

## List of Proposed Changes to the Provincial Nuclear Emergency Response Plan (PNERP) 2009

The main proposed changes to the PNERP listed below are based on a review of the most recent guidance, standards, studies and technical analyses. This review together with conclusions and recommendations for the PNERP revision are detailed in the PNERP Planning Basis Review and Recommendations Discussion Paper which is the subject of a Spring 2017 public consultation. The proposed changes outlined below, therefore, are subject to change, pending the results of the public consultation process.

Chapter/Section/Title	Current	Proposed Changes
<b>Chapter: 2 Planning Basis and Concepts</b>		
Sec 2.1 - The Potential Hazard Sub-section 2.1.1 – 2.14	In all emergencies covered by the PNERP 2009 plan, the hazard could arise either from a nuclear reactor accident or from a radioactive source which has undergone an accident or over which control has been lost, resulting in the potential for, or the occurrence of: radiation exposure or radioactive contamination of people and the environment.	The revised PNERP to be aligned with revised Health Canada Guidance for potential hazards.
Sec 2.2 - Protective and Precautionary Measures Sub-sec 2.2.1 – 2.2.7	The prevention of internal and external contamination by preventing or minimizing its exposure to the radiation source.	PNERP to be aligned with revised Health Canada Guidelines on Protective and Precautionary Measures.
Sec 2.3 - Basis of Planning	Planning Basis – The Hazard – Characteristics of a two types of accidents - Basic Offsite Effect and Severe Accident – are defined.	<ul style="list-style-type: none"> <li>- Minor modifications may be made. The integrity of the Basic Offsite Effect description found in the current PNERP will be maintained.</li> <li>- The Severe Accident description from the current PNERP will be enhanced with the inclusion of multi-unit events.</li> </ul>

Sec 2.4 - Primary Zones and Sectors	<p><b>Pickering, Darlington and Bruce Power CANDU stations</b></p> <ul style="list-style-type: none"> <li>- 3 km Contiguous Zone</li> <li>- 10 km Primary Zone</li> <li>- 50 km Secondary Zone</li> </ul>	<p>The current PNERP 2009 Contiguous, Primary and Secondary zones will be maintained in addition to a proposed new Contingency Planning Zone (see below for details)..</p>
	<p><b>Fermi 2</b></p> <p>The Primary Zone has an approximate radius of up to 23 km from Fermi 2. The Secondary Zone is within an 80 km radius of Fermi 2.</p>	<p>U.S. regulation sets a standard Emergency Planning Zone of 10 miles (16 km) for U.S. nuclear power generating stations; the following zones will be delineated for the Fermi 2 site:</p> <ul style="list-style-type: none"> <li>- No Contiguous Zone</li> <li>- The Detailed Planning (Primary) Zone will be reduced to a radius of 16 kilometres to align with the standard set by U.S. regulation</li> <li>- The Ingestion Control (Secondary) Zone will be maintained at 80 km to align with the standard set by U.S. regulation</li> </ul>
	<p><b>Contingency Planning Zone</b></p> <p>Provision for a new Contingency Planning Zone (CPZ) should be included to align with CSA N1600 and to provide for very low probability, severe accident situations.</p> <p>The CPZ is the area within which arrangements in the event of a radiological release could be required to monitor the dose rates from deposition (groundshine<sup>1</sup>). This is done in order to locate areas, beyond the detailed planning Primary Zone, which may require exposure control measures (evacuation, sheltering, ITB and/or longer term relocation) once environmental monitoring results have been obtained. The following CPZs should be defined:</p> <ul style="list-style-type: none"> <li>• Pickering, Darlington and Bruce Power CANDU stations: 20 km</li> <li>• CRL: None</li> <li>• Fermi 2: To Be Determined</li> </ul> <p>The CPZ for CANDU stations, defined as the area beyond the Primary Zone out to a radius of 20 km, has been determined by</p>	

<sup>1</sup> Groundshine is defined as the radioactive materials that fall to the ground.

	<p>doubling the Primary Zone distance in order to provide a conservative buffer for nuclear emergency planning and response.</p> <p>Plans and arrangements for this CPZ include considerations for:</p> <ul style="list-style-type: none"> <li>• Subdivision into sub-zones.</li> <li>• Population estimates for each sub-zone.</li> <li>• Provision for this Zone in Scientific Section mechanisms and processes, including in the Environmental Radiation and Assurance Monitoring Group (ERAMG) Procedures and plume modelling, as applicable.</li> <li>• Familiarization sessions with impacted municipalities, as required.</li> <li>• Identify existing response centres that fall within the CPZ and develop a list of possible alternates located outside the CPZ.</li> <li>• No additional Thyroid Blocking requirements beyond those stipulated for the Secondary Zone.</li> <li>• No additional public education requirements - public education to be consistent with Secondary Zone requirements.</li> <li>• No requirement for designation of additional emergency response centres (including Emergency Operations Centres (EOCs), Emergency Information Centres (EIC), reception/evacuee centres, personal monitoring and decontamination facilities) beyond those designated for Primary Zone response purposes.</li> <li>• No additional public alerting and communications requirements beyond what is in place and consistent with existing provincial mechanisms.</li> </ul>	
<p>Sec 2.6 - Population Groups</p>	<p>The need for a protective measure to take into account the projected dose to the most exposed individual in the Critical, Vulnerable and Special Groups.</p>	<p>The revised PNERP to be aligned with revised Health Canada Guidance on population groups.</p>
<p>Sec 2.7 - Protection Action Levels</p>	<p>The PNERP provides for Protective Action levels which provide guidance in the pre-emission phase to determine the need to undertake protective measures. Operational Intervention Levels for protective action decision-making in the post-emission phase were not included.</p>	<p>The revised PNERP to be aligned with Health Canada Guidance which includes Operational Intervention Levels for post-emission protective action decision-making.</p>

<p>Sec 2.9 - Concept of Operations – Nuclear and Radiological Emergencies Sub-sec 2.9.1 - 2.9.2</p>	<p>Operations to deal with a nuclear or radiological emergency will be conducted in two successive phases:</p> <ul style="list-style-type: none"> <li>- Response Phase</li> <li>- Recovery Phase</li> </ul>	<p>A review of revised Health Canada Guidelines and international best practices will be undertaken to determine whether a change to the PNERP’s emergency phases is required.</p>
<p><b>Chapter: 5 Operational Responsibilities</b></p>		
<p>Sec 5.5 – Notification System</p>	<p>Pursuant to the Nuclear Safety and Control Act and Section 6 of the Regulations for Class 1 Facilities made under that Act, a nuclear installation or establishment in Canada makes an initial notification to the Provincial and Municipal authorities upon the occurrence of an event or condition which has implications for public safety, or could be of concern to the authorities responsible for public safety.</p>	<p>The Notification Categories in place with each of the nuclear facilities will be reviewed to ensure that they reflect new severe accident management criteria.</p>
<p><b>Chapter: 6 Provincial Operational Response Strategy</b></p>		
<p>Sec 6.2 – Provincial Response Levels</p>	<p>Upon receipt of notification of an emergency, the Province will adopt the appropriate response levels based on the following:</p> <ul style="list-style-type: none"> <li>- Routine monitoring</li> <li>- Enhanced monitoring</li> <li>- Activation (partial or full)</li> </ul>	<p>The Provincial Response Levels in place with each of the nuclear facilities will be reviewed in concert with the Notification Categories.</p>