

September 30, 2009

File No: NK054-00531 P  
CD No: NK054-CORR-00531-00035

Joint Review Panel  
OPG New Nuclear at Darlington Project

c/o Mr. M. Leblanc  
Commission Secretary  
Secretariat  
Canadian Nuclear Safety Commission  
280 Slater Street  
Ottawa, Ontario  
K1P 5S9

Dear Panel Members:

**OPG New Nuclear at Darlington Project – Application for a Licence to Prepare Site**

- References:
1. OPG letter from A. Sweetnam to Joint Review Panel for OPG's New Nuclear at Darlington Project, "Environmental Assessment for the OPG New Nuclear at Darlington Project", September 30, 2009, CD# NK054-CORR-00541-00037.
  2. OPG letter, J. Hankinson to M. Leblanc, "Application for a Site Preparation Licence – New Nuclear Power Generation", September 20, 2006, CD# N-CORR-00531-03717.
  3. OPG letter, R. J. Hagamasy to Joint Review Panel for the OPG New Nuclear at Darlington Project, "OPG New Nuclear at Darlington – Application for a Licence to Prepare Site – Chapter 6 - Security Protected Information", September 30, 2009, CD# NK054-CORR-00531-00039.

The purpose of this letter is to submit a revised Application for a Licence to Prepare Site to the Joint Review Panel for the OPG New Nuclear at Darlington, in accordance with Section 24(2) of the Nuclear Safety and Control Act. Additional supporting information is also being provided to assist in the evaluation of the Application material.

The Application demonstrates that the site is appropriate for a nuclear power plant, and describes the site layout and the activities to be undertaken as well as management programs that govern the activities to be carried out. The Application shows OPG is:

- (a) qualified to carry out the activity that the licence will authorize OPG to carry on; and
- (b) will, in carrying out that activity, make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed.

As a specific reactor type has not yet been determined, technical information from various available designs was used to develop a plant parameter envelope necessary for the evaluations of the suitability of the site for the facility, and to assess environmental effects that the site could have on the facility. This Application contains both bounding information, as it relates to site characteristics, and design specific information, as it relates to the reactor characteristics. Bounding of technical information for the purpose of this Licence to Prepare Site Application provides an adequate conservative evaluation of the suitability of the site.

Attachment 1 to this letter lists the OPG documents referenced in the Application, enclosed with this submission. These are considered to form part of the licensing basis for the Licence to Prepare Site.

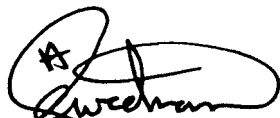
Attachment 2 lists the additional enclosed OPG documents that may assist in the evaluation of the Application material, as an aid in reaching a regulatory decision. Information from the Environmental Impact Statement (submitted with Reference 1) may also be of assistance in the evaluation. These documents are not considered to form part of the licensing basis for the Licence to Prepare Site. In the event of a discrepancy between information presented in the Environmental Impact Statement and the Application material, the Application will take precedence.

A preliminary Application was submitted to the CNSC in September 2006 (Reference 2). Attachment 3 provides the revised Application. Security protected portions of this Application are being submitted separately (Reference 3).

As noted above, the Application (Attachment 3 and Reference 3) demonstrates that OPG is qualified to carry out the activities under the licence, and that OPG will make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed.

A total of 6 copies of this Application material and the supporting information have been provided, along with electronic copies. If you have any questions, please contact Ms. Laurie Swami, Director of Licensing and Environment, Darlington New Nuclear Project, at 905-837-4540, extension 5203.

Sincerely,



Albert Sweetnam  
Executive Vice President  
Darlington New Nuclear Project  
Ontario Power Generation

Enc.

cc. G. Schwarz	-CNSC (Ottawa)	2 copies + 6 CDs
R. Virtue	-CEA Agency (Toronto)	1 CD
J. Adams	-CEA Agency (Ottawa)	1 CD

## **ATTACHMENT 1**

**Attachment to OPG letter, Albert Sweetnam to Joint Review Panel for the OPG New Nuclear at Darlington Project, "OPG New Nuclear at Darlington Project – Application for a Licence to Prepare Site"**

**September 30, 2009**

**CD# NK054-CORR-00531-00035**

**List of Documents Submitted as Part of the Licensing Basis for the Application for a Licence to Prepare Site**

**Attachment 1**

**List of Documents Submitted As Part of the Licensing Basis for the Application for a  
Licence to Prepare Site**

The following documents referenced in the Application (Attachment 2) are enclosed with this submission:

	Document Number	Document Title
1	NK054-REP-01210-00008	Site Evaluation for OPG New Nuclear at Darlington – Nuclear Safety Considerations
2	NK054-REP-03490-00001	Emergency Preparedness Site Evaluation for OPG New Nuclear at Darlington
3	NK054-REP-01210-00003	Exclusion Zone Determination for Darlington New Nuclear Project
4	NK054-PLAN-00960-00001	Preliminary Decommissioning Plan OPG New Nuclear at Darlington Site – Site Preparation
5	N-REP-01200-10000-R002	Use of Plant Parameters Envelope to Encompass the Reactor Designs Being Considered for the Darlington Site
6	NK054-CHAR-0001-R002	DNNP Management System

## **ATTACHMENT 2**

Attachment to OPG letter, Albert Sweetnam to Joint Review Panel for the OPG New Nuclear at Darlington Project, "OPG New Nuclear at Darlington Project – Application for a Licence to Prepare Site"

September 30, 2009

CD# NK054-CORR-00531-00035

**List of OPG Documents Submitted as part of the Supporting  
Materials for the Application for a Licence to Prepare Site**

**Attachment 2**

**List of OPG Documents Submitted as Part of the Supporting  
 Materials for the Application for a Licence to Prepare Site**

This submission lists following enclosures to assist reviewers in reaching a regulatory decision, which will not form part of the licensing basis:

	<b>Document Number</b>	<b>Document Title</b>
<b>1</b>	NK054-REP-01210-00009	Site Boundary Considerations for New Nuclear – Darlington
<b>2</b>	NK054-REP-01210-00010	Summary Report: Site Evaluation Studies for Nuclear Installations at Darlington Site: Evaluation of External Human Induced Events
<b>3</b>	NK054-REP-01210-00016	Site Evaluation for OPG New Nuclear at Darlington – Part 2: Dispersion of Radioactive Materials in Air and Water
<b>4</b>	NK054-REP-01210-00015	Site Evaluation for OPG New Nuclear at Darlington – Part 3: Summary of Seismic Hazard Evaluations
<b>5</b>	NK054-REP-01210-00013	Site Evaluation of the OPG New Nuclear at Darlington – Part 4: Evaluation of Meteorological Events
<b>6</b>	NK054-REP-01210-00012	Site Evaluation of the OPG New Nuclear at Darlington – Part 5: Flood Hazard Assessment
<b>7</b>	NK054-REP-01210-00011	Site Evaluation of the OPG New Nuclear at Darlington – Part 6: Evaluation of Geotechnical Aspects
<b>8</b>	NK054-REP-01210-00014	Site Evaluation for OPG New Nuclear at Darlington – Probabilistic Seismic Hazard Assessment
<b>9</b>	NK054-REP-01210-00018	Site Evaluation of the OPG New Nuclear at Darlington - Additional Considerations

## **ATTACHMENT 3**

Attachment to OPG letter, Albert Sweetnam to Joint Review Panel for the OPG New Nuclear at Darlington Project, "OPG New Nuclear at Darlington Project – Application for a Licence to Prepare Site"

September 30, 2009

CD# NK054-CORR-00531-00035

**Application for Licence to Prepare Site  
for the Future Construction  
of OPG New Nuclear at Darlington**



**Ontario Power Generation Inc.**

**Application for a Licence to  
Prepare Site for the Future Construction  
of OPG New Nuclear at Darlington**

**September 30, 2009**

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**Application for a Licence to Prepare Site for the  
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**Application for a Licence to Prepare Site for the  
Future Construction of OPG New Nuclear at Darlington**

**Introduction and Description of the Application**

Ontario Power Generation Inc. (OPG) is hereby submitting a revised application to the Canadian Nuclear Safety Commission (CNSC) for a Licence to Prepare Site in accordance with Section 24(2) of the *Nuclear Safety and Control Act*. The activity to be licensed is the preparation of the site for the construction of up to four Class 1 Nuclear Power Generating Facilities, and associated radioactive waste and used fuel storage facilities, at the Darlington Nuclear site located on the property OPG owns in the Municipality of Clarington, in the Regional Municipality of Durham. The Darlington Nuclear site is currently home to Darlington Nuclear Generating Station, a 4-unit nuclear generating station and the Darlington Waste Management Facility, a licensed used fuel dry storage facility.

This Application for a Licence to Prepare Site is in anticipation of the Province of Ontario selecting an Engineering, Procurement and Construction Company (EPC Co.) to prepare the site and construct the new nuclear facilities. Once selected, OPG will enter into a contract with the EPC Co. for provision of the nuclear facility and the related works including preparation of the site as discussed in this Application. OPG will be the eventual operator of the OPG New Nuclear at Darlington facility.

In June 2006 OPG was directed by the Ontario Minister of Energy to begin a federal approval process, including an environmental assessment, for new nuclear at an existing nuclear site. In response to this directive OPG submitted a preliminary Site Preparation Licence Application to the CNSC<sup>1</sup> in September of that year.

As the EPC Co. has not been selected by the Province of Ontario, technical information from various available designs has been used to develop the Plant Parameter Envelope necessary for the performance of the evaluations of the suitability of the site for the facility, and to assess the environmental effects that the site could have on the facility. This Application contains both bounding information as it relates to site characteristics and design specific information as it relates to the reactor characteristics. Bounding of technical information for the purpose of this Licence to Prepare Site Application provides an adequately conservative evaluation of the suitability of the site. This bounding information is described in detail in OPG report, *Use of Plant Parameters Envelope to Encompass the Reactor Designs Being Considered for the Darlington Site*<sup>2</sup> (NND Plant Parameter Envelope). The Licence to Construct Application will contain the specific reactor technical information necessary to address design considerations.

This Application has been developed to respond directly to the requirements for a Licence to Prepare Site Application contained in the General Nuclear Safety and Control Regulations, and the Class 1 Nuclear Facility Regulations. To the extent practicable, those requirements have been grouped such that related information on items such as environmental effects or security are contained in a single chapter of this Application. Each section includes a statement of the regulatory requirement that is being addressed. Note, in the event of a discrepancy between information presented in the Environmental Impact Statement and material in this Application, the Application will take precedence.

Application for a Licence to Prepare Site for the  
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Security related information pertaining to prescribed information and national security has been excluded from this Application. A separate, Security Protected submission, will be provided with respect to those portions of the Application.

References internal to this Application are provided by chapter and section number. References external to this Application, such as studies or reports that have been previously submitted to the CNSC, as well as reports submitted along with this Application, are provided at the end of each chapter. Such references are considered to be included in the licensing basis for site preparation. However references within these licensing basis documents are considered to be excluded from the licensing basis.

Tables, figures and attachments provided in this Application are designated by use of the chapter and section number to which they apply. Where practicable, the tables, figures and attachments are provided within the section. If not practical, they are provided on independent pages as close to the section as possible.

Pagination of this Application is sequential with reference to the chapter number, for example page 1 – 1 refers to chapter 1, page 1.

Due to the substantive nature of the changes from the September 2006 Application, no vertical change bars have been provided to indicate changes and no revision table has been provided.

The following table provides cross reference between applicable regulations and sections within this Licence to Prepare Site Application.

**Cross Reference – Application Requirements to Application Sections**

<b>CNSC Regulation</b>	<b>Application Requirement (Regulation text)</b>	<b>Application Section(s)</b>
General Regulations s. 3.(1)(a)	Applicant's Name and business address	1.1
General Regulations s. 3.(1)(b)	The activity to be licensed and its purpose	1.2
General Regulations s. 3.(1)(c)	The name, maximum quantity and form of any nuclear substance to be encompassed by the licence	3.1
General Regulations s. 3.(1)(d)	A description of any nuclear facility, prescribed equipment or prescribed information to be encompassed by the licence	1.3
General Regulations s. 3.(1)(e)	The proposed measures to ensure compliance with the <i>Radiation Protection Regulations</i> and the <i>Nuclear Security Regulations</i>	3.2 and 6
General Regulations s. 3.(1)(f)	Any proposed action level for the purpose of section 6 of the <i>Radiation Protection Regulations</i>	3.3
General Regulations s. 3.(1)(g)	The proposed measures to control access to the site of the activity to be licensed and the nuclear substance, prescribed equipment or	1.3

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<b>CNSC Regulation</b>	<b>Application Requirement (Regulation text)</b>	<b>Application Section(s)</b>
	prescribed information	
General Regulations s. 3.(1)(h)	The proposed measures to prevent loss or illegal use, possession or removal of the nuclear substance, prescribed equipment or prescribed information	1.3
General Regulations s. 3.(1)(i)	A description and the results of any test, analysis or calculation performed to substantiate the information included in the application	4.1
General Regulations s. 3.(1)(j)	The name, quantity, form, origin and volume of any radioactive waste or hazardous waste that may result from the activity to be licensed, including waste that may be stored, managed, processed or disposed of at the site of the activity to be licensed, and the proposed method for managing and disposing of that waste	4.4
General Regulations s. 3.(1)(k)	The applicant's organizational management structure insofar as it may bear on the applicant's compliance with the Act and the regulations made under the Act, including the internal allocation of functions, responsibilities and authority	2.3
General Regulations s. 3.(1)(l)	A description of any proposed financial guarantee relating to the activity to be licensed	1.6
General Regulations s. 15. (a)(b)(c)	Every applicant for a licence and every licensee shall notify the Commission of (a) the persons who have authority to act for them in their dealings with the Commission; (b) the names and position titles of the persons who are responsible for the management and control of the licensed activity and the nuclear substance, nuclear facility, prescribed equipment or prescribed information encompassed by the licence; and (c) any change in the information referred to in paragraphs (a) and (b), within 15 days after the change occurs	1.7
Class 1 Nuclear Facilities Regulations s. 3.(a)	A description of the site of the activity to be licensed, including the location of any exclusion zone and any structures within that zone	1.4
Class 1 Nuclear Facilities Regulations s. 3.(b)	Plans showing the location, perimeter, areas, structures and systems of the nuclear facility	1.4
Class 1 Nuclear Facilities Regulations s. 3.(c)	Evidence that the applicant is the owner of the site or has authority from the owner of the site to carry on the activity to be licensed	1.5

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<b>CNSC Regulation</b>	<b>Application Requirement (Regulation text)</b>	<b>Application Section(s)</b>
Class 1 Nuclear Facilities Regulations s. 3.(d)	The proposed quality assurance program for the activity to be licensed	2.1
Class 1 Nuclear Facilities Regulations s. 3.(e)	The name, form, characteristics and quantity of any hazardous substances that may be on the site while the activity to be licensed is carried on	4.4
Class 1 Nuclear Facilities Regulations s. 3.(f)	The proposed worker health and safety policies and procedures	2.1
Class 1 Nuclear Facilities Regulations s. 3.(g)	The proposed environmental protection policies and procedures	2.1
Class 1 Nuclear Facilities Regulations s. 3.(h)	The proposed effluent and environmental monitoring programs	4.5
Class 1 Nuclear Facilities Regulations s. 3.(i)	The information required by section 3 of the <i>Nuclear Security Regulations</i>	6
Class 1 Nuclear Facilities Regulations s. 3.(j)	The proposed program to inform persons living in the vicinity of the site of the general nature and characteristics of the anticipated effects on the environment and the health and safety of persons that may result from the activity to be licensed	5
Class 1 Nuclear Facilities Regulations s. 3.(k)	The proposed plan for the decommissioning of the nuclear facility or of the site	1.6
Class 1 Nuclear Facilities Regulations s. 4.(a)	A description of the site evaluation process and of the investigations and preparatory work that have been and will be done on the site and the surrounding area	4.1
Class 1 Nuclear Facilities Regulations s. 4.(b)	A description of the site's susceptibility to human activity and natural phenomena, including seismic events, tomadoes and floods	4.1
Class 1 Nuclear Facilities Regulations s. 4.(c)	The proposed program to determine the environmental baseline characteristics of the site and the surrounding area	4.2
Class 1 Nuclear Facilities Regulations s. 4.(d)	The proposed quality assurance program for the design of the nuclear facility	2.2
Class 1 Nuclear Facilities Regulations s. 4.(e)	The effects on the environment and the health and safety of persons that may result from the activity to be licensed, and the measures that will be taken to prevent or mitigate those effects	4.3



**Application for a Licence to Prepare Site for the  
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**List of Acronyms**

ALARA	As Low As Reasonable Achievable
CN	Canadian National
CNSC	Canadian Nuclear Safety Commission
CSA	Canadian Standards Association
DN	Darlington Nuclear
DNNP	Darlington New Nuclear Project
DNGS	Darlington Nuclear Generating Station
DWMF	Darlington Waste Management Facility
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPC	Engineering, Procurement and Construction
IAEA	International Atomic Energy Agency
ISO	International Organization for Standardization
MNR	Ministry of Natural Resources
mSv	milliSievert
MWe	megawatt electrical
NND	(OPG) New Nuclear at Darlington
OH&SA	Ontario Health and Safety Act
OPA	Ontario Power Authority
OPG	Ontario Power Generation Incorporated
RD	Regulatory Document
TDG	Transportation of Dangerous Goods

**Application for a Licence to Prepare Site for the  
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**Introduction References**

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- <sup>1</sup> Ontario Power Generation letter, J. Hankinson to M. Leblanc, "Application for a Site Preparation License – New Nuclear Power Generation," OPG N-CORR-00531-03717, September 20, 2006.
- <sup>2</sup> Ontario Power Generation Report, Use of Plant Parameters Envelope to Encompass the Reactor Designs Being Considered for the Darlington Site, N-REP-01200-10000-R002, March 11, 2009.

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**Chapter 1 – The Applicant, Purpose, and Site**

**1.1 Applicant's Name and Business Address**

Regulation Text	<i>CNSC Regulation</i>
Applicant's name and business address	<i>General Nuclear Safety and Control Regulations, Section 3.1(a)</i>

Ontario Power Generation Incorporated (OPG) is an Ontario-based electricity generation company whose principal business is the generation and sale of electricity in Ontario. OPG was created under the Business Corporations Act (Ontario), and is wholly owned by the Province of Ontario.

OPG has a variety of generating assets, including hydroelectric generating stations, fossil-fuelled generating stations, and nuclear generating stations. It also operates nuclear waste management and storage facilities. OPG's nuclear generating stations and nuclear waste management and storage facilities are all operated in accordance with licences issued by the Canadian Nuclear Safety Commission.

The business address for Ontario Power Generation Inc. is

700 University Avenue,  
Toronto, Ontario, M5G 1X6

For purposes of this application, correspondence should be directed to:

Mr. A. Sweetnam  
Executive Vice President  
Darlington New Nuclear Project  
Ontario Power Generation, TCH17G25  
700 University Avenue,  
Toronto, Ontario, M5G 1X6

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**1.2 The Activity to be Licensed and its Purpose**

Regulation Text	<i>CNSC Regulation</i>
The activity to be licensed and its purpose	<i>General Nuclear Safety and Control Regulations, Section 3.(1)(b)</i>

OPG is requesting a Licence to Prepare Site, for preparation of the DN site for up to four Class 1A nuclear powered reactors with a maximum combined net electrical output of 4800 megawatt electric (MWe) to supply the Ontario grid. The activity to be licensed is "Site Preparation"; the ultimate purpose of the activity is the long term operation of a Nuclear Power Plant, followed by eventual decommissioning and abandonment of the site. The project is known as OPG New Nuclear at Darlington (NND).

Site preparation will involve activities within the DN site necessary to facilitate subsequent construction and operation of the Nuclear Facility.

**1.2.1 Definition of Nuclear Facility**

Under the *Nuclear Safety and Control Act*, *Nuclear Facility* is defined as follows:

Nuclear Facility means any of the following facilities, namely: (a) a nuclear fission or fusion reactor or subcritical nuclear assembly, [ . . . ] and includes, where applicable, **the land on which the facility is located, a building that forms part of, or equipment used in conjunction with, the facility, and any system for the management, storage, or disposal of a nuclear substance.** (emphasis added)

Therefore the Nuclear Facility includes:

- nuclear reactor,
- reactor coolant systems,
- safety systems (e.g. reactivity control systems, emergency core cooling system, containment system, control room facilities, emergency heat removal),
- instrumentation and control systems,
- electrical systems,
- plant auxiliary systems supporting the operation of the reactor including:
  - water systems (service water systems, cooling systems, demineralised water supply systems, condenser cooling systems, ultimate heat sink, and condensate storage),
  - process systems (compressed air systems, sampling systems, drainage systems, chemical and volume control systems, purification systems, and soluble poison addition and control systems),
  - heating, air conditioning, and ventilation systems,
  - Plant Power Conversion System (Main Steam systems, Turbine Generator systems, Feed Water systems),
- fire safety systems,
- fuel handling and storage systems,

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- complementary design features that ensure that the risks associated with beyond design basis accidents are managed,
- radioactive waste treatment systems,
- effluent and emission treatment systems,
- other systems associated with the operation of the Nuclear Facility included to ensure potential risks to national security, environmental harm, worker safety, and public safety, are limited to a reasonable level, and to safeguard against the use of nuclear materials for purposes of proliferation of weapons.

Buildings that form part of the nuclear reactor include:

- Containment, reactor auxiliary building.

Buildings that contain systems or equipment used in conjunction with the nuclear reactor include:

- Turbine Generator buildings
- Condenser Cooling supply buildings
- Water Treatment and supply buildings
- security buildings
- buildings containing environmental protection equipment including monitoring equipment

Preparation of the site will also accommodate any radioactive waste and used fuel dry storage facilities.

The Nuclear Facility does not include:

- Buildings that do not form part of the nuclear reactor or do not contain systems or equipment used in conjunction with the nuclear reactor. For example, administrative offices or material storage areas external of the protected area.
- Equipment used in conjunction with the nuclear reactor that is also used for other, general, purposes. For example, the supply line for potable water is equipment used in conjunction with the nuclear reactor, which also serves a general purpose. The Nuclear Facility ends at the point where its equipment connects to the equipment that serves the general purpose.

Therefore any activities in preparation for these items are not considered part of this Application.

#### 1.2.2 CNSC Licence to Prepare Site Activities

OPG will undertake site preparations under the "owner-only" approach sanctioned by the Ontario Ministry of Labour. Accordingly, an EPC Co. will be responsible for performance of the physical works. Consistent with the General Nuclear Safety and Control Regulations section 12(1), OPG will fulfill the obligations of the licensee through review of EPC Co. prepared Programs and oversight of implementation of these Programs. Oversight of EPC Co. is further described in section 2.1 of this Application. The EPC Co. shall have the obligations of a worker as defined in section 17 of that Regulation except for Worker, Health and Safety as described in section 2.1.2 of this Application.

Physical activities covered by the CNSC's Licence to Prepare Site include those related to preparing for construction of the Nuclear Facility:

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- Construction of access control measures;
- Clearing and grubbing of vegetation;
- Excavation and grading of the site;
- Installation of services and utilities;
- Development of administrative and physical support facilities inside future protected area;
- Construction of environmental monitoring and mitigation systems; and
- Construction of flood protection and erosion control measures.

Other activities in addition to those described in this Licence Application may be undertaken in parallel, under other regulatory approvals as appropriate.

Access Control Measures

Access control will be established during site preparation to create a construction island. Fencing such as chain link fence on steel posts footed in concrete will be erected, or confirmed in place, around the project site perimeter. Any fences used during any phase from site preparation onwards will comply with security requirements appropriate to the work (e.g., in some areas permanent fences may be needed in place of temporary fences).

Access control measures are described in the separate security protected submission.

Clearing and Grubbing

Clearing and grubbing of vegetation, roots and stumps shall be done at locations where embankments are to be built, or excavations are to be cut, or at locations where permanent or temporary facilities/structures are to be constructed. Appropriate erosion and sediment control measures will be installed prior to starting these activities. Any trees, brush, bushes, stumps and windfall that cannot be safely managed on site will be disposed/removed from site to a licenced facility or placed in a designated soil spoil area and in accordance with regulatory requirements. Good industry practices applied during clearing and grubbing activities to reduce overall environmental effects include:

- Minimizing the area to be cleared to the extent feasible;
- Minimizing compaction of roots in areas that will not be cleared; and
- Compliance with seasonal constraints and regulatory requirements.

Excavation and Grading

The site preparation activities will involve the excavation and grading of soil, rock and like material, and associated activities to facilitate its excavation and transfer to storage areas. Associated activities will include drilling and blasting. Rock excavation will include activities related to general site grading and grading for building and structure foundations. A separate application will be filed with the Minister of Natural Resources Canada for a licence for the temporary storage and use of explosives before these activities are undertaken as set out in section 7 of the Explosives Act. Blasting will be carried out using conventional explosives in controlled charges as required.

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Excavation and grading will be by means of conventional construction equipment such as bulldozers, excavators, front-end loaders and trucks. Depending on the suitability of the excavated soil, there may be opportunities for re-use of the excavated soil on site. Excavated soil may be deposited on site in the northeast quadrant of the site, to create a berm south of the CN rail lines, as lake infill or hauled to an off-site location. Any contaminated soil or rock encountered will be managed according to regulatory requirements. Excavated rock may be crushed for more efficient placement on site and may be re-used to construct parking and laydown areas or as foundation backfill.

Figure 1.4-5 of this Application shows the existing NND construction site contours; while Figure 1.4-6 shows the proposed contours following soil excavating and grading. Figure 1.4-6 shows the resulting level surface area for the generic power block area as well as the additional space available for construction or operational use as required. Further excavation for subsurface preparation of the plant footprint will consist of soil and rock excavation cut from the level surface of the generic power block in preparation for the foundations of the new nuclear reactors and other structures which will be built during the construction phase.

Final excavation down to the bearing surface (i.e., the surface on which concrete would be poured) for foundations of the reactor building and other structures will be part of the construction phase. Volumetrically, the bulk of excavation will occur during site preparation, leaving only a small amount of material requiring excavation down to the bearing surface during the construction phase of the project.

### Installation of Services and Utilities

The installation of services and utilities will include both those required during construction and those of a more permanent nature to support the future Nuclear Facility operations. The utilities and services installations covered by this Application include only those portions (cables, conduit, piping, etc.) that will service the future Nuclear Facility from the point at which the equipment connects to the equipment that serves the general purpose and include:

- Potable water will be extended via underground conduit into the NND site preparation construction area from the existing water main available on the DN site for any potable water and requirements and for fire protection. OPG will work with the Municipality to upgrade the service to the site as necessary.
- Sanitary sewage collection within the NND site preparation construction area for both temporary (as required) and permanent requirements will be connected via underground conduit to the existing DN site sewage collection system
- Electrical and telephone service via underground and/or aerial cables will be extended into the NND site preparation construction area from adjacent available networks.
- Natural gas will be provided as required via underground conduit from existing gas mains.



Application for a Licence to Prepare Site for the  
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Administration and Support Facilities Within the Future Protected Area

Administration and support facilities to support site preparation and later phases will be constructed or located within the future protected area. These may include offices, workshops, storage and security buildings and utility structures such as transformers.

Environmental Monitoring and Mitigation Systems

Prior to site preparation activities commencing at the site, environmental monitoring and mitigation measures will be proposed and a plan put in place to ensure adequate mitigation of environmental effects. These measures will be developed in advance of the work and will follow Good Industry Management Practices to:

- Mitigate any potential effects;
- Monitor environmental releases; and
- Take appropriate action and notify the appropriate regulatory body as required.

Measures for controlling effects related to airborne particulate and stormwater quality will require plans to be developed for excavation, and soil handling and transport that will consider dust control, and surface water and erosion/sediment control. Other activities will be required for monitoring and mitigation of noise and odour. Handling of fuels and lubricants used during site preparation activities and contingency measures in the event of spills during site preparation will be in put in place to contain the spill, stop the source where possible and direct subsequent clean-up.

Additional environmental monitoring and mitigative details are provided in Chapter 4 of this Application.

Flood Control and Shoreline Protection

To accommodate the site layout and provide for shoreline protection, some amount of lake infilling will be required in the area directly south of the proposed project area along the Lake Ontario shoreline. Flood control and new shoreline protection will extend from the easterly limit of the DN site along the shoreline to the south of the project area. The new shoreline created by the lake infill as well as any undisturbed shoreline within the boundaries of the site will be further stabilized and protected with armour stone blocks or similar revetment placed at the shoreline surface to dissipate any existing or potential wave energy and erosion.

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**1.3 Description of the Nuclear Facility, Prescribed Equipment and Prescribed Information Encompassed by the Licence**

Regulation Text	<i>CNSC Regulation</i>
A description of any Nuclear Facility, prescribed equipment or prescribed information to be encompassed by the licence.	<i>General Nuclear Safety and Control Regulations, Section 3.(1)(d)</i>
The proposed measures to control access to the site of the activity to be licensed and the nuclear substance prescribed equipment or prescribed information.	<i>General Nuclear Safety and Control Regulations, Section 3.(1)(g)</i>
The proposed measures to prevent loss or illegal use, possession or removal of the nuclear substance, prescribed equipment or prescribed information.	<i>General Nuclear Safety and Control Regulations, Section 3.(1)(h)</i>

Description of the Nuclear Facility

No Nuclear Facility is encompassed by this licence. Site preparation will be suitable for construction of a future Nuclear Facility which will be bounded by the NND *Plant Parameter Envelope*<sup>1</sup>. If the Nuclear Facility is not bounded by the NND Plant Parameter Envelope, the Envelope will be updated and appropriate assessment of the impacts will be undertaken as required.

Prescribed Equipment & Prescribed Information

It is anticipated that there will be devices used during construction and for security search that may be prescribed. Proposed measures to control access to the site are described in Section 1.2 of this Application. Measures to control access to prescribed equipment will be developed upon identification of any such equipment that will be used during site preparation. Measures to prevent loss or illegal use, possession or removal of prescribed equipment will be developed upon identification of any such equipment that will be used during site preparation.

Details on the proposed measures to protect prescribed equipment and information to be encompassed by the Licence to Prepare Site are presented in a separate security protected submission.

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Application for a Licence to Prepare Site for the  
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**1.4 Description of the Site**

Regulation Text	<i>CNSC Regulation</i>
A description of the site of the activity to be licensed, including the location of any exclusion zone and any structures within that zone.	<i>Class 1 Nuclear Facilities Regulations, Section 3.(a)</i>
Plans showing the location, perimeter, areas, structures and systems of the Nuclear Facility	<i>Class 1 Nuclear Facilities Regulations, Section 3.(b)</i>

The description of the site for the site preparation activities is provided in OPG report, *Site Evaluation for OPG New Nuclear at Darlington – Nuclear Safety Considerations*<sup>2</sup>. Figure 1.4-1 illustrates the location of the Darlington Nuclear (DN) site from a local context.

Figure 1.4-2 provides a recent survey drawing of a portion of the DN site including the area for NND.

Figure 1.4-3 is a recent orthographically produced photograph of the DN site which illustrates the proposed boundary for the NND construction site. The portion of the DN site proposed for the NND construction site is primarily the easterly one third (approximately) of the overall DN site. It is bounded by the DN site property limits on the east and north boundaries, by Lake Ontario to the south, and by Holt Road (including the southerly projection to Lake Ontario) on the west.

The portion of the DN site proposed for NND site preparation activities included in this Application is primarily the portion of the NND Construction site south of the CN Rail line.

Figure 1.4-4 is a topographic map illustrating the present contours of the DN site. Figure 1.4-5 provides a contour drawing with the existing DN site structures represented. Illustration of the proposed site contours after completion of site preparation activities is shown in Figure 1.4-6.

Figures 1.4-7 illustrates the proposed layout for the NND site and includes the following proposed areas:

- Excavated area;
- New soil stockpile (denoted as Northeast Landfill Area) composed of inert materials from the excavated area proposed for the northeast quadrant
- Available space for construction or operational use for support buildings and structures;
- Condenser Cooling Water intake / discharge channel (conceptual locations only);
- Switchyard and transmission corridor;
- Waste transfer and storage areas;
- Site roads and related infrastructure;
- Proposed NND Exclusion Zone.

The DNGS Exclusion Zone covers a portion of the lands for the NND Project and extends onto the proposed NND construction site. The proposed project emergency

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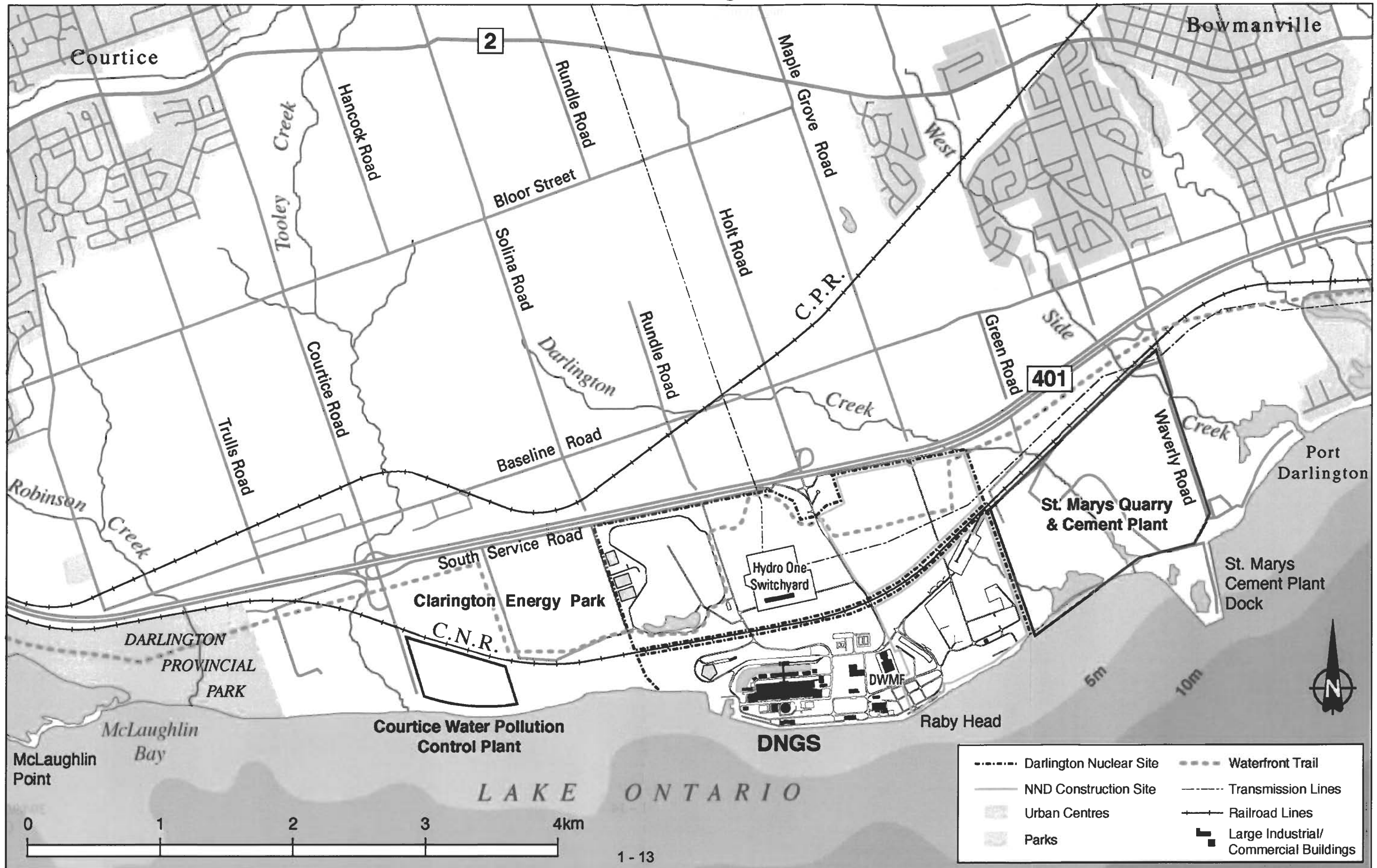
preparedness program, discussed in section 2.1 of this Application, will provide direction should a DNGS emergency event require response actions.

The proposed Exclusion Zone for NND maintains a minimum distance of 500 m from the reactor building walls. As illustrated in Figure 1.4-7 the proposed NND Exclusion Zone lies entirely within the DN site. Coinciding site and exclusion zone boundaries are acceptable under Canadian regulatory requirements. The most easterly edge runs along the east property line, while the westerly portion extends onto the DNGS Licensed Facility Site.

Detailed assessment of the proposed Exclusion Zone is presented in the *Exclusion Zone Determination for Darlington New Nuclear Project*<sup>3</sup> report. This assessment has considered land usage, security, evacuation needs and environmental factors, as well as regulatory dose limits for the site. The estimated bounding effective dose to members of the public due to Normal Operations based on the *NND Plant Parameter Envelope*<sup>1</sup> is well below the regulatory limit of 1 mSv per year. As well, based on the available reactor technology information, the regulatory requirements and expectations with respect to the site boundary and exclusion zone boundary can be met at distances equal to 500 m from the reactor building walls.

The precise location of the exclusion zone and supporting calculations will be provided with the Construction Licence application once a technology has been selected.

Figure 1.4-1 Location of Darlington Nuclear Site

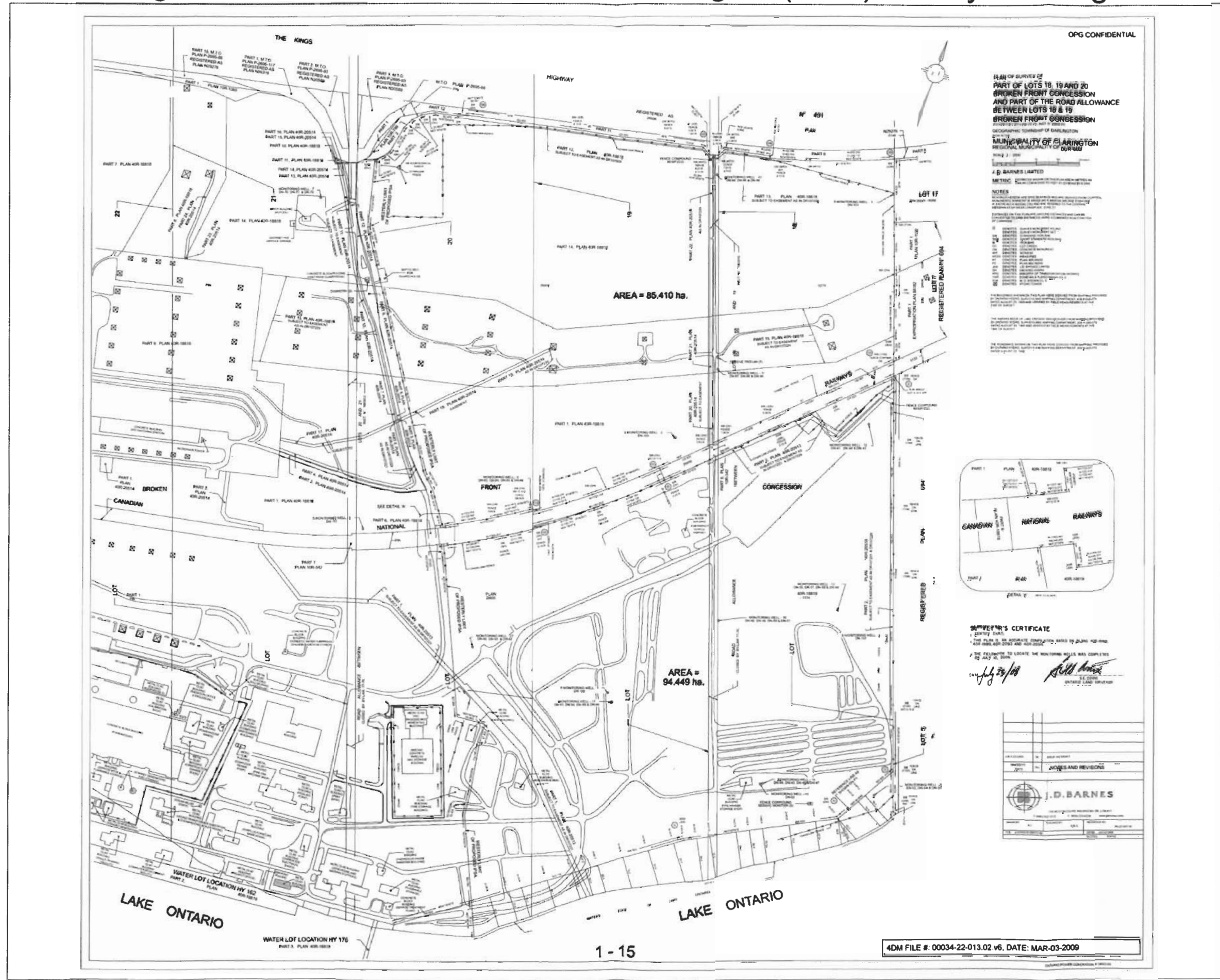


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Figure 1.4-2 OPG New Nuclear at Darlington (NND) Survey Drawing



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Figure 1.4-3 Photograph of DN Site Illustrating NND Construction Site Boundary

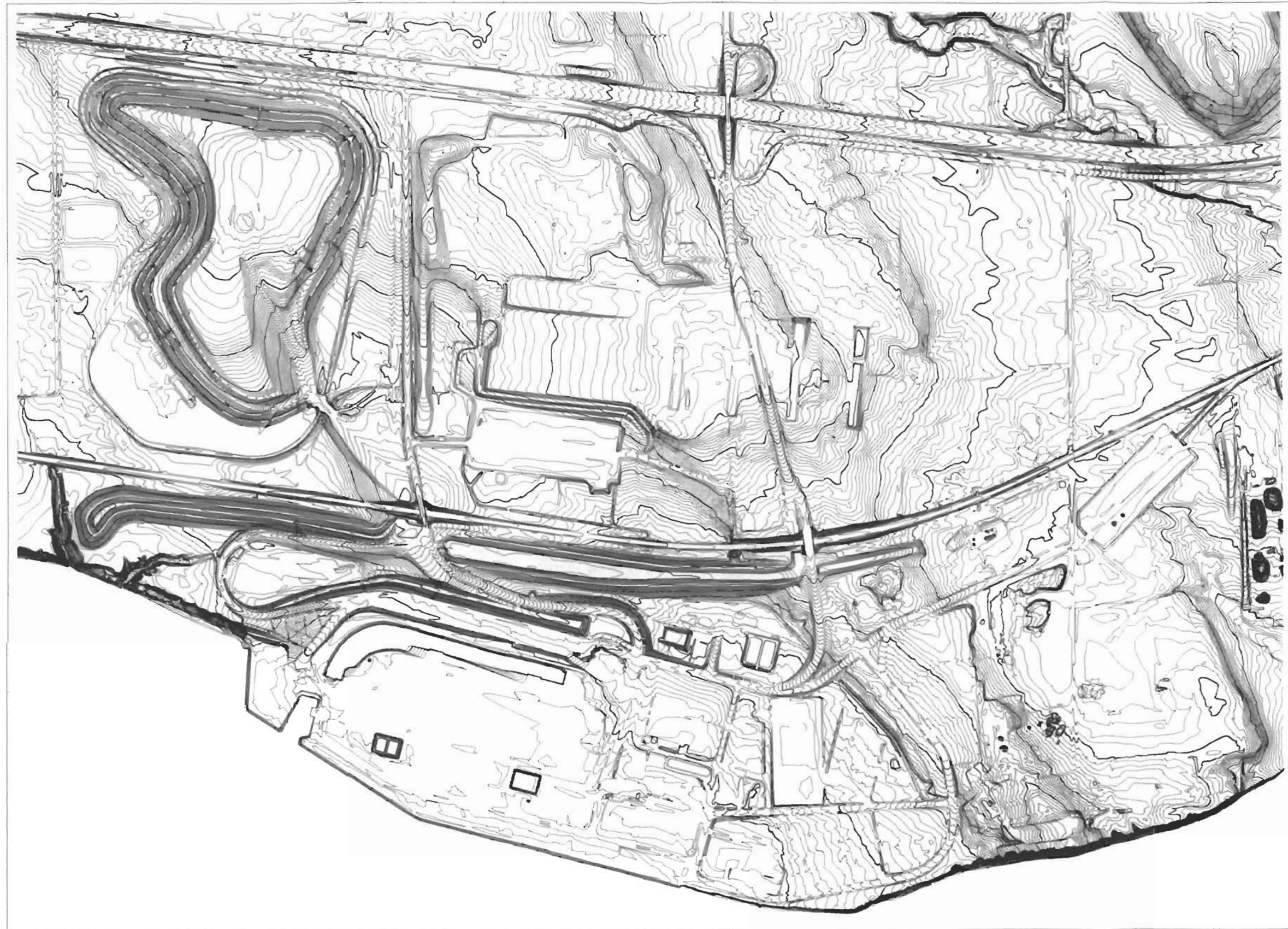


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# Figure 1.4-4 DN Site Topographical Details



SCALE 1:3,200  
PROJECTION: UTM Zone 17, NAD83



### Legend

- Contour - 5 m
- Contour - 1 m
- Contour - @ 5 m

Contour Map Created By: NORTHWAY-PHOTOMAP INC

Note: Contours were generated from 1:10,000 scale Spring 2007 Aerial Photography designed for preliminary planning purposes only, not to be used for final design.

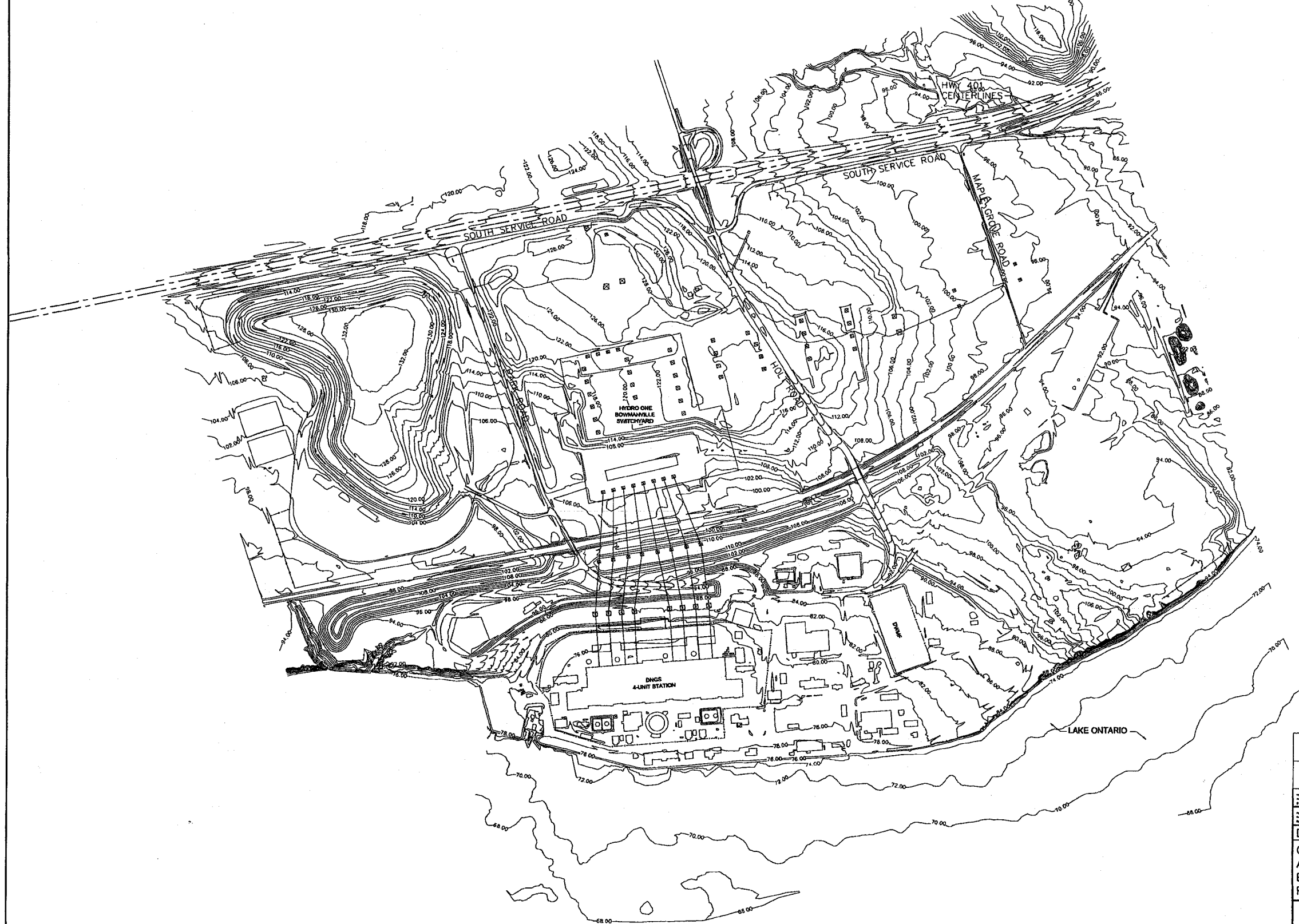
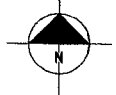
FILE: 00034-22-013-01.wpd  
DATE: JAN-21-2009  
PRODUCED BY: AII



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Figure 1.4-5 DN Site Existing Contour Drawing



CONTOUR INTERVAL = 2m

1:5000

DATE	DESCRIPTION	BY	CHECKED
11/11/00	ISSUED FOR PERMITTING	J. BROWN	M. SMITH
11/11/00	ISSUED FOR PERMITTING	J. BROWN	M. SMITH

DARLINGTON NND 01

OPG NEW NUCLEAR  
AT DARLINGTON  
EXISTING TOPOGRAPHIC DRAWING  
FOR ILLUSTRATION PURPOSES

**amec** AMEC  
NSS

DN drawn by:	Eng designed by:	Checked by:
DN checked by:	Eng verified by:	Reviewed by:
Scale:	Eng approved by:	Permitted by:
AS NOTED		
Date of Issue:	Scale:	Eng Size:
01/11/00	1:5000	A3

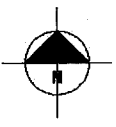
DWG No D0034-DW-001

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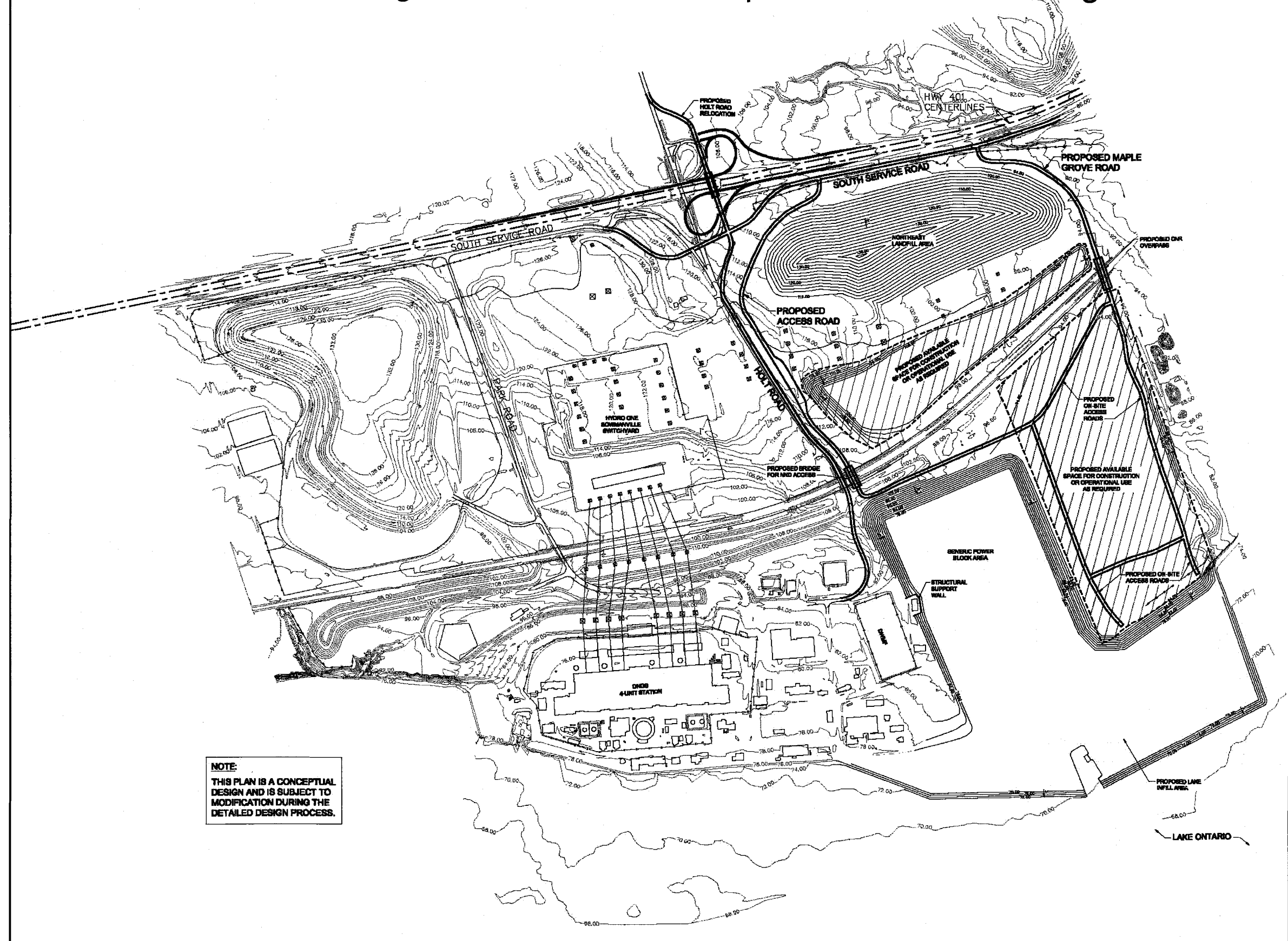
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# Figure 1.4-6 DN Site Proposed Contour Drawing



**NOTE:**  
SITE BOUNDARY REFLECTS  
FINAL SITE LAYOUT FOR 2018  
AND MAY BE DIFFERENT FROM  
ORIGINAL SITE SURVEY.



**NOTE:**  
THIS PLAN IS A CONCEPTUAL  
DESIGN AND IS SUBJECT TO  
MODIFICATION DURING THE  
DETAILED DESIGN PROCESS.

CONTOUR INTERVAL = 2m

1:8000

REV	DATE	DESCRIPTION	BY	CHECKED
01				
02				
03				
04				

DARLINGTON NND 0

OPG NFW NUCLFAR  
AT DARLINGTON  
POST SITE PREPARATION  
TOPOGRAPHIC DRAWING  
FOR ILLUSTRATION PURPOSES

**amec**  
NS

NO drawn by:	NO designed by:	NO checked by:	NO verified by:	NO approved by:

scale  
AS NOTED

date of issue

sub type

proj name

FIG NO  
D0034-DW-002

02

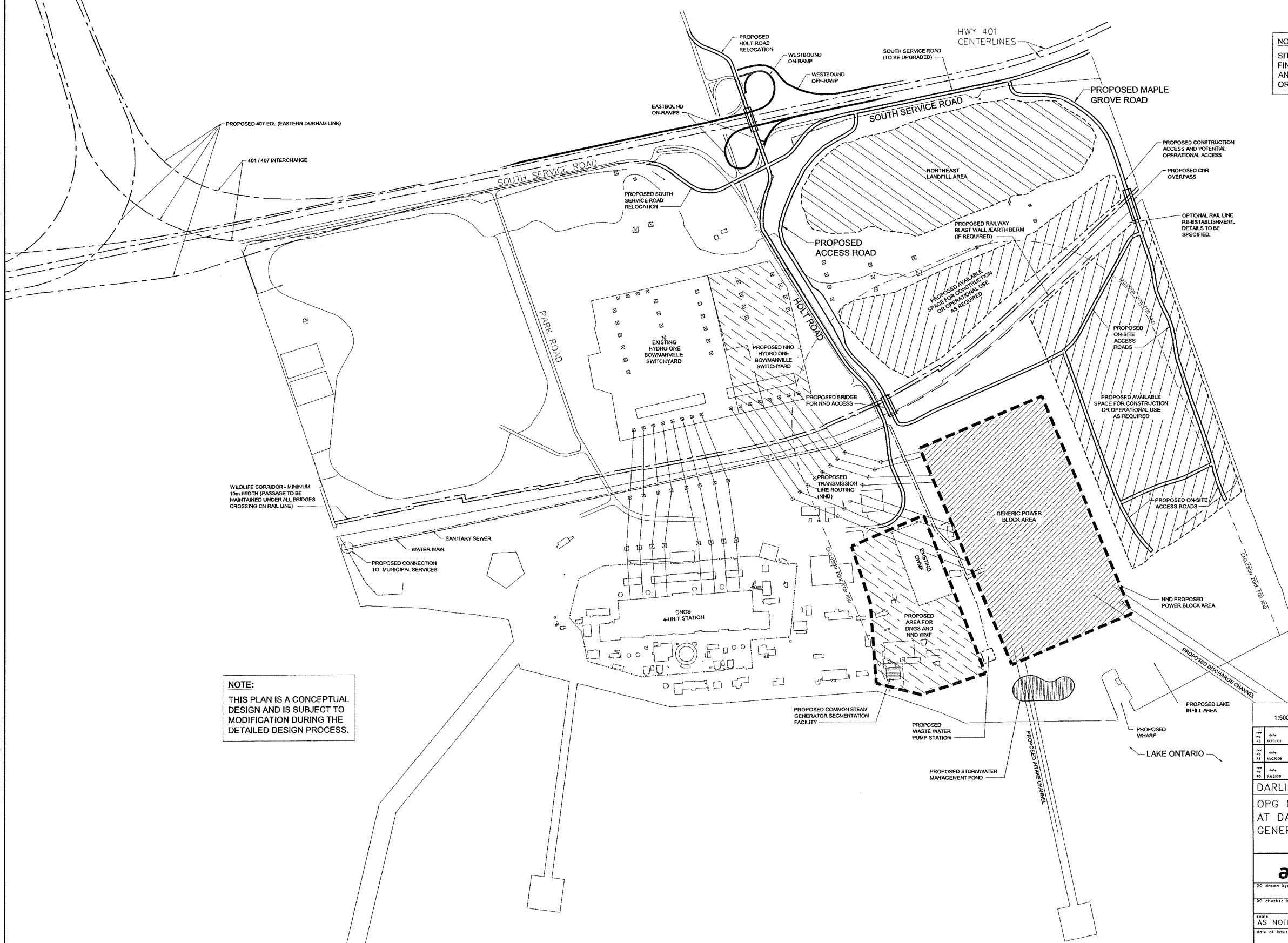
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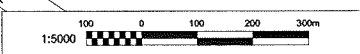
# Figure 1.4-7 OPG New Nuclear at Darlington (NND) Proposed Site Layout



NOTE:  
SITE BOUNDARY REFLECTS  
FINAL SITE LAYOUT FOR 2018  
AND MAY BE DIFFERENT FROM  
ORIGINAL SITE SURVEY.



NOTE:  
THIS PLAN IS A CONCEPTUAL  
DESIGN AND IS SUBJECT TO  
MODIFICATION DURING THE  
DETAILED DESIGN PROCESS.



REV	DATE	DESCRIPTION	BY	CHECKED
1	12/20/18	ISSUED FOR PERMITTING	AMC	JEE
2	1/10/19	REVISED FOR COMMENTS	AMC	JEE
3	1/24/19	REVISED FOR COMMENTS	AMC	JEE
4	2/14/19	REVISED FOR COMMENTS	AMC	JEE

DARLINGTON NND 0  
OPG NEW NUCLEAR  
AT DARLINGTON  
GENERIC LAYOUT

<b>amec</b>		<b>AMEC NSS</b>	
DD drawn by:	Eng designed by:	DATE CHECKED BY:	DATE APPROVED BY:
DD checked by:	Eng verified by:	DATE CHECKED BY:	DATE APPROVED BY:
DATE OF ISSUE:	REV	DATE OF ISSUE:	REV
DDG no	REV	DDG no	REV

D0034-DW-003 02

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Regional Municipality of Durham, Municipality of Clarington

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**Application for a Licence to Prepare Site for the  
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**1.5 Evidence of Ownership**

<b>Regulation Text</b>	<b>CNSC Regulation</b>
Evidence that the applicant is the owner of the site or has authority from the owner of the site to carry on the activity to be licensed.	<i>Class 1 Nuclear Facilities Regulations, Section 3.(c)</i>

Attachment 1.5-1 provides a copy of the Transfer/Deed of Land filed in the Land Titles for the Province of Ontario showing OPG-Darlington Inc. as the owner of the Darlington Nuclear site. Included in the attachment is the survey that identifies the property described in the Transfer/Deed of Land.

Effective June 20, 2007 by Instrument Number DR614956 (see Attachment 1.5-2) the registered owner of the lands changed from OPG-Darlington to Ontario Power Generation Inc.

To accommodate the site layout and provide for shoreline protection, some amount of lake infilling will be required in the area directly south of the Lake Ontario shoreline of the proposed project area. The Province of Ontario retains title to the lands located beneath Lake Ontario within the federal boundaries of Canada. The Ontario Ministry of Natural Resources (MNR) is responsible for approving the transfer of such property on behalf of the Province.

OPG will work with MNR for transfer of the water lots in fee to OPG for the purpose of land reclamation from Lake Ontario and transfer of the title of the Crown Land, once the Environmental Assessment for the project is approved and MNR conditions have been met. OPG will have control of the required water lots prior to start of licensed Site Preparation Activities.

**Application for a Licence to Prepare Site for the  
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**Attachment 1.5-1  
Transfer/Deed of Land**

<b>Transfer/Deed of Land</b> <small>Form 1 - Land Registration Reform Act</small>		Number of Pages: <b>5</b> Page: <b>1</b> of <b>5</b> pages
FOR OFFICE USE ONLY LT1016056 01 APR 8 PM 4 44 New Property Created Additional See Schedule <input type="checkbox"/> Executions Additional See Schedule <input type="checkbox"/>	(1) Registry <input type="checkbox"/> Land Titles <input checked="" type="checkbox"/> (2) Page of 5 pages (3) Property Identifier(s) Block: 26606 Property: 0134(LT) 0133(LT) Address: See Schedule <input checked="" type="checkbox"/> (4) Consideration: <b>P001523</b> NIL 00/100 Dollars \$NIL (5) Description: This is a Property Division <input checked="" type="checkbox"/> Property Consolidation <input type="checkbox"/> Firstly: Part of Lots 23 and 24, Concession Broken Front, Darlington and part of road allowance between Lots 24 and 25, Concession Broken Front, Darlington, designated as PART 6, Plan 10R-99, Municipality of Clarington, Regional Municipality of Durham - more particularly described on Schedule B annexed	A P901523
(6) This Document Contains: (a) Redescription New Easement Plan/Slotch <input type="checkbox"/> (b) Schedule for Description <input checked="" type="checkbox"/> Additional Parties <input type="checkbox"/> Other <input checked="" type="checkbox"/> (7) Interest/estate Transferred Fee Simple		
(8) Transferor(s): The transferor hereby transfers the land to the transferee and a witness that the transferee is at least eighteen years old and must see attached Schedule A entitled "Electricity Act, 1998 Registration Statement"		
Name(s): <b>OPG-DARLINGTON INC.</b>  We have authority to bind the corporation.	Signature(s): <i>[Signature]</i> By: <b>Executive Vice President</b> Title: <b>Law and Corporate Development</b>	Date of Signature: <b>2001 2 5</b>
(9) Spouse(s) of Transferor(s) I hereby consent to this transaction Name(s): _____ Signature(s): _____ Date of Signature: Y M D		
(10) Transferor(s) Address: <b>c/o 700 University Avenue, Toronto, Ontario, M5G 1X6</b>		
(11) Transferee(s): <b>OPG-DARLINGTON INC.</b> Date of Birth: Y M D		
(12) Transferee(s) Address: <b>c/o 700 University Avenue, Toronto, Ontario, M5G 1X6</b>		
(13) Transferor(s) The transferor verifies that to the best of the transferor's knowledge and belief, the transfer does not contravene section 50 of the Planning Act. Signature: _____ Date of Signature: Y M D		
OPTIONAL Planning Act - Section 50 Affidavit by solicitor if necessary	(14) Solicitor for Transferor(s) I have explained the effect of section 50 of the Planning Act to the transferor and I have made inquiries of the transferor to determine that the transfer does not contravene that section and based on the information supplied by the transferor, to the best of my knowledge and belief, the transfer does not contravene that section. I am an Ontario solicitor in good standing. Signature: _____ Date of Signature: Y M D Name and Address of Solicitor: _____ Signature: _____ Date of Signature: Y M D	
(15) Solicitor for Transferee(s) I have investigated the title to the land and to siting land where relevant and I am satisfied that the title records reveal no contravention as set out in subclause 50(22)(c)(8) of the Planning Act and that to the best of my knowledge and belief this transfer does not contravene section 50 of the Planning Act. I act independently of the solicitor for the transferor(s) and I am an Ontario solicitor in good standing. Name and Address of Solicitor: _____ Signature: _____ Date of Signature: Y M D		
(16) Assessment Roll Number of Property: _____ (17) Municipal Address of Property: <b>Darlington Generating Station, Clarington</b> #11095616	(17) Document Prepared By: <b>BLAKE, CASSELLS &amp; GRAYDON LLP</b> Barristers and Solicitors Box 25, Commerce Court West Toronto, Ontario M5L 1A9 (416) 863-2400 ATTENTION: Edward P. Perlmutter/BRK	Fees and Tax Registration Fee: <b>0</b> Land Transfer Tax: <b>NILA</b> Total:

Application for a Licence to Prepare Site for the  
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SCHEDULE A

**P90 1523**

TO TRANSFER/DEED OF LAND

**ELECTRICITY ACT, 1998 REGISTRATION STATEMENT**

- ✓ 1. The Transferor is the transferor referred to in Box (8) in the Form 1 (Transfer/Deed of Land) under the *Land Registration Reform Act* to which this schedule is attached, is a person referred to in section 124 of the *Electricity Act, 1998* and is a person from which no consent was required in respect of the transfer in the transfer order, as amended, pursuant to subsection 116(5) of the *Electricity Act, 1998*.
- ✓ 2. The interests described in Box (7) in the lands (the "Lands") described in Box (5) in the Form 1 under the *Land Registration Reform Act* to which this schedule is attached were transferred unconditionally to the Transferor from Ontario Hydro by or pursuant to a Transfer Order, as amended, made under the *Electricity Act, 1998*, which transfer has taken effect.
3. There were no conditions or other provisions in the Transfer Order, as amended, that restrict the power or right of the Transferor to transfer to the Transferee the interest described in Box (7) in the Lands.
- ✓ 4. The foregoing statements are statements made pursuant to section 124 of the *Electricity Act, 1998*.
5. This transfer/deed of land is being registered to record the name of Transferee on title to the Lands.
6. Pursuant to Section 135 of the *Electricity Act, 1998* the *Land Transfer Tax Act* does not apply to any transfer of assets by or pursuant to a transfer order.
7. Where applicable, by the *Power Commission Amendment Act, 1973* proclaimed March 4, 1974, the name of The Hydro-Electric Power Commission of Ontario was changed to Ontario Hydro.

10848484.MASTER Jan 1/01

Application for a Licence to Prepare Site for the  
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Page 3

**SCHEDULE B  
Darlington Nuclear Generating Station  
(Legal Description)**

**P901523**

**1. PIN 26606-0134(LT) [South of CNR]**

Part of the Road allowance between Lots 24 and 25, Concession Broken Front Darlington, closed by By-law No. N90910 and Part of Lots 23 and 24, Concession Broken Front Darlington, designated as PART 6, Plan 10R-94;

Parts of Lots 21 and 22, Concession Broken Front Darlington, designated as PARTS 1 and 2, Plan 10R-342;

Parts of Lots 19 and 20, Concession Broken Front Darlington, designated as PART 4, Plan 10R-342;

Part of Lot 18, Concession Broken Front Darlington, designated as PART 6, Plan 10R-342;

Part of the Road allowance between Lots 22 and 23, Concession Broken Front Darlington, closed by By-law No. N90910, designated as PART 5, Plan 10R-553;

Part of Road allowance between Lots 20 and 21, Concession Broken Front Darlington, closed by By-law No. N90910, designated as PART 3, Plan 10R-342;

Part of the Road allowance between Lots 18 and 19, Concession Broken Front Darlington, closed by By-law No. N90910, designated as PARTS 5 and 9, Plan 10R-342;

First Avenue, Second Avenue, Third Avenue and Fourth Avenue, Plan 97 Darlington, closed by By-law No. N90910;

Lots 1534 to 1741, both inclusive, Plan 97 Darlington;

Municipality of Clarington, Regional Municipality of Durham,

and being designated as **PART 1 on Plan 40R-18819**

**2. Part of PIN 26606-0133(LT) [North of CNR]**

Parts of Lots 23 and 24, Concession Broken Front Darlington and part of road allowance between Lots 24 and 25, Concession Broken Front Darlington, designated as PARTS 2, 3, 4, 5 and 7, Plan 10R-94;

Parts of Lots 21 and 22, Concession Broken Front Darlington, designated as PART 1, Plan 10R-343 and PART 1, Plan 10R-398 except PART 1, Plan 10R-1080;

Parts of Lots 19 and 20, Concession Broken Front Darlington, designated as PART 3, Plan 10R-343 except PARTS 1 and 2, Plan 10R-786;

Part of Lot 18, Concession Broken Front Darlington, designated as PART 5, Plan 10R-343;

Part of the Road allowance between Lots 22 and 23, Concession Broken Front Darlington, closed by By-law No. N90910, designated as PART 3, Plan 10R-553;

Part of the Road allowance between Lots 20 and 21, Concession Broken Front Darlington, closed by By-law No. N90910, designated as PART 2, Plan 10R-398 and PART 2, Plan 10R-343;

Part of the Road allowance between Lots 18 and 19, Concession Broken Front Darlington, closed by By-law No. N90910, designated as PART 4, Plan 10R-343;



Application for a Licence to Prepare Site for the  
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**P901523**

Parts of Lots 157 to 182, both inclusive and Parts of Lots 911 and 912, Plan 97 Darlington as in Expropriation Plan No. N74387;

Parts of Lots 131 to 133, both inclusive, and Parts of Lots 181 and 182, Plan 97 Darlington, designated as PART 1, Plan 10R-553;

Parts of Lots 907 to 912, both inclusive, Plan 97 Darlington, designated as PART 2, Plan 10R-553;

Parts of Lots 885 to 908, both inclusive and part of Seventeenth Avenue, Plan 97 Darlington, designated as PART 1, Plan 10R-664;

Station Road, Fifth Avenue, Sixth Avenue, Seventh Avenue, Eighth Avenue, Ninth Avenue, Tenth Avenue, Eleventh Avenue, Twelfth Avenue, Thirteenth Avenue, Fourteenth Avenue, Fifteenth Avenue and Sixteenth Avenue, Plan 97 Darlington, closed by By-law No. N90910;

Lots 183 to 754, both inclusive and Lots 913 to 1533, both inclusive, Plan 97 Darlington;

Municipality of Clarington, Regional Municipality of Durham,

and being designated as PARTS 1, 3, 4, 7 to 15 (inclusive) on Plan 40R-18818

Subject to an easement in favour of Bell Canada as in Instrument No. N138804.

✓ 3. PIN26606-0051(LT)

Parcel HY-162 in the Register for Section Water Lot Location Darlington, being part of the bed of Lake Ontario lying in front of Lot 1741, Registered Plan N97, Lots 21, 22 and 23, and the Road Allowance between Lots 22 and 23, Broken Front Concession, in the Municipality of Clarington, (formerly the Town of Newcastle and formerly the Township of Darlington), Regional Municipality of Durham, designated as PART 1, Plan 10R-781,

and now being designated as PART 2 on Reference Plan 40R-18819.

Saving and excepting and reserving unto the Crown, heirs and successors, all ores, mines or minerals which are or shall hereafter be found on or under the land hereby granted; also saving, excepting and reserving the free use, passage and enjoyment of, in, over and upon all navigable waters which shall or may hereafter be found on or under, or flowing through or upon, any part of the land hereby granted, and reserving also the right of access to the shores of all rivers, streams and lakes for all vessels, boats and persons; also saving, excepting and reserving the surface rights only in ten per cent of the acreage hereby granted for roads and the right to lay out the same where the Crown or its officers may deem necessary.

✓ 4. PIN 26606-0052(LT)

Parcel HY-187 in the Register for Section Water Lot Location Darlington, being part of the bed of Lake Ontario lying in front of Lots 23, 24, 25 and 26, Broken Front Concession and the Road Allowance between Lots 24 and 25, Broken Front Concession, in the Municipality of Clarington (formerly in the Township of Darlington) Regional Municipality of Durham, designated as PART 1, Plan 10R-1551,

and now being designated as PART 5 on Reference Plan 40R-18819.

Saving and excepting and reserving unto the Crown, heirs and successors, all ores, mines or minerals which are or shall hereafter be found on or under the land hereby granted; also saving, excepting and reserving the free use, passage and enjoyment of, in, over and upon all navigable waters which shall or may hereafter be found on or under, or flowing through or upon, any part of the land hereby granted, and reserving also the right of access to the shores of all rivers, streams and lakes for all vessels, boats and persons; also saving, excepting and reserving the surface rights only in ten per cent of the acreage hereby granted for roads and the right to lay out the same where the Crown or its officers may deem necessary.

109611703 - Darlington

Application for a Licence to Prepare Site for the  
Future Construction of OPG New Nuclear at Darlington

Page 5

**P90 15 23**

✓ 5. **PIN26606-0053(LT)**

Parcel HY-184 in the Register for Section Water Lot Location Darlington, being part of the bed of Lake Ontario lying in front of Lots 23 and 24, Broken Front Concession, in the Municipality of Clarington (formerly the Township of Darlington) Regional Municipality of Durham, designated as PART 1, Plan 10R-1347,

and now being designated as **PART 4 on Reference Plan 40R-18819.**

Saving and excepting and reserving unto the Crown, heirs and successors, all ores, mines or minerals which are or shall hereafter be found on or under the land hereby granted; also saving, excepting and reserving the free use, passage and enjoyment of, in, over and upon all navigable waters which shall or may hereafter be found on or under, or flowing through or upon, any part of the land hereby granted, and reserving also the right of access to the shores of all rivers, streams and lakes for all vessels, boats and persons; also saving, excepting and reserving the surface rights only in ten per cent of the acreage hereby granted for roads and the right to lay out the same where the Crown or its officers may deem necessary.

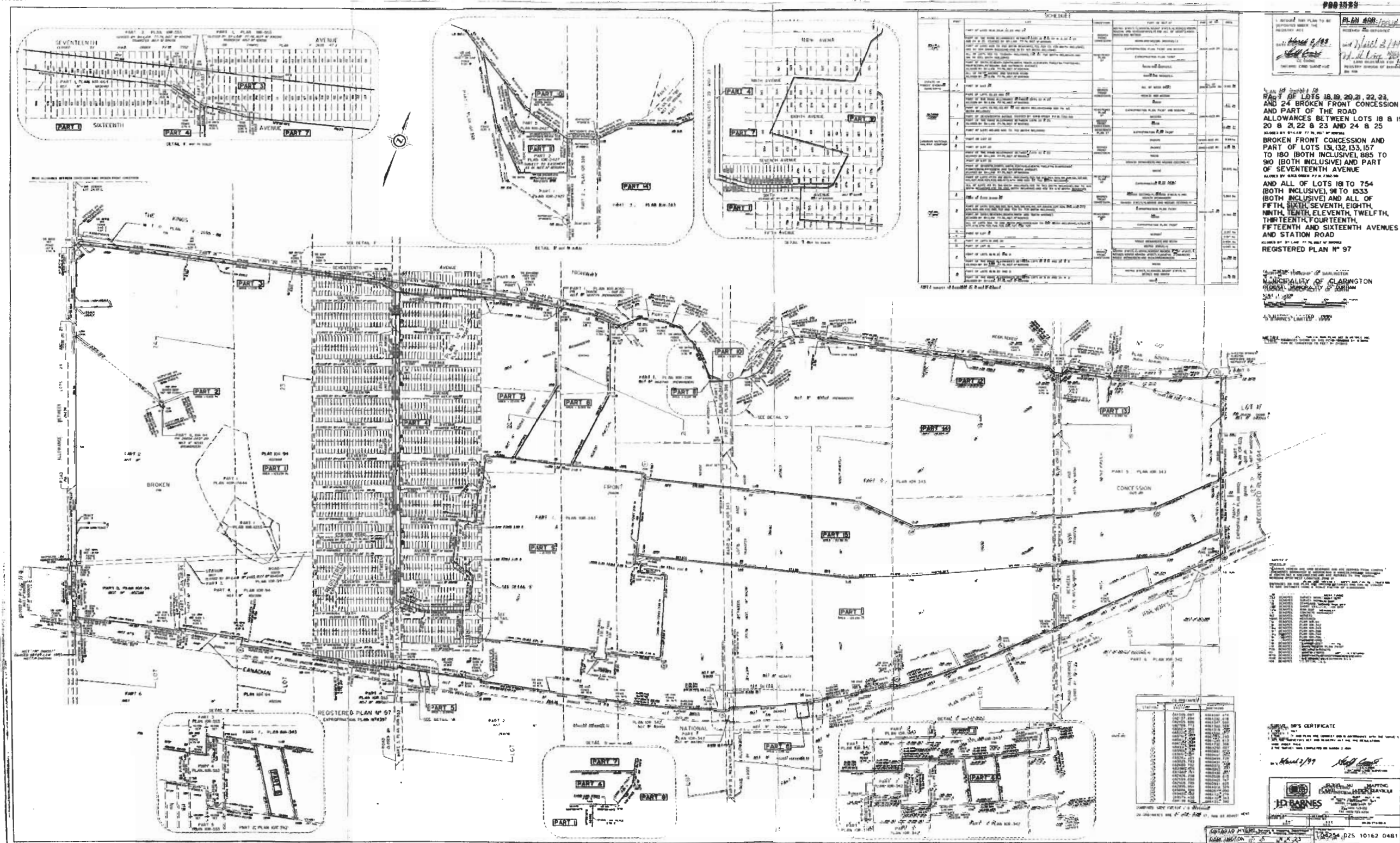
✓ 6. **PIN 26606-0085(LT)**

Parcel HY-176 in the Register for Section Water Lot Location Darlington, being part of the bed of Lake Ontario lying in front of Lot 20, Broken Front Concession and the Road Allowance between Lots 20 and 21, Broken Front Concession, in the Municipality of Clarington, (formerly in the Town of Newcastle, formerly in the Township of Darlington), Regional Municipality of Durham, designated as PART 1, Plan 10R-1031,

and now being designated as **PART 3 on Reference Plan 40R-18819.**

Saving and excepting and reserving unto the Crown, heirs and successors, all ores, mines or minerals which are or shall hereafter be found on or under the land hereby granted; also saving, excepting and reserving the free use, passage and enjoyment of, in, over and upon all navigable waters which shall or may hereafter be found on or under, or flowing through or upon, any part of the land hereby granted, and reserving also the right of access to the shores of all rivers, streams and lakes for all vessels, boats and persons; also saving, excepting and reserving the surface rights only in ten per cent of the acreage hereby granted for roads and the right to lay out the same where the Crown or its officers may deem necessary.

Application for a Licence to Prepare Site for the  
Future Construction of OPG New Nuclear at Darlington



PLAN 408  
 I HEREBY CERTIFY THAT THE ABOVE PLAN IS A TRUE AND CORRECT COPY OF THE ORIGINAL PLAN AS SUBMITTED TO ME.  
 [Signatures]

ALL OF LOTS 18, 19, 20, 21, 22, 23, AND 24 BROKEN FRONT CONCESSION AND PART OF THE ROAD ALLOWANCES BETWEEN LOTS 18 & 19, 20 & 21, 22 & 23 AND 24 & 25 BROKEN FRONT CONCESSION AND PART OF LOTS 131, 132, 133, 157 TO 180 (BOTH INCLUSIVE), 885 TO 900 (BOTH INCLUSIVE) AND PART OF SEVENTEENTH AVENUE  
 AND ALL OF LOTS 18 TO 754 (BOTH INCLUSIVE), 98 TO 1333 (BOTH INCLUSIVE) AND ALL OF FIFTH, SIXTH, SEVENTH, EIGHTH, NINTH, TENTH, ELEVENTH, TWELFTH, THIRTEENTH, FOURTEENTH, FIFTEENTH AND SIXTEENTH AVENUES AND STATION ROAD  
 REGISTERED PLAN N° 97

MANICIPALITY OF DARLINGTON  
 [Signatures]

REGISTERED PLAN N° 97

Lot No.	Area (sq. ft.)	Area (sq. m.)
1	...	...
2	...	...
3	...	...
4	...	...
5	...	...
6	...	...
7	...	...
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93	...	...
94	...	...
95	...	...
96	...	...
97	...	...
98	...	...
99	...	...
100	...	...

ENGINEER'S CERTIFICATE  
 I HEREBY CERTIFY THAT THE ABOVE PLAN IS A TRUE AND CORRECT COPY OF THE ORIGINAL PLAN AS SUBMITTED TO ME.  
 [Signatures]

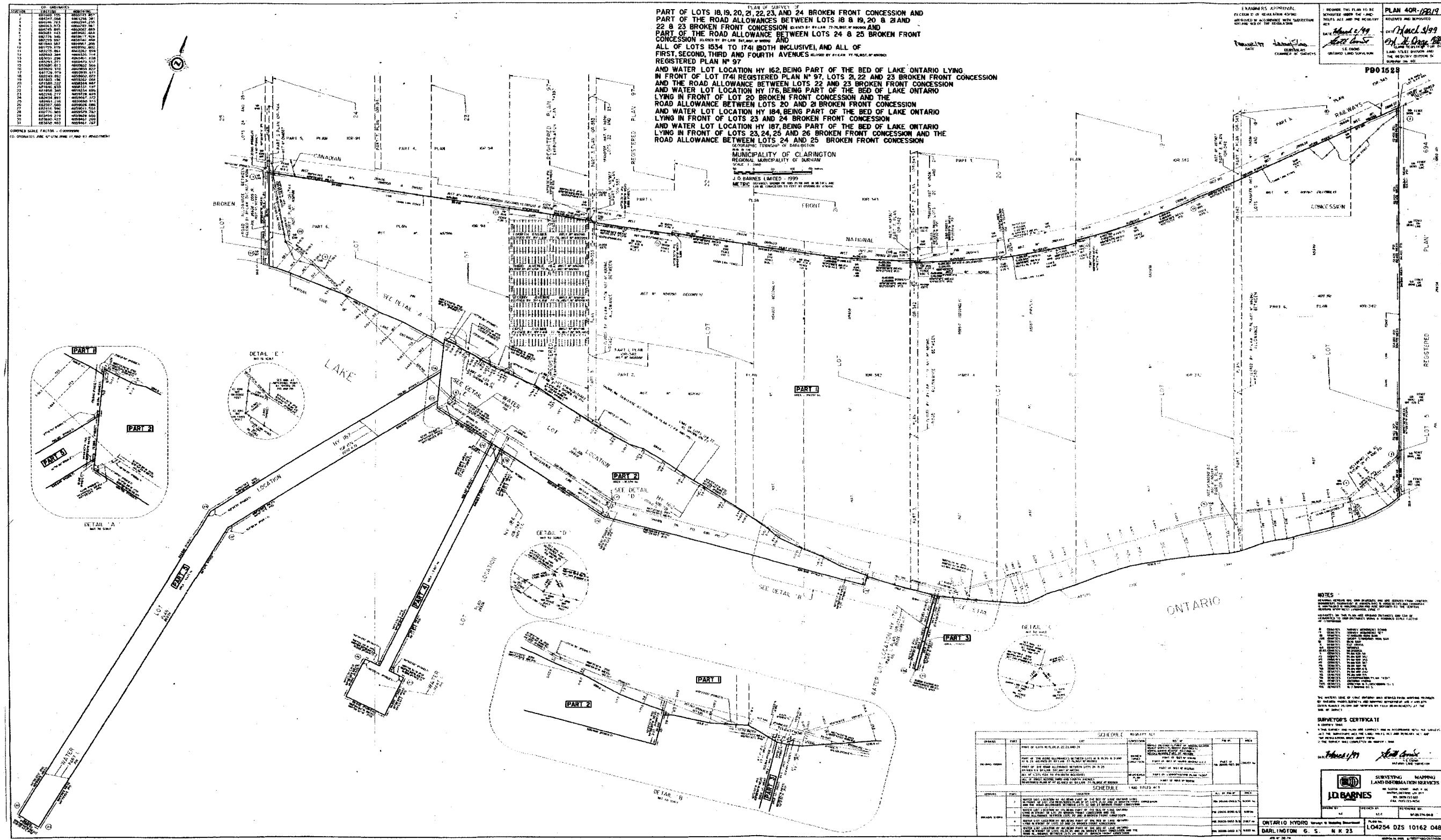
REGISTERED PLAN N° 97

ONTARIO PLANNING ACT  
 [Signatures]

Application for a Licence to Prepare Site for the  
Future Construction of OPG New Nuclear at Darlington

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**Application for a Licence to Prepare Site for the  
Future Construction of OPG New Nuclear at Darlington**



Application for a Licence to Prepare Site for the  
Future Construction of OPG New Nuclear at Darlington

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Application for a Licence to Prepare Site for the  
Future Construction of OPG New Nuclear at Darlington

Attachment 1.5-2  
Application to Change Name – Owners

P901523 - 02

LRO # 40 Application To Change Name-Owners  
The applicant(s) hereby applies to the Land Registrar.

Received as DR014956 on 2007 06 20 at 11:56  
yyyy mm dd Page 1 of 19

Properties **P901523 - 00017**

**PIN** 26606 - 0051 LT  
**Description** PCL HY-162 SEC WATER LOT LOCATION DARLINGTON; PT OF THE BED OF LAKE ONTARIO LYING IN FRONT OF LT 1741, PL N67, LTS 21, 22 & 23 AND THE RDAL BTN LTS 22 & 23, BROKEN FRONT CONCESSION IN THE TOWN OF NEWCASTLE (FORMERLY IN THE TOWNSHIP OF DARLINGTON, IN THE COUNTY OF DURHAM) PT 1, 10R781; SAVING, EXCEPTING AND RESERVING UNTO THE CROWN, HEIRS AND SUCCESSORS, ALL ORES, MINES OR MINERALS WHICH ARE OR SHALL HEREAFTER BE FOUND ON OR UNDER THE LAND HEREBY GRANTED; ALSO SAVING, EXCEPTING AND RESERVING THE FREE USE, PASSAGE AND ENJOYMENT OF, IN, OVER AND UPON ALL NAVIGABLE WATERS WHICH SHALL OR MAY HEREAFTER BE FOUND ON OR UNDER, OR FLOWING THROUGH OR UPON, ANY PART OF THE LAND HEREBY GRANTED, AND RESERVING ALSO THE RIGHT OF ACCESS TO THE SHORES OF ALL RIVERS, STREAMS AND LAKES FOR ALL VESSELS, BOATS AND PERSONS; ALSO SAVING, EXCEPTING AND RESERVING THE SURFACE RIGHTS ONLY IN TEN PER CENT OF THE ACREAGE HEREBY GRANTED FOR ROADS AND THE RIGHT TO LAY OUT THE SAME WHERE THE CROWN OR ITS OFFICERS MAY DEEM NECESSARY ; CLARINGTON

**Address** CLARINGTON

**PIN** 26606 - 0052 LT  
**Description** PCL HY-187 SEC WATER LOT LOCATION DARLINGTON; PT OF THE BED OF LAKE ONTARIO LYING IN FRONT OF LTS 23, 24, 25 & 26 BROKEN FRONT CONCESSION AND THE RDAL BTN LTS 24 & 25 BROKEN FRONT CONCESSION - TOWNSHIP OF DARLINGTON, IN THE REGIONAL MUNICIPALITY OF DURHAM, PT 1, 10R1561; SAVING, EXCEPTING AND RESERVING UNTO THE CROWN, HEIRS AND SUCCESSORS, ALL ORES, MINES OR MINERALS WHICH ARE OR SHALL HEREAFTER BE FOUND ON OR UNDER THE LAND HEREBY GRANTED; ALSO SAVING, EXCEPTING AND RESERVING THE FREE USE, PASSAGE AND ENJOYMENT OF, IN, OVER AND UPON ALL NAVIGABLE WATERS WHICH SHALL OR MAY HEREAFTER BE FOUND ON OR UNDER, OR FLOWING THROUGH OR UPON, ANY PART OF THE LAND HEREBY GRANTED, AND RESERVING ALSO THE RIGHT OF ACCESS TO THE SHORES OF ALL RIVERS, STREAMS AND LAKES FOR ALL VESSELS, BOATS AND PERSONS; ALSO SAVING, EXCEPTING AND RESERVING THE SURFACE RIGHTS ONLY IN & OVER ANY PUBLIC OR COLONIZATION ROADS OR ANY HIGHWAYS CROSSING THE SAID LAND AT THE DATE OF THESE LETTERS PATENT; ALSO SAVING, EXCEPTING & RESERVING THE SURFACE RIGHTS ONLY IN TEN PER CENT OF THE ACREAGE HEREBY GRANTED FOR ROADS AND THE RIGHT TO LAY OUT THE SAME WHERE THE CROWN OR ITS OFFICERS MAY DEEM NECESSARY ; CLARINGTON

**Address** CLARINGTON

**PIN** 26606 - 0053 LT  
**Description** PCL HY-184 SEC WATER LOT LOCATION DARLINGTON; PT OF THE BED OF LAKE ONTARIO LYING IN FRONT OF LTS 23 & 24, BROKEN FRONT CONCESSION, TOWNSHIP OF DARLINGTON IN THE REGIONAL MUNICIPALITY OF DURHAM, PT 1, 10R1347; SAVING, EXCEPTING AND RESERVING UNTO THE CROWN, HEIRS AND SUCCESSORS, ALL ORES, MINES OR MINERALS WHICH ARE OR SHALL HEREAFTER BE FOUND ON OR UNDER THE LAND HEREBY GRANTED; ALSO SAVING, EXCEPTING AND RESERVING THE FREE USE, PASSAGE AND ENJOYMENT OF, IN, OVER AND UPON ALL NAVIGABLE WATERS WHICH SHALL OR MAY HEREAFTER BE FOUND ON OR UNDER, OR FLOWING THROUGH OR UPON, ANY PART OF THE LAND HEREBY GRANTED, AND RESERVING ALSO THE RIGHT OF ACCESS TO THE SHORES OF ALL RIVERS, STREAMS AND LAKES FOR ALL VESSELS, BOATS AND PERSONS; ALSO SAVING, EXCEPTING AND RESERVING THE SURFACE RIGHTS ONLY IN & OVER ANY PUBLIC OR COLONIZATION ROADS OR ANY HIGHWAYS CROSSING THE SAID LAND AT THE DATE OF THESE LETTERS PATENT; ALSO SAVING, EXCEPTING & RESERVING THE SURFACE RIGHTS ONLY IN TEN PER CENT OF THE ACREAGE HEREBY GRANTED FOR ROADS AND THE RIGHT TO LAY OUT THE SAME WHERE THE CROWN OR ITS OFFICERS MAY DEEM NECESSARY ; CLARINGTON

**Address** CLARINGTON

**PIN** 26606 - 0085 LT  
**Description** PCL HY-176 SEC WATER LOT LOCATION DARLINGTON; PT OF THE BED OF LAKE ONTARIO, LYING IN FRONT OF LT 20, BROKEN FRONT CONCESSION AND THE RDAL BTN LTS 20 & 21, BROKEN FRONT CONCESSION IN THE TOWN OF NEWCASTLE, IN THE REGIONAL MUNICIPALITY OF DURHAM (FORMERLY IN THE TOWNSHIP OF DARLINGTON, IN THE COUNTY OF DURHAM) PT 1, 10R1031; SAVING, EXCEPTING AND RESERVING UNTO THE GRANTOR, HEIRS AND SUCCESSORS, ALL ORES, MINES OR MINERALS WHICH ARE OR SHALL HEREAFTER BE FOUND ON OR UNDER THE ABOVE LAND; ALSO SAVING, EXCEPTING AND RESERVING THE FREE USE, PASSAGE AND ENJOYMENT OF, IN, OVER AND UPON ALL NAVIGABLE WATERS WHICH SHALL OR MAY HEREAFTER BE FOUND ON OR UNDER, OR FLOWING THROUGH OR UPON, ANY PART OF THE ABOVE LAND, AND RESERVING ALSO THE RIGHT OF ACCESS TO THE SHORES OF ALL RIVERS, STREAMS AND LAKES FOR ALL VESSELS, BOATS AND PERSONS; ALSO SAVING, EXCEPTING AND RESERVING THE SURFACE RIGHTS ONLY IN &

Application for a Licence to Prepare Site for the  
Future Construction of OPG New Nuclear at Darlington

P901526 -0001

LRO # 40 Application To Change Name-Owners  
The applicant(s) hereby applies to the Land Registrar.

Received as DR814956 on 2007 06 20 at 11:58  
yyyy mm dd Page 2 of 19

Properties

OVER ANY PUBLIC OR COLONIZATION ROADS OR ANY HIGHWAYS CROSSING  
THE SAID LAND AT THE DATE OF LETTERS PATENT N98513; ALSO SAVING,  
EXCEPTING & RESERVING THE SURFACE RIGHTS ONLY IN TEN PER CENT OF  
THE ACREAGE HEREBY GRANTED FOR ROADS AND THE RIGHT TO LAY OUT THE  
SAME WHERE THE CROWN OR ITS OFFICERS MAY DEEM NECESSARY ;

CLARINGTON

Address CLARINGTON

Pin 26606 - 0134 LT

Description RDAL BTN LTS 24 & 25 CON BROKEN FRONT DARLINGTON CLOSED BY BYLAW  
N90910, PT LT 23 CON BROKEN FRONT DARLINGTON & PT LT 24 CON BROKEN  
FRONT DARLINGTON PT 6, 10R34; PT LT 21 CON BROKEN FRONT DARLINGTON &  
PT LT 22 CON BROKEN FRONT DARLINGTON PTS 1 & 2, 10R342; PT LT 19 CON  
BROKEN FRONT DARLINGTON & PT LT 20 CON BROKEN FRONT DARLINGTON PT 4,  
10R342; PT LT 18 CON BROKEN FRONT DARLINGTON PT 6, 10R342; RDAL BTN LTS  
22 & 23 CON BROKEN FRONT DARLINGTON CLOSED BY BYLAW N90910 PT 5,  
10R553; RDAL BTN LTS 20 & 21 CON BROKEN FRONT DARLINGTON CLOSED BY  
BYLAW N90910 PT 3, 10R342; RDAL BTN LTS 18 & 19 CON BROKEN FRONT  
DARLINGTON CLOSED BY BYLAW N90910 PTS 5 & 9, 10R342; FIRST AV PL 97  
DARLINGTON, SECOND AV PL 97 DARLINGTON, THIRD AV PL 97 DARLINGTON &  
FOURTH AV PL 97 DARLINGTON CLOSED BY BYLAW N90910; LT 1534 PL 97  
DARLINGTON; LT 1535 PL 97 DARLINGTON; LT 1536 PL 97 DARLINGTON; LT 1537 PL  
97 DARLINGTON; LT 1538 PL 97 DARLINGTON; LT 1539 PL 97 DARLINGTON; LT 1540  
PL 97 DARLINGTON; LT 1541 PL 97 DARLINGTON; LT 1542 PL 97 DARLINGTON; LT  
1543 PL 97 DARLINGTON; LT 1544 PL 97 DARLINGTON; LT 1545 PL 97 DARLINGTON;  
LT 1546 PL 97 DARLINGTON; LT 1547 PL 97 DARLINGTON; LT 1548 PL 97  
DARLINGTON; LT 1549 PL 97 DARLINGTON; LT 1550 PL 97 DARLINGTON; LT 1551 PL  
97 DARLINGTON; LT 1552 PL 97 DARLINGTON; LT 1553 PL 97 DARLINGTON; LT 1554  
PL 97 DARLINGTON; LT 1555 PL 97 DARLINGTON; LT 1556 PL 97 DARLINGTON; LT  
1557 PL 97 DARLINGTON; LT 1558 PL 97 DARLINGTON; LT 1559 PL 97 DARLINGTON;  
LT 1560 PL 97 DARLINGTON; LT 1561 PL 97 DARLINGTON; LT 1562 PL 97  
DARLINGTON; LT 1563 PL 97 DARLINGTON; LT 1564 PL 97 DARLINGTON; LT 1565 PL  
97 DARLINGTON; LT 1566 PL 97 DARLINGTON; LT 1567 PL 97 DARLINGTON; LT 1568  
PL 97 DARLINGTON; LT 1569 PL 97 DARLINGTON; LT 1570 PL 97 DARLINGTON; LT  
1571 PL 97 DARLINGTON; LT 1572 PL 97 DARLINGTON; LT 1573 PL 97 DARLINGTON;  
LT 1574 PL 97 DARLINGTON; LT 1575 PL 97 DARLINGTON; LT 1576 PL 97  
DARLINGTON; LT 1577 PL 97 DARLINGTON; LT 1578 PL 97 DARLINGTON; LT 1579 PL  
97 DARLINGTON; LT 1580 PL 97 DARLINGTON; LT 1581 PL 97 DARLINGTON; LT 1582  
PL 97 DARLINGTON; LT 1583 PL 97 DARLINGTON; LT 1584 PL 97 DARLINGTON; LT  
1585 PL 97 DARLINGTON; LT 1586 PL 97 DARLINGTON; LT 1587 PL 97 DARLINGTON;  
LT 1588 PL 97 DARLINGTON; LT 1589 PL 97 DARLINGTON; LT 1590 PL 97  
DARLINGTON; LT 1591 PL 97 DARLINGTON; LT 1592 PL 97 DARLINGTON; LT 1593 PL  
97 DARLINGTON; LT 1594 PL 97 DARLINGTON; LT 1595 PL 97 DARLINGTON; LT 1596  
PL 97 DARLINGTON; \* LT 1629 PL 97 DARLINGTON; LT 1630 PL 97 DARLINGTON; LT  
1631 PL 97 DARLINGTON; LT 1632 PL 97 DARLINGTON; LT 1633 PL 97 DARLINGTON;  
LT 1634 PL 97 DARLINGTON; LT 1635 PL 97 DARLINGTON; LT 1636 PL 97  
DARLINGTON; LT 1637 PL 97 DARLINGTON; LT 1638 PL 97 DARLINGTON; LT 1639 PL  
97 DARLINGTON; LT 1640 PL 97 DARLINGTON; LT 1641 PL 97 DARLINGTON; LT 1642  
PL 97 DARLINGTON; LT 1643 PL 97 DARLINGTON; LT 1644 PL 97 DARLINGTON; LT  
1645 PL 97 DARLINGTON; LT 1646 PL 97 DARLINGTON; LT 1647 PL 97 DARLINGTON;  
LT 1648 PL 97 DARLINGTON; LT 1649 PL 97 DARLINGTON; LT 1650 PL 97  
DARLINGTON; LT 1651 PL 97 DARLINGTON; LT 1652 PL 97 DARLINGTON; LT 1653 PL  
97 DARLINGTON; LT 1654 PL 97 DARLINGTON; LT 1655 PL 97 DARLINGTON; LT 1656  
PL 97 DARLINGTON; LT 1657 PL 97 DARLINGTON; LT 1658 PL 97 DARLINGTON; LT  
1659 PL 97 DARLINGTON; LT 1660 PL 97 DARLINGTON; LT 1661 PL 97 DARLINGTON;  
LT 1662 PL 97 DARLINGTON; LT 1663 PL 97 DARLINGTON; LT 1664 PL 97  
DARLINGTON; LT 1665 PL 97 DARLINGTON; LT 1666 PL 97 DARLINGTON; LT 1667 PL  
97 DARLINGTON; LT 1668 PL 97 DARLINGTON; LT 1669 PL 97 DARLINGTON; LT 1670  
PL 97 DARLINGTON; LT 1671 PL 97 DARLINGTON; LT 1672 PL 97 DARLINGTON; LT  
1673 PL 97 DARLINGTON; LT 1674 PL 97 DARLINGTON; LT 1675 PL 97 DARLINGTON;  
LT 1676 PL 97 DARLINGTON; LT 1677 PL 97 DARLINGTON; LT 1678 PL 97  
DARLINGTON; LT 1679 PL 97 DARLINGTON; LT 1680 PL 97 DARLINGTON; LT 1681 PL  
97 DARLINGTON; LT 1682 PL 97 DARLINGTON; LT 1683 PL 97 DARLINGTON; LT 1684  
PL 97 DARLINGTON; LT 1685 PL 97 DARLINGTON; LT 1686 PL 97 DARLINGTON; LT  
1687 PL 97 DARLINGTON; LT 1688 PL 97 DARLINGTON; LT 1689 PL 97 DARLINGTON;  
LT 1690 PL 97 DARLINGTON; LT 1691 PL 97 DARLINGTON; LT 1692 PL 97  
DARLINGTON; LT 1693 PL 97 DARLINGTON; LT 1694 PL 97 DARLINGTON; LT 1695 PL  
97 DARLINGTON; LT 1696 PL 97 DARLINGTON; LT 1697 PL 97 DARLINGTON; LT 1698  
PL 97 DARLINGTON; LT 1699 PL 97 DARLINGTON; LT 1700 PL 97 DARLINGTON; LT  
1701 PL 97 DARLINGTON; LT 1702 PL 97 DARLINGTON; LT 1703 PL 97 DARLINGTON;  
LT 1704 PL 97 DARLINGTON; LT 1705 PL 97 DARLINGTON; LT 1706 PL 97  
DARLINGTON; LT 1707 PL 97 DARLINGTON; LT 1708 PL 97 DARLINGTON; LT 1709 PL  
97 DARLINGTON; LT 1710 PL 97 DARLINGTON; LT 1711 PL 97 DARLINGTON; LT 1712  
PL 97 DARLINGTON; LT 1713 PL 97 DARLINGTON; LT 1714 PL 97 DARLINGTON; LT  
1715 PL 97 DARLINGTON; LT 1716 PL 97 DARLINGTON; LT 1717 PL 97 DARLINGTON;  
LT 1718 PL 97 DARLINGTON; LT 1719 PL 97 DARLINGTON; LT 1720 PL 97  
DARLINGTON; LT 1721 PL 97 DARLINGTON; LT 1722 PL 97 DARLINGTON; LT 1723 PL  
97 DARLINGTON; LT 1724 PL 97 DARLINGTON; LT 1725 PL 97 DARLINGTON; LT 1726



**Application for a Licence to Prepare Site for the  
Future Construction of OPG New Nuclear at Darlington**

**P90152c -0001**

LRO # 40 Application To Change Name-Owners

Received as DR814956 on 2007 06 20 at 11:58

The applicant(s) hereby applies to the Land Registrar.

yyyy mm dd Page 3 of 19

**Properties**

PL 97 DARLINGTON; LT 1727 PL 97 DARLINGTON; LT 1728 PL 97 DARLINGTON; LT 1729 PL 97 DARLINGTON; LT 1730 PL 97 DARLINGTON; LT 1731 PL 97 DARLINGTON; LT 1732 PL 97 DARLINGTON; LT 1733 PL 97 DARLINGTON; LT 1734 PL 97 DARLINGTON; LT 1735 PL 97 DARLINGTON; LT 1736 PL 97 DARLINGTON; LT 1737 PL 97 DARLINGTON; LT 1738 PL 97 DARLINGTON; LT 1739 PL 97 DARLINGTON; LT 1740 PL 97 DARLINGTON; LT 1741 PL 97 DARLINGTON; "LTS 1597 TO 1628 INCL. PL 97 DARLINGTON"; CLARINGTON, "A MENDED 2000 08 24 BY T.CUTLER S/T EASE PTS 1 & 2, PL 40R20514 AS IN D R107221; S/T EASE PT 2, PL 40R20513 AS IN DR107229

**Address** CLARINGTON

**PIN** 28606 - 0279 LT

**Description** PT RDAL BTN: LTS 18 & 19, 20 & 21, 22 & 23, 24 & 25, ALL BF CON (DARLINGTON) CLOSED BY BY-LAW N80910; PT LTS 18, 19, 20, 21, 22, 23 & 24, BF CON (DARLINGTON); LTS 183 TO 754 INCL, 913 TO 1533 INCL, PT LTS 131 TO 133 INCL. 157 TO 182 INCL & 885 TO 912 INCL, STATION RD, FIFTH AVE, SIXTH AVE, SEVENTH AVE, EIGHTH AVE, NINTH AVE, TENTH AVE, ELEVENTH AVE, TWELFTH AVE, THIRTEENTH AVE, FOURTEENTH AVE, FIFTEENTH AVE & SIXTEENTH AVE. CLOSED BY BY-LAW N80910 & PT SEVENTEENTH AVE, PL 97 (DARLINGTON), PTS 1, 3, 4 & 7 TO 15 INCL, 40R18818, S/T EASE OVER PT 11 40R18818 AS IN N138804; CLARINGTON, S/T EASE PTS 3, 5, 6, 8, 9, 1 2, 13 & 18, PL 40R20514 IN FAVOUR OF PT 9, 40R18818 & PT 1, PL 40R20514 AS IN DR107221; S/T EASE PTS 4, 6, 7, 10, 11, 14 & 15, PL 40R20514 IN FAVOUR OF PT 9, PL 40R18818 & PT 1, PL 40R20514 AS IN DR107221; T/W EASE PT LTS 19, 20, 21, PT RDAL BTN LTS 20 & 21, BFC DARLINGTON, PT 1, PL 40R20513 (IN FAVOUR OF PT 9, PL 40R18818 & PT 1, PL 40R20514) AS IN DR107221; T/W EASE PT LT 21 BFC DARLINGTON, PT 2, PL 40R20513 (IN FAVOUR OF PT 9, PL 40R18818 & PT 1, PL 40R20514) AS IN DR107221 S/T EASE PT 8, PL 40R18818 IN FAVOUR OF PT 9, PL 40R18818 & PT 1, 40R20514 AS IN DR107229; S/T EASE PT 15, PL 40R18818 IN FAVOUR OF PT 9, PL 40R18818 & PT 1, PL 40R20514 AS IN DR107229; S/T EASE PT 3, PL 40R18818 IN FAVOUR OF PT 9, PL 40R18818 & PT 1, PL 40R20514 AS IN DR107229; S/T EASE PT 4, PL 40R18818 IN FAVOUR OF PT 9, PL 40R18818 & PT 1, PL 40R20514 AS IN DR107229; S/T EASE PT 12, PL 40R18818 IN FAVOUR OF PT 9, PL 40R18818 & PT 1, PL 40R20514 AS IN DR107229; S/T EASE PT 13, PL 40R18818 IN FAVOUR OF PT 9, PL 40R18818 & PT 1, PL 40R20514 AS IN DR107229; S/T EASE PT 11, PL 40R18818 IN FAVOUR OF PT 9, PL 40R18818 & PT 1, PL 40R20514 AS IN DR107229; S/T EASE PTS 20, 21 & 22, PL 40R20514 IN FAVOUR OF PT 9, PL 40R18818 & PT 1, PL 40R20514 AS IN DR107229; S/T EASE PTS 5, 6 & 18, PL 40R20514 IN FAVOUR OF PT 9, PL 40R18818 & PT 1, PL 40R20514 AS IN DR107229; S/T EASE PT 17, PL 40R20514 IN FAVOUR OF PT 9, PL 40R18818 & PT 1, PL 40R20514 AS IN DR107229; S/T EASE PT 19, 40R20514 IN FAVOUR OF PT 9, PL 40R18818 & PT 1, PL 40R20514 AS IN DR107229; S/T EASE PTS 23 & 24, PL 40R20514 IN FAVOUR OF PT 9, PL 40R18818 & PT 1, PL 40R20514 AS IN DR107229; S/T EASE PT 3, PL 40R20514 IN FAVOUR OF PT 9, PL 40R18818 & PT 1, PL 40R20514 AS IN DR107229; S/T EASE PTS 5, 6 & 9, PL 40R20514 IN FAVOUR OF PT 9, PL 40R18818 & PT 1, PL 40R20514 AS IN DR107229; S/T EASE PT 12, PL 40R20514 IN FAVOUR OF PT 9, PL 40R18818 & PT 1, PL 40R20514 AS IN DR107229; S/T EASE PTS 13 & 18, PL 40R20514 IN FAVOUR OF PT 9, PL 40R18818 & PT 1, PL 40R20514 AS IN DR107229; T/W ROW PT 2, PL 40R20513 IN FAVOUR OF PT 9, PL 40R18818 & PT 1, PL 40R20514 AS IN DR107229

**Address** CLARINGTON

**Party From(s)**

**Name** OPG-DARLINGTON INC.  
**Address for Service** 700 University Avenue  
Toronto, Ontario  
M5G 1X6

**Applicant(s)** **Capacity** **Share**

**Name** ONTARIO POWER GENERATION INC.  
**Address for Service** 700 University Avenue  
Toronto, Ontario  
M5G 1X6

I, SONY LIM, Real Estate Services Manager, have the authority to bind the corporation  
This document is not authorized under Power of Attorney by this party

**Statements**

The name has changed as a result of a change of corporate name authorized under See Schedules and this statement is made for no improper purpose

Application for a Licence to Prepare Site for the  
Future Construction of OPG New Nuclear at Darlington

P901523 -0001

LRO # 40 Application To Change Name-Owners

Received as DR614956 on 2007 06 20 at 11:58

The applicant(s) hereby applies to the Land Registrar.

yyyy mm dd Page 4 of 19

**Signed By**

Tracy Lee Ferguson

2 Keewatin Ave.  
Toronto  
M4P 1Z8

acting for  
Applicant(s)

Signed 2007 06 20

Tel 4164802200

Fax 4164802693

**Submitted By**

GELLER & MINSTER

2 Keewatin Ave.  
Toronto  
M4P 1Z8

2007 06 20

Tel 4164802200

Fax 4164802693

**Fees/Taxes/Payment**

Statutory Registration Fee \$60.00

Total Paid \$60.00

**File Number**

Party From Client File Number : 15-392

Applicant Client File Number : 15-392

Application for a Licence to Prepare Site for the  
Future Construction of OPG New Nuclear at Darlington

Notarial Certificate of True Copy - Short Form

Dyc & Dutton Co. Inc.  
Form No. 134

**P901528 -000 1**

CANADA )  
          ) **To all whom these Presents**  
PROVINCE OF ONTARIO) **may come, be seen or known**  
                          ) **To Wit)**

I, Robert Dickson Stephen Harkness a Notary Public, in and for the Province of Ontario, by Royal Authority duly appointed, residing at the Town of Oakville in the Region of Halton in said Province,

Do Certify and Attest that the paper-writing hereto annexed is a true copy of a document produced and shown to me and purporting to be the Articles of Amalgamation of Ontario Power Generation Inc. dated the 1<sup>st</sup> day of January, 2007, the said copy having been compared by me with the said original document, an act whereof being requested I have granted under my Notarial Form and Seal of Office to serve and avail as occasion shall or may require

In Testimony Whereof I have hereto subscribed my name and affixed my Notarial Seal of Office at Toronto this 18<sup>th</sup> day of January, 2007.



Robert Dickson Stephen Harkness  
A Notary Public in and for the Province of Ontario  
My Commission never expires

Application for a Licence to Prepare Site for the  
 Future Construction of OPG New Nuclear at Darlington

P901523 -0001

For Ministry Use Only  
 À l'usage exclusif du ministère

Ontario Corporation Number  
 Numéro de la société en Ontario

1720591

JANUARY 01 JANVIER, 2007

Form 4  
 Business  
 Corporations  
 Act

Formule 4  
 Loi sur les  
 sociétés par  
 actions

ARTICLES OF AMALGAMATION  
 STATUTS DE FUSION

1. The name of the amalgamated corporation is: (Set out in BLOCK CAPITAL LETTERS)  
 Dénomination sociale de la société issue de la fusion (écrite en LETTRES MAJUSCULES SEULEMENT)

O	N	T	A	R	I	O	P	O	W	E	R	G	E	N	E	R	A	T	I	O	I	N	C	.

2. The address of the registered office is:  
 Adresse du siège social:

700 University Avenue, 19th Floor

(Street & Number or R.R. Number & if Multi-Office Building give Room No.)  
 (Rue et numéro, ou numéro de la R.R. et, s'il s'agit d'un édifice à bureaux, numéro du bureau)

Toronto

Ontario

M5G 1X6

(Name of Municipality or Post Office)

(Postal Code)

(Nom de la municipalité ou du bureau de poste)

(Code postal)

3. Number of directors is/are: or minimum and maximum number of directors is/are:  
 Nombre d'administrateurs: ou nombres minimum et maximum d'administrateurs  
 Number or minimum and maximum  
 Nombre ou minimum et maximum

4. The director(s) is/are:  
 Administrateur(s):

First name, middle names  
 and surname  
 Prénom, autres pré-noms et nom  
 de famille

Address for service, giving Street & No. or R.R. No.,  
 Municipality, Province, Country and Postal Code  
 Domicile élu, y compris la rue et le numéro ou le  
 numéro de la R.R., le nom de la municipalité, la  
 province, le pays et le code postal

Resident Canadian  
 State Yes or No  
 Résident canadien  
 Oui/Non

See attached page 1A

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1A

<i>First name, middle names and surname Prénoms, autres prénoms et nom de famille</i>	<i>Address for service, giving Street &amp; No. or R.R. No., Municipality, Province, Country and Postal Code Domicile et/ou, y compris la rue et le numéro ou le numéro de la R.R., le nom de la municipalité, la province, le pays et le code postal</i>	<i>Resident Canadian State 'Yes' or 'No' Résident canadien Oui/Non</i>
Jake Epp	700 University Avenue Toronto, ON Canada M5G 1X6	Yes
James F. Hankinson	700 University Avenue Toronto, ON Canada M5G 1X6	Yes
Donald Hintz	700 University Avenue Toronto, ON Canada M5G 1X6	No
Gary Kugler	700 University Avenue Toronto, ON Canada M5G 1X6	Yes
George Lewis	Royal Trust Tower, 39 <sup>th</sup> Floor 77 King Street West Toronto, ON Canada M5W 1P9	Yes
David MacMillan	700 University Avenue Toronto, ON Canada M5G 1X6	No
Corbin McNeill	700 University Avenue Toronto, ON Canada M5G 1X6	No
Margaret Jean Mulligan	287 Speedvale Ave W, Guelph, ON, Canada N1H 1C5	Yes
C. Ian Ross	20 Queen Street West, Suite 3504 Toronto, ON Canada M5H 3R3	Yes
Marie Rounding	700 University Avenue Toronto, ON Canada M5G 1X6	Yes
William Sheffield	700 University Avenue Toronto, ON Canada M5G 1X6	Yes
David Unruh	1055 West Georgia Street, Suite 1100 Vancouver, BC Canada V6E 3R5	Yes

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**5. Check A or B  
Cochez A ou B**

A) The amalgamation agreement has been duly adopted by the shareholders of each of the amalgamating corporations as required by subsection 176(4) of the *Business Corporations Act* on the date set out below.

A) Les actionnaires de chaque société qui fusionne ont dûment adopté la convention de fusion conformément au paragraphe 176(4) de la Loi sur les sociétés par actions à la date mentionnée ci-dessous.

or  
ou

B) The amalgamation has been approved by the directors of each amalgamating corporation by a resolution as required by section 177 of the *Business Corporations Act* on the date set out below.

B) Les administrateurs de chaque société qui fusionne ont approuvé la fusion par vote de résolution conformément à l'article 177 de la Loi sur les sociétés par actions à la date mentionnée ci-dessous.

The articles of amalgamation in substance contain the provisions of the articles of incorporation of the status of fusion represent essentially the provisions of the status of the

**ONTARIO POWER GENERATION INC.**

and are more particularly set out in these articles  
et sont énoncés notamment aux présentes statuts

Names of amalgamating corporations Dénomination sociale des sociétés qui fusionnent	Ontario Corporation Number Numéro de la société en Ontario	Date of Adoption/Approval Date d'adoption ou d'approbation			
		Year / année	Month / mois	Day / jour	
ONTARIO POWER GENERATION INC.	182251	2008	Dec	13	
OPG-PICKERING INC.	134544	2008	Dec	13	
OPG-PICKERING WASTE INC.	134543	2008	Dec	13	
OPG-DARLINGTON INC.	134545	2008	Dec	13	
OPG-DARLINGTON WASTE INC.	134538	2008	Dec	13	

17-21 (24-2005)

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3

6. Restrictions, if any, on business the corporation may carry on or on powers the corporation may exercise.  
Limites, s'il y a lieu, imposées aux activités commerciales ou aux pouvoirs de la société.

None.

7. The classes and any maximum number of shares that the corporation is authorized to issue.  
Catégories et nombre maximal, s'il y a lieu, d'actions que la société est autorisée à émettre.

Unlimited number of common shares.

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8. Rights, privileges, restrictions and conditions (if any) attaching to each class of shares and directors authority with respect to any class of shares which may be issued in series.  
Droits, privilèges, restrictions et conditions, s'il y a lieu, rattachés à chaque catégorie d'actions et pouvoirs des administrateurs relatifs à chaque catégorie d'actions qui peut être émise en série.

Not applicable.

07121 1140004



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9. The issue, transfer or ownership of shares is/are not restricted and the restrictions (if any) are as follows.  
L'émission, le transfert ou la propriété d'actions est/sont pas restreint. Les restrictions, s'il y a lieu, sont les suivantes :

No shares in the capital of the Corporation shall be issued or transferred without:

(a) the consent of the holders of one hundred percent (100%) of the common shares of the Corporation for the time being outstanding expressed by a resolution passed at a meeting of the shareholders or by an instrument or instruments in writing signed by the holders of one hundred percent (100%) of such shares; and

(b) the consent of the directors of the Corporation expressed by a resolution passed at a meeting of the board of directors or by an instrument or instruments in writing signed by all of the directors.

10. Other provisions, (if any):  
Autres dispositions, s'il y a lieu :

See attached page 5A

11. The statements required by subsection 178(2) of the Business Corporations Act are attached as Schedule "A"  
Les déclarations exigées au terme du paragraphe 178(2) de la Loi sur les sociétés par actions constituent l'annexe A
12. A copy of the amalgamation agreement or directors' resolutions (as the case may be) is/are attached as Schedule "B"  
Une copie de la convention de fusion ou les résolutions des administrateurs (selon le cas) constitue/nt l'annexe B

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5A

9. Other provisions, if any, are:  
Autres dispositions, s'il y a lieu.

Without in any way restricting the powers conferred upon the Corporation or its board of directors by the *Business Corporations Act*, as now enacted or as the same may from time to time be amended, re-enacted or replaced, the board of directors may from time to time, without authorization of the shareholders, in such amounts and on such terms as it deems expedient.

(a) borrow money upon the credit of the Corporation.

(b) issue, re-issue, sell or pledge debt obligations of the Corporation.

(c) subject to the provisions of the *Business Corporations Act*, as now enacted or as the same may from time to time be amended, re-enacted or replaced, give a guarantee on behalf of the Corporation to secure performance of an obligation of any person, and

(d) mortgage, hypothecate, pledge or otherwise create a security interest in all or any property of the Corporation owned or subsequently acquired, to secure any obligation of the Corporation.

The board of directors may from time to time delegate to a director, a committee of directors or an officer of the Corporation any or all of the powers conferred on the board as set out above, to such extent and in such manner as the board shall determine at the time of such delegation.

The number of shareholders of the Corporation, exclusive of persons who are in its employment and exclusive of persons who, having been formerly in the employment of the Corporation, were, while in that employment, and have continued after the termination of that employment, to be shareholders of the Corporation, is limited to not more than fifty (50), two (2) or more persons who are the joint registered owners of one (1) or more shares being counted as one (1) shareholder.

Any invitation to the public to subscribe for securities of the Corporation is prohibited.

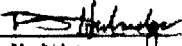
Application for a Licence to Prepare Site for the  
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These articles are signed in duplicate.  
Les présents statuts sont signés en double exemplaire.

Names of the amalgamating corporations and signatures and descriptions of office of their proper officers.  
Dénomination sociale des sociétés qui fusionnent, signature et fonction de leurs dirigeants respectivement désignés.

ONTARIO POWER GENERATION INC.

By:   
Donn Hanbidge  
Senior Vice President and Chief Financial Officer

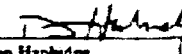
OPG-PICKERING INC.

By:   
Donn Hanbidge  
President and Chief Financial Officer

OPG-PICKERING WASTE INC.

By:   
Donn Hanbidge  
President and Chief Financial Officer

OPG-DARLINGTON INC.

By:   
Donn Hanbidge  
President and Chief Financial Officer

OPG-DARLINGTON WASTE INC.

By:   
Donn Hanbidge  
President and Chief Financial Officer

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Application for a Licence to Prepare Site for the  
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SCHEDULE A

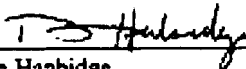
STATEMENT OF DIRECTOR OR OFFICER UNDER  
SUBSECTION 178(2) OF  
THE *BUSINESS CORPORATIONS ACT* (ONTARIO)

RE: Proposed amalgamation of **ONTARIO POWER GENERATION INC.,  
OPG-PICKERING INC., OPG-PICKERING WASTE INC.,  
OPG-DARLINGTON INC., AND OPG-DARLINGTON WASTE INC.**  
(collectively the "Amalgamating Corporations")

I, **Donn Hanbidge**, of Toronto, Ontario, state as follows:

- 1 I am an officer of each of the Amalgamating Corporations and as such have personal knowledge of their affairs.
- 2 There are reasonable grounds for believing that:
  - (a) each of the Amalgamating Corporations is and the corporation to be formed by their amalgamation (the "Amalgamated Corporation") will be able to pay its liabilities as they become due; and
  - (b) the realizable value of the Amalgamated Corporation's assets will not be less than the aggregate of its liabilities and stated capital of all classes of shares
- 3 There are reasonable grounds for believing that no creditor will be prejudiced by the amalgamation.

DATED December 15, 2006.

  
\_\_\_\_\_  
Donn Hanbidge

Application for a Licence to Prepare Site for the  
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PART 1 OF SCHEDULE B TO THE  
ARTICLES OF AMALGAMATION OF  
ONTARIO POWER GENERATION INC.

EXTRACT TAKEN FROM THE MINUTES OF A MEETING OF  
THE BOARD OF DIRECTORS OF ONTARIO POWER  
GENERATION INC. (the "Corporation")

RECITAL:

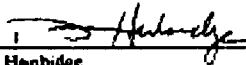
Each of OPG-Pickering Inc., OPG-Pickering Waste Inc., OPG-Darlington Inc., and OPG-Darlington Waste Inc. (collectively, the "Subsidiaries") are wholly-owned subsidiaries of Ontario Power Generation Inc. ("Corporation") and have agreed to amalgamate with the Corporation and continue as one corporation under subsection 177(1) of the *Business Corporations Act* (Ontario) ("Act") under the name Ontario Power Generation Inc. effective as of January 1, 2007.

RESOLVED THAT:

1. The amalgamation on January 1, 2007 of the Corporation and each of the Subsidiaries under subsection 177(1) of the Act and the continuation of the amalgamating corporations as one corporation under the name Ontario Power Generation Inc. ("Amalgamated Corporation") is approved.
2. Subject to the issuance of a Certificate of Amalgamation of the Amalgamated Corporation under section 178 of the Act, all the issued and outstanding shares of each of the Subsidiaries, including all such shares of each of the Subsidiaries which have issued and are outstanding as at the date of the amalgamation, will be cancelled on the amalgamation without any repayment of capital in respect thereof.
3. The by-laws of the Amalgamated Corporation will be the same as the by-laws of the Corporation.
4. Except as may be prescribed by the Regulations to the Act, the articles of amalgamation will be the same as the articles of the Corporation.
5. No securities will be issued and no assets will be distributed by the Amalgamated Corporation in connection with the amalgamation.
6. Any officer or director of the Corporation is authorized to do all the things and to execute and deliver any instruments and documents necessary or desirable to effect the amalgamation contemplated by this resolution.

The undersigned, Senior Vice President and Chief Financial Officer of the Corporation, hereby certifies that the foregoing is a true and complete extract taken from the minutes of a meeting of the board of directors duly called and properly constituted in accordance with the provisions of the *Business Corporations Act* (Ontario) on December 15, 2006 at which a quorum of directors was present and further that the said resolution is in full force and effect unamended as of the date hereof.

DATED December 15, 2006.

  
Donn Hanbidge  
Senior Vice President and Chief Financial Officer

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PART 2 OF SCHEDULE B TO THE  
ARTICLES OF AMALGAMATION OF  
ONTARIO POWER GENERATION INC.

RESOLUTION OF THE DIRECTORS

OF

OPG-PICKERING INC.  
(the "Corporation")

AMALGAMATION WITH ONTARIO POWER  
GENERATION INC.

RECITAL:


The Corporation is a wholly-owned subsidiary of Ontario Power Generation Inc. ("Holdco") and has agreed to amalgamate with Holdco and three other wholly-owned subsidiaries of Holdco, all of which corporations will continue as one corporation under subsection 177(1) of the Business Corporations Act (Ontario) (the "Act") under the name Ontario Power Generation Inc. effective January 1, 2007.

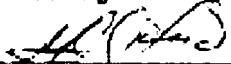
RESOLVED THAT:

1. The amalgamation on January 1, 2007 of the Corporation, Holdco, OPG-Pickering Waste Inc., OPG-Darlington Inc. and OPG-Darlington Waste Inc. under subsection 177(1) of the Act and the continuation of the amalgamating corporations as one corporation under the name Ontario Power Generation Inc. (the "Amalgamated Corporation") is approved.
2. Subject to the issuance of a Certificate of Amalgamation of the Amalgamated Corporation under section 178 of the Act, all the issued and outstanding shares of the Corporation, including all such shares of the Corporation which have been issued and are outstanding as at the date of the amalgamation, will be cancelled on the amalgamation without any repayment of capital in respect thereof.
3. The by-laws of the Amalgamated Corporation will be the same as the by-laws of the Holdco.
4. Except as may be prescribed by the Regulations to the Act, the articles of amalgamation of the Amalgamated Corporation will be the same as the articles of the Holdco.
5. No securities will be issued and no assets will be distributed by the Amalgamated Corporation in connection with the amalgamation.
6. Any officer or director of the Corporation is authorized to do all the things and to execute and deliver any instruments and documents necessary or desirable to effect the amalgamation contemplated by this resolution.

The foregoing resolution is signed by all the directors of the Corporation entitled to vote thereon in accordance with the provisions of the Business Corporations Act (Ontario). This resolution may be signed and delivered in counterpart and/or by electronic facsimile.

DATED December 15, 2006.

  
\_\_\_\_\_  
Donn Hanbridge

  
\_\_\_\_\_  
Colleen Starnes

Application for a Licence to Prepare Site for the  
Future Construction of OPG New Nuclear at Darlington

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PART J OF SCHEDULE B TO THE  
ARTICLES OF AMALGAMATION OF  
ONTARIO POWER GENERATION INC.

RESOLUTION OF THE DIRECTORS

OF

OPG-PICKERING WASTE INC.  
(the "Corporation")

AMALGAMATION WITH ONTARIO POWER  
GENERATION INC.

RECITAL:

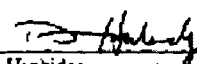
The Corporation is a wholly-owned subsidiary of Ontario Power Generation Inc. ("Holdco") and has agreed to amalgamate with Holdco and three other wholly-owned subsidiaries of Holdco, all of which corporations will continue as one corporation under subsection 177(1) of the Business Corporations Act (Ontario) (the "Act") under the name Ontario Power Generation Inc.

RESOLVED THAT:

1. The amalgamation on January 1, 2007 of the Corporation, Holdco, OPG-Pickering Inc., OPG-Darlington Inc. and OPG-Darlington Waste Inc. under subsection 177(1) of the Act and the continuation of the amalgamating corporations as one corporation under the name Ontario Power Generation Inc. (the "Amalgamated Corporation") is approved.
2. Subject to the issuance of a Certificate of Amalgamation of the Amalgamated Corporation under section 178 of the Act, all the issued and outstanding shares of the Corporation, including all such shares of the Corporation which have been issued and are outstanding as at the date of the amalgamation, will be cancelled on the amalgamation without any repayment of capital in respect thereof.
3. The by-laws of the Amalgamated Corporation will be the same as the by-laws of the Holdco.
4. Except as may be prescribed by the Regulations to the Act, the articles of amalgamation of the Amalgamated Corporation will be the same as the articles of the Holdco.
5. No securities will be issued and no assets will be distributed by the Amalgamated Corporation in connection with the amalgamation.
6. Any officer or director of the Corporation is authorized to do all the things and to execute and deliver any instruments and documents necessary or desirable to effect the amalgamation contemplated by this resolution.

The foregoing resolution is signed by all the directors of the Corporation entitled to vote thereon in accordance with the provisions of the Business Corporations Act (Ontario). This resolution may be signed and delivered in counterpart and/or by electronic facsimile.

DATED December 15, 2006.

  
\_\_\_\_\_  
Donn Hanbidge

  
\_\_\_\_\_  
Colleen Sifford

Application for a Licence to Prepare Site for the  
Future Construction of OPG New Nuclear at Darlington

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PART 4 OF SCHEDULE B TO THE  
ARTICLES OF AMALGAMATION OF  
ONTARIO POWER GENERATION INC.

RESOLUTION OF THE DIRECTORS

OF

OPG-DARLINGTON INC.  
(the "Corporation")

AMALGAMATION WITH ONTARIO POWER  
GENERATION INC.

RECITAL:

The Corporation is a wholly-owned subsidiary of Ontario Power Generation Inc. ("Holdco") and has agreed to amalgamate with Holdco and three other wholly-owned subsidiaries of Holdco, all of which corporations will continue as one corporation under subsection 177(1) of the Business Corporations Act (Ontario) (the "Act") under the name Ontario Power Generation Inc.

RESOLVED THAT:

1. The amalgamation on January 1, 2007 of the Corporation, Holdco, OPG-Pickering Inc., OPG-Pickering Waste Inc. and OPG-Darlington Waste Inc. under subsection 177(1) of the Act and the continuation of the amalgamating corporations as one corporation under the name Ontario Power Generation Inc. (the "Amalgamated Corporation") is approved.
2. Subject to the issuance of a Certificate of Amalgamation of the Amalgamated Corporation under section 178 of the Act, all the issued and outstanding shares of the Corporation, including all such shares of the Corporation which have been issued and are outstanding as at the date of the amalgamation, will be cancelled on the amalgamation without any repayment of capital in respect thereof.
3. The by-laws of the Amalgamated Corporation will be the same as the by-laws of the Holdco.
4. Except as may be prescribed by the Regulations to the Act, the articles of amalgamation of the Amalgamated Corporation will be the same as the articles of the Holdco.
5. No securities will be issued and no assets will be distributed by the Amalgamated Corporation in connection with the amalgamation.
6. Any officer or director of the Corporation is authorized to do all the things and to execute and deliver any instruments and documents necessary or desirable to effect the amalgamation contemplated by this resolution.

The foregoing resolution is signed by all the directors of the Corporation entitled to vote thereon in accordance with the provisions of the Business Corporations Act (Ontario). This resolution may be signed and delivered in counterpart and/or by electronic facsimile.

DATED December 15, 2006

  
Donn Hanbidge

  
Colleen Sidford



Application for a Licence to Prepare Site for the  
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PART 5 OF SCHEDULE B TO THE  
ARTICLES OF AMALGAMATION OF  
ONTARIO POWER GENERATION INC.

RESOLUTION OF THE DIRECTORS

OF

OPG-DARLINGTON WASTE INC.  
(the "Corporation")

AMALGAMATION WITH ONTARIO POWER  
GENERATION INC.

RECITAL:

The Corporation is a wholly-owned subsidiary of Ontario Power Generation Inc. ("Holdco") and has agreed to amalgamate with Holdco and three other wholly-owned subsidiaries of Holdco, all of which corporations will continue as one corporation under subsection 177(1) of the Business Corporations Act (Ontario) (the "Act") under the name Ontario Power Generation Inc.

RESOLVED THAT:

1. The amalgamation on January 1, 2007 of the Corporation, Holdco, OPG-Pickering Inc., OPG-Pickering Waste Inc. and OPG-Darlington Inc. under subsection 177(1) of the Act and the continuation of the amalgamating corporations as one corporation under the name Ontario Power Generation Inc. (the "Amalgamated Corporation") is approved.
2. Subject to the issuance of a Certificate of Amalgamation of the Amalgamated Corporation under section 178 of the Act, all the issued and outstanding shares of the Corporation, including all such shares of the Corporation which have been issued and are outstanding as at the date of the amalgamation, will be cancelled on the amalgamation without any repayment of capital in respect thereof.
3. The by-laws of the Amalgamated Corporation will be the same as the by-laws of the Holdco.
4. Except as may be prescribed by the Regulations to the Act, the articles of amalgamation of the Amalgamated Corporation will be the same as the articles of the Holdco.
5. No securities will be issued and no assets will be distributed by the Amalgamated Corporation in connection with the amalgamation.
6. Any officer or director of the Corporation is authorized to do all the things and to execute and deliver any instruments and documents necessary or desirable to effect the amalgamation contemplated by this resolution.

The foregoing resolution is signed by all the directors of the Corporation entitled to vote thereon in accordance with the provisions of the Business Corporations Act (Ontario). This resolution may be signed and delivered in counterpart and/or by electronic facsimile.

DATED December 15, 2006

  
Donn Hambridge

  
Colleen Stafford

**Application for a Licence to Prepare Site for the  
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Application for a Licence to Prepare Site for the  
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**1.6 Proposed Decommissioning Plan and Financial Guarantee**

Regulation Text	CNSC Regulation
A description of any proposed financial guarantee relating to the activity to be licensed	<i>General Nuclear Safety and Control Regulations, Section 3.(1)(l)</i>
The proposed plan for the decommissioning of the Nuclear Facility or of the site	<i>Class 1 Nuclear Facilities Regulations, Section 3.(k)</i>

A preliminary decommissioning plan has been developed to describe the decommissioning of the site in the event the project is cancelled after the site has been prepared for construction of the NND project. Decommissioning activities to restore the site to a brown field state are described in detail in OPG's *Preliminary Decommissioning Plan OPG New Nuclear at Darlington Site*<sup>4</sup> which includes a cost estimate for decommissioning activities.

OPG proposes that a financial guarantee from OPG to the CNSC is not required with respect to the Licence to Prepare the Site for NND. OPG has substantial financial assets that generate ongoing revenue that could support the costs of decommissioning efforts.

CNSC Regulatory Guide G-206, *Financial Guarantees for the Decommissioning of Licensed Activities*, indicates that a financial guarantee, to be acceptable, must provide assurance that adequate resources will be available to fund decommissioning activities. The assurance of such a guarantee is intended to address the potential that the CNSC would find itself responsible for performance of the decommissioning effort.

In the circumstances of preparation of the NND site the potential that the CNSC would become responsible for decommissioning at the conclusion of site preparation is very low. OPG will continue to operate other licensed facilities at the site and retain ownership of the property. OPG has established guarantees for those facilities that include remediation costs for the Darlington Nuclear site to return it to a brownfield state.

**Application for a Licence to Prepare Site for the  
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Application for a Licence to Prepare Site for the  
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**1.7 OPG's Authorized Delegates**

Regulation Text	<i>CNSC Regulation</i>
Every applicant for a licence and every licensee shall notify the Commission of (a) the persons who have authority to act for them in their dealings with the Commission; (b) the names and position titles of the persons who are responsible for the management and control of the licensed activity and the nuclear substance, Nuclear Facility, prescribed equipment or prescribed information encompassed by the licence; and (c) any change in the information referred to in paragraphs (a) and (b), within 15 days after the change occurs.	<i>General Nuclear Safety and Control Regulations, Section 15. (a) (b) (c)</i>

For the purposes of this Licence to Prepare Site Application, the following people have authority to act for Ontario Power Generation in dealing with the Canadian Nuclear Safety Commission:

Mr. Tom Mitchell  
President & Chief Executive Officer  
Ontario Power Generation

Mr. Wayne Robbins  
Chief Nuclear Officer  
Ontario Power Generation

Mr. Albert Sweetnam  
Executive Vice President  
Darlington New Nuclear Project

For the purpose of this Application the following person is responsible for the management and control of the activities associated with the Licence to Prepare the Site:

Mr. Albert Sweetnam  
Executive Vice President  
Darlington New Nuclear Project

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Chapter 1 References

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- <sup>1</sup> Ontario Power Generation Report, Use of Plant Parameters Envelope to Encompass the Reactor Designs Being Considered for the Darlington Site, N-REP-01200-10000-R002, March 11, 2009.
- <sup>2</sup> Ontario Power Generation Report, Site Evaluation for OPG New Nuclear at Darlington – Nuclear Safety Considerations, NK054-REP-01210-00008 R001, September 14, 2009.
- <sup>3</sup> Ontario Power Generation, Exclusion Zone Determination for Darlington New Nuclear Project, NK054 REP-01210-00003 R001, September 10, 2009.
- <sup>4</sup> Ontario Power Generation, Preliminary Decommissioning Plan OPG New Nuclear at Darlington Site – Site Preparation, NK054-PLAN-00960-00001 R01, April 20, 2009.

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**Chapter 2 – Management Programs**

**2.1 Proposed Management Programs for the Activity**

Regulation Text	CNSC Regulation
The proposed quality assurance program for the activity to be licensed.	<i>Class 1 Nuclear Facilities Regulations, Section 3.(d)</i>
The proposed worker health and safety policies and procedures	<i>Class 1 Nuclear Facilities Regulations, Section 3.(f)</i>
The proposed environmental protection policies and procedures.	<i>Class 1 Nuclear Facilities Regulations, Section 3.(g)</i>

OPG commits to conformance with Canadian Standards Association (CSA) Standard N286-05 *Management System Requirements for Nuclear Power Plants*<sup>1</sup> to the extent such requirements are applicable to the activities of site preparation.

In keeping with the recent communication from the CNSC on their intent to move towards integrated management systems, OPG is developing an Integrated Management System for the project that addresses and integrates the requirements for quality as well as the requirements for other business objectives such as safety, security, environment and economics.

An indicative Project Schedule for site preparation is shown in Figure 2.1-1. This schedule shows approximate timelines for the licensed activities associated with this application and also includes other activities associated with preparatory work, permitting and other activities being carried out in parallel in support of the project. (Note that some of the indicated activities may continue during the construction phase of the NND). OPG will advise the CNSC at least 30 days prior to commencement of licensed activities on site should these not start at the time the Licence to Prepare Site is issued.

**2.1.1 Quality Management System Overview**

OPG will contract for the design, procurement, and construction of new nuclear plants at its Darlington Nuclear site, and will become the licensed operator of the facilities. As such OPG has overall responsibility for the new nuclear power plants. OPG has established the Darlington New Nuclear Project (DNNP) group to oversee the EPC Co. to ensure that the required quality, the health, safety and security of the public and workers, and protection of the environment are achieved when preparing for and building NND. These activities will be performed in conformance with the requirements of CSA N286-05<sup>1</sup>, the conditions that may be included in the Licence to Prepare Site, the Project Agreement between OPG and the EPC Co., and applicable laws and regulations.

The Management System described in this Application and its associated implementing documents will provide for planned and systematic control of activities necessary to ensure adequate confidence that such structures, systems, and components will perform satisfactorily in service. The Management System will be applied in a graded manner based on safety significance and complexity where safety is always the paramount



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consideration. It will ensure an ongoing and intrusive oversight for all phases of the NND project, and will make certain that the EPC Co. has its own defined and implemented Management System compliant with CSA N286-05<sup>1</sup> or equivalent, and is effective in implementation.

Ontario Power Generation, NK054-CHAR-0001, *DNNP Management System*<sup>2</sup> is the top-level document that describes the overall manner in which the Management System will be implemented and OPG's overall philosophy and strategy regarding achievement of the goals of the project. Implementing documents will assign more detail, processes and requirements and define the organization, responsibilities and interfaces involved in the project. Compliance with the *DNNP Management System*<sup>2</sup> and implementing documents will be mandatory for personnel directly or indirectly associated with NND.

The NND site preparation activities will be carried out by the EPC Co. The EPC Co. is required to have a Quality Management System that, at a minimum, complies with or demonstrates equivalency with the applicable requirements of the following:

- CSA N286-05<sup>1</sup>;
- CSA N285.0-06, *General Requirements for Pressure Retaining Systems and Components in CANDU Nuclear Power Plants*<sup>3</sup>;
- Canadian Standards Association, N286.7-99, *Quality Assurance of Analytical, Scientific, and Design Computer Programs for Nuclear Power Plants*<sup>4</sup>;
- Canadian Standards Association, CSA -CANZ1000 *Health and Safety Management Systems*<sup>5</sup>;
- International Organization for Standardization (ISO) 14001, *Environmental Management Systems*<sup>6</sup>;
- ISO-28000 *Specification for Security Management Systems for the Supply Chain*<sup>7</sup>; and
- ISO/IEC 27001:2005 – *Specification for an Information Security Management System*<sup>8</sup>.

The EPC Co. is also required to manage the quality of the activities performed by sub-contractors that it employs to execute parts of its responsibility, including:

- Ensuring that these sub-contractors have appropriate Management Systems;
- The interfacing arrangements among the groups involved in the Project are clearly defined and understood;
- Defining organizational responsibilities and processes; and
- Defining organizational structure, lines of responsibility, and limits of authority.

An important expectation by OPG for the EPC Co.'s Quality Management System is that at all times it will demonstrate the attributes of a positive nuclear safety culture. The EPC Co. will be responsible for ensuring, through their processes, training, and oversight that:

- Sound and rigorous processes are implemented and all work activities are planned and controlled to maintain Design configuration;
- Decisions are made with full regard to potential safety consequences and conservative actions are taken in the face of uncertainty;
- All personnel comply with procedures and apply rigorous error reduction tools and techniques in their work;
- A questioning attitude exists on behalf of all personnel;

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- Any event, incident, emerging issue or adverse condition is reported through the chain of command;
- All personnel are appropriately trained and qualified for the tasks they are assigned to perform; and
- Self-evaluation, team work, procedure adherence, and accountability for success are emphasized throughout the project.

The EPC Co.'s Quality Management System will be reviewed and assessed by OPG to ensure that all of the above requirements are met. This will be accomplished through initial surveys and assessments to confirm that the EPC Co.'s Quality Management System addresses all of the requirements listed above and that the Quality Management System can be fully implemented and complied with. Ongoing assessments will be scheduled to confirm continued implementation and compliance.

The *DNNP Management System*<sup>2</sup> and implementing documents apply to review and oversight of site preparation activities. All implementing documents required for site preparation will be in place prior to the start of licensed activities. The present version of the *DNNP Management System*<sup>2</sup> is focused on the selection of the EPC Co. and development of the licence applications. As the project progresses through the licensing process, the organization and related activities will evolve. The *DNNP Management System*<sup>2</sup> will be revised to ensure management of the activities occurring during each phase of the project.

#### 2.1.2 Health and Safety Program

The Health and Safety Program will apply to all personnel working on the project including OPG staff who will be providing project oversight of the EPC Co. The EPC Co. will be accountable for all Health and Safety issues within the defined NND Site Preparation Island, as described below.

The goal of the Conventional Safety Program will be to ensure that the NND site preparation activities are completed safely by application of a rigorous and effective safety management system.

#### Relationship between OPG and the EPC Co.

With respect to the accountabilities and responsibilities under the Ontario Occupational Health and Safety Act and its Regulations (OH&SA), Ontario Power Generation will assume the role and responsibilities of the "Project Owner" (OH&SA s.30), and the EPC Co. will assume the role and responsibilities of "Constructor" (OH&SA s.23) and "Employer" (OH&SA s.25 and s.26). The EPC Co. will hold the legal accountability for all Health and Safety matters for its employees and for all sub-contractors engaged by the EPC Co.

#### EPC Co. Safety Management System

The EPC Co. will be required to establish and maintain a Safety Plan which will meet the requirements of applicable law, and Good Utility Practices, and which will meet the requirements of the CNSC for the granting of the Licence to Prepare the Site. OPG will

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review the Safety Plan through its oversight role as described in the DNNP Charter. The Safety Plan will include provisions for:

- Documenting and implementing the site specific Safety Management System;
- Ensuring the EPC Co. meets its sole responsibility for initiating, maintaining, reviewing, revising and supervising all safety precautions and programs in respect of the project site and tasks;
- Ensuring that the EPC Co. meets its sole responsibility to write safety procedures, provide site specific training and orientation, and supervise safety, to prevent injury to all persons while in the Construction Island;
- Establish the basics of the interaction between the EPC Co. and OPG staff to ensure safety;
- Ensure the required safety reporting to OPG;
- Ensuring the ongoing maintenance, revision, and review of the Safety Plan in accordance with the processes laid out in the Project Agreement.

OPG will perform periodic monitoring/audits of the EPC Co. to ensure it complies with its own Safety Plan and the safety requirements of the contractual agreement between OPG and the EPC Co.

The EPC Co. Site Safety Plan will address the fact that the NND site is located within close proximity of the Darlington Waste Management Facility (DWMF) and Darlington Nuclear Generating Station (DNFS), and thus there will be very low level exposure to ionizing radiation above background levels. OPG will review the EPC Co. Safety Plan to ensure that all applicable requirements of the Nuclear Safety and Control Act, including but not limited to, the CNSC Radiation Protection Regulations, the CNSC Guide G-129 Keeping Radiation Exposures and Doses "As Low as Reasonably Achievable (ALARA)", and the CNSC Nuclear Substances and Radiation Devices Regulations, are met.

In particular, the EPC Co.'s Safety Plan will describe the processes/methods the EPC Co. will use to receive DNFS and DWMF facilities' perimeter radiation data provided by OPG, and interpret the results. The Safety Plan will describe the collection, interpretation and verification that workers on the project site are not receiving doses in excess of the limits for non-Nuclear Energy Workers during site preparation activities.

### 2.1.3 Emergency Preparedness Program

The DNNP Charter includes a description of the proposed emergency preparedness program which will describe emergency response within the NND site. This is required because a large portion of the NND site is within the DNFS exclusion zone.

There are four protocols associated with a NND response to a nuclear emergency at DNFS:

- Protective Action Decision;
- Notification;
- Sheltering; and
- Evacuation.

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Protective Action Decisions, notification of NND and the DNGS portion of coordinated evacuation will be governed by the *Consolidated Nuclear Emergency Plan* as required by the DNGS Power Reactor Operating Licence.

NND site personnel notification, sheltering and the NND site portion of a coordinated evacuation will be implemented through EPC Co. documentation.

2.1.4 Environmental Protection Program

The DNNP Charter document includes the environmental protection program to address the requirements for site preparation activities, including biodiversity and spills management requirements, and identifies the elements delegated in whole or in part to the EPC Co.

OPG will ensure, through its environmental oversight program, that the EPC Co. and its sub-contractors perform the site preparation activities in a manner that protects the environment through the systematic evaluation of the potential environmental effects associated with all work activities, and the implementation of measures that eliminate, manage, reduce, or mitigate the risk, in accordance with the reviewed Environmental Management and Protection Plan submitted by the EPC Co.

OPG will confirm the following:

- The Environmental Management and Protection Plan satisfies Applicable Law, Good Utility Practice, ISO 14001, and CNSC Standard S-296;
- Objectives and targets established in the Environmental Management and Protection Plan will be achieved, and when not achieved, adequate corrective measures are developed and implemented to ensure that they will be achieved;
- Resources required to implement the Environmental Management and Protection Plan will be provided, and that the personnel performing roles and responsibilities identified in the Plan will be fulfilling those roles and responsibilities;
- The EPC Co. personnel will have the appropriate training, education, or experience necessary to perform the site preparation activities. This includes receiving awareness training of the potential environmental risks associated with the work to be performed, and the requirements for avoidance, management, and mitigation of those risks, including notification and reporting;
- The Environmental Management and Protection Plan will be appropriately updated to reflect changes in Applicable law, including all requirements imposed on OPG through a licence, permit, approval or other regulatory instrument;
- Any environmental discoveries or events that potentially require a change to the site preparation activities will be identified, evaluated, and incorporated as necessary.

Through its conventional waste management program, OPG will make all reasonable efforts to reduce, reuse, or recycle non-hazardous and non-radioactive waste during the site preparation phase of the Project.

The DNNP Charter includes the environmental monitoring and environmental assessment follow-up plan which will include:

- The methodology of development, implementation, and reporting on the EA Follow-up Plan;

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- The development and implementation of the measures that will be used to improve the biodiversity of the site, during and following the conclusion of Site Preparation;
- The allocation of responsibility for completion of the elements of the EA Follow-up Plan and biodiversity measures to the EPC Co. and OPG, the schedule for undertaking the EA Follow-up Plan and biodiversity measures, and the form and nature of the reporting on completion of the EA Follow-up Plan and biodiversity measures;
- The development, implementation, and reporting on the Environmental Monitoring and Protection Plan for Site Preparation that confirms changes to the environmental baseline character of the site caused by the EPC Co. are consistent with the conclusions reached in the EIS;
- Confirmation on an ongoing basis that the EA Follow-up Plan as it pertains to site preparation activities, biodiversity measures and the Environmental Monitoring Plan satisfy the commitments made in the EIS, and corrective actions are taken as necessary;
- Routine reporting of the results of the EA Follow-up Plan as it pertains to site preparation activities, biodiversity measures and monitoring results to the local community and key stakeholders.

**2.1.5 Management System Oversight, Assessment and Improvement**

The oversight process will provide for planned audit activities to execute a comprehensive and critical evaluation of all activities affecting the NND project, as part of continuous improvement. It will support the quality assurance requirements stated in CSA N286-05 and ISO 14000 series of standards.

Management system oversight will include the EPC Co. activities as well as DNNP staff activities. It will result in the initial qualification of the EPC Co.'s management system and subsequent audits and assessments of its implementation. Audits and assessments will be performed to confirm that DNNP and other organizations that support the NND project are in compliance with the management system governance and that the governance is effective.

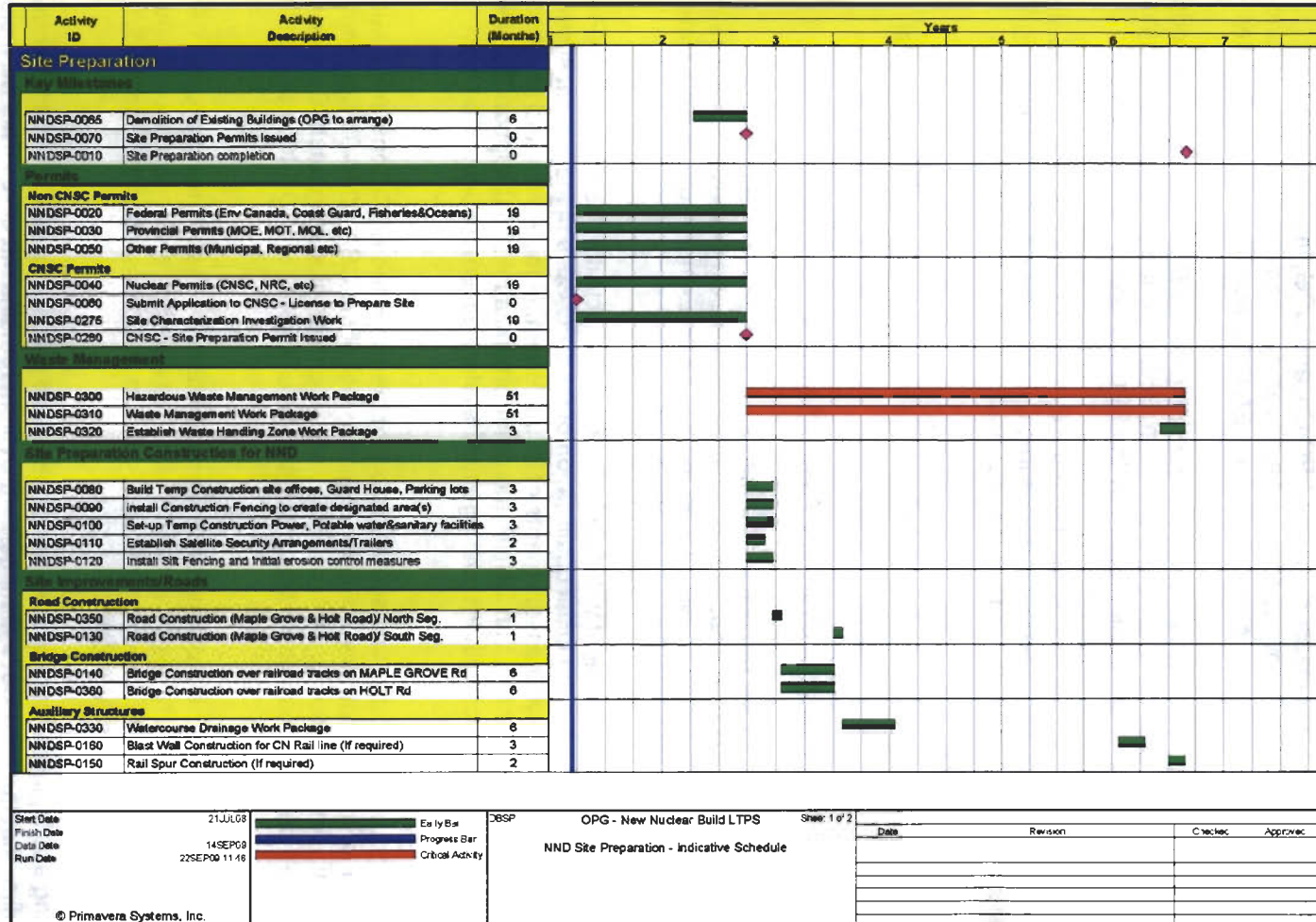
The Management Systems and supply history of the proposed EPC Companies were evaluated to confirm that they meet the requirements of the CSA N286-05 Standard or equivalent. An evaluation of each company's Environmental Management System was also carried out to confirm consistency with the requirements of ISO 14001 and CNSC S-296.

The Management Systems of the consortium members for each of the proposed EPC Companies have been reviewed in detail to confirm that they are consistent with the applicable CSA N286-05 requirements applicable to site preparation and facility design (see section 2.2 of this Application).

Ongoing audits, inspections and surveillance will be carried out with sufficient frequency to confirm that the EPC Co.'s Management System remains effective. This will include feedback and scoring of the EPC Co.'s performance.

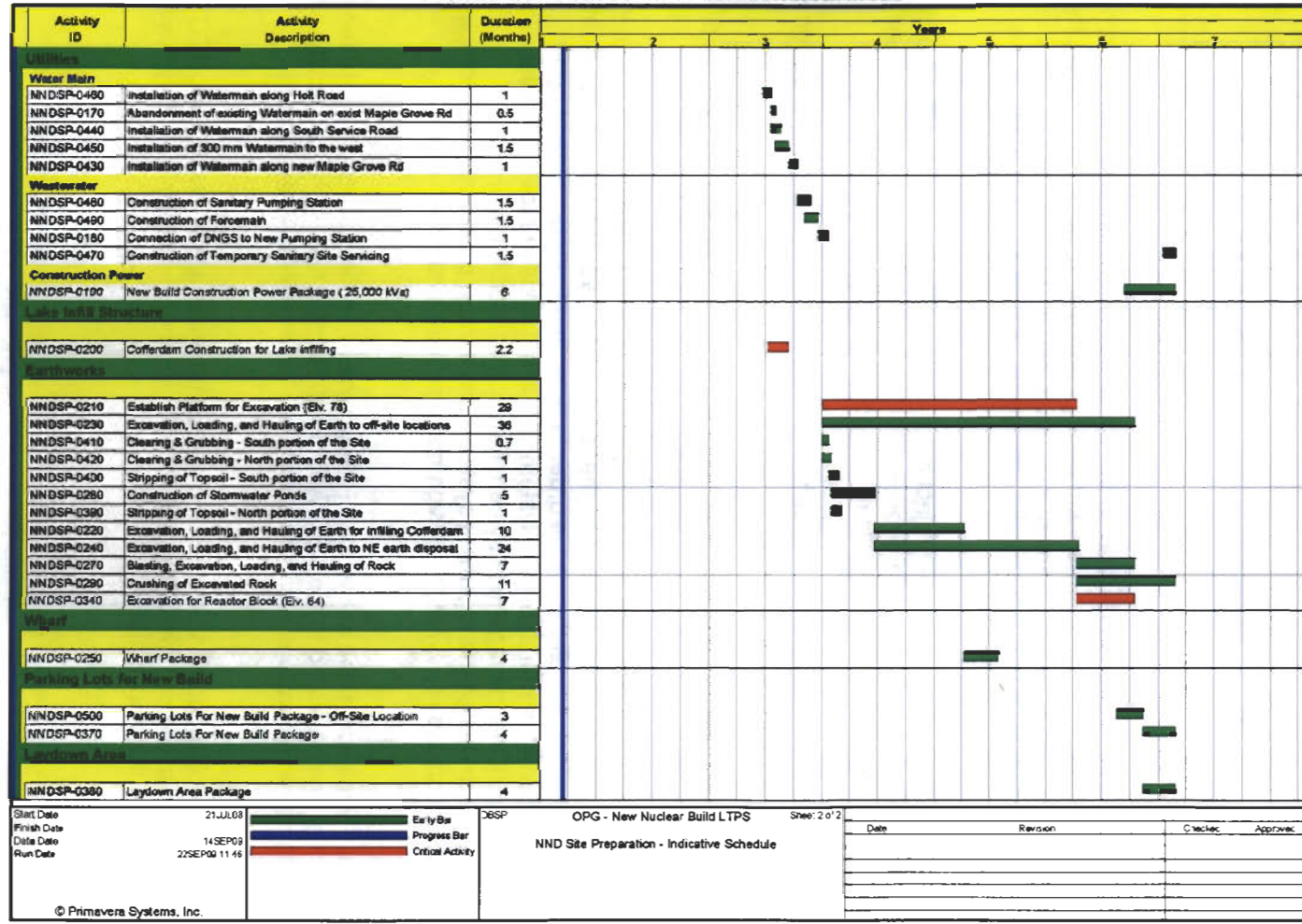
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Figure 2.1-1 Indicative Project Schedule



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Figure 2.1-1 Indicative Project Schedule (continued)



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**2.2 Proposed Quality Assurance Program for the Design**

Regulation Text	<i>CNSC Regulation</i>
The proposed quality assurance program for the design of the nuclear facility	<i>Class 1 Nuclear Facilities Regulations, Section 4.(d)</i>

The EPC companies under consideration have all established management systems to control their activities from site preparation through turnover to OPG. In addition, the EPC Co. selected will establish a project execution plan and quality plan for OPG's acceptance to identify site/project specific arrangements necessary to manage the project.

The EPC Co. will employ an overall project organization with a project leader and clearly defined roles, responsibilities and interfaces. The proposed project organization will be in keeping with generally accepted project management principles.

OPG has performed assessments and audits of the EPC Co. and of the fuel design and manufacturing companies.

The methodology used by OPG was a series of a total of 15 assessments and audits, including,

1. Initial high level assessments of the three proposed EPC Companies of the nuclear plant management system to confirm that each had an acceptable management system defined and implemented in order to enter into the procurement cycle.
2. Assessments of the management system for each proposed provider of fuel,
3. Assessment of the management system for each consortium member,
4. Audits of each design management system for the three proposed EPC Companies.
5. A clause by clause review of the design management systems to ensure consistency with N286-05.

Successful completion of the above DNNP assessment and audit activities resulted in these suppliers being added to the OPG Approved Supplier List. OPG is tracking any outstanding corrective actions resulting from these assessments and audits to completion.

Copies of the audit reports and associated correspondence are available for CNSC inspection. Due to the commercially confidential nature of the information they have not been included in this application.



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**2.3 Applicant's Management Structure**

Regulation Text	<i>CNSC Regulation</i>
The applicant's organizational management structure insofar as it may bear on the applicant's compliance with the Act and the regulations made under the Act, including the internal allocation of functions, responsibilities and authority.	<i>General Nuclear Safety and Control Regulations, Section 3.(1)(k)</i>

The organizational structure for the project will be fully established once the EPC Co. has been selected by the Province of Ontario. The organizational accountabilities, consistent with the Quality Management System described in this Application, will result in the general separation of the responsibilities for performance of the activities as distinct from the responsibilities for review and oversight of the performance of the activities.

OPG will have an organization that will perform project oversight, thus ensuring that the licences and approvals issued are achieved and the overall contract completed. This organization will be the Darlington New Nuclear Project (DNNP) and will have the capability of performing the obligations of the licensee, as contained in section 12(1) of the General Nuclear Safety and Control Regulations. Development of the DNNP organization will focus on the following elements, although the actual organization may divide these responsibilities amongst several portions of the organization when it is implemented:

1. Design Authority – this portion of the DNNP organization will be responsible for oversight of the EPC Co. design activities including review of their design products before implementation in the field, to ensure that the design meets the requirements of applicable laws including the incorporation of features that will ensure reasonable protection of the environment, the safety of workers, the safety of the public, and a reasonable assurance of the capability to maintain security.
2. Project Controls – this portion of the DNNP organization will be responsible for the oversight of the performance of the EPC Co., measured against the performance requirements of the contract including achievement of all requirements contained in the Licence to Prepare Site and other applicable regulatory requirements.
3. Project Field Oversight – this portion of the DNNP organization will be responsible for performing field observation, coaching, and auditing to ensure that the EPC Co. is working within their reviewed Quality Management System, including ensuring the presence of a sufficient number of trained and qualified workers to carry on the activity safely, and implementation of measures to protect the safety of the workers involved including the use of appropriate protective clothing and equipment, and to mitigate potential consequences to the environment.
4. Operational Readiness – as eventual operator of the New Nuclear at Darlington (NND) Facility, this portion of OPG's DNNP organization will undertake the process of establishing an organization that is ready to assume operational responsibility for

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the nuclear facility after it has been constructed, participating in the design, construction, and commissioning processes as necessary to ensure that capability is achieved.

The organization responsible for security will depend on the extent to which the project area can be segregated from the operating facilities. Currently, it is assumed that the EPC Co. will be able to maintain a security organization that will be able to preserve security within the portion of the site that is segregated – the “NND construction island”. This island is expected to reside within or about the area over which OPG will sustain security. A further description of the organizational structure currently expected in the area of security is provided in the separate security protected submission.

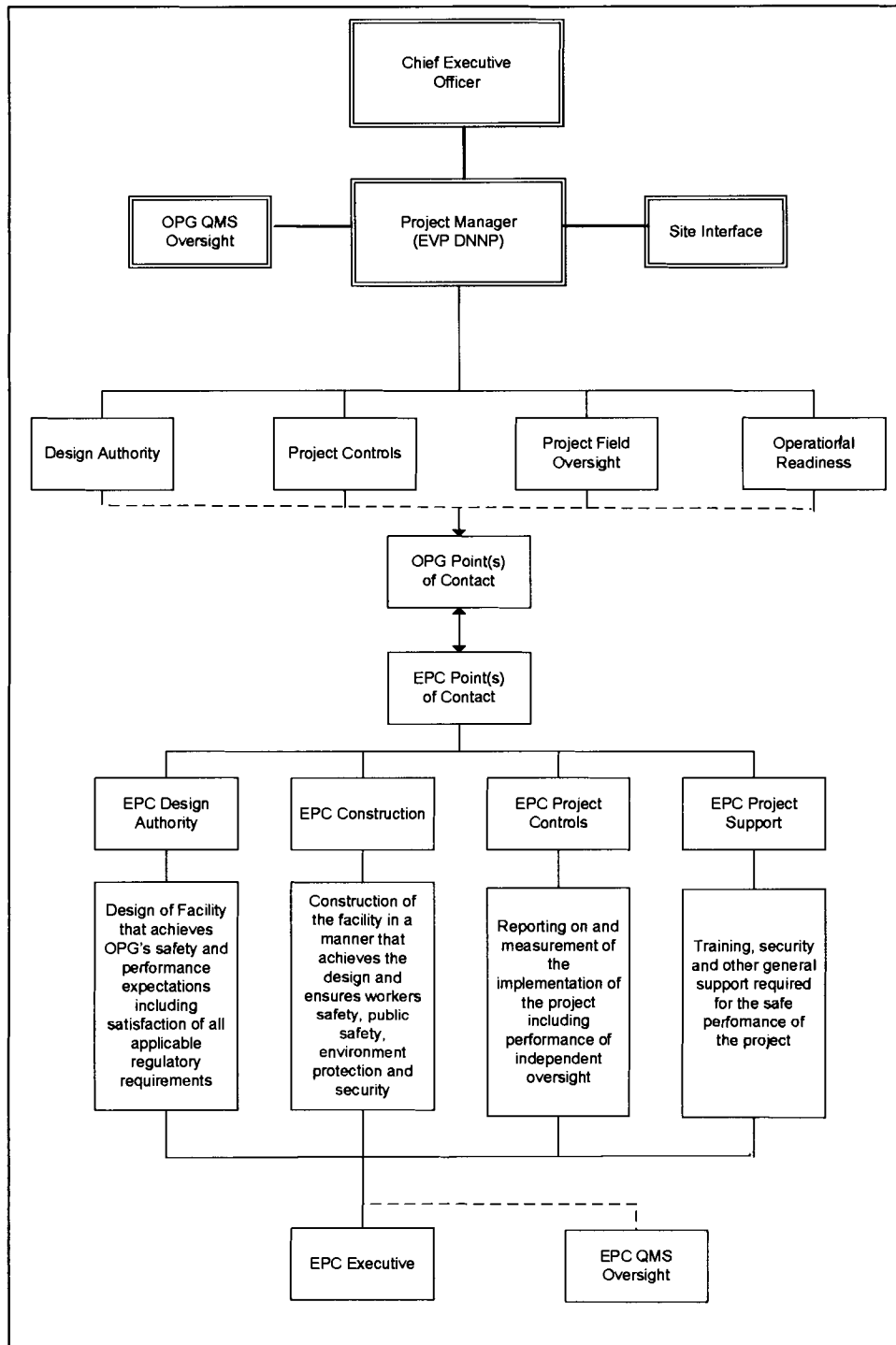
It is anticipated that the relationship between OPG and the EPC Co. will be managed through a point of contact approach. To ensure control over the relationship, only limited OPG personnel will be authorized to interface directly with the EPC Co. Other elements of the DNNP organization will report any concerns or findings to this point of contact for discussion with the EPC Co. If the point of contact is unable to resolve the concern with the EPC Co., an oversight group will become involved.

Figure 2.3-1 illustrates the expected functional interfaces.

The EPC Co. will be expected to establish a project planning and controls office that will provide overall project co-ordination and planning. They are also expected to have a safety organization that both facilitates safe work planning as well as performs field coaching on safe work practices. Similarly, they are expected to have a portion of their organization that facilitates work planning that manages potential environmental harms that may arise during site preparation. It is not known whether these organizations will be distinct from or generally included within the portion of the EPC Co. responsible for performance of the construction of the facilities, including the performance of site preparation.

OPG's general expectations of the EPC Co. is also that the Quality Management System used during site preparation will include responsibilities for independent audit, in addition to that performed by OPG, of the implementation of the EPC Co. quality management system, and requirements for the training of all personnel for the roles and responsibilities that they will be entrusted to safely perform.

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**Figure 2.3-1 DNNP / EPC Co. Functional Interface**

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**Chapter 2 References**

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- <sup>1</sup> Canadian Standards Association, Standard N286-05, Management System Requirements for Nuclear Power Plants.
- <sup>2</sup> Ontario Power Generation, NK054-CHAR-0001, DNNP Management System.
- <sup>3</sup> Canadian Standards Association, N285.0-06, General Requirements for Pressure Retaining Systems and Components in CANDU Nuclear Power Plants.
- <sup>4</sup> Canadian Standards Association, N286.7-99, Quality Assurance of Analytical, Scientific, and Design Computer Programs for Nuclear Power Plants.
- <sup>5</sup> Canadian Standards Association, CSA -CANZ1000 Health and Safety Management Systems.
- <sup>6</sup> International Organization for Standardization, ISO-14001, Environmental Management Systems.
- <sup>7</sup> International Organization for Standardization, ISO-28000 Specification for Security Management Systems for the Supply Chain.
- <sup>8</sup> International Organization for Standardization, ISO/IEC 27001:2005 – Specification for an Information Security Management System.

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**Chapter 3 – Radiation Protection and Nuclear Substances**

**3.1 Nuclear Substances to be Encompassed by the Licence**

Regulation Text	<i>CNSC Regulation</i>
The name, maximum quantity and form of any nuclear substance to be encompassed by the licence.	<i>General Nuclear Safety and Control Regulations, Section 3.(1)(c)</i>

There will be no nuclear substances encompassed by the site preparation licence requested.

Any site preparation activities which would require construction-related tools containing radioactive nuclear substances as defined in the *Nuclear Substances and Radiation Devices Regulations* will be performed under the authority of CNSC nuclear substance and device licences.

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**3.2 Proposed Measures to Ensure Compliance with the Radiation Protection Regulations**

Regulation Text	<i>CNSC Regulation</i>
The proposed measures to ensure compliance with the Radiation Protection Regulations and the Nuclear Security Regulations	<i>General Nuclear Safety and Control Regulations, Section 3.(1)(e)</i>

OPG does not request permission to possess, transfer, use, or store nuclear substances under this licence. Workers will not be at risk of receiving radioactive doses exceeding public dose limits as a result of the activities to be performed with the exception of work done with construction related tools containing radioactive nuclear substances. These activities will be performed under the authority of existing CNSC Nuclear Substances and Radiation Devices licence. Specific measures are not required with respect to this Application for compliance with the Radiation Protection Regulations.

Section 2.1 of this Application provides details on the Worker Health and Safety Program as it relates to radiation protection and the project Nuclear Emergency Preparedness Program due to the close proximity of the Darlington Nuclear Generation Station and the Darlington Waste Management Facility.

*Proposed measures to ensure compliance with the Nuclear Security Regulations are presented in a separate security protected submission.*

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**3.3 Proposed Action Levels**

<b>Regulation Text</b>	<b><i>CNSC Regulation</i></b>
Any proposed action level for the purpose of Section 6 of the Radiation Protection Regulations	<i>General Nuclear Safety and Control Regulations, Section 3.(1)(f)</i>

There will be no dose of radiation that would cause OPG to develop an Action Level pursuant to Section 6 of the Radiation Protection Regulations for the activities associated with site preparation.

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**Chapter 4 – Site Evaluation and Environmental Effects**

**4.1 Site Evaluation**

Regulation Text	<i>CNSC Regulation</i>
A description of the site evaluation process and of the investigations and preparatory work that have been and will be done on the site and the surrounding area.	<i>Class 1 Nuclear Facilities Regulations, Section 4.(a)</i>
A description of the site's susceptibility to human activity and natural phenomena, including seismic events, tornadoes and floods	<i>Class 1 Nuclear Facilities Regulations, Section 4.(b)</i>
A description and the results of any test, analysis or calculation performed to substantiate the information included in the application.	<i>General Nuclear Safety and Control Regulations, Section 3.(1)(i)</i>

This section of the Application addresses both the site evaluation process, and the investigations and preparatory work that have been done, and will be done, on the site and surrounding area.

**4.1.1 Site Evaluation Work Completed**

An evaluation of the Darlington Nuclear (DN) site has been performed to determine the suitability of the site for the proposed NND in accordance with the CNSC Regulatory Document RD-346, *Site Evaluation for New Nuclear Power Plants*<sup>1</sup>. RD-346<sup>1</sup> represents the CNSC's adoption and adaptation, where applicable, of the principles set forth by the International Atomic Energy Agency (IAEA) in their NS-R-3, *Site Evaluation for Nuclear Installations*<sup>2</sup>. OPG initiated site evaluation in 2006, prior to the issuance of RD-346<sup>1</sup>. NS-R-3 was used as the appropriate standard for the evaluation work at that time. In addition to the evaluations considered in NS-R-3, RD-346<sup>1</sup> also specifies consideration of environmental protection, security of the site, and protection of prescribed information and equipment.

The DN site has been home to the operating DNGS since 1990 and the performance and operational history of that facility has clearly demonstrated the suitability of the DN site for this purpose. Based on the evaluations performed, OPG has determined the DN site is suitable to build the proposed new nuclear power plants. For each of the hazard areas evaluated, the risk was determined to be negligible or could be reduced to an acceptable level through design mitigation.

Results of the technical site evaluations are provided in the *Site Evaluation for OPG New Nuclear at Darlington – Nuclear Safety Considerations Report*<sup>3</sup>. In addition, the following OPG Reports: *Emergency Preparedness Site Evaluation for OPG New Nuclear at Darlington*<sup>4</sup>, *Exclusion Zone Determination for Darlington New Nuclear Project*<sup>5</sup>, and *Preliminary Decommissioning Plan OPG New Nuclear at Darlington - Site Preparation*<sup>6</sup> provide details that satisfy specific expectations in RD-346 in the identified areas.

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Site evaluations provided in the *Site Evaluation for OPG New Nuclear at Darlington – Nuclear Safety Considerations Report*<sup>3</sup> were performed in order to demonstrate that the NND site meets the requirements and expectations of the Class I Nuclear Facilities Regulations and RD-346<sup>1</sup>. These site evaluation studies considered the following hazards:

- Meteorological events;
- Flooding hazards;
- Seismic hazards;
- Geotechnical hazards;
- External human-induced hazards;
- Hazards related to site characteristics and its influence on potential dispersion of radioactive materials.

These hazards were assessed in terms of risk to the proposed new nuclear power plant and ultimately to the public and the environment. Additionally, the projected performance of the new nuclear power plant was evaluated against safety goals for the expected conditions at the site. In each of the hazard areas, the risk was determined to be acceptably low or could be reduced to an acceptable level through design mitigation.

The *Emergency Preparedness Site Evaluation for OPG New Nuclear at Darlington*<sup>4</sup> report provides an evaluation of the OPG Emergency Preparedness program to show how the current program addresses the expectations outlined in RD-346<sup>1</sup>. The results of the evaluation show that the current nuclear emergency preparedness program applicable to the OPG DNGS site is broad, flexible, detailed and robust. A significant component of the Emergency Preparedness evaluation is the Evacuation Time Estimates Study presented in the Environmental Assessment for the project. The study was undertaken specifically for the NND Project and considers existing and projected population densities and land use with input from the Region's Recommended Growth Scenario. The study confirms that a safe evacuation could take place if a nuclear emergency were to occur. The conclusion is that the existing emergency program is compliant with the expectations of RD-346<sup>1</sup> and will require only minor modifications to accommodate the NND project. These modifications can be incorporated through the established emergency planning processes.

The *Emergency Preparedness Site Evaluation for OPG New Nuclear at Darlington*<sup>4</sup> also includes information on community commitment to nuclear planning. The Municipality of Clarington, the Region of Durham, and the Province of Ontario have confirmed that they will: continue to maintain their nuclear emergency plans as required by legislation; continue to consult with OPG on an annual basis regarding existing nuclear emergency plans and related activities; and review their respective nuclear emergency plans for the NND Project. This provides confirmation that the implementation of the Nuclear Emergency Plans and related protective actions will not be compromised for the life cycle of the proposed NND.

Site evaluation includes an assessment of the site to support the required exclusion zone for the proposed NND. This work is documented in the *Exclusion Zone Determination for Darlington New Nuclear Project*<sup>5</sup>. The role of the exclusion zone is to prohibit permanent dwelling within a certain distance from the reactor building in order to ensure significant dispersion of any potential radioactive release before it reaches

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human habitat. Also, the exclusion zone is defined as an area over which OPG has legal authority to exercise control so that, in the case of a nuclear emergency, the public can be evacuated.

The factors considered in the determination of the exclusion zone are:

- Land usage needs;
- Security requirements;
- Evacuation needs;
- Environmental factors.

Based on the available reactor technology information, it is expected that distances of 500m meet the requirements and expectations in RD-337, RD-346, Class 1 Nuclear Facilities Regulations, and Radiation Protection Regulations with respect to the site and exclusion zone boundaries. The proposed site can accommodate these requirements.

The correlation between RD-346 and this Application can be found in Table 4.1 below.

Table 4.1  
Correlation between Regulatory Document RD-346 Expectations  
and Application Section / Reports

<b>RD-346 section</b>	<b>RD-346 Expectation</b>	<b>Application Section / Reports</b>
5.1	Evaluation Against Safety Goals	<i>Exclusion Zone Determination for Darlington New Nuclear Project<sup>6</sup></i>  <i>Site Evaluation for OPG New Nuclear at Darlington – Nuclear Safety Considerations Report<sup>3</sup>, section 5.0</i>
5.2	Consideration of the Evolution of Natural and Human-induced Factors	<i>Site Evaluation for OPG New Nuclear at Darlington – Nuclear Safety Considerations Report<sup>3</sup></i>
5.3	Evaluation of Hazards Associated with External Events	<i>Emergency Preparedness Site Evaluation for OPG New Nuclear at Darlington,<sup>4</sup> section 10</i>  <i>Site Evaluation for OPG New Nuclear at Darlington – Nuclear Safety Considerations Report<sup>3</sup>, sections 3 &amp; 4.</i>
5.4	Determining Potential Impact of the Site on the Environment	<i>Site Evaluation for OPG New Nuclear at Darlington – Nuclear Safety Considerations Report<sup>3</sup>, section 5</i>  <i>Emergency Preparedness Site Evaluation for OPG New Nuclear at Darlington<sup>4</sup>, section 5</i>

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<b>RD-346 section</b>	<b>RD-346 Expectation</b>	<b>Application Section / Reports</b>
5.5	Population and Emergency Planning Considerations	<i>Exclusion Zone Determination for Darlington New Nuclear Project<sup>5</sup></i>  <i>Emergency Preparedness Site Evaluation for OPG New Nuclear at Darlington<sup>4</sup></i>
5.6	Consideration of Future Life Extension Activities	<i>Emergency Preparedness Site Evaluation for OPG New Nuclear at Darlington<sup>4</sup>, section 12</i>
6.0	Gathering Baseline Data	<i>Site Evaluation for OPG New Nuclear at Darlington – Nuclear Safety Considerations Report<sup>3</sup>, sections 2 &amp; 3</i>
7.0	Evaluation of Natural External Events	<i>Site Evaluation for OPG New Nuclear at Darlington – Nuclear Safety Considerations Report<sup>3</sup></i>
8.0	Evaluation of External, Non-Malevolent, Human-Induced Events	<i>Site Evaluation for OPG New Nuclear at Darlington – Nuclear Safety Considerations Report<sup>3</sup>, section 4</i>
8.6	Consideration of Future Connections to the Grid	Consideration of future connections to the grid is the responsibility of the Ontario Power Authority (OPA). The OPA integrates supply and transmission planning and includes any required strengthening of transmission.
9.0	Security Considerations	Provided in a separate security protected submission
10.0	Decommissioning	Section 1.7 of this Application & <i>Preliminary Decommissioning Plan OPG New Nuclear at Darlington Site<sup>6</sup></i>
11.0	Quality Assurance	<i>Site Evaluation for OPG New Nuclear at Darlington – Nuclear Safety Considerations Report<sup>3</sup>, section 1</i>
12.1	Aboriginal Consultation	Chapter 5 of this Application
12.2	Public Consultation	Chapter 5 of this Application

Consideration of Future Life Extension Activities

During the 60 year life of the station, specific reactor components and the steam generators, may require replacement. In addition to the steam generators,

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refurbishment of the ACR-1000 may require replacement of fuel channel assemblies, calandria tubes and feeder pipes. The EPR and AP1000 may require replacement of the reactor pressure vessel head. Each of these activities will require the reactors being removed from service for a period of time (one to three years). The reactor will be defueled, systems will be drained and access ways through containment created. The components will be removed by cutting or disconnecting piping and equipment. The Low and Intermediate Level Waste from refurbishment will be transported either to a purpose built facility on-site or transported to a licensed facility, in accordance with CNSC transportation regulations in place at the time of refurbishment.

Future life extension activities can be safely accommodated on the DN site.

**Decommissioning**

Initial consideration of the effects and requirements of site decommissioning activities has been performed through the environmental assessment process. The conclusion reached is that decommissioning is feasible with existing technology. While the specific details differ depending on the design and layout of the buildings and systems, the overall decommissioning strategy and principals are identical.

**4.1.2 Site Investigations to be Completed During Site Preparation Phase**

Site evaluation and investigations and preparatory work for future phases of the project will continue prior to and during the site preparation phase.

Site characterization investigation work to support detailed design work may be performed during the site preparation phase. This site investigation work may include activities such as additional borehole preparation and analysis, detailed soil and rock analysis, additional seismic characterization, ground and surface water analysis, topographic analysis, detailed bathymetry of the lake bottom. These physical activities may be performed concurrently with the licensed site preparation activities; however they do not require federal regulatory approval and are mentioned here to provide full understanding of works to be performed.

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**4.2 Proposed Program to Establish the Environmental Baseline**

Regulation Text	<i>CNSC Regulation</i>
The proposed program to determine the environmental baseline characteristics of the site and the surrounding area.	<i>Class 1 Nuclear Facilities Regulations, Section 4.(c)</i>

In addition to the existing baseline characteristics compiled for the site evaluation work discussed in section 4.1, the NND Environmental Assessment (EA) has compiled comprehensive baseline characteristics. These baseline characteristic studies complement each other and result from the parallel work progression on both the site evaluation and the EA.

As described in Section 4.5, the Environmental Assessment Follow-up and Monitoring Plan, a requirement of the EIS Guidelines, will monitor effects of the Project on the environment to confirm mitigation measures are effectively implemented. The Plan will be incorporated into the DNNP Management System, as described in Section 2.1.4.

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**4.3 Potential Effects on the Environment and the Health and Safety of Persons, and Mitigating Measures**

Regulation Text	<i>CNSC Regulation</i>
The effects on the environment and the health and safety of persons that may result from the activity to be licensed, and the measures that will be taken to prevent or mitigate those effects.	<i>Class 1 Nuclear Facilities Regulations, Section 4.(e)</i>

The effects and mitigation strategies for the site preparation phase of this project have been reviewed during the Environmental Assessment performed for the project.

A summary of the likely environmental effects and mitigation measures of the NND Project due to activities under this licence are summarized in Tables 4.3-1 and 4.3-2.

These identified mitigative measures are considered to adequately ensure no significant residual adverse environmental effects result from the NND site preparation activities. All mitigation measures identified in these tables are included in the Environmental Assessment for this project.

The following description of environmental mitigative measures is illustrative of those Good Industry Management Practices which could be used to control adverse environmental impacts from licensed site preparation activities. The EPC Co.'s detailed Environmental Management and Protection Plan will conform to all applicable regulatory requirements, and Good Industry Management Practices.

**Erosion and Sediment Control**

The primary sources of sediment during the earth moving and grading operations will be from stockpiled topsoil as well as the soil left exposed once the clearing and grubbing and topsoil removal have been completed. Sources of sediment from rock excavation and grading will be from earth exposed from the excavating and filling operations.

To minimize adverse effects, work planning would consider a plan whereby no area is opened up for work until all of the proper erosion and sedimentation control measures are in place. In addition, consideration should be given to conducting the work in phases/stages so that the area opened up for work, and therefore the amount of soil exposed, can be minimized.

Some of the principles of erosion control and sedimentation and Good Industry Management Practice involve keeping clean water clean, minimizing the amount of soil exposed, minimizing the time of soil exposure and keeping sediment on site. Some of the techniques utilized to carry out these practices are:

- Constructing cut-off ditches to divert upstream-water around a construction site (reducing erosion by reducing water flowing over the exposed soil);
- Constructing silt fences;
- Constructing diversion ditches and sedimentation ponds (to intercept sediment laden water and treat before releasing and mixing with clean off-site water); and

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- Establishing vegetation on slopes and other areas where appropriate (to reduce erosion).

The erosion and sediment control plan will describe and prescribe all necessary means to ensure Good Industry Management Practices.

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Table 4.3-1 Summary of Likely Adverse Environmental Effects and Mitigation Measures

<b>Likely Adverse Environmental Effect arising from Site Preparation Activities</b>	<b>Mitigation Measures</b>
<b>Atmospheric Environment</b>	
Some measurable increases to background concentrations of the contaminants are predicted at onsite and offsite receptor locations due to site preparation activities including material transfer and handling and blasting,	A Dust Management Program will be implemented during the Site Preparation phase of the Project to control dust emissions at their source. Examples of typical dust management strategies include application of dust suppressants; stabilization of completed soil surfaces; and suspension of dust-generation activities during periods of inclement weather.
Some measurable increases in existing noise levels are predicted at offsite receptor locations due to site preparation activities including material transfer and handling, blasting and vehicular movements.	A Noise Management Plan will be implemented during the site preparation phase of the Project. The Plan will be based on practices typical of major construction projects and operating plants and will include, for example, measures to control sound generation at source, to alert area residents of specific noise generating activities (e.g., blasting), requirements to maintain construction and operating equipment in proper mechanical condition, and the need to comply with applicable noise standards and regulations.
<b>Surface Water Environment</b>	
Stormwater draining into Lake Ontario may contain contaminants due to silt and rock excavation, site grading and dewatering during excavation and grading.	Implementation of Good Industry Management Practices with respect to stormwater management. Good practice typically includes, among other actions: sediment control practices, dewatering water treatment, stormwater conveyance systems and conventional stormwater treatment methods such as stormwater management ponds and oil-grit separators.  Collection and appropriate management and disposal of all water having come into contact with blasting agents.

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Likely Adverse Environmental Effect arising from Site Preparation Activities	Mitigation Measures
<b>Terrestrial Environment</b>	
<p>An estimated 113 hectares of Cultural Meadow and Thicket Ecosystem will be removed as a result of site development. This Ecosystem represents:</p> <ul style="list-style-type: none"> <li>• Feeding and winter foraging area for raptors; and</li> <li>• Mammal habitat.</li> </ul>	<p>Re-planting of approximately 40 to 50 hectares of Cultural Meadow and approximately 15 to 20 hectares of Cultural Thicket with native shrub plantings</p>
<p>An estimated 17 hectares of Wetland Ecosystem will be removed through site development.</p>	<p>Creation of new fish-free wetland ponds with riparian plantings in appropriate locations on the DN site.            Future mitigation includes incorporation of wetland areas into the new lake infill area after the construction phase.</p>
<p>Clearing of the DN site will result in the loss of an estimated 74 hectares of:</p> <ul style="list-style-type: none"> <li>• Monarch (and other) butterfly habitat; and</li> <li>• Migrant bird habitat.</li> </ul>	<p>Re-planting of approximately 40 to 50 ha of Cultural Meadow and approximately 15 to 20 ha of Cultural Thicket with native forb seeds in seed mixture, native shrub plantings and woodland dominated by Sugar Maple.            Creation of new fish-free wetland ponds with riparian plantings in appropriate locations on the DN site.             Future mitigation includes incorporation of wetland areas into the new lake infill area after the construction phase.</p>
<p>Clearing and grubbing of the DN site may result in the loss of rare plant species: Shag-bark Hickory, Butternut, Common Water Flax-seed, Cup Plant and Loesel's Twagblade.</p>	<p>Salvage and relocation or replanting of rare plant species (Shag-bark Hickory, Common Water Flax-seed, Cup Plant and Loesel's Twagblade) to a suitable existing or created habitat in advance of site preparation activities.</p>

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<b>Likely Adverse Environmental Effect arising from Site Preparation Activities</b>	<b>Mitigation Measures</b>
<p>As a consequence of the removal of the shoreline bluffs in the development area of the DN site, the Project will result in a decrease in Bank Swallow nesting habitat that supports approximately 1,300 active burrows.</p>	<p>Development of artificial Bank Swallow habitat in potentially suitable locations on the DN site and the monitoring of existing colonies.</p> <p>Development of artificial habitat for aerial forage species (e.g. Chimney Swift and Purple Martins) in potentially suitable locations on the DN site.</p> <p>Acquisition of lands that contain an existing large Bank Swallows colony for study and protection.</p> <p>Integrate interpretive opportunities related to the effects of the Project on shoreline bluff habitat and Bank Swallows such as erecting interpretative signage and constructing observation decks.</p> <p>Development of partnerships to undertake research into declines in aerial foragers in Ontario.</p>
<p>Access for wildlife travel along the wildlife corridor extending east-west across the DN site is likely to be interrupted at points in time during the Site Preparation phase.</p>	<p>No mitigation measures identified as practicable during the site preparation phase.</p>
<p><b>Geological and Hydrogeological Environment</b></p>	
<p>Based on comparisons to the current operations at DNGS, stormwater management facilities can potentially affect soil and groundwater quality.</p>	<p>Implementation of Good Industry Management Practices during all phases of the NND Project with respect to stormwater management. Good practice typically includes, among other actions: sediment control practices, dewatering water treatment, stormwater conveyance systems and conventional stormwater treatment methods such as stormwater management ponds and oil-grit separators.</p>

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<b>Likely Adverse Environmental Effect arising from Site Preparation Activities</b>	<b>Mitigation Measures</b>
<p>Groundwater flow conditions will be changed permanently by the NND Project. Although flow patterns will change, the ultimate flow direction and discharge point will remain to be Lake Ontario, as is currently the case.</p>	<p>Design and implementation of stormwater management features in the area of the Northeast Landfill Area with objectives of:</p> <ul style="list-style-type: none"> <li>• Contributing additional baseflow into Darlington Creek and</li> <li>• Reducing the extent of the groundwater drawdown area north of the DN site.</li> </ul> <p>Design and implementation of all stormwater management features such as swales, ditches and retention ponds so as to optimize opportunities to recharge the groundwater flow regime with surface water runoff.</p>
<b>Physical and Cultural Heritage Resources</b>	
<p>As a result of physical disturbance of the site during the Site Preparation Phase, two Euro-Canadian archaeological resources will be displaced.</p>	<p>Qualified specialists will undertake a controlled removal and recording of archaeological site context, cultural features and artifacts to document the cultural heritage value or interest of the site and to preserve its information for future study.</p>
<b>Socio-Economic Environment</b>	
<p>No adverse environmental effects are expected on Financial Assets as a result of the Project. In reaching this conclusion, however, it was assumed that planning and design features will be incorporated into the Project based on industry practice and OPG experience, including experience as it relates to its current relationship with the local and regional municipalities.</p>	<p>A Traffic Management Plan will be implemented with the objective of reducing disruption and maintaining safe traffic conditions during the Site Preparation phase.</p>



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Likely Adverse Environmental Effect arising from Site Preparation Activities	Mitigation Measures
<p>Because of public safety concerns during physical works in the vicinity of the publicly-accessible spaces, and possible periodic and short-term disruption because of the construction activities, there is likely to be some reduced use and enjoyment of the community and recreational features on the DN site during the Site Preparation phase.</p> <p>Because of nuisance-related effects (e.g., dust, noise, traffic) some residents living along truck haul routes may experience disruption to their use and enjoyment of their property during the Site Preparation phase.</p>	<p>A Nuisance Effects Management Plan (e.g., to address dust and noise concerns) will be implemented for residential properties along transportation routes affected by the NND Project. The Plan will include a process for receiving, resolving and following-up on issues raised by the public.</p> <p>OPG will continue to keep its neighbours and the broader public informed concerning activities at the DN site as appropriate to each phase of the Project.</p> <p>OPG will re-establish full access to and use of the Waterfront Trail in stages once safe access can be provided.</p>

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Table 4.3-2 Summary of Potential Malfunction or Accident Scenarios and Preventive and Mitigative Measures

Potential Malfunction or Accident Scenario	Preventive and Mitigative Measures
<b>Accidents involving release of fuel into the lake</b>	
Boat or barge accident resulting in release of oil or fuel into the lake during marine activities.	It is expected that small personnel watercraft and barges will be used to carry out Project works and activities. All use of boats and waterways will be performed within a regulatory environment, in compliance with site safety procedures and conforming to good industry, navigation, and operational practice.
<b>Accidents involving release of fuel or oil onto land</b>	
Transportation or vehicle accident resulting in a spill of fuel, oil, transmission fluid, hydraulic fluid, coolant or lubricant to land	<p>The typical accident scenario could occur as a result of a leak or release of diesel fuel from a tanker truck or a storage tank due to a traffic accident. The following mitigation measures are in place to reduce the effect of such a spill:</p> <ul style="list-style-type: none"> <li>• Safety programs for contractors and operation staff will include safe driving procedures and expectations.</li> <li>• All applicable transportation regulations will be followed in the movement of vehicles on the NND site.</li> <li>• Traffic control and speed limits will be in place.</li> <li>• Spill contingency and prevention plans will ensure prompt spill containment and clean-up.</li> </ul> <p>Likely effect after clean-up activities would be minor or negligible.</p>
Spill of oil or lubricant from fuelling equipment	<p>The typical accident scenario that could occur is human error or failure of refuelling hose or tanker truck. The following mitigation measures will be put in place to reduce the effect of such a spill:</p> <ul style="list-style-type: none"> <li>• Refuelling will be conducted by trained staff.</li> <li>• Spill contingency and prevention plans will be in place to ensure prompt spill containment and clean-up.</li> <li>•</li> </ul>
<b>Accidents involving a release of chemicals</b>	

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<b>Potential Malfunction or Accident Scenario</b>	<b>Preventive and Mitigative Measures</b>
Spill of hazardous waste during handling, processing, or transport	Procedures will be in place to handle hazardous waste according to regulations and standards.
Spill of sewage during tie-in to site services and utilities	Procedures will be in place to ensure that precautions are taken during tie-ins to municipal services such as sewage and grid power. These are activities carried out routinely in the construction of new facilities and any spill would result in a local effect that will be cleaned up as quickly as possible.
Spill of chemicals used for construction such as cement, paints, solvents or sealants	Spill contingency and prevention plans will ensure prompt spill containment and clean-up. Likely effects would be minor or negligible after clean-up. Any effect would also be small because of the limited amounts and types of chemicals and hazardous materials used; and the Environmental Management Plan that will be in place.
<b>Accidents involving fall of heavy equipment</b>	
Accidents involving heavy equipment, for activities such as moving large rocks from barges to construct the coffer dam for shoreline protection.	Cranes will have to meet stringent safety requirements, and will have a significant safety factor in terms of lifting capability. All applicable regulatory requirements related to safe rigging and hoisting will be met. An experienced contractor with proven safety record in undertaking heavy lifts will be used, where applicable. All of these factors provide a high level of confidence that the lifts will be carried out safely.
<b>Fire and Explosion Accidents</b>	
Blasting accidents resulting in chemical release, personnel injury, or damage to existing structures and processes	Blasting at the NND site will be done in compliance with stringent regulatory and procedural requirements, including consideration of worker safety and limitations imposed by surrounding structures. Design and construction protocols will be followed at all times, and the work will be done according to the Environmental Management Plan that will be in place. Work will be conducted such that existing DN site facilities are not unacceptably affected.
Fire from fuel or oil	The EPC Co. will have policies, procedures and programs in place for fire prevention and response.

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<b>Potential Malfunction or Accident Scenario</b>	<b>Preventive and Mitigative Measures</b>
	Due to the limited quantities of fuel or lubricants that would be stored on-site during construction, and construction protocols developed to minimize the potential for fire, the risk of a fire is considered minimal.
<b>Accidents involving release of gases</b>	
Accidents involving compressed gas cylinders	All operations will be performed within a regulatory environment and conforming to design and construction protocols that will minimize the potential for personal injury, equipment damage and chemical leakage as a result of the use of compressed gas cylinders.
<b>Accidents involving occupational health and personal injuries</b>	
Potential personnel injury due to construction activities.	<p>Personal injury could result from a construction accident such as a failure of temporary platforms, heavy equipment crashes, slope failures or trench collapse, etc. during relocation of structures or buildings, creation of parking and laydown areas, movement of heavy equipment, construction of structures or buildings, and provision of NND site services.</p> <p>EPC Co. will have extensive programs, policies and procedures in place to prevent such health and safety events.</p> <p>All activities will be performed within a regulatory environment and conforming to design and construction protocols with will minimize the potential for personnel injury accidents.</p>
Water-related accident resulting in personnel injuries and drowning	<p>All use of boats and waterways will be performed within a regulatory environment, in compliance with site safety procedures, minimizing the potential for personal injury accidents.</p> <p>Personnel training and use of personal protection equipment will reduce the probability and extent of injuries.</p>

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**4.4 Radioactive Waste, Hazardous Substances and Waste**

Regulation Text	<i>CNSC Regulation</i>
The name, form, origin and volume of any radioactive waste or hazardous waste that may result from the activity to be licensed, including waste that may be stored, managed, processed or disposed of at the site of the activity to be licensed, and the proposed method for managing and disposing of that waste.	<i>General Nuclear Safety and Control Regulations, Section 3.(1)(j)</i>
The name, form, characteristics and quantity of any hazardous substances that may be on the site while the activity to be licensed is carried on.	<i>Class 1 Nuclear Facilities Regulations, Section 3.(e)</i>

The activities to be licensed under the License to Prepare Site will not involve the handling of radioactive materials and will not generate any radioactive wastes. All site preparation activities will take place outside the existing Protected Areas established on the Darlington Nuclear site for the Darlington Nuclear Generating Station and the Darlington Waste Management Facility. The handling of nuclear substances is not part of this Application.

Hazardous substances that may be present and/or hazardous wastes generated as a result of site preparation activities will be limited to those employed during standard construction processes. These would include chemicals, fuel, lubricants and compressed gases used during operation and maintenance of site preparation equipment, as well as solvents and cleaners used to clean the equipment. Additional substances on-site may consist of paint, aerosol cans, oil and electrical components used in the construction and relocation of services and utilities, construction of support facilities, and explosives used during excavation activities.

The management of hazardous wastes, which includes the storage, processing, disposal or transport of hazardous or liquid industrial waste generated during site preparation will comply with federal and provincial requirements, such as the Transportation of Dangerous Goods (TDG) Act and TDG Regulations, Environmental Protection Act, General - Waste Management, O. Reg. 347, Ministry of the Environment guidelines and waste management best practices. Waste will be collected, stored and shipped by a licensed hazardous waste disposal company, to a facility licensed to receive and manage these wastes. Hazardous wastes will be stored in separate, secure areas to prevent spills and ensure segregation for appropriate management. Spills will be reported in accordance with regulatory requirements.

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**4.5 Proposed Effluent and Environmental Monitoring Programs**

Regulation Text	<i>CNSC Regulation</i>
The proposed effluent and environmental monitoring programs.	<i>Class 1 Nuclear Facilities Regulations, Section 3.(h)</i>

The Environmental Assessment for this project identifies the preliminary environmental follow-up and monitoring program which is designed to verify the predictions made in the assessment, and to verify the effectiveness of mitigation methods. The environmental follow-up and monitoring program will be incorporated into the site preparation phase environmental monitoring program, as appropriate, to ensure the site preparation activities and mitigation measures conform with the outcome of the Environmental Assessment.

**Long Term Environmental Monitoring Program**

The EA's preliminary follow-up and monitoring program connects the baseline environmental characteristics with long term environmental monitoring to determine effects from both the site preparation activities and succeeding licensing phases of the Project.

The follow-up and monitoring program is a requirement of the EIS Guidelines. The program's objectives are:

- to confirm on an on-going basis, whether assumptions made during the EA remain accurate;
- to confirm that mitigation measures have been implemented and are effective; and
- in the event that applied mitigation measures are not completely effective in ameliorating adverse effects, serve to assist in identifying new mitigation strategies that may be required.

After EA approval, the scope of the follow-up and monitoring program described in the EIS will be developed in detail to address the specific requirements associated with site preparation and construction phases, and the operation and maintenance phases of the Project. The scope and nature of the follow-up and monitoring program will be reviewed and adjusted on an ongoing basis to incorporate evolving site conditions, and results of monitoring data as it is acquired.

The aspects of the approved follow-up and monitoring program pertaining to site preparation activities will be implemented during site preparation phase.

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Chapter 4 References

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- <sup>1</sup> Canadian Nuclear Safety Commission, Regulatory Document RD-346, Site Evaluation for New Nuclear Power Plant, Canada, November, 2008.
- <sup>2</sup> International Atomic Energy Agency, Safety Standards Series No. NS-R-3, Site Evaluation for Nuclear Installations, Vienna, November, 2003.
- <sup>3</sup> Ontario Power Generation Report, NK054-REP-01210-00008 R001, Site Evaluation for OPG New Nuclear at Darlington – Nuclear Safety Considerations, September 14, 2009.
- <sup>4</sup> Ontario Power Generation Report, Emergency Preparedness Site Evaluation for OPG New Nuclear at Darlington, NK054-REP-03490-00001 R001, August 25, 2009.
- <sup>5</sup> Ontario Power Generation Report, Exclusion Zone Determination for Darlington New Nuclear Project, NK054-REP-01210-00003 R001, September 10, 2009.
- <sup>6</sup> Ontario Power Generation Report, Preliminary Decommissioning Plan OPG New Nuclear at Darlington – Site Preparation, NK054-REP-00960-00001 R001, April 20, 2009.

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**Chapter 5 – The Proposed Public Information and Consultation Program**

Regulation Text	CNSC Regulation
The proposed program to inform persons living in the vicinity of the site of the general nature and characteristics of the anticipated effects on the environment and the health and safety of persons that may result from the activity to be licensed.	<i>Class 1 Nuclear Facilities Regulations, Section 3.(j)</i>

OPG values the relationships it has with the local community and stakeholders. The overall goal of our public communications and consultation programs are to ensure that the public and key stakeholders are supportive of our operations.

This chapter of the Application describes the proposed Public Communications and Consultation Program for Site Preparation for NND.

The initial communications and consultation program was carried out in accordance with *CNSC Regulatory Document RD-346 – Site Evaluation for New Nuclear Power Plants<sup>1</sup>* through the EA process and the results are documented in the EIS for the project.

**5.1. Objectives**

The objectives of the proposed Site Preparation Communications and Consultation Program are to:

- Inform persons living in the vicinity of the site of the general nature and characteristics of the anticipated effects on the environment and the health and safety of persons that may result from site preparation activities;
- Promptly respond to issues raised by the community, stakeholders, and the general public;
- Seek community, stakeholder, and general public views and perspectives on proposed activities;
- Provide clear, consistent, and accurate information; and
- Thoroughly document the program, results and findings.

**5.2 Target Audience**

The proposed Site Preparation Communications and Consultation Program will ensure that those potentially affected by the NND Project and those with a potential interest are notified and have the opportunity to share their views about the Project. The target area includes the host community (i.e. the Municipality of Clarington) and adjacent communities within 10 km of the Project (the City of Oshawa). The 10 km radius is consistent with the Primary Response Zone for nuclear emergency planning purposes, an area where residents are most familiar with nuclear plant operations and regularly receive information on nuclear emergency preparedness and response. Thus, the geographic target area includes the Municipality of Clarington and the City of Oshawa as the 'persons living in the vicinity'.

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The Site Preparation Communications and Consultation Program includes a number of stakeholders, including:

- Elected officials, MP's, MPP's, mayors, and councilors, in the host community and adjacent areas;
- Federal, provincial, regional and municipal agencies and officials with a regulatory role or project interest;
- Established community committees, such as the Darlington Site Planning Committee and the Durham Nuclear Health Committee;
- The Darlington 'community' including:
  - neighboring residents;
  - local businesses and business organizations;
- OPG Employees;
- Local First Nations and Métis Organizations.

### 5.3 Public Information Program

This section describes the Program content, methods, and tools for issue tracking and response.

#### 5.3.1 Program Content

The information materials provided to the public through site preparation activities will be developed to ensure that:

- Environmental, and health and safety issues are effectively communicated to the public in a manner that complies with established regulations;
- Persons living in the vicinity of the site of are informed of:
  - the general nature and characteristics of the anticipated project activities, effects on the environment, and the effects on the health and safety of persons that may result from site preparation activities; and
  - the measures that will be taken to prevent or mitigate those effects;
- Mechanisms to address concerns of the general public regarding the anticipated or potential environmental effects of the site preparation activities are in place; and
- Up-to-date information describing the project to the public and especially to the communities likely to be most affected by the project is continually provided.

In addition to information on the site preparation activities, Program content may include:

- Effects of the project on air quality, the terrestrial environment, the aquatic environment, hydrogeology, regional health services and public health infrastructure;
- Terrestrial and aquatic contaminant concentrations;
- Effects of liquid emissions on the aquatic environment, aquatic habitat loss, blasting and excavating effects on aquatic species;
- Off-site effects to members of the public (from normal operations as well as highly unlikely accidents and malfunctions);
- Environmental protection program for activities to be encompassed by the Licence to Prepare Site; and
- Details concerning the proposed emergency response plan.

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**5.3.2 Program Methods**

Communications and consultation methods are the approaches and activities used to distribute information, and to solicit feedback and input during site preparation activities. The methods to be employed during site preparation will be specific to the issues and matters that arise, however, at a minimum they will include:

- **Notification Advertisements and Letters** - Public notifications will be prepared and distributed to announce the commencement of site preparation activity, via a press release, web communications, the Darlington Nuclear community newsletter (Darlington Neighbours) and advertisements in local print media.
- **Website** - The OPG website for the NND Project will be updated. The web site serves as a vehicle to provide access to information, as well as a mechanism to receive input from interested persons as an enhancement of the public consultation program. Information such as: scope; schedule; descriptions; process steps; events; and contacts pertaining to site preparation will be maintained.
- **Toll Free Information Line** - A 1-800 information line will be maintained. When not answered in person, the line will inform callers how to obtain details/information about the site preparation and construction activity. Messages will be checked and responded to on weekdays and any required follow-up will be completed.
- **Media Relations** - Ongoing liaison with respect to the site preparation and construction activities will be initiated and maintained by OPG with reporters and news editors for both the electronic and print media.
- **OPG Employee Consultation Activities** - The employee communication program will include articles written for all employee publications including OPG wide and Darlington Station specific vehicles - both electronic (such as OPG Today, Darlington's On-Site) and hard copy (Power News). Staff presentations and Lunch and Learn sessions will be held. A specific intranet site will continue to be maintained to facilitate communication with employees.
- **Key Stakeholder Briefings and Interviews** - Interviews and briefings will continue to be conducted to present information and provide an opportunity to have questions and comments addressed. Regular updates will be presented to municipal representatives of the Darlington Site Planning Committee and Darlington Nuclear Health Committee and other key stakeholders on a frequency commensurate with key project activities and milestones. Feedback from these meetings will be recorded for response and issue management tracking system.
- **Workshops** - Key stakeholders with a high level of interest in the site preparation activities may be invited to participate in workshops that will involve meaningful discussions and provide substantive input to site preparation activities.

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**5.3.3 Public Comments Tracking**

A public comment tracking system will be maintained to record and monitor comments received by the public and stakeholders involved in or affected by the site preparation activities. A public comment tracking system helps ensure that any issues and concerns held by the public or stakeholders are identified and responded to, to the extent possible.

The tracking system will be structured to:

- Identify and record the source of the comment (name of person or groups);
- Indicate the date and event of origin;
- Identify the type of communication and the original document for cross-referencing (letter, meeting report, email, voicemail report, etc.);
- Provide a summary of the comment and response;
- Indicate the response action taken, when and by whom; and
- Document how the response was communicated to the comment source, where applicable.

**5.4 Administrative and Organizational Considerations**

The contact person responsible for the public information program is Mr. Charles Pautler, Vice President, Public Affairs' Ontario Power Generation, 700 University Avenue, Toronto, ON M5G 1X6.

The Site Preparation Communications & Consultation Program will be under the direct oversight of OPG. OPG maintains a community relations and public information function, staffed by communications professionals with appropriate academic qualifications and professional experience. The organization will include a Manager of Public Affairs, who will be accountable for employee communications; community relations; public information products; issue management and response; and emergency communications. The Manager will report to the Director of Nuclear Public Affairs.

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**Chapter 5 References**

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- <sup>1</sup> Canadian Nuclear Safety Commission Regulatory Document RD-346, Site Evaluation for New Nuclear Power Plants, November 2008.

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**Chapter 6 – Nuclear Security Information**

Regulation Text	<i>CNSC Regulation</i>
The proposed measures to ensure compliance with the Radiation Protection Regulations and the Nuclear Security Regulations	<i>General Nuclear Safety and Control Regulations, Section 3.(1)(e)</i>
The information required by section 3 of the Nuclear Security Regulations	<i>Class 1 Nuclear Facilities Regulations, Section 3.(i)</i>

*Proposed measures to ensure compliance with the Radiation Protection Regulations are in section 3.2 of this Application.*

OPG will implement security strategies, measures, and practices to protect personnel, information, and physical assets owned by or entrusted to the Corporation against the risks of employee wrong doing, crime, terrorism, sabotage, unauthorized diversion, misuse and any other relevant security risks that could cause loss or harm.

Details of the proposed measures to ensure compliance with the Nuclear Security Regulations for the NND facility are presented in a separate security protected submission. An unclassified overview of the NND proposed security program is presented in the DNNP Management System<sup>1</sup>.

The program will include an effective security management structure with administrative and front line security functions delivered by OPG Nuclear Security and by the EPC Co. contract security company. Instructions that will be developed to implement the program will address the following subject areas:

- Security Background Clearances
- Protection of Information
- Security Officer Training
- Access Control & Security Search
- Patrol & Security Response
- Security Reporting
- Emergency Response
- Compensatory Measures and Defensive Strategy
- Program Oversight & Independent Audit

The program and instructions will be developed from pre-existing OPG Nuclear Security documentation incorporating requirements specific to NND site preparation activities including interface activities between OPG Nuclear Security and the EPC Co. contract security company. Where required, the program will evolve and new instruction documents will be created to provide direction exclusive to NND site preparation phase.



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**Chapter 6 References**

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<sup>1</sup> Ontario Power Generation NK054-CHAR-0001, DNNP Management System.

**Nuclear Refurbishment /  
Darlington New Nuclear - CNSC  
Correspondence Routing Sheet**

<b>ORIGINATOR: NUCLEAR REFURBISHMENT</b> <input type="checkbox"/>		<b>DARLINGTON NEW NUCLEAR</b> <input checked="" type="checkbox"/>	
<b>SECTION 1 – CORRESPONDENCE INFORMATION</b>			
Title: Darlington New Nuclear Project – Application for a Licence to Prepare Site		Date: 2009-09-04	
		CD #: NK054-CORR-00531-00035	
File #: NK054-00531 P		Due Date to CNSC: 2009-09-30	
AR#:		Due Date to DLA:	
Author (name & signature): A.Kintzi		Project #:	
SECURITY CLASSIFICATION (Reference: CIO-STD-CS-001, Classification, Protection and Release of Information). OPG CONFIDENTIAL <input type="checkbox"/> OPG PROPRIETARY <input type="checkbox"/> UNCLASSIFIED <input checked="" type="checkbox"/> <i>Note: For Security Protected correspondence use N-FORM-10909.</i>			
Purpose/Business Impact: Describe the costs and/or benefits resulting from the attached correspondence, if any. N/A <i>Note: This is defined by the author and its line management.</i>			
Regulatory Risk: Describe the regulatory benefits and/or risks (i.e., regulatory certainty, relationship and compliance), if any. Uncertainty around EPC Company and the timeline of the selection process Project approval could be deferred by one or more years Difficult to accurately assess risk until there is greater clarity in the vendor selection process <i>Note: This is defined by Licensing Support or Policy and Regulatory Affairs staff.</i>			
<b>SECTION 2 – AUTHOR'S ACTIONS:</b> (Reference: Licensing Desktop Task Guideline, Preparation of Level 1 CNSC Correspondence)			
(1) Prepare draft letter and attachments using CIO-STD-CS-005, OPG Correspondence Requirements.		<input checked="" type="checkbox"/>	
(2) Obtain a Controlled Document number using N-FORM-10027, Controlled Document Request. Attach a hard copy of the completed form.		<input checked="" type="checkbox"/>	
(3) Complete SECTIONS 3A, 4A and 5A, including signatures from the Additional Technical/Policy reviewers.		<input type="checkbox"/>	
(4) Submit to Licensing Support or Policy and Regulatory Affairs for review and approval (SECTIONS 3B, 4B and 5B). Include a hard copy of the cover letter of all referenced OPG/CNSC letters. Include enclosures/attachments, as applicable.		<input type="checkbox"/>	
<b>SECTION 3 – REVIEW REQUIREMENTS:</b> The following persons have reviewed and approved the above noted correspondence including regulatory actions <u>prior</u> to signature by the Authorized Representative (Senior VP):			
A)	TITLE & ACCOUNTABILITY:	NAME & SIGNATURE:	DATE:
	Section Manager	T. Walsh	
	Line Manager	L. Mitchell	
	Line Director	L. Swami	
	General Counsel	S. Berger	Sept 22/09
	Additional Technical/Policy Reviewers: (Note: Consider all Project Directors and Managers, and other stakeholders.)	<i>Comment provided in email to [redacted] plus separate envelope.</i>	
	Sr. Manager, Design Review, DNNP	D. Williams	
	Sr. Manager, Licensing	Allan Webster	