Public Comments re: Ontario Power Generation’s Deep Geologic Repository (OPG’s DGR)

To: Deep Geologic Repository Project
Project Manager
Canadian Environmental Assessment Agency
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CANADA

Submitted via: CEAA.DGR.Project-Projet.DGR.ACEE@ceaa-acee.gc.ca

From: Kevin Kamps, Radioactive Waste Watchdog, Beyond Nuclear (and board member, Don’t Waste Michigan, representing the Kalamazoo chapter), and Diane D’Arrigo, Radioactive Waste Project Director, Nuclear Information and Resource Service (NIRS), both based in Takoma Park, Maryland, U.S.A.

Date: March 6, 2017

CC: The Honourable Catherine McKenna; Prime Minister Trudeau; Honourable James Carr

Subject: The Canadian Government Needs to Stand up to OPG

Dear CEAA DGR Project Manager,

On behalf of our members and supporters throughout the Great Lakes Basin and beyond, in both Canada and the U.S., NIRS, Don’t Waste Michigan, and Beyond Nuclear submit the following comments.

Beyond Nuclear, Don’t Waste Michigan, and NIRS endorse the “quick take on OPG’s ‘additional information’” recently prepared by Brennain Lloyd of Northwatch, namely:

• *Ontario Power Generation did not provide the information the Minister requested; for example, they were to provide information on alternate locations using actual locations, but they provided very general descriptions of two large regions and no actual information!*

• *Ontario Power Generation misrepresented the findings of the public opinion poll they had commissioned*

• *Ontario Power Generation’s “additional information” was similar to their earlier reports on the proposed deep geologic repository – poorly referenced, overly generalized, and lacking supporting information*
Beyond Nuclear, Don’t Waste Michigan, and NIRS also endorse the “Key Issues in Environmental Assessment Review,” also recently prepared by Brennain Lloyd of Northwatch, namely:

• Ontario Power Generation’s characterization and inventory of the wastes remains incomplete

• The rate at which gas will be generated by deteriorating metal waste containers is still unknown; this is important, because these gas pressures can cause fracturing that could speed the release of radionuclides out to the biosphere

• The chemical stability of some wastes, such as ion exchange resins, is uncertain over time

• Many of the “design” decisions have not yet been made, including important features like the seal for the vertical shafts that connect the underground repository to the environment

• The only example Ontario Power Generation offered of a similar deep geologic repository for radioactive wastes, the Waste Isolation Pilot Plant in New Mexico, is no longer operating after an underground fire and loss of containment resulted in radioactive releases to the surface in 2014 [the U.S. Department of Energy (DOE) recently announced resumed operations at WIPP; however, operations are significantly less than what they were before the fire and barrel burst of February 2014, and operations will remain significantly reduced for a long time to come, as DOE projects spending some $2 billion to attempt to recover from the 2014 incidents]

• Management of the wastes through placement in the proposed DGR will cost approximately four times more than above-ground options, with current cost estimates at over $2 billion; OPG’s pattern of persistently underestimating costs for nuclear projects over the last several decades suggests that real costs are more likely to be in the $6 to $10 billion range

• Ontario Power Generation’s proposal (2011) is for 200,000 cubic metres [of so-called “low” and “intermediate” level radioactive waste] but in August 2013 Ontario Power Generation acknowledged on the public record that they intend to double the amount of waste to be placed in the proposed DGR and will seek a licence amendment after they receive a project approval based on the original volume; the final use and size of the proposed DGR remain unknown

• [187] municipalities representing more than [23] million people have passed resolutions opposing OPG’s proposed waste repository; the large and growing public opposition includes many elected representatives in the U.S.
• The Project is not supported by the Saugeen Ojibway Nation; Ontario Power Generation has previously stated that it will not proceed without the support of the Saugeen Ojibway Nation.

• This project is an unacceptable risk to the world’s largest fresh water supply: the Great Lakes.

Likewise, Beyond Nuclear, Don’t Waste Michigan and NIRS endorse the comments prepared recently by SOS Great Lakes:

It is time for the Canadian government to enforce the Environmental Assessment Act. In March of 2016, the Honourable Catherine McKenna asked Ontario Power Generation (OPG) to identify specific alternate sites for the burial of nuclear waste and they have refused to do so. OPG’s proposal to construct a deep geologic repository (DGR) for radioactive nuclear waste on the shore of Lake Huron, in Kincardine, ON, should be rejected NOW.

OPG’s “Response to Information Requested from the Minister of Environment and Climate Change” submitted to the CEAA on December 28, 2016 is inadequate for the following reasons:

1. OPG fails, for the fifth time, to clearly identify specific feasible alternate locations with reference to actual locations for the burial of nuclear waste.
2. Its updated analysis of the cumulative environmental effects of the Project in light of the proposal for the DGR 2 by NWMO [the Nuclear Waste Management Organization] is inadequate and does not follow standard practice for cumulative effects analysis.
3. Its updated list of mitigation commitments lacks credibility.
4. OPG states that transporting radioactive waste by road to alternate locations in the province would have greater risk than burying it 900 metres from the shore of Lake Huron. They continue to fail to recognize that the efforts of every other country in the world have produced deep burial sites that have failed to prevent radiological waste from escaping into the surrounding environment.

OPG claims that people in Ontario have little interest in the Project despite a documented history of highly-biased public opinion research and ongoing, widespread public opposition in Canada and the U.S.

Ontario Power Generation’s repeated failure to adequately consider alternate sites for nuclear waste storage and its numerous violations of environmental laws are all the grounds the Canadian government needs to deny the Project.

Our organizations agree with SOS Great Lakes, that the “Canadian government needs to stand up to OPG.”

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We also endorse these points made by Jill Taylor of SOS Great Lakes on Feb. 14, 2017, addressed to CEAA and the Environment Minister:

*The OPG plan should be rejected outright, now*

*OPG has not answered your questions and is irresponsible and devious*

*You continue to ignore the OTHER points of dispute we have raised, summarized in our letters to you from November 2015, on a total of 8 infractions of the CEAA 2012*

*Why are you just asking “THESE” questions?*

Those eight infractions -- all reasons to stop the DGR -- mentioned just above, identified by SOS Great Lakes, involve:

*Abandoned Science*

*Alternative Sites*

*Proof of Sustainability*

*Public Health and Safety*

*International Commitments*

*Public Acceptance*

*Incomplete Report*

*Regulators and Regulated*

We join with Dr. Gordon Edwards of Canadian Coalition for Nuclear Responsibility, who recently urged “Don’t Waste Lake Huron” in regards to the DGR. Don’t Waste the Great Lakes!

Dr. Edwards of CCNR also recently pointed to prescient warnings from 40 years ago, regarding radioactive waste. The U.K. Royal Commission on Nuclear Energy and the Environment warned in 1976 that “There should be no commitment to a large programme of nuclear fission power until it has been demonstrated that a method exists for the safe isolation of these wastes...”.

Even now, 41 years later, no safe isolation for radioactive wastes has been demonstration. The DGR certainly fails this test.

Dr. Edwards also recently cited the Ontario Royal Commission on
Electric Power Planning, which warned in 1978 that “If progress toward a solution of the nuclear waste problem is not evident by 1985, a moratorium would be justified...”.

39 years after that warning, and 32 years after that moratorium should have been put in place, atomic reactors at Bruce, Pickering, and Darlington continue to generate “low” and “intermediate” level radioactive wastes, for which there is no good solution regarding their long-term management. These same reactors, and others in additional Canadian provinces, also generate highly radioactive irradiated nuclear fuel, for which there is no safe, sound, socially acceptable solution. Nuclear power should be phased out as soon as possible, and the generation of radioactive wastes halted, due to the long evident lack of solutions for its long term management and ultimate disposition.

As Dr. Edwards has recently warned: Water spreads radioactive contamination quickly; Nuclear waste should not be stored near water.

Let alone dumped, or “abandoned,” near water – especially not the Great Lakes shoreline, immediately adjacent to 84% of North American’s surface fresh water, and 21% of the entire world’s!


Gordon Edwards, a scientist and spokesman for the Canadian Coalition for Nuclear Responsibility, said that the proximity of nuclear waste to any body of water is the biggest issue facing the industry today. “We are entering the ‘age of nuclear waste’ and our emphasis should be on keeping the stuff away from water since it is the mostly likely mechanism to disseminate it,” he told NIW. And in Canada where low and intermediate level waste goes then high level waste is sure to follow. “Rather than sending it deep underground wouldn’t it be better to keep it somewhere safe — and away from water — where we can keep an eye on it?”

The same article quotes Dr. Frank Greening:

OPG claims the best place to store L&ILW [low and intermediate level waste] is “on land they already own across the road from their nuclear plant,” said former OPG scientist and whistleblower Frank Greening. “It’s simply dishonest — they are claiming to have looked at Ontario’s million square kilometers only to have found the best one square kilometer storage site was a limestone formation where they now operate.”

And in an article by Jim Bloch published in The Voice on Feb. 25, 2017, it is reported:
Minister McKenna asked OPG to identify alternate “actual locations” for the waste dump.

“This is something OPG has failed to do,” said Edwards. “They’ve mapped out large areas of Ontario, covering about 70 percent of the province, and said our alternative location could be anywhere in these regions.”

This is the fourth time that the company has refused to pinpoint alternative sites, Edwards said.

“The only reason for the site being near Lake Huron is because the reactors need a lot of water to operate,” said Edwards. “It’s not a good site for nuclear waste.”

For one thing, water spreads radioactive contamination quickly.

“In the early writings of the industry on nuclear waste disposal, they made the point repeatedly that you should keep this stuff away from water,” Edwards said. “Water cannot only transport the material, but water also acts as a kind of chemical catalyst. There’s all kinds of chemical reactions that can take place when you have water present. Those chemical reactions can generate heat. They can generate gas, which can cause pressure... The wastes we’re talking about are not inert materials. They’re not like rocks.”

In this sense, OPG’s proposed DGR has been wrongheaded from the start. The Environment Minister should cancel it, once and for all.

Dr. Edwards has also recently warned that “Eating, drinking, breathing [are] all internal hazards” when it comes to ionizing radioactivity contamination – such as that which could leak from the DGR into the environment, including into the Great Lakes.

Edwards’ wise warnings about not abandoning radioactive wastes on the shores of the Great Lakes, echo warnings made by Dr. Mary Sinclair, a founder of Don’t Waste Michigan, decades ago. Dr. Sinclair warned that radioactive wastes cannot be dumped on the shores of the Great Lakes, and the banks of rivers – the fresh drinking water supplies of our countries.

(Of course, they also can’t be dumped or abandoned on the seacoasts. Salt water is corrosive. Sea levels are rising. And the oceans are the origin place of all life on Earth, and still provide essential life support services for the planet. The oceans already bear a bad radioactive burden, as from nuclear weapons testing fallout, radioactive emissions from the nuclear power fuel chain, and catastrophes like Fukushima. We poison the oceans at our own peril, and that of our entire planet.)

Dr. Rosalie Bertell, a founder of the International Institute of Concern for Public Health, and a member of the International Joint Commission Nuclear Task Force,
warned that hazardous ionizing radioactivity can and does bio-concentrate, bio-accumulate, and bio-magnify up the food chain. Thus, humans, and other predators at the top of the food chain, get the worst, most concentrated doses of hazardous ionizing radioactivity, through ingesting contaminated food. The IJC Nuclear Task Force published *The Inventory for Radionuclides for the Great Lakes* in December 1997 (posted online at [http://www.ijc.org/files/publications/C131.pdf](http://www.ijc.org/files/publications/C131.pdf)), another important touchstone in determining cumulative impacts at the DGR(s), because the DGR(s) will merely add to the hazardous radioactive burden already borne by the Great Lakes, its ecosystems, and its human residents, as the DGR(s) leak into the Great Lakes over time.

Famed biologist and ecologist Dr. Rachel Carson, warned in her iconic book *Silent Spring,* that the exacerbated risks from synergistic effects of hazardous ionizing radioactivity, as from nuclear weapons testing fallout, and toxic chemicals, such as pesticides, must be taken into consideration. Such synergistic effects of hazardous ionizing radioactivity – as from DGR leakage into the environment and the Great Lakes, over time – and toxic chemicals (as from multiple sources in the ecosystem) must be considered, but have not been by OPG. This failure is grounds for CEAA and the Environment Minister to reject OPG’s DGR proposal, once and for all.

As reported by the Canadian Press on Feb. 19, 2016, just after Minister McKenna requested additional information from OPG re: the DGR, it is high time for this proposal to be scrapped in its entirety:

*Groups opposed to the burial of nuclear waste near Lake Huron are calling on the federal government to kill a proposal for an underground storage bunker rather than ask for more information on the project.*

*In a statement Friday, one group said the environmental credibility of the new Liberal government under Justin Trudeau is at stake.*

*“It is unfortunate that the government is not listening to what the people and Great Lakes communities are telling them: to reject this plan,” said Beverly Fernandez with Stop the Great Lakes Nuclear Dump.*

*“No matter what process is followed, burying and abandoning radioactive nuclear waste in the Great Lakes Basin will always be a bad idea.”*

The work of Stop the Great Lakes Nuclear Dump has long put the lie to OPG’s absurd claim, repeated in its submission of additional information to the Environment Minister, that not many people even care about the DGR issue, and the level of concern is waning.

Nothing could be further from the truth.

Stop the Great Lakes Nuclear Dump’s own petition has garnered nearly 100,000 signatures (see
Another anti-DGR petition, by SumOfUs, has gathered nearly 60,000 signatures (see <https://actions.sumofus.org/a/lake-huron-nuclear-waste>).

As mentioned above, as of Sept. 12, 2016, 187 resolutions have been passed opposing OPG’s proposed Great Lakes nuclear dump. Stop the Great Lakes Nuclear Dump has been instrumental in the passage of many of these resolutions. A whopping 23.4 million people reside in the municipalities that have passed anti-DGR resolutions in the U.S. and Canada. The National Association of Counties, representing 3,069 U.S. counties (with 255 million residents), has passed an anti-DGR resolution. So too has the Great Lakes Legislative Caucus, representing lawmakers from eight U.S. states and two Canadian provinces. In addition to all of this, the State of Michigan Senate has passed a bipartisan, unanimous resolution opposing the DGR. The United Tribes of Michigan, representing a dozen Native American First Nations, has likewise passed a resolution against the DGR. (See <http://stopthegreatlakesnucleardump.com/resolutions.php> for a map, and full listing, of these resolutions.)

Another reflection of the growing opposition to the DGR is the very large number of environmental and public interest organizations active on the issue.

For example, on March 2, 2016, a coalition of 110 Canadian and U.S. environmental groups, writing to the U.S. EPA and Environment Canada, mentioned radioactive waste disposal in their letter Re: Nomination of Radionuclides as a Chemical of Mutual Concern under the GLWQA (Great Lakes Water Quality Act). See: http://static1.1.sqspcdn.com/static/f/356082/27208443/1472050344197/1.+NGO+Letter+Supporting+Radionuclides+Nomination+-+March+2+2016.pdf?token=kR8SJCfejL%2Bw4D2GveP%2BOwUBmpk%3D

Also see the Feb. 2016 report by John Jackson, commissioned by CELA: http://www.cela.ca/sites/cela.ca/files/Radionuclides-CMC.pdf

The coalition’s letter to EPA and Environment Canada, listing the 110 U.S. and Canadian signatories, is posted here:


Also, in August 2016, 125 organizations from across Canada, the U.S., and 28 additional countries overseas, endorsed the Montreal Declaration for a Nuclear-Fission Free World during the World Social Forum in Quebec, which featured a week-long “Anti-Nuclear Thematic.” (See the text of the Montreal Declaration here: http://www.ccnr.org/declaration_WSF_e_2016.pdf). The signatory groups pledged, in part:
...We will pool our resources across national boundaries in a spirit of cooperation, allowing us to contribute to the formulation of a convergent and unified response to counteract the plans of the nuclear establishment that operates on a global scale to multiply civil and military nuclear installations worldwide and to dump, bury and abandon nuclear wastes. (emphasis added)

The Montreal Declaration also pledged:

...to emphasize our moral responsibilities not to burden future generations with a poisonous nuclear legacy...

OPG’s DGR was at the forefront of U.S. and Canadian signatories’ minds, as multiple workshop sessions at the week-long World Social Forum “Anti-Nuclear Thematic” had been devoted to the controversy.

The list of 125 organizational endorsers from 30 countries is posted here: http://www.ccnr.org/declaration_endorsers.pdf.


Thus, OPG’s claim that the public has lost interest in the DGR controversy, is one of its most absurd claims yet.

This is further reflected in years-long engagement on the issue by a bipartisan, bicameral coalition of U.S. lawmakers.

Most recently, just last month, a bipartisan coalition of 23 Members of the United States Congress from seven of the eight Great Lakes States (Illinois, Indiana, Michigan, Minnesota, New York, Ohio, and Wisconsin; only Pennsylvania is not represented) have urged the U.S. and Canadian governments to block Ontario Power Generation’s proposed radioactive waste dump on the Great Lakes shoreline.

As reported by Michigan Radio (see the coverage, posted online at <http://michiganradio.org/post/michigan-congressmen-urge-us-and-canadian-governments-reject-nuclear-waste-site-near-lake-huron>):
Members of Michigan’s congressional delegation have sent letters to the Trump administration and the Canadian government in hopes of stopping a planned nuclear waste site along Lake Huron.

Ontario Power Generation wants to store low and intermediate level radioactive waste less than a mile from Lake Huron. The utility insists the plan is safe and other options are too expensive.

The Canadian government is taking public comment on the proposal.

Michigan’s congressional delegation want the Trump administration to use its influence to discourage the Canadian government from letting the plan move forward.

Republican Paul Mitchell, R-MI 10th District, says the plan “poses a danger to a crucial water source.”

In a different letter, a bi-partisan group of congressmen from different states, including Michigan, tell Canada’s new Minister of Foreign Affairs of their opposition to the project.

The lawmakers wrote a letter to Canadian Minister of Foreign Affairs Chrystia Freeland. It said, in part:

“Our countries have long partnered to protect the Great Lakes. And we ask that the Canadian government continue to enhance our strong relationship by exploring other options outside of the Great Lakes basin to store nuclear waste.”

Nearly 200 local governments and other groups have taken a stand against the plan to build the facility near Kincardine, Ontario.

The Canadian government has delayed its decision on the project in the past. No decisions are expected until this fall.

The full text of the letter sent to the Minister of Foreign Affairs can be found below:

Minister Freeland:

Congratulations on your recent appointment as Canadian Minister of Foreign Affairs. We look forward to working with you and Prime Minister Trudeau on a multitude of issues of mutual interest to our countries.

For some time, Members of Congress from both parties have expressed concerned about a proposed deep geologic repository for nuclear waste (DGR) that Ontario Power Generation (OPG) is planning to build in Kincardine, Ontario less than one mile from the Great Lakes.
We would like to emphasize our opposition to permanently burying nuclear waste within the Great Lakes basin.

Recently, OPG released a study on potential alternate locations for the DGR. In that report, OPG recognized that there are other viable locations to store nuclear waste in Ontario that would be technically feasible. And we ask that you require OPG to select a site that is outside the Great Lakes basin. Again, permanently burying nuclear waste so close to the drinking water of nearly 40 million people is just too risky.

Further, a portion of the report, under the section ‘Social Licence’, reads in part, “Research shows that there is little interest among the general public regarding the DGR Project at the Bruce Nuclear site.” We vehemently disagree with this conclusion.

First, one cannot depend on social media or internet traffic activity to determine the public’s feelings about burying toxic waste next to the Great Lakes. This data is neither scientific nor representative of the entire population.

Attached you will find a list of 186 local, county and state governments representing nearly 23 million people in the U.S. and Canada that have passed resolutions opposing the proposed nuclear waste repository. In addition, we have heard from our constituents that they are overwhelmingly opposed to OPG’s proposal.

As you can see, contradictory to OPG’s report, there is in fact broad opposition from citizens in both Canada and the United States to burying nuclear waste near the Great Lakes.

Our countries have long partnered to protect the Great Lakes. And we ask that the Canadian government continue to enhance our strong relationship by exploring other options outside of the Great Lakes basin to store nuclear waste.

Thank you for your attention to this important matter and congratulations again on your appointment.

Sincerely,

Daniel Kildee [(Democrat-Michigan)]
Sean Duffy [(Republican-Wisconsin)]
Debbie Dingell [(D-MI)]
Paul Mitchell [(R-MI)]
Jackie Walorski [(R-IN)]
David Joyce [(R-OH)]
Sander Levin [(D-MI)]

Brad Schneider [(D-IL)]

John Moolenaar [(R-MI)]

Jim Renacci [(R-OH)]

Mike Bishop [(R-MI)]

Brenda Lawrence [(D-MI)]

Robin Kelly [(D-IL)]

Dave Trott [(R-MI)]

Marcy Kaptur [(D-OH)]

Jan Schakowsky [(D-IL)]

John Conyers, Jr. [(D-MI)]

Daniel Lipinski [(D-IL)]

Peter Roskam [(R-IL)]

Richard Nolan [(D-MN)]

Marcia Fudge [(D-OH)]

Louise Slaughter [(D-NY)]

Brian Higgins [(D-NY)]

(A PDF of the congressional letter is posted online here: http://stopthegreatlakesnuleardump.com/pdfs/02-01-17%20Highlighting%20Public%20%20Opposition%20to%20DGR%20-%20Minister%20Freeland-1.pdf)

But this is just the latest U.S. congressional action.

For example, on Feb. 18, 2016, U.S. Senator Debbie Stabenow, a senior Democratic leader in the U.S. Senate from Michigan, stated (see http://www.stabenow.senate.gov/news/senator-stabenow-statement-on-canadian-government-nuclear-waste-site-announcement-):
U.S. Senator Debbie Stabenow today issued the following statement regarding the Canadian government’s announcement to delay a decision on whether an underground nuclear waste facility will be built off of the shores of Lake Huron. Senator Stabenow spoke with Canadian Environmental Minister Catherine McKenna earlier this month about how this storage facility could put Michigan’s billion-dollar fishing and boating industries at risk as well as our quality of life by permanently damaging the environment and water quality of the Great Lakes. This is the second time since November that the Canadian government has responded to Senator Stabenow’s call to delay making a decision on the site:

“Canada is facing a critical decision that will impact generations in both of our countries. Given what is at stake, a closer examination of the serious environmental and public health risks of this site is imperative and will hopefully lead our Canadian neighbors to make the right decision to shelve plans for this site once and for all.”

Stabenow, along with fellow Democratic U.S. Senator Gary Peters from Michigan, have led bipartisan U.S. Senate efforts against the DGR, including the introduction of legislation.

Likewise, a bipartisan effort in the U.S. House, involving dozens of Democrats and Republicans, led by U.S. Rep. Dan Kildee (Democrat-Flint Township), has introduced legislation opposing the DGR.

On Nov. 5, 2015, 32 Democrats and Republicans, from both the U.S. House and Senate, wrote Canadian Prime Minister Justin Trudeau, urging he reject OPG’s DGR. See: http://www.stopthegreatlakesnuclerardump.com/pdfs/110515%20Canadian%20Nuclear%20Waste%20%28Trudeau%29.pdf

Actions by legislators also have extended to the State of Michigan level. Most recently, on Feb. 6, 2017, State of Michigan Representative, Kevin Hertel (Democrat-St. Clair Shores) representing Michigan’s 18th District in the State of Michigan House of Representatives, published an anti-DGR opinion-editorial in the Oakland Press entitled “Profits over people could spell nuclear disaster for the Great Lakes” (posted online at: http://www.theoaklandpress.com/article/OP/20170206/NEWS/170209666). It states:

Our state’s greatest natural treasure is its water. While many states in the western half of the country face frequent droughts and must constantly work to keep necessary vegetation alive, Michigan is surrounded by the world’s largest source of fresh water. There is pride in this: we rely on our water for tourism as well as agricultural purposes.

Yet a proposal by Ontario Power Generation (OPG) would store nuclear waste less than a mile from the Canadian shores of Lake Huron. My predecessor, state Rep. Sarah Roberts, and state Sen. Hoon-Yung Hopgood (D-Taylor) both testified in Canada
against this proposal and I am asking the people of this state to continue working to prevent this potential catastrophe from happening.

There is a reason this storage site is getting preference over the others: money. It is less expensive by a factor of $2.7 billion than one of the other waste sites being looked into. This may be true. It may be cost-effective now to bury the low- and intermediate-level nuclear waste on the shores of Lake Huron. However, if these containers should ever leak, no amount of money will be able to repair the damage done to our Canadian brothers and sisters, our Michigan residents who rely on Lake Huron for drinking water, and everything else our precious water supply grants us. Placing these containers into water-soluble limestone leads me to believe that disaster is a matter of when, not if, and the effects of radioactivity could last hundreds of thousands of years. It is unacceptable to place the potential for damage so close to a water source relied on by millions.

Running the state of Michigan like a business has failed time and again, and we cannot continue to put profits over people. We have seen the devastating effects of this, in no way greater than the Flint water crisis. We have seen how quickly water problems devastate a community. We have seen how costly the infrastructure is to repair, and worse, that the damage is often irreparable, particularly for vulnerable populations like children. Canada knows this, too, with citizens from Windsor and Hamilton offering aid to the people of Flint. I am imploring their government to consider a site farther away from such a precious resource.

Michigan’s resolutions sponsored at both the state and federal level stand among the 152 resolutions that have already been submitted in both the United States and Canada rejecting the Huron Shores repository site. The OPG’s study stated that this site was the only one with a willing host community. They were wrong. The safety of water for millions should be the primary concern, not the desire to build this storage site quickly and inexpensively — we cannot afford to let our Canadian neighbors get this wrong.

But this op-ed is but the latest State of Michigan legislator’s action. As reported by CTV (see http://london.ctvnews.ca/michigan-politicians-voice-concerns-over-burying-nuclear-waste-near-kincardine-1.1477370), and other Canadian news media, State of Michigan Senator Hoon-yung Hopgood and Michigan State Representative Sarah Roberts (both Democrats) travelled up to Kincardine, Ontario in autumn 2013 to testify against the DGR before the Joint Review Panel.

Earlier that year, Hopgood had introduced a resolution that passed both committee, and the full State Senate, unanimously, opposing the DGR. Such bipartisan unanimity in the Michigan State Senate is exceedingly rare.

But as with the U.S. congressional coalition, the State legislative actions are also bipartisan. Republican State of Michigan Senator Phil Pavlov from St. Clair Township
also travelled up to Kincardine, in autumn 2014, to testify before the JRP against the DGR. He also collected petition signatures from his constituents against the DGR.

These legislative efforts, at both the State of Michigan as well as the U.S. Congress levels, have been ongoing for several long years now. State of Michigan legislators, as well as Members of the U.S. Congress, are not backing down from their opposition to the DGR.

**Additional comments by Beyond Nuclear, Don’t Waste Michigan and NIRS:**

OPG prefers to call its proposal the DGR, short for Deep Geologic Repository. Our groups prefer to call it the DUD, short for Deep Underground Dump, a phrase coined by Dave Martin of Greenpeace Canada many years ago now. Thus, we will refer to the DGR as the DUD, below.

Our groups, along with many additional allied environmental and public interest organizations, on both sides of the U.S.-Canadian border, have been fighting hard in opposition to the proposed DUD for over 15 long years, ever since we first learned of it. Our resistance has only deepened, the more we have learned about the proposal.

And that resistance movement has also grown by leaps and bounds, into a First Nations-Canadian-U.S. groundswell.

Re: cumulative impacts, we not only refer the CEAA and Environment Minister back to our submissions as official intervenors before the Joint Review Panel (JRP) in 2013 and 2014, but also to our submissions and public comments at every turn in this long proceeding, before and since – dating back to over a decade and a half at this point.

It was due to pressure exerted by ourselves and our allies, that OPG was forced to admit that the 200,000 cubic meters of so-called “low” and “intermediate” level radioactive wastes, proposed at the DUD, from operations and refurbishment, would be doubled to 400,000 cubic meters, in order to accommodate decommissioning wastes. That alone represented a very significant cumulative impact, that OPG had kept secret for many years, until forced to admit it.

Now Environment Minister McKenna has requested additional information about the cumulative impacts of essentially co-locating the “low” and “intermediate” level radioactive waste DUD for Ontario, near to the irradiated nuclear fuel DUD for all of Canada. At this late date, three municipalities near Kincardine, Ontario are still in the running for the Nuclear Waste Management Organization’s (NWMO, comprised of Canada's nuclear utilities, and thus dominated by OPG). But OPG has utterly failed to provide an adequate response.
This is all the more objectionable, given that the JRP had also been urged, by our groups and our allies, as well as by the Saugeen Ojibwe Nation (SON) itself, to address the cumulative impacts of co-locating DGR1 and DGR2 (or DUD1 and DUD2).

The moving target of OPG’s proposal, combined with the moving target of NWMO’s (itself dominated by OPG) proposals, has required that the multiple DUDs be given numeric designations, in order to keep them straight! DUD1 refers to “low” and “intermediate” level radioactive wastes from operations and refurbishment at 20 reactors across Ontario; DUD2 refers to NWMO’s Canada-wide dump for irradiated nuclear fuel; DGR3 refers to “low” and “intermediate” level radioactive wastes from decommissioning Ontario’s reactors – as Northwatch noted above, these wastes, OPG very belatedly admitted in September 2013, would simply go into DGR1).

DGR1, DGR2, and DGR3 would be cumulative impacts on top of the very large number of nuclear/radioactive waste -- and other dirty, dangerous, and polluting energy industry (including fossil fuel industries) -- cumulative impacts on the Great Lakes. Please see Beyond Nuclear’s written testimony, as well as its oral testimony, as presented to the JRP in 2013 and 2014.

Submitted in our previous testimony and submissions, are the “Great Lakes Nuclear Hot Spots” map prepared in Winter 1990-1991 by Nuclear Awareness Project (Irene Koch and Dave Martin) of Oshawa, Ontario (posted online here: http://www.flickr.com/photos/badheartbull/4418881368/sizes/o/), as well as the updated “Great Lakes Region Nuclear Hot Spots” map, published in April 2013 by Anna Tilman of IICPH (International Institute of Concern for Public Health) and John Jackson of GLU (Great Lakes United), posted online at:

http://static1.1.sqspcdn.com/static/f/356082/26985148/1461223507850/Great+Lakes+Nuclear+Hotspots+Map+Final.jpg?token=zUhu3MUln8Xzv7hCtQpNIU09rWY%3D

These maps show the cumulative impacts from the nuclear power and radioactive wastes industries on the Great Lakes, which would only be made worse by the DUDs.

Bruce Nuclear Generating Station being one of the very largest nuclear power complexes on the planet (the largest in North America, with eight still operable reactors, and one permanently shutdown reactor), located on Saugeen Ojibwe Nation (SON) territory, already raises very serious environmental justice concerns. (Another way of saying this is, concerns about radioactive racism.) The Western Waste Management Facility’s operation, including storage, compaction, and even incineration, significantly deepens these concerns. DGR1, DGR2, and DGR3 make it all that much worse, with proposed “abandonment” of radioactive wastes – “low” level, “intermediate” level, and perhaps even high-level – on the very edge of the Great Lakes, in SON territory.
OPG has acknowledged SON’s veto on the DUD. If SON does not consent, the DUD cannot go forward. Given SON’s refusal to consent, for all these many years now, why then is this proceeding still continuing? Why is the DUD still on the table? Why is it still under consideration?

Our groups invoke the slogan, rallying cry, and prayer of the Standing Rock Sioux Tribe (SRST) of North and South Dakota, and the water protectors who gathered by the many thousands at Cannonball, North Dakota to resist the Dakota Access (crude oil) Pipeline in the past many months: *Mni Wiconi*, Sioux language for “Water Is Life.” While the SRST and the indigenous and non-indigenous water protectors have striven to protect the drinking water for 17 million people downstream of DAPL on the Missouri River, our groups and our allies have worked hard for a decade and a half to protect the Great Lakes against OPG’s DUD(s). This is because the Great Lakes provide drinking water for 40 million people in eight states, two provinces, and a large number of Native American First Nations. The Great Lakes are the lifeblood of one of the world’s single largest bio-regional economies, in terms of its fisheries, tourism, recreation, drinking water, industry, agriculture, property values, etc. When it comes to the Great Lakes, we really do have a lot to lose. The DUD(s) put it all at risk. The DUD(s) represent a high-risk game of radioactive Russian roulette on the Great Lakes shorelines.

After the Flint, Michigan drinking water catastrophe, in which a town of around 100,000 people (majority African American, as well as a significant proportion low income) was exposed to dangerous levels of the toxic heavy metal lead via their tap water, through no fault of their own, our groups vow that we won’t let OPG “nuke” the Great Lakes next. A shocking 9,000 children in Flint were put at high-risk of irreversible lead poisoning. (“After Flint, Don’t Let Them NUKE the Great Lakes Next,” written by Beyond Nuclear’s Kevin Kamps, and published at Counterpunch in Jan. 2016, is posted online at: [http://www.counterpunch.org/2016/01/26/after-flint-dont-let-them-nuke-the-great-lakes-next/](http://www.counterpunch.org/2016/01/26/after-flint-dont-let-them-nuke-the-great-lakes-next/). Flint, Michigan, by the way, is back on Lake Huron drinking water again now. This is all the more reason to protect Lake Huron’s clean, safe drinking water supply, so that it can help in the healing of Flint’s population over time.

As the above article pointed out, the very elected officials and government agencies that OPG cited as having been reached out to, and having no problem with the proposed DUD – Michigan Governor Rick Snyder’s administration, the Michigan Department of Environmental Quality, and the U.S. Environmental Protection Agency’s Region 5, headquartered in Chicago, Illinois – are the very same officials and agencies responsible for the drinking water catastrophe in Flint, Michigan. Thus, OPG’s reliance on these agencies and officials as having somehow signed off on the DUD is all the more alarming, and unacceptable.
Regarding the actual alternate locations, about which the Environment Minister requested additional information, astonishing some of the alternate locations OPG considered included:

- Grand Portage, Minnesota, USA (specifically, a gas station/convenience store! Whoops!)
- Lake Erie (Double whoops!)
- The chic neighborhood of Chaplin Estates, Toronto (Triple whoops!)

Obviously, OPG failed to provide the information about actual alternate locations that the Environment Minister requested. For this reason alone, CEAA and the Environment Minister should reject OPG’s proposal, once and for all.

As reported by Jennifer Wells, business columnist at The Star (see the article at: https://www.thestar.com/business/2017/01/10/opg-identifies-most-of-ontario-as-alternate-location-to-bury-nuclear-waste-jennifer-wells.html), in an article entitled “OPG identifies most of Ontario as alternate ‘location’ to bury nuclear waste”:

*OPG has defined two alternate locations — one a “crystalline” rock location, which OPG has used interchangeably with granite, and the other a sedimentary rock location. Fourteen GPS co-ordinates, including Ryden's Border Store [in Grand Portage, Minnesota, U.S.A.] and a spot in Lake Erie, have been provided to define the first of these. When mapped, the 14 form the perimeter of this so-called “crystalline alternate location.” Plotted by the Star’s Matthew Cole, the result is a 726,052-square-kilometre land mass covering roughly 73 per cent of the province.*

The article also reports:

*Equally curious, the co-ordinates for the second alternate include a stately two story brick home in Chaplin Estates, near Yonge St. and Davisville Ave.*

As reported by Seymour Real Estate (see: http://www.seymourrealestate.ca/chaplin-estates-real-estate-information), Chaplin Estates happens to offer "some of the most luxurious homes in Toronto” -- that is, the largest city in Canada. Ontario Power Generation should have known that, as it is headquartered in that very same city!

Suffice it to say, had this been a junior high science homework assignment, OPG would have earned a resounding F. It’s high time for Canada’s Environment Minister, Catherine McKenna, to flunk OPG’s DUD, once and for all!

Regarding the additional information the Environment Minister requested re: mitigation measures, we would like to comment that:
• OPG and CNSC (Canadian Nuclear Safety Commission) would be in charge of these mitigation measures. The problem is, neither can be trusted! They represent foxes, guarding the henhouse!

• Re: SOS Great Lakes’ “Regulators and Regulated” concern, above, CNSC and OPG are in cahoots, in a bad way;

• The Japanese Parliament, after a year-long independent investigation, concluded that the root cause of the Fukushima nuclear catastrophe was “collusion” between regulatory agencies, the nuclear power industry, and government/elected officials. Such collusion exists in spades re: the DUD, between CNSC, OPG, and government/elected officials who support the DUD.

**Conclusion**

Ontario Power Generation (OPG) has doubled down on its insane scheme to bury radioactive waste on the Great Lakes shoreline, and our Canadian-U.S. environmental coalition will redouble its efforts to stop it. We have resisted the DUD for more than 15 years now, ever since OPG first declared this war on the future of the Great Lakes. After Flint, we won’t let them nuke the Great Lakes next!

OPG has refused to name the specific sites it has so hurriedly studied as alternative dumpsites to the Great Lakes shore, despite Canadian Environment Minister Catherine McKenna’s explicit instructions in her request for additional information. For this reason alone, OPG must be given a failing grade, and its coveted Great Lakes shore DUD nipped in the bud, that is, rejected outright.

OPG’s hypothetical alternative dumpsites analysis is all the more dubious, in that it was conducted in ten short months, as opposed to the 15 years it has spent targeting the Lake Huron shore at the Bruce Nuclear Generating Station in Kincardine, Ontario, Canada.

As U.S. Representative Dan Kildee (Democrat-Flint) has stated, ‘Surely in the vast land mass that comprises Canada, there must be a better place to permanently store nuclear waste than on the shores of Lake Huron.’

In fact, Canada has the second largest land mass of any country, after Russia.

Rep. Kildee, as well as Michigan’s U.S. Senators, Debbie Stabenow and Gary Peters (also both Democrats), have led the bipartisan congressional coalition opposing OPG’s Great Lakes radioactive waste dump for several long years now.

OPG’s claim -- that a national Canadian high-level radioactive waste dump nearby, in addition to the proposed DUD for all of Ontario's so-called “low” and “intermediate” level radioactive wastes -- would not represent significant cumulative environmental impacts, would be laughable, if it weren’t so seriously dangerous.
Three municipalities near Kincardine, under the influence of OPG and Bruce Nuclear Generating Station inducements, are still in the running for Canada’s national high-level radioactive waste dump. This is an environmental injustice, given the adjacent Saugeen Ojibwe Nation (SON) territory, and other Native American First Nation’s treaty rights downwind and downstream, as to hunting and fishing.

And OPG’s false assurances, echoing the Joint Review Panel’s that rubber-stamped the DUD, that the Canadian Nuclear Safety Commission (CNSC) will oversee mitigation of cumulative environmental impacts over time at the DUD, is fatally flawed. CNSC, including its President, Michael Binder, is a completely captured agency, in collusion with the nuclear power industry it is supposed to regulate.

The Japanese Parliament concluded, after an independent investigation, that such collusion between regulators, the nuclear power industry, and elected officials, was the root cause of the ongoing Fukushima nuclear catastrophe. We must prevent a Fukushima on the Great Lakes shoreline!

As Beverly Fernandez, spokesperson for Stop the Great Lakes Nuclear Dump, has said, ‘Water is Life.’ Stop the Great Lakes Nuclear Dump has been instrumental in securing 186 municipal resolutions, representing 23 million residents in each Great Lakes state and province, opposing OPG’s so-called “Deep Geologic Repository” for “low” and “intermediate” level radioactive waste burial, or any radioactive waste dump in the Great Lakes Basin, including Canada’s national high-level radioactive waste dump.

The Standing Rock Sioux Tribe’s leadership in defense of the Missouri River, drinking water supply for 17 million people downstream in multiple states, against the risk of crude oil leaks from the Dakota Access Pipeline, is an inspiration. We must similarly protect the Great Lakes, against leaks of hazardous radioactivity from OPG’s DUD. After all, the Great Lakes are the drinking water supply for 40 million people in eight U.S. states, two Canadian provinces, and a large number of Native American First Nations. Not just is the drinking water supply for current generations put at risk by OPG’s DUD, but so too for all future generations, for radioactive waste is deadly forevermore.

OPG’s DUD is all the more unacceptable after the lead poisoning of Flint, Michigan via the drinking water supply. Lead and radioactivity have a lot in common. There is no safe level of exposure – any exposure carries a health risk. The higher the dose, the higher the risk. The risks accumulate over a lifetime. And children, especially the fetus in the mother’s womb, are the most vulnerable of all.

In fact, the very agencies of the U.S. federal and state governments responsible for the lead poisoning of 9,000 children in Flint via the drinking water supply – the U.S. Environmental Protection Agency, Michigan Governor Rick Snyder and his Michigan Department of Environmental Quality -- have yet to do anything to protect Michiganders and other Americans downstream against OPG’s Lake Huron shore
radioactive waste dump scheme. Most ironically, now that Flint is again getting its drinking water supply from a safe, clean source – Lake Huron – OPG is threatening it with hazardous radioactive contamination, at the DGR(s).

An ounce of prevention is worth a pound of cure. That’s why we need to nip the DUD in the bud, before hazardous radioactivity ruins the Great Lakes drinking water supply forevermore.

Another form of preventative medicine, is to stop making radioactive waste in the first place. Dr. Judith Johnsrud, a founder and board member of both NIRS and Beyond Nuclear, warned that radioactive waste may well be a “trans-solutional problem” – that is, a problem created by human beings, that we are not able to solve. The only real answer to the radioactive waste problem, Dr. Johnsrud argued, was to not make it in the first place.

After it’s made, radioactive waste “solutions” are actually just the choice between lesser and greater evils. OPG’s proposed DUD is too great an evil, and must be stopped, once and for all. We call on CEAA, Environment Minister McKenna, and Prime Minister Trudeau to cancel the DUD, for good.

Thank you for considering our comments.

Sincerely,

Kevin Kamps and Diane D’Arrigo

Submitted by Kevin Kamps, Radioactive Waste Watchdog at Beyond Nuclear (and board member of Don’t Waste Michigan, representing the Kalamazoo chapter), and Diane D’Arrigo, Radioactive Waste Project Director, Nuclear Information and Resource Service (NIRS).

Based in Takoma Park, Maryland, U.S.A., Beyond Nuclear aims to educate and activate the public about the connections between nuclear power and nuclear weapons and the need to abolish both to safeguard our future. Beyond Nuclear advocates for an energy future that is sustainable, benign and democratic.

Don’t Waste Michigan (DWM) is a federation of environmental organizations with a board of directors and a membership of some 50 researchers, educators, concerned citizens, and others across the State of Michigan. DWM was founded in 1987 to oppose the designation of the State of Michigan as a repository for what was misleadingly called “low-level” radioactive waste from eight states. Don’t Waste Michigan’s work was ultimately successful; Michigan was eliminated from consideration as a repository for the wastes. DWM also resisted, unsuccessfully, the 1993 plan at Palisades to load high-level nuclear waste in casks on the shore of Lake Michigan at the plant site, for so-called “interim storage.” DWM
maintains a website, http://dwmi.homestead.com. DWM has long opposed OPG’s DUD, in order to protect the Great Lakes against radioactive contamination. For example, DWM signed onto the Huron Declaration, dated October 13, 2012.*

NIRS, also headquartered in Takoma Park, Maryland, U.S.A., is a national non-profit organization devoted to a nuclear-free, carbon-free world. NIRS has served as the information and networking hub for people and organizations concerned about nuclear power, radioactive waste, radiation, and sustainable energy issues since 1978. NIRS also supports people and organizations internationally, most notably the World Information Service on Energy (WISE) International, to create a sustainable energy future without nuclear power.

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*The Huron Declaration is posted online at:

http://static1.1.sqscdn.com/static/f/356082/26867948/1455903241803/10+2012+Huron+Declaration.pdf?token=hZmsZxqg%2Fw8hr8Xn2d2MftkTz0Y%3D

Signed by a large number of individuals, representing many organizations, in addition to DWM, the Huron Declaration marked a watershed moment, the beginning of a groundswell of opposition to the DUD, which continues to expand.

The "Huron Declaration" came out of the Nuclear Labyrinth conference, organized by Michael Keegan of Coalition for a Nuclear-Free Great Lakes, featuring Dr. Gordon Edwards of Canadian Coalition for Nuclear Responsibility as keynote speaker, and hosted by Timothy J. Jurkovic, Ph.D., Associate Professor, Sociology, Program
Director, Criminal Justice, at Bowling Green State University’s Firelands College in Huron, Ohio.

While named after the location of the conference, the "Huron Declaration" also is an allusion to the "Port Huron Statement," which marked the formation of the Students for a Democratic Society in the early 1960s, at a gathering held in Port Huron, Michigan. In fact, the Huron Declaration came 50 years after the Port Huron Statement -- 1962 to 2012.

Recently, Port Huron has become a hotbed of resistance to the DUD, with a St. Clair River rally in August 2015, the formation of Great Lakes Environment Alliance (GLEA) thereafter, a November 2015 event at St. Clair County Community College again featuring Dr. Gordon Edwards of CCNR as keynote speaker, another rally and teach-in on the St. Clair River in summer 2016, and numerous addition events, right up to the present.

Port Huron, Michigan is located at the point where Lake Huron flows into the St. Clair River. Port Huron's sister city, Sarnia, Ontario, has also long been a hotbed of resistance to the DGR, thanks in large part to the leadership of its long-serving progressive and environmental mayor, Mike Bradley. Port Huron and Sarnia are the nearest population centers downstream of the proposed DUD -- in fact, Sarnia is the biggest city on the shores of Lake Huron.

The international environmental coalition resisting the DUD is now redoubling efforts, in order to block the insane scheme outright. The movement will then move on to address the many other radioactive risks to the Great Lakes, concentrated at the Bruce Nuclear Generating Station, and at many other places along the Great Lakes shorelines. Ironically enough, the declaration of war against the Great Lakes, that is the DUD proposal, has awakened a widespread and growing anti-nuclear movement across the Great Lakes Basin.