

POWER NEWS

FALL 2015

Connecting the people who power Ontario



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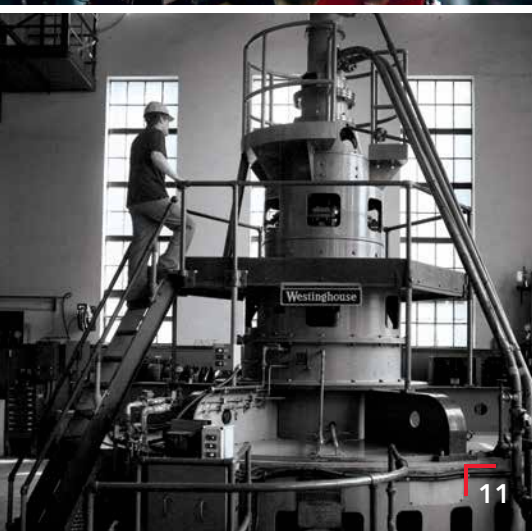
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Cover photo: A close-up view of the endfitting and feeder pipe training and tool testing module located in the mock-up training facility at the Darlington Energy Complex.



JEFF LYASH, OPG PRESIDENT AND CEO

SEASONED ELECTRICITY VETERAN TAKES THE LEAD AT OPG

OPG's new President and CEO Jeff Lyash is no stranger to the electricity industry. Some may even say it's in his blood.

Having spent more than 34 years in the energy sector, Lyash brings a vast array of experience to OPG.

"From project development to generation to transmission to customer service, I learned the business and the work ethic of the people who populate it," says Lyash.

Following in his grandfathers' footsteps – one a coal miner, the other a lineman – Lyash began his career as an engineer with Pennsylvania Power and Light. He later joined Progress Energy where he held a wide range of management and executive roles, including Executive Vice President of Energy Supply. Lyash oversaw the company's diverse 22,000 megawatt fleet of generating resources including nuclear, coal, oil, natural gas and hydroelectric stations.

Most recently as President of CB&I Power, Lyash was responsible for the engineering, procurement and construction of multi-billion dollar electrical

generation projects in both domestic and international markets.

After taking over from Tom Mitchell on Aug. 21, Lyash is approaching the company's ambitious mandate with a clear focus.

"For me, the safety of our employees and communities is, and should always be, at the forefront. Keeping a focus on safety will be imperative as we take on some big challenges like delivering the Darlington refurbishment on time and budget," says Lyash.

OPG will be also be concentrating efforts on supporting Pickering Nuclear's continued operations, operating its vast hydroelectric fleet, and continuing to improve its bottom line.

Lyash acknowledges there will be some difficult days and decisions ahead but remains confident. "If we do these things well, we will have provided a vital service to Ontarians and the province. And the tradition of excellence built over a century at OPG will be stronger and even more lasting through our efforts."

SAVING THE AMERICAN EEL

OPG is celebrating another successful year of aquatic stewardship and environmental leadership, having made significant strides in the conservation of the American eel.

An endangered species in Ontario, the American eel migrates to the Sargasso Sea in the Atlantic Ocean to spawn. Blockages, such as dams, along migratory routes can pose significant problems. In the upper St. Lawrence River, abundance indices are five to eight per cent of those measured in the 1970–80s.

“The American eels have been a big concern for us,” says Dave Stanley, a Senior Environmental Specialist at OPG. “We’ve been working to mitigate our impact on their populations since 1974, when OPG and the Ministry of Natural Resources and Forestry (MNRF) built the first eel ladder at R.H. Saunders Generating Station (GS).”

The Saunders GS eel ladder allows juvenile eels to head upriver across the station. A ladder isn’t

effective for downstream migration, so OPG maintains a trap and transport program with local commercial fishermen. The eels are caught and trucked past two hydro stations before being released downstream. Since 2006, OPG has partnered with the MNRF and the Department of Fisheries and Oceans to address downstream migration of eels at generating stations.

From 2006 to 2011, the company stocked approximately four million young eels into the upper St. Lawrence River and Lake Ontario. Now, OPG is engaging families in eel conservation through OPG’s biodiversity program, which supports habitat research at the St. Lawrence River Institute, and hosts fish and eel workshops at the St. Lawrence Power Development Visitor Centre.

The centre has experienced a record number of visitors this year, allowing more Ontarians to get involved in protecting one of the province’s most interesting aquatic predators.

MATT WINDLE (ST. LAWRENCE RIVER INSTITUTE OF ENVIRONMENTAL SCIENCES),
WITH A LARGE AMERICAN EEL ON THE SHORES OF THE ST. LAWRENCE RIVER





DARLINGTON NUCLEAR STATION TURBINE HALL

PLANNING CONTINUES ON DARLINGTON'S MASSIVE REFURBISHMENT

For 20 years, Darlington Nuclear has provided safe, reliable and affordable power every second of every day to roughly two million homes.

The station's role as the backbone of the province's electricity grid and its strong performance record make an excellent starting point for the station's refurbishment.

This massive undertaking will be a major boost to Ontario's economy, with the full refurbishment project expected to involve about 30 million hours of work over 10 years and cost approximately \$12.8 billion.

The refurbishment project is coming to the end of the definition phase, with a number of initiatives that have to be finished before the project's execution phase.

The definition phase has involved projects, planning, engineering, design and construction of pre-requisite projects, which include infrastructure upgrades, install of safety enhancements, and develop reactor tooling.

Refurbishment of the first unit is scheduled to begin late 2016.

For a more detailed summary of project steps, refer to the latest Semi-Annual Performance Report. Progress reports can also be found throughout the project on www.opg.com/darlingtonrefurb

KEY PROJECT MILESTONES

2014 The Darlington Energy Complex opens, featuring a life-sized training model of a nuclear reactor face. The Complex is part of OPG's intensive planning and preparation to ensure everyone working on the project is equipped to complete their tasks safely, precisely and efficiently.

LATE 2015 OPG will submit full project budget and execution schedule to the OPG Board of Directors.

OCTOBER 2016 Refurbishment of first unit scheduled to begin.

2025 Expected completion of all four units.

CERTIFYING OPG'S COMMITMENT TO ABORIGINAL EXCELLENCE

OPG has reached yet another milestone in First Nations and Métis Relations. The company has been awarded Silver-level Progressive Aboriginal Relations (PAR) certification by the Canadian Council for Aboriginal Business.

PAR is a premier corporate social responsibility program with an emphasis on aboriginal relations. Certification demonstrates OPG is a good employer and business partner, and is committed to prosperity in aboriginal communities.

PAR-certified companies are awarded Gold, Silver, or Bronze for their achievements. PAR Silver – an ambitious achievement for a first-time applicant –

signifies a company has business partnerships in place with aboriginal communities and supports sustainability through investment in people and communities.

"We've come a long way with our First Nations relationships, and we have a lot to be proud of," says Ted Gruetzner, OPG's Vice President of Corporate Relations and Communications. "However, this process isn't just about celebrating what we've achieved. This is a chance to learn what we can do to be even better."

The company has settled grievances with 21 First Nations communities, and an additional settlement with Animbigoo Zaaging Anishinaabek, also known as the Lake Nipigon Ojibway First Nation, has recently been ratified.

OPG's two mutually beneficial hydroelectric partnerships with the Lac Seul and Moose Cree First Nations are also highly successful. The 12-megawatt Lac Seul generating station has been operating since 2009, while the newly-completed Lower Mattagami project with the Moose Cree First Nation has added 438 MW of power. Both the Moose Cree and Lac Seul First Nations receive a 25 per cent equity share in the new generating units.

Underlying these projects is OPG's First Nations and Métis Relations policy. Created in 2007, it sets out the company's objectives for respecting rights and interests and developing mutually beneficial relationships with First Nations and Métis communities. It also requires OPG to engage in community relations and to provide capacity-building support, including employment and business contracting opportunities. According to Gruetzner, "The policy reaches beyond operations."

"It's in our culture now," he says. "Our employees are committed to excellence in First Nations and Métis Relations."



DEMONSTRATING PROJECT EXCELLENCE

OPG's single largest project for 2015, the Darlington Vacuum Building Outage (VBO) kicked off on Sept. 11. As part of our operating licence, OPG must shut down the Darlington nuclear station every 12 years to inspect and maintain the station's vacuum building.

By completing the VBO in 2015, we're working six years ahead of schedule to ensure the station is available throughout Darlington's upcoming refurbishment between 2016 and 2025.

Since the VBO requires all four units to be shut down, it's an opportunity to maintain other areas in the plant. More than 2,000 supplementary staff will support the outage and complete over 12,000 tasks across all units.

The VBO is a significant investment, consistent with OPG's ongoing commitment to safety and excellence across the fleet. Darlington will receive support from across the nuclear organization, including 112 maintenance and 28 operations employees from the Pickering Nuclear station.

"Executing a large scale project like the VBO safely, on time and on budget is also a good way to prepare for the refurbishment," says Glenn Jager, President, OPG Nuclear and Chief Nuclear Officer.

WHAT'S A VACUUM BUILDING?

Darlington's vacuum building is a critical piece of the site's safety system. Standing at 71 metres tall, the building is made of reinforced concrete and is connected to the four reactor buildings by a pressure relief duct.

By maintaining the building at negative atmospheric pressure, any release of radioactive steam from the pressurized systems would be sucked into the vacuum building and condensed into water, preventing its release to the outside environment.





KYLA VELDHUIS

OUR PEOPLE: KYLA VELDHUIS

Whether it's organizing fundraisers for OPG's Charity Campaign or championing new performance reporting functions in Northwest Operations (NWO), Kyla Veldhuis is always looking to improve.

"I like the big picture," she says. "I like getting involved in things that can impact the bottom line, and I like to share that knowledge with everyone."

It comes as no surprise that Veldhuis, Plant Programming Coordinator in NWO, is one of OPG's 2015 Power of YOU award recipients. Currently, she's creating new metrics and reporting tools to better measure station performance. The new tools translate existing reporting into meaningful metrics at the employee level, and will become critical as NWO prepares for new Independent Electricity System Operator contracts and Ontario Energy Board regulation.

"This initiative took an exceptional amount of effort in understanding the systems, the details of the contracts and how we can use them to become more efficient and competitive," says Jessica Polak, Veldhuis' Power of YOU award nominator. "This is an important strategic initiative for Northwest Operations."

"She has a quiet competence about her; anything that she takes on gets done without exception," says Chris Fralick, Regional Plant Manager at Northwest Operations. "She has a seemingly endless capacity to accept new challenges."

Despite these accomplishments, Veldhuis is modest. "I like being involved at work and keeping morale up," she says. "It's great to know you're making a difference."

EMPLOYEE SPOTLIGHT KYLA VELDHUIS

POSITION: Plant Programming Coordinator

WORK LOCATION: Northwest Ontario – primarily Thunder Bay, but it depends on the day – Veldhuis often works between Atikokan and Thunder Bay

YEARS OF SERVICE: 6

FAVOURITE SPOT TO VISIT IN ONTARIO:
Niagara-on-the-Lake

WHAT'S YOUR AVERAGE COMMUTE TIME:
15 minutes each way

EARLY BIRD OR NIGHT OWL: Night Owl

OPG REPORTS STRONG SECOND QUARTER FINANCIAL RESULTS

OPG reported a solid second quarter for 2015 achieving a net income of \$193 million compared to \$116 million in Q2 2014.

Net income for the first six months of 2015 was \$432 million compared to \$359 million in 2014. The increase was primarily due to new regulated prices, higher nuclear production, and an increase in income as a result of the new generating units on the Lower Mattagami River and the Atikokan and Thunder Bay generating stations biomass conversions.

President and CEO Tom Mitchell (now retired), reported, "In the first half of the year, the higher production by the Darlington nuclear station made an essential contribution to the people and businesses of Ontario by providing reliable, moderately-priced power."

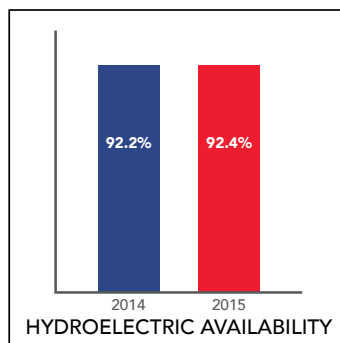
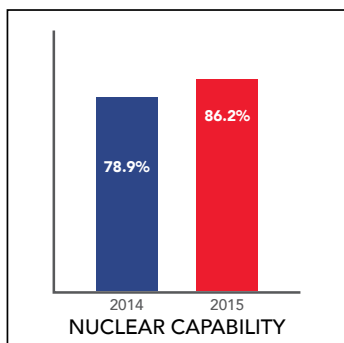
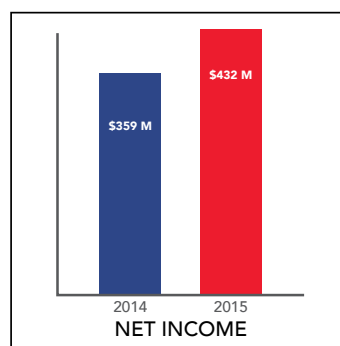
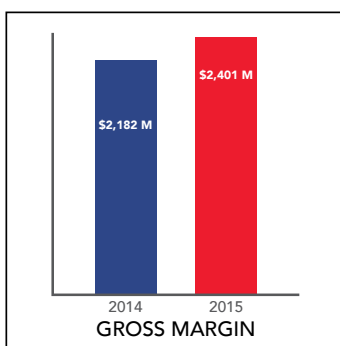
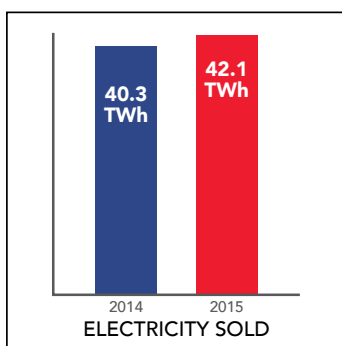
Mitchell added, "Darlington operates safely and replaces power sources that would contribute

to climate change. Refurbishing the station will allow it to continue to operate for another 30 years and will create thousands of jobs at the plant and at companies across Ontario."

Total electricity generated also increased in the second quarter to 20.8 terawatt hours (TWh) from 19.8 TWh in 2014, mainly due to higher nuclear generation. During the first six months of 2015, total generation was 42.1 TWh, compared to 40.3 TWh in 2014, primarily due to higher nuclear generation and the new hydroelectric units operating on the Lower Mattagami River.

For the six months ended June 30, 2015, the nuclear capability factor was above 86 per cent reflecting improvements in reliability primarily due to the timing of planned outage work scheduled to coincide with Darlington's VBO and a decrease in the number of unplanned outage days at Pickering. In addition, the availability of OPG's hydroelectric stations for the same time period remained above 90 per cent due to a combination of fewer planned and unplanned outage days.

YEAR-TO-DATE JUNE 30 RESULTS





TRETHEWAY GS



MATABITCHUAN GS PENSTOCK REPLACEMENT PROJECT



OVERHAULLED RUNNER ARRIVING AT THE PUMP GENERATING STATION IN NIAGARA

UPGRADES PROVIDE CLEAN POWER FOR GENERATIONS TO COME

Turbine replacement and concrete rehabilitation are occurring across the province at many of OPG's 65 hydroelectric stations as part of an ongoing renewal process that will ensure their lasting integrity and efficiency.

The company's hydro stations have been generating renewable, low-cost power for generations. A robust maintenance and improvement program ensures these well-established stations are performing better than ever.

Concrete rehabilitation is necessary to combat weather and chemical induced damage to station structures. The \$40 million Chats Falls GS rehabilitation is currently underway, in partnership with Hydro Quebec. An additional \$35 million of concrete work will soon commence at Saunders GS and Otto Holden GS.

Turbine replacements are equally important. Old models are replaced by new, custom-built turbines

which take into account the unique hydrology of their locations. At Des Joachims GS, newly-completed turbine replacements have increased efficiency from 92.4 per cent to 95 per cent and saved millions of maintenance dollars. Turbine replacements at Sir Adam Beck I and Harmon stations will add an additional 12.4 MW of capacity, and are expected to conclude in 2016 and 2017.

"Our hydro stations are built to last," says Mike Martelli, Senior Vice President of Hydro Thermal Operations. "By making these upgrades and taking advantage of new technologies, we're able to increase station efficiency and ensure excellent performance for generations to come."

Eugenia Falls GS celebrated its centennial this year, one of 14 hydro stations over 100 years old providing clean, reliable energy to the people of Ontario. It's a feat that demonstrates both the importance of OPG's hydro upgrade program and the long-term reliability of hydroelectric power generation.



Cleaner air. Bigger dreams.

In 2014, we stopped burning coal to make electricity. It was North America's largest action to combat climate change. And the power we now generate is 99.7 percent free of smog and greenhouse gas emissions. Because we know the future is our most powerful resource.

*Clean, reliable power.
For the future.*

ONTARIOPOWER
GENERATION

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