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Overview look of the Nuclear Sustainability Services - Western Waste Management - taken in spring 2023.

OPG's Nuclear Sustainability Services – Let's take a look!

Ontario Power Generation's (OPG) Nuclear Sustainability Services (NSS) division is making a big impact across Ontario.

Sharing a site with Bruce Power, Nuclear Sustainability Services – Western Waste Management Facility (NSS-WWMF) has provided the safe handling and management of low, intermediate and high-level nuclear materials, produced through the nuclear energy cycle, for decades. The site boasts approximately 175 staff members, who collaboratively work to ensure Ontarians can keep the lights on.

But what is it that we do? How does the

work done at each of the three Nuclear Sustainability Services facilities support the ongoing production of carbon-free nuclear power? Follow Kaitlyn Nevill, OPG's Senior Communications Advisor, as she provides a look inside NSS-WWMF's operations and facilities.

NSS-WWMF's Processing building manages and stores low-level materials delivered safely from OPG's Pickering & Darlington generating stations, in addition to Bruce Power. Low-level materials are everyday items that may have come in contact with radioactivity, such as gloves or hardhats. These items are generally not

radioactive for prolonged periods of time – in fact, as staff members have begun sorting through legacy storage bins, much of what they are finding isn't radioactive at all.

This building houses one of OPG's biggest assets – the incinerator. This is used to reduce overall volumes of low-level materials by up-to 95% through the incineration process, converting bins of items into small amounts of ash. The exhaust produced from the incineration process is further incinerated and eventually makes its way out of the smokestack, monitored by highly-trained operators in addition to a state of the art emissions monitoring system.

"At OPG, we take our responsibility as

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stewards of the environment seriously”, explains Brendon Seepe, Assistant Technical Officer for NSS-WWMF’s Performance Engineering Department, “which is why we operate a state-of-the-art continuous emissions monitoring (CEM) system”. “Our CEM system constantly monitors, and tracks gases being emitted from our incinerator stack, ensuring we remain in compliance with all regulatory requirements and maintain the highest standards of environmental protection”.

NSS-WWMF also provides the safe storage of intermediate level materials, such as resin and filters, which are materials used in nuclear reactors. Stored in in-ground storage containers, they are safely nestled between the processing and dry-fuel storage buildings and are under continuous monitoring to ensure environmental, worker and public safety.

What is likely one of the most interesting parts of our tour, is NSS-WWMF’s dry-storage building, where all of Bruce

Power’s used fuel is safely stored and managed in the interim. “The Dry Storage Facility at NSS - Western has a robust, skill-oriented crew housed in a secured amenity” explains the facility’s Front Line Manager Harold Hisey.

At present, used-fuel is stored in very large “dry-storage containers” (DSC), weighing around 75 tonnes when full. The containers are built of reinforced concrete and are lined with ½” steel liners on both the exterior and interior of the container. This design offers ample protection from any radiation that may be emitted from the fuel rods stored inside.

Used fuel is cooled for 10 years in large cooling bays located within the Bruce Power generating stations, before it is placed into a DSC for long-term storage. Each container is welded shut and backfilled with helium before it is placed in one of OPG’s secure, on-site storage facilities.

“The team at Western is highly capable and it is a privilege to be part of

it,” Harold proudly shares. “In July our team celebrated a momentous accomplishment as they accepted and processed the 2000th DSC from Bruce Power,” Harold elaborates. “Seeing as this is all of the spent fuel that has been created in the 50 years of operations on the Bruce Power site, volumes are low and remain in a safe and effective storage space until a permanent storage solution is finalized.”

Though the Nuclear Sustainability Services division of OPG does not operate in the field of nuclear power generation, the role that it plays to support ongoing nuclear operations across the province is pivotal. “Without the NSS division, there would be no nuclear power,” states Mark Welt, Director of Operations and Maintenance at the NSS-WWMF Site. “It is imperative to nuclear operations that we provide the safe management of materials produced throughout the nuclear energy cycle and I am proud to say the staff on site demonstrate this exceptional workmanship everyday.”



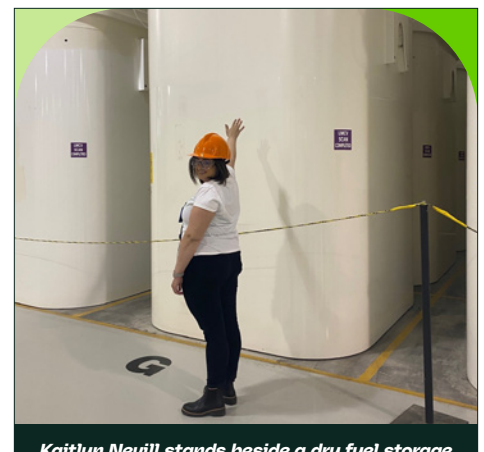
Nuclear Sustainability Services – Western Waste Management Facility’s intermediate level storage (in-ground storage containers).



Kaitlyn Nevill stands beside a bin of low-level materials at OPG’s low-level processing building.



Kaitlyn Nevill holding a replica fuel bundle, which is used in nuclear reactors.



Kaitlyn Nevill stands beside a dry fuel storage container used to safely store spent nuclear fuel in the interim.



Western Clean-Energy Sorting & Recycling facility officially opens its doors

Since ground was broken on OPG's newest building, the Western Clean Energy Sorting & Recycling (WCSR) Facility in December 2021, the commencement of operations at the 42,000 square foot building has been highly anticipated.

A grand opening for the facility took place on October 20th, whereby proponents from each of the buildings partnerships came together to ceremoniously cut the ribbon and officially open its doors.

Working collaboratively with Laurentis Energy Partners (LEP), a subsidiary of OPG, and Energy Solutions Canada, it is anticipated that the innovative work accomplished at this facility will decrease the need for storage of low-level materials significantly.

In pursuit of meeting targets set out by the company's climate change action plan, the adherence to the 'three R's' (reduce, re-use & recycle) is at the forefront of making lasting positive environmental impacts.



Carefully sorting through bins of low-level materials accrued from nuclear generating operations, staff will utilize innovative solutions to assist in reducing the volume of items requiring storage. For instance, should materials found in a bin from several decades ago prove to have no level of radioactivity, these materials can then be sent to a conventional waste management stream. Or perhaps there have been advancements in the management of certain materials, whereby there are ways that these materials can now be re-used within various streams of the industry rather than taking up space in storage, as has been done traditionally.

The commencement of operations at OPG's WCSR is an exciting milestone in OPG's ongoing commitment to lessening its environmental footprint. Since the commencement of operations at the facility in August 2023, staff have made substantial strides in the sorting and volume reduction of low-level materials.

This is a very exciting and innovative accomplishment for the nuclear industry as OPG, LEP & Energy Solution lead the way in facilitating the 3 R's and work to tangibly reduce volumes of materials requiring long-term storage.



Nuclear Sustainability Services – Darlington Waste Management Facility receives CNSC approval for 10-Year licence renewal

Ontario Power Generation is pleased to advise that it has been granted an additional 10-year operating licence for its Nuclear Sustainability Services – Darlington Waste Management Facility, allowing for the continuation of safe

nuclear materials management.

The licence extension will allow for support of the Darlington New Nuclear Project, which will see OPG construct Canada's first small modular reactor (SMR).

For more information on the NSS-DWMF licence renewal, please visit [opg.com/operating-licences](https://www.opg.com/operating-licences).



April showers brought a wonderful addition to Savage Park

Working collaboratively with the Kincardine Naturalization Project and the municipality of Kincardine, OPG's Corporate Citizenship Program (CCP) financially supported the planting of 50

trees at Kincardine's Savage Park.

Choosing a variety of trees indigenous to the Bruce County area, OPG staff joined members of the Kincardine

Naturalization Project, members of Kincardine Council and staff and local volunteers to assist in the betterment of the environment.

Community projects such as these are an important component in OPG's commitment to be a good neighbour to our host communities.



Environmental advisor Adam Melick braved the rain and planted trees at Savage Park.



Senior Communications Advisor, Kaitlyn Nevill, presents a \$10,000 cheque to Blair & Doug from the Kincardine Naturalization Project.



NSS Vice President Kapil Aggarwal helps to plant trees at OPG's tree planting event.

OPG in the community

OPG takes its social responsibility seriously and part of this means being a good corporate citizen and neighbour.

education programs, environmental initiatives, foodbanks and healthcare, amongst others.

Across Ontario, OPG sponsors a multitude of worthy organizations with focus areas that include: cultural events and festivals,

Below are a few highlights from the expansive sponsorship program that is run throughout the Bruce & Grey areas.



NSS-WWMF's Director of Operations Mark Welt helps present a cheque alongside colleagues Kaitlyn Nevill & Nuala Zietsma to the Women's House of Bruce Grey as part of OPG's International Women's Day celebrations.



OPG was a proud sponsor of the 2023 Coldest Night of the Year, featured here in Saugeen Shores.



NSS staff helped judge the projects at the 2023 Bluewater District School Board's Science Fair.



Kapil Aggarwal, VP of Nuclear Sustainability Services at OPG, presents a \$50,000 sponsorship cheque towards the refurbishment of the Teeswater Medical Centre in September 2023.

Nuclear Sustainability Services - Western

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