To: Executive Committee, Toronto City Council

From: Dr. Cathy Vakil, Board Member,
Canadian Association of Physicians for the Environment

Date: November 27, 2015

Re: Emergency Planning for Large-Scale Nuclear Accident in the GTA – Health Concerns

I am a family physician representing the Canadian Association of Physicians for the Environment (CAPE). On behalf of CAPE, I did a presentation at the recent Darlington hearings regarding OPG's request for a 13 year licence to rebuild and continue operation of the nuclear reactors.

CAPE recommends that you, the Executive Committee of Toronto City Council, support the motion proposed by Councillor Mike Layton and all Scarborough Councillors that the City Manager, in consultation with the Medical Officer of Health and the Office of Emergency Management, report back to the Executive Committee by March 2016 on:

1. The status of the Darlington Nuclear Generating Station license renewal and any issues relating to emergency response discussed during the renewal process.
2. Toronto's emergency response protocols for nuclear risks and international best practices for both Darlington and Pickering Nuclear Generating Stations.

3. The appropriateness of the current 10 km primary response zone for distribution of Potassium Iodide (KI) pills and whether it should be expanded given the 50 km evacuation zones of other jurisdictions.

The main reason we at CAPE encourage you to support this motion is that we have serious concerns about the lack of an emergency plan in the case of large-scale radiation release due to a major nuclear accident similar to Fukushima. CAPE raised concerns about the inadequacy of the provincial offsite emergency response plan at the Canadian Nuclear Safety Commission (CNSC) hearings in 2012 (Darlington), 2013 (Pickering) and 2015 (Bruce and Darlington).

These concerns expressed by CAPE as well as by many organizations and members of the public have still not been addressed. Passing the above motion would serve to address these important health issues. The provincial decisions regarding the offsite emergency response plan have limited the ability of Toronto Emergency Management Organization and the MOH to ensure the City of Toronto has world-class nuclear emergency plans. We think the requested report will help put in place conditions where the City of Toronto could request changes from the province and better empower municipal authorities, including the MOH.

Firstly, the present Ontario Nuclear Emergency Response Plan was designed even before the Chernobyl nuclear accident, and its latest update predates the Fukushima accident. Because the planning basis dictates the emergency measures required, this emergency plan must be updated to reflect a large-scale nuclear release. In addition it should reflect the change in demographics, population, traffic patterns and other important factors in the region. The present study was not designed based on a large-scale radiation release which, though unlikely, is possible.

Secondly we believe that potassium iodide (KI) pills should be pre-distributed to the residents living in the secondary zone (from 10 to 50 km from the Darlington nuclear reactors). Presently only the residents in the primary zone (up to 10 km) will be mailed KI pills. In view of the fact that Ontario does not have an updated emergency plan for a large-scale nuclear accident, and other countries such as Switzerland

have completed a detailed analysis of health impacts of a Fukushima-like accident and have decided to pre-distribute KI pills to residents within a 50 km radius, we think that Canadians deserve similar protection. Pre-distribution of KI pills to all residents within a 50 km radius should be included in an updated Ontario Nuclear Emergency Response Plan. It must be kept in mind that KI pills only protect against thyroid cancer, not any other radiation-related cancer or illness. A recent study from Fukushima, Japan has shown 20 to 50 times the expected number of children with thyroid cancer since the nuclear accident in 2012. Most of the increase was outside the evacuation zone (50 km); underlining the need for people outside our 10 km evacuation zone near Darlington to receive pre-distributed KI (1).

We also believe that it is mandatory for all emergency rooms to be equipped with decontamination equipment and all staff be familiar with its use. In addition, all hospitals should have an active radiation emergency plan and appropriate drills in place. If hospitals in the primary zone (within 10 km of the reactors) are to be evacuated in the event of a nuclear accident, recipient hospitals should be prepared to accommodate the patients that are evacuated. Local hospital personnel outside the primary zone that are not evacuated need to be trained and prepared to see patients with radiation exposure and other injuries that could arise from the accident or evacuation. These measures need to be in place in all hospitals in the GTA as part of an emergency plan.

Canada has not done a study to examine the health impacts of a Fukushima-scale nuclear accident. The recent study done by the Canadian Nuclear Safety Commission does not address similar radiation releases as those from Fukushima (and in fact the radiation releases studied are 10 to 100 times less than those experienced at Fukushima) (2). Their findings that there would be almost no health impact therefore are not accurate. In addition, the authors make unrealistic assumptions in the study regarding time between knowledge of impending radiation release and actual release (they assume 24 hours allowing complete smooth evacuation of the primary zone, and 100% ingestion of KI pills) as well as other methodological problems in their assessment of radiation doses. A study of the health impacts of an accident with Fukushima-scale

releases needs to be complete in order to be able to assess the emergency measures required.

In summary, from a health point of view, CAPE recommends the following in terms of an emergency plan for the GTA:

- An updated Ontario Nuclear Emergency Response Planning with a planning basis of a nuclear accident similar to the releases of the Fukushima accident
- Pre-distribution of KI pills to all residents within a 50 km radius of the Darlington reactors
- Appropriate training and preparation for a major nuclear disaster in all hospitals across the GTA
- A health impact study examining the health impacts of a Fukushima-scale nuclear accident

We encourage you to support the proposal put forth by Councillor Mike Layton and all Scarborough councillors as a first step towards the above goals.

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References:

1) Thyroid Cancer Detection by Ultrasound Among Residents 18 Years and Younger in Fukushima, Japan: 2011-2014. Tsuda, Tokinobu, Yamamoto and Suzuki. Epidemiology Nov. 2015.

2) http://nuclearsafety.gc.ca/pubs_catalogue/uploads/Severe-Nuclear-Accident-Study-eng.pdf