Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

CMD 18-M39.5

File/dossier : 6.02.04
Date : 2018-10-15
Edocs pdf : 5669357

Written submission from the Canadian Environmental Law Association

Mémoire de l'Association canadienne du droit de l'environnement

In the Matter of

À l'égard de

Regulatory Oversight Report for Canadian Nuclear Power Generating Sites: 2017

Rapport de surveillance réglementaire des sites de centrales nucléaires au Canada : 2017

Commission Meeting

Réunion de la Commission

November 8, 2018

Le 8 novembre 2018

Canada

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Canadian Environmental Law Association
EQUITY. JUSTICE. HEALTH.

CELA's Comments on the CNSC's Regulatory Oversight Report for Canadian Nuclear Power Generating Sites: 2017

Reviewing promises made for the protection of vulnerable communities and drinking water contingency planning

October 15, 2018

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Publication No. 1215
ISBN: 978-1-77189-921-5

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Part 1 - Overview

These submissions are filed in response to the Canadian Nuclear Safety Commission's ("CNSC") revised notice of meeting dated June 21, 2018 concerning the presentation of the *Regulatory Oversight Report for Canadian Nuclear Power Generating Sites: 2017* (herein "ROR").[1] A meeting in Ottawa with respect to this matter is scheduled for November 8, 2018.

Expertise of the Intervenor

CELA is a non-profit, public interest law organization. For nearly 50 years, CELA has used legal tools to advance the public interest, through advocacy and law reform, in order to increase environmental protection and safeguard communities across Canada. CELA is funded by Legal Aid Ontario as a specialty legal clinic, to provide equitable access to justice to those otherwise unable to afford representation. CELA has engaged in detailed research and advocacy related to public safety and environmental protection by seeking improvements to nuclear emergency preparedness.

CELA frequently participates in legal proceedings involving the interpretation, implementation, and enforcement of statutes related to environmental protection and often intervenes in its own right in proceedings involving issues of public importance and environmental significance. CELA has a lengthy history reviewing the sufficiency of emergency preparedness in the context of nuclear power plants[2] and has also been actively involved in discussions and consultations regarding the Province of Ontario's revised Provincial Nuclear Emergency Response Plan.[3]

Part 2 - Issues

CELA has routinely participated in the annual ROR meeting for nuclear power plants.[4] Our participation in this year's ROR draws directly upon the findings made by the Commission in the context of the Bruce Nuclear Generating Station and Pickering Nuclear Power Plant relicensing hearings, specifically as it relates to emergency preparedness and environmental protection.

In response to this year's ROR, CELA has three main points at issue:

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[1] Notice: http://www.nuclearsafety.gc.ca/eng/the-commission/pdf/NoticeMeetingPFP-ROR-NuclearGeneratingSites-2017-e.pdf

[2] Canadian Environmental Law Association, "Publications: Emergency Planning around Canadian Nuclear Plants," online: http://www.cela.ca/test-emergency-planning-around-canadian-nuclear-plants

[3] CELA, "Re: Discussion Paper on Planning Basis Review and Recommendations and List of Proposed Changes to the PNERP 2009" (28 July 2017), online: http://www.cela.ca/sites/cela.ca/files/EmergencyPlg.pdf

[4] See CELA, "An Environmental Review of the CNSC's 2016 Regulatory Oversight Report on thee Use of Nuclear Substances" (11 Sept 2017), online: http://www.cela.ca/1131-publications/environmental-review-cnscs-2016-regulatory-oversight-report-use-nuclear-substances; CELA, "A Review of Canada's Nuclear Emergency Preparedness and Response Plans," (17 July 2017), online: http://www.cela.ca/review-nuclear-emergency

1. How can the CNSC improve public participation rights in the ROR process;
2. Has the CNSC delivered on its promise for a KI Working Group; and
3. Did the recent relicensing hearings of the Bruce Power and Pickering nuclear generating stations provide the CNSC with evidence of specific plans for drinking water contingency planning.

With respect to the first question, we provide recommendations to the CNSC related to procedural fairness and public participation rights in the context of regulatory oversight reports and meetings. We submit the current process provides unequal rights to participants, where licensees are provided both written and oral opportunities to address the Commission, and intervenors provided only an opportunity to participate in writing.

With respect to the second question, as CELA detailed in its Participant Funding application, the motivation for this year's ROR involvement stems from commitments made by the Commission during the Pickering NGS relicensing hearing in June 2018. The Commission's staff committed on the record to form a working group for the implementation of emergency measures within the 50 km ingestion planning zone. CELA submits CNSC staff have not delivered on its promise to date, and by making the Pickering Record of Decision a prerequisite to the Group's formation, has caused unnecessary delay.

Lastly, CELA has a history of working to protect source waters and stop water pollution. Therefore, drawing on our expertise in water law, CELA has also reviewed the sufficiency of drinking water contingency planning in the context of emergency preparedness. Having reviewed the transcript from the Pickering relicensing hearing in full, CELA submits the record before the Commission has not resolved whether there are adequate protection and planning measures in place necessary to safeguard the health of the lake and the millions who rely on it for drinking water.

Part 3 – Findings and Recommendations to the Commission

ISSUE 1: PUBLIC PARTICIPATION RIGHTS

1. Scope of Regulatory Oversight Report

This submission seeks to provide value-added guidance to the Commission, as it relates to the formation of the KI Working Group and drinking water contingency planning. This submission is based on the record available to date, comprised of the transcripts from the Bruce and Pickering NGS relicensing hearings, the Bruce Power Record of Decision[5], and the Pickering Summary Decision[6].

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[5] CNSC, "In the Matter of Bruce Power Inc. Application to Renew the PROL for Bruce A and Bruce B NGS" (27 Sept 2018) **[Bruce Decision]**

[6] CNSC, "In the Matter of Ontario Power Generation Inc. Application to Renew the PROL for the Pickering NGS" (7 Aug 2018), online: http://www.nuclearsafety.gc.ca/eng/the-commission/pdf/SummaryDecision-OPG-Pickering-2018-e.pdf **[Pickering Summary Decision]**

CELA's proposed submission to the Commission was approved by the CNSC Participant Funding Program in September 2018. As the detailed Pickering Record of Decision will be determinative in respect of the latter two issues reviewed herein, CELA reserves the right to provide further comments to the Commission.

CELA's comments for this ROR have been significantly constrained by the lack of detailed reasons following the CNSC's decision to grant a 10-year licence to the Pickering NGS on August 7, 2018. On October 5, 2018, we were informed that the Pickering NGS Record of Decision would not be released until late November or early December 2018, which prompted CELA to request the ROR meeting be deferred. The CNSC denied this request on the basis that the ROR only assesses how well licensees have met regulatory requirements and program expectations for the period of 2017. Thus, in the CNSC's view, the unavailability of the Pickering decision was of no consequence.

As a result, CELA is concerned that its comments – which are not specific to 2017 – will be deemed out of scope, despite being preapproved by the CNSC's Participant Funding Program committee. More importantly, CELA submits it is not clear that the ROR is limited to 2017 activities only and thus, for the following reasons, we request our intervention be included in the CNSC's ROR meeting. Our position is reinforced by statements made to the Commissioners by CNSC staff at the most recent Pickering licensing hearing, in which CNSC staff stated that distribution of KI to vulnerable communities would be a major topic at the ROR fall meeting.

First, the following excerpts from the Bruce Power NGS Record of Decision illustrate the broad scope of the ROR, as contemplated by the Commission. Accordingly, the ROR is to be used for the following suggested uses:

- The Commission encourages Indigenous groups and members of the public to participate in the proceedings considering the annual ROR (para 18)
- A 10-year licence is appropriate because of public involvement opportunities through annual ROR meetings (para 439)
- Commission encourages members of the public to take advantage of all opportunities provided by the CNSC for public participation including RORs (para 453)

The Pickering NGS Summary Decision reflects similar sentiments, noting "the Commission encourages Indigenous groups and members of the public to participate in the proceedings considering the annual ROR."[7] No accompanying statement is made in the Bruce Power and Pickering NGS decisions that the public's review be limited to the activities occurring in the year prior. CELA therefore submits the Commission has signalled a use for ROR's which is much broader than 2017 activities only.

Secondly, the CNSC's Notice of Commission Meeting states that the public can provide "topic specific" submissions. It does not, however, provide a timeframe defining the scope of these submissions.

[7] *Pickering Summary Decision, supra* note 6, para 18

Thirdly, CELA is not aware of a process which sought to define the issues for review prior to this ROR submission deadline. Therefore, as there has not been a public scoping of issues, whereby the CNSC staff, licensees and intervenors can weigh in on the issues which should frame the Commission's ROR, we submit CELA's comments provided herein are not out of scope.

Recommendations

To clarify the scope of RORs, CELA recommends the CNSC conduct a pre-meeting conference or discussion, which seeks input on issues to be discussed. Preliminary meetings are a widely used practice in anticipation of tribunal proceedings.[8] Not only would the CNSC, as a quasi-judicial tribunal, benefit from a pre-meeting conference, whereby the scope of the proceeding could be narrowed or expanded, upon input from the regulator, proponent, and intervenors, it would provide demonstrably clearer guidance to intervening parties regarding the acceptability of their submissions.

Issue identification is critically important, not only to ensure the efficient and best use of intervening parties' time, but to ensure matters of critical importance are not deemed out of scope and thus dismissed. While issue identification can require a significant amount of time, a clearer sense of the issues and providing an opportunity to comment on scope is part of an intervenor's procedural right to a fair process.

CELA suggests the CNSC could reframe its ROR format, so that its structure is more akin to a "Discussion Paper," whereby the Paper provides information but also poses questions and actively seeks public feedback.[9]

2. Oral Presentation Opportunity

While the regulations of the *Nuclear Safety and Control Act* permit the CNSC to determine its own process,[10] the CNSC cannot exercise its authority in a way that offends the rules of natural justice or procedural fairness. Accordingly, in CELA's view, by allowing licensees the opportunity to respond to comments and questions made by the Commission during the ROR meeting, but not provide a similar oral opportunity to intervenors whose written comments are before the Commission, creates varying levels of procedural rights.

CELA submits the CNSC is required, as part of its duty of fairness, to accord participatory rights which do not differentiate on the grounds of party vs. intervenor status. Despite CELA's repeated requests for an oral intervention opportunity, the CNSC will only accept public comments in writing. CELA experienced

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[8] Jerry DeMarco and Paul Muldoon, "Environmental Boards and Tribunals – A Practical Guide, 2nd Ed" (LexisNexis: 2016), p 78

[9] See for instance, Canada, "Environmental and Regulatory Reviews Discussion Paper" (June 2017), online: https://www.discussionpaper.ca/

[10] *Canadian Nuclear Safety Commission Rules of Procedure,* SOR/2000-211

the same procedural barrier at last year's ROR and despite licensees' opportunity to engage in dialogue with Commission members, CELA was prevented from doing so.

CELA submits the CNSC's decision to permit oral presentation opportunities to proponents but not intervenors, diminishes the transparency of the proceeding and creates an apprehension of bias, whether perceived or real, in favour of the licensee.

Procedural fairness requires that the CNSC's decision-making be made free from a reasonable apprehension of bias. The test used to determine whether a reasonable apprehension of bias exists is whether a reasonable, well-informed person having thought the matter through would conclude that an administrative decision-maker is sufficiently free of factors that could interfere with his or her ability to make impartial judgments.[11] In CELA's view, the CNSC has not met this onus as it repeatedly allows greater engagement and comment opportunities to licensees than intervenors during its ROR proceedings. We submit the CNSC is not acting impartially and due to the public interest nature of its role, should provide equal participation opportunities to all participants.[12]

Recommendation

CELA remains of the view that ROR meetings are not a replacement for relicensing hearings[13] and the CNSC must remedy the discrepancy in participation rights among public intervenors and licensees.[14]

ISSUE 2: EMERGENCY PLANNING WORKING GROUP

1. Context

As previously noted, CELA's motivation for involvement in this year's ROR results from the commitment made by the Commission on Thursday, June 28, 2018 at the Pickering NGS relicensing hearing. During the hearing, the CNSC committed to form a working group overseeing the implementation of emergency measures within the 50 km ingestion planning zone. As stated by Executive Vice-President and Chief Regulatory Operations Officer Ramzi Jammal to the Commission members:

> […] CNSC staff is recommending we establish a working group that encompasses CNSC staff, OPG, the Ministry of Health and the Chief Health Officer, and then other stakeholders in order to provide the Commission with a plan on the implementation of the requirement of 2.10.1, RD-2.10.1, and that we will be updating you with respect to the progress so that it will be clear to

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[11] *Committee for Justice and Liberty et al. v National Energy Board,* [1978] 1 SCR 369

[12] See *Imperial Oil Ltd. v Quebec (Minister of the Environment),* 2003 SCC 58; *Newfoundland Telephone Co. v Newfoundland (Board of Commissioners of Public Utilities),* [1992] 1 SCR 623

[13] See CNSC "Bruce Power Hearing Transcript – May 29, 2018," p 188

[14] See also comments by Greenpeace Canada, CNSC "Pickering Hearing Transcript – June 28, 2018," p 17-18

> the responsible authority to deliver the KI pills when it is needed and then we will provide the Commission with the answers.[15]

On July 4, 2018, CELA communicated its interest to be involved in the working group to the CNSC and noted we would like notice of any public input opportunities that arise in this respect. We also recommended that broader public notice and sufficient time to allow for input to the working group be provided for residents within the ingestion protection zone, as to:

- the terms of reference of the working group,
- input for the plan and recommendation development by the working group, and
- opportunities to review any outcomes, before the finalization of recommendations (based on providing a draft to the public from the working group).

As part of CELA's ROR review, CELA stated in its PFP application that it would participate in the review of any Working Group terms of reference and any documents produced therein, participate in discussions, stakeholder sessions, and provide input in the form of written submissions and recommendations. However, as CELA has since been informed that the working group will not be established until the CNSC releases it Pickering Record of Decision, CELA could not undertake any of these actions and report back to the CNSC for this year's ROR.

While CELA remains committed to involvement with the working group and providing feedback, we are deeply dismayed by the CNSC's delay in establishing the KI Working Group, pending the release of the Pickering NGS Record of Decision. The formation of the KI Working Group should have been an action to immediately follow the release of the Pickering Summary Decision on August 7, 2018 which permitted a 10-year renewal of the NGS's licence. Until the KI Working Group is in place and its objectives fulfilled, CELA submits OPG remains in non-compliance with s 2.3.4 of *RegDoc 2.10.1: Nuclear Emergency Preparedness and Response* which requires among other things, that "consideration is given to sensitive populations such as children…within the designated ingestion control planning zone."

2. Recommendations on the Establishment of the KI Working Group

To ensure the timely implementation of the KI Working Group's goals, CELA provides the following recommendations to the Commission.

Definition of Stakeholder

CELA submits that the CNSC must ensure that the definition of "stakeholder" used in framing the membership of the KI Working Group include members of the public and civil society organizations. Without this clarification, CELA is concerned that the CNSC's current use of the term 'stakeholder' will constrain the KI Working Group to industry and CNSC-staff only. For instance, this year's ROR report

[15] CNSC, "Pickering Hearing Transcript - June 24, 2018" p 316 - 317

notes that in February 2018, "the draft PNERP site-specific implementing plans became available for stakeholder comments."[16] In this instance, the opportunity for stakeholder comment did not include the public and thus public interest groups, such as CELA, did not have an opportunity to review the plant-specific Implementing Plans.

We request that the CNSC, in its use of the term stakeholder, include the public.

Timeline for Stockpiling

CELA submits that KI stocking in schools should occur in time for the start of the school year in September 2019. As Dr. Robert Kyle, Commissioner for the Medical Officer of Health with the Durham Region Health Department noted in the recent Pickering NGS relicensing hearing, the focus over the next year will be on replacing the current stock of KI pills whose shelf life is expiring. [17]

In order to ensure goal-oriented action by the KI Working Group, CELA submits the Terms of Reference should set a deadline of the beginning of the 2019 school year for stockpiling in schools.

Written and Publicly Available

CELA submits that all interim and final documents drafted by the KI Working Group should be made in writing and publicly available. As became evident during the Pickering NGS relicensing hearing, without documented emergency plans, there can be an accompanying lack of clarity. For instance, in response to RegDoc 2.10.1's provision that KI be pre-stocked and available so that it can be efficiently obtained by, or provided to, members of the public if required, the CNSC unveiled that there was no documented plan outlining the logistics of KI distribution. A review of the transcript clearly illustrates the confusion which can result when there is a lack of written plans.[18]

For this reason, CELA submits it is crucial that the specific plans accompanying the implementation of emergency response measures be made in writing and publicly available. This should be made a condition of licensing or required, through the CNSC's interpretation of RegDoc 2.10.1.

ISSUE 3 - DISASTER RECOVERY AND CONTINGENCY PLANNING FOR DRINKING WATER

1. Context

In addition to CELA's review of emergency response plans and advocating for improvements to preparedness and planning around Canada's nuclear power plants, CELA also has a history of working to

[16] CNSC, "Regulatory Oversight Report for Canadian Nuclear Power Generating Sites: 2017" (CMD 18-M39, 6 Sept 2018), p 66 **[Regulatory Oversight Report]**

[17] CNSC, "Pickering Hearing Transcript - June 28, 2018," p 56

[18] CNSC, "Pickering Hearing Transcript – June 26, 2018," p 148

protect source water and stop water pollution. Based on our expertise in water law, we provide the following comments on drinking water contingency planning.

As a follow-up to CELA's submissions at the Bruce Power and Pickering NGS relicensing hearings in 2018, we continue to be concerned by the lack of specific and publicly demonstrable plans safeguarding drinking water in the event of an accident. Despite comments from the Minister of Environment and Climate Change (MOECC) during the relicensing hearings in 2018, there remains deficiencies in the scope and detail of any plans, their public availability and comprehensiveness of considerations related to public health and the environment.

As detailed in section 2, below, CELA's detailed review of the transcripts from the Pickering NGS relicensing hearing demonstrates there are gaps in the record before the Commission and thus, unresolved issues which should be addressed at the forthcoming ROR meeting.

Excerpt – CELA's Submission to the CNSC Regarding the Bruce Power NGS Relicensing (2018)

The following excerpt highlights CELA's recommendations related to drinking water contingency planning, as provided to the Commission for the Bruce Power NGS licence renewal:

> The 2017 PNERP states that within the IPZ, "plans or arrangements are made to …protect drinking water supplies."[19] Given that all of Ontario's nuclear reactors are located on the Great Lakes - which supplies the drinking water to 40 million Canadians and Americans – it is necessary to not only "protect drinking water supplies" but require contingency planning in the event of an accident.
>
> Current monitoring of drinking water, under the Ministry of Environment and Climate Change's drinking water surveillance program assesses potential risks from existing nuclear power plant operations and activity. [20] While this program is needed to ensure plant operations due not exceed drinking water standards during the course of normal operation, there is no discussion of drinking water protection in the event of an emergency. CELA submits that detailed contingency planning in the event of accident is required, given the interconnectivity of the Great Lake system and the millions of people who rely on it as their source of drinking water.
>
> In advance of relicensing, it is incumbent that the CNSC ensure that provisions are in place for an alternative source of drinking water is available for residents whose current drinking water source is from Lake Huron. There has not being a study on drinking water replacement in case of accident, nor has a contingency plan been developed. Additionally, alternative drinking water

[19] Ontario, "Provincial Nuclear Emergency Response Plan, Master Plan 2017" online: https://www.emergencymanagementontario.ca/english/emcommunity/response_resources/plans/provincial_nuclear_emergency_response_plan.html at 2.2.5(f)

[20] CNSC, "CMD 18-H4 Bruce Power Inc. - Bruce Nuclear Generating Station A and B" (12 February 2018), p 102

sources must be identified, and logistical plans put in place to supply the impacted communities with water, indefinitely.

Recommendation: The CNSC should require proof of adequate contingency planning for the protection of drinking water in the event of an emergency as a requirement for licensing. Drinking water monitoring is insufficient in scope to ensure that there are actually sufficient drinking water supplies available in the event of a major radioactive release.

Excerpt – CELA's Submission to the CNSC Regarding the Pickering NGS Relicensing (2018)

The following excerpt highlights CELA's recommendations related to drinking water contingency planning, as provided to the Commission for the Pickering NGS licence renewal:

> The Pickering Implementing Plan states that "if venting over Lake Ontario, ground monitoring teams from PNGS shall complete radiological surveys following the shoreline, out to 20 km on either side of the plant." While CELA welcomes the inclusion of radionuclide monitoring for Lake Ontario in the revised PNERP, it is unclear to what degree monitoring occurs in the inshore and offshore areas, and whether currents and flow unique to Lake Ontario have been considered.
>
> As the Toronto Region Conservation Authority explains, the nearshore is the region which extends 3 – 5 km offshore.[21] Therefore, potentially 15 km of the '20 km monitoring on either side of the plant' could extend into the offshore region. There are a number of distinctions between the near and offshore regions, including coarser-grained bottom sediments in the nearshore and finer-grained sediments in the offshore,[22] and faster moving alongshore currents (which travel along the shoreline) than cross-shore currents (which move towards or away from the shoreline).[23]
>
> The revised PNERP and the Implementing Plan lack contingency measures to protect and monitor Lake Ontario, despite its recognition that during a design basis accident, venting of containment will occur "over the lake."[24]
>
> Given that all of Ontario's nuclear reactors are located on the Great Lakes - which supplies the drinking water to 40 million Canadians and Americans – it is necessary that detailed planning be required in the IPZ to protect drinking water supplies and require contingency planning in the

[21] Toronto Region Conservation Authority, "Watershed Management" online: https://trca.ca/conservation/watershed-management/lake-ontario-waterfront/projects/western-durham-nearshore-monitoring-program/lake-comparison/
[22] Toronto Region Conservation Authority, "Lake Comparison" online: https://trca.ca/conservation/watershed-management/lake-ontario-waterfront/projects/western-durham-nearshore-monitoring-program/the-nearshore-environment/
[23] Toronto Region Conservation Authority, "Currents" online: https://trca.ca/conservation/watershed-management/lake-ontario-waterfront/projects/western-durham-nearshore-monitoring-program/currents/
[24] Ontario, "Implementing Plan for the Pickering Nuclear Generating Station" (March 2018), s 4.6.6(a)

event of an accident. With nine million people relying on Lake Ontario for drinking water, there is an even greater imperative that emergency planning be in place for the Pickering NGS.[25]

In advance of relicensing, it is incumbent that the CNSC ensure that provisions are in place for an alternative source of drinking water for residents whose current drinking water source is Lake Ontario. The licensing materials do not demonstrate that either OPG or CNSC have studied drinking water and contingency planning. Such a study is not only necessary to identify alternative sources of drinking water, but to logistically plot how an alternative supply would be delivered to impacted communities, indefinitely.

Recommendation: The CNSC should require proof of adequate contingency planning for the protection of drinking water in the event of an emergency as a requirement for licensing. The CNSC ensure that provisions are in place for an alternative source of drinking water for residents whose current drinking water source is Lake Ontario.

2. Outstanding Issues

Specifics of Drinking Water Contingency Planning

A number of intervenors, including CELA raised concerns about the contamination of Lake Ontario in the event of an accident at the Pickering NGS. [26] In response to CELA's intervention, then President Binder directly questioned what the specific plan was for drinking water and where, in the event of an accident, drinking water would come from.[27] At the time, CELA responded that despite our specific expertise in Ontario water law, we were not aware of any specific plans and thus, we requested the Commission determine what the plan was and to table it publicly.[28]

In response, the Office of the Fire Marshall and Emergency Management (OFMEM) specified that the *Provincial Liquid Emissions Response Procedures*, which were subordinate to the *Provincial Nuclear Emergency Response Plan*, were intended to address an emission directly from a nuclear station into a lake.[29] Furthermore, as specifics of Ontario's water safety and drinking water regulations were overseen by MOECC, OFMEM deferred to their expertise who accordingly, would be present on the final day of the hearing (Friday June 29, 2018).[30]

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[25] Daniel Otis, "Is Toronto ready for a radiation emergency" 5 Jan 2016, The Toronto Star, online: https://www.thestar.com/news/gta/2016/01/05/is-toronto-ready-for-a-radiation-emergency.html

[26] See CNSC, "Pickering Hearing Transcript - June 25, 2018," p 170; CNSC, "Pickering Hearing Transcript - June 26, 2018," p 12; 114-115, 117; CNSC, "Pickering Hearing Transcript - June 27, 2018," p 26, 126; CNSC, "Pickering Hearing Transcript - June 29, 2018" p 83, 90

[27] CNSC, "Pickering Hearing Transcript - June 26, 2018," p 162 - 3

[28] *Ibid*, p 165

[29] As CELA was unable to locate the "Provincial Liquid Emissions Response Procedure" online, a copy was provided by the MOECC. They are appended to this report at **Appendix A.**

[30] CNSC, "Pickering Hearing Transcript - June 26, 2018," p 164

On numerous occasions throughout the hearing, CNSC Staff and the Commission Members deferred to the pending appearance of the MOECC when issues regarding water contingency planning were raised by intervenors. [31] Unfortunately, CELA's review of the transcripts demonstrates that the "specifics" evidencing contingency planning of drinking water, which was to be provided by the MOECC on the last day of the proceeding, never occurred. On this basis, CELA submits the record before the Commission is incomplete and therefore, the Commission lacks the necessary evidence allowing it to opine as to whether in the event of a radiological release, drinking water is protected and sufficient contingency plans are in place.

Provincial Liquid Emissions Response Procedure

While OFMEM specified during the Pickering NGS relicensing hearing that the MOECC's *Provincial Liquid Emissions Response Procedure* (PLERP) procedures were intended to address an emission directly from a nuclear station into a lake, we find the degree of specificity in the PLERP is insufficient to remedy the above noted gaps in evidence. While the PLERP contemplates restricting the consumption of tap water and lists that a role of the Municipal Works Department is to "arrange for reservoirs to be filled,"[32] it is otherwise silent on contingency planning. There is no provision for supply of alternative sources of drinking water to affected communities, for example.

Federal Environmental Assessment and Review of Disasters

During the Pickering NGS's hearing and accompanying discussion of the impact of a radiological release on water, President Binder queried whether calculations about the impact of a plume hitting the water had occurred.[33] In response, the CNSC Staff provided that an examination of accidents which may impact Lake Ontario was completed during the environmental assessment (EA) for the Pickering B refurbishment in 2007.[34]

While CELA is supportive of this study having occurred, we are concerned that the current paucity of nuclear activities which trigger a federal EA will decrease the frequency of studies which review the impacts of accidents on the environment. That is, the refurbishment of nuclear reactors was formerly a designated project which triggered a federal EA. However, the repeal of the *Canadian Environmental Assessment Act* and its replacement with the *Canadian Environmental Assessment Act, 2012,* removed refurbishment from EA review. As yet, activities including refurbishment have not been added to the project list for the legislation currently proposed to replace *CEAA 2012,* known as the *Impact Assessment Act.*[35]

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[31] See CNSC, "Pickering Hearing Transcript - June 26, 2018" at p 164, 167, 368; CNSC, "Pickering Hearing Transcript - June 27, 2018," p 323, 317

[32] MOECC, "Provincial Liquid Emission Response Procedure," (26 April 2016), p 16

[33] CNSC, "Pickering Hearing Transcript – June 26, 2018," p 166

[34] *Ibid*, p 167

[35] Bill C-69, *Impact Assessment Act*

While the refurbishment of Pickering required a federal EA, which triggered the 2007 accident study mentioned by the CNSC, the refurbishment proposed by Bruce Power in its 2018 licence renewal was not subject to a similar study because of this legislative lacuna. Unless nuclear activities such as refurbishment are added to the Project List for the proposed *Impact Assessment Act,* there will not be a statutory obligation to consider the environmental effects resulting from malfunctions or accidents.[36]

3. Considerations Informing Drinking Water Contingency Planning

Due to the lack of specifics provided on drinking water contingency planning at the Pickering NGS licence renewal, CELA provides the following guidance which should be made conditions of licensing in the Pickering NGS Record of Decision.

Recovery Following an Accident

As CELA provided in a recent submission to the Commission on emergency recovery,[37] the related theories of resiliency and adaptation should inform the CNSC's consideration of drinking water contingency planning.

Resiliency is defined as the capacity of a system to absorb disturbances and reorganize while undergoing change.[38] Building resilience into human-environment is an effective way to respond to change and unknown risks. Not only does resiliency reduce the vulnerability of a system, it increases the capacity of the system to absorb and adapt, so that individuals and communities are less sensitive to unanticipated shocks and stressors.[39] Adaptation likewise, refers to an action that allows a form or structure to better cope with a stressful condition.[40] Accordingly, adaptation activities that occur before a risk turns into a hazard is proactive and often aids in disaster risk reduction.

In line with these principles, we recommend the CNSC seek information detailing the plans for proactive planning and ensure, that in advance of a radiological release or plume over Lake Ontario, a backup supply of water is available for the millions of citizens who rely on this water body for drinking water. In particular, the CNSC should require proof that every municipality within 80 km of a nuclear power plant that it licenses has a specific drinking water contingency plan that covers the event of a severe offsite nuclear power plant accident.

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[36] See for instance, *CEAA 2012,* s 19(1)(a)

[37] See **Appendix B,** CELA "Consultation on Draft RegDoc-2.10.1 Emergency Management and Fire Protection Volume II: Framework for Recovery After a Nuclear Emergency" (28 Sept 2018)

[38] Yan, W. and Galloway, W. "Rethinking Resilience, Adaptation and Transformation in a Time of Change" (Springer: 2017), p 5 **[Rethinking Resilience]**

[39] Brooks, N. "Vulnerability, risk and adaptation: a conceptual framework" (2003)

[40] Rethinking Resilience, *supra* note 37, p 6

Capacity of Water Treatment Facilities to Remove Radionuclides

The CNSC should require evidence that water treatment facilities in potentially affected areas have the capacity to remove radionuclides through its treatment process. As facilities which only undertake minimal treatment measures (ie. do not include flocculation or secondary filtration) may not be able to remove radionuclides, the CNSC should ensure the sufficiency of treatment processes.[41]

Waste Water Discharges

Some water treatment facilities may discharge waste waters directly into natural water sources or sewers. Therefore, the contamination which could result from the discharge of waste water should be considered within the CNSC's review of drinking water contingency planning.

Exposure of Water Treatment Plant Operators

The CNSC should review potential radiation exposure pathways for workers at water treatment facilities (ie. exposure which results from the cleaning of filter tanks, removing filters, maintenance or repair of equipment), ensure protections are in place to safeguard their health, and review whether they have the requisite training and knowledge, in the event of a radiological release and contaminated water being treated at their facility.[42]

Site Specific Data

Due to the range of facility characteristics and capacity to treat water contaminated with radionuclides, the CNSC's review of water treatment must include site specific data. That is, the CNSC's review of the sufficiency of water treatment should be based on a facility's characteristics (ie. water throughput, the amount of sludge production) and capacity of the plant to undertake treatment (ie. sophistication of treatment and filtration).[43]

Recommendations

The provision of safe drinking water is directly within the CNSC's purview of ensuring the protection of the environment and the health and safety of persons, required by s 24(4) of the *Nuclear Safety and Control Act*. However, as the record from the Pickering relicensing hearing does not specify the plans in place to safeguard drinking water in the event of an emergency, CELA refutes the ROR's conclusion which states:

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[41] J Brown, D Hammond and B Wilkins, "Handbook for Assessing the Impact of a Radiological Incident on Levels of Radioactivity in Drinking Water and Risks to Operatives at Water Treatment Works: Supporting Scientific Report," (2008), online: http://dwi.defra.gov.uk/research/completed-research/reports/DWI70-2-192_supporting.pdf, p 13

[42] *Ibid*, p 43, 45

[43] *Ibid*, p 63

> With respect to the licensing basis framework for emergency preparedness at Pickering, CNSC staff verified and confirmed that Pickering Nuclear Generating Station meets the regulatory requirements of REGDOC-2.10.1 for emergency preparedness, plans, procedures and equipment.[44]

Based on the deficient record before the Commission, it should require, as a condition of licensing that drinking water contingency planning be expressly demonstrated. Given the CNSC's decision to grant a 10-year licence for the Bruce and Pickering NGSs, we request this ROR be used as an opportunity to remedy this evidentiary deficiency, and ensure related plans are in place and publicly available.

Part IV – Conclusion

The CNSC has not to date delivered on its promise to establish a working group tasked with the delivery of KI to vulnerable populations, nor, thoroughly considered whether drinking water contingency planning is in place.

CELA's comments to the CNSC for this year's ROR highlight that without adequate procedural rights and a clear scoping of issues, the ROR – which is the CNSC's touted stand-in for more frequent relicensing hearings - does not provide an opportunity for public participation on par with relicensing hearings.

We respectfully provide these comments to assist the CNSC in its review of environmental protection and human health matters. The issues highlighted herein are not only urgent, but because of the gaps in the record currently before the CNSC, CELA has demonstrated that licences for operation have been issued which are not congruous with the CNSC's duty, per section 24(4) of the *NSCA.*

Truly,

CANADIAN ENVIRONMENTAL LAW ASSOCIATION

Theresa McClenaghan, Executive Director and Counsel

Kerrie Blaise, Counsel

[44] *Regulatory Oversight Report, supra* note 16, p 63

Appendix A

PROVINCIAL LIQUID EMISSION RESPONSE PROCEDURE

Updated April 26, 2016

PROVINCIAL LIQUID EMISSION RESPONSE PROCEDURE

TABLE OF CONTENTS

ANNEXES

Provincial Liquid Emission Response Procedure

RESPONSE TO LIQUID DISCHARGES
WITH ABNORMAL LEVELS OF RADIOACTIVITY FROM OPG AND BRUCE POWER
WHICH COULD IMPACT ONTARIO DRINKING WATER SUPPLIES

1.0 Introduction

1.1 Some heavy water together with very small amounts of radioactivity (notably tritium) is normally released from Canadian nuclear power generating facilities to Lake Ontario and Lake Huron. These facilities are the Pickering and Darlington nuclear generating stations on Lake Ontario and Bruce Power nuclear generating stations on Lake Huron. The levels of radioactivity released under normal operating conditions are well below those set for the protection of human health and the environment. However, abnormal conditions or accidents might occur, resulting in higher than normal discharges. This document focusses on releases for which concentrations of radioactivity in drinking water may approach or exceed Ontario's Drinking-Water Quality Standards (ODWQS).

1.2 The Canadian Nuclear Safety Commission (CNSC) restricts licensees emissions to specified Derived Release Limits (these are distinct for each station) via conditions in the Power Reactor Operating Licence. The Ontario Ministry of the Environment and Climate Change (MOECC) Regulation 169/03 (Ontario Drinking-Water Quality Standards (ODWQS) regulation) establishes the limit for tritium in drinking water at 7000 becquerels per litre (Bq/L)

1.3 This document applies to cooling water or wastewater discharges with elevated waterborne radiological discharges from nuclear generating facilities in Ontario that result in events of a magnitude below those of an emergency (as defined in the Emergency Management and Civil Protection Act), and below those of nuclear emergencies that fall under the Provincial Nuclear Emergency Response Plan (PNERP) (see Annex B).

1.4 The primary focus of these procedures is on tritium releases. However, radionuclides other than tritium could also be released. The overall response structure in this document could then also be used for events involving discharges of radionuclides other than tritium. Regulation 169/03 provides standards for these other radionuclides. A separate document will address releases from Canadian Nuclear Laboratories (CNL).

2.0 Purpose

2.1 This document is intended to provide a coordinated response for events where the discharge of radioactivity from Ontario's nuclear power plants may result in radioactive concentrations at nearby water intakes that may exceed the MOECC standards.

2.2 This document focuses on specific arrangements for discharges with elevated tritium levels from nuclear power generating facilities in Ontario that may affect drinking water supplies. A response to such events will shift to a response under the PNERP or the Provincial Emergency Response Plan (PERP) should such events escalate to a magnitude for which those plans were designed.

3.0 Authority

3.1 The responsibility for coordination of emergency management for the Province rests with Office of the Fire Marshal and Emergency Management (OFMEM), Ministry of Community Safety and Correctional Services (MCSCS). OFMEM also has responsibility for the Provincial Nuclear Emergency Response Plan (PNERP) and for the Provincial Emergency Response Plan (PERP).

3.2 This is an authorized implementing document under the Provincial Nuclear Emergency Response Plan for coordinating the response to abnormal liquid discharges of radioactive materials. OFMEM shall be responsible for the maintenance of this document (see sect. 13).

3.3 The Provincial governmental authority is further supported by Ministry of the Environment and Climate Change (MOECC) legislation for spills and other discharges to the environment and drinking water systems regulatory requirements. These include Part X of the Environmental Protection Act, Ontario Water Resources Act, Clean Water Act, Safe Drinking Water Act and Regulation 169/03 (ODWQS).

4.0 Initial Actions

4.1 Overview

4.1.1 The initial response to elevated waterborne radiological discharges depends on the amount of radioactivity in the discharge, its projected or potential effect on local drinking water supplies, and the ability of community and local Health Authorities to deal with the situation. A response to elevated radiation discharges is

similar to other events that involve an unusual or unanticipated release of contaminants into the environment, and escalates when necessary from the discharger to the community, and finally to the Province.

4.1.2 A response to elevated waterborne radiological discharges will involve the Ministries of Community Safety and Correctional Services, Environment and Climate Change, Health and Long-Term Care and Labour, the affected community, and the nuclear facility. It may also involve certain federal departments. Annex A summarizes the Responsibilities of Agencies, and Annex B is a summary of Recommended Action Levels.

4.2 Actions by the Nuclear Facility

4.2.1 As soon as radioactive concentrations exceeding reporting criteria are discovered or are believed to have been discharged, the facility involved takes steps to:

a) identify the source of the elevated discharges,

b) address the problem that gives rise to the elevated discharges, and

c) conduct internal and external notifications.

4.2.2 The requirements for external reporting fall under a number of statutes and procedures (identified in the Provincial Nuclear Emergency Response Plan and the MOECC Emergency Response Plan). In general, the requirement to notify arises when a radioactive substance is released that causes or is likely to cause adverse effects (ref: Environmental Protection Act).

4.2.3 OPG and Bruce Power facilities have specific notification and action protocols in place. These protocols address generic reporting requirements as well as very specific local notification arrangements. Section 5 of this document describes these notification arrangements.

4.2.4 Notification and action protocols for Canadian Nuclear Laboratories are under development.

4.3 Community Actions

4.3.1 Under the (Ontario) Health Protection and Promotion Act, local Health Authorities, under the direction of the Local Medical Officer of Health and the Chief Medical Officer of Health for Ontario shall

deal with the situation created by the release of tritiated water to the best of their ability. Communities that surround Ontario's nuclear power facilities have prepared various response procedures intended to address a community response in the event of an abnormal release from their respective facility.

4.3.2 When radioactive levels in drinking water supplies appear to approach or are likely to exceed the Ontario Drinking Water Quality Standards for a radionuclide (7,000 Bq/L for tritium), the PLERT will normally be activated. However, the affected community(ies) or Ministries may request Provincial support or for the PLERT to be activated at any time. These requests will normally be granted by the Chief, OFMEM, following full consultation with all parties to the PLERT including the community(ies).

4.4 Actions under the Provincial Nuclear Emergency Response Plan

4.4.1 An event that results in, or is likely to result in, elevated radioactive levels in the drinking water supplies of affected communities will be dealt with under the Provincial Nuclear Emergency Response Plan (PNERP) if:

a) the event is part of a larger incident for which the PNERP has already been activated, or

b) the event will lead to, or is likely to lead to, a larger incident for which the PNERP would normally be activated.

4.4.2 OFMEM would consider activating the PNERP in other circumstances if MOECC, the local Medical Officer of Health, or a community makes a request.

5.0 Initial Notification from OPG and Bruce Power

5.1 Notification protocols and related agreements have been developed between Ontario Power Generation, Inc. (OPG) and local officials in Durham Region and the City of Toronto for releases from the Pickering and Darlington Nuclear Generating Stations; and for Bruce Power, the Municipality of Kincardine and the Municipality of Saugeen Shores for releases from Bruce Power. Under these arrangements, the nuclear facility will notify the communities, OFMEM and MOECC (Spills Action Centre) when radioactivity above specified levels is discharged to receiving waters.

5.2 According to the OPG and Bruce Power notification and action protocols for the nuclear power facilities, a notification to local communities and the

Provincial Emergency Operations Centre (PEOC) will be made when tritium levels are, or are expected to be, above prescribed levels set as notification levels for the facilities (see Section 5.5).

5.3 Separate Abnormal Waterborne Tritium Emission Notification forms (see Annex C) will be used by OPG facilities and Bruce Power to provide formal notification to the Province and communities.

5.4 The Abnormal Waterborne Tritium Emission Notification form will be faxed to the PEOC Duty Officer. OPG or Bruce Power, as applicable, will follow up this fax as soon as practical with a telephone call confirming receipt of a legible copy. If the form has not been received, or is not legible, the form will be re-faxed or the information will be communicated verbally. Similar arrangements are in place with the Spills Action Centre (SAC) and local communities.

5.5 The notification levels are as follows:

Facility	Notification Levels
Pickering	➢ tritium in the station discharge of >1,000 Bq/L to the shoreline
Darlington	➢ tritium in the station discharge of >1,000 Bq/L to the shoreline
Pickering	➢ tritium in the station discharge of >4,000 Bq/L, corresponding to approximately 600 Bq/L at the Ajax water supply plant
Darlington	➢ tritium in the station discharge of > 4,000 Bq/L, corresponding to approximately 1100 Bq/L at the Bowmanville water supply plant
Bruce	➢ tritium levels in the cooling water outfall > 30,000 Bq/L, corresponding to approximately 2000 Bq/L at the Port Elgin water supply plant

5.6 Upon receipt of the notification of an event that indicates potentially elevated tritium levels at drinking water intakes near the facility, the PEOC Duty Officer will:

a) notify the PEOC Duty Operations Chief, who will in turn make the appropriate internal notifications;

b) confirm the information contained within the initial notification form by contacting the facility at the call-back numbers listed in Annex D;
c) confirm that the community has been notified and ascertain if any assistance is required;
d) complete the Provincial Notification of Liquid Emission form and fax it to the nuclear facility and affected communities; and
e) contact the Spills Action Centre.

5.7 Community contact telephone numbers are listed in Annex E.

6.0 Immediate Provincial Actions

6.1 Upon being advised of a release of tritium at or above the notification levels, or of other radioactivity, the PEOC will monitor the situation in collaboration with the MOECC Emergency Management Coordinator (EMC), MOL, and the Community Emergency Management Coordinator (CEMC). This monitoring will ensure that all pertinent information available is exchanged, the type of assistance required is determined, and any actions to be undertaken will be placed in priority as appropriate.

6.2 A provincial response will involve representatives from the Ministry of Community Safety and Correctional Services, Ministry of the Environment and Climate Change, Ministry of Labour, and the Ministry of Health and Long-Term Care.

6.3 The decision to activate this plan is the responsibility of the PEOC Duty Commander (Chief, OFMEM). This will include notifying and activating / not activating the Provincial Liquid Emission Response Team (see Section 7) and initiating the response portion of this plan (section 8), if:

a) the MOECC (Regional Director, Director, Safe Drinking Water Branch or EMC), the CEMC, the local Medical Officer of Health, or others, requests that a response be initiated;
b) radiation levels at drinking water intakes may exceed 50% of the Ontario Drinking Water Quality Standard (i.e. 3500 Bq/L); or
c) the level of community concern and/or public interest in the incident is sufficiently great to warrant activation.

7.0 Provincial Liquid Emission Response Team

7.1 Under this plan a Team is formed to facilitate a coordinated response to elevated waterborne radiological discharges. The Team is referred to as the Provincial Liquid Emission Response Team (PLERT).

7.2 The PLERT is comprised of the following members:

Organization	Representative/Function
Ministry of Community Safety and Correctional Services	- PEOC Duty Commander (Chief, OFMEM) or designate (Chair) - PEOC Duty Operations Chief - PEOC Duty Scientist - Representative, Communications Branch, MCSCS - others, as required
Ministry of the Environment & Climate Change	- Regional Director - Director, Safe Drinking Water Branch - Ministry Emergency Management Coordinator - Water dispersion modeller
Ministry of Labour	- Ministry Emergency Management Coordinator - Laboratory staff
Ministry of Health and Long-Term Care	- Emergency Management Unit rep.
Ontario Power Generation (OPG) for an OPG event (Pickering or Darlington)	- Director, Environmental Operations Support - Scientist / Engineer
OR	
Bruce Power event	- Manager, Environment Management Section - Scientist / Engineer
Community official(s)	- Staffing as appropriate according to local procedures

7.3 OFMEM will provide a secretary to the Provincial Liquid Emission Response Team.

7.4 Additional MOECC staff may be required to assist in sampling or to provide on-site liaison with community officials.

7.5 Other federal partners may also be requested to provide additional representation (e.g., Health Canada, Canadian Nuclear Safety Commission (CNSC)).

7.6 The PLERT will be notified when a coordinated response is required. The mechanisms for activation are described in Section 6.

8.0 Operations

8.1. The PLERT will be assembled as required, upon request by the CEMC or Ministry of the Environment and Climate Change, or as decided by the Chief, Office of the Fire Marshal and Emergency Management. A teleconference meeting will normally be held following an initial notification to decide on further actions. A template for the agenda for the first meeting / teleconference is given at Annex H.

8.2 Further meetings of the PLERT will occur at a location and frequency to be established by the Team and adjusted as required. Sections 8.3 - 8.6 below serve as guidelines for these meetings.

8.3 Each organization will report on its activities as follows:

a) **The Nuclear Facility** will report details of the release (duration, amounts released, etc.) and on the results of its monitoring and analysis programme and provide periodic written reports and summaries.

b) **The Ministry of Community Safety and Correctional Services,** through Office of the Fire Marshal and Emergency Management, will report on the overall Provincial response to the incident. A representative of the Ministry's Communications Branch will report on the media response to the incident and coordinate provincial media inquiries and media releases in conjunction with the PLERT, as appropriate.

c) **The Ministry of the Environment and Climate Change** will report on its interactions with the affected water treatment plants and provide modelling estimates, as available, of the time at which the radioactive release is expected to reach these plants and at what probable levels.

d) **The Ministry of Labour** will report on the results of its own, independent, monitoring and analysis programme.

e) **The Ministry of Health and Long-Term Care** will report on the coordination of health activities, and indicate if any protective actions or health advisories/orders have been issued or recommended.

f) **Community officials** will report on the impact of the release on the local community, on any actions taken by other community agencies (e.g. public works, health, etc.), and on any assistance and/or resources required.

8.4 The Provincial Liquid Emission Response Team will assess the data and information presented and decide on any additional actions, such as:

a) general and specific requirements for additional monitoring and analysis of radioactivity, such as the locations of monitoring stations and the frequency of sampling and analysis;

b) the need for precautionary or protective measures based on the trend of radioactivity levels with time at or near water treatment plants;

c) the need for further technical analysis and consultation (e.g., using the expertise at Health Canada);

d) the need for further actions to be taken by, or to support the community; and

e) requirements for coordination of emergency information, media inquiries and releases, etc.

f) the need to notify and coordinate with any additional communities

8.5 In addition, each organization will set up its own response team in accordance with its own plans and procedures.

8.6 At its discretion, the PLERT may establish a Technical Team composed of scientific staff (normally a nuclear facility scientist/engineer, an OFMEM Senior Scientific Officer, an MOECC Water Modeller, an MOL radiological scientist, a MOHLTC specialist, and others as required) to coordinate the data and analysis, and to evaluate public safety implications. The Technical Team may consult with any available expertise, and federal departments or entities, such as Health Canada and the Canadian Nuclear Safety Commission, as required.

8.7 All decisions taken by the PLERT will be minuted. The Chair will sign all minutes on behalf of the Team. These minutes will be distributed to all members of the PLERT.

9.0 Emergency Information

9.1 Each agency (ministry, community or facility) participating in the PLERT may disseminate their own internal and external emergency information relating to their specific role in the incident. All organizations should ensure that news releases are coordinated as and when appropriate. Courtesy copies of any news releases issued should be distributed to all PLERT members prior to media distribution.

9.2 Once the PLERT has been assembled, members will discuss and confirm how emergency public information will be coordinated.

9.3 MCSCS Emergency Information Section (EIS) may coordinate all provincial emergency information on behalf of the provincial ministries and government, as required

9.4 If requested by the PLERT, MCSCS EIS, in consultation with the PLERT, may coordinate the dissemination of either all emergency information or of joint news releases to the media on behalf of all PLERT members.

10.0 Deactivation

10.1 A decision to deactivate the response and to stand down the Provincial Liquid Emission Response Team will be reached by consensus of the Team. This could occur, for instance, when tritium levels in the proximity of drinking water intakes have decreased to normal or near-normal levels. A confirmation to deactivate the response will be communicated by means of a deactivation form issued by the PEOC.

11.0 Record Keeping and Reports

11.1 Members of the PLERT will maintain records of the contact names and times of notifications and calls received and made. All material received during the incident, such as data, projections, etc., will be part of the Spills Action Centre occurrence report.

11.2 OFMEM will prepare minutes of PLERT meetings

11.3 A debriefing with all participants may be held at the discretion of the Chief, OFMEM, in consultation with the members of the PLERT.

11.4 A report of the incident may be prepared at the discretion of the Chief, OFMEM, in consultation with the PLERT.

12.0 Exercises and Drills

12.1 Fax transmittal tests, consisting of a blank initial notification form faxed from the facility shall be conducted monthly.

12.2 Notification drills will be held annually. These will consist of (a) a notification form based on a pre-determined scenario; (b) internal and external notifications/fan-outs; (c) exchange of appropriate forms and follow-up phone calls; and (d) may include initial decision-making by PLERT. OFMEM staff will coordinate the notification drill and prepare a joint Exercise Directive.

12.3 A full-scale exercise shall be held annually, in rotation with OPG and Bruce Power. These will normally consist of a table-top exercise involving the full PLERT together with possible field components. The dates of these exercises shall be agreed to in the preceding year at the Spring/May meeting of the Nuclear Emergency Management Coordinating Committee (NEMCC). The exercise shall be developed by a small Provincial Exercise Development Team, normally coordinated by OFMEM.

14.0 Maintenance and Revision of Procedure

14.1 This document shall be maintained and distributed by the Deputy Chief, Planning and Program Development, Office of the Fire Marshal and Emergency Management.

14.2 This document will be reviewed by the representative from the stakeholder organizations. The comments will be reviewed and this document will be updated to incorporate any changes. This document will then be finalized and issued by OFMEM once endorsed by the Committee.

ANNEX A

RESPONSIBILITIES OF PARTICIPATING AGENCIES

Responsibilities of Participating Agencies

Agency	Responsibilities
Local Medical Officer of Health (LMOoH)	• direct responsibility for public health issues • order precautionary and/or protective measures • decide on sampling requirements in consultation with the MOECC • coordinate with community officials • member of PLERT (as appropriate)
Community Emergency Management Coordinator (CEMC)	• municipal coordination • fanout of initial notification to municipal officials • municipal procedures, training and drills • coordinate with nuclear facility (Ontario Power Generation, Inc.), Office of the Fire Marshal and Emergency Management (OFMEM) and PLERT • ensure locally generated sampling data is made available • implement precautionary and/or protective measures when directed by LMOoH • coordinate local media issues • member of PLERT (as appropriate)
Municipal Works Department (MWD)	• carry out sampling at water supply plants as directed by community officials • Toronto & Durham MWD to initiate default sampling upon notification by OPG • arrange for delivery of samples to nuclear facility and/or Ministry of Labour laboratories as appropriate • arrange for reservoirs to be filled • input to recommendations re sampling requirements
Ministry of the Environment & Climate Change (MOECC)	• set drinking water standards • model dispersion and flow of contaminants • provide input (consultation and guidance) to Local Medical Officer of Health i.e. sampling requirements, potential for impact to drinking water systems • monitor sample results with affected drinking water system owners/operators

	• coordinate collection and delivery of samples to MOL Radiation Protection Laboratory • member of PLERT
Ministry of Community Safety and Correctional Services Emergency Management Ontario (MCSCS, EMO)	• Authorize activation of PLERT • Chair of PLERT • Deploy Provincial Emergency Response Team (PERT) to support community, as required • consultation and guidance • invoke the Provincial Nuclear Emergency Response Plan, if required • maintain minutes of meetings • prepare issue notes for MCSCS • MCSCS Communications Branch to coordinate news releases and media enquiries for MCSCS, other ministries and PLERT, as required
Ministry of Health and Long-Term Care (MOHLTC)	• provide guidance on health issues • coordination between Chief Medical Officer of Health and local Health Authorities, as appropriate • member of PLERT
Ministry of Labour (MOL)	• radio-analytical services (sample analysis) • transmit results to PLERT • consultation and guidance • member of PLERT
Ontario Power Generation (OPG)	• initial notification • preliminary data and estimates • periodic updates • radio-analytical services (as for MOL) • transmit results to PLERT and community • facility news releases • member of PLERT (as appropriate)
Bruce Power	• initial notification • preliminary data and estimates • periodic updates • initiate supplemental sampling program • radio-analytical services (as for MOL) • transmit results to PLERT and community

- facility news releases
- member of PLERT (as appropriate)

ANNEX B

RECOMMENDED ACTION LEVELS

Recommended Action Levels

Precautionary Measures	Action Level
Rerouting of water supplies	**7000 Bq/L (based on ODWQS)**
Drinking water advisory	**7000 Bq/L (based on ODWQS)**
Posting of no swimming signs on beaches	*****
Advisory not to water vegetables	*****
Advisory not to shower	*****
Fishing advisory	*****
Protective Measure	**Action Level**
Restricting consumption of tap water	**100,000 Bq/L (based on Health Canada Derived Intervention Levels for water)**

*These decisions would be based on the circumstances at the time depending on the nature, scope, and length of the release. There is no single number that could be used to make these recommendations.

ANNEX C

LIQUID EMISSION NOTIFICATION AND DEACTIVATION FORMS

FORM-11747-R002*

Abnormal Waterborne Tritium Emission Initial Notification

Part A **Emitting Facility** ☐ Bruce A ☐ Bruce B

Part B
☐ **This is only a drill** – repeat once.
☐ **This is an abnormal Waterborne Tritium Liquid Emission event** – repeat once.

Part C

Reported by: _____ (Name) _____ (Position)

Shift Manager Approval: _____ (Name (print)) _____ (Signature) FROM: **BRUCE POWER**

Local time (00:00 – 24:00 h) _____ Date: _____ (DDMMMYYYY)

Part D Time of Release

☐ Emission occurred between _____h; on (date): _____and _____h on (date): _____.

☐ Emission started at _____h; on (date): _____ and is ongoing.

Anticipate termination at _____h; on (date): _____.

☐ Emission anticipated at _____h; on (date): _____with duration of: _____h.

Part E Lake Conditions (NOTE: For meteorological data, see **FORM-11069.)**

Wave height (0.5 X peak to trough): _____m

Shoreline ice conditions:

☐ No significant ice ☐ Intermittent/broken ice flows or slush out to _____m

☐ Solid ice cover out to _____m

Part F Outfall Tritium Concentration at Incident Facility

_____Becquerels/L tritium Sample Time: _____h Sample Date: _____

Part G Anticipated Impact Concentration at Most Affected Water Supply Plant

This is a conservative estimate for Port Elgin Water Supply Plant based on historical data:

Tritium concentration = (Outfall Concentration/14) = _____Becquerels/L

NOTE: Anticipated time of impact is ~36 to 72 hours after start of emission from facility.

Part H Initiating Condition/Description of Event (if known)

_____

_____

_____

_____

_____

_____

_____

_____

_____

Part I Request for Further Information

Information updates will be forthcoming from the Corporate Emergency Support Centre (CESC) if impact is anticipated to be >3500 Bq/L. CESC staff have been notified and are assembling within 3 hours of notification. If you have specific queries, contacts are as follows:

Note: CESC will not assemble if water supply plant tritium is anticipated to be <3500 Bq/L (minor event).

☐ Shift Manager (off hours, minor event) at: _____

☐ CESC (Health Physics Director) at: (519) 396-9235

*Associated with BP-PROC-00127, Radioactive Liquid Emission Response

FORM-11760-R001*

Abnormal Waterborne Tritium Emission

Supplemental Information – Update # _____

Part A **Emitting Facility** ☐ Bruce A ☐ Bruce B

Part B ☐ **This is only a drill** – repeat once.
☐ **This is an abnormal Waterborne Tritium Liquid Emission event –** repeat once.

Part C

Health Physics Director Approval: _____ (Name (print)) _____ (Signature) FROM: **Bruce Power**

Local time (00:00 – 24:00 h): _____ Date: _____ (DDMMMYYYY)

Part D **Time of Release**

☐ Emission occurred between _____ h on (date): _____ and _____ h on (date): _____.
☐ Emission started at _____ h; on (date): _____ and is ongoing.
Anticipate termination at _____ h; on (date): _____ .
☐ Emission anticipated at _____ h; on (date): _____ with duration of: _____ h.

Part E **Lake Conditions** (NOTE: for meteorological data, see **FORM-11069)**

Wave height (0.5 X peak to trough): _____ m.
Shoreline ice conditions:
☐ No significant ice ☐ Intermittent/broken ice flows or slush out to _____ m.
☐ Solid ice cover out to _____ m.

Part F **Outfall Tritium Concentration at Incident Facility**

_____ Becquerels / L Tritium	Sample Date: _____	Sample Time: _____ h
_____ Becquerels / L Tritium	Sample Date: _____	Sample Time: _____ h
_____ Becquerels / L Tritium	Sample Date: _____	Sample Time: _____ h
_____ Becquerels / L Tritium	Sample Date: _____	Sample Time: _____ h

Part G **Water Supply Plant Tritium Results**

Port Elgin:	**Southampton:**	**Kincardine:**
_____ Bq/L Date: _____ Time: _____	_____ Bq/L Date: _____ Time: _____	_____ Bq/L Date: _____ Time: _____
_____ Bq/L Date: _____ Time: _____	_____ Bq/L Date: _____ Time: _____	_____ Bq/L Date: _____ Time: _____
_____ Bq/L Date: _____ Time: _____	_____ Bq/L Date: _____ Time: _____	_____ Bq/L Date: _____ Time: _____
_____ Bq/L Date: _____ Time: _____	_____ Bq/L Date: _____ Time: _____	_____ Bq/L Date: _____ Time: _____

Part H **Additional Information Related to Event and Follow-up Activities**

☐ Port Elgin drinking water supply plant (WSP) tritium is expected to exceed 3,500 Bq/L, but not 7,000 Bq/L
Sampling at local water supply plants is once per 12 hours.

☐ Port Elgin drinking water supply plant (WSP) tritium is expected to exceed 7,000 Bq/L.
Sampling at local water supply plants has been increased to once per 6 hours.

_____
_____
_____
_____
_____
_____
_____

Part I Request for Further Information

☐ CESC (Health Physics Director) at: (519) 396-9235
☐ Shift Manager (off hours) at: _____

*Associated with BP-PROC-00127, Radioactive Liquid Emission Response

☐ **Part A: Emitting Facility** ☐ Pickering A Nuclear ☐ Pickering B Nuclear ☐ Darlington Nuclear

Select one: ☐ This is the Initial Notification #1.

☐ This provides updated Supplemental Information to Notification #1 reported at (time) _____ on (date) _____. Check marks beside section headings indicate that they contain new/revised information.

Notification #: _____

Local Time (24h clock): _____

Date (YYYY-MM-DD): _____

☐ **Part B:** ☐ This is only a drill

☐ This is an Abnormal Waterborne Tritium Release from the Station Discharge

☐ This is an Abnormal Waterborne Tritium Release to the Shoreline

☐ **Part C: Time of Release from Facility (use local time and 24h clock)**

☐ Release occurred between _____ h on (date) _____ and _____ h on (date) _____ .

☐ Release started at _____ h on (date) _____and is ongoing.

☐ Anticipate termination at _____ h on (date) _____ .

☐ Release anticipated at _____ h on (date) _____with duration of _____ h.

☐ **Part D: Lake Current Conditions** (if available) at _____ h on (date) _____.

Current Speed:			3 h average for same depth:	
Depth	**Velocity**	**Direction (to)**	**Velocity**	**Direction (to)**
_____ m	_____ km/h	_____	_____ km/h	_____

☐ **Part E: Tritium Release Details at Incident Facility (select one)** (determine using P-FORM-10936, P-FORM-10937, D-FORM-10299, or N-FORM-11311)

☐ This is a release via Station Discharge of _____ Becquerels (Bq) / L tritium at Incident Facility Discharge.

Sample Date: _____

Sample Time: _____ h

☐ This is a Shoreline Release of _____ Bq tritium total loading entered the lake over _____ hours.

☐ **Part F: Projected Concentration at the Most Affected Water Supply Plant (select one)** (determine using P-FORM-10936, P-FORM-10937, D-FORM-10299, or N-FORM-11311)

☐ 7,000 Bq/L tritium may be exceeded at the _____ Water Supply Plant (WSP).

☐ 3,500 to 7,000 Bq/L tritium may be approached at the _____ WSP.

☐ 3,500 Bq/L tritium not projected to be exceeded at any WSP.

For a Shoreline Release only:

☐ 3,500 Bq/L tritium may be exceeded at the _____ WSP.

☐ 960 Bq/L tritium for PN release or 1,000 Bq/L tritium for DN release may be exceeded at the _____ WSP.

☐ 960 Bq/L tritium for PN release or 1,000 Bq/L tritium for DN release not projected to be exceeded at any WSP.

Projected time for plume to arrive at WSP: _____ h.

☐ **Part G: Initiating Condition and Description of Event (if known) or Updated Comments**

☐ **Part H: Water Supply Plant Water Sample Analysis Data**

Data attached to this transmittal? ☐ Yes ☐ No _____ # of pages attached.

☐ **Request for Further Information**

Information updates will be forthcoming from the site's Radioactive Liquid Emission Team. This team will be assembled and available within 90 minutes after initial notification. If you have specific queries, please contact:

☐ 905-839-1151 ext. 3712 or ext. 4219 for a Pickering Nuclear emission.

☐ 905-623-6670 ext. 7440 for a Darlington Nuclear emission.

☐ Call (Print Name/Position) _____ at (phone #) _____

Report by: _____ _____
Name Position

Verified by: _____ _____
Name Position

Approval: _____ From: **Ontario Power Generation**
Name (Print)/Signature

ONTARIO POWER GENERATION

Records File Information:
03492.7 RRC ENV-0002
Notification Drill - 3 years
Triennial Exercise - 5 years
Real Event - LOF

Internal Use Only

N-FORM-10768-R004*

Abnormal Waterborne Tritium Emission

☐ **Part A: Emitting Facility** ☐ Pickering A Nuclear ☐ Pickering B Nuclear ☐ Darlington Nuclear

Select one: ☐ This is the Initial Notification #1.
☐ This provides updated Supplemental Information to Notification #1 reported at (time) _____ on (date) _____. Check marks beside section headings indicate that they contain new/revised information.

Notification #: _____
Local Time (24h clock): _____
Date (YYYY-MM-DD): _____

☐ **Part B:**
☐ This is only a drill
☐ This is an Abnormal Waterborne Tritium Release from the Station Discharge
☐ This is an Abnormal Waterborne Tritium Release to the Shoreline

☐ **Part C: Time of Release from Facility (use local time and 24h clock)**
☐ Release occurred between _____ h on (date) _____ and _____ h on (date) _____.
☐ Release started at _____ h on (date) _____ and is ongoing.
☐ Anticipate termination at _____ h on (date) _____.
☐ Release anticipated at _____ h on (date) _____ with duration of _____ h.

☐ **Part E: Tritium Release Details at Incident Facility (select one)** (determine using P-FORM-10936, P-FORM-10937, D-FORM-10299, or N-FORM-11311)

☐ This is a release via Station Discharge of _____ Becquerels (Bq) / L tritium at Incident Facility Discharge.

Sample Date: _____
Sample Time: _____ h

☐ This is a Shoreline Release of _____ Bq tritium total loading entered the lake over _____ hours.

☐ **Part F: Projected Concentration at the Most Affected Water Supply Plant (select one)** (determine using P-FORM-10936, P-FORM-10937, D-FORM-10299, or N-FORM-11311)

☐ 7,000 Bq/L tritium may be exceeded at the _____ Water Supply Plant (WSP).
☐ 3,500 to 7,000 Bq/L tritium may be approached at the _____ WSP.
☐ 3,500 Bq/L tritium not projected to be exceeded at any WSP.

For a Shoreline Release only:

☐ 3,500 Bq/L tritium may be exceeded at the _____ WSP.
☐ 960 Bq/L tritium for PN release or 1,000 Bq/L tritium for DN release may be exceeded at the _____ WSP.
☐ 960 Bq/L tritium for PN release or 1,000 Bq/L tritium for DN release not projected to be exceeded at any WSP.

Projected time for plume to arrive at WSP: _____ h.

☐ **Part G: Initiating Condition and Description of Event (if known) or Updated Comments**

_____
_____
_____
_____

☐ **Part H: Water Supply Plant Water Sample Analysis Data**

Data attached to this transmittal? ☐ Yes ☐ No _____ # of pages attached.

☐ **Request for Further Information**

Information updates will be forthcoming from the site's Radioactive Liquid Emission Team. This team will be assembled and available within 90 minutes after initial notification. If you have specific queries, please contact:

☐ 905-839-1151 ext. 3712 or ext. 4219 for a Pickering Nuclear emission.

☐ 905-623-6670 ext. 7440 for a Darlington Nuclear emission.

☐ Call (Print Name/Position) _____ at (phone #) _____

Report by: _____ (Name) _____ (Position)

Verified by: _____ (Name) _____ (Position)

Approval: _____ (Name (Print)/Signature)

From: **Ontario Power Generation**

Annex C
revised July 31, 2006

PROVINCIAL NOTIFICATION OF RADIOACTIVE LIQUID EMISSION FROM OPG OR BRUCE POWER

Date:		Time:	☐ UPDATE
1.	Bruce ☐ Kincardine ☐ Saugeen Shores ☐ BP (A or B) ☐ CESC (fax only)	**Darlington** ☐ DEMO ☐ Toronto ☐ DNGS ☐ CEOF (fax only)	Pickering ☐ DEMO ☐ Toronto ☐ PNGS (A or B) ☐ CEOF (fax only)
2.	☐ This is an **EXERCISE**…This is an **EXERCISE.** ☐ **This is a Provincial Liquid Emission Notification** – This is a **REAL** incident (repeat once).		
3.	This is _____ from the Provincial Emergency Operations Centre. I am calling to confirm that a (name) liquid emission was reported at the _____Nuclear Facility at _____hours on _____. (name of facility) (time) (date:dd/mm/yyyy)		
4.	(a) The Provincial Liquid Emission Response Team (PLERT) will be notified but is **not** required to meet at this time. ☐ **OR** (b) The Provincial Liquid Emission Response Team (PLERT) is required to meet as follows: ☐ at _____hours on _____ at _____. (time) (date:dd/mm/yyyy) location OR teleconference number		
5.	Notification receiver to read back message to verify the information received.		
6.	PEOC Duty Officer: 416-314-0472 / 1-866-314-0472 Contact Name:		

Annex C
revised July 31, 2006

PROVINCIAL NOTIFICATION OF DEACTIVATION OF PROVINCIAL LIQUID EMISSION RESPONSE TEAM

Date:		Time:	
1.	Bruce ☐ Kincardine ☐ Saugeen Shores ☐ BP (A or B) ☐ CESC (fax only)	**Darlington** ☐ DEMO ☐ Toronto ☐ DNGS ☐ CEOF (fax only)	Pickering ☐ DEMO ☐ Toronto ☐ PNGS (A or B) ☐ CEOF (fax only)
2.	☐ This is an **EXERCISE**…This is an **EXERCISE.** ☐ **This is a Provincial Liquid Emission Response Team Deactivation Notification** – This is a **REAL** incident (repeat once).		
3.	This is _____, from the Provincial Emergency Operations Centre. (name) I am calling to confirm that the **Provincial Liquid Emission Response Team** (PLERT) activated as a result of the radioactive liquid emission reported at the _____Nuclear Facility at _____hours on _____. (name of facility) (time) (date:dd/mm/yyyy) **HAS BEEN DEACTIVATED** as of _____hours on _____. (time) (date:dd/mm/yyyy)		
4.	Notification receiver to read back message to verify the information received.		
5.	PEOC Duty Officer: 416-314-0472 / 1-866-314-0472 Contact Name:		

ANNEX D

INITIAL NOTIFICATION CALL-BACK NUMBERS

PROVINCIAL LIQUID EMISSION
INITIAL NOTIFICATION CALL-BACK NUMBERS
FOR OPG OR BRUCE POWER INCIDENTS

LOCATION OF INCIDENT	CALL BACK NUMBER	FAX NUMBER
Bruce Nuclear Power Development Station A	[redacted]	[redacted]
Bruce Nuclear Power Development Station B	[redacted]	[redacted]
Bruce Power Corporate Emergency Support Centre (CESC)	[redacted]	[redacted]
Darlington Nuclear Generating Station	[redacted]	[redacted]
Pickering Nuclear Generating Station A	[redacted]	[redacted]
Pickering Nuclear Generating Station B	[redacted]	[redacted]

Revised March 28, 2006

ANNEX E

COMMUNITY CONTACT NUMBERS

PROVINCIAL LIQUID EMISSION
COMMUNITY CONTACT NUMBERS
FOR OPG OR BRUCE POWER INCIDENTS

NUCLEAR FACILITY/ COMMUNITY	TELEPHONE	FAX	PAGER	CELLULAR
For DARLINGTON NGS Incident				
Durham Emergency Management Office	[redacted]	[redacted]		[redacted]
Toronto Police Service	[redacted]	[redacted]		
For PICKERING NGS Incident				
Durham Emergency Management Office	[redacted]	[redacted]		[redacted]
Toronto Police Service	[redacted]	[redacted]		

NAME/ COMMUNITY	TELEPHONE	FAX	PAGER	CELLULAR
For BRUCE NPD Incident				
Municipality of Kincardine Community Emergency Management Office	[redacted]	[redacted]	[redacted]	[redacted]
Municipality of Saugeen Shores Community Emergency Management Office	[redacted]	[redacted]		[redacted]

Revised March 28, 2006

ANNEX F

SAMPLING LOCATIONS AND LABORATORY CONTACT INFORMATION

MOL WATER SAMPLING STATIONS

Region	Monitoring Site	Description of Location
Bruce	Kincardine WTP	[redacted]
	Port Elgin WTP	[redacted]
	Southampton WTP	[redacted]
Darlington	Ajax WTP	[redacted]
	Bowmanville WTP	[redacted]
	Newcastle WTP	[redacted]
	Oshawa WTP	[redacted]
	Whitby WTP	[redacted]
Toronto	R.C. Harris WTP	[redacted]
	R. L. Clarke WTP	[redacted]
	Horgan WTP	[redacted]
	Lakeview WTP	[redacted]
	Lorne Park WTP	[redacted]
	Island WTP	[redacted]

ANNEX G

DATA FORMS

Ontario

Ministry of Labour

Radiation Protection Service
81 Resources Road
Weston, Ontario
M9P 3T1
Tel: 416-235-5922
Fax: 416-235-5926

Liquid Emission Response Procedure (LERP) Report Form

Date:

To: _____ , EMO **EMO Fax No:** _____

From: Philip Panter

Laboratory Coordinator, RPMS

Re: LERP – Trillium Analysis Results for _____

Lab ID #	Location	Sample Description	Sample No.	Sampling Date	Sampling Time (24 hr)	Tritium (Bq/L)

AN:

_____

Philip Panter
Laboratory Coordinator
Radiation Protection Monitoring Service
RPMS LERP Report Form Ver. 1.0
Ministry of Labour

ANNEX H

TEMPLATE AGENDA FOR FIRST PLERT MEETING/TELECONFERENCE

TEMPLATE AGENDA FOR FIRST PLERT MEETING / TELECONFERENCE

AGENDA

Serial	Item	Sponsor
1	Welcome and introductions	Chair
2	Description of event and anticipated consequences	Nuclear Facility
3	Actions taken by nuclear facility (identification of source, monitoring, analysis, etc.)	Nuclear Facility
4	Actions taken by community (public works, health unit, etc.)	Community
5	Actions taken by OFMEM	OFMEM
6	Update from MOECC	MOECC
7	Update from MOL	MOL
8	Update from MOHLTC	MOHLTC
9	Update on Emergency Information	All
10	Discussion: • review membership of PLERT and determine need for additional participants • need for additional sampling and analysis • need for protective or precautionary measures • need for assistance from Federal Government • need for community support / PERT • coordination of emergency information • need to notify other communities / agencies • other actions required	All
11	Decisions taken	
12	Time / location of next meeting *or* teleconference	
13	Adjournment	

Appendix B

Canadian Environmental Law Association
EQUITY. JUSTICE. HEALTH.

Canadian Nuclear Safety Commission
P.O. Box 1046, Station B
280 Slater Street
Ottawa, ON, Canada K1P 5S9

via email cnsc.consultation.ccsn@canada.ca

September 28, 2018

Re: Consultation on Draft RegDoc-2.10.1 Emergency Management and Fire Protection Volume II: Framework for Recovery After a Nuclear Emergency

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INTRODUCTION

The Canadian Environmental Law Association (CELA) provides the following comments in response to the Canadian Nuclear Safety Commission's (CNSC) draft "Emergency Management and Fire Protection, Volume II: Framework for Recovery After a Nuclear Emergency, RegDoc – 2.10.1" (herein "draft RegDoc").[1]

Given the impact of sudden and potentially disastrous nuclear and radiological events, the purpose of the draft RegDoc should be to proactively take action through the adoption of a resilience-based approach to disaster recovery. The draft RegDoc as currently proposed, does not achieve this goal as it fails to consider the interrelated principles of resiliency and adaptation.

CELA's recommendations to the CNSC are set out below. These comments build on CELA's related concerns about the sufficiency of emergency planning and preparedness, as highlighted in our recent submissions to the CNSC for the relicensing hearings of the Bruce and Pickering nuclear generating stations.[2]

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[1] CNSC, "REGDOC-2.10.1 Emergency Management and Fire Protection Volume II: Framework for Recovery After a Nuclear Emergency," online: https://www.nuclearsafety.gc.ca/eng/acts-and-regulations/regulatory-documents/history/regdoc2-10-1-vol2.cfm **[Draft RegDoc]**

[2] *See* Canadian Environmental Law Association, "Submission on Pickering Licence Renewal," (2018) online: http://www.cela.ca/pickering-licence-renewal; "Submission on Bruce Licence Renewal," (2018) online: http://www.cela.ca/publications/brucepower-refurb-emergprep **[CELA Submissions]**

COMMENTS ON THE DRAFT REGDOC PROVISIONS

1. Scope (1.3)

CELA submits the scope of the draft RegDoc, which is defined as guidance that decision makers may need in planning for and executing offsite recovery operations following a nuclear emergency, is too narrow. Many of the provisions in the draft RegDoc directly build upon the licensee guidance in RegDoc 2.10.1. Furthermore, there is an accompanying paucity of federal[3] and provincial[4] recovery plans. Thus, CELA submits RegDoc-2.10.1(II) should form part of the basis for licensing. This approach would mirror the scope and applicability of RegDoc 2.10.1, which forms part of a licence's Compliance Verification Criteria for Emergency Planning."[5]

RECOMMENDATION 1: CELA recommends RegDoc-2.10.1(II) form part of the basis for licensing, in the same way that RegDoc 2.10.1 forms part of a license's Compliance Verification Criteria.

Secondly, there is a conflict between the matters listed as 'out of scope' in section 1.3 and statements made later in the text. For instance, section 1.3 states onsite recovery activities are out of scope, yet section 2.1 defines recovery as including "short-term and long-term actions taken both onsite and offsite" (emphasis added). Similar to RegDoc 2.10.1 - which references onsite and offsite emergency response measures, where relevant - CELA recommends the draft RegDoc include onsite considerations within the document's scope. This would remove the conflict which currently exists among the text's provisions.

RECOMMENDATION 2: CELA recommends the draft RegDoc include onsite considerations within its scope. This approach would align with the scope of RegDoc 2.10.1 and remove the conflict which currently exists among the draft RegDoc's provisions.

2. International Standards, Requirements and Recommendations (s 1.4)

Section 1.4 of the draft RegDoc states that "Canada's framework for recovery after a nuclear emergency reflects international standards, requirements and recommendations." Unfortunately, the text does not specify the references supporting this statement, with the exception of two IAEA standards. Therefore, to increase the informational capacity of the

[3] Draft RegDoc, *supra* note 1, p 8
[4] As noted in past discussions to the CNSC, while the provincial emergency response plan in Ontario mentions recovery, neither the Implementing Plans for the Bruce or Pickering provide detailed guidance. *See* CELA Submissions, *supra* note 2.
[5] CNSC, RegDoc-2.10.1, s 1.2

RegDoc, we request it include a list of international treaties or standards which informs the recovery strategy.

To further advance the intent of the draft RegDoc to reflect international standards, we recommend the text incorporate by reference the United Nations' International Law Commission's "Draft Articles on the Protection of Persons in the Event of Disasters."[6] Among the purposes of the Articles, is the facilitation of adequate and effective response to disasters which meets affected persons' essential needs, with full respect for their rights.

As a result of nuclear and radiological accidents impacts on human and ecological communities, nuclear disasters would be encompassed within the Article's definition of the term, which is defined as a "calamitous event or series of events resulting in widespread loss of life, great human suffering and distress, mass displacement, or large-scale material or environmental damage, thereby seriously disrupting the functioning of society."

Having fulfilled the threshold definition of "disaster", the Articles further provide a range of principles which are applicable to the draft RegDoc. For instance, in the event of a disaster, the inherent dignity of persons shall be respected (Article 4), response to disasters shall take into account the needs of the particularly vulnerable (Article 6) and States must seek to reduce the risk of disasters (Article 9). For ease of reference, the full text of the UN Articles is appended in Appendix I.

RECOMMENDATION 3: CELA requests the draft RegDoc incorporate by reference the United Nations' International Law Commission's "Draft Articles on the Protection of Persons in the Event of Disasters." Not only are the Articles specific to disaster response, they provide a greater range of humanitarian protections than those currently reflected in the draft RegDoc.

3. Nuclear Emergency Management (s 2)

While the text in section 2 provides discussion of the goals and measures which inform emergency response planning, an equivalent discussion is not provided for accident or disaster recovery. Given the impact of sudden and potentially disastrous nuclear and radiological events, CELA submits the draft RegDoc should explicitly state how the related theories of resilience and adaption informed the draft RegDoc's recovery elements. Unfortunately, neither the terms resilience nor adaption appear in the text. These are critical omissions.

[6] International Law Commission, "Draft articles on the protection of persons in the event of disasters" (2016), online: http://legal.un.org/ilc/texts/instruments/english/draft_articles/6_3_2016.pdf

Resiliency is defined as the capacity of a system to absorb disturbances and reorganize while undergoing change.[7] As noted by architect and planner William Galloway, "continual surprise from disasters and crises is becoming a normal state. The question to answer is how to act with that context."[8] Building resilience into human-environment is an effective way to respond to change and unknowable risks. Not only does resilience reduce the vulnerability of a system, it increases the capacity of the system to absorb and adapt, so that individuals and communities are less sensitive to unanticipated shocks and stressors.[9]

Adaptation likewise, refers to an action that allows a form or structure to better cope with a stressful condition.[10] Accordingly "adaptation activities that are taken before a risk turns into a hazard is called proactive, often taking the form of disaster risk reduction. The other end of the scale is occupied by reactive adaptation, which takes place during or after an event or a disaster."[11] For example, evacuating people from the 10 km Detailed Planning Zone in Pickering, Ontario, would be reactive adaption, even if planned for in advance. Ensuring nuclear power plants are not built next to densely populated areas, as recommended by the IAEA's siting guide and ensuring the periodic reviews of existing plant suitability, would be proactive adaptation.[12]

RECOMMENDATION 4: Given the impact of sudden and potentially disastrous nuclear and radiological events, the draft RegDoc should explicitly state how the theories of resilience and adaption guide the draft RegDoc's recovery elements.

4. Return to a new normal (s 4.2)

While section 4.2.2 of the RegDoc emphasizes that time spent in temporary evacuation should be minimized (and it is also an objective repeated in s. 5.6 that populations return home "as soon as possible"), there is no mention of the availability of emergency shelters and ensuring that during their use, they meet the physical, social and physiological needs of evacuees.

While planning emergency shelters in advance is a recognized, effective approach to mitigating the effects of disasters,[13] understanding post-disaster shelter demand is crucial to ensuring

---

[7] Yan, W. and Galloway, W. "Rethinking Resilience, Adaptation and Transformation in a Time of Change" (Springer: 2017), p 5 **[Rethinking Resilience]**
[8] *Ibid*
[9] Brooks, N. "Vulnerability, risk and adaptation: a conceptual framework" (2003)
[10] Rethinking Resilience, *supra* note 7, p 6
[11] *Ibid*
[12] IAEA, "Site Survey and Site Selection for Nuclear Installations" (2015)
[13] L. Zhao et al. "Planning Emergency Shelters for Urban Disaster Resilience: An Integrated Location-Allocation Modeling Approach," (2017) Sustainability 9(11).

resilience.[14] Prior to the 2011 Tohoku earthquake and tsunami, Japan was ready for disaster in some important ways, including the preconstruction of 53,000 housing units.[15] Despite Japan's apparent readiness, there were too few prefabricated shelters, their livable design life much too short, and their location not conducive to maintaining community structures.[16]

For these reasons, the draft RegDoc should be amended to build upon licensee emergency planning criteria, as set out in RegDoc 2.10.1 section 2.2.4, and require collaboration among municipal, regional and provincial authorities to establish appropriate offsite housing for the potentially millions of people which could be affected in the event of a large-scale, offsite radiological release.

Currently, the draft RegDoc emphasizes promptly returning home without due regard to the increased dangers this may pose to evacuated populations. Due to the lack of consideration to the adequacy of evacuation shelters, it appears the draft RegDoc has overlooked a crucial feature of recovery efforts which requires much advance planning and coordination among decision makers.

RECOMMENDATION 5: CELA recommends that the draft RegDoc be amended to build upon licensee emergency planning requirements, as set out in RegDoc 2.10.1 section 2.2.4. Section 4.2 of the draft RegDoc should be amended to require collaboration among municipal, regional and provincial authorities in establishing appropriate offsite housing, with capacity for millions of evacuees.

5. Mitigation of psychosocial effects (s. 4.2.2) and self-help actions (s 5.1.2)

Section 4.2.2 lists a range of mitigation measures aimed at reducing psychosocial effects of disaster recovery. These include having 'open communication lines,' providing 'quality information' (s 4.2.2) and providing effective education (s 5.1.2) to encourage self -help actions (s 4.2.2). However, the draft RegDoc fails to consider how timing will determine the efficacy of these actions. As s 4.2.2. frames these mitigation efforts as *following* a nuclear accident, the draft RegDoc should be amended to require the public awareness of these mitigation efforts, which are crucial in alleviating the psychosocial effects discussed in the text, *in advance* of a disaster.

---

[14] William Galloway, "Planning for disaster – the Case of the 2011 Tohuku Disaster" presented at Regional Nuclear Non-Proliferation and Disposal Conference (2018).
[15] *Ibid*
[16] See online: https://www.japantimes.co.jp/community/2017/04/02/how-tos/temporary-disaster-housing-unforeseen-permanence/#.W6wttmhKjlU; and https://qz.com/448959/japanese-prefab-tiny-homes-could-change-the-way-we-think-about-disaster-housing/

CELA again reiterates that public awareness is not an emergency response or recovery measure which can be accomplished at the time of the accident. Instead, it requires that preventative measures be taken in advance of an emergency to ensure potentially affected communities have a requisite degree of preparedness and recovery knowledge. This recommendation builds on s 2.3.4 of RegDoc 2.10.1, which requires licensees pre-distribute emergency plans through a public information program. Like s 2.3.4 of RegDoc 2.10.1 which is a licensing requirement, we recommend the measures in s 4.2.2 (and their related discussion in section 5) be made requirements of licensing.

RECOMMENDATION 6: Like s 2.3.4 of RegDoc 2.10.1 which requires licensees pre-distribute emergency plans through a public information program, we recommend public knowledge of the mitigation measures discussed in draft RegDoc s 4.2.2 (and their counterparts in s 5) be made requirements of licensee's public information and disclosure programs.

6. Remediation (s 5.7)

Remediation is listed as a 'key recovery element' in Section 5 of the draft RegDoc. The text defines remediation as a measure to remove the physical contamination in the environment "to an acceptably low level." Due to the condition, "to an acceptable low level," the definition of remediation used in the text does not align with international environmental law.

First, we recommend the draft RegDoc adopt a definition of remediation which is substantively similar to the following: "any remedial measure that returns the damaged natural resources to their baseline condition."[17] Secondly, should a return to baseline conditions not be achieved (as contemplated by the draft RegDoc's statement that the environmental contamination be removed *to an acceptably low level*), then complementary or compensatory remediation should be required.

'Complementary remediation' refers to the provision of a similar level of natural resources and services which would have been provided, if the damaged site had been restored. Likewise, 'compensatory remediation' refers to the compensation of interim loss of natural resources and services, pending recovery.[18]

RECOMMENDATION 7: The draft RegDoc requires a definition of remediation that aligns with international environmental law. Currently, the definition does not reflect the intent of remediation, which is the return of an environment to its baseline conditions.

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[17] Telesetsky, A. et al, "Ecological Restoration in International Environmental Law" (Cambridge: 2017)
[18] *Ibid*

7. Protection of workers (s 5.9)

The draft RegDoc envisions that during the recovery phase, workers who work at licensed facilities and involved in recovery effects may be occupationally exposed to radiological hazards. The draft RegDoc, however, does not discuss maximum exposure limits or, the provision of consent prior to recovery efforts being undertaken. Therefore, methods to review risks and obtain consent from workers to exceed those limits should be explicitly required in the draft RegDoc.

RECOMMENDATION 8: Methods to review risks and obtain consent from workers to exceed maximum radiation exposure limits should be explicitly required by the draft RegDoc.

CONCLUSION

When the scale of an accident is large, there is a tendency to work reactively – taking action only *after*, when there is urgent need.[19] This is the short-sighted approach currently reflected in the draft RegDoc. We strongly encourage the CNSC to revise its approach to recovery planning and incorporate a resilience-based approach to disaster response, which would shift the draft RegDoc to a proactive stance in the form of prevention and mitigation strategies.

We appreciate this opportunity to comment and would welcome further submission opportunities in subsequent iterations of the draft RegDoc.

Truly,

CANADIAN ENVIRONMENTAL LAW ASSOCIATION

Kerrie Blaise, Counsel

[19] Resilience Thinking, *supra* note 7, p 4

Appendix I

Draft articles on the protection of persons in the event of disasters

2016

Adopted by the International Law Commission at its sixty-eighth session, in 2016, and submitted to the General Assembly as a part of the Commission's report covering the work of that session (A/71/10), para. 48. The report will appear in *Yearbook of the International Law Commission, 2016*, vol. II, Part Two.

Protection of persons in the event of disasters

Bearing in mind Article 13, paragraph 1 (*a*), of the Charter of the United Nations, which provides that the General Assembly shall initiate studies and make recommendations for the purpose of encouraging the progressive development of international law and its codification,

Considering the frequency and severity of natural and human-made disasters and their short-term and long-term damaging impact,

Fully aware of the essential needs of persons affected by disasters, and conscious that the rights of those persons must be respected in such circumstances,

Mindful of the fundamental value of solidarity in international relations and the importance of strengthening international cooperation in respect of all phases of a disaster,

Stressing the principle of the sovereignty of States and, consequently, reaffirming the primary role of the State affected by a disaster in providing disaster relief assistance,

Article 1

Scope

The present draft articles apply to the protection of persons in the event of disasters.

Article 2

Purpose

The purpose of the present draft articles is to facilitate the adequate and effective response to disasters, and reduction of the risk of disasters, so as to meet the essential needs of the persons concerned, with full respect for their rights.

Article 3

Use of terms

For the purposes of the present draft articles:

(a) “disaster” means a calamitous event or series of events resulting in widespread loss of life, great human suffering and distress, mass displacement, or large-scale material or environmental damage, thereby seriously disrupting the functioning of society;

(b) “affected State” means a State in whose territory, or in territory under whose jurisdiction or control, a disaster takes place;

(c) “assisting State” means a State providing assistance to an affected State with its consent;

(d) “other assisting actor” means a competent intergovernmental organization, or a relevant non-governmental organization or entity, providing assistance to an affected State with its consent;

(e) “external assistance” means relief personnel, equipment and goods, and services provided to an affected State by an assisting State or other assisting actor for disaster relief assistance;

(f) “relief personnel” means civilian or military personnel sent by an assisting State or other assisting actor for the purpose of providing disaster relief assistance;

(g) “equipment and goods” means supplies, tools, machines, specially trained animals, foodstuffs, drinking water, medical supplies, means of shelter, clothing, bedding, vehicles, telecommunications equipment, and other objects for disaster relief assistance.

Article 4

Human dignity

The inherent dignity of the human person shall be respected and protected in the event of disasters.

Article 5

Human rights

Persons affected by disasters are entitled to the respect for and protection of their human rights in accordance with international law.

Article 6

Humanitarian principles

Response to disasters shall take place in accordance with the principles of humanity, neutrality and impartiality, and on the basis of non-discrimination, while taking into account the needs of the particularly vulnerable.

Article 7

Duty to cooperate

In the application of the present draft articles, States shall, as appropriate, cooperate among themselves, with the United Nations, with the components of the Red Cross and Red Crescent Movement, and with other assisting actors.

Article 8

Forms of cooperation in the response to disasters

Cooperation in the response to disasters includes humanitarian assistance, coordination of international relief actions and communications, and making available relief personnel, equipment and goods, and scientific, medical and technical resources.

Article 9

Reduction of the risk of disasters

1. Each State shall reduce the risk of disasters by taking appropriate measures, including through legislation and regulations, to prevent, mitigate, and prepare for disasters.

2. Disaster risk reduction measures include the conduct of risk assessments, the collection and dissemination of risk and past loss information, and the installation and operation of early warning systems.

Article 10

Role of the affected State

1. The affected State has the duty to ensure the protection of persons and provision of disaster relief assistance in its territory, or in territory under its jurisdiction or control.

2. The affected State has the primary role in the direction, control, coordination and supervision of such relief assistance.

Article 11

Duty of the affected State to seek external assistance

To the extent that a disaster manifestly exceeds its national response capacity, the affected State has the duty to seek assistance from, as appropriate, other States, the United Nations, and other potential assisting actors.

Article 12

Offers of external assistance

1. In the event of disasters, States, the United Nations, and other potential assisting actors may offer assistance to the affected State.

2. When external assistance is sought by an affected State by means of a request addressed to another State, the United Nations, or other potential assisting actor, the addressee shall expeditiously give due consideration to the request and inform the affected State of its reply.

Article 13

Consent of the affected State to external assistance

1. The provision of external assistance requires the consent of the affected State.

2. Consent to external assistance shall not be withheld arbitrarily.

3. When an offer of external assistance is made in accordance with the present draft articles, the affected State shall, whenever possible, make known its decision regarding the offer in a timely manner.

Article 14

Conditions on the provision of external assistance

The affected State may place conditions on the provision of external assistance. Such conditions shall be in accordance with the present draft articles, applicable rules of international law and the national law of the affected State. Conditions shall take into account the identified needs of the persons affected by disasters and the quality of the assistance. When formulating conditions, the affected State shall indicate the scope and type of assistance sought.

Article 15

Facilitation of external assistance

1. The affected State shall take the necessary measures, within its national law, to facilitate the prompt and effective provision of external assistance, in particular regarding:

(a) relief personnel, in fields such as privileges and immunities, visa and entry requirements, work permits, and freedom of movement; and

(b) equipment and goods, in fields such as customs requirements and tariffs, taxation, transport, and the disposal thereof.

2. The affected State shall ensure that its relevant legislation and regulations are readily accessible, to facilitate compliance with national law.

Article 16

Protection of relief personnel, equipment and goods

The affected State shall take the appropriate measures to ensure the protection of relief personnel and of equipment and goods present in its territory, or in territory under its jurisdiction or control, for the purpose of providing external assistance.

Article 17

Termination of external assistance

The affected State, the assisting State, the United Nations, or other assisting actor may terminate external assistance at any time. Any such State or actor intending to terminate shall provide appropriate notification. The affected State and, as appropriate, the assisting State, the United Nations, or other assisting actor shall consult with respect to the termination of external assistance and the modalities of termination.

Article 18

Relationship to other rules of international law

1. The present draft articles are without prejudice to other applicable rules of international law.

2. The present draft articles do not apply to the extent that the response to a disaster is governed by the rules of international humanitarian law.