemistry control.
- Enhanced regulatory confidence and support of long-term plant reliability by helping mitigate corrosion risk in critical components.
- Follow-on improvements of the model will enable more accurate FAC calculations with CHECWORKS, laying a foundation for predictive asset management and optimized secondary system performance.

Introducing Dexterous Robotics to High-Dose Tasks

Through the Reduced Outages Strategic R&D Program, Conexus and Calian Nuclear completed a multi-year initiative to demonstrate the feasibility of automating scrape sample retrievals from the CWEST tool; a high-dose task performed manually during outages. Dexterous Robotics has demonstrated potential to reduce dose and improve worker safety during reactor inspections.

Using off the shelf robotic systems and station mockups, a fully automated prototype was developed and demonstrated. By introducing automation into tasks like scrape retrieval and other component inspections, members are seeing measurable benefits in efficiency and safety.

**Results:**

- Achieved an estimated 80% reduction in radiation dose during scrape retrieval tasks, directly improving worker safety and reducing overall outage dose.
- Demonstrated that off-the-shelf robotic systems can be adapted for nuclear environments, lowering implementation costs and barriers.
- Opens the door for broader use of robotics in inspections, outage planning, and radiation scanning - modernizing maintenance while protecting the workforce.

From dose reduction to waste management, the Reduced Outages Strategic R&D program is laying the groundwork for the next generation of nuclear innovation.

These projects reflect the strength of the Conexus R&D model: targeted, member-driven research that transforms shared challenges into future-ready solutions. As the nuclear industry advances into second and third plant life cycles, R&D remains central to Conexus' commitment to collaboration, innovation, and technical excellence.

Recent Conexus Events



CNNO Visit

On July 16, Conexus Nuclear Inc. welcomed a delegation from China National Nuclear Corporation (CNNC) to our Toronto office for a focused meeting on fuel channel life extension and current joint initiatives in support of the Qinshan refurbishment project.

Led by Mr. Huang Qian, Chairman of the Board at CNNO, the delegation met with Conexus leadership and technical experts to exchange updates, explore future opportunities, and reaffirm our shared commitment to safety, innovation, and operational excellence. The meeting also included participation from Kinectrics technical experts, contributing to discussions on potential new research initiatives to support long-term operations and planning for fuel channel life management.

This visit reflects the continued strength of international collaboration in the nuclear sector and the importance of global knowledge sharing in driving performance, extending plant life, and advancing shared goals across the CANDU community.



Primary Side Pumps Workshop

Conexus hosted the Primary Side Pumps Workshop June 25–26, 2025, bringing together utility engineers, technical experts, and vendor partners from across the CANDU fleet. With a focus on primary heat transport, moderator, and shutdown cooling pumps, the event provided a platform to



share OpEx, address common challenges, and explore innovations in pump seal performance and design. Presentations from utilities and vendors highlighted issues such as seal deterioration, obsolescence, and maintenance constraints, while closed-door sessions enabled candid discussions on talent gaps, equipment reliability, and procurement quality.

Outcomes include enhanced technical collaboration, capture of fleet-wide lessons learned, and performance improvements through shared insights and follow-up actions. .



INPO Resilience Workshop

On June 18 -19, Conexus hosted a two-day INPO Resilience Workshop in Toronto, supporting member utilities in aligning with new industry expectations around resilience. Coordinated by the Institute of Nuclear Power Operations (INPO), with participation from OPG, Bruce Power and NB Power, the session introduced INPO's latest guidance on strengthening nuclear station resilience against external threats, including natural events, cyber and physical security risks, and indirect disruptions.

The workshop provided a deep dive into the principles outlined in INPO-24-003, helping sites interpret the guidance, understand evaluation criteria for future Peer Reviews, and begin developing strategies in alignment with the 2025 timeline. Peer Reviews will begin assessing performance against these new principles beginning in January, 2026.

Working with our industry partners, Conexus facilitates knowledge exchange, helping to ensure that CANDU stations are well-equipped to meet evolving expectations with clarity and confidence.



CNS Conference

In June, Conexus participated in the 2025 Canadian Nuclear Society (CNS) Conference, joining industry leaders for three days of dialogue, insight-sharing, and strategic collaboration. This year's theme "Our CANDU Past, Our CANDU Present, and Our Can Do Future" celebrated the legacy and continued potential of Canada's homegrown nuclear technology.

Conexus President and CEO Rachna Clavero delivered remarks at the Industry Association Updates Plenary and moderated a compelling fireside chat with CNSC President Pierre Tremblay on regulatory leadership in a changing energy landscape. Sonia Iqbal, Program Director, Small Modular Reactors (SMRs), also took the stage as moderator for the Utility Updates Plenary.

Throughout the event, the Conexus team engaged with members, utilities, and partners, reinforcing our role in advancing Canada's clean energy and climate goals through collaboration, technical excellence, and CANDU leadership.



Developing the Next Generation of Nuclear Leaders: NPDS 2025

This spring, emerging leaders from across the global nuclear sector completed Conexus Nuclear Inc.'s Nuclear Professional Development Seminar (NPDS) - a World Association of Nuclear Operators (WANO) endorsed program designed to build leadership capacity, strengthen safety culture, and foster international collaboration.

Congratulations to both of our 2025 cohorts. In May, a delegation from China National Nuclear Operation (CNNNO) completed the program, including site visits to Ontario Power



Generation's Darlington and Pickering Nuclear Generating Stations. In June, a second cohort, comprising participants from Canadian utilities, Romania's Societatea Nationala Nuclearelectrica (SNN), and members of the supplier community, took part in international site visits to Vandellós Nuclear Power Plant in Spain, Callaway Energy Center in Missouri, and Calvert Cliffs Nuclear Power Plant Maryland.

Over the three-week program, participants engaged in facilitated learning, peer collaboration, and mentorship from senior industry leaders. The curriculum included leadership assessments, workshops on WANO-aligned leadership traits, and in-depth exploration of safety culture, communication, and operational excellence. NPDS continues to be a cornerstone of Conexus' commitment to developing skilled, globally connected nuclear leaders.



Environmental Qualification Workshop

Conexus held its annual Environmental Qualification (EQ) Workshop from June 11–12, 2025, bringing together industry experts and member utilities to share best practices, OPEX, and lessons learned. The workshop focused on key topics such as KPI presentations, EQ database capabilities, and technical discussions on materials and equipment performance. EQ plays a vital role in ensuring that safety-related equipment can withstand harsh conditions and perform reliably throughout the plant's lifecycle.

Conexus/CNSC R&D Seminar

From May 27–28, Conexus Nuclear Inc.'s R&D team hosted the 2025 Conexus/CNSC Seminar, a biennial technical exchange designed to facilitate open dialogue between the Canadian nuclear industry and the Canadian Nuclear Safety Commission (CNSC). The seminar



brought together more than 100 subject matter experts from utilities, suppliers, and the regulator to discuss ongoing research and technical priorities. Through more than 40 presentations, the seminar focused on key components of the Safety and Licensing (S&L) and Industry Standard Toolset (IST) portfolios.

The forum provided an opportunity to communicate the status and outcomes of current R&D programs, align on evolving priorities, and obtain feedback to inform future planning. While not intended for licensing discussions, the seminar helps strengthen transparency and mutual understanding of the technical basis that underpins licensing and safety case development across the Canadian nuclear sector.



Conexus Team Updates

Conexus Welcomes Yu Han as CNNP Seconded

In June, Conexus Nuclear Inc. welcomed Mr. Yu Han on secondment from China National Nuclear Power Co., Ltd. (CNNP). Based in our Toronto office for a three-month term, Mr. Han is contributing to key areas of the Research & Development Technical Committee, including the Industry Standard Toolset and Safety & Licensing working groups.

Mr. Han brings more than 27 years of experience from the Third Qinshan Nuclear Power Plant and CNNP, where he currently serves as a Senior Safety Analysis Engineer. He holds a Bachelor's degree in Thermal Energy Engineering from Tianjin University.



Ann Palen Retires as Treasurer and Chief Financial Officer

After 16 years of distinguished service, Ann Palen officially retired from her role as Treasurer and Chief Financial Officer on July 25, 2025. Throughout her tenure, Ann brought unwavering integrity, sound financial leadership, and a collaborative spirit that helped shape the Business Services team and strengthen Conexus as a whole.

Her guidance and commitment to excellence left a lasting mark on the organization. Thank you to Ann, for her many contributions and we wish her all the best in this next chapter of life.



Louisa Kwan Appointed CFO and Treasurer

Conexus Nuclear Inc. is pleased to announce the appointment of Louisa Kwan as Treasurer and Chief Financial Officer, effective July, 2025. Louisa joined Conexus in 2023 and has since played a key role in supporting the organization's financial operations and strategic planning efforts. In her new role, she leads the finance function, overseeing business planning, accounting, treasury, and operational oversight. She works closely with the President and Board of Directors to ensure financial compliance, effective strategy execution, and sound risk management.



Louisa brings over 17 years of senior financial leadership experience, including close to a decade at Ontario Power Generation, where she led transformative initiatives in operations controllership and business planning. A Chartered Professional Accountant (CPA, CA), she holds a Bachelor of Business Administration from the University of Toronto and is recognized for her integrity, governance expertise, and collaborative approach to leadership.

John Sowagi Receives 2025 CNS Education and Communication Award

John Sowagi, Director of Information Exchange at Conexus, was presented with the 2025 Education and Communication Award from the Canadian Nuclear Society in recognition of his long-standing contributions to leadership development and knowledge sharing in the nuclear sector.

With over three decades of experience, John has supported senior leaders across the global nuclear industry through targeted education and training programs. At Conexus, he leads efforts to capture and share best practices by facilitating collaboration between operators, technical experts, and supply chain partners. His work supports safety, sustainability, and performance improvement across the CANDU fleet.

John has also played a key role in the development and delivery of the NPDS a WANO-endorsed program designed for emerging leaders. The seminar combines classroom instruction with direct engagement at nuclear sites and has been delivered both domestically and internationally since 2019. In addition, John serves as Chair of the IAEA Knowledge Management Committee, where he contributes to global initiatives supporting leadership development and institutional knowledge retention.

“As our industry continues to grow, let's continue to build a brighter future through the power of knowledge, communication and collaboration.”

– John Sowagi



Welcome to our new SPPs:

Conexus is pleased to welcome Alberici Constructions and Black & McDonald to the Supplier Participant Program (SPP).

The SPP connects suppliers and operators to strengthen safety, quality, and performance across the nuclear supply chain. Through information exchange, training, and shared lessons learned, the program supports a resilient, high-performing supplier community ready to meet the demands of refurbishment, new builds, and advanced technologies.

Learn more [here](#).



Alberici

Black&McDonald

Industry News



Canadian Nuclear
Laboratories

Nuclear Laboratory Partners of Canada has been selected as the preferred bidder to manage and operate CNL starting September 2025, following a comprehensive procurement process led by AECL.



Canadian Nuclear Laboratories (CNL), Atomic Energy of Canada Limited (AECL), and the University Network of Excellence in Nuclear Engineering (UNENE) have signed an MOU to develop the Canadian Nuclear Learning Centre, which will coordinate education, training, and workforce development across Canada's nuclear sector.



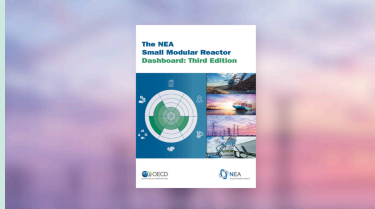
Ontario Power Generation has awarded Candu Energy Inc. a CAD 450 million contract to support the first BWRX-300 SMR at Darlington, marking Canada's first nuclear new build in nearly 30 years and the first grid-scale SMR project in a G7 country.



The 2025 Women in Nuclear (WiN) Canada Conference will take place October 5–8 in Niagara Falls, Ontario, bringing together professionals from across the sector to empower, connect, and inspire women in nuclear. Registration is now open.



OCNI Nuclear Industry Day 2025 will take place September 10–11 at the Scarborough Convention Centre, featuring a trade show, panel discussions, workshops, and B2B matchmaking sessions to connect Canada's nuclear supply chain and explore future opportunities.



The OECD Nuclear Energy Agency (NEA) launched the third edition of its SMR Dashboard on July 22, 2025, offering a real-time digital platform to track global progress in SMR deployment across licensing, financing, siting, fuel readiness, and supply chain development.

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- Follow us on [LinkedIn](#) for weekly news and updates.
- Visit [Conexus.Online](#), our one-stop collaboration tool and information access portal with more than 45,000 OPEX data entries, a calendar of events, and a workspace for peer teams, forums and committees.

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