# Risk Specific Plan TORONTO NUCLEAR EMERGENCY RESPONSE PLAN (TNERP)

August 2020

Office of Emergency Management www.toronto.ca/oem



# Toronto Nuclear Emergency Response Plan (TNERP)

Lead: Office of Emergency Management

#### Supporting City of Toronto Divisions, Agencies and Commissions (DACs):

Toronto Fire Services	Toronto Public Health	Toronto Police Service
Toronto Paramedic	Toronto Transportation	Toronto Transit
Services		Commission
Toronto Water	Toronto Occupational Health and Safety	Strategic Communications

#### **Supporting External Agencies:**

Centennial College	Canadian Red Cross	York University
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# Accronyms and Abbreviations

Table 1: Accronyr	ns and Abbreviations
AAZ	Automatic Action Zone
BDBA	Beyond Design Basis Accident
СМОН	Chief Medical Officer of Health
CNSC	Canadian Nuclear Safety Commission
CPZ	Contingency Planning Zone
CRL	Chalk River Laboratories
DNGS	Darlington Nuclear Generating Station
DPZ	Detailed Planning Zone
EMCPA	Emergency Management and Civil Protection Act
EIC	Emergency Information Centre
EOC	Emergency Operations Centre
EPZ	Emergency Planning Zone
IPZ	Ingestion Planning Zone
ITB	Iodine Thyroid Blocking
KI	Potassium Iodide
km	Kilometre
LGIC	Lieutenant Governor in Council
MCSCS	Ministry of Community Safety and Correctional Services
MDU	Monitoring and Decontamination Unit
MOHLTC	Ministry of Health and Long-Term Care
MTO	Ministry of Transportation, Ontario
NEMCC	Nuclear Emergency Management Coordinating Committee
PEOC	Provincial Emergency Operations Centre
PNERP	Provincial Nuclear Emergency Response Plan
PNGS	Pickering Nuclear Generating Station
PPE	Personal Protective Equipment
RD	Radiological Device
UTCC	Unified Transportation Coordination Centre
UTMP	Unified Transportation Management Plan

### **Executive Summary**

The City of Toronto is a Designated Municipality and within the affected area of Pickering Nuclear Generating Station. Municipalities designated pursuant to Section 3(4) of the Emergency Management and Civil Protection Act (EMCPA) as municipalities in nuclear Detailed Planning Zones (DPZs) have the following responsibilities:

- Preparedness
- Provision of Personnel
- Response
- Training & Exercises
- Infrastructure

Details of these responsibilities are described in Annex I Appendix 15 of the Provincial Nuclear Emergency Response Plan (PNERP) – Master Plan 2017

The Pickering Nuclear Generating Station (PNGS) Detailed Planning Zone is the area immediately surrounding the reactor facility extending out to an approximate radius of 10 kilometres which includes the eastern most limit of the City of Toronto.

The City of Toronto is also implicated as a designated host municipality for emergencies at the Darlington Nuclear Generating Station (DNGS). In coordination with the Provincial Nuclear Emergency Response Plan (PNERP) and the Implementing Plan for the Pickering Nuclear Generating Station, this Plan lays out the City of Toronto's response to a nuclear emergency focusing on Pickering's Nuclear Generating Station (PNGS) but also making provisions for an emergency at Darlington Nuclear Generating Station (DNGS).

The key strategies employed in the Toronto Nuclear Emergency Response Plan are evacuation, protective action, and public information. The activities the Toronto Emergency Operations Centre (EOC) will enact include coordination between the Provincial Emergency Operations Centre (PEOC) and the City of Toronto's Divisions, Agencies, and Corporations (DACs); establishment of Reception Centres and Emergency Worker Centres; and, public alerting and information in coordination with the Provincial Emergency Information Section.

Led by the Toronto Office of Emergency Management (OEM), the City of Toronto's Nuclear Emergency Planning Committee (TNEPC), consisting of key Divisions, Agencies, and Corporations (DACs) with leadership roles and major responsibilities in a nuclear emergency response operation is responsible for this Plan. Its membership is also responsible for coordinating their related operational plans with the overall intent and strategies of this one. This Plan is being continuously updated and expanded upon.

### **Appendices:**

Appendix 1	<ul> <li>Pickering Nuclear Generating Station Detailed and Contingency Planning Zones</li> </ul>
Appendix 2	- Pickering Nuclear Generating Station Ingestion Planning Zones
Appendix 3	- Population Data by Sector/Planning Zone
Appendix 4	- Toronto EOC Nuclear Emergency Notification Procedure
Appendix 5	- Emergency Information and Alerting
Appendix 6	- Toronto Nuclear Mass Evacuation/ Transportation Plan
Appendix 7	- Nuclear Emergency Reception Centres
Appendix 8	- Toronto Nuclear Emergency Local Traffic Control Plan
Appendix 9	- Emergency Workers Centre - Land
Appendix 10	- Emergency Workers Centre - Marine

### Figures and Tables:

Figure 1: Nuclear and Radiological Emergency Response Planning Structure (2017 PNERP)......Error! Bookmark not defined. Figure 2: Initial Provincial Response to an On-Site Emergency Notification as outlined in the Implementating Plans for the PNGS and DNGS ......Error! Bookmark not defined. Figure 3: Protective and Precautionary Measures – (all references made in the above table can be found in the 2017 PNERP Master Plan)......Error! Bookmark not defined. Figure 4: Pickering Nuclear Generating Station Detailed and Contingency Planning Zones (extracted from the PNGS Implementing Plan) .....Error! Bookmark not defined. Figure 5: Pickering Nuclear Generating Station Ingestion Planning Zones (extracted from the PNGS Implementing Plan)......43

### Annexes:

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### Table of Contents

Acc Exe App Figu Ann 1.0	ronyms and Abbreviations cutive Summary endices: ures and Tables: exes: Scope and Authority	i ii . iii . iii . iii 9
	<ul> <li>1.1 Aim</li> <li>1.2 Municipal Response Plans</li> <li>1.3 Partners and Emergency Operations Centres</li> <li>1.4 Tactical Response</li> </ul>	10 10 10 11
2.0	Emergency Response: Overview	12
	<ul> <li>2.1 Concept of Operations</li></ul>	13 15 18 18 19 19 19
	<ul> <li>2.7.1 Early Phase</li> <li>2.7.2 Intermediate Phase</li> <li>2.7.3 Recovery Phase</li> </ul>	20 20 21
3.0	Protective Action Response Strategy	21
	<ul> <li>3.1 Guiding Principles for Protective Action Decision-Making</li></ul>	22 22 23 24 25 25
4.0	Operational Response	27
	<ul> <li>4.1 Guiding Principles for an Operational Response</li></ul>	27 27 32 33 33 35 36 37 37 38 38

# M Toronto



4.12 Ve	enting of Containment	
4.13 Pro 4.14 Lig	otection and Care of Animals	
Population I Toronto Em	bata by Sector/Planning Zone ergency Operations Centre	
Nuclear	Emergency Notification Procedure	
Emergency	Information and Alerting	
1.0 – Ba 2.0 – St 3.0 – Er	ackground tandards mergency Information Centre	
Toronto Nuc	clear Mass Evacuation/ Transportation Plan	
Concep Logistic	ot of Operationss	
Nuclear Eme Toronto Nuc	ergency Reception Centres clear Emergency Local Traffic Control Plan	50 51
1.0 – Ba	ackground	51
Emergency	Worker Centre	
1.0 – Ba 2.0 – Er 3.0 – Co 4.0 – No	ackground mergency Worker Centres oncept of Operations otifications	

#### 

1.0 – Background	59
2.0 – Concept of Operations	59
3.0 – Responsibilities	62

### **1.0 Scope and Authority**

1.0.1 This document is the official City of Toronto Nuclear Emergency Response Plan (TNERP). It is raised in accordance with the Emergency Management and Civil Protection Act (EMCPA); the Provincial Nuclear Emergency Response Plan – Master Plan (PNERP); the Implementing Plan for the Pickering Nuclear Generating Station (PNGS IP); the City of Toronto Emergency Plan, the City of Toronto Emergency Support Functions (ESFs) and the City of Toronto Risk Specific Plans (RSPs). Toronto's Office of Emergency Management (OEM) under direction of the Toronto Emergency Management Program Committee (TEMPC) has oversight of this Plan.

1.0.2 The hierarchy of legislative and non-legislative authorities governing emergency response plans for the Pickering Nuclear Generating Station are depicted in the PNERP and replicated here:



Figure 1: Nuclear and Radiological Emergency Response Planning Structure (2017 PNERP)



1.0.3 The TNERP outlines the roles and responsibilities of the City of Toronto, including its Divisions, Agencies and Corporations (DACs), with respect to provisions of the PNERP and PNGS IP. It must be read in conjunction with those plans. In case of any apparent discrepancies between the PNGS IP and the TNERP, the former shall take precedence.

1.0.4 Together, this set of plans describes how provincial decisions are implemented by the City of Toronto in response to a nuclear emergency.

#### 1.1 Aim

1.1.1 The aim of the TNERP is to provide operational guidance for the City of Toronto's response to a nuclear emergency, setting out plans for deployment of resources and enabling communication and coordination amongst responsible partners and the City of Toronto's Office of Emergency Management (OEM).

#### **1.2 Municipal Response Plans**

1.2.1 The City of Toronto and the Regional Municipality of Durham are Designated Communities with respect to PNGS (PNERP Master Plan, Annex A). The City of Toronto is the Designated Host Community in emergency response operations relating to Darlington Nuclear Generating Station (DNGS) (PNERP Master Plan, Annex A).

1.2.2 In accordance with the PNERP, this Plan is developed to address associated responsibilities and activities including offsite emergency response arrangements; and, activities of designated municipalities, municipal divisions, boards, and police services.

1.2.3 Radiological and Designated Host Community plans are being conceptualized to amplify the TNERP in accordance with roles and responsibilities outlined in the PNERP, **Annex I – Appendix 16**.

#### **1.3 Partners and Emergency Operations Centres**

1.3.1 Federal, provincial, municipal, Ontario Power Generation, and other partners utilize emergency operations centres (EOCs) to manage and coordinate emergency response operations including nuclear emergencies. Partner EOCs relevant to this Plan include but are not limited to:

- The Government Operations Centre (Public Safety Canada)
- The Federal Coordination Centre (Public Safety Canada)
- The Regional Emergency Coordination Centre (Public Health Agency of Canada, Ontario Region)
- Ontario Power Generation Corporate Emergency Operations Facility
- The Provincial Emergency Operations Centre (PEOC)
- The Ontario Ministry of Health Ministry Emergency Operations Centre (MEOC)



- The Ministry of Transportation Ontario Unified Traffic Coordination Centre (UTCC)
- The Regional Municipality of Durham Emergency Operations Centre
- The Canadian Red Cross, Toronto Region Duty Officer; and
- Divisional Operations Centres (DOCs) and other similar organizations or functions within the City of Toronto's divisions, agencies and corporations

The Office of Emergency Management's operational partners include but are not limited to the following internal and external partners:

- Toronto Fire Services
- Toronto Police Service
- Toronto Paramedic Services
- Toronto Public Health (TPH)
- Toronto Transit Commission (TTC)
- Canadian Red Cross
- York University Keele Campus
- Centennial College Progress Campus
- The Marine Emergency Worker Centre and Reception Centre at Bluffers Park Complex
- Ontario Power Generation (OPG); and
- The Ontario Office of the Fire Marshal and Emergency Management (OFMEM) (includes the PEOC)

1.3.2 To ensure liaison and coordination between different elements of the emergency response system, the following arrangements and agreements shall be made in advance of an emergency:

- Provincial Liaisons to be deployed to the Toronto EOC
- PNGS Liaisons to be deployed to the Toronto EOC; and
- OPG support to Emergency Worker Centres including monitoring and decontamination capabilities, radiation monitoring team activities, and technical briefings

#### **1.4 Tactical Response**

1.4.1 The TNERP provides operational guidance. Where questions of tactics arise, the TNERP may allude or make reference to potential tactics but it does not prescribe them to first line response organizations or operators. Tactical plans are developed and maintained by participating partners and divisions within the City of Toronto.

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# 2.0 Emergency Response: Overview

2.0.1 The TNERP's primary focus is on the Pickering Nuclear Generating Station which resides approximately 45 kilometres east of Toronto City Hall. The most easterly limit of City of Toronto border is situated approximately 5 kilometres west of the nuclear generating station.

2.0.2 The greatest hazard to people is potential exposure to and inhalation of airborne radionuclides, radioiodine and particulates that could be emitted from the nuclear generating station in times of emergency. Depending on the severity of damage and/or malfunction of the nuclear generating station, radioactive emissions to the surrounding environment could continue for weeks and may cover a relatively small or large area around the nuclear generating station. Levels of radioactivity emitted from the station may range from low to higher amounts.

2.0.3 Protective measures are available for minimizing the radiation hazard in a nuclear emergency. They include entry control (restricting the public from entering specific areas); sheltering (staying indoors); evacuation (leaving the area when directed); thyroid blocking (consumption of Potassium Iodide (KI pills) made available to members of the Pickering Detailed Planning Zone; and, the use of protective equipment and self-decontamination (cleaning oneself of any exposure to the "dust"). Each of these measures are defined in the Nuclear/Radiological Glossary, Appendix C, of the PNGS IP. The operational use of these measures is prescribed in appropriate sections of this Plan.

2.0.4 For the purposes of the PNERP, PNGS IP, and this Plan, four centrifugal planning zones around PNGS are considered:

- a. <u>Automatic Action Zone</u>: The area immediately surrounding the PNGS out to an approximate radius of 3 kilometres. (See Appendix '1' of the TNERP).
- b. <u>Detailed Planning Zone:</u> Inclusive of the Automatic Action Zone, it is the area around the PNGS within a 10 kilometre radius. Detailed planning and preparedness is carried out for measures against exposure to radioactive emission in this zone. It includes an area of Toronto from the Durham-Toronto boundary west to Morningside Avenue and extending to Finch and Steeles Avenues in the north. The Zone extends out into Lake Ontario to a radius of approximately 10 kilometres from PNGS. The exact boundaries of the zone are identified in (Appendix '1' of the PNERP), including parts of the Regional Municipality of Durham.
- c. <u>Contingency Planning Zone</u>: The centrifugal area between 10 and 20 kilometres from the PNGS. Contingency planning and arrangements are made so that



during a nuclear emergency, protective actions can be extended beyond the Detailed Planning Zone to reduce potential for exposure; and

d. <u>Ingestion Planning Zone</u>: The Ingestion Planning Zone encompasses all areas of the City of Toronto, Regional Municipalities of Durham, York and Peel and City of Kawartha Lakes within a 50 kilometre radius of PNGS. The Ingestion Planning Zone includes all other zones

City of Toronto population data related to these zones is available in Appendix '3' of the TNERP.

2.0.5 Planning times for radioactive emissions resulting from an accident at PNGS depend on the condition and functioning of the station containment system, as well as the Station's ability to prevent escape of radioactive material. Planning assumptions are:

- a. A minimum interval of 2 days between occurrence of the accident and the commencement of an emission when containment systems are functioning normally
- b. Venting (controlled) could cause intermittent emissions lasting many weeks; and
- c. Impaired containment could cause continuous emissions very soon after an accident

2.0.6 Emergency facilities could be established when a full nuclear emergency response is staged. Partnerships listed in para 1.3 of the TNERP could be utilized to establish:

- A Marine Emergency Worker Centre at the Scarborough Bluffs (Bluffers Park)
- An Evacuation/Reception Centre at York University; and
- An Emergency Worker Centre at Centennial College

2.0.7 The Toronto EOC is equipped with a dedicated landline which is linked with OPG's Corporate Emergency Operations Facility in Whitby, Ontario. In the event of a telecommunications failure, Toronto EOC will use two-way radio communications with Metronet radios that are pre-established and regularly tested through Toronto Police Service.

#### 2.1 Concept of Operations

2.1.1 Response to a nuclear emergency at Pickering Nuclear Generating Station can be generally categorized by the type of emergency it responds to: a "Design Basis Accident" (DBA) or a "Beyond Design Basis Accident" (BDBA). In a DBA, station containment systems will likely be functional and will facilitate controlled release of decayed radiation, giving response organizations time to alert the public and implement



Toronto Nuclear Emergency Response -- TNERP

protective measures. The main hazard would be exposure to radionuclides and risk of environmental contamination and radioactivity would be lowered. In a BDBA, station containment systems may be impaired, potentially leading to early or uncontrolled release of radioactive emissions, risking high radiation doses and environmental contamination in the DPZ.

2.1.2 Radiological emergencies could also arise as a result of accidents at reactor facilities or during the transportation of radioactive material; employment of Radiological Devices, Radiological Dispersal Devices, or Radiological Exposure Devices (malicious human-caused events); satellite re-entry; nuclear weapon detonation; or, lost, stolen, or orphaned radiation sources. In such events, field monitoring will inform the delineation of planning or response zones surrounding the incident site and which exposure control and protective measures shall be employed.

2.1.3 The primary hazard the TNERP prepares for are accidents at the Pickering NGS; however, as a Designated Host Community for nuclear emergency response at Darlington NGS, elements of the TNERP may be enacted to manage consequences associated with an event at that location as well in support of the Regional Municipality of Durham.

2.1.4 If an emergency occurs at the PNGS, a notification process overviewed below will be immediately initiated. The PEOC shall immediately activate and assume incident command. In a nuclear emergency response operation, the Toronto EOC will activate to an emergency response level that parallels the PEOC and it will enact an approximately similar Incident Management System (IMS) structure. The Toronto EOC will notify all concerned partners and stakeholders within the City of Toronto as soon as possible.

2.1.5 The PNERP, Annex D, Section 5.0 outlines Ontario's notification categories and their associated response. They are:

- a. <u>Reportable Event:</u> An event affecting the reactor facility which would be of concern to the off-site authorities responsible for public safety. Provincial and municipal duty staff should respond as per routine monitoring.
- b. <u>Abnormal Incident:</u> An abnormal occurrence at the reactor facility which may have a significant cause, and/or may lead to more serious consequences. Response should include enhanced monitoring from respective emergency operations centres and staff checks.
- c. <u>On-Site Emergency:</u> A serious malfunction which results or may result in atmospheric release of radioactive material. Partial or full activation of emergency operations centres shall occur and various off-site response centres shall be established; and

- d. <u>General emergency:</u> An ongoing or imminent atmospheric release of radioactive material as a result of a more severe accident. Response plans, organizations, and emergency operations centres shall be fully activated and appropriate protective measures may be taken.
- 2.1.6 The combined City of Toronto concept of operations can be best summarized as:
  - a. Notification of a nuclear or radiological emergency through established contact procedures. (For the City of Toronto Emergency Level Notifications ESF)
  - b. Actions by the owner/operator on site to respond to the emergency. Activation of emergency response organizations and their nuclear emergency response plans.
  - c. Determination of the type, potential scale, and potential impact of the emergency and the scale of response: partial or full activation
  - d. Official declaration of a Provincial emergency.
  - e. Determination and implementation of appropriate protective action response strategy
    - i. Precautionary measures
    - ii. Protective measures for exposure and/or ingestion control
    - iii. Invoking of any required mutual aid agreements
  - f. Alerting and public communications (continuous)
  - g. Determination and implementation of emergency worker protection strategy
  - h. Determination of need for and implementation of appropriate evacuation strategy
    - i. Emergency Worker Centres Emergency Reception Centres; and
    - ii. Demobilization and return to normal state upon cessation of the emergency

#### 2.2 Initial Notification of Nuclear Emergencies in Ontario

2.2.1 The PNERP and the PNGS IP establish standards for initial notification of nuclear emergencies. Reactor facilities are responsible for notifying designated provincial and municipal contacts of a nuclear emergency within 15 minutes of categorizing the event. This notification should include the notification category. The PEOC, in turn, is responsible for deciding on its initial response level and notifying the Designated Host Community and other stakeholders of its response within 15 minutes.

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2.2.2 Paragraphs 2.1.4 and 2.1.5 of the TNERP outline the nuclear emergency notification categories and process to the PEOC, Toronto EOC, and Durham EOC.

2.2.3 If partial or full activation is required, the EOC shall be automatically activated to the required level and OEM's management team along with the City's Senior Leadership will be notified. The EOC will immediately notify its municipal, private, non-profit, and other partners of the emergency.

2.2.4 Just as the nuclear facility and the PEOC will establish operating and reporting periods, the Toronto EOC will also establish operating and reporting periods at that time.



Figure 2: Initial Provincial Response to an On-Site Emergency Notification as outlined in the Implementating Plans for the PNGS and DNGS

#### 2.3 Initial Notification of Radiological Emergencies in Ontario

2.3.1 The first indications of a radiological event may come from the Canadian Nuclear Safety Commission for routine matters or incidental release; other government agencies reporting incidents within their area of responsibility (i.e. Transport Canada reporting an accident and spill); a local emergency response organization; or a community.

2.3.2 In the event that notification is received, the PEOC shall make notifications and take action in accordance with the PNERP Implementing Plan for Other Radiological Emergencies. There may be implications for the City of Toronto that could require activation of components of this response Plan or other emergency response plans.

#### 2.4 Activation and Deactivation of Emergency Plans

2.4.1 The TNERP will be immediately actioned as soon as notification of PNERP activation is received. The level of Plan activation and EOC activation will align with the PEOC unless specified otherwise.

2.4.2 The Toronto EOC will notify all City of Toronto partners that the EOC and TNERP have been activated, and they will also immediately activate their plans and organizations in parallel.

2.4.3 The following table outlines initial posturing after notification is received and emergency plans are activated.

INITIAL NOTIFICATION	INITIAL PROVINCIAL RESPONSE	INITIAL CITY OF TORONTO RESPONSE
Reportable Event	Routine Monitoring	Routine Monitoring
Abnormal Incident	Enhanced Monitoring	Enhanced Monitoring
On-site Emergency (No emission occurring)	Partial Activation	Partial EOC Activation
On-site Emergency (Emission ongoing or expected within 12 hours)	Full Activation	Full EOC Activation
General Emergency (Emission ongoing or expected within 12 hours)	Full Activation	Full EOC Activation

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#### 2.5 Operational Lead

2.5.1 Incident Command resides with the PEOC Commander. Whenever a nuclear emergency or a radiological emergency requiring activation of the PNERP occurs, the PEOC Commander is primarily responsible for leading the off-site response by supporting and coordinating the emergency response.

2.5.2 The PEOC Commander shall consult with the EOC Director for the municipality when planning to issue operational directives or communicate an emergency order for a protective measure within a municipal area.

2.5.3 In accordance with Chapter 59 of the Toronto Municipal Code, the Toronto Emergency Management Program Committee Control Group will assume Incident Command for the City of Toronto. The EOC Director will be primarily responsible for coordinating the off-site emergency response and implementing this plan.

#### 2.6 Declaration and Termination of an Emergency

2.6.1 The authority for the declaration and termination of Provincial emergencies pursuant to the EMCPA is the Lieutenant Governor In Council (LGIC) or the Premier if the urgency of the situation requires that it be made immediately.

2.6.2 The authority for the declaration and termination of an emergency in the City of Toronto pursuant to Chapter 59 of the Toronto Municipal Code is the Mayor. They may declare an emergency, take action, and make orders as they consider necessary and not contrary to the law.

#### 2.7 Emergency Phases

There are three phases of a nuclear emergency outlined in the PNERP and amplified in the PNGS IP: the Early Phase, the Intermediate Phase, and the Recovery Phase. These phases of response differ depending on whether the initial response activation is partial or full.

Transition between phases is not always clear. Recovery plans should define a transition process from the nuclear emergency response phase to the recovery phase, identify the organizations involved, assess the need for additional resources, and adjust protective actions as required. Basic recovery transition criteria include:

- Completion of the nuclear emergency and facility's return to safe operation
- Ability to safely and permanently return evacuees to their residences; and
- Discontinuation of all emergency response activities





#### 2.7.1 Early Phase

The Early Phase of the emergency:

- a. Begins with an initial notification before or during a radioactive release as described in parasgraphs 2.2 and 2.3 of this plan
- b. Starts with the first warning of a significant radiological problem and could last from hours to days
- c. May require use of protective measures. The PEOC Science Section's technical assessment of the situation shall prepare a preliminary assessment and updated assessments of the need for exposure control, ingestion control, and/or emergency worker protective measures.

#### 2.7.2 Intermediate Phase

The Intermediate Phase:

- a. Begins once the radioactive release or source is brought under control (though not necessarily contained) and reliable environmental radiation monitoring is available for use in protective action decision-making.
- b. The PEOC Scientific Section shall undertake and continuously update assessments of:
- Off-site environmental radiation monitoring, producing a picture of the contamination situation
- Protective actions, such as exposure and ingestion control measures, which will inform the Protective Action Response Strategy directed by the PEOC to all stakeholders; and
- Sector safety status, resulting in recommendations for emergency workers operating in the area.
- c. Psychosocial support measures shall also be implemented as necessary during the intermediate stage. Planning for the management of radioactive waste generated by the emergency should preferably begin during this phase.



#### 2.7.3 Recovery Phase

The Recovery Phase:

- a. Begins when short-term and long-term actions can be taken in order to restore, to an acceptable level, both the organizations involved and the communities affected by, the nuclear emergency and the associated response activities.
- b. May include emergency management and response operations continuing (e.g., ingestion control protective measures, restoration activities, etc.).
- c. May include activities described in a separate plan such as:
- Case for persons exposed and/or contaminated
- Psychosocial support
- Long-term relocation issues
- The resettlement of and return of individuals affected by the nuclear emergency
- Long-term support to the public living in contaminated areas
- Decontamination or reconstruction of property damaged as a result of the emergency and associated response activities; and
- Economic impact studies and studies on how to revive local business activity

### **3.0 Protective Action Response Strategy**

3.0.1 During the response to a nuclear emergency, the PEOC shall implement a protective action response strategy based on the PEOC Scientific Section's analyses and recommendations to protect the public and responding emergency workers from the effects of a radioactive emission. The Toronto EOC shall adopt the PEOC's Protective Action Response Strategy and communicate and coordinate its implementation in the City of Toronto.

3.0.2 Protective action decision-making can be categorized according to response phase where the hazard and its location are known.



#### 3.1 Guiding Principles for Protective Action Decision-Making

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3.1.1 Protective actions include both precautionary and protective measures. They are complementary to each other and may be applied in combination. It may be necessary to justify and optimize the application of protective actions with respect to risks and costs (psychosocial and economic).

3.1.2 When a protective action is warranted at any boundary of a response sector in the Detailed Planning Zone, it should be applied to the whole response sector. If a protective measure is warranted in the Detailed Planning Zone, it should be applied to the entire ring of sectors in order to ensure protection when winds are shifting.

3.1.3 The PEOC Commander, as the operational lead for the off-site response, has the authority on behalf of the Province for protective action decision-making and shall direct the implementation of protective measures as appropriate. They may issue operational directives or emergency orders if an emergency is declared.

3.1.4 Protective actions include precautionary measures, exposure control protective measures, ingestion control protective measures and additional measure to protect the public.

3.1.5 Protective measures will be implemented through emergency bulletins communicating the PEOC Commander's direction to the public and stakeholders in the emergency response. If no emission is expected for 36 hours or more at the time of issue, the emergency bulletin should include the date and time of expected emission; sectors potentially affected by the emission; if or when precautionary measures or protective actions will be ordered and what they might be; public inquiry phone numbers; and, evacuation instructions.

3.1.6 Emergency bulletins issued within 36 hours of expected emission will be increasingly directive. Emergency bulletins for sheltering-in-place will be broadcast as soon as that need is identified. The timing to issue an operational directive for sheltering-in-place shall ultimately be determined by the PEOC. Alert Ready and other broadcast methods will be used. Alert Ready in Ontario is part of a national service designed to deliver critical and potentially life-saving emergency alert messages to Canadians. Emergency alerts are distributed on radio, TV and compatible wireless devices to help ensure that Ontarians have the critical information they need in emergencies to take necessary precautions to protect themselves and their families.

#### **3.2 Precautionary Measures**

3.2.1 The PEOC Commander shall direct precautionary measures as appropriate in the Detailed Planning Zone, the Contingency Planning Zone, or parts therefor. Timing will be a consideration in this direction.



3.2.2 The Toronto EOC will communicate and coordinate the dissemination of these emergency directives.

3.2.3 Protective measures may include:

- a. Closing of beaches, recreation areas, etc.
- b. Closing of workplaces and schools
- c. Suspension of admissions of non-critical patients in hospitals
- d. Entry control
- e. Clearing the milk storage of dairy farms
- f. Banning consumption of any item of food or water that may have been exposed outdoors
- g. Banning consumption and export of locally produced milk, meat, produce, milk- and meat-producing animals; and
- h. Removing milk and meat-producing animals from outside pasture and exposed water sources

#### **3.3 Protective Measures for Exposure Control**

3.3.1 Evacuation, Decontamination, and Temporary Relocation: The purpose of an evacuation is to prevent or minimize the exposure of members of the public to the effects of radiation. All residents in the affected area will be directed to evacuate, and those who require transportation to leave the Detailed Planning Zone will be assisted according to the Mass Evacuation Transportation Plan outlined in Appendix 6 of the TNERP). All routes will be utilized to evacuate the Detailed Planning Zone.

3.3.2 In the event of an ongoing or imminent emission, evacuees exposed to radioactive emissions can be expected to have varying levels of contamination. Where found, contamination will be in the form of loose particulate on people, their belongings, and vehicles. Internal contamination may be present in individuals exposed to radioactive emissions. Self-decontamination may be the primary means of decontamination; however, monitoring at decontamination facilities will be required for those evacuees who will not be able to self-decontaminate.

3.3.3 For the purpose of this plan, temporary relocation shall be considered synonymous with evacuation. Functionally, it will occur almost identically during an immediate nuclear emergency response.



3.3.4 Iodine Thyroid Blocking: The decision to direct thyroid blocking will be made by the Provincial Chief Medical Officer of Health (CMOH) in coordination with the PEOC. Potassium Iodine (KI) pills are pre-stocked at the Emergency Worker and Evacuation/Reception Centres in the City of Toronto. Once notified of the need for thyroid blocking, the City of Toronto will notify staff located in the Detailed Planning Zone.

3.3.5 If and when the CMOH issues direction to the public to ingest a dose of KI, the City will take actions to notify or confirm that staff working in the Pickering Detailed Planning Zone are directed to take this protective measure. The process is outlined in Section 4.5 of this plan.

3.3.6 Shelter-in-Place: In the case of an imminent emission, the operational directive to shelter-in-place shall be issued by the PEOC via an emergency bulletin at least 4 hours before the emission is expected to commence. Emergency bulletins will be issued by the PEOC Emergency Information authority, via Alert Ready and broadcast media. The Toronto EOC will further distribute the bulletin through Strategic Communications staff using its Emergency Information and Media Relations Emergency Support Function (ESF) and other means, as required.

3.3.7 In the case of an ongoing emission, all sectors adjacent to sectors requiring evacuation will be directed to shelter-in-place.

#### **3.4 Protective Measures for Ingestion Control**

3.4.1 Before an emission commences, appropriate ingestion control measures will be directed by the PEOC via emergency bulletin as a precaution within and, if necessary, adjacent to the Detailed Planning Zone. The Toronto EOC will amplify the PEOC's direction and the City will adopt directions immediately.

3.4.2 If general Province-wide monitoring indicates the need, appropriate ingestion control measures will be considered in areas known or suspected to be contaminated. Based on the data produced by ground monitoring, additional ingestion control measures will be considered, where necessary, while the original precautionary measures may be lifted by the PEOC where appropriate.

3.4.3 Protective measures for ingestion control most relevant to the City of Toronto may include:

- a. Milk control
- b. Water control
- c. Foodstuff control

d. Land control; and

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e. Environmental decontamination

#### 3.5 Protective Action Decision-making for Radiological Emergencies

3.5.1 Protective measures may have been implemented by government agencies early in the event, before reliable radiological information was available. Once Environmental Monitoring Teams are activated and data is received and analyzed, these protective measures can be adjusted or new ones directed based on operational, technical, and public policy considerations.

#### **3.6 Additional Measures to Protect the Public**

3.6.1 The PEOC Commander may recommend other practical dose reduction measures to the public. Such measures may be implemented in combination with the measures described above or, may simply be recommended to provide an additional level of protection against possible radionuclides present. Such measures include:

- a. Respiratory protection, including ad hoc protection;
- b. Self-decontamination and decontamination of critical areas and objects; and
- c. Staying indoors to the extent that it is practical.

3.6.2 Detailed advice regarding these measures shall be developed and implemented in both the preparedness stage through public awareness and education as well as for the emergency phase through the emergency bulletin process. Chapter 5 of the PNERP, Initiating An Emergency Response prescribes various measures that can be taken during each phase of a nuclear emergency. The following chart is extracted from the PNERP depicts those measures



Toronto Nuclear Emergency Response -- TNERP

Date: 20/Aug/2020

Early Phase (Section 5.9.1)	Intermediate Phase (Section 5.9.2)		Phase (Section 5.9.1)         Intermediate Phase (Section 5.9.2)         Recovery Phase (Section 5.9.3)		ı 5.9.3)
Precautionary Measures Protective Measures (Implementation Criteria)	Precautionary Exposure Contro Measures Measures	Ingestion Control Measures (based on OILs)	Precautionary Measures	Exposure Control Measures	Ingestion Control Measures (based on OILs)
<ul> <li>Closing of beaches, recreation areas, etc.</li> <li>Closing of workplaces and schools</li> <li>Suspension of non-critical patient admissions in hospitals</li> <li>Entry (access) control</li> <li>Clearing milk storages of dairy farms</li> <li>Banning consumption of exposed foodstuff or water</li> <li>Santing consumption of exposed</li> <li>Banning consumption of exposed</li> <li>Self- Decontamination (as applicable)</li> <li>Staying indoors (as far as practicable)</li> </ul>	<ul> <li>Closing of beaches, recreation areas, etc.</li> <li>Closing of workplaces and schools</li> <li>Suspension of non-critical patient admissions in hospitals</li> <li>Entry control</li> <li>Staying indoors (as far as practicable)</li> <li>Staying indoors (as far as practicable)</li> <li>Staying indoors (as far as</li> </ul>	<ul> <li>Milk control</li> <li>Water control</li> <li>Pasture control</li> <li>Produce and crop control</li> <li>Livestock control</li> <li>Foodstuff control</li> </ul>	<ul> <li>Rescinded as appropriate</li> </ul>	- Rescinded as appropriate	<ul> <li>Milk control</li> <li>Water control</li> <li>Pasture control</li> <li>Produce and crop control</li> <li>Livestock control</li> <li>Foodstuff control</li> <li>Land control</li> <li>Environmental decontamination</li> </ul>

Figure 3: Protective and Precautionary Measures – (all references made in the above table can be found in the 2017 PNERP Master Plan)

### 4.0 Operational Response

4.0.1 The operational response activities of the City of Toronto depend on the notification category received from the PEOC. The City of Toronto will respond accordingly based on the directions received from the PEOC or appropriate authority.

4.0.2 This response plan specifies strategies and operations that will be undertaken in response to an event at Pickering NGS which results in, or has the potential to result in, an emission of radioactive material into the atmosphere. It is intended to be flexible and scalable: some of the strategies or operations may be enacted in response to similar events at Darlington NGS or for radiological emergencies.

#### 4.1 Guiding Principles for an Operational Response

4.1.1 In a nuclear or radiological emergency, the goals of an operational response are to:

- a. Mitigate radiological and non-radiological consequences
- b. Ensure that designated municipal and affected agencies are kept apprised of the situation and, where time permits without threatening public health and safety, are consulted prior to any decisions being made
- c. Keep the public informed; and
- d. Prepare for the resumption of normal social and economic activity

4.1.2 The initial notification of a nuclear emergency and corresponding actions are outlined in paragraph 2.4 of the TNERP and expanded upon below.

#### 4.2 Recap of Response Overview

4.2.1 The initial response to a nuclear emergency varies based on the type of event or incident that is occurring. Generally, when an event or incident occurs at a nuclear facility, the operator shall report the incident to the PEOC and other implicated partners within 15 minutes of its becoming aware of the occurrence.

4.2.2 The PEOC, the Toronto EOC, and applicable partners will adopt an operational posture appropriate for the type of event or incident that is occurring.

4.2.3 Initial response actions for the PEOC and the Toronto EOC are outlined in Table 2, Initial Provincial and Municipal Response on the following page.



Table 3: Initial Provincial and City of Toronto Response (based on information extracted from the PNERP Annex D and the PNGS and DNGS Implementing Plans)

INITIAL NOTIFICATION	INITIAL PROVINCIAL RESPONSE	INITIAL CITY OF TORONTO RESPONSE
REPORTABLE EVENT	ROUTINE MONITORING	ROUTINE MONITORING
	<ol> <li>Provincial Emergency Operations Centre (PEOC) shall notify the municipal contact point(s), Ontario Power Generation (OPG), and others as appropriate, and shall monitor the situation.</li> <li>Scientific Section staff is consulted, if appropriate.</li> <li>If and when appropriate, PEOC Emergency Information (EI) staff issues news release(s).</li> </ol>	<ol> <li>Emergency Management Public Order (EMPO) of Toronto Police Service (TPS) shall be notified by PEOC.</li> <li>PSU shall notify Office of Emergency Management (OEM).</li> <li>Emergency response staff, (TPS and OEM) will remain in contact with the PEOC and monitor event.</li> </ol>
ABNORMAL INCIDENT	ENHANCED MONITORING	ENHANCED MONITORING
	<ol> <li>PEOC shall adopt Enhanced Monitoring, and shall so inform the municipal contact point(s), OPG, and any other organizations affected.</li> <li>External notifications to Michigan, New York, Ohio and Quebec are made.</li> <li>PEOC to set up a duty team consisting of operations staff, scientific staff, OPG representative(s), EI staff, and others as required.</li> <li>If and when appropriate, PEOC EI staff issue news release(s).</li> <li>Provincial staff are notified to remain available to report in for duty.</li> </ol>	<ol> <li>Emergency Management Public Order (EMPO) of Toronto Police Service (TPS) shall be notified by PEOC.</li> <li>PSU shall notify Office of Emergency Management (OEM).</li> <li>Emergency response staff will monitor the event via the OEM. The OEM will activate the Emergency Operations Centre (EOC).</li> </ol>



	Toronto Nuclear Emergency Response TNERP	Date: 20/Aug/2020
INITIAL NOTIFICATION	INITIAL PROVINCIAL RESPONSE	INITIAL CITY OF TORONTO RESPONSE
ONSITE EMERGENCY (No emission occurring)	<ol> <li>PARTIAL ACTIVATION</li> <li>PEOC shall adopt Partial Activation response and shall initiate the appropriate internal and external notifications, including the municipal contact points and the host communities.</li> <li>PEOC shall be fully staffed. Consideration shall be given to issuing an Emergency Bulletin and/or news release.</li> <li>Ministry EOCs and Joint Traffic Control Centre (JTCC) to be established and appropriately staffed.</li> </ol>	<ol> <li>PARTIAL ACTIVATION</li> <li>OEM will issue notifications to place municipal emergency response organizations on standby.</li> <li>Toronto EOC will be fully activated.</li> <li>Emergency information function at Toronto EOC is operational.</li> <li>OEM will activate the Emergency Social Services ESF to activate emergency centres to become operational without undue delay.</li> </ol>
ONSITE EMERGENCY (Emission ongoing or expected within 12 hours)	<ul> <li>FULL ACTIVATION</li> <li>1. PEOC shall notify and require the municipal contacts to activate the public alerting system.</li> <li>2. PEOC shall adopt Full Activation, and shall initiate the appropriate internal and external notifications including the host community.</li> <li>3. PEOC shall issue the appropriate Emergency Bulletin.</li> <li>4. PEOC shall issue operational directives implementing the following operational measures, unless there are good reasons for modifying this response, for: <ul> <li>(a) Sheltering-in-place in the Automatic Action Zone</li> <li>(b) Suspension of road and rail traffic through the Automatic Action Zone</li> <li>(c) The clearance of all boaters in Lake Sector P23</li> <li>5. PEOC shall assess the situation for further action.</li> <li>6. PEOC shall issue further Emergency Bulletins, as appropriate</li> </ul> </li> </ul>	<ul> <li>FULL ACTIVATION</li> <li>1. Public Alerting will be initiated via Toronto EOC</li> <li>2. Toronto OEM will issue notifications to activate municipal emergency response organization.</li> <li>3. Toronto EOC, including Emergency Information and Media Relations function and other centres will be activated and fully staffed.</li> <li>4. Toronto EOC will implement operational directives, as issued by the PEOC.</li> <li>5. Toronto EOC will activate all three Emergency Response Centres, York University, Emergency Worker Centre at Centennial College and Emergency Worker and Reception Centre at Bluffers Park Complex.</li> </ul>



	Toronto Nuclear Emergency Response TNERP	Date: 20/Aug/2020
INITIAL NOTIFICATION	INITIAL PROVINCIAL RESPONSE	INITIAL CITY OF TORONTO RESPONSE
	<ul><li>7. PEOC EI section shall issue news releases, as appropriate.</li><li>8. JTCC and Ministry EOCs to be established.</li></ul>	
GENERAL EMERGENCY (Emission	FULL ACTIVATION	FULL ACTIVATION
(Emission ongoing or expected within 12 hours)	<ol> <li>PEOC shall notify and ensure that the municipal contacts have activated the public alerting system.</li> <li>PEOC shall issue the appropriate Emergency Bulletin.</li> <li>PEOC shall issue operational directives implementing the following operational measures for: (a) suspension of road, rail and air traffic throughout the Automatic Action Zone (b) the evacuation of the Automatic Action Zone and Lake Sectors P23 through P25 unless there are good reasons for modifying this response.</li> <li>If emission is ongoing or, if evacuations will not be completed prior to emission, issue operational directives implementing the operational measures for: (a) Evacuees to report for radiation monitoring or, if not possible, to evacuate to a destination beyond the PZ and to undertake self-decontamination.</li> <li>The ingestion of KI pills in the Automatic Action Zone.</li> <li>Sheltering-in-place in the rest of the Detailed Planning Zone. Otherwise, take this action 4 hours (or, at a time deemed appropriate) before the expected time of commencement of the emission.</li> <li>PEOC shall adopt Full Activation, and shall initiate the appropriate internal and external notifications, including the host community.</li> <li>PEOC shall assess the situation for further action.</li> </ol>	<ol> <li>Public alerting will be initiated via Toronto EOC</li> <li>Toronto OEM will issue notifications to activate municipal emergency response organization</li> <li>Toronto EOC, including emergency information and media relations function and other centres will be activated and fully staffed.</li> <li>Toronto EOC will implement operational directives, as issued by the PEOC.</li> <li>Toronto EOC will activate all three Emergency Response Centres, York University, Emergency Worker Centre at Centennial College and Emergency Worker and Reception Centre at Bluffers Park Complex.</li> </ol>



	Toronto Nuclear Emergency Response TNERP	Date: 20/Aug/2020
INITIAL NOTIFICATION	INITIAL PROVINCIAL RESPONSE	INITIAL CITY OF TORONTO RESPONSE
	<ul> <li>7. PEOC shall issue further emergency bulletins, as appropriate.</li> <li>8. PEOC EI section shall issue news releases, as appropriate.</li> <li>9. Ministry EOCs and JTCC to be established.</li> </ul>	





4.2.3 Operational directives on protective measures and strategies may be sent via emergency bulletins at this point. Declaration of a provincial emergency may also follow immediately after notification.

4.2.4 The City of Toronto's response strategies and operations will differ based on the type of emergency and response plan activation level. In the event of an "Abnormal Incident", the Toronto EOC shall activate to **Level 3 – Major Emergency**.

4.2.5 The PEOC's response posture will be that of either partial or full activation, which the Toronto EOC will match. The PEOC may be partially activated but shall be fully staffed if a reactor emission is expected to occur in 36 hours or more, or if no emission is expected. It may be fully activated for an ongoing emission (or one imminently occurring). In both cases, the Toronto EOC shall activate to **Level 3 – Major Emergency.** 

#### 4.3 Partial or Full Activation

4.3.1 In this plan, some of the strategies employed by the City of Toronto and the Toronto EOC to respond to an emergency differ based on partial or full activation of the Plan, as noted above.

4.3.2 The initial sequence of actions for activation and response will be:

100			
	Partial Activation		Full Activation
٠	The Toronto EOC will activate to	•	The Toronto EOC will activate to
	Level 3 – Major Emergency		Level 3 – Major Emergency
•	Issue notification placing municipal	•	Issue notification activating municipal
	emergency response organizations on		emergency response organizations
	stand-by according to the Emergency		according to the Emergency Level
	Level Notifications Emergency		Notifications ESF
	Support Function (ESF)	•	Establish the Emergency Information
•	Establish the Emergency Information		Centre according to the Emergency
	Centre according to the Emergency		Information and Media Relations ESF
	Information and Media Relations ESF	•	Establish the following emergency
•	Receive and implement operational		centres to become operational as
	directives from the PEOC Commander		soon as required:
	regarding protective measures		• Marine Emergency Worker Centre
	- g g p		<ul> <li>Reception/Evacuation Centre</li> </ul>
			<ul> <li>Emorgonov Worker Centre</li> </ul>

#### Table 4: Partial Activation and Full Activation





#### 4.4 Public Alerting and Direction

4.4.1 Whenever the "Alert Ready" public alerting system is to be activated, the PEOC Commander shall concurrently issue an emergency bulletin to the broadcast media with instructions to the public.

4.4.2 In the case of a General Emergency notification from the PNGS, the City of Toronto should immediately activate its public alerting system. In all other cases, the PEOC Commander shall decide when to activate the public alerting system and issue the necessary instructions to the Designated Host Communities.

4.4.3 Communication shall report that a problem exists, the affected area, instructions to monitor media for more information, precautionary and protective measures being directed, and precautionary and protective measured being rescinded.

4.4.4 In a radiological emergency, the Province and the affected municipalities shall consult and decide on responsibilities for issuing emergency bulletins.

4.4.5 The City of Toronto's public alerting system used to implement the TNERP shall confirm to the following principles, per the PNERP and PNGS IP:

- Provisions shall be made to ensure that residents of the City of Toronto can be alerted to take immediate protective action within 15 minutes of initiation
- Alerting must be coordinated with the Regional Municipality of Durham, the City of Toronto, and the Province of Ontario, ensuring timely and accurate information is disseminated
- This Plan must describe and ensure that the public alerting system has the capability to issue an alert to the affected population in the Detailed Planning Zone, located both indoors and outdoors, within 15 minutes

The City of Toronto participates in the Alert Ready network and will submit emergency notifications to the PEOC for "broadcast immediate" release.

4.4.6 The City of Toronto will adopt and further transmit all directives and bulletins from the PEOC Commander. Public alerting and information is further expanded upon in Appendix '6' of this Plan.

#### 4.5 Implementation of Protective Measures

4.5.1 Having assessed the need for protective measures and identified a strategy for implementation, the PEOC will upgrade to a Full Activation prior to directing the City of Toronto to implement protective measures and/or to evacuate at least 36 hours prior to the emission, if possible.



4.5.2 As outlined in paragraph 3.0 'Protective Action Response Strategy' of this Plan, the main strategies for protective measures are precautionary measures, evacuation, iodine thyroid blocking, and shelter-in-place. Implementation directives for protective measures shall be communicated as outlined in the following sub-sections:

Table 5	5: Quick	Reference	
			_

Quick Reference: Outline of communicating Protective Action implementation directions in the TNERP			
Protection Action	Communication	Additional instructions	
Precautionary Measures	Paragraph 4.5.3	-	
Evacuation	Paragraph 4.5.3	Paragraph 4.9	
Iodine Thyroid Blocking	Paragraph 4.5.3	Paragraph 4.5.4	
Shelter-in-Place	Paragraph 4.5.3	-	

4.5.3 Once all relevant stakeholders have been informed and implementation of the necessary actions may begin, the PEOC shall issue an Emergency Bulletin informing the affected public of the timing and extent of the expected emission. The Bulletin will also include protective actions. The bulletin will include the following information:

- Date and time of expected emission
- Sectors which may be affected
- When precautionary and protective measures will be ordered and any variations by sector
- Public inquiry phone numbers; and
- Evacuation instructions if applicable

4.5.4 Internal notification for City staff to follow Ontario Ministry of Health direction to ingest KI will occur as follows:

- The Toronto EOC will notify the following divisions/agencies of the CMOH direction to ingest KI:
  - Parks, Forestry & Recreation
  - Transportation Services
  - Toronto Water
  - o Toronto Zoo
  - o Toronto Library
  - Toronto Police Service
  - Toronto Paramedic Services
  - Toronto Fire Services
  - Toronto Transit Commission
  - o Toronto Hydro
  - Toronto Public Health
- Each of the divisions/agencies will enact pre-established procedures to forward these instructions onward to their staff/facilities within the Detailed Planning Zone.
- Each of the above divisions / agencies with 24/7 operations must ensure that the Toronto EOC/Office of Emergency Management has appropriate contact information for notifications, and that internal processes are in place.



4.5.5 Termination of protective measures will occur either when the specified timeline in Provincial direction elapses or when termination instructions from the Province are received.

#### 4.6 Entry Control

4.6.1 Management of the main traffic routes shall be coordinated by the PEOC. While marine, air, road, and rail traffic are managed through the appropriate coordinating ministries and agencies via the PEOC, the City of Toronto will provide similar coordination over City road and marine traffic in the Detailed Planning Zone. Marine traffic will be managed by the Toronto Police Marine Unit.

4.6.2 In the event of an ongoing emission or one that is imminent, the PEOC may consider the following entry control measures and notify the proper authorities for implementation as appropriate. The City of Toronto will support the implementation of these controls within its jurisdictional and functional limits:

- Suspension of through traffic on main road and rail routes going through the Detailed Planning Zone (Highway 401, Highway 2, major rail corridors)
- Suspension of marine traffic in the Detailed Planning Zone portion of Lake Ontario
- Aircraft should be kept clear of the Detailed Planning Zone

4.6.3 If it is likely that a radioactive emission will take place, operational directives or Provincial Orders will be issued to clear Response Sectors P23 through P25 of any marine craft. Entry control will be imposed via the Canadian Coast Guard, Toronto Police Marine Unit and the Durham Regional Police Service Marine Unit.

4.6.4 Full entry control should be implemented for sectors that have been evacuated; however, access will be allowed to emergency workers who have duties to perform in these sectors. This entry control shall be the responsibility of the police service of jurisdiction in accordance with the Provincial Unified Transportation Management Plan (UTMP) and the TNERP Appendix '10' Toronto Nuclear Local Traffic Control Plan.

4.6.5 Entry control will be directed and implemented in sectors undergoing shelteringin-place.



#### 4.7 Evacuation

4.7.1 This section of the Plan further details the evacuation in a nuclear emergency. The Toronto Nuclear Mass Evacuation Plan can be found in Appendix '7'

4.7.2 The first priority shall be to leave the affected area as efficiently as possible. Evacuees will be advised via bulletin to go to a facility for monitoring and decontamination or to self-decontaminate. All available routes will be utilized to evacuate the public and evacuation time estimates should be used to inform decisionmaking regarding implementation of evacuation strategies.

4.7.2 Transportation during a nuclear emergency will be complicated by significantly increased traffic on major arterial roads and highways. Integrated transportation management through the Unified Traffic Control Centre (UTCC) is required to ensure that evacuations can proceed as smoothly as possible.

4.7.3 In the event of a delayed radiological emission, evacuees are not expected to be contaminated; however, in the event of an ongoing or imminent emission, evacuees can be expected to have varying levels of contamination. It would be in the form of loose particulate on people, their belongings, and vehicles; alternately, it may be internal in those who have been exposed to ingesting the radioactive emission.

4.7.4 Decontamination facilities may be required for those who are not able to selfdecontaminate as instructed by emergency bulletins.

4.7.5 Arrangements for mass evacuation transportation and medical transfers, reception, sheltering-in-place, and other associated needs are a responsibility of the City of Toronto. Many evacuees will make their own arrangements for independent care and lodging. Decontamination verification will be required and led by Ontario Power Generation.

4.7.6 Temporary relocation is the displacement of people from their homes for a period beyond one week and up to one year to avoid chronic exposure to radiation, usually from ground contamination. It can be directed post-emission, during the intermediate response phase, or subsequent to evacuation or sheltering-in-place.

4.7.7 Families may naturally seek to reunite and evacuate together. The ability for families to reunite may depend on time of day at the onset of the emergency and the urgency of evacuations. Reunification is a variable that could complicate evacuation directions and effectiveness.

4.7.8 The Toronto Nuclear Mass Evacuation/Transportation Plan (see Appendix '6') details the strategies, operational actions, and resources that will be employed to affect an evacuation. It is based on the principles and assumptions of this section.

#### 4.8 Transportation Management

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4.8.1 A Unified Transportation Management Plan (UTMP) shall be developed by the Province for the Detailed Planning Zone as well as the arterial roads that provide access to this zone. During an emergency evacuation, the Provincial Unified Transportation Coordination Centre (UTCC) shall be responsible for implementing the UTMP.

4.8.2 The UTCC shall operate in coordination with the Municipal Emergency Operations Centres, including the Toronto EOC, and the PEOC. In addition, the UTCC may communicate with municipal Traffic Operations Centres.

4.8.3 The UTMP is executed in three incremental stages consistent with the agreed upon evacuation time estimate data. Stages are:

- <u>Stage 1</u>: Traffic flows smoothly on the main evacuation routes, and the routes remain open
- <u>Stage 2</u>: Traffic is prevented from entering the Detailed Planning Zone, except for emergency workers. Traffic that is flowing smoothly along evacuation routes that intersects with the prohibited area is diverted around it
- <u>Stage 3</u>: If necessary, this stage is initiated when it appears that particular sectors are likely to be evacuated. Additional resources should be deployed to ensure that evacuation proceeds smoothly

4.8.4 The Toronto Nuclear Local Traffic Control Plan shall be implemented to assist with the City of Toronto's portion of the UTMP. The Plan (see Appendix '8') is strategic guidance that gives flexibility in command and tactics to both the UTCC and implicated City divisions, agencies, and corporations.

#### 4.9 Radiation Health Response Plan

4.9.1 The Provincial Radiation Health Response Plan (RHRP) establishes health sector roles and responsibilities during planning, response, and recovery phases of nuclear or radiological emergencies. It describes operational concepts and principles, coordination, and implementation of precautionary and protective measures that guides Local Health Integration Networks (LHINs), paramedic services, hospitals, and cancer centres.

4.9.2 If it is estimated that the radiation dose in any sector is likely to be significant, as determined by the PEOC's Scientific Section, the appropriate provisions of the RHRP shall be implemented.

4.9.3 Where Toronto Paramedic Services are involved in this Plan or the City of Toronto is implicated in planning or response with LHINs, hospitals, or cancer centres,



the Toronto EOC will be required to generate situational awareness and coordinate response activities.

#### 4.10 Personal Monitoring and Decontamination

4.10.1 Where evacuations are being undertaken during an emission, the first priority shall be to leave the affected area as quickly as possible. Evacuees will be advised (via an operational directive) to go to a facility for monitoring or to self-decontaminate.

4.10.2 Details for decontamination shall be provided through Emergency Bulletins as will the location of facilities where evacuees may go for follow-up assurance monitoring.

4.10.3 OPG will activate five Monitoring and Decontamination Units (MDUs) as follows;

- Three MDUs will be located at fixed sites; and
- Two MDUs will be mobile facilities, stored in trailers at an OPG facility and transportable, when required, to locations which have been pre-designated

4.10.4 Multiple sites which can host the mobile MDUs will be pre-designated to ensure the availability of infrastructure and amenities to support their operation. Fixed sites as well as the pre-designated sites for mobile units will be selected so as to provide, as far as possible, monitoring and decontamination options for all directives impacting the Detailed Planning Zone.

4.10.5 Fixed and mobile MDUs will provide assurance monitoring for those who have undertaken self-decontamination, as well as monitoring and decontamination for those evacuees who either require or desire it upon evacuating the Detailed Planning Zone. Mobile MDUs can also be deployed to support fixed MDUs if additional capacity is required at those locations.

4.10.6 The Ministry of Health and Long Term Care will develop arrangements, in coordination with OPG, hospitals, designated municipalities, and their public health units, to track evacuees for the purposes of internal and external contamination assessments and to provide follow-up for those affected.

#### 4.11 Emergency Worker Protective Action Strategy

4.11.1 At the commencement of an emergency resulting in the activation of this plan, the Response Sectors in the Detailed Planning Zone will be assumed to carry the following safety status in accordance with the PNERP, based on the category of the notification initiated by PNGS:





Table 6: Emergency Worker Protective Action Strategy

Notification	Sectors in Green Safety Status	Sectors in Orange Safety Status	Sectors in Red Safety Status
Onsite Emergency with Ongoing Emission	All Remaining	P1, P2, P23	-
General Emergency with Ongoing Emission	All Remaining	P3-P14, P24	P1, P2, P23
All other emergencies	All	-	-

4.11.2 As soon as relevant data is available, the PEOC will re-assign safety status to all the sectors and will update them periodically. During the course of an emission over the land areas of the Detailed Planning Zone this updating will be done on an hourly basis. The safety status of sectors should be promptly communicated by the PEOC to all concerned.

4.11.3 It is the responsibility of each organization with emergency workers operating or required to operate in the Detailed Planning zone to ensure that they are kept apprised of the current safety status of response sectors.

4.11.4 This plan provides for the setting up of Emergency Worker Centres (EWCs) (see Appendix '9' & '10' of this plan). It expands on strategies for implementation of land and marine EWCs.

4.11.5 Emergency workers who need to enter a sector shall first report to a EWC, where they will be provided with personal monitoring devices and briefed on the health risks and precautions they should observe, as well as any maximum time limit on their stay in the sector.

4.11.6 If an emission is ongoing, emergency services who are required to operate in the Automatic Action Zone before an EWRC is functioning should carry and use the following equipment:

- Personal Protective Equipment (PPE)
- Dosimetry
- Stable iodine tablets; and
- A card listing the default safety status of sectors

4.11.7 OPG is responsible for the monitoring and decontamination aspect of EWCs, the relevant details of which will be provided in their plans/procedures.



### 4.12 Venting of Containment

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4.12.1 During a Design Basis Accident (DBA), the holdup within the station containment structure (e.g. vacuum building) of any radioactive material released from damaged fuel would create the possibility of venting such contained radioactivity in a controlled manner and in a safe direction.

4.12.2 During a Beyond Design Basis Accident (BDBA), the holdup period of any radioactive material may be significantly reduced and radioactive material may be released in an uncontrolled manner.

4.12.3 PNGS shall include, in each hourly report to the PEOC, an estimate of the time at which the vacuum building pressure would reach the minimum level at which the filtered air discharge system can be operated.

4.12.4 The time interval between the occurrence and the accident and containment pressure reaching this minimum level will depend on the condition and behavior of the containment system. With no impairment to containment, this time interval is expected to be approximately 48 hours (an impaired containment could significantly reduce that time).

4.12.5 The PEOC should consider, in consultation with OPG, the Canadian Nuclear Safety Commission (CNSC), the City of Toronto, and the Region of Durham, whether venting would be feasible or advisable.

4.12.6 The Toronto EOC and the City of Toronto must be prepared to report on its emergency situation to support this decision. To assist with venting decisions, the City of Toronto will collect, collate, evaluate, and develop situational awareness of outstanding issues and consequences.

#### 4.13 Protection and Care of Animals

4.13.1 In accordance with the EMCPA, paragraph 7.0.2 (4) and the PNGS IP, paragraph 5.3.1 (h), provisions must be made in this plan for the protection and care of all animals, including those left behind during an evacuation.

4.13.2 The COT Animal Care and Relief ESF shall be enacted as soon as it is clear evacuation is taking place. Additional assistance will be sought as necessary from the Ontario Society for the Prevention of Cruelty to Animals for the care of all animals; the Ontario Ministry of Agriculture, Food, and Rural Affairs (OMAFRA) for assistance for farm animals; and, the Ontario Ministry of Natural Resources and Forestry (MNRF), for issues pertaining to wildlife.



4.13.3 Provisions for animals brought to emergency reception centres – whether authorized or not – are made in the Toronto Nuclear Mass Evacuation/ Transportation Plan (see Appendix '6').

#### 4.14 Liquid Emission Response

4.14.1 The main radiation exposure pathway for a liquid emission from PNGS is through contamination of a water supply source, with the resulting hazard being the subsequent ingestion of contaminated water.

4.14.2 If a liquid emission has occurred at PNGS in conjunction with an event that meets the notification category system as detailed in this plan and the PNGS IP, it shall be managed by this plan.

4.14.3 A liquid emission at PNGS that does not meet the notification category system shall be managed in accordance with the operator's response plan; however, it may escalate to a magnitude that is encapsulated within this plan. Accordingly, vigilance with reportable events is advised.



#### Appendix '1'



#### Pickering Nuclear Generating Station Detailed and Contingency Planning Zones

Figure 4: Initial Provincial and City of Toronto Response (based on information extracted from the PNERP Annex D and the PNGS and DNGS Implementing Plans)



#### Appendix '2'



#### Pickering Nuclear Generating Station Ingestion Planning Zones

Figure 5: Pickering Nuclear Generating Station Ingestion Planning Zones (extracted from the PNGS Implementing Plan).



Appendix '3'

# Population Data by Sector/Planning Zone

**Population:** P Zone areas highlighted in yellow refer to Toronto. Population estimates include resident data based on the 2006 Canada Census and estimates of employees who commute into the PZ (2006 Transportation Tomorrow Survey (TTS)).

Table 7: Population Data by Sector/Planning Zone

Sector	Population
P1	9,313
P2	12,761
P3	4,656
P4	8,605
P5	14,109
P6	11,353
P7	16,224
P8	17,098
P9	18,702
P10	15,374
P11	8,576
P12	3,309
P13	12,144
P14	8,857
P15	10,703
P16	8,419
P17	14,260
P18	22,376
P19	8,025
P20	288
P21	12,911
P22	18,388
PNGS Staff	4,500
Total with PNGS Staff	260,861
Total without PNGS Staff	256,361



Appendix '4'

# **Toronto Emergency Operations Centre**

#### **Nuclear Emergency Notification Procedure**

Using OEM's Master Contact List, the following points of contact shall be notified of activation of the TNERP in the order they are presented:

- □ All City of Toronto Divisions
- COT Senior Leadership Team / Control Group
- □ [List all local utilities following this bullet]
- □ Toronto District School Board: [name, number, and email as applicable]
- □ Toronto Catholic District School Board: [name, number, and email as applicable]
- □ [List all applicable branches of voluntary organizations following this bullet]



Appendix '5'

# **Emergency Information and Alerting**

#### 1.0 – Background

1.1 The responsibility for activating the Alert Ready notification system and issuing emergency bulletins rests with the PEOC Commander. The aim of public direction is to communicate, directly to the affected public through emergency bulletins, the direction and guidance regarding protective actions they should take in order to ensure their safety and welfare.

1.2 Every effort shall be made to consult with emergency response organizations as to the content of the bulletin, preferring pre-scripted messages where possible, and to release them in a timely manner.

1.3 Emergency bulletins issued during a partial activation response level, before an emission is expected to occur, should be informative and permissive, whereas those issued once a full activation response has been adopted should be increasingly directive.

#### 2.0 – Standards

2.1 In a partial activation response, emergency bulletins shall include the following information, as applicable:

- Date and time of expected emission
- Sectors (with geographical description) which may be affected
- Applicable precautionary and protective measures for the affected sectors or area and applicable timings; and
- Public inquiry phone number(s) and websites

2.2 In a full activation response and when an emission is expected in 36 hours or less, emergency bulletins should ensure that they include directions regarding:

- Date and time of expected emission
- Precautionary measures directed in specific zones
- Protective measures directed in specific sectors or zones
- Reception Centre information which can receive evacuees who are without accommodations
- KI pill availability and ingestion direction; and
- Public inquiry phone number(s) and websites



2.3 The Toronto Police Marine Unit is responsible for assisting in notifying and evacuating marine craft that do not have radios on board. Provisions must be made as part of their operational response.

#### 3.0 – Emergency Information Centre

3.1 The City of Toronto will establish an Emergency Information Centre (EIC) for all activation levels and will follow procedures outlined in the Emergency Information and Media Relations ESF.

3.2 The EIC is responsible for the collection, dissemination, and monitoring of local emergency information and for coordination with the PEOC Emergency Information Section (EIS).

3.3 The EIC shall be coordinated by the Toronto EOC's Emergency Information Officer (EIO) and includes the corporate Strategic Communications team. OPG, neighbouring municipalities, and federal and provincial liaisons may participate in the operations of the EIC if desired.

3.4 The functions of the EIC include:

- In coordination with the Provincial EIS, preparing and issuing news releases and other public information documents for the local media and residents, describing the emergency and response measures
- Keeping the Provincial EIS apprised of communications environmental awareness, such as local public perceptions, rumours, and reactions
- Assisting local media covering the emergency in coordination with the Provincial EIS
- Monitoring local media to ensure that local news is being correctly transmitted to the public by the media and confirming this with the Provincial EIS; and
- In coordination with the Provincial EIS, arranging media briefings to communicate "key messages" to the public
- 3.5 The preferred channel for public inquiry is 3-1-1 Toronto.



Appendix '6'

### **Toronto Nuclear Mass Evacuation/ Transportation Plan**

This Appendix shall constitute the Toronto Nuclear Mass Evacuation Plan. This Plan needs to be developed amongst a working group of partners and will be inserted into the TNERP when completed.

The following points will be incorporated the plan;

#### **Concept of Operations**

- Evacuations will be directed by Response Sector or groups of sectors, detailing the boundaries of the evacuation area by readily identifiable roads/landmarks
- Evacuees who may have been exposed to an emission will be directed either to
  proceed to a Monitoring and Decontamination Unit (MDU) or to selfdecontaminate upon reaching their destination. Information on locations for
  monitoring shall be provided by the PEOC at the time of the emergency
- Evacuees who are not at risk of being contaminated will be instructed by to leave the Detailed Planning Zone and will not be directed to an MDU or to selfdecontaminate
- Evacuees will be permitted to evacuate in the direction and to the destination of their choosing, subject to restrictions (due to weather, traffic conditions etc.) announced by the PEOC through the Emergency Bulletins
- The smooth and expeditious movement of evacuee traffic is the responsibility of the traffic control organization set up under the Joint Traffic Control Plan and Toronto Nuclear Local Traffic Control Plan
- The Joint Traffic Control Centre will monitor the evacuating traffic and inform the PEOC of any issues impacting the evacuation
- Evacuations will be directed by Response Sector or groups of sectors, detailing the boundaries of the evacuation area by readily identifiable roads/landmarks
- Evacuees who may have been exposed to an emission will be directed either to proceed to a Monitoring and Decontamination Unit (MDU) or to self-decontaminate upon reaching their destination. Information on locations for monitoring shall be provided by the PEOC at the time of the emergency
- Evacuees who are not at risk of being contaminated will be instructed by to leave the Detailed Planning Zone and will not be directed to an MDU or to self-decontaminate
- Evacuees will be permitted to evacuate in the direction and to the destination of their choosing, subject to restrictions (due to weather, traffic conditions etc.) announced by the PEOC through the Emergency Bulletins
- The smooth and expeditious movement of evacuee traffic is the responsibility of the traffic control organization set up under the Unified Traffic Control Plan and Toronto Nuclear Local Traffic Control Plan

 The Unified Traffic Control Centre will monitor the evacuating traffic and inform the PEOC of any issues impacting the evacuation

#### Logistics

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- Municipal nuclear emergency plans need to identify the location of the following emergency facilities and shall include provisions for their selection, staffing, and resourcing:
  - Reception Centres
  - Evacuation Centres
  - Monitoring and decontamination for evacuees either in a Reception Centre or a separate facility
  - Emergency Worker Centres; and
  - An Emergency Information Centre
- Municipal nuclear emergency plans shall also identify the location of alternate municipal facilities outside the Contingency Planning Zone
- All stakeholder emergency plans shall describe how their emergency centres and facilities are linked via primary and backup communication systems which enable email and transfer of emergency information



Appendix '7'

# **Nuclear Emergency Reception Centres**

To be completed as a separate plan and included in the TNERP as an a stand-alone Annex.



Appendix '8'

### **Toronto Nuclear Emergency Local Traffic Control Plan**

A local traffic control plan needs to be developed to outline how City partners will coordinate with the Provincial Traffic Management Plan.

#### 1.0 – Background

1.1 During an emergency, the Unified Traffic Control Centre (UTCC) shall be responsible for implementing the Unified Traffic Control Plan.

1.2 The Unified Traffic Management Plan (UTMP) is executed in three incremental stages consistent with the agreed upon evacuation time estimate data. Stages are:

- <u>Stage 1</u>: Traffic flows smoothly on the main evacuation routes, and the routes remain open
- <u>Stage 2</u>: Traffic is prevented from entering the Detailed Planning Zone, except for emergency workers. Traffic that is flowing smoothly along evacuation routes that intersects with the prohibited area is diverted around it
- <u>Stage 3</u>: If necessary, this stage is initiated when it appears that particular sectors are likely to be evacuated. Additional resources should be deployed to ensure that evacuation proceeds smoothly



Appendix '9'

### **Emergency Worker Centre**

'Land'

#### 1.0 – Background

1.1 The purpose of an Emergency Worker Centre (EWC) is to provide a staging area, decontamination facilities, respite, and single window access point for emergency workers with duties in the Detailed Planning Zone during a nuclear emergency.

1.2 Municipal plans shall detail how emergency services obtain equipment, appropriately store them, and maintain such equipment so that it is readily available, when required.

1.3 This appendix overviews plans for the EWC and the Marine EWC (MEWC) as required by PNGS IP.

#### 2.0 – Emergency Worker Centres

2.1 The PNGS IP requires the nuclear facility to monitor and decontaminate emergency workers during a nuclear emergency. The activation of a EWC will be based on direction from the PEOC, in consultation with the Toronto EOC. The designated location of the EWC is Centennial College, Progress Campus at 941 Progress Avenue (at Markham Road).

An additional Emergency Worker Centre is located at the Bluffers Park Complex and is co-located with a Reception Centre for impacted boaters from Lake Ontario. Details of this Emergency Worker Centre and Reception Centre are outlined in Section 1 of this Appendix.

2.2 The purpose of the EWC is to provide safeguards to protect the health and safety of workers who may be required to provide emergency assistance in sectors with or that potentially may have higher than normal levels of radioactivity.

2.3 The EWC is intended to address health and safety issues related to emergency workers who are required to be deployed into the Detailed Planning Zone from:

- Toronto Fire Services
- Toronto Paramedic Services
- Toronto Police Service
- Toronto Transit Commission (TTC)

- Any City of Toronto division
- Other agencies and corporations of the City of Toronto; and
- Provincial, adjacent municipalities, and non-governmental organizations

This facility does not offer evacuee services or support for members of the general public.

- 2.4 The EWC will provide the means to:
  - Instruct workers on use of Personal Protective Equipment and basic Radiation Safety
  - Provide exposure control for workers to safely complete their assignments
  - Decontaminate workers, their vehicles and equipment
  - Track the deployment of workers; and
  - Communicate the safety status of sectors from workers deployed into the Detailed Planning Zone to the Toronto EOC

2.5 The Emergency Worker Centre is only activated during a nuclear emergency that originates at the Pickering Nuclear Generating Station. It is not required for a nuclear emergency at the Darlington Nuclear Generating Station.

#### 3.0 – Concept of Operations

3.1 Activation:

- The decision to activate the EWC by the PEOC based on consultations with Toronto EOC
- The timing and urgency of activation will be determined by the PEOC and communicated by the Toronto EOC to the designated contacts for the EWC at Toronto Fire Services, Toronto Police Service, Toronto Paramedic Services, Toronto Transit Commission and Centennial College
- 3.2 Reporting and Registration:
  - Before being deployed into the Detailed Planning Zone, staff must report to the EWC to obtain instructions on basic radiation safety, dosimetry and reporting procedures for entry and exit from the Detailed Planning Zone
  - Personal protective equipment (PPE) will be provided as required
  - Each of the following agencies will staff a Registration desk to receive and record the names and deployment status of staff that are sent into the Detailed Planning Zone:
    - Toronto Police Service
    - Toronto Fire Services
    - Toronto Paramedic Services



- Toronto Transit Commission
- Ontario Power Generation; and
- Other agencies, as required

3.3 Vehicle and Pedestrian Traffic Flow: refer to OPG's approved procedure for Campus Flow Map and Traffic Flow Plan.

- 3.4 Signage:
  - OPG will provide signage to direct vehicular and pedestrian traffic to maintain separation between clean and (potentially) contaminated pathways
  - The signs will be stored in the OPG bunker at Centennial College and deployed by OPG staff during the activation of the EWC
- 3.5 Protective Measures:
  - The EWC will use the safety limits prescribed in the PNERP Master Plan to manage the duration of potential exposure and time spent by workers in the Detailed Planning Zone
  - Potassium lodide (KI) will be made available by OPG at the EWC for staff who are deployed into the Detailed Planning Zone
  - The administration of KI shall be as directed by the Province
  - KI is not required by staff working at the EWC as it is located outside the Detailed Planning Zone
- 3.6 Dosimetry:
  - OPG will issue dosimetry and instructions to workers at the Exposure Control Desk. The dosimetry will alert the worker of a high dose rate and the radiation exposure level
  - Baseline readings will be recorded by OPG for each worker before they dispatched into the Detailed Planning Zone
  - Subsequent readings will be similarly maintained
  - Copies of exposure records maintained by OPG will be made available to agency staff, as requested
- 3.7 Vehicle Monitoring and Decontamination:
  - OPG will provide staff and equipment to monitor vehicle interiors and exteriors for radioactive contamination
  - OPG will position their staff at the designated parking lots to monitor vehicles and occupants
  - If contaminated, the vehicle will be identified and directed for decontamination at assigned parking lots



- If the vehicle is not contaminated, it will be directed to parking lots allocated for clean vehicles
- Toronto Fire Services will set up and provide vehicle decontamination in the designated parking lot
- Placement of the decontamination equipment should be determined in consultation with the TTC, if possible, to ensure sufficient room for maneuvering large vehicles such as TTC buses
- Toronto Fire Services staff will assist drivers through the decontamination process with instructions and offer guidance on the placement of their vehicle
- After decontamination, the exterior of the vehicle will be re-monitored by OPG
- If deemed clean, the interior of the vehicle will be monitored and decontaminated if required
- The emergency worker/driver will be directed to Personal Monitoring
- 3.8 Personal Monitoring and Decontamination:
  - OPG will set up and operate a Personal Monitoring area according to approved OPG procedures
  - Workers who are deemed clean will be sent to the Exposure Control Desk
  - Workers requiring decontamination will be directed to Personal Decontamination
  - Following personal decontamination, workers may be asked to provide a urine sample to determine if radioactive contaminants have been ingested or inhaled
- 3.9 Equipment Decontamination Procedures:
  - OPG will provide guidance on radiation safety for the decontamination of equipment and accessories of emergency workers
  - The Toronto Police Service will provide staff and equipment to handle and decontaminate firearms, with guidance from OPG on radiation safety
- 3.10 Registration and Re-deployment:
  - Emergency workers who are deemed clean will inform their respective agencies of their availability for re-deployment
  - OPG will advise individual workers if they have reached their exposure limits
  - If they have not reached exposure limits, they will inform their agencies they are available for re-deployment inside the Detailed Planning Zone and wait at staging areas for further direction from their agencies
  - If workers have reached their exposure limits, they should notify their agencies of their status and request further direction for assignments outside the Detailed Planning Zone



3.11 Media Relations and Emergency Information:

• The Province and Toronto Emergency Operations Centre through the Strategic Communications Emergency Information Officer will issue emergency information to the media for general and local issues respectively

3.12 Cessation of Operations:

- This Centre will be demobilized when advised by Toronto Emergency Operations Centre to cease operations
- Documentation collected (under Incident Management System), evacuee registration lists and dose records of evacuees and emergency responders should be collected and forwarded to the Toronto Office of Emergency Management

#### 4.0 – Notifications

4.1 The Toronto Emergency Operations Centre will notify the Manager of Safety and Security, Centennial College to evacuate Progress Campus of students, faculty and non-essential staff. The College will ensure that designated areas of the campus are made accessible to Toronto Fire Services and Ontario Power Generation

4.2 Each agency represented at the Toronto EOC will inform their respective staff of the activation of the EWC and when it is scheduled to be operational. Agency staff at the EOC will also provide periodic reminders to their respective organizations of the purpose of the EWC and to direct their workers to report to the EWC before they are deployed into the Detailed Planning Zone

4.3 The City's Shelter, Support and Housing Administration division should notify their agency partners to report to the EWC before they are deployed into the Detailed Planning Zone e.g. Local Health Integration Network (LHIN), non-government organizations and other agencies involved in the care of vulnerable individuals

4.4 Lead and support agencies named in this document will be contacted by their respective organizations based on notifications made by the Office of Emergency Management at the onset of the nuclear emergency

#### 5.0 – Responsibilities

5.1 Lead Agency – Toronto Fire Services:

- Appoint Incident Commander in Unified Command structure with Incident Management System
- Set up and operate exterior vehicle decontamination apparatus with OPG
- Organize operations

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- Implement plans and procedures
- Liaise with Toronto Emergency Operations Centre
- Liaise with Toronto Police Major Incident Command Centre (MICC) and/or TPS Command Post
- Update PNERP Sector status maps
- 5.2 Ontario Power Generation:
  - Issue dosimetry to emergency workers
  - Maintain dose records of workers deployed into Detailed Planning Zone
  - Instruct workers on the use of dosimetry and reporting requirements
  - Assist Incident Commander to update PNERP Sector status maps
  - Monitor and decontaminate EWC premises as required
  - Monitor and decontaminate workers, vehicles, equipment and accessories
  - Set-up facility according to approved OPG procedures
  - Restore the EWC to normal condition at the conclusion of the emergency

#### 5.3 Toronto Police Service:

- Appoint Police Incident Commander for policing operations
- Organize policing operations
- Register policing staff
- Implement plans and procedures
- Participate in Unified Command at EWC
- Liaise with Major Incident Command Centre
- Control entry to the Campus and traffic flow within Campus

#### 5.4 Centennial College:

- Evacuate campus of students, faculty and non-essential staff
- Enable agency access to EWC gymnasium, designated areas for EWC Operations Centre, cafeteria and parking lots
- Provide desks, chairs, rooms/space, telephones, fax machines, photocopiers and other amenities as required to the agencies
- Maintain building operations, cleaning, sanitation, campus security, lighting, access to offices and rooms and contracted services
- Track expenses at EWC

5.5 Toronto's Office of Emergency Management (OEM) leads and facilitates all City activities related to the City's ability to mitigate, prepare for, respond to, and recover from major emergencies. The Office coordinates the activities of divisional and intergovernmental teams to plan and deliver emergency management objectives, and ensure an effective balance of compliance, administrative governance and delegation of responsibility throughout the organization.



The OEM maintains the City's Emergency Operations Centre (EOC), which can be activated in response to an emergency. Trained staff from across City divisions and related agencies are deployed to the EOC to ensure a coordinated response to an incident. The EOC is activated based on the response needed as outlined the table below. When there is no emergency it is maintained in a state of readiness.

The OEM is curator of the City of Toronto's Emergency Plan as well as this Nuclear Emergency Response Plan.



Appendix '10'

### **Emergency Worker Centre**

'Marine'

#### 1.0 – Background

1.1 In the event of a nuclear emergency at PNGS, it may be necessary to evacuate the Lake Ontario Sectors. To facilitate marine evacuations safely, a Marine Emergency Worker Centre (MEWC) will be established at the Bluffers Park Complex, at the bottom of Brimley Road in Toronto. This Plan is not applicable to the lake sectors of the Darlington Nuclear Generating Station.

1.2 The purpose of the Marine Emergency Worker Centre (MEWC) is provide protective measures to enable marine emergency responders to work safely when they evacuate the lake sectors of the Pickering Detailed Planning Zone. The MEWC hosts Monitoring & Decontamination Units (MDU) operated by OPG.

1.3 The scope and objectives of the Marine Emergency Worker Centre are:

- Coordinate the activities of marine emergency responders to evacuate the lake sectors of the Pickering Detailed Planning Zone
- Equip emergency responders to enter the Detailed Planning Zone with personal dosimetry, personal protective equipment and provide instructions on their use
- Update information on the status of the lake sectors, wind direction, weather forecasts, status of emissions from nuclear station
- Monitor and decontaminate emergency responders and their vessels according to approved OPG procedures
- Monitor and decontaminate marine evacuees from the Pickering Detailed Planning Zone
- Liaise with Toronto Police Major Incident Command Centre (MICC), Toronto Emergency Operations Centre (EOC) and Durham Regional Police Service (marine unit) for overall direction and situational awareness

#### 2.0 – Concept of Operations

2.1 Marine evacuations will be required as directed by the Province in the event of imminent or ongoing emissions from the Pickering Nuclear Station. The Canadian Coast Guard and Toronto Police Marine Unit will be asked to clear lake sectors with continual marine broadcasts warning the boating public to avoid or leave the lake sectors of the Pickering Detailed Planning Zone.





#### 2.2 Marine Evacuations:

As stated in the PNERP-Implementing Plan of the Pickering Nuclear Generating Station, boaters will be notified by the Canadian Coast Guard via marine radio to leave the area around the Pickering Nuclear Station. Many boats are equipped with the Global Maritime Distress and Safety System (GMDSS) which will automatically alert them of an emergency message.

A direct way of notifying these boaters may be required especially when an emission is about to occur (within 12 hours) or is already in progress.

It should not be automatically assumed that boaters are equipped with GMDSS or monitoring marine broadcasts at the time of the emergency.

Boaters should be strongly advised to leave the lake sectors and go beyond 10 km of the nuclear station

The Durham Regional Police Service helicopter may be requested to assist to determine if there are boaters in the lake sectors .

The Toronto Police Marine Unit and other agencies may be dispatched to evacuate boaters from the lake sectors. Boaters will be directed to either the Marine EWC at Bluffers Park or Iroquois Park (Whitby Harbour) for monitoring and decontamination.

2.3 Lead and Support agencies named in this document will be contacted by their respective organizations based on notifications made by the Office of Emergency Management at the onset of the nuclear emergency.

2.4 Monitoring and decontamination of boaters from lake sectors:

It is only necessary to monitor and decontaminate boaters after emissions have started. Monitoring and decontamination details are described in approved OPG procedures

2.5 Assistance after Monitoring & Decontamination:

Boaters may leave the Bluffers Park after they have been monitored and cleared of contamination. They may go to a destination of their choice but should be advised to listen to Provincial direction for protective measures especially if they are residents of the Pickering Detailed Planning Zone.

If evacuated boaters are residents of the Pickering Detailed Planning Zone, the Emergency Social Services Emergency Support Function may be activated to may offer assistance for temporary accommodations, if the Province has ordered evacuations.



Toronto Nuclear Emergency Response -- TNERP

If the boaters are able to live aboard their vessels until the evacuation order is lifted, they may choose to do so at a marina or yacht club that can host them.

Reception Centre staff will register boaters who are temporarily moored at the Bluffers Park Complex and other locations. This will enable families to be re-united, if needed. They may direct boaters who prefer temporary housing to accommodations being used for land-based evacuees.

If required, the Toronto Transit Commission may be requested to send buses to Bluffer Park to take evacuees to other destinations, depending on individual circumstances.

2.6 Media Relations and Emergency Information:

The Province and Toronto Emergency Operations Centre will issue emergency information to the media for general and local issues respectively. The boating community at the Bluffers Park Complex may also need emergency directions that are specific to their circumstances.

Public inquiries from the Bluffers Park Complex community should be answered by a designated spokesperson from the Command Post if they relate to specific issues about operations at Bluffers Park e.g. what remains open or has been shut down, access to yacht clubs or public marina, road access etc.

2.7 Mutual arrangements with Durham Regional Police Service and other neighbouring police services:

The evacuation of the lake sectors is a responsibility that is shared between the Toronto Police Service and Durham Regional Police Service.

Arrangements to evacuate, monitor and decontaminate boaters are twinned at the Bluffers Park Complex and at Iroquois Park, Port Whitby Harbour. While both locations would be set up to receive boaters, the Centre that should be used may depend on the wind direction at the time of the emergency.

2.8 Cessation of Operations:

This Centre will be demobilized when advised by Toronto Emergency Operations Centre to cease operations.

Boaters and the Bluffers Park Complex community should be advised of the status and/or termination of the emergency. Boaters within the Detailed Planning Zone should be told if they may return to the Detailed Planning Zone. OPG staff will monitor the site for contamination and decontaminate it if necessary.



Documentation collected (under Incident Management System), evacuee registration lists and dose records of evacuees and emergency responders should be collected and sent to the Toronto Office of Emergency Management.

#### 3.0 – Responsibilities

- 3.1 Lead agency Toronto Police Service (Marine Unit):
  - Appoint Police Incident Commander for policing operations
  - Organize policing operations
  - Register policing staff
  - Implement plans and procedures
  - Participate in Unified Command at EWC
  - Liaise with Major Incident Command Centre
  - Update PNERP Sector status maps
- 3.2 Ontario Power Generation:
  - Issue dosimetry to emergency workers
  - Maintain dose records of workers deployed into Detailed Planning Zone
  - Instruct workers on the use of dosimetry and reporting requirements
  - Assist Incident Commander to update PNERP Sector status maps
  - Monitor and decontaminate EWC premises as required
  - Monitor and decontaminate workers, vehicles, equipment and accessories
  - Set-up facility according to approved OPG procedures
  - Restore the EWC to its normal condition at the conclusion of the nuclear emergency
- 3.3 The City of Toronto's Office of Emergency Management:
  - Maintain the City of Toronto's Emergency Plan and Toronto Nuclear Emergency Response Plan
  - Operates the Emergency Operations Centre
  - Arrange for meals and temporary accommodation, if required by evacuees
  - Organize mass transportation to enable evacuees to leave area, if required





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