The main ingredient in the recipe for a successful nuclear refurbishment? Utilities and suppliers learning and working together as one team.

At the CANDU Owners Group (COG)-International Atomic Energy Agency (IAEA) Technical Workshop on Best Practices in CANDU Refurbishment, held Dec. 2-6, 2019 in Toronto, presenters and panelists agreed that industry collaboration is fueling continuous improvement of nuclear refurbishment projects, worldwide.

Approximately 50 people attended the workshop, hosted by the Government of Canada. COG’s member utilities, program and supplier participants were among the presenters. Canadian and Indian nuclear regulators also participated in the workshop.

“CANDU refurbishment project teams are not just focussing on the work that happens on-site,” says Macit Cobanoglu, COG Refurbishment Forum Lead, Supplier Participant Program Manager and workshop co-organizer. “They are putting more time and resources into worker training and preparation, with an eye to improving productivity, decreasing dose and saving time and resources. These were some of the consistent themes coming out of presentations at the workshop.”

Other workshop highlights included:
- A presentation on Ontario Power Generation’s successful use of the Darlington refurbishment mock-up and efficient shift scheduling to effectively prepare tradespeople and other workers while reducing dose;
- A discussion by Bruce Power on its use of 3D modelling and scanning technology in its Major Component Replacement (MCR) work;
- Tours of the Darlington and Bruce mock-ups used in refurbishment training and simulation;
- An update from SNC-Lavalin Nuclear on a new and more efficient approach to removing calandria and pressure tubes;
- A presentation by ATS Automation on the latest innovations in feeder tooling leading to improvements in safety and cost-effectiveness; and
- A supplier panel discussing the challenges and opportunities tied to ongoing and future refurbishment projects.

There were also several presentations dealing with fuel channel R&D, specifically, the recent work of COG’s Fuel Channel Life Management (FCLM) project. FCLM’s contributions to extending the number of years of continued reactor operation has provided utilities with flexibility to schedule unit refurbishments by prolonging operating life.

“Collaboration between CANDU utilities and suppliers, around the world, is enabling refurbishment work to happen more safely and effectively,” says Cobanoglu.

“We heard from presenters that learning is happening and being applied in real-time, from one reactor unit to the next,” he says. “COG members and refurbishment vendors are moving from paper to electronic procedures, removing unnecessary steps and rearranging shift schedules to strengthen efficiency.”

COG and IAEA staff will capture the learnings from the workshop in a technical report expected to be published later this fall.