OPG New Nuclear at Darlington Environmental Assessment Project Overview

Town of Markham Council

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Ontario Power Generation New Nuclear at Darlington

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Environmental Assessment

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Public Consultation

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Federal Approvals - Status

Next Steps





Ontario Power Generation







- Owned by Province of Ontario
- Supplies 70% of Ontario's electricity
- Approx. 11,500 employees
- Over 22,000 MW of inservice capacity
 - 64 hydroelectric stations:
 6,982 MW
 - 10 nuclear units: 6,606 MW (29% of Ontario's electricity)
 - 5 fossil stations: 8,578 MW



The Project - Roles and Responsibilities

- The project is to construct and operate a new nuclear power plant at the existing Darlington site to meet the base-load electricity requirements of Ontario
- In June 2006 the Provincial Ministry of Energy directed OPG to begin the federal approvals process for new nuclear generation
- OPG is undertaking a federal environmental assessment & site preparation licence application for
 - up to to 4 nuclear units and up to 4,800 MW of electrical capacity for new nuclear at our Darlington site
- An EA must be completed before a licence can be issued
- A federally appointed joint review panel will review the EA and licence application
- In June 2008 it was confirmed that OPG will be the operator for the new nuclear units at the Darlington site



Darlington Site

Major Attributes of the Darlington Nuclear Site:

- Room to build
- Adjacent to a major transmission corridor and load centre
- History of support from host and Regional Municipalities
- Extensive operating experience at the site
- Proven track record in protecting the environment, worker and public safety
- Highly skilled workforce, many years of operating experience





Infrastructure Ontario is leading a competitive process to select a nuclear reactor vendor and technology to construct two units

- Three internationally recognized vendors participating in the process:
 - AREVA NP US Evolutionary Pressurized Reactor
 - Atomic Energy of Canada Limited ACR 1000 Advanced CANDU Reactor
 - Westinghouse Electric Company AP 1000 nuclear power plant
- December 2008: Deadline for Phase 2 Proposal Submission
- March 2009: Preferred Vendor Selected









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The Project – Principal Buildings & Structures

Principal Buildings

- Power Block
 - Reactor building
 - Turbine building
- Annex and Auxiliary Buildings
- Cooling System
- Switchyard including lines, circuit breakers and towers
- Used Fuel Storage Facilities
- Operations Waste Management Facility





The Project – An Example of the Model Plant Layout



Model Plant Layout 3



Elements in the Environmental Assessment



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ONTARIOPOWER GENERATION

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EA Study Areas/Spatial Boundaries



Site Study Area – existing Darlington site

Local Study Area ~ 10 km from the Project Site

> Most environmental effects within LSA

Regional Study Area ~ 50 Km from the Project site

- Largely socioeconomic effects
- Cumulative effects



Screening for Potential Project-Environment Interactions

Site Preparation & Construction Phase – Atmospheric

Potential Interaction

- Mobilization and Preparatory Works
- Excavation and Grading
- Marine and Shoreline Works
- Development of Ancillary Facilities
- Admin & Support Facilities
- Construction of Power Block

- Construction of Radioactive Waste Facilities
- Supply of Equipment, Material, Components
- Management of Waste, Hazmat, Fuels
- Workforce, Payroll and Purchasing

All of these activities have the potential to involve earthworks and/or vehicle emissions, and are therefore have the potential to interact with the Atmospheric Environment



Screening for Potential Project-Environment Interactions

Operation and Maintenance Phase - Atmospheric

No Interaction

- Operation of Reactor Core
- Operation of Primary Heat Transport system
- Operation of Active Ventilation System
- Operation of Fuel and Fuel Handling Systems

Potential Interaction

- Dry Storage of Used Fuel
 - Processing (paint, welding) and transportation related emissions
- Management of Conventional Waste
 - Transportation related emissions
- Administration, Payroll, Purchasing
 - Employee traffic emissions



Examples of Potential Mitigation Measures

Development of dust management plan for site preparation and construction.

- Assessment will be making assumptions for:
 - Watering frequency for dust control
 - Use of paved versus unpaved roads
 - Use of different aggregate grades for roads construction
 - Slope stabilization (e.g. hydro seeding)

Noise

- Ensure construction equipment is well maintained
- Alert local residents prior to blasting operations
- Establish on-site vehicle restrictions (i.e. tailgate banging during offloading)

Off-site dust / vehicle exhaust/ noise effects during site prep and construction phase

Potential for occasional excursions, routine monitoring





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Projects to Consider in Cumulative Effects

In the EA we look at other projects in the area (existing and planned) to determine if there will be any cumulative environmental effects. Some projects include:

- 407 Eastern Extension
- Region of Durham Energy From Waste Facility
- St. Marys Alternative Fuels Project
- Refurbishment of Darlington NGS
- Future 401 widening

We also look at studies and Plans:

- Growing Durham Study
- Durham Region Water and Wastewater Master Servicing Strategy
- Planning and development applications in Clarington and Oshawa







407 East Project

Informed Community

Community Kiosk at the Bowmanville Mall

Approximately 150 – 200 visitors/month

Employment (approx. 25%) :

- Opportunities would benefit the community
- Potential employment opportunities with OPG

Public consultation program (approx. 20%):

- The purpose of the community kiosk
- Importance and value of the kiosk to community

Timing of project events:

- When is decision about the site selected (7%)
- When would construction start and reactors be inservice (7%)
- When will a decision be made about the vendor, and which technology will it be (6%)

Spring 2008 Community Information Sessions

- Over 200 residents attended
- Report posted on our project web site www.opg.com/newbuild





Public Consultation Fall 2008

Community Information Sessions Round #4

- Bowmanville Tuesday, October 21
- **Port Hope** Wednesday, October 22
- Oshawa Thursday, October 23
- Newcastle Tuesday, October 28
- Lindsay Wednesday, October 29
- **Orono** Thursday, October 30
- Courtice Tuesday, November 4
- Ajax Thursday, November 6

We will be seeking comments/input on

- Mitigation measures to address potential effects of the project
- Cumulative effects between new nuclear and other community projects
- Criteria to assess significance of effects







Federal Approvals - Status

Canadian Environmental Assessment Agency

- Draft Environmental Impact Statement (EIS) Guidelines & Draft Panel Agreement and Terms of Reference released for public review
 - Comments due November 19 2008
 - Canadian Environmental Assessment Registry
 - Reference # 07-05-29525
 - <u>http://www.ceaa.gc.ca/050/viewer_e.cfm?cear_id=29525</u>
- Issues Final EIS Guidelines, Panel Agreement and Panel Terms of Reference

OPG

Submits EIS and Site Preparation Licence Application

Joint Review Panel

- Undertakes Public and Technical Review regarding adequacy
 - May request additional information from OPG
- Holds public hearing
- Issues Report to Federal Minister of the Environment

Federal Cabinet

- Responds to Joint Review Panel Report
- Determines Acceptability of EIS





OPG's Next Steps

Date	Activity	Status
Feb/March 2007	Pre-submission Consultation on Project Description	
April 2007	OPG submits EA Project Description to CNSC	
June 2007	Define Study Areas	\checkmark
Fall 2007	Public Consultation Round #2	
Fall 2007 – Summer 2008	Establish Environmental Baseline (environmental components; valued ecosystem components)	\checkmark
Spring 2008	Public Consultation Round #3	
Spring/Summer 2008	Determine Possible Project – Environment Interactions	\checkmark
Summer/Fall 2008	Identify Environmental Effects, Possible Mitigations, Determine Residual Effects	underway
Fall 2008	Public Consultation Round #4	underway
Fall/Winter 2008	Determine Significance of Residual Effects	underway
Fall/Winter 2008	Examine Effects of Environment on Project; Follow-up and Monitoring	
Spring 2009	Public Consultation Round #5	
2009	EIS and Site Preparation Licence Application Submission	





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