

# WINDSOR-ESSEX COUNTY BOARD OF HEALTH

## RESOLUTION RECOMMENDATION

AUGUST 11, 2017

### PROVINCIAL NUCLEAR EMERGENCY RESPONSE PLAN (PNERP)

#### **Background:**

The situation in Windsor-Essex County and the Town of Amherstburg is different than most Ontario municipalities within range of a nuclear power plant. The difference being that while Windsor and Essex counties fall within the primary and secondary zone, Fermi 2, the nuclear installation of interest, is not located within the borders of Canada. Fermi 2 Nuclear Energy is located in Newport, Michigan and is approximately 16 km away from parts of the Town of Amherstburg putting close to 300 homes within the primary zone (which is currently 20km) and all of Windsor-Essex County within the secondary zone (80km).

Past nuclear power plant failures worldwide have demonstrated the public health risk for those living within certain distances to nuclear power plants. It is with these past disasters in mind that nuclear installations and municipalities are being required to enhance their emergency response plans and mechanisms. Due to the location of the nuclear power plant of interest, until recently, Fermi 2 has been left out of much of the province of Ontario's nuclear emergency planning.

From a public health perspective, education around Protective Action Strategies, such as sheltering in place and taking thyroid blocking medication (KI pills), is key in planning for a nuclear emergency. According to the Canadian Nuclear Safety Commission (CNSC), nuclear installations are required to procure and distribute adequate amounts of KI pills for the primary zone and work with the designated municipalities to facilitate distribution. In addition, they are required to support pre-distribution with "a robust, ongoing, and cyclical public education program." However, Fermi 2 has no obligations to follow regulations under the CNSC. According to the 2009 Provincial Nuclear Emergency Response Plan (PNERP), the Ministry of Health and Long Term Care is responsible for procuring KI pills as well as assisting the Windsor-Essex County Health Unit (WECHU) and Town of Amherstburg in making emergency plans and arrangements for the planning zones including stocking, distribution and administration of KI.

The primary zone (16km) in Amherstburg, which includes roughly 300 homes, has a mixed demographic of families, retirees, seasonal homes, and American owned cottages. The secondary zone (80km) of Windsor-Essex County includes 152,295 households with 74% being owner occupied and the remaining 26% being renter occupied.

The Windsor-Essex County Health Unit submitted a one-time business case to the Ministry of Health and Long Term Care (MOHLTC) on March 31, 2017 to request funding for KI Pill Distribution and is currently awaiting their response.

## **Issue:**

In May 2017, the Ontario government released a Discussion Paper proposing changes to the current Provincial Nuclear Emergency Response Plan (PNERP), which was last reviewed in 2009. The Discussion Paper makes six key recommendations for the revised PNERP which are:

### Provincial Recommendation 1 – Protective Action Strategies

The PNERP outlines a variety of options for protection of people in the event of a nuclear emergency. These measures are called “Protective Action Strategies” and include actions such as evacuating the area or asking people to shelter in place.

The Protective Action Strategies in the current 2009 PNERP are comprehensive and sound but will be reviewed and updated to better align with Health Canada’s revised *Canadian Guidelines for Protective Actions during a Nuclear Emergency*.

### Provincial Recommendation 2 – The Hazard

While the hazard description of the types of possible accidents that could occur in the 2009 PNERP still applies, modifications will be made during the PNERP review in light of lessons learned from the Fukushima accident, including the addition of multi-unit events to the Severe Accident description.

### Provincial Recommendation 3 – Planning Zones – Multi-Unit CANDU Stations

Does not apply to Windsor-Essex County

### Provincial Recommendation 4 – Planning Zones – Chalk River

Does not apply to Windsor-Essex County

### Provincial Recommendation 5 – Planning Zones – Fermi 2

The planning zones associated with the Michigan Fermi 2 Nuclear Generating Station differ from that of Ontario’s nuclear power plants due to different technologies and types of reactor. The revised PNERP will take into account the planning area requirements of the United States Nuclear Regulatory Commission. Specifically, the following planning zones for the PNERP will be delineated for the Fermi 2 site:

- No contiguous zone (within a radius of 3km of the nuclear power plant);
- The radius of the primary zone will be reduced to 16km to meet the US standard;

- The radius of the secondary zone will remain 80km in order to comply with the US Fermi 2 reactor technology standard

### Provincial Recommendation 6 – Contingency Planning Zone

Provision for a new Contingency Planning Zone (CPZ) will be included to align with the CSA N1600 Standard and to provide for very low probability, severe accident situations.

The CPZ is the area within which arrangements in the event of a radiological release could be required to monitor the dose rates from deposition of radioactive material that falls to the ground. This is done in order to locate areas beyond the Primary Zone which may require exposure control measures (evacuation, sheltering, Iodine Thyroid Blocking (ITB) , and/or longer term relocation) once environmental monitoring results have been obtained.

The following CPZ should be defined:

- CANDU facilities: 20km
- Chalk River Laboratories: none
- Fermi 2: to be determined

### Thyroid Blocking

In the event of a serious accident, a release of radioactive material containing radioactive iodine could constitute a potential hazard to the public by inhalation or ingestion. Radioactive iodine could possibly increase the risk of radiation-induced thyroid cancer, especially in fetus and children up to the age of 18.

Although thyroid doses resulting from severe accidents have been considered in this document, no proposed policy recommendations for the storage and distribution of the thyroid blocking agent have been suggested since this is not an element of the foundations of planning.

Under the current 2009 PNERP, the planned implementation of ingestion control measures (banning the consumption of potentially exposed food and dairy products) would minimize the danger of ingesting radioactive iodine.

According to the 2009 PNERP, taking potassium iodide (KI) tablets to block radioactive iodine, could be advised in order to minimize any potential dangers associated with inhalation. It is the responsibility of the nuclear reactor facilities to provide the necessary resources under the thyroid blocking program (except for Fermi 2, where this responsibility rests with the MOHLTC). Designated municipalities are responsible for the storage of potassium iodide (KI) tablets and mechanism and methods of distribution in accordance to the 2009 PNERP. Currently in Ontario, the CNSC provides guidelines to the nuclear installations on the facilitation of KI Pill distribution.

## **Proposed Motion**

**WHEREAS** the Government of Ontario has asked for the public and community organizations to provide recommendations on how it should update the province's Provincial Nuclear Emergency Response Plan (PNERP); and,

**WHEREAS** the entirety of Windsor-Essex County are in close proximity to the Michigan-based Fermi 2 nuclear station and the Ohio-based Davis Besse nuclear station;

**Now therefore be it resolved** that the Windsor-Essex County Health Unit submits the following recommendations to the Government of Ontario to ensure communities living in proximity to the Fermi 2 and Davis Besse nuclear stations be accorded the same level of public safety as communities living near the Ontario based nuclear stations.

The following are the recommendations to the Government of Ontario regarding the PNERP:

1. Include the Ohio-based Davis Besse nuclear station in the PNERP;
2. Include requirements for the pre-distribution and availability of potassium iodide (KI) pills for communities living in proximity to the Fermi 2 and Davis Besse nuclear stations;
3. Ensure funding mechanisms are in place for communities in proximity to US nuclear stations in order to carry out the public education, planning, pre-distribution, and availability of KI pills for distribution;
4. Include a reliable funding mechanism to support all aspects of emergency preparedness for communities in Southwestern Ontario affected by non-Ontario based nuclear reactors;
5. Require provincial and municipal authorities to regularly identify vulnerable communities within provincial nuclear response zones and prepare emergency measures adapted to the needs of such vulnerable communities;
6. Ensure adequate measures are in place to protect drinking water in the event an accident on Canadian or American-based reactor contaminates the Great Lakes;
7. Ensure that the Province recognizes the public's expectation for meeting or exceeding international best practices for nuclear emergency planning where feasible;
8. Ensure that the Province conducts studies and modeling on the possible effects of a US type reactor emergency, which differ from Canadian nuclear reactors, and could release more radioactivity in the event of a severe accident; and,
9. Ensure that the Province provides regular updates to designated and impacted municipalities and community organizations on the PNERP revision process in order to improve transparency and accountability for nuclear emergency planning.