Darlington New Nuclear Public Information Sessions Questions & Answers

Topics

Environmental Assessment

How will surface run-off be dealt with for the Darlington New Nuclear Project (DNNP) site?

A: Our Environmental Assessment (EA) anticipated no residual adverse effects from storm water releases. We have an EA follow-up water-monitoring plan to sample storm water discharges from the DNNP in order to confirm that the predictions from the EA are accurate.

What occurs if an archeological item is found during construction?

A: Just as was done 10 years ago when the site was being characterized the first time and archeological items were found, the Ministry of Tourism, Culture and Sport has a process and guidelines OPG must follow.

What will be done about the shoreline erosion on the DNNP site?

A: We studied shoreline erosion extensively during the EA process, which concluded no significant adverse effects, taking into account a variety of mitigating activities and commitments we would undertake should we proceed with the project.

Will the new SMR facility be integrated to the existing Darlington Nuclear Generating Station? If not, is the EA based on the accumulating environmental effects of both station?

A: The licences for the proposed new nuclear facility would be separate; however, the EA conducted for the new nuclear project included an accumulated effects assessment and consideration of past, present and planned foreseeable projects, involving local and regional study areas.

Technology & Small Modular Reactors

Is OPG considering technologies like a Canada Deuterium Uranium (CANDU) for the DNNP?

A: Currently, we are working with three Small Modular Reactor (SMR) developers on options for future deployment: GE Hitachi, Terrestrial Energy and X-Energy.

Considering cost and demand, we want to ensure we are building a generating asset that satisfies Ontario's power generation needs and is cost effective to the ratepayer.

With the once-through cooling system being the preferred option, how will the lake temperature be maintained to regulatory limits?

A: There are regulatory limits that have to be maintained, and we will make sure that the intakes and discharges are suitable to minimize environmental impacts.

Is OPG currently working with Moltex Energy?

A: OPG's Centre for Canadian Nuclear Sustainability (CCNS) will provide funding to assist Moltex in demonstrating the technical viability of a new process to recycle used CANDU fuel. The project would contribute to the development of Moltex's Waste To Stable Salt (WATSS) technology, which could lead to a more sustainable form of nuclear power in the future.

Is OPG aware that Idaho National Laboratories are working with Nu Scale on the development of their version of an SMR?

A: Yes, we are aware and we're in touch with what's called the Utah Associated Municipal Power Systems to stay up to date on the latest developments and share information where possible.

Do any of the SMR designs OPG is currently exploring allow for the production and collection of medical isotopes?

A: We have asked the SMR developers we're working with to review this as part of the capability and feasibility planning for their proposed technology.

What is the gross floor area for an SMR?

A: The size of an SMR is dependent on the technology selected. Some designs have a wider footprint, while others have a more embedded style and are vertically stacked. More details on the size of an SMR will be known after the technology is selected.

What are the major criteria/considerations OPG is using to pick an SMR design?

A: The most important is safety; the SMR needs to have world-class safety features built directly into the design. Additionally, we're looking for a design that is low-cost and easier to operate – lowering electricity rates for Ontarians. Finally, we want a technology that we're confident fits within the parameters of our EA.

Site preparation

Is there a particular area on the current Darlington site where the new nuclear plant will be?

A: A detailed site layout will be completed once a technology has been selected.

What are the most significant activities which can be done under the site preparation license?

A: The most significant activities are going to be things such as constructing office buildings and warehouses, roads, parking lots and services.

Licencing process & timelines

How confident is OPG in a having an operating, commercial SMR for 2028?

A: We are hard at work by preparing schedules, milestones and activities to accomplish our goal of as early as 2028. With one refurbished Darlington unit complete on-time and on-budget, we know we can execute complex projects with safety and quality.

As a first of a kind technology, what will the approvals process be for an SMR?

A: The designs we are considering are not first of a kind. The technologies we are considering are based on proven technology. The selected technology will go through a very rigorous Canadian Nuclear Safety Commission (CNSC) licensing process, as well as our own rigorous examination.

Are there any challenges to fit specific SMR design parameters to the existing site license?

A: When the EA was conducted, no technology was selected. Therefore, our environmental impact statement was prepared covering a range of potential reactor technologies available at the time. If we move forward with the construction of DNNP, we will need to apply to the CNSC for a licence to construct a specific technology. During this process, we will need to demonstrate the selected technology would not fundamentally alter the conclusions of the EA.

Since the licence to construct can overlap with the licence to prepare site, does that mean OPG will have a design picked in the next couple of years?

A: We are planning to pick a technology by the end of this year (2021). Then, we will focus our efforts on working with the developers to finish the necessary preliminary safety analysis and design information packages to submit a construction licence application, in approximately 2022.

Is there any possibility of obtaining a site licence for SMRs at the Lambton, Nanticoke, or Lakeview sites?

A: Those locations are suitable for industrial development but in order to determine if they are suitable for nuclear development, it would require an EA, public consultation, and a lot of planning. Right now, OPG is focused on developing the Darlington site with a new nuclear project.

Cost & electricity needs for Ontario

How will the DNNP offset the loss in energy output when the Pickering Nuclear Generating Station enters decommissioning?

A: Based on current projections and economic forecasts by stakeholders such as the Independent Electricity System Operator (IESO), we know Ontario's current generating assets are almost sufficient to absorb the loss of 3,000 megawatts (MW). We intend to add some additional capacity through a Small Modular Reactor (SMR) at Darlington.

Is OPG looking to build multiple SMRs and export any excess electricity in the future?

A: That may be an option we look at in the future, but right now, our focus is on building an SMR for the people of Ontario on our Darlington site.

What is the target dollar per Kilowatt-hour ($/kWh) provided from an SMR?

A: There are a number of factors that go into determining $/kWh. Our ultimate goal is to ensure we have the minimum amount of impact on the ratepayer, while producing reliable, safe, clean energy.

How long is the SMR planned to be in operation?

A: We have projections that an SMR would operate for about 60 years.

Miscellaneous

Is OPG working on hydrogen production within the existing Darlington Nuclear Generating Station?

A: We're working with external organizations such as Canadian Nuclear Labs on the different kinds of hydrogen producing technologies using a non-emitting source. We believe hydrogen production will be a significant component of the clean energy future for Ontario.