From left: OPG's Tom Nushaj, Hamdi Seid and Shashank Gandhi, Ashley Lindeman, EPRI, Fred Dermarkar, COG and Neil Wilmshurst, EPRI at the Technology Transfer Awards ceremony in February. Gandhi led one of two OPG projects recognized by EPRI this year.

Transforming research into results

Ontario Power Generation brings home pair of EPRI Technology Transfer Awards for collaborative R&D work supporting nuclear plant safety

An innovative online reactor monitoring tool and a fire probabilistic safety analysis (PSA) project helped Ontario Power Generation (OPG) land two Electric Power Research Institute (EPRI) awards when the 2019 Technology Transfer Award winners were announced in February.

For the fourth year in the past five, employees from a CANDU Owners Group (COG) member, won at the prestigious award ceremony, held during the Nuclear Power Council Advisory Week.

The OPG team awards recognized research and technology initiatives that contributed to improving plant safety and efficiency.

Innovative approach to fire safety analysis recognized

OPG's Shashank Gandhi was recognized for his role in adapting an EPRI, U.S. NRC methodology in a first-of-a-kind application to a fire PSA.

The fire PSA work allowed the company to demonstrate stronger alignment with regulatory safety requirements, improved plant operational efficiency and resulted in a regulatory hold-point release on OPG's Pickering plant.

As well, plans to further improve site performance based on the PSA will contribute to the safety case for extended plant operations to 2024. If Pickering operation continues to 2024, it will mean a significant savings to the Ontario electricity system and ratepayers who can further benefit from the capital costs already invested in the plant while also pushing out the need for development of replacement electricity.

The research findings are believed to have applications across the CANDU industry.

Innovation in chemistry monitoring

OPG's Peigang Cao, Emily Cornthwaite, Anil Garg, Ranganathan Santhanam and Pamela Woods were recognized for their roles in EPRI's SMART Chemistry Pressurized Water Reactor Online Chemistry Monitoring Demonstration, which was co-hosted by Darlington Nuclear with Public Services Enterprise Group (PSEG) in Salem.

EPRI's Water Chemistry team wanted to demonstrate the capabilities and maintenance requirements for state-of-the-art SMART Chemistry technology for improved monitoring and analysis of reactor coolant, main feedwater and steam generator blowdown systems. In 2018 and 2019, Salem and Darlington plants hosted the demonstration skids. OPG and PSEG provided significant support to the global industry, as the demonstrations will lead to swifter improvements and implementation.

Specifically, OPG's SMART Chemistry PWR system allowed for almost continuous chemistry data monitoring and resulted in more accurate data readings over manual monitoring approaches. The demonstration results and the system itself were also implemented by OPG and other global nuclear utilities.

Online technologies can potentially provide continuous or at least hourly chemistry information. This improved granularity is likely to result in significant operational efficiency improvements and cost savings for the industry.

From left: OPG's Peigang Cao, Ranganathan Santhanam, Pam Woods and Anil Garg earned EPRI Award honours, in February, for their work installing and demonstrating SMART Chemistry Skids.

COG's partnership role with EPRI

CANDU operators hold membership in EPRI through COG providing a two-way information exchange that brings relevant information to and from the CANDU community to the global industry: Information is gathered and shared from the CANDU operators to EPRI. As well, COG identifies information and provides analysis from EPRI data relevant to CANDU operators allowing cost-sharing and efficiency of analysis where it is relevant to the CANDU fleet.

"COG is proud to play a part in helping our members engage with EPRI," says Kerry Clemen, COG Program Manager, Information Exchange and Chair of the Nuclear Managers EPRI Technology Transfer Technical Committee. "EPRI has recognized our members' research for a number of years because it consistently strengthens plant safety and efficiency and helps ensure the reliability of the electrical supply we all rely on."

Remembering Tom Nushaj

Ontario Power Generation's (OPG) Tom Nushaj passed away on May 6. Nushaj spent 18 years with the organization including more than a decade serving as section manager in civil design and analysis for its nuclear engineering division. Most recently, he worked in OPG's engineering mechanics and design group.

Nushaj was a graduate of Albania's University of Tirana with a bachelor of civil engineering. After a successful career outside Canada, he joined OPG Nuclear's Pickering refurbishment engineering team in 2002. In 2005, he was promoted to senior technical engineer and, in 2009, was promoted once again to section manager.

Nushaj was known for his breadth and depth of knowledge, experience and strong belief in professional mentorship and collaboration. He was the industry lead on the COG Concrete Working Group, participated on the CSA's N287 (Concrete) and N289 (Seismic) Technical Committees and he chaired the EPRI-Nuclear Power Council's Advisory Committee on Concrete. Tom was also a member of IAEA's Integrated Generic Aging Lessons Learned (IGALL) team.

"Tom was a respected member of various industry committees," says Glenn Pringle, COG Chemistry, Materials and Components Program Manager. "At COG and in the working group, Tom was known for his competence, professionalism, integrity, friendly demeanour and willingness to listen."

Nushaj most recently reported to Jey Alalasuntharam, OPG Engineering Mechanics and Design Manager, who considered Tom a dear friend. Jey often sought counsel from Tom on a variety of topics.

"Tom was fond of travel and full of charm," says Alalasuntharam. "He was one of those rare personalities with strong business acumen, leadership and technical competence. His immense contribution and great legacy in the nuclear industry will always be legendary."