

NSDF Project Q & A

1. **What is a Near Surface Disposal Facility?**

The NSDF is first and foremost the key enabling facility to support environmental remediation at the Chalk River Laboratories. It will significantly improve the existing conditions at Chalk River Laboratories and enable the cleanup of contaminated soils and materials that are already present on the site. The facility has been specifically engineered for disposal of low-level radioactive waste by safely by isolating it from the environment.

2. **Why does CNL have to build this facility?**

CNL has conducted remarkable work over the past 70 years, including the production of lifesaving medical isotopes, and the development of CANDU reactors which cleanly, safely and reliably generate more than 60 per cent of Ontario's electricity. This work has also produced radioactive waste. While this waste was stored according to the best practices and regulations at the time, standards have changed. CNL is cleaning up this waste and managing it with modern technology. CNL is also in the process of revitalizing Chalk River Laboratories to create a world-class nuclear research centre. The NSDF is a key element in that transformation, helping us to ensure the responsible and safe disposal of resulting debris and building materials.

3. **What will the NSDF look like?**

The NSDF, in its final form, will resemble a large, grassy hill. While in operation it will include an engineered containment mound, a wastewater treatment plant, and support facilities. It will have a total footprint of 37 hectares -- equivalent to 10 soccer fields.



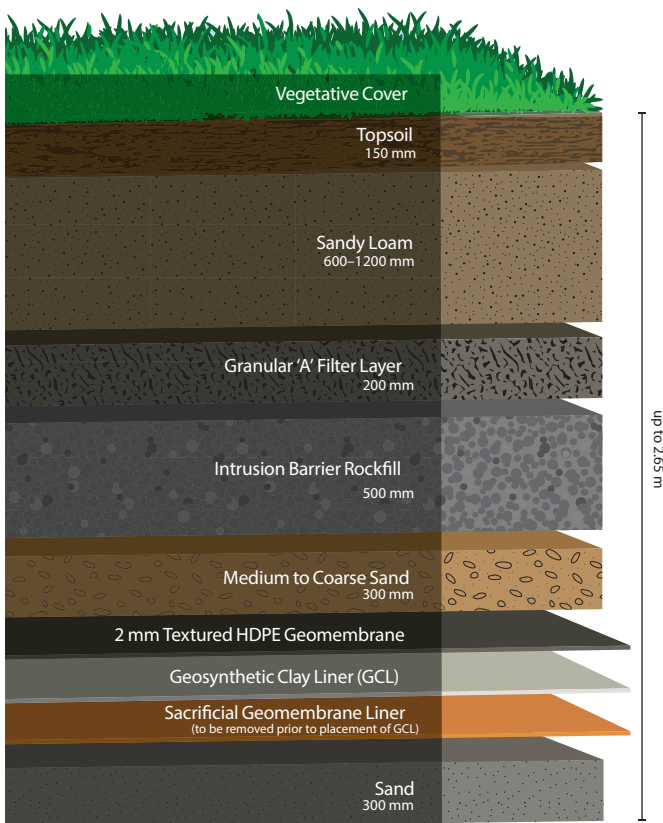
NSDF Project Q & A

4. How will the NSDF keep the waste from contaminating the environment?

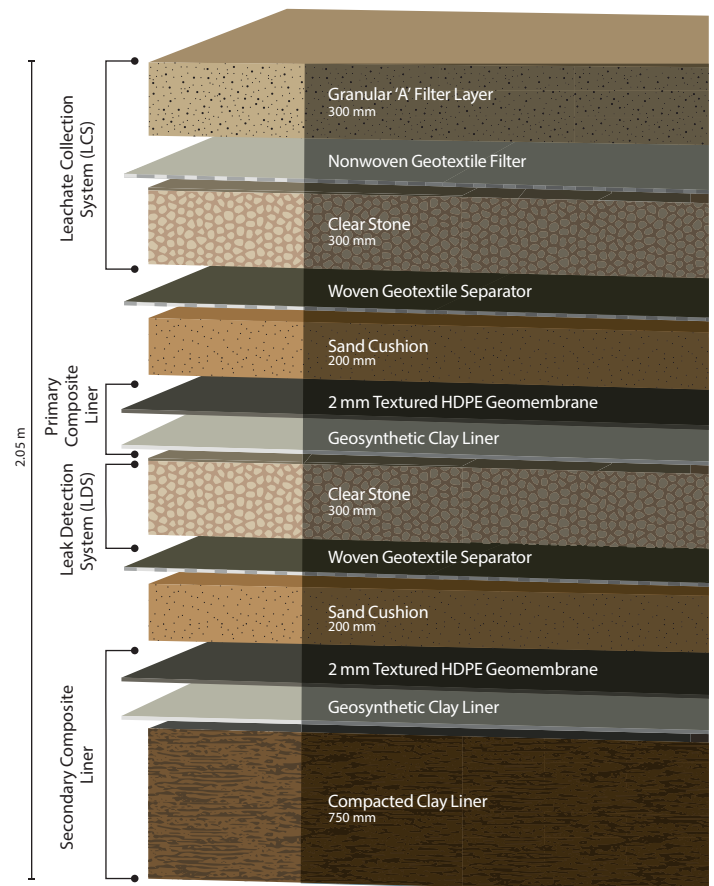
The facility's engineered containment mound includes base and cover systems that will fully contain wastes. The base liner and cover system and monitoring are key safety features:

- The base liner system will be approximately 1.5 metres thick.
- The cover system will be approximately two metres thick.
- Queens University has tested the synthetic geomembrane and concludes it will stay intact for more than a thousand years – much longer than the time it will take to for the radioactivity to decay to a safe level.
- There are primary and secondary collection systems to collect and transfer any contaminated water for treatment at a purpose designed wastewater treatment plant.
- The design includes features to enable inspection of the system performance and allow for repairs if necessary.
- An array of environmental monitoring systems that will sample air, water and groundwater quality will surround the NSDF.
- The water discharged from the wastewater treatment plant will meet discharge targets and protect humans and the environment, including the Chalk River wetlands and the Ottawa River. Treated effluent will be tested prior to discharge to the environment to ensure the discharge targets are met.

COVER SYSTEM CROSS SECTION



BASE LINER SYSTEM CROSS SECTION



NSDF Project Q & A

5. **What will you put in the facility?**

The NSDF will contain only low-level radioactive waste such as soil from environmental remediation work on the Chalk River site, demolition debris from the revitalization of the campus, protective clothing or equipment. Ninety percent of this waste is already on site at Chalk River Laboratories, five per cent comes from hospitals and universities, and five per cent comes from other AECL sites. Only materials that meet the stringent Waste Acceptance Criteria which has been accepted by the Canadian Nuclear Safety Commission will be allowed for disposal in the NSDF.

6. **Why are you locating the NSDF beside the Ottawa River?**

The preferred site met all of the criteria for size, proximity to the main campus for safe monitoring and operation of the facility, low flood risk, protection of species at risk and geotechnical qualities. The site is just over one km from the Ottawa River, but is on a bedrock ridge that naturally forces water away from the River.

7. **Does the location pose a risk to the river?**

No, it does not. The NSDF is designed to protect the Ottawa River, not to harm it. Drinking water in any location downriver is not at risk. The proposed facility is designed to contain contamination and protect the surrounding environment. And CNL must prove that is happening. CNL conducts and annually reports on the results of its extensive environmental monitoring program, which has been in place for over 60 years. Environmental monitoring occurs at over 400 sampling locations with CNL collecting on average 5,000 samples annually and over 40,000 unique analyses. CNL posts environmental monitoring results on its website every year.

This environmental monitoring program will be expanded to include specific monitoring related to the NSDF project.

8. **As you fill the NSDF with waste, parts of it will be open to the environment, is this safe?**

Yes, it is safe. The NSDF will have one cell (ten total) uncovered as it is being filled with waste. Exposure to the elements will be minimized and monitored. Any water that does enter the facility will be captured and treated in a purpose-built wastewater treatment plant. The water released following treatment will not pose a human or environmental risk.

9. **What will happen when you close the facility, will it be abandoned?**

The NSDF site will not be abandoned in the years following closure. It will remain under institutional controls and supervision for hundreds of years. This includes an extensive surveillance and monitoring program to ensure the facilities are performing as designed. Should any issues arise during that period, CNL will be in a position to address them. For NSDF, this is a practical consideration for planning such a facility at the Chalk River site.

NSDF Project Q & A

10. **How will the NSDF withstand natural events like an earthquake or a tornado?**

The NSDF has been designed to withstand extreme weather and events such as earthquakes, tornadoes, forest fires, sabotage and major storms. The base of the facility is located approximately 50 metres above the Ottawa River, much higher than any flood waters that might occur.

11. **How can I have a say in this project?**

CNL has conducted more than 100 engagement activities with the public, including individual community members, government and environmental groups to share information and gain feedback on the project. Activities included public information sessions, presentations, meetings, community events, open houses and more recently virtual events. We want to make sure that the project is well understood by the public and that they have the opportunity to share with us their concerns and comments. Further to that, we listen. We have adapted our plans based on feedback we have heard from the public and Indigenous communities.

12. **What about Indigenous communities? How are you ensuring their rights are protected?**

We are working very closely with Indigenous peoples to ensure Indigenous rights and interests are represented and valued species are appropriately protected. CNL has engaged more than 200 times with sixteen identified Indigenous communities, including the Algonquins of Pikwakanagan First Nation, Algonquins of Ontario and Métis Nation of Ontario. The environmental assessment will consider Indigenous peoples' potential or established Indigenous or treaty rights pursuant to section 35 of the Constitution Act, 1982.

13. **What is happening with the Environmental Impact Statement for the NSDF?**

CNL submitted a draft Environment Impact Statement (EIS) for the NSDF project in 2017. CNL responded to over 600 comments and requests for information and re-submitted the EIS in late 2019. While the Federal Provincial Review Team found that CNL had responded adequately to the majority of information requests, more information to satisfy requirements for Indigenous engagement has been requested. It is expected that CNSC Commission hearings for the NSDF will begin in 2022.

14. **Why has this project taken so long to get started?**

CNL has taken time to carefully address comments and requests for information received from the public, government agencies, Indigenous groups and various regulatory bodies following the submission of the EIS for the project. This process takes time to do thoroughly, to get it right. This delay is not unusual for a project of this unique nature, it was anticipated. CNL is taking the time necessary, with oversight from the CNSC, to clearly demonstrate that we have the best design possible to protect the environment and people.