

MUNICIPALITY OF CLARINGTON

NUCLEAR EMERGENCY PLAN

October 2002

REVISION 4

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MUNICIPALITY OF CLARINGTON NUCLEAR EMERGENCY PLAN

1 INTRODUCTION

1.1 AIM

The aim the Municipality of Clarington's (Clarington) Nuclear Emergency Response Plan is to prescribes the planning and operational requirements for a response to a nuclear emergency directly or indirectly affecting the municipality.

1.2 SCOPE

The scope Clarington Nuclear Emergency Plan (the Plan) includes actions by Clarington's emergency organization in response to provincial and regional direction during a nuclear emergency at Darlington Nuclear Generating Station. It also includes actions by Clarington to support Durham Region's response to a nuclear emergency affecting other communities.

The scope also includes guidance for the Department Directors for the development of departmental plans. In addition, it gives recovery-planning considerations.

1.3 PLANNING BASIS

The Plan is based on applicable legislation and radiation hazards described below. It is also based on Planning Zones and Response Sectors designated by the Province.

1.3.1 Legislation

The Plan has been prepared under the authority of the Emergency Plans Act R.S.O., 1990, Chapter E.9, Sections 3 and 8 and Municipality of Clarington's *By-law to Provide for a Prompt and Coordinated Response to an Emergency* (under development). It conforms to the Municipal Act R.S.O. 1990, Chapter M.45 Section 208 (b) (ii) (iii), and the Regional Municipality of Durham's Emergency By-Laws 96-80 and 115-81.

1.3.2 Hazards

Clarington is vulnerable to radiation hazards from a release of radioactive materials from the Darlington Nuclear Generating Station. The main immediate hazards to humans are:

- a. external irradiation from a radioactive plume;
- b. inhalation of radioactive material, including radioactive iodine which would be absorbed by the thyroid gland; and
- c. external irradiation from radioactive contamination on the body and/or on the ground.

1.3.3 Emergency Planning Zones

For planning purposes, the Province has designated areas around the Darlington Nuclear Generating Station (NGS) for which plans are required for the effective implementation of protective measures. The zone in which immediate protective measures may be required is called the *Primary Zone*. The emergency-planning zone for longer-term radiation exposure control is called the *Secondary Zone*. It is stressed that emergency planning zones are planning tools only. The implementation of protective measures must be based on the radiological hazards at the time of the emergency and sound judgment.

Primary Zone

The Primary Zone is a circle with a radius of approximately ten kilometres measured from the reactor building. To ensure planning for the effective implementation of protective measures according to the possible risks and hazards the Primary Zone has been subdivided into three rings - the *Contiguous Zone*, the *Middle Ring* and *Outer Ring*. The Contiguous zone is a circle with a radius of approximately three kilometres from the reactor building. The Middle Ring is a concentric circle from the outer edge of the Contiguous Zone (three kilometres) out to approximately six kilometres. The Outer Ring is a concentric circle from the outer edge of the Middle Ring (six kilometres) out to approximately ten kilometres. See Figure 1.1.

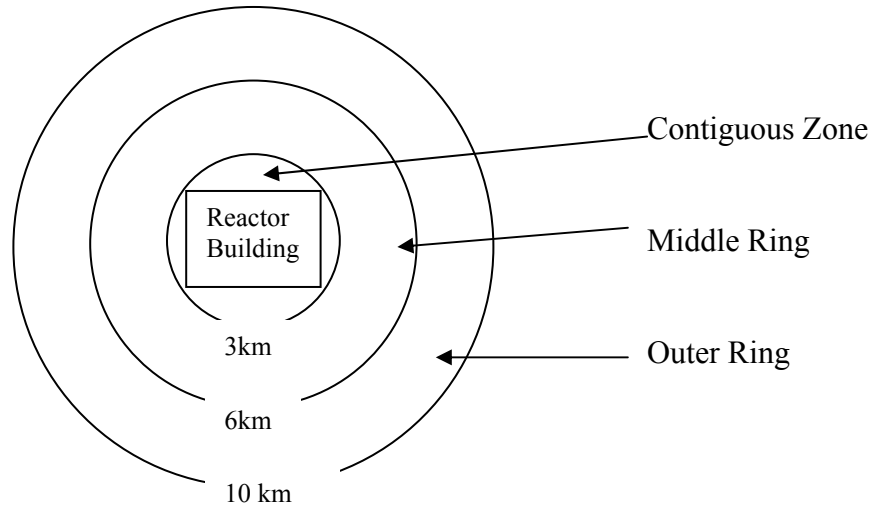


Figure 1.1: Primary Zone

Secondary Zone

The area where longer-term radiological exposure control measures may be required is called the **Secondary Zone**. The Secondary Zone is a circle with a radius of approximately 50 kilometres measured from the reactor building. It is subdivided into four inner circles - the Inner Zone (the Primary Zone) and Sub Zones B, C and D. Sub Zone B is a concentric circle from the outer edge of the Inner Zone (ten kilometres) out to approximately 20 kilometres. Sub Zone C is a concentric circle from the outer edge of the Sub Zone B (20 kilometres) out to approximately 30 kilometres. Sub Zone D is a concentric circle from the outer edge of the Sub Zone C (30 kilometres) out to approximately 50 kilometres. See Figure 1.2.

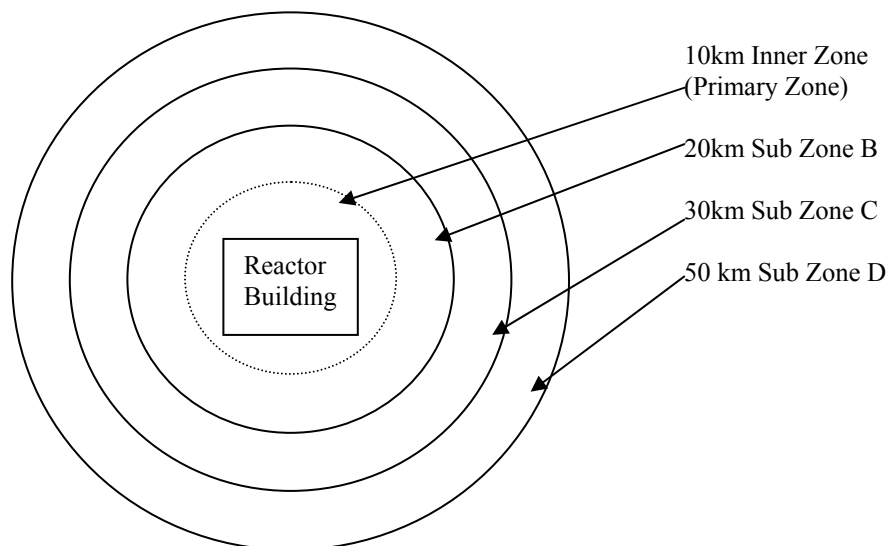


Figure 1.2: Secondary Zone

1.3.4 Response Sectors

For the implementation of protective measures, the Planning Zones have been divided into Response Sectors. A Response Sector is an area in which, if a protective measure is required in a portion of the area, it shall be implemented in the whole sector. For example, if evacuation is required because a radioactive plume is expected to pass over a part of a sector, the whole sector will be evacuated as a precaution against a shift in the wind. The Response Sectors of interest to Clarington are shown in the following table.

SECTOR	SECTOR BOUNDARY
Contiguous Zone	
D1	North – Darlington Baseline Rd; East - Martin Rd; South – Lake Ontario; West - Courtice Rd
Middle Ring	
D2	North - Nash Rd; East - Courtice Rd/RR 34; South - Lake Ontario; West - Townline Rd/RR 55
D3	North - Nash Rd; East - Martin Rd/RR 57; South – Darlington Baseline Rd; West - Courtice Rd
D4	North - 3 rd Concession Rd; East - Lamb’s Rd; South - Lake Ontario; West - Martin Rd/RR 57
D5	North – Highway # 2; East - Lamb’s Rd; South – Lake Ontario; West - Martin Rd/RR 57
D 14	Lake Ontario (Information only - Clarington has no responsibilities in this Sector)
D 15	Lake Ontario (Information only - Clarington has no responsibilities in this Sector)
Outer Ring	
D6-A&B	North – Bloor St/RR 22; East - Simcoe Street; South - Lake Ontario; West - Park Rd/RR 54
D7	North – Bloor St/RR 22; East - Townline Rd/RR 55; South - Lake Ontario; West - Simcoe St/RR 2
D8-A&B	North – Adelaide Ave/RR 58; East - Townline Rd/RR 55; South - Bloor St/RR 22; West - Ritson Rd
D9	North –Taunton Rd/RR 4; East - Townline Rd/RR 55; South -Adelaide Ave/RR 58; West - Harmony
D10	North –Taunton Rd/RR 4; East - Courtice Rd/RR 34; South -Nash Rd; West -Townline Rd/RR 55
D11	North –Taunton Rd/RR 4; East - Martin Rd/RR 57; South -Nash Rd; West -Courtice Rd/RR 34
D12	North –Taunton Rd/RR 4; East – Townline E/RR 55; South -Nash Rd; West - Martin Rd

D13	North - 3 rd & 4 th Concession Rd; East - Wilmot Creek; South - Lake Ontario; West - Lamb's Rd
D16	Lake Ontario (Information only – Clarington has no responsibilities in this Sector)
D17	Lake Ontario (Information only – Clarington has no responsibilities in this Sector)

Table 1.1: Darlington Response Sectors

The Response Sectors are also shown on the map in Figure 1.3.

(To be issued by Durham Emergency Measures Office)

Figure 1.3: Darlington Primary Zone Map

1.4 DEFINITIONS AND TERMINOLOGY

The following definitions apply in this Plan:

Emergency Network - all persons and organizations that may reasonably be expected to be involved in emergency operations with the Regional Municipality. Involvement may include, but is not limited to exchange of information; coordination of policies, plans and procedures; and participation in training and exercise programs.

Exercises/drills - scheduled events that provide a realistic setting for practicing emergency response and evaluating emergency plans, procedures and resources.

Hazard - a situation with the potential for human injury or death, damage to property, damage to the environment, or some combination of these.

Precautionary Measures - measures taken before or in the early stages of an emergency, to minimize the impact on the public.

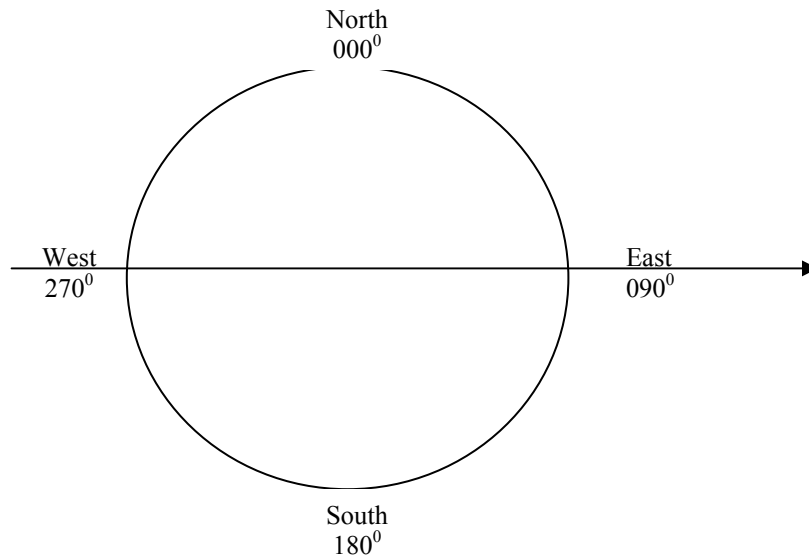
Protective Measures - measures taken during an emergency to protect the public from the direct effects of the emergency.

For a complete list of acronyms and abbreviations see Annex C.

1.5 OPERATIONAL CONVENTIONS

The following operational conventions will be used during a nuclear emergency response:

- a. time will be expressed using the 24-hour clock and all timings will be given in local time;
- b. locations will be expressed by urban features (e.g., town name and street names) or response sectors;
- c. radiological units will be expressed in the International System (SI) if possible¹; and
- d. wind direction will be given in degrees from the direction it is blowing from to the direction it is blowing towards. (See the example below).



“Wind from the West 270⁰ to the East 090⁰”

¹Clarington does not have the expertise to convert radiological units. To prevent misinterpretation, Clarington will relay all radiological information in the units in which they are received.

2. EMERGENCY RESPONSIBILITIES

As with any hazard, the responsibility for nuclear emergency preparedness and response rests with individuals, businesses and industries, community organizations, and all levels of government, as outlined below.

2.1 INDIVIDUALS

Responsibility for initial actions in an emergency lie with the individuals most affected. As a minimum, all individuals should be prepared to implement initial emergency measures directed by Clarington, Durham Region and/or the Province. Heads of households and individuals must be prepared to implement the following protective actions.

2.1.1 Sheltering

Individuals should have plans to shelter in their homes or place of business. A shelter plan should include warning others, closing all doors and windows, turning off all furnaces / air conditioning and other air intake / exhaust mechanisms. See Annex D for a list of designated media outlets.

2.1.2 Evacuation

Heads of households and individuals are responsible for ensuring they are prepared to evacuate the area quickly during a nuclear emergency. Families and individuals should be prepared to evacuate with enough clothing and personal care items to be self sufficient for at least 36 hours. As a minimum, the following items should be considered: clothing, medication, money and credit cards, sleeping bags and toiletries.

Heads of household and individuals should have plans to secure their homes to protect their property and to minimize contamination. For example, furnaces, air conditioning and other air intake mechanisms should be turned off. If there is a danger of freezing, furnaces should be left on at a very low temperature. All doors and windows should be closed and locked.

Persons without their own transportation should make arrangements to travel with family, neighbours or friends.

2.1.3 Thyroid Blocking

Potassium iodide tablets are used to prevent the uptake of radioactive iodine by the thyroid gland. They have been distributed to schools, hospitals and other health care facilities. They will be made available to the effected public if there is a possibility that radioactive iodine has been or could be released to the atmosphere. Potassium iodide tablets are only to be taken when directed by a public health official. It is the responsibility of Heads of households and individual to know dosage rates, and possible side effects. See Annex E for details.

2.2 BUSINESSES AND INDUSTRIES

Businesses and industries are responsible for having contingency plans to warn and protect their employees and other persons on their premises. The plan should detail sheltering and evacuation procedures. See articles 2.1.1 and 2.1.2 for guidance.

Businesses and industries should have plans to secure their facilities and to minimize contamination. See article 2.1.2 for details.

Businesses and industries will be used to augment Clarington's resources according to prearranged agreements and plans, or as required.

2.3 COMMUNITY ORGANIZATIONS

Community groups and organizations, such as services clubs and volunteer organizations are valuable resources for emergency response. They will be used to augment Clarington's resources according to prearranged agreements and plans, or as required.

2.4 CLARINGTON DEPARTMENTS

Clarington Departments are responsible for the implementation of emergency measures to protect the population, property, and environment in the Municipality, as directed by the Municipal Operations Centre (MOC). All Departments will have emergency plans and procedures that are compatible with this plan (see Annex B for planning guidance). Departments are responsible for the implementation of measures (sheltering and evacuation) to protect their personnel. Departments are also responsible for identifying essential vehicles and equipment and for their timely removal from the primary zone, if required.

2.5 MUNICIPALITY OF CLARINGTON

Clarington is responsible for the implementation of precautionary and protective measures to protect the population, property, and environment in the municipality, as directed by the Durham Region. Clarington is also responsible for providing resources in support of Durham Region's emergency operations. In particular, Clarington is responsible for the following:

- a. Closure of municipal facilities, parks, recreation areas, and other public places;
- b. Suspension of work in industrial and commercial establishments in some or all of the response sectors and monitoring compliance;
- c. Emergency transportation for evacuees from Clarington and/or other municipalities;
- d. Sheltering and monitoring implementation in the municipality;
- e. Provision of resources to Durham Police during an evacuation;
- f. provision of resources to Durham police for entry control;
- g. provision of facilities in support of response operations;

- h. Provision of public enquires service pertaining to closures, protective measures and emergency transportation within the Municipality; and
- i. Other emergency functions as may be identified within the municipality or directed by the Regional Operations Centre (ROC).

2.6 DURHAM REGION

First, Durham Region is responsible for coordinating the implementation of protective measures ordered by the Province. Durham Region's ROC will issue written instructions, on how precautionary and protective measures are to be implemented. The Region is also required to support Provincial operations in the region. For example, Durham Region is responsible for providing administrative support to the Public Information Centre, which will be jointly managed by the Province and Ontario Power Generation.

Second, the Durham Departments of Health and Social Services are responsible for the provision of emergency health and emergency social services. The provision of emergency health and emergency social services is arranged and coordinated between the ROC and Clarington's MOC.

Third, Durham Regional Police Service is responsible for emergency police services within Clarington. They are also responsible for traffic and entry control and the management of the Emergency Worker Centre, located at Orono.

Fourth, the Durham Emergency Measures Office and/or the ROC are responsible for providing additional resources when requested by Clarington.

2.7 PROVINCE OF ONTARIO

The Province is overall responsible for coordination of nuclear emergency response operations. The Province will assess all available information and direct the appropriate precautionary and protective actions. The measures will be based on the provincial Protective Action Levels (PALs) Exposure Control Measures and Ingestion Control Measures. See the *Regional Municipality of Durham Nuclear Emergency Plan (DRNEP)* for details. The province will provide written instructions to the ROC for the implementation of precautionary and protective measures. The Province is also responsible for providing additional resources when requested by Durham Region.

2.8 GOVERNMENT OF CANADA

The Government of Canada is responsible for providing resources when they are requested by the Province.

3. NUCLEAR EMERGENCY ORGANIZATION

A nuclear emergency with off-site implications at the Darlington NGS will involve all levels of government and most government departments. As previously mentioned, the Province will be in overall control. Control will be exercised from the Provincial Operations Centre through the Regional Operations Centre, the Joint Traffic Control Centre and the Joint Information Centre. Clarington's Municipal Operations Centre will support the Regional Operations Centre by implementing precautionary and protective as directed. The organization chart is shown in Figure 3.1.

3.1 ORGANIZATION CHART

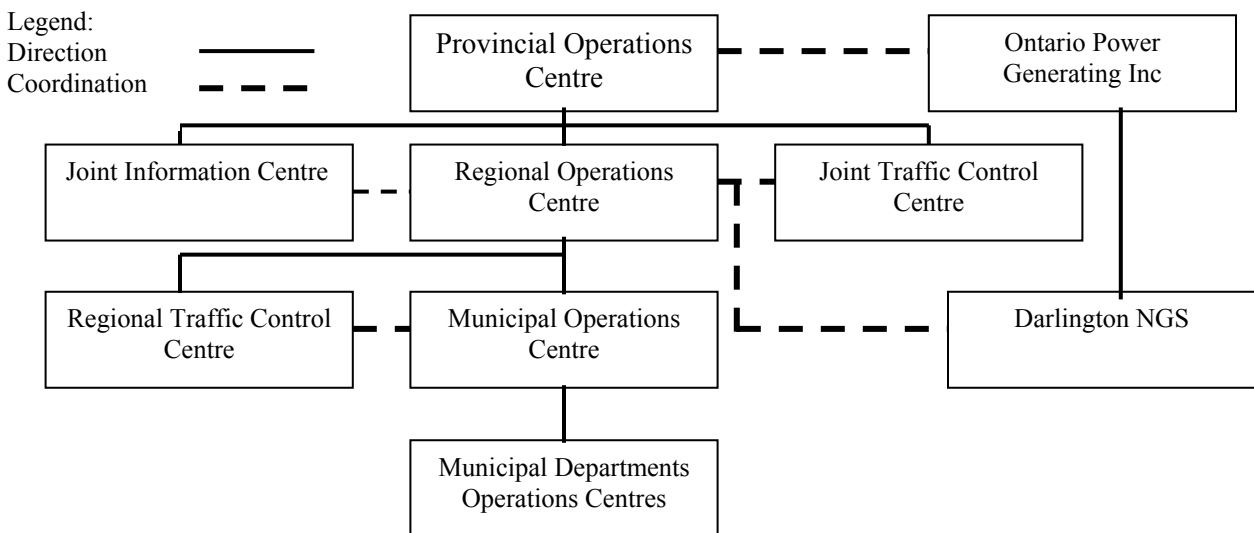


FIGURE 3.1: NUCLEAR EMERGENCY ORGANIZATION - DARLINGTON

3.2 CLARINGTON'S NUCLEAR EMERGENCY ORGANIZATION

Clarington's nuclear emergency organization has two interdependent groups:

- a. the Municipal Control Group; and
- b. Clarington Municipal Departments.

3.2.1 Municipal Control Group

The Municipal Control Group (MCG) consists of the Mayor, CAO, Director of Emergency Services, all other Department Directors, Fire Services representative, Durham Regional Police Service representative and others as required. During an emergency, those persons work out of the Municipal Operations Centre (MOC). They are assisted by MOC support staff. The Municipal Operations Centre procedures will specify what minimum MCG staff must be present for the MOC to be declared operational.

The responsibilities of the MCG are the following,

- a. to assess the short, medium and long-term emergency operating requirements for Clarington;
- b. to recommend to the Mayor when a state of emergency should be declared or terminated;
- c. to make policy recommendations to the Mayor;
- d. to set operational priorities and issue instructions to departments;
- e. to resolve inter-department or inter-organizational disputes; and
- f. to ensure communications with all other levels of government, external agencies, and the public is coordinated.

MCG members at the MOC also have individual responsibilities as outlined below.

Mayor (Executive Authority)

The Mayor, or alternate, will exercise executive authority even though he/she has no official role on the MCG. The alternates to the Mayor are pre-designated members of council. The Chief Administrative Officer (CAO) is the Head of the MCG. The Head of the MCG will assume the Mayor's authority for any decisions or directives related to emergency response operations.

The Mayor's responsibilities include, but are not limited to the following:

- a. declaration or termination of a state of emergency within Clarington;
- b. decisions beyond the authority of the CAO as the Head of the MCG (e.g., policy);
- c. coordination with the Durham Region Chair;
- d. keeping Council informed and instructing Council as required;
- e. communications with all other levels of government and the public; and
- f. approving release of resources under mutual aid agreements.

Chief Administrative Officer (CAO)

Before an emergency, the CAO has overall accountability for Clarington's emergency preparedness program through the Director of Emergency Services.

During an emergency, the CAO is the Head of the MCG or Operations Officer. He/she is responsible for:

- a. establishing emergency response priorities and objectives for Clarington;
- b. liaison with the Mayor;
- c. major decisions regarding Clarington's operations; and
- c. recommending policy decisions to the executive authority.

The CAO is the primary contact for the Mayor and the Regional Operations Centre - if activated.

Immediately following the termination of an emergency, the CAO is responsible for the coordination of Clarington's recovery plan through the Director of Emergency Services - if required.

Director of Emergency Services (DES)

Before an emergency, the Director of Emergency Services administers the Clarington Emergency Preparedness Program. As such, he/she also fulfills the role of the Community Emergency Management Coordinator prescribed by Provincial legislation. This involves maintaining the emergency plan, the MOC facility and related procedures, verifying that Clarington departments maintain their individual emergency plans and response capability, and managing the Clarington emergency training and exercise program.

During an emergency, the DES is the Deputy Operations Officer responsible for overseeing the implementation of protective measures and other activities ordered by the MOC. He/she also assists with ensuring effective operation of the MOC.

Fire Services Representative

The Fire Services Representative is responsible for emergency fire services, lifesaving and rescue, and implementation of protective measures ordered by the MOC. In addition, on direction of the Operations Officer, Fire Services will provide operational support to the Durham Region Fire Coordinator.

Durham Police Representative

The Durham Police Representative is responsible for assessment of the following operations as they affect Clarington - law enforcement, traffic control, entry control, evacuation, sheltering, and security. He/she is also responsible for recommendations, instructions, and legislative compliance for those operations.

Director of Operations

The Director of Operations is responsible for the following during an emergency - provision of essential services; maintenance of traffic routes; provision of resources to other departments as required; and closure of municipal parks, cemeteries and outdoor recreation areas. He/she is also responsible for recommendations, instructions, and legislative compliance for those operations. In addition, on direction of the Operations Officer, the Director of Operations will provide operational support to Durham Region - if required. Instructions from the Director of Operations are implemented at the normal public works dispatch centre.

The Director of Operations is also responsible for the development and coordination of the physical and environmental components of Clarington's recovery plan - if required.

The Director of Public Works is also responsible for the development and coordination of the physical and environmental components of Clarington's recovery plan - if required.

Director of Planning

The Director of Planning is responsible for providing physical, social and environmental planning services and information systems. The Director of Planning also controls and maintains operations maps and status boards within the MOC.

Director of Community Services

The Director of Community Services general duties are operational planning, decisions, and coordination within the Department of Community Services. During an emergency, he/she is responsible for the following specific functions - coordination of emergency transportation services for evacuees; provision of resources to other departments as required; and public notification in municipal arenas.

In addition, the Director of Community Services is responsible for the development and coordination of the social component of Clarington's recovery plan - if required

Municipal Clerk

Before an emergency, the Municipal Clerk maintains the Clarington Emergency Information Plan and related program elements, including staffing, procedures and general capability of the Clarington Emergency Information Centre.

During an emergency, the Municipal Clerk assumes the role of the Public Information Officer (PIO). The Public Information Officer is also the Head of the Clarington Emergency Information Centre and Media Spokesperson. He/she is responsible for updating the media, affected Clarington residents and Clarington departments on the emergency. This includes the establishment and management of an Emergency Information Centre, media announcements and packages, coordinating media interviews within Clarington, media monitoring, and public inquiries. As the Public Information Officer may spend part of his/her time at the MOC or at the adjacent Emergency Information Centre, his/her representative at the MOC is the Deputy Municipal Clerk.

Deputy Municipal Clerk

The Deputy Municipal Clerk assists the Municipal Clerk in his/her role as the Public Information Officer. The Deputy Municipal Clerk is located within the Municipal Operations Centre and acts as the PIO's representative or liaison when the PIO is active in the Emergency Information Centre. The Deputy Municipal Clerk is also responsible for information routing within the MOC. This includes the keeping of logs and records.

Director of Finance

The Director of Finance is responsible for financial and legal services. He/she also verifies legislative compliance for response activities

Director of Corporate Services

Before an emergency the Director of Corporate Services is responsible for appointing and training MOC clerical and housekeeping support staff. During an emergency, he/she oversees purchasing and materials and human resource management. He/she also supervises support staff in the MOC.

MOC Support Staff

General MOC support staff report to the Director of Corporate Services. However, departmental staff recruited to represent their department or support their department's representative, report to that representative. MOC support staff is responsible for the following:

- a. physical support for MOC set up and, if required, relocation;
- b. administrative support (including, but not limited to, messengers, recording secretaries, status board recorders, and map plotters);
- c. telecommunications equipment operation;
- d. technical support for information systems;
- e. technical support for telecommunications equipment; and
- f. access control.

MOC support staff will include Duty Officers / communicators from each of the department and services as required.

Emergency Information Centre (EIC) Staff

The Emergency Information Centre is managed by the Public Information Officer and is co-located with the MOC. All Clarington-sponsored media conferences and interviews are conducted at this centre. It also functions as a public inquiry centre where citizens of Clarington, and any other interested persons, may obtain information about the emergency situation or response. A public inquiry centre offers telephone and/or walk-in service.

Other Support Staff

Departmental Emergency Headquarters Staff

Department Headquarters staff assist the MCG by carrying out instructions for the provision of services to the persons affected by the emergency and by maintenance of essential services in Clarington. They are also responsible for the health and safety of their personnel. To the extent possible, Departmental Headquarters staff operate from their normal operating locations. However, departments must have plans and procedures to move all essential departmental resources outside the affected area and to operate from locations outside that area.

The Department headquarters managers receive instructions from their MCG representative and implement them in accordance with departmental procedures.

Evacuation Centre Staff

Arrangements have been made with a number of schools (see Appendix B) for use as Evacuation Centres if people have to be evacuated. A number of resource personnel are designated to set up, staff and operate these centres. They are not part of the ERO but receive training to operate these facilities.

3.2.5 Media Centre

The media centre is managed by the Control Officer and is co-located with the MOC. All Clarington-sponsored media conferences and interviews are conducted at that centre.

3.2.6 Public Inquiry Centre

The Treasure is responsible for the establishment and management of a public inquiry centre. A public inquiry centre is a location where citizens of Clarington, and any other interested persons, may obtain information about the emergency situation or response. It offers telephone and/or walk-in service.

3.3 EMERGENCY NETWORK

The MOC maintains direct links with:

- a. the ROC;
- b. the Joint Information Centre;
- c. the Regional Traffic Control Centre (through the Durham Police Representative);
and
- b. Clarington business.

The MOC will not contact any other organization unless authorized to do so by the ROC. The provision of resources from other organizations will be coordinated by the ROC. In special circumstances, it may be beneficial to request selected representatives from the various organizations to attend briefings and/or planning sessions at the MOC. However, this should be done by exception, to minimize resource demands and traffic at the MOC.

3.4 EVACUEE AND RECEPTION CENTRES

An evacuee centre is a facility where Registration and Inquiry, emergency feeding and/or temporary accommodations are provided for persons forced from their homes during an emergency. During a nuclear emergency, Durham Region and/or host municipalities outside the Primary Zone will operate evacuee centres. The designated evacuee centres for the residents of Clarington are shown in Table 3.1.

A reception centre is a location where evacuees are monitored for radioactive contamination and decontaminated if required. Durham Region and/or host municipalities outside the Primary Zone will operate all reception centres. The designated reception centres for Clarington are shown in Table 3.1.

RESPONSE SECTORS	EVACUEE CENTRES	RECEPTION CENTRES	MAIN EVACUATION ROUTES
D1	Seneca College	Oshawa Civic Centre	Highway 401 (West)
D2	Durham College Seneca College (alternate)	Durham College Seneca College (alternate)	Highway 2 (West) Various roads north
D3	Oshawa Civic Centre Seneca College (alternate)	Oshawa Civic Centre Seneca College (alternate)	Highway 401(West) Highway 2 (West)
D4	Durham College York University (alternate)	Durham College York University (alternate)	Highway 2 West Highway 401(West) from west of Solina Road Various roads north
D5	Trent University	Sandford Fleming College	Highway 401 (East) Highway 2 (East)
D6	York University	York University	Highway 401 (West)
D7	York University	Oshawa Civic Centre York University (alternate)	Highway 401 (West)
D8	Seneca College	Seneca College	Highway 401 (West) Highway 2 (West)
D9	Durham College Seneca College (alternate)	Durham College Seneca College (alternate)	Taunton Road (West) Highway 115 (North)
D10	Trent University	Sandford Fleming College	Taunton Road (East) Highway 115 (North)
D11	Trent University	Sandford Fleming College	Taunton Road (East) Highway 115 (North)
D12	Trent University	Sandford Fleming College	Taunton Road (East) Highway 115 (North)
D13	Trent University	Sandford Fleming College	Taunton Road (East)

TABLE 3.1: DESIGNATED EVACUEE AND RECEPTION CENTRES

3.5 EMERGENCY WORKER SAFETY

If required, Durham Region will establish Emergency Workers Centres to supervise the safety of emergency workers who may have to work in a contaminated response sector(s). Emergency workers could include: police, firefighters, emergency medical services personnel, employees from all levels of government, private sector specialists and/or others who may have to enter a contaminated area in the performance of their duties. At the emergency workers centre, emergency workers will be provided with personal monitoring devices and KI pills (if required). They will be briefed on the protective measures they should observe and how long they can remain in a particular response sector. No one will be allowed to enter a contaminated area unless they are processed through an emergency worker centre and authorized to enter by the ROC. The designated emergency worker centres are:

- a. EWC # 1 Iroquois Park Arena - Victoria and Henry Street Whitby;
- b. EWC # 2 Orono Area - Highway # 115, Village of Orono;
- c. EWC # 3 Centennial College - Progress Campus, Progress Court, Scarborough; and
- d. EWC # 4 Marine Unit Headquarters - Queens Quay Toronto.

For details on emergency worker centres see Chapter 7 of the Durham Region Nuclear Emergency Plan.

3.6 ESSENTIAL STAFFING REQUIREMENTS

The essential staffing requirements for the Nuclear Emergency Plan are the following:

- a. regular on-duty emergency response personnel;
- b. Mayor (or alternate);
- c. Chief Administrative Officer (or alternate);
- d. MCG members (or alternates);
- e. MOC support staff; and
- f. department headquarters managers.

3.6.1 Roster of Persons Designated for Essential Staffing Positions

A Nuclear Emergency Plan essential staffing roster will be prepared and maintained by the Fire Chief, in consultation with the MCG members. The roster will be updated at least every six months, or earlier if significant staff changes take place. The list will be included as Annex A to MOC Procedure 1 - Activation (Section 2). Persons in the positions are responsible for notifying the Fire Chief of any change in employee status, which may affect the emergency organization.

3.6.2 Backups and Provisions for Shifts

A minimum of two qualified persons must be designated for each position identified as minimum staffing.

3.6.3 Recall Time

The designated staff or alternate(s) must be able to be alerted within 30 minutes of Plan activation and present at operating locations within one hour.

3.6.4 Qualification Requirements

All emergency response personnel will be trained to deal with nuclear emergency issues and conditions. Training should be carried out at least annually. For guidance on training see article 7.

3.7 DEPARTMENTAL PLANS

All Directors, the Fire Chief and the Durham Region Police are responsible for developing and maintaining departmental nuclear emergency plans and procedures which are consistent with this Plan. Guidance for departmental planning is given in Annex B.

4. EMERGENCY OPERATIONS

4.1 CONCEPT OF OPERATIONS

A response to a nuclear emergency involving an actual or imminent atmospheric emission of radioactive materials will be conducted in three phases as follows:

- a. **Phase 1 - Precautionary and Protective Measures.** Precautionary measures such as closure of public recreation areas and suspension of business and protective measures as sheltering, evacuation, distribution of Potassium Iodide tablets, personal monitoring and decontamination are implemented.
- b. **Phase 2 - Ingestion Control Measures.** Ingestion Control Measures such as entry control, environmental (field) monitoring, monitoring and control of local water, milk and food produces are implemented.
- c. **Phase 3 – Recovery.** Recovery actions, such as re-entry, radiation surveys, large-scale decontamination, relocation (if required) and compensation are implemented.

4.1.1 Phase 1 - Precautionary and Protective Measures

The aim of the Precautionary and Protective Measures Phase is to protect human health from the hazards during an atmospheric release of radioactive materials from a NGS.

Clarington's nuclear emergency organization will be activated to monitor and if required, implement precautionary and/or protective measures for possible hazards from a nuclear emergency at Darlington NGS. It will also be activated to provide support to Durham Region responding to a nuclear emergency at Pickering NGS. The Province from the Provincial Operations Centre will direct all precautionary and protective measures. Durham Regional will coordinate the implementation of the required measures from the Regional Operations centre. Clarington will implement the protective measures from the MOC. Clarington will also provide assistance to Regional Departments to execute their assigned responsibilities. For example, Clarington's Public Works Department will provide and place traffic control barriers in support of Durham Police regional entry control and evacuation operation.

4.1.2 Phase 2 - Ingestion Control

The aim of the Ingestion Control phase is to protect human health from radioactive contamination hazards following a release of radioactive materials from a NGS. Planning for this phase is a Provincial responsibility. The Province, in consultation with Durham Region and Clarington, will develop a plan for radiation control in the affected zone(s). The plan will be implemented on termination of all releases from the NGS. Protective actions will be based on the results of ongoing field monitoring and technical assessment. As in Phase 1, the Province will direct the required actions, Durham Region will coordinate their implementation and Clarington will provide support. Possible tasks for Clarington could include, but may not be limited to: the continued staffing of vehicle wash points, continued support to Durham police entry control operations and the provision of equipment and operators for decontamination operations. For details on this phase, see Section 5 of the *Province of Ontario Nuclear Emergency Plan, Part IV - Darlington Nuclear Emergency Plan.*

The MOC will remain open and control Clarington's activities during this phase.

4.1.3 Phase 3 - Recovery

The aim of a recovery phase is to return Clarington to an optimal state. The recovery from a nuclear emergency will most likely involve all levels of government, Ontario Hydro and private contractors. A recovery program has three components: social, physical and environmental recovery.

Social recovery applies differently to emergency responders and the general public. For emergency responders, social recovery involves critical incident stress debriefing, medical follow-up, operational debriefings, and review of emergency plans and procedures. For the public, social recovery may involve critical incident stress programs, long term medical monitoring and financial assistance.

Physical and environmental recovery following a nuclear emergency generally includes: resumption of public services; short-term environmental monitoring, decontamination (if required), the orderly return of the population, resumption of business and long-term environmental monitoring. It may also include the relocation of a portion of the population from areas that cannot be readily decontaminated.

A recovery plan is developed to provide such services during and following a nuclear emergency.

The scope of a recovery plan includes, but is not limited to, the following:

- a. establishment and operation of a Clarington recovery committee;
- b. impact assessment;
- c. identification of sources of assistance (including financial and technical);
- d. identification and exploitation of opportunities (e.g., rezoning);
- e. resolution of issues including legislative, regulatory, policy, safety, emergency mitigation, political, and economic;
- f. assignment of responsibilities; and
- g. implementation strategy (including a budget and schedule).

4.2 PLAN IMPLEMENTATION

The following provides details on the implementation of this plan. Furthermore, this plan is supported by MOC procedures, which are found in Part 3 of Clarington's Emergency Management Manual.

4.2.1 Activation

It is expected that the Clarington's Fire Dispatcher will receive the initial notification of a nuclear emergency at Darlington NGS from the Durham Regional Police. The dispatcher will

immediately notify the Director of Emergency Services or alternate. The Director of Emergency Services will activate Clarington's nuclear emergency organizations in accordance with the following guidelines.

Reportable Event/Abnormal Incident

For a reportable event or abnormal incident, the Director of Emergency Services will notify the Mayor and Chief Administration officer. Through discussions, the Mayor, CAO and Director of Emergency Services will decide if the nuclear emergency plan will be activated and if so, to what level. Durham Emergency Measures Office or the ROC should also be consulted as soon as possible.

On-site Emergency

For an on-site emergency, all members of the MCG will be notified. The MOC will be activated to a level commensurate with the situation as determined by the Mayor, CAO and Director of Emergency Services, in consultation with Durham Region Emergency Measures Office or the ROC if activated. As a minimum the CAO, Director of Emergency Services, Durham Region Police Representative, and MOC support staff will staff the MOC.

General Emergency

For a general emergency, Clarington's emergency measures organization will be fully activated. All MOC and departmental staff will report to their assigned emergency work stations for a situation briefing and to be organized into shifts. Off-duty shifts will be sent home for rest. Communications will be established with the ROC, Joint Information Centre and the Regional Traffic Control Organization and support organizations (e.g., Handi Transit). See the MOC Procedures, Section 2 for activation procedures. Department/service emergency plans are activated as required.

4.2.2 Municipal Operations Centre

As soon as possible after activation of the Nuclear Emergency Plan, members of the MCG and MOC support staff report to the MOC. The first member to arrive does the initial MOC set up. The second member to arrive assumes the role of Operations Officer, until relieved by the Chief Administrative Officer.

4.2.3 Municipal Control Group

The Operations Officer directs the MCG. The general operating functions of this group include, but are not limited to, the following:

- a. providing emergency services and resources to implement precautionary and protective measures consistent with this plan and ROC directions;
- b. approving recommendations from departments to augment municipal resources with private sector resources (e.g., utilities and transportation companies);
- d. requesting additional resources from Durham Region through the ROC;
- e. coordinating operations with the ROC, Joint Information Centre and Regional Traffic Control Centre;
- g. collecting and disseminating information about the response requirements and progress; and
- h. keeping the general public and the public at risk informed of the implementation of protective measures in Clarington.

Members of the MCG activate department emergency plans, as required; review information about the emergency; share information with other MCG members; make sure their information is recorded and displayed in the MOC; and recommend emergency actions to the Operations Officer. The MCG members implement approved recommendations by issuing instructions to department emergency managers. Department emergency managers determine how things will be done and issue further instructions to responders. Department emergency managers report results to their MCG members.

4.3 DEPARTMENT EMERGENCY RESPONSE

Department emergency managers implement instructions from the MOC. They task employees, as required and in accordance with their department emergency plans and the Nuclear Emergency Plan. In every case, department emergency managers ensure all employees, are trained/qualified, and properly equipped for assigned tasks. They also ensure all employees, have adequate supervision, equipment, support (e.g., feeding and breaks), instructions and access to information.

If tasks exceed available department resources/equipment, department emergency managers obtain permission from the MOC to request additional resources from any of the following: volunteer organizations, businesses and industries. Department emergency managers advise the MOC when regional or provincial resources are required. If required, the MOC will request regional and/or provincial resources through the ROC.

Information about the following items is immediately reported through the department supervision structure to the MOC:

- a. health and safety issues;
- b. injuries/distress suffered by employees or volunteers;
- c. disputes over roles/responsibilities/jurisdiction;
- d. secondary events/emergencies;
- e. warnings/orders received or issued; and
- f. rumours and/or public complaints.

4.4 DECLARATION OF A STATE OF EMERGENCY

The Mayor declares, renews or terminates a state of emergency in accordance with the Emergency Plans Act and Regulations. A copy of a declaration by the Mayor is immediately sent to the Solicitor General and the Durham Region Chair. Any declaration is also immediately made known to the people of the area affected. The required documentation and instructions for declaring a state of emergency are in Annex A.

4.5 RECORD KEEPING

Detailed information such as: critical times; information received/sent; critical decisions; instructions received/sent; and actions planned/implemented will be recorded in operations logs and a master log.

Detailed information about the following items will be recorded during an emergency:

- a. receipt of information about an actual or potential emergency;
- b. activation of Nuclear Emergency Plan;
- c. notification to the general public and other emergency organizations;
- d. executive actions and orders;
- e. Departmental operations;
- f. health and safety assessments;
- g. public inquiries;
- h. media announcements;
- i. safety instructions issued to the public;
- j. declaration/renewal/termination of a state of emergency;

- k. orders issued by the ROC;
- l. requests for assistance;
- m. acquisition of materials/services; and
- m. warnings/orders issued to Clarington departments.

4.6 CRISIS MANAGEMENT

Clarington forms a crisis management team if the situation leads to a perceived loss of control of the situation. This team may be formed for an on-site emergency, regardless of how well the situation is actually being managed by Ontario Hydro, if there is a public perception that the people of Clarington are at risk. The Mayor, the CAO, Director of Emergency Services, the media spokesperson and other members of the RCG, as required will act as the crisis management team. The team will meet as required to address public concerns.

4.7 DEACTIVATION OF THE NUCLEAR EMERGENCY PLAN

Members of the MCG consider and recommend, as appropriate, to the Operations Officer, deactivation of department/service plans they are responsible for. The MCG discusses and recommends, as appropriate, changing the activation level of the Nuclear Emergency Plan (and the MOC). Any change in the activation level shall come from the Province through the ROC. The Operations Officer discusses and recommends, as appropriate, to the ROC downgrading the activation level from active mode to standby or recovery. The MOC will remain activated until authorized to close by the ROC. Notification of deactivation will be given to the emergency measures organization, employees, volunteers, the emergency network, and the general public.

5. PROTECTION OF EMERGENCY RESPONDERS

5.1 EMPLOYEES

Clarington protects and compensates employees and volunteer fire fighters in accordance with contracts, agreements, legislation and regulations in force at the time of the emergency. This applies for emergency response actions and emergency training/exercises when employees and volunteer fire fighters are acting under the direction of the emergency measures organization.

5.2 RESPONDER ROTATION AND COMFORT

The following guidelines should be used to ensure effective use of human resources and to minimize to the possible of secondary injuries due to stress and fatigue:

- a. staff and volunteers should be relieved every six to eight hours;
- b. staff and volunteers should be required to take 15-minute breaks every two hours, in a rest area separate from the workstation;
- c. meals and snacks should be available on a routine basis; and
- d. clean up and washroom facilities should be provided close to the work sites.

6. EMERGENCY FACILITIES AND EQUIPMENT

6.1 GENERAL PRINCIPLES

The Plan must be supported by appropriate facilities and equipment. As much as possible, the emergency equipment should be identical to equipment used during non-emergency situations. The equipment must be verified and tested at least once a month. To the extent possible, critical equipment and facilities should be dedicated to emergency use, or measures should be in place to ensure they will be immediately available when required. In particular, replacements must be available for out of service equipment deemed essential for the MOC and departmental operations.

6.2 MUNICIPAL OPERATIONS CENTRE

The MOC is located at the Hampton Public Works Depot, 2320 Taunton Road. Use of the facility is restricted to emergency measures operations, planning, administration, and training. The MOC layout is described in the MOC procedures.

When the MOC is operational, only the MCG and MOC support staff will be authorized entry, unless otherwise directed by the Operations Officer. Furthermore, support staff will only enter the MOC operations room to complete their assigned duties.

Other offices and areas in the Hampton Public Works Depot outside of the dedicated MOC facility, will be used for emergency operations as directed by the Operations Officer. For example, if additional external representatives are required at the MOC, offices outside of the main MOC will be made available for their use.

Fire Hall No 3 in Orono is the designated alternate MOC for nuclear emergency operations.

The Emergency Measures Coordinator is responsible for the maintenance of the primary and alternate MOCs and essential equipment.

6.3 TELECOMMUNICATIONS

The Director of Emergency Services is responsible for the telecommunications system, which links critical operating locations including, but not limited to: the MOC, the ROC, department emergency headquarters, Clarington's media centre, public inquiry centre, traffic Control Organization and Joint Information Centre. The design, maintenance, and administration of the telecommunications system should include reasonable measures to ensure its availability and sustainability during an emergency. The system should also allow for secure transmission of confidential information during an emergency. It is also the Fire Chief responsibility to ensure that all required personnel are trained on the use of the telecommunications equipment.

7. NUCLEAR EMERGENCY PREPAREDNESS

7.1 NUCLEAR EMERGENCY PLAN

The Nuclear Emergency Plan, as a minimum, will be reviewed at least once annually. It will be formally reviewed and revised, as required, following every emergency operation or major exercise. The Director of Emergency Services is responsible for the review and revision of the Plan. Following all exercises, written feedback on deficiencies will be provided to the Director of Emergency Services. Deficiencies must be reported to the CAO within 30 days. Critical deficiencies must be corrected within 60 days. Other deficiencies should be corrected within six months. The revised Plan will be reviewed and approved by the MCG, before submission to Council and Durham Region Emergency Measures Office for approval. When it is approved by the Durham Region Emergency Measures Office, the CAO must notify, in writing, all persons involved in or affected by the Plan.

7.2 PROCEDURES

Procedures must be developed in support of the implementation of the Nuclear Emergency Plan. Except for departmental procedures, the Emergency Measures Coordinator is responsible for identifying the required procedures and determining their format. S/he is also responsible for developing those procedures and reviewing them at least every six months. Any deficiencies should be corrected within 60 days. All persons affected by the revision(s) must be notified of the change in writing. Department procedures will conform to the Nuclear Emergency Plan procedures.

7.3 DEPARTMENT EMERGENCY PLANS AND PROCEDURES

Department emergency plans and procedures must be reviewed annually by the Director of Emergency Services. The Director of Emergency Services is also responsible for reporting the results of the review to the CAO. Critical deficiencies must be corrected within 60 days. Other deficiencies should be corrected within six months, or as directed by the CAO.

7.4 MEMORANDUMS OF AGREEMENT AND UNDERSTANDING

Memorandums of Agreement and Understanding (agreements) may be developed in support of the implementation of the Nuclear Emergency Plan. The Emergency Measures Coordinator is responsible for identifying required agreements to the MCG. S/he is also responsible for developing agreements as directed by the MCG. Council must approve all negotiated agreements.

The Emergency Measures Coordinator is responsible for reviewing agreements annually. Recommendations for the correction of any deficiencies should be presented to the MCG, CAO, and Council (in that order) within 60 days of the review. All persons affected by the revision(s) must be notified of the change(s) in writing.

7.5 EXTERNAL EMERGENCY PLANS

The Emergency Measures Coordinator is responsible for reviewing emergency plans of external organizations, which involve or affect Clarington at least once every six months. The appropriate organization(s) must be notified of any identified deficiencies in writing. The

deficiencies will also be reported to the CAO.

7.6 TRAINING PROGRAMS

Training is the foundation of Clarington's emergency preparedness program. The Director of Emergency Services, with cooperation from the members of the Municipal Control Group, is responsible for all generic training on the Plan, and training related to the MOC.

The Department Directors, and the Director of Emergency Services are responsible for all other training related to department Emergency Plans and field response.

7.7 EXERCISE PROGRAM

The validation of the Plan and the department emergency plans through exercises is an essential component of preparedness. To ensure a high state of preparedness the Plan and department plans will be exercised at every practical opportunity and at a minimum as follows.

- a. Quarterly recall exercises to test all alerting and notification procedures.
- b. Semi-annual telecommunications exercise to test the telecommunications systems.
- c. An annual tabletop exercise to test the portions of the Nuclear Emergency Plan and department plans. All aspects of the Plan and the departmental plans shall be tested over a five-year period.
- d. Bi-annual Provincial Nuclear Exercises to test Clarington's ability to respond.

These exercises may be conducted in conjunction with exercise conducted by other organizations. For example, participation in a Durham Region tabletop exercise would meet the requirement to conduct an annual tabletop exercises.

ANNEX A: DECLARATION OF A STATE OF LOCAL EMERGENCY

REFERENCE:

Emergency Plans Act R.S.O. 1990

CRITERIA

A declaration of a state of emergency will be considered whenever the Provincial and/or the Durham Region nuclear emergency plans have been activated for an emergency at the Darlington NGS. More specifically, a declaration of a state of emergency will be considered when Darlington NGS declares an *Onsite Emergency*. A state of emergency will be declared when Darlington NGS declares a *General Emergency*.

AUTHORITY

The Mayor or alternate, when satisfied that an emergency exists or may exist will declare a state of emergency in the Municipality of Clarington.

PROCEDURE

To declare a state of emergency complete the following steps in the order shown:

- (1) Complete the attached form
- (2) Forward a copy to the Solicitor General of Ontario, the Minister responsible for the Emergency Plans Act.
- (3) Forward a copy to the Chair of Durham Region, through the ROC.
- (3) Issue a media announcement on the declaration, through the Joint Information Centre.
- (4) Issue an executive order to all groups in the Municipality of Clarington emergency organization on the declaration, and specifying the persons or committees authorized to exercise the associated powers.
- (5) Inform Council.
- (5) Terminate or renew the state of emergency, as required, in accordance with the Emergency Plans Act and Regulations.

ANNEX B: GUIDANCE FOR THE DEVELOPMENT OF DEPARTMENTAL NUCLEAR EMERGENCY PLANS

Departmental nuclear emergency plans must contain the following:

- a. departmental emergency management structures, including authorities and departmental responsibilities as prescribed in the Nuclear Emergency Plan;
- b. procedures to ensure the effective and efficient implementation of departmental responsibilities;
- c. alert, recall and notification procedures;
- d. notification of next of kin procedures;
- e. inventory of emergency response equipment/resources (including any contracted services), indicating storage locations and access information;
- f. emergency public information procedures;
- g. procedures to provide essential services to the non-affected areas of Clarington;
- h. location of the departmental emergency headquarters (and alternate location);
- i. specialised skills and expertise available from among departmental staff, including but not limited to: languages, and certified skills not used in regular position (e.g., first aid and/or CPR);
- j. worker fatigue and critical incident stress management procedures; and
- k. training standards; and debriefing and reporting procedures.

ANNEX C: LIST OF ACRONYMS AND ABBREVIATIONS

AECB	-	Atomic Energy Control Board
AECL	-	Atomic Energy of Canada Limited
BNGS	-	Bruce Nuclear Generating Station
CANDU	-	<u>C</u> anada <u>D</u> euterium <u>U</u> ranium nuclear power reactor system
CZ	-	Contiguous Zone
DEL	-	Derived Emission Limit
DIL	-	Derived Intervention Level
DNGS	-	Darlington Nuclear Generating Station
ECI	-	Emergency Coolant Injection
EC	-	Evacuee Centre
EMO	-	Emergency Measures Ontario
EWC	-	Emergency Workers Centre
FADS	-	Filtered Air Discharge System
FHQ	-	Field Headquarters
FNEP	-	Federal Nuclear Emergency Plan
GPM Plan	-	General Province-wide Monitoring Plan
HAM	-	Amateur Radio Club
Infor	-	Information
IMO	-	Ingestion Monitoring Organization
IMCG	-	Ingestion Monitoring Control Group
JIC	-	Joint Information Centre
JTCC	-	Joint Traffic Control Centre
KI	-	Potassium Iodide
Km	-	Kilometre
LERP	-	Liquid Emission Response Procedures

LOCA	-	Loss-of-coolant Accident
LOECI	-	Loss of Emergency Coolant Injection
MCG	-	Municipal Control Group
MCSS	-	Ministry of Community and Social Services
MDU	-	Monitoring and Decontamination Unit
Met	-	Meteorology, meteorological
MMAH	-	Ministry of Municipal Affairs and Housing
MNR	-	Ministry of Natural Resources
MOC	-	Municipal Operations Centre
MOE	-	Ministry of Environment
MOH	-	Medical Officer of Health
MOL	-	Ministry of Labour
MSGCS	-	Ministry of the Solicitor General and Correctional Services
MTO	-	Ministry of Transportation Ontario
NGS	-	Nuclear Generating Station
OH	-	Ontario Power Generation
OMAFRA	-	Ontario Ministry of Agriculture and Food and Rural Affairs
Ops	-	Operations
PAD	-	Public Action Directive
PAL	-	Protective Action Level
PNGS	-	Pickering Nuclear Generating Station
POC	-	Provincial Operations Centre
PTAC	-	Phase 2 Advisor Committee
PZ	-	Primary Zone
rem	-	Roentgen equivalent man (unit to measure biological harm caused by radiation)

ROC	-	Regional Operations Centre
RTCC	-	Regional Traffic Control Centre
RTC	-	Regional Traffic Control Coordinator
SOP	-	Standard Operating Procedure
Sv	-	Sievert (SI unit of measurement of biological harm caused by radiation)
Tech	-	Technical
Telecom	-	Telecommunication
TC	-	Traffic Control
TCP	-	Traffic Control Point
TLD	-	Thermoluminescent Dosimeter
TRF	-	Tritium Removal Facility (located at the Darlington)

ANNEX D: EMERGENCY PUBLIC INFORMATION - DESIGNATED MEDIA OUTLETS

The aim of emergency information is to provide the public with timely, accurate and complete advise on what they should do in an emergency.

Directions to the public on actions they should take to ensure their health and safety will be issued by the Provincial Operations Centre (POC) in the form of Public Action Directives (PADs). These PADs will be broadcast through the Designated Media and it shall be the responsibility of the Joint Information Centre to monitor the broadcasts and confirm that they have been correctly transmitted.

Designated Media

Under the Provincial arrangements, the following radio and television stations have agreed to act as Designated Media outlets to broadcast emergency information and instructions for the Darlington PZ.

AM Radio

FM Radio

Television

CFMX 103.1

CHEX Channel 12

ANNEX E: POTASSIUM IODIDE TABLETS USE

Potassium Iodide tablets are used to prevent the uptake of radioiodine by the thyroid gland. It does this by filling the thyroid with non-radioactive iodine prior to exposure or early in the exposure to radioactive iodine that may be released during a nuclear emergency.

DOSAGE AND ADMINISTRATION

Potassium iodide should only be taken when directed by a Public Health Official.

The dose required for thyroid blocking in an adult person is 100 mg of iodine per day. To achieve this dose, tablets of 130 mg of potassium iodide or 170 mg of potassium iodate are acceptable for use.

The approved daily dosage for thyroid blocking is:

- Adults/children over 12 - 1 tablet (as described above)
- Children 3 – 12 years - ½ tablet
- Children below 3 years - ¼ tablet
- Neonates to 1 month - 1/8 tablet (not to be repeated)

The administration of fractional doses to children and infants should be effected by crushing and dissolving a stable iodine tablet in a measured quantity of water or juice, and then giving an appropriate portion of the solution (equal to the prescribed fraction of the tablet) to the child.

Medication should preferably commence before exposure to radioiodine occurs. (The optimum time is 2 to 6 hours earlier). However, if that is not possible, it should commence as soon after first exposure as possible. (After two to three hours effectiveness is reduced by half, while no benefit is gained after a delay of 10 to 12 hours).

For continued exposure to radioiodine requiring thyroid blocking, the stable iodine dose given above should be repeated every 24 hours. However, a **dose limit** of one dose in total for the neonate, and two doses for pregnant and lactating women shall be observed.

Do not take more than the prescribed dose. More will not help and may increase the risk of severe side effects.

WARNING

Potassium iodide should not be taken by people allergic to iodine, unless directed to do so by a health official.

ADVERSE REACTIONS

Possible adverse reactions include: skin rashes, swelling of the salivary glands and "iodism". The symptoms of iodism are: metallic taste, burning mouth and sore throat, sore teeth and gums, symptoms of a head cold, and stomach upset and diarrhea.

A few people could have more serious reactions. These could include: fever and joint pains, swelling of parts of the face and body and at times severe shortness of breath. If a severe reaction occurs, stop taking the potassium iodide and call health officials for

instructions.