



Sent via email

October 16, 2019

Canadian Nuclear Safety Commission (CNSC)  
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RE: CNSC Decommissioning Draft REGDOC 2.11.2

Please accept the enclosed document as staff level comments from the Region of Durham on CNSC Decommissioning Draft REGDOC 2.11.2. Also attached for reference purposes, is a copy of the Region's June 2018 submission to the CNSC hearings for the relicensing of the Pickering Nuclear Generating Station.

We appreciate the opportunity to provide input on this proposed regulation which would have a very significant impact on the Region of Durham as the host community of two nuclear energy generating stations, Pickering and Darlington.

If you have any questions on this submission, please contact Sandra Austin, Director, Corporate Policy and Strategic Initiatives at 905-668-4113, ext. 2049 or via email [sandra.austin@durham.ca](mailto:sandra.austin@durham.ca).

Sincerely,

Original signed by

Elaine Baxter-Trahair  
Chief Administrative Officer

Enclosed: Region of Durham Comments on Canadian Nuclear Safety Commission  
(CNSC) Decommissioning Draft REGDOC 2.11.2

Attachment 1: Region of Durham's Submission to the Canadian Nuclear Safety  
Commission on the proposed relicensing of the Pickering Nuclear  
Generating Station from 2018 to 2028.

c: Mr. Andy Allison, CAO, Municipality of Clarington  
Mr. Tony Prevedel, CAO, City of Pickering

# Region of Durham Comments on the Canadian Nuclear Safety Commission (CNSC) Decommissioning Draft REGDOC 2.11.2

October 16, 2019

## Background

In July 2019, the CNSC released a draft regulatory document (REGDOC 2.11.2) for the decommissioning of nuclear facilities as part of the regulatory series on nuclear waste management. Comments regarding the impacts of this document, should it be approved, were requested by October 16, 2019.

## Durham Context

This draft regulation is significant for Durham Region since the Pickering Nuclear Generating Station (PNGS) is scheduled to cease operations in 2024. At that point, it is the Region's understanding that Ontario Power Generation's (OPG) plans to defuel and dewater the reactors and begin undertaking the steps required to place the plant in "safe storage" (2024-2028). OPG's Preliminary Decommissioning Plan (PDP) takes a "deferred decommissioning approach" under which the plant would be kept in safe storage mode for several decades (2028-2050) before it finally would be dismantled and demolished. A key premise of the PDP is that all used nuclear fuel waste must be removed from the site before dismantling can occur (estimated 2043-2054). Thus, the timeframe for dismantling and demolition likely will not begin until 2055 and will take until the early 2060s. Site restoration is to be completed by 2066 according to OPG's PDP. About the same time (estimated 2065), the Darlington station, now undergoing refurbishment, will be nearing the end of its operational period (as currently envisioned).

This means that Durham Region, its area municipalities and residents will be living with nuclear decommissioning processes for the next century. Thus, our communities and residents will be greatly affected by the comprehensiveness and effectiveness of the proposed regulatory document.

The CNSC held hearings in June 2018 to consider the relicensing of the PNGS from 2018 to 2028. At that hearing, the Region's submission (Attachment 1) anticipated the impacts expected to result from the plant closure and decommissioning process as outlined in OPG's preliminary decommissioning plan. We ask that you review pages 7-9 and 13-23 to understand more fully the uncertainties and expected impacts to the Regional community in which a large decommissioning project will shortly begin.

We also provide the comments below that relate specifically to the draft regulation.

## General Comments

The imminent closure of the PNGS and the subsequent stages of safe storage and decommissioning will have significant physical, fiscal, emergency response and socio-economic consequences for the surrounding urban community for the next half-century. These anticipated impacts are outlined in detail on pages 14 to 22 of Attachment 1. In Regional staff's view, the draft REGDOC is deficient in recognizing and planning for these consequences "beyond the fence line" of the nuclear facility.

The draft regulation is focused on safety and engineering challenges within the confines of the site. PNGS was built in a rural area in the 1970s but the adjacent environment has changed dramatically since then. The station is now in the midst of a growing urban community. However, beyond the need to prepare a consultation plan, the draft REGDOC contains almost no requirement of the licensee to plan for the potentially 50-year decommissioning process **with** the surrounding community. Further, there is no discussion of a process by which the community impacts of decommissioning of a large nuclear plant will be jointly managed or mitigated.

## No alternative consideration of community impacts

Despite the project size, complexity and timeframe of decommissioning, existing nuclear generation stations are not included in the new Impact Assessment Act (IA Act) Project List as requiring a full impact assessment. If the IA process had been applied to decommissioning, it would have demanded assessment and mitigation of community and socio-economic impacts. Since an IA is unlikely to be carried out for PNGS decommissioning, it is even more critical that the regulations and licensing processes for decommissioning take into account and plan for community impacts over the full decommissioning period.

The CNSC Environmental Assessment process has a very narrow scope. The offsite impacts it considers are largely limited to air and water quality, radiation exposure levels and emergency response plans. The CNSC suggested to the Region at the June 2018 hearing that socio-economic impacts are not their area of expertise and should be discussed with the operator outside the scope of the licensing hearing. While this is possible and has been pursued in the past, unfortunately, the regional municipality is not an equal partner in such a discussion. While OPG does consult with the Region, as a federally regulated provincial agency, it is largely exempt from municipal authority.

In section 4 (p.5), the draft regulation suggests that when determining the appropriate decommissioning strategy (i.e. prompt, deferred, in situ), the licensee "should consider" public and Indigenous engagement, potential impacts on Indigenous and or treaty rights and other political, social and economic considerations. OPG selected deferred

decommissioning as their strategy in the 1980s. We are not aware of engagement at that time that considered these factors.

“The decommissioning strategy should be reviewed and updated in light of changes in site conditions...with relevant consequences for decommissioning”. We agree that the PDP and subsequently, the Detailed Decommissioning Plan (DDP), should be reviewed and updated every five years. The growth of an urban community surrounding a facility should be a reason to regularly revisit the decommissioning strategy and revise the PDP and/or DDP for any nuclear generating station.

We also recommend that the REGDOC be much clearer in stating when the PDP must be transformed into the DDP.

### Content of the Decommissioning Plans

Section 5.1.1 states that the PDP should identify “any features of the surrounding natural and social environment that could be significantly affected by the decommissioning process”. This is a vital first step, but it needs to go further.

The definition of decommissioning is critical. From the community perspective, decommissioning begins with the end of commercial operations. This is when the ongoing changes that will affect the host community, such as the loss of direct and indirect jobs and shifts in property tax revenues, will begin.

The content of the PDP should be amended to include the need for all parties to study and understand how conditions in the surrounding community will be changed by the plant closure and subsequently at each stage of the decommissioning and create plans for mitigation. The licensee should be required to do this investigation and planning in partnership with the community. These steps should begin in advance of the plant closure. We recommend adding mechanisms for determining how community impacts will be monitored, measured and mitigated at each step.

Decommissioning is a long process. There should be formal mechanisms for ongoing dialogue and learning by the licensee and the Region and area municipalities throughout the process. This could include agreements to jointly study issues raised by the community, discuss findings and develop solutions. It would also involve freely sharing the information necessary for the affected municipalities to understand and plan for:

- changes in property tax assessment at the point of plant closure and during the decommissioning period,
- changes to emergency response planning,

- shifting employment patterns and loss of employee spending in the local economy,
- impact of the loss of corporate and employee donations on community organizations,
- timing of impacts on the transportation system from moving waste, used fuel, etc. and
- opportunities for new activities or progressive redevelopment at the site to mitigate economic impacts and stigma related to nuclear waste.

In Durham Region, land use, energy, transit and infrastructure planning, is being done for time horizons extending from 2030 to 2050 and beyond. To be effective, the Region needs to know what to expect, from the end of commercial operations to the ultimate repurposing of the site. For such a lengthy project to be successfully conducted in a busy urban area (i.e. with minimal disruption to the surrounding Region), both the licensee and regulator need to be attentive to the context in which decommissioning is occurring.

The REGDOC should require the licensee to outline in the PDP and DDP how they will partner with the host communities to mitigate impacts and tap into new opportunities related to decommissioning.

### Communication and Public Disclosure

Section 5.1.1. contains a requirement for the PDP to include a public consultation plan, including a public information program and avenues for public participation.

REGDOC 3.2.2 outlines the Communication and Disclosure protocols that guide licensees. It requires that “Each public information program and its disclosure protocol should be designed to address the information needs of its target audience.” “Target audiences shall include the general population of the local community and other communities impacted by the licensee’s nuclear facility...including key opinion and political leaders.” The protocol further suggests that the scope of communications to the public should be determined by first doing a survey to find out what the audience wants to know and then limits the resulting communication to activities being licensed.

Decommissioning is a long, complex and very technical process. Even though the licensees may post all technical documentation available on their website, this practice is not a substitute for building community understanding and interest.

The public will require education sessions (at the beginning and throughout) to understand the changes to operations and stages the site will go through. Then they can formulate questions requiring further response from the licensee. Working with the

host communities well would allow the licensee to take advantage of established communications and engagement tools to reach citizens.

We recommend that the communications goal for the decommissioning process be to have the best-informed public and host communities possible, by providing information in clear and accessible language and formats, well in advance of the activities to be undertaken, and in an ongoing way throughout the decommissioning process.

Providing opportunities to hear from the community is also critical. At the recent 4<sup>th</sup> Canadian Nuclear Waste and Decommissioning Conference in Ottawa, presenters from decommissioning projects at Chalk River and Whiteshell Labs pointed to the need and value of engaging the local community and getting their input on process, storage options, and desired outcomes.

During the same session, presentations by staff of Hydro Quebec and OPG regarding decommissioning plans for Gentilly 2 and PNGS indicated that in both cases little consideration has been given yet to community impacts as part of project planning. A presentation on a decommissioning roadmap by the CANDU Owners Group also did not include a work bundle related to community engagement. These presentations stood in contrast to the presentations by the Nuclear Waste Management Organization (NWMO) on the siting of deep geological repository (DGR) where working with the communities and hearing from them is seen as a core element of the process. It is a core element because they need to build trust and establish a social contract with the future host community to accept the waste.

It is recommended that the preliminary and detailed decommissioning plans for nuclear facilities specifically include a bundle of work to build community awareness of and engagement in the decommissioning process. This could be done through a “learn about” initiative similar to that conducted by the NWMO in potential Deep Geological Repository (DGR) host communities. This effort would provide a foundation for building community support of the decommissioning process. The regulators, the licensees and communities can work together to build a true partnership.

### **Lack of Timeframes**

The proposed regulation provides no timeframes by which certain deliverables can be expected. For example, the PDP is proposed to contain a commitment to prepare a DDP for CNSC acceptance “prior to dismantling and demolition”. No specific timing for demolition is included in the PGNS PDP. The trigger for the demolition step is removal of the used fuel waste from the site for which there is also no firm timeline. Clarification of the timing of major steps is key.

Several years ago, OPG engaged the community with the Repurposing Pickering exercise. This engagement focused mainly on potential uses after the site was fully restored rather than the decommissioning steps and timeline for getting there. The discussion at that time suggested that progressive reuse of parts of the PNGS site would be possible during decommissioning. If OPG plans to allow for progressive reuse of the site, this should be reflected in an updated PDP.

Timelines in the sections of the REGDOC on the detailed decommissioning plan, the safety assessment and the waste management plan should also be clearer and more precise.

### Definitions

The foundation for an effective REGDOC is a clear **definition** of decommissioning. The definition provided on p.18 of the draft is designed for the regulator. Describing the removal of some or all regulatory controls as a defining characteristic of decommissioning is not helpful to the average citizen.

The definition must be clear and understandable to the host communities and the public, as well as the regulator and licensees. Creating a shared understanding of the process and its phases is critical to building an effective partnership. Host communities need to know what is involved and required at each phase within the decommissioning process. When does it start – when the plant ceases commercial operation or later? Is the safe storage with surveillance phase part of decommissioning? When will full site restoration be achieved?

### Cost and Financial Guarantee

It would also help build community confidence to know that funds have been set aside for the decommissioning process and how they are being protected for future use. Explaining how the funds will be applied, by time period and major activity would demonstrate that there is a budget and an achievable plan. For example, how much will be allocated during the dismantling phase for engineering, skilled labour, equipment, disposal and treatment of hazardous wastes, security, etc.? How much is demolition, disposal of the low and intermediate level waste, and site restoration to the final state expected to cost? This would highlight both the activities and the notion that enough funding has been set aside. This kind of information might also support the development of supply chain companies to support the future activity.

### Uncertainty

The current PDP is written as if few uncertainties exist. However, based on the decommissioning experiences at the Chalk River and Whiteshell labs, dismantling a nuclear facility designed, built and used decades ago when safety standards had not



evolved to today's standards, is fraught with uncertainty. These projects require constant innovation by the decommissioning crews to develop solutions for dismantling safely and with a view to minimizing nuclear waste.

A key uncertainty from the Region's perspective is the notion that a decommissioning plan for a large nuclear generating station can be premised on the future existence of a storage facility – a facility for which a site has been selected or any approval given. The timely completion of Canada's used fuel DGR is a risky bet at this time. Given this uncertainty, the licensee should state how the waste will be managed if a DGR is not available so that the host community and public is aware of this potential outcome.

## Section Specific Comments

### 6.1 Storage with Surveillance plan

Host communities should be engaged in the discussion on the preferred strategy for decommissioning. "Storage with surveillance" is not the strategy recommended by the IAEA. The impact of deferred decommissioning on the community should be a factor in this decision as they may live with the impact for decades. The rationale for this approach must take into account community impacts, costs and wellbeing.

This section raises the possibility that the DDP may not be completed for decades because the storage with surveillance plan can be submitted as a stand-alone document for licensing of that stage. This "just in time approach" should not be permitted for a large nuclear generating station due to the uncertainty for the surrounding community. A DDP that outlines the overall framework and expected timing should be prepared before the storage with surveillance phase begins. Additional detail should be added to the DDP at every five-year review.

The lengthy safe storage period envisioned by OPG at PNGS could mean the loss of economic benefits and revenue generating uses of this site for 30 years or more. Where deferred decommissioning is selected by a licensee (rather than prompt decommissioning), the PDP/DDP should include mitigation measures, such as compensation, for the communities for hosting nuclear waste until it can be permanently relocated.

### 6.2 Detailed Decommissioning Plan (DDP)

The only timing mentioned for submission of the DDP is "prior to executing decommissioning activities." Since the storage with surveillance plan can be submitted separately it appears that the safe storage phase is not considered to be part of decommissioning. This is not consistent with what is currently outlined in the PNGS PDP.

As mentioned earlier the definition of decommissioning and the timing needs to be clear to the host community and the public in general. A five-year review cycle is supported since institutional memory related to a facility may be lost with a longer review cycle, both within the community and within the licensee's organization.

We recommend that one of the planning envelopes in the decommissioning plan should outline activities that will support ongoing, meaningful community engagement including:

- partnership with the host community/municipal government/indigenous community,
- community awareness, well being and engagement,
- sharing of information about the PDP and DDP well in advance with the host communities,
- intergenerational knowledge transfer,
- characterization of potential fiscal and socio-economic effects and environmental impacts,
- development of impact mitigation strategies and
- discussion about the desired end-state and use of the property, post decommissioning.

The regulations should ensure that open dialogue among the regulator, licensee and host communities continues throughout the decommissioning process. The host community cannot avoid the decommissioning process or ask for it to occur elsewhere, so their needs and concerns must be dealt with in good faith.

In this regard, the bullet on p. 11 stating that the content of the DDP should include “a summary report of any public and Indigenous consultations undertaken in preparing the plan, including issues raised and how they were considered and dispositioned” is insufficient. This implies that no further dialogue with the affected community is required but there is no recourse for the community if they aren't satisfied with the disposition.

Even where a current nuclear operator has a strong relationship with the host communities, it cannot be assumed that this ownership arrangement or the co-operative relationship continues indefinitely. Proper community engagement, whether with municipalities or Indigenous communities, cannot be left at the discretion or good will of whoever owns the facility in future. It must be mandated to protect the host community.

### **6.3 Safety Assessment for Decommissioning**

The safety assessment section is an example of planning premised on the continuation of the current (or improving) regulatory regime. It assumes that the political support and

financial means necessary to support a strong safety regime will continue to be available, enabling Canada to maintain the strict regulatory structure and high standard of oversight we have today.

In the past few decades in Canada, we have seen significant shifts in political direction, a severe economic recession and related austerity measures, regulations rolled back as “red tape”, and the sale of public infrastructure. Changes like these, alone or in combination, over time, could result in a deterioration of the institutional measures, funding mechanisms and knowledge base required to complete decommissioning. Planning for a less reliable regulatory future may be warranted.

#### 6.4 Waste management plan

The decommissioning and dismantling experiences at Chalk River and Whiteshell Labs revealed undocumented waste and contamination issues such as the amount of asbestos and lead used in the older buildings on their sites.

Waiting (potentially) decades to develop the waste management plan for a nuclear facility risks the loss of expertise about the facility that is available in current staff. While technology available for dismantling and packaging waste may improve over time, the best time to characterize the type and quantity of waste material that will be generated in taking the facility apart may be in the immediate future.

These are matters of concern to the nearby urban community and the labour force that will be engaged in decommissioning.

While the waste management plan will undoubtedly be very technical, there should be provision for making the public and host communities aware of it in plain language. Key aspects to include could be timing of facility dismantling, volumes of material expected to be produced, planned time and location for disposition for that material.

As noted in Attachment 1 (p.16, 21, and 22), the Region and local municipality will need to understand impacts of employee movement and the timing and volume of waste haulage on regional and local roads. The Region will need to be consulted on any airborne or waterborne emissions from the waste being generated that could affect water quality at its Lake Ontario water supply intakes. Regional and local municipal emergency responders will need to participate in planning for transfer of waste materials offsite.

Managing, maintaining and moving waste on and away from that site must be done in a scientifically responsible way, but also in a socially acceptable way. Developing agreements with host communities to ensure their wellbeing during this activity should be a component of the waste management plan.

## 8. Completion of Decommissioning

This section speaks to the licensee demonstrating that the end-state criteria specified in the DDP have been met in a way acceptable to the CNSC. The end-state also should be acceptable to the community. The public should be fully involved in developing the end-state vision and criteria for establishing that it has been achieved.

As a form of community accountability, the interim end-state reports should be publicly accessible and presented, with an opportunity for local elected officials and citizens to ask questions and be responded to by the licensee. These reports would also be an opportunity as time goes on to confirm that end-state envisioned in the DDP is still viable and aligned with the shared licensee/community vision.

## 9. Post-decommissioning

Institutional controls (such as land use constraints, monitoring and surveillance) may continue after the end state has been achieved. During the discussion of the DDP, the host communities need to be aware of the extent and longevity of any limitations that will be imposed on the site. There must be a plan for intergenerational knowledge transfer within the general population about these limitations for example through land use planning, storytelling, historical exhibits, and school curricula. Multiple mechanisms are needed to avoid reliance on a single institutional measure that could fail or disappear.

## 10.0 Radiological and Hazardous Surveys

We support the approach proposed in this section. We suggest that pre-surveys of the surrounding area also need to include transportation routes to be used for removal of waste once the routes are established. Post-surveys also should include the transportation routes used.



May 7, 2018

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**RE: Request to Intervene**

Dear Ms. Levert,

We understand that a Public Hearing Part 2 on matters related to the proposed relicensing of the Pickering Nuclear Generating Station (PNGS) will be held from June 26 to 28, 2018 in Courtice, Ontario. In accordance with a resolution from Durham Regional Council, the Region of Durham provides the following written submission. We also request to make an oral submission during the hearing.

Please find attached our formal written submission including the resolution from Durham Regional Council, passed April 11, 2018. We appreciate the opportunity to participate.

Yours truly,

A handwritten signature in black ink, appearing to read 'Garry H. Cubitt', written in a cursive style.

G.H. Cubitt, MSW  
Chief Administrative Officer

cc: Mr. Glenn Jager, President OPG Nuclear and Chief Nuclear Officer, Ontario Power Generation  
Ms. Laurie Swami, President and CEO, Nuclear Waste Management Organization  
Mayor David Ryan, City of Pickering  
Mayor Adrian Foster, President, Canadian Association of Nuclear Host Communities

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**Submission from the Regional Municipality of Durham regarding  
the application of Ontario Power Generation (OPG) to renew the Power Reactor  
Operating Licence for the Pickering Nuclear Generating Station (PNGS) from  
September 1, 2018 to August 31, 2028.**

**May 7, 2018**

**With respect to the Part 2 Hearing, June 26 to 28, 2018 in Courtice, Ontario.**

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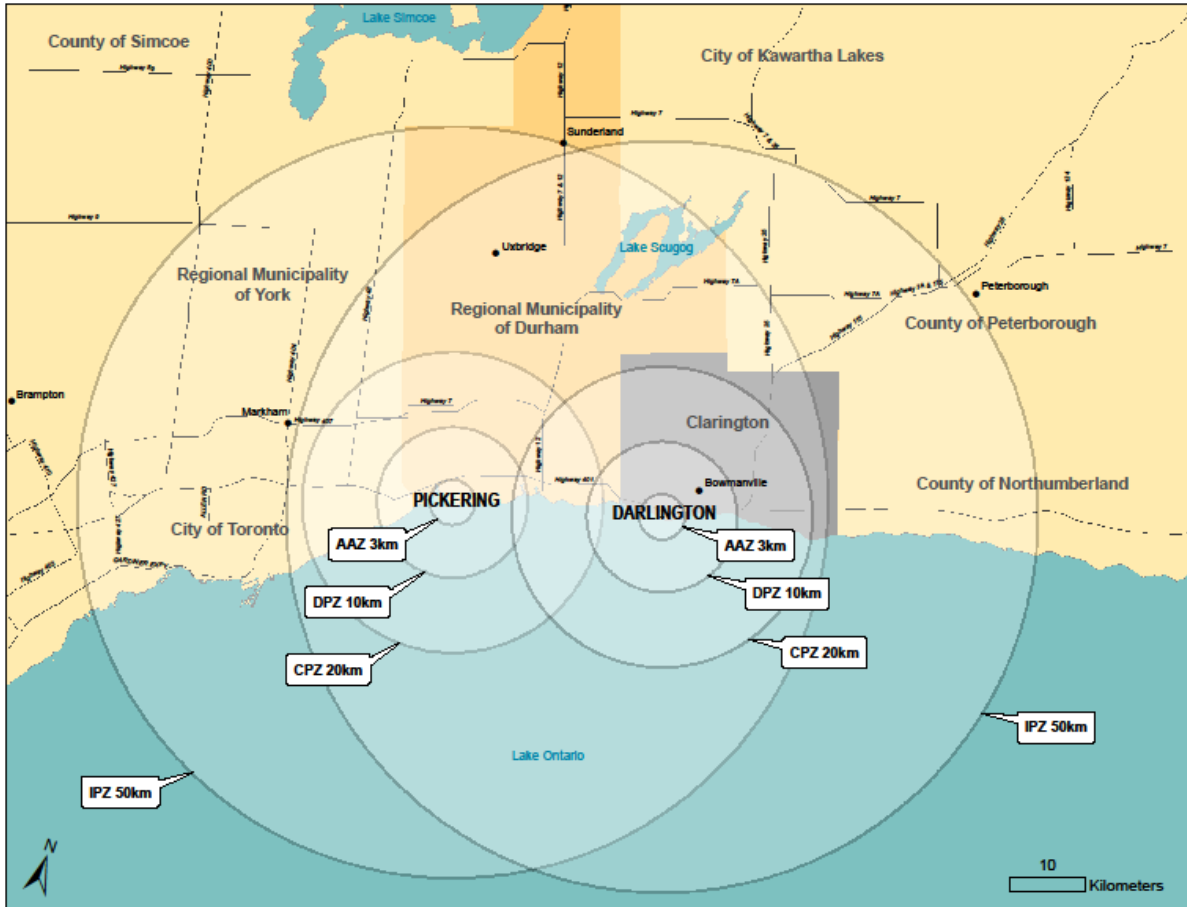
## 1 Introduction:

The Regional Municipality of Durham is an upper tier government in Ontario's system of two-tier municipal government. The upper tier is the regional level, which operates at a broader scale to provide planning, servicing and financing for Region-wide services including policing, ambulance, emergency management, public health, land use planning, and water and waste water services. For a more extensive list of Regional legislated responsibilities see Appendix A.

In Durham Region, eight area municipalities comprise the lower tier (see map below). The City of Pickering is one of the area municipalities. They operate at a more local scale, handling services such as detailed local planning, fire protection, tax collection and parks and recreation.



The map following map shows the location of the Pickering and Darlington Nuclear Generating Stations within our Region and the extent of the associated nuclear protection zones within Durham and beyond.



Durham Region is unique in Ontario as the host community for two nuclear generating stations located within urban environments. As its host community, Durham Region has a substantial interest in the continued safe operation of the Pickering Nuclear Generating Station (PNGS). With 2,700 employees, this station is a major employer in the Region, in total providing about 4,500 direct and indirect high-skill, well-paid jobs for our residents. The proposed extended operation until 2024 will provide the benefit of maintaining these jobs. For this reason, the Region of Durham supports the continued operation of the Pickering Station.

Another key benefit of PNGS's ongoing operation is its significant contribution to Ontario's 99% carbon emissions-free electricity supply. As a leader in municipal efforts to address climate change, the Region knows that this clean electricity supply will enable our community to pursue a strategy of electrifying space heating and transportation to help meet Durham's GHG emission targets.

The chief beneficiary of continued operation of PNGS is the Province of Ontario by:

- ensuring a reliable power supply and avoided electricity replacement costs of \$600 million during refurbishment of other facilities;
- continuing the payment of personal and corporate income taxes from the employees and related economic activity in the nuclear supply chain, about 95 per cent of which is located in Ontario; and
- continuing the payment of proxy property taxes to help relieve the stranded debt.

## 2 Strong Region/OPG Partnership Continues

Construction of PNGS began in the late 1960's and the first four reactors began operating in 1971 before the Regional Municipality of Durham existed. The station, and all the complex regulatory mechanisms pertaining to it, were part of the inherited landscape of the Region. Over the years, the Region has worked closely with Ontario Power Generation (OPG), especially on emergency management, and continues to view OPG as a community partner. The Region is keenly aware of the responsibilities that come with being a host community for the Pickering plant.

Since its inception, the Region has been a strong supporter of the operations at the two nuclear generating stations in Durham. This support has been expressed to the CNSC through various Regional Council resolutions and Regional submissions.

The partnership and cooperation between OPG and Durham Region is maintained through a variety of mechanisms.

### 2.1 Communications

There is considerable effort on both sides to sustain a healthy dialogue:

- Periodic OPG presentations to Regional Council
- Regular Durham Nuclear Health Committee (DNHC) meetings chaired by the Region's Commissioner and Medical Officer of Health
- Issue-specific meetings with Regional staff and/or the Regional Chair
- Staff-to-staff meetings on specific issues such as emergency exercises
- Regional staff attendance at OPG stakeholder meetings and public information centres
- Regional participation in the Pickering Advisory Committee
- Regional participation in the Repurposing Pickering exercise

#### 2.1.1 Durham Nuclear Health Committee

Since 1995, OPG has funded and provided technical assistance to the Durham Nuclear Health Committee (DNHC). It is chaired by the Region's Commissioner & Medical Officer of Health. Membership of the DNHC consists of nine public members from

Whitby, Oshawa, Ajax, Clarington and Pickering, who are appointed by Council; two representatives of OPG; and four provincial/regional government representatives. The DNHC acts primarily as a forum for discussing and addressing radiological emissions from nuclear facilities in Durham Region to assess the potential environmental human health impacts. The DNHC meets five times a year and regularly receives presentations from OPG staff updating the committee on environmental monitoring results at PNGS.

## 2.2 Emergency Management

### 2.2.1 Durham Emergency Management Office (DEMO)

For decades, the Region's Emergency Management Office has played a coordinating role in the community in planning and executing the Region's offsite response to a nuclear emergency at PNGS or DNGS. This activity is directed through the Provincial Nuclear Emergency Response Plan (PNERP) and partially supported by funding from OPG under the terms of a Memoranda of Understanding (MOU) with the Region.

DEMO has partnered with OPG and local emergency services in ensuring that appropriate planning, practice and coordination are in place to respond to a nuclear incident affecting the Durham community.

As an example, in December 2017, the Region participated in the OPG led Exercise Unified Control which simulated a nuclear emergency at the Pickering Nuclear Generating Station. The purpose of the exercise was to test the preparedness of OPG, the Region and the many other partners to respond. The exercise was designed to test the interoperability between organizations, communication during decision making, and the coordination and effectiveness in delivering information to the public and media.

When a nuclear exercise is conducted in accordance with Provincial legislation and CNSC regulations, hundreds of Regional staff from police, paramedic, transit, social services and most other Regional departments are involved. While OPG has helped fund that effort, it is a significant responsibility for Durham Region to ensure training of Regional staff and community partners, availability of physical facilities, current technology and communications capacity to support these efforts. This obligation relates not only to the Pickering NGS but also to the Darlington NGS.

Consequently, the Region has developed a high level of expertise in nuclear emergency preparedness. Maintaining training levels and corporate memory will be an ongoing challenge for the Region to due to upcoming retirements combined with normal staff turnover. In addition, as our population grows, and the legislated requirements related to community safety increase, meeting the needs to communicate, practice, and constantly update our emergency plans has become an escalating demand.

### 2.2.2 Potassium Iodide (KI) Pill Distribution Program

A significant example of a strengthened regulatory requirement is the expanded program for the distribution of Potassium Iodide (KI) pills in the 10 km zone. This was a post-Fukushima requirement from the CNSC which was much appreciated by the Region.

For more than 20 years the Durham Region Health Department (DRHD) pre-distributed KI to specific vulnerable populations e.g. schools, child care centres, health care and long-term-care facilities located in the primary zones and emergency service providers and others. Residents living in the primary zones could also obtain KI through several pharmacies located in the primary zones (10 km).

During 2014 and 2015, DRHD in partnership with OPG, designed and implemented a campaign with full community consultation to meet the requirements of the CNSC REGDOC 2.10.1 regarding the pre-distribution of KI. In late 2015, DRHD and OPG launched a campaign to distribute KI pills to over 200,000 homes and businesses within a 10-kilometre radius (Detailed Planning Zone) of Pickering and Darlington nuclear generating stations. In addition, KI pills were made available upon request to anyone living or working in the Ingestion Planning Zone (50 km). OPG fully funds this program through an MOU with DRHD. DRHD continues to promote this initiative to ensure that anyone new to the area is aware of the availability of KI tablets for their residence or business, and also to encourage existing area residents and businesses to confirm that they have their supply of KI tablets.

Various mechanisms have been employed to ensure that the public is aware of the KI pill program. Residents and business owners can confirm if they are located within the 10-kilometre Detailed Planning Zone by visiting [preparetobesafe.ca](http://preparetobesafe.ca) and entering their postal code in the required field. The website will show their proximity to each nuclear generating station. KI tablets are also available free of charge to residents living within 50-kilometres of either generating station on the [preparetobesafe.ca](http://preparetobesafe.ca) website.

In September 2017, DRHD launched a video to promote the availability of potassium iodide (KI) tablets for new residents and businesses located near the Region's nuclear generating stations in Pickering and Darlington.

In the fall of 2016, PNGS participated in an Operational Safety Review Team (OSART) mission. As part of the mission, the team of experts from the International Atomic Energy Agency that reviewed PNGS, identified the KI distribution program as a "good practice" (IAEA, p.48) which they define as "an outstanding and proven performance...markedly superior to that observed elsewhere, not just the fulfillment of current requirements..." (IAEA) p.82.

### 2.2.3 Policing

The Durham Region Police Service (DRPS) has historically had an excellent working relationship with both the Emergency Preparedness and Security program and Emergency Services (SES) Unit within OPG. The DRPS and OPG have an MOU for Off-Site Response that provides the framework for police response to high risk incidents as outlined in the agreement.

To maintain a strong working relationship, DRPS continually participated in security and emergency services training and exercise activities as stakeholders in OPG's Emergency Management Program. This includes natural, technological and human-induced (criminal) emergencies or disasters. In 2017, along with other Durham Region departments, DRPS was highly engaged in the planning and participation in exercise "Unified Control" hosted by OPG. The DRPS also participates in annual "Force on Force" security exercises and training opportunities in the roles of participant, observer and evaluator.

Both DRPS and OPG are engaged stakeholders in evacuation planning. DRPS currently maintains evacuation plans for the Pickering and Darlington NGS sites.

The advancement and adoption of the Next/Gen radio system to create integrated, seamless and interoperable communications with Durham Region first responders is an excellent example of a valuable partnership between the Region and OPG. The radio system was completed in 2017 and supports fully integrated communications that adheres to the five lanes of communications interoperability as outlined by Public Safety Canada:

- Governance
- Standard operating procedures
- Technology
- Training
- Usage

Training and usage includes the integrated major incident response training and procedures for major events that have been integrated into our response model.

The OPG portable radios users (Security and Emergency Services and Emergency Response Team) at both the Pickering NGS and Darlington NGS are considered to be normal high priority users on the NextGen Radio / HARRIS system along with all of the other public safety users – police and fire – in the Region.

Because the radio system views OPG users like any other user of the system, no "integration" is required. Interoperability is a given and as simple as the responding parties to operationally change channels to a common channel i.e. create a Talk Group.



This is part of the Standard Operating Procedure for both parties. It is also possible for Pickering OPG teams to communicate directly with Darlington OPG teams if required.

In the case of infrastructure components installed at both facilities to provide the required on-site radio coverage - these radio towers are connected – via dedicated and redundant microwave links - and managed by the fully redundant NextGen / HARRIS core computer.

These radio towers – three at each facility – and links are monitored 24/7 and considered by all involved to be an integral part of the overall NextGen system. These components enable not only on-site coverage for OPG portable radio units but also for arriving first responders. Testing of the system has proven that it works extremely well.

### 3 Durham Regional Council Seeks Renewed Partnerships and Support

In April 2018, Durham Regional Council heard presentations from both Ontario's Office of the Fire Marshal and Emergency Management (OFMEM) and OPG. The presentation by OFMEM outlined for Council the revision of the PNERP. OPG's presentation provided updates on refurbishment of the Darlington Nuclear Generating Station (DNLS) and the proposal to extend the operation of DNLS to 2024. These initiatives have renewed Council's discussion about the impacts of OPG's ongoing nuclear operations in our Region.

On April 11, 2018, Durham Regional Council passed the following resolution:

**Information Report #2018-INFO-41: Provincial Nuclear Emergency Response Plan (PNERP) – Update**

Moved by Councillor Jordan, seconded by Councillor Drumm,

That we recommend to Council:

Be it resolved that Durham Regional staff be mandated to make a submission to the Canadian Nuclear Safety Commission (CNSC) regarding Ontario Power Generation's (OPG) application for a ten-year licence for the Pickering nuclear station;

That in the submission staff highlight Durham Region's ongoing support for transparency, public consultation, strengthening emergency preparedness wherever feasible, protection of vulnerable communities, and world-class public safety as outlined in motions passed by council in 2014, 2015 and 2017;



That the submission commend and thank the CNSC for its issuance of strengthened potassium iodide (KI) distribution requirements in 2014;

That the submission encourage the CNSC to ensure the province implements its updated Provincial Nuclear Emergency Response Plan (PNERP) in a timely, transparent and accountable manner;

That the submission request the CNSC encourage the province to release the technical assessment it has commissioned to identify whether evacuation zones or KI distribution distances should be expanded;

That the submission reiterate Durham Region's request for funding to be made available to address any additional planning, public education and implementation costs related to the new requirements included in the 2017 PNERP or related implementation plans;

That Durham Region requests the CNSC include a licence requirement obligating OPG or the government of Ontario to provide appropriate funding to Durham Region for the implementation of the 2017 PNERP or related implementation plans;

That Durham Region be compensated for the storage of nuclear waste until such time as nuclear waste is stored in a permanent nuclear waste site and compensation is then provided for the permanent waste storage host community;

And finally, be it further resolved:

That Durham Region requests OPG prepare and publish plans on how it will mitigate negative impacts of the station's retirement, including transition plans for affected workers, in advance of the stations' closure.

OPG has prepared a strategy for the End of Commercial Operation and a Preliminary Decommissioning Plan. The CNSC has outlined a series of conditions to be met for approval of the relicensing of PNGS. These include monitoring and milestone reporting on key technical criteria as well as development of a sustainable operations plan and a stabilization activity plan. OPG must give the CNSC notice by December 31, 2022 of any request to operate beyond December 2024. The CNSC requires that the

decommissioning plan be progressively updated every five years over the life cycle of the facility, with increasing levels of detail.

While the Region is confident that OPG will take all measures needed for continued safe operation of the PNGS to 2024 in accordance with CNSC regulations, the plans for and impacts of the period after PNGS operations cease raise some questions for the Region of Durham.

The Region's submission will address the following general areas:

- Emergency management/PNERP impacts
- Financial and property tax impacts
- Employment and socio-economic impacts
- Economic development and beneficial reuse
- Nuclear waste management impacts
- Dust, noise, toxins and non-nuclear waste
- Transportation impacts

The comments address two distinctly different phases of the future of the PNGS: the continued operations phase until 2024, and the decommissioning phase after commercial operations end. As highlighted in the Council motion, Durham Region's ongoing support for the nuclear facilities in the Region will be built on fairness, transparency, public consultation, strengthening of emergency preparedness, protection of vulnerable communities and world class public safety.

## 4 PNGS Continued Operations Phase to 2024

During this phase there are three areas of concern for the Region:

- Ongoing and expanded obligations related to the PNERP
- Socio-economic impacts related to unfair property taxation
- The increasing, indefinite storage of nuclear waste

### 4.1 Emergency Management: Provincial Nuclear Emergency Response Plan (PNERP)

The Region welcomed the release of the updated PNERP in December of 2017. Durham actively participated in the consultations that led to the new plan and made 16 recommendations identifying gaps that we felt needed to be covered by the plan. These recommendations, which were endorsed by Durham Regional Council in Report 2017-COW-137, sought additional studies, greater clarity from the Province on standards and roles, updated and harmonized requirements, and funding to support the Region's ongoing capacity to implement the PNERP. Of these recommendations, three were included in the final PNERP relating to transparency, the need to study impacts of a

nuclear accident on the Great Lakes, and the need for a clear focus and process for evacuation planning in the new emergency planning zones.

Of the Regional recommendations that were not addressed in the PNERP, three related to the need for increased funding from the Province and CNSC to support additional planning and operational costs related to the expanded planning zones beyond the 10 km radius. This may include the need for a new primary standalone Regional Emergency Operations Centre outside the 20 km Contingency Planning Zone.

Other potential resourcing needs relate to study of dose control standards and protective actions for staff, expanded distribution of KI pills beyond the 10 km zone and the need for the Province to regularly update designated and impacted municipalities on the process of revising the PNERP.

As shown in the last two nuclear emergency exercises, (Unified Response 2014 and Unified Control 2017) emergency communications capability and coordination is an increasingly important aspect of the response. The growing use of internet and social media channels and new tools like the Alert Ready wireless alerting system will be effective in reaching the public wherever they are via mobile devices. However, with the changes to the PNERP, the Region will need sufficient staff and technology resources to continue to ensure that accurate, coordinated and timely messaging is delivered to our growing urban community.

With the release of the new PNERP in December 2017, the evacuation plans maintained by DRPS for the PNGS and DNGS sites will need to be reviewed to ensure alignment with the revised PNERP requirements. The DRPS and OPG are active participants in the Evacuation Transportation Subcommittee being led by the Ontario Ministry of Transportation. The subcommittee exists under the larger Nuclear Emergency Management Coordinating Committee.

Of particular note, in the 2017 PNERP is the introduction of a new Contingency Planning Zone (CPZ) out to 20 km. The response expectations of the Region in this new zone will require detailed planning in order to meet the requirements assigned to designated municipalities in the PNERP. This should not be underestimated. The Region will need sufficient emergency management staff, over and above the current complement to conduct the necessary planning in an area of the Region that is largely rural with limited resources and facilities - it will require a significant investment to extend the response capability into the CPZ.

The introduction of the new CPZ out to 20 km has also served to put increased pressure on the Region's Business Continuity planning strategy, since the new zone effectively eliminates all existing operations centres, reception and evacuation centres, traffic

management centre, Regional Headquarters, as well as most of the identified alternates.

The Provincial Implementing Plan for Pickering was released on May 1, 2018 and is intended to contain greater detail in terms of designated municipal requirements. In addition, the Province is in the process of commissioning a technical study which will, among other things, indicate whether there is a need to modify the planning zones as well as the KI distribution strategy as outlined in the 2017 version of the PNERP.

We note that CNSC REGDOC 2.10.1 will need to be updated to reflect new terminology in the PNERP with respect to names of the new zones, in particular for the pre-distribution of KI.

**As conditions of relicensing PNGS, the CNSC should include the following requirements:**

- **Provincial action to ensure the timely, transparent and accountable implementation of the updated PNERP;**
- **completion and release by the Province of the additional technical assessment study it is commissioning to identify whether evacuation zones or KI distribution distances should be expanded; and**
- **an obligation for the Province and/or OPG to provide funding to the Region of Durham to support implementation of the 2017 PNERP and the related Pickering Implementation Plan.**

#### 4.2 Socio-economic Impacts: Property Taxation

Durham's inherited landscape of nuclear facilities includes a property tax regime that was imposed by the Province of Ontario through the *Assessment Act R.S.O. 1990* and the *Electricity Act 1998*. Regional efforts to assess the actual impact of this regime have proved challenging based on the limited property assessment information available to the Region and as such significant assumptions have been made in the following analysis.

Like other non-residential properties, payments in lieu of taxes (PILs) for non-generating buildings, facilities and all lands (excluding the water intake and discharge facilities which are determined under Ont. Reg. 574/06) are set out based on the current value assessment (CVA) assigned by the Municipal Property Assessment Corporation (MPAC) multiplied by the applicable local municipal, regional and provincial education property tax rate. Note the commercial and industrial provincial education PIL is retained by the local municipality.

CVA value (reassessed every 4 years) X applicable tax rate = PILs on non-generating assets

For generating buildings and facilities, in accordance with the *Assessment Act*, the PILs paid to the municipalities are calculated by multiplying the rate of \$86.11 per square metre (unchanged since 1968) by the inside ground floor area of the generating and transformer station buildings times the regional, local municipal and education tax rate for the applicable property tax class (i.e. large industrial for the generating component). Note the commercial and industrial provincial education PIL is retained by the area municipality.

$$\$86.11/m^2 \times \text{gross floor area} \times \text{applicable tax rate} = \text{PILs on generating assets}$$

The assessed value for other non-residential properties is reassessed on a four-year cycle to ensure the CVA reflects current market conditions. For the generating buildings and facilities, the rate of \$86.11 has not increased since 1968 and as a result the PILS paid on the generating buildings and facilities have eroded relative to other non-residential properties. Estimating the amount of foregone revenue with respect to the frozen rate of \$86.11 is difficult as it is not a flat fee but rather a set assessment used in a property tax calculation. As a proxy, if the \$86.11 rate was indexed annually by CPI, the rate would have increased by almost 700 percent since 1968. This represents an annual shortfall of approximately \$3.5 million in the 2018 PILs paid to the Region and area municipalities for PNGS and DNGS in total.

In addition to the PIL amount paid to the Region and area municipality for the generating buildings and facilities, OPG makes a proxy property tax payment to the Minister of Finance through the Ontario Electricity Financial Corporation (OEFC). This redirection of property taxes from the municipal sector to the Province is significant and is to be applied against the stranded debt of the former Ontario Hydro. The methodology for the proxy property tax payment is described within the *Electricity Act, 1998* and Ontario Reg. 423/11.

OPG also benefits from development charge exemptions for production facilities located in the defined protected areas as they are under federal jurisdiction.

The longer the nuclear plants operate in Durham Region, the greater the cumulative impact of these unfair practices. Durham Region has annually raised this issue of property tax fairness with the Minister of Finance for many years, most recently in Report 2018-COW-32, with no response.

**To strengthen community support for the extended operation of PNGS, the CNSC should direct OPG to seek from the Province the changes necessary to ensure that a fair and equitable level of property tax on the generating assets at PNGS and DNGS is paid to the Region and area municipalities in support of the Durham community.**

The Province could achieve this by:

- Updating the Nuclear Generating Facilities statutory rate and institute a process whereby the rate is indexed annually; and
- Redirecting the proxy property tax payment currently paid to the Province through the OEFC to the area municipalities and the Region.

#### 4.3 Nuclear Waste Management

As of June 2017, there were 736,800 used nuclear fuel bundles stored at the PNGS site. By the proposed end of operations in December 2024, this will increase to about 781,000 used fuel bundles.

Regional Council's opposition to the long-term storage of nuclear waste in Durham was stated in 2010 and reiterated in 2015<sup>1</sup>. Regional Council's April 11, 2018 motion includes a call for Durham Region to "be compensated for the storage of nuclear waste until such time as nuclear waste is stored in a permanent nuclear waste site and compensation is then provided for the permanent waste storage host community".

Other communities in Ontario are receiving payments and/or benefits for hosting (or offering to eventually host) nuclear waste through Community Benefits Agreements:

- Port Hope and Clarington are being compensated through an agreement under the Port Hope Area Initiative
- Kincardine and four adjacent communities have received annual payments since 2005 under a hosting agreement with OPG related to the proposed deep geological repository for low and intermediate level waste – a project which still has no approval to proceed
- The Nuclear Waste Management Organization (NWMO) has paid numerous communities grants for communications and health and well-being initiatives just for consideration of becoming a host community

No parallel recognition of the hosting commitment and burden has been extended to Durham Region, the current home of more than half of Ontario's used nuclear fuel waste. With refurbishment at DNGS and the prospect of ongoing operations at PNGS, additional waste storage facilities are being added at both locations to handle both L&ILW and used fuel waste.

As the current and indefinite future host community of all the used nuclear fuel waste, refurbishment waste and decommissioning waste generated from PNGS and DNGS,

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<sup>1</sup> See Report 2010-J-29 and Report 2015-J-21.

the Region of Durham seeks to be treated fairly and with respect by OPG in keeping with communities such as Kincardine:

“OPG is committed to ongoing, meaningful engagement and dialogue with municipal and Indigenous communities regarding the DGR and OPG’s nuclear waste management operations.”<sup>2</sup>

**To recognize the Region’s commitment and increase community support for the PNGS licence renewal, the CNSC should impose conditions requiring:**

- **non-regulatory mitigation of socio-economic impacts consistent with those described in the EA for the Kincardine DGR, and**
- **that OPG enter into a community benefits agreement with Durham Region as part of the effort to mitigate the impacts of ongoing nuclear waste storage in the Region.**

## 5 PNGS Decommissioning Phases

### 5.1 Background

The application for relicensing of the plant for a 10-year period will carry OPG through the extended years of operation and into the early stages of their decommissioning plan including preparing the reactors for safe storage. According to the CNSC website “under a normal operating licence, the operator can place the nuclear facility in safe storage...as an initial step to decommissioning”.<sup>3</sup> Units 2 and 3 of Pickering A are already in safe storage. An operator would make a separate application to the CNSC for a licence to decommission which may require completion of an environmental assessment (EA) process. This license application includes OPG’s Preliminary Decommissioning Plan (PDP).

The PDP is of great interest to the Region of Durham as it lays out the future of the site for the next half century which, in municipal planning, is the long-term future. From economic and social licence perspectives, the decommissioning phase is a substantially different proposition for the community than an operating plant.

After the end of commercial operations in 2024, OPG proposes an almost 50-year process of de-energizing and stabilizing the plant, safely storing the reactors largely intact for about 30 years. Beginning about 2050, the reactors will be dismantled, first PNGS A, then PNGS B. After that, the plant can be demolished, and the site restored by about 2065. However, the PDP states that initiation of the dismantling phase is

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<sup>2</sup> Kincardine DGR Mitigation Measures Report, Table AA Socio-Economic Environment, p.159

<sup>3</sup> CNSC website page on Decommissioning activities at <http://nuclearsafety.gc.ca/eng/resources/factsheets/decommissioning-of-nuclear-power-plants.cfm>

contingent on all used nuclear fuel waste having been removed from the site by the early 2050's. OPG plans to own the site throughout the process, for reuse after site restoration.

The PDP states that “the main feature that distinguishes the decommissioning of a nuclear station from that of any other large industrial plant is the radiological hazard” (p. 53). Allowing time for natural decay to reduce the radiation exposure to workers was cited as one important factor in OPG choosing a deferred decommissioning strategy in the 1980's.

**Table 2: Proposed Phases of Decommissioning and Related Staffing  
from Preliminary Decommissioning Plan – Pickering Generating Stations A & B**

| <b>Activity</b>                            | <b>Estimated Time Frame<sup>4</sup></b> | <b>PNGS Nominal Number of Staff<sup>5</sup></b> |
|--|---|---|
| Continued operations                       | 2018-2024                               | 2700  |
| Preparation for safe storage               | 2024-2028                               | 1200  |
| Safe storage (approx. 30 years)            | 2028-2050                               | 40  |
| Preparation for dismantling and demolition | begins 2051                             | 750   |
| Dismantling and demolition                 | 2051-2061                               | 880   |
| Disposal and site restoration              | 2061-2066                               | 130   |

For planning purposes, the Region needs to know the impact of each phase on the following areas:

- emergency planning
- employment levels and other socio-economic factors
- property tax revenue projections
- prospects for economic development and beneficial reuse of the site
- road infrastructure, transportation safety and traffic implications (i.e. related to the of the removal of used nuclear fuel and waste from the dismantling and demolition phase)

<sup>4</sup> The time frames for each phase are derived from the Pickering NGS Timeline (as portrayed on p. 12 of the PNGS Power Reactor Operating Licence Application August 2017).

<sup>5</sup> Employment levels associated with the decommissioning period are derived from Appendix C of the PNGS preliminary decommissioning plan, p. 137.



- emissions profile (air quality, dust and noise)
- plans for disposal of other toxic substances from the plant (e.g. PCBs, radioactive PCBs, asbestos)
- nuclear waste management (used fuel and low and intermediate level waste)

OPG must apply to the CNSC for a separate decommissioning licence to complete the process. The PDP indicates that the CNSC and OPG will decide on the need for and scope of an Environmental Assessment (EA) for the decommissioning process. Given that the federal government is currently changing the legislation governing federal environmental assessment, the EA regime that will be in place at that time is unknown.

**The Region requests the CNSC to commit that the Region of Durham will be formally notified of and engaged in the decision-making process with respect to conducting an EA for PNGS decommissioning since our community will be directly affected for decades by the decommissioning process.**

## 5.2 Emergency Planning

### 5.2.1 PNERP

Closure of the Pickering NGS will not change the demands for emergency planning and preparedness in the Region of Durham. The end of operations at PNGS may alter the risk and nature of a nuclear emergency. However, in accordance with the PNERP, the Region will continue to need all the resources and capabilities required to prepare, plan and execute an emergency response to a nuclear incident at Darlington NGS. This will include maintaining the trained personnel, technology and network of partners over many decades.

Outstanding questions for the Region relate to:

- the level of funding support from OPG for emergency planning during the decommissioning phases;
- impacts related to increased handling of nuclear wastes during the decommissioning phases (e.g. increased risk of spills, transportation incidents);
- the need for additional first-responder training and offsite capabilities to safely address radiological spills response on Regional Roads; and
- the need for agreements with OPG and the NWMO to mitigate the increased risk of transportation-related incidents.

### 5.2.2 KI Pill Distribution Program

While the legal requirement to distribute KI pills within the Pickering 10 km zone may disappear, most of Durham will remain within the 50 km zone of Darlington, so the program delivery is unlikely to change dramatically. The Region will continue to need OPG's support in financing this program.

### 5.2.3 Coordination with Durham Regional Police Service

The need for co-ordination and collaboration with the Region's police service will continue. A key consideration for the Region will be the level of security and vigilance OPG maintains at, or in relation to, the site over the coming decades. In future, DRPS recognizes that transportation safety and security during the decommissioning and demolition activities will be a continued area of consideration since significant increases in employee, contractor and truck traffic to and from the site are anticipated.

### 5.3 Socio-Economic Issues:

The decommissioning portion of the application is of concern to the Region from a socio-economic impact perspective due to:

- A sudden decrease in jobs at the end of current operations as outlined in Table 2;
- Uncertainty around changes in property tax revenues related to the plant ceasing operation;
- Existence of a large, essentially vacant prime industrial property for decades after 2028; and
- The stigma and other impacts associated with the Region becoming a nuclear waste storage site for the foreseeable future.

#### 5.3.1 Human Assets and Municipal Property Taxes

Following the end of commercial operations, the number of staff at PNGS will decline dramatically from 2700 to about 1200<sup>6</sup> during the preparation for safe storage. During the safe storage phase which lasts more than two decades, the staff level will drop to about 40 people.

Regional Council's April 2018 motion expresses their concern for workers displaced by the end of operations at PNGS. **It requests OPG to mitigate the negative impacts, including transition plans for the affected workers being prepared and shared with the Region in advance of the closure.**

The Region needs detailed information about future staffing levels anticipated at the site. While Regional Council has raised the issue of transition for employees at the end of commercial operations, the plans for support of fluctuating numbers of employees and contractors in the later phases of decommissioning are also of interest to the Region of Durham with respect to providing timely and suitable levels of Regional services (e.g. affordable housing, child care, public health).

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<sup>6</sup> Employment levels associated with the decommissioning period are derived from Appendix C of the PNGS preliminary decommissioning plan, p. 137.

To plan for the future, the Region needs detailed information about property tax revenue impacts of each decommissioning phase including:

- the property tax impact when operations cease and when water intake and discharge facilities stop operating.
- Confirmation that any temporary structures constructed to house the activities related to dismantling and demolition, will be taxed based on CVA
- Confirmation on whether those operations require access to Regional water and sewer services during decommissioning

Mitigation of these impacts by OPG may be required.

**In the interests of transparency and planning ahead, the Region asks the CNSC to require, as a condition of relicensing, that OPG and the Province provide to the Region of Durham the detailed assumptions, projections and data necessary to understand the impact of the various phases of decommissioning on the Regional economy, the needs for Regional services and property tax revenue, including:**

- **the projected number of employees (and/or contractor staff) at the site for each year of the decommissioning plan**
- **the type and level of assessment that will be attracted by the structures and activities present on the site at each phase; and**
- **that this information be provided within 60 days of approval by the CNSC of this relicensing application and updated every five years.**

### 5.3.2 Financial Assets: Economic Development and Beneficial Reuse of the Site

Community and stakeholder consultations held as part of the Repurposing Pickering Initiative (PDP, pg. 61) raised expectations that beneficial reuse of the station site could proceed in parallel with decommissioning. OPG's President of Nuclear, Mr. G. Jager, reiterated this possibility in a meeting with the Regional Chair and staff in December 2017. OPG's submission and previous studies on "Repurposing Pickering" indicate their intent to retain ownership and explore feasible options for redevelopment of the Pickering site. However, there is no indication in the PDP of the extent of redevelopment anticipated, financial mechanisms to support it, or timeframes in which this will occur.

The decommissioning plan states only that OPG will "carefully assess the range of ideas" provided through that public process (PDP, p. 62). This is not reassuring given the known impact to the community of losing thousands of jobs within the next decade. Given the theoretical possibility that PNGS might not be relicensed to 2024 and instead

be closed years sooner, the “Repurposing” plans should already have been well advanced.

In stakeholder sessions and direct meetings, the Region has suggested a variety of energy-related projects or partnerships that might usefully be located on the site, to build on and bolster the energy sector in Durham. This could be a key measure to offset job losses from the plant.

The Region proposes that within the term of this licence (to 2028), available portions of the site be re-developed with a focus on energy innovation as an economic stimulus. In partnership with local energy utilities, Durham’s universities and college, and research and business development organizations, the site has the potential to become a location for energy research and development, district heating and/or cooling, conservation technology development and renewable generation testing and facilities.

**To mitigate the economic impacts and stigma associated with PNGS closure, the Region recommends that OPG investigate and launch projects and partnerships to reuse portions of the site as soon as possible.**

OPG’s submission indicates their plan to continue ownership of the PNGS site once the plant is shut down. The Region is concerned that with the deferred decommissioning strategy, OPG’s focus will be on maintaining the site in a safe storage condition for decades, disregarding opportunities for redevelopment that would benefit the community. Such development could mitigate the stigma associated with the long-term storage of nuclear waste at the site. **The Region therefore seeks OPG’s written commitment to beneficial reuse of the PNGS site.**

The decommissioning plan identifies a method of site restoration that will abandon in place concrete foundations slabs greater than 1 metre in thickness covered by a 1 metre thick layer of backfill. Concrete rubble may be used to fill voids. The Region would be concerned that this practice could limit opportunities for redevelopment of the site. **A clearly articulated plan for “Repurposing Pickering” should be the basis for selecting a site restoration approach. In addition, OPG should be directed to meet provincial standards for brownfield site restoration suitable for reuse as an industrial site.**

#### 5.4 Ongoing and Increasing Nuclear Waste Storage

OPG has selected a deferred decommissioning approach. The unavailability of a licensed long-term waste storage facility means that prompt decommissioning has never been an option. The Nuclear Waste Management Organization (NWMO) now projects that the earliest operational date for the long-term storage facility (the planned

NWMO Deep Geological Repository or “DGR”) is 2043 (PDP, p. 77). There is no certainty that this date will be met.

The Low and Intermediate Level Waste (L&ILW) DGR proposed by OPG to be constructed in a willing host community at Kincardine has been under study for 15 years and its approval repeatedly delayed.

Further, it should be stressed that the Kincardine DGR currently proposed, at 200,000 cubic metres, is designed to accept only the wastes from current OPG nuclear generating operations. The PDP estimates that the decommissioning of PNGS will produce 68,100 cubic metres of L&ILW (PDP, p.94). The Kincardine DGR will have to be doubled in size to accommodate decommissioning wastes from PNGS and DNGS. “This expansion is expected to occur during the years 2039 through 2043.” (PDP, p. 97)

Kincardine decided to become a willing host for the L&ILW DGR project because, based on the experience of others (e.g. Port Hope and American projects), “there was little confidence that a non-nuclear community would step-up to this responsibility”<sup>7</sup>. OPG signed a community benefits agreement with them in 2004. This agreement makes payments to Kincardine and adjacent municipalities totalling \$1,050,000 annually for 30 years, indexed to inflation plus some additional lump sum payments. The payments are contingent on their continued support for the DGR. The 30-year grand total of payments amounts to \$34,340,000 before indexing. The agreement was amended in February 2018 to reflect the delays in the DGR project. Since the community already hosts the waste, there is really nothing to be gained by withdrawing their support.

The NWMO process to identify a willing host community for the used fuel DGR has been underway for a decade and is not expected to produce a willing and suitable host site until 2023 at the earliest. The NWMO will need to acquire the consent of relevant Indigenous communities for the construction of the used fuel DGR. Eight years has already been added to the NWMO’s original 2035 timeline for the used fuel DGR to begin operations, now anticipated in 2043 at the earliest.

OPG’s decommissioning plan makes an assumption that the dismantling and demolition process will not be started until a licensed facility is available to take the used fuel waste. This assumption removes any pressure from the NWMO (which OPG also primarily funds) to expedite the construction of the used fuel DGR. In the absence of such a facility, Durham Region is the de facto long-term waste storage site.

By design and without consulting current host communities, OPG has made no provision for prompt decommissioning. The level of uncertainty around the licensing of

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<sup>7</sup> OPG’s Deep Geological Repository for L&ILW Written Closing Remarks, p. 27.

both the L&ILW and used fuel DGRs is substantial. OPG's plan to decommission PNGS within the projected time frame depends entirely on favourable decisions relating to other large nuclear projects. At the Durham Nuclear Health Committee meeting on April 20, 2018, NWMO staff indicated that removal of used nuclear fuel from PNGS would take decades. Consequently, the Region is concerned that the Pickering site will not be ready for demolition by 2050, pushing the full restoration and reuse of the site even further into the future.

**To mitigate the considerable uncertainty around the timing of the removal of nuclear waste from the Pickering site, the Region requests the CNSC to require that the financial guarantee for the decommissioning of PNGS incorporate annual payments to the Region of Durham (indexed to inflation) per unit of waste stored in Durham Region.**

### 5.5 Transportation

During decommissioning, if the PDP plays out as envisioned by OPG, sometime in the late 2040's OPG and the NWMO will begin to move the used nuclear fuel from the Pickering Waste Management Facility to the licensed deep geological repository. This will involve moving up to 781,000 used fuel bundles from dry storage at PNGS to the new repository site, most likely by road. The frequency and weight of these truckloads is likely to represent a considerable increase in traffic load over the previous 20 to 25 years of safe storage.

Once the dismantling and demolition stage begins, traffic will increase again, due to the number of staff and contractors working onsite and the movement of heavy equipment and trucks related to the demolition phase. If a licensed facility exists by then to take the L&ILW, it is likely that many truckloads per day of radioactive demolition debris will be departing the site, in addition to loads of conventional demolition wastes.

The heavy truck traffic generated by these decommissioning activities, depending on their departure profiles, can potentially result in significant impacts on the surrounding Regional road network. Road infrastructure improvements and traffic operations changes may be required to ensure that the expected volumes of heavy vehicles can be safely accommodated without causing undue traffic congestion or damage to the pavement on Regional roads. Information to support road improvements would need to be provided at least a decade in advance and costs to the Region may need to be mitigated.

The Region and OPG will need to work together to prepare for and manage this significantly increased worker and heavy truck traffic on Regional Roads such as Brock Road and Bayly Street. **OPG should provide information to the Region for the**

**traffic impacts of each phase of decommissioning well in advance so that necessary infrastructure can be planned, funded and built in a timely way.**

It is notable that from January to November 2017, when the NWMO conducted more than 50 public engagement sessions on their framework for transportation of used fuel waste, no session was held in Durham Region. **Durham Region and its area municipalities should be included as a key stakeholder in the NWMO discussions of transportation planning for used fuel waste.**

**Both OPG and the NWMO should engage with the Region to reach agreement on impact mitigation and funding at least a decade before starting these activities.**

## 5.6 Emissions

Dust and air emissions from demolition and heavy equipment as well as noise and removal of non-radioactive toxic wastes from the site may be an issue of concern to the Region during the dismantling and demolition and restoration phases.

**Plans for forecasting, mitigating and monitoring these impacts at the dismantling, demolition and site restoration phases should be included in OPG's decommissioning plan and a related environmental assessment.**

## 6 Conclusion

Durham Region understands the benefits of ongoing operation of PNGS to the entire province in carrying Ontario through the refurbishment of the Darlington and Bruce Nuclear Generating Stations without increasing GHG emissions. Our full list of recommendations is provided in Appendix 2. Generally, from a Regional perspective at this stage of the plant's lifecycle, CNSC should direct OPG and advise the Province to mitigate impacts on the Region by:

- Increasing funding of Regional emergency response capacity to meet the additional requirements of the PNERP both during ongoing operations and during the decommissioning phases;
- Providing a transition plan for workers displaced by the closure of PNGS;
- Providing data and timelines, updated every five years, to the Region that will allow it to understand and prepare for the likely impacts on property tax revenues, local employment, businesses and social services of the decommissioning phases;
- Addressing historic property tax unfairness, by redirecting to the Region and area municipalities fair and equitable property tax payments attracted by nuclear generating assets in the Region, in line with that of any other large industrial use;
- Mitigating socio-economic impacts in ways consistent with those described in the EA for the Kincardine DGR through a community benefits agreement;

- Mitigating the significant economic disadvantages to our community of increasing nuclear waste storage at the Pickering site after energy generation ceases for decades to come;
- Engaging community partners, formally committing to and investing in beneficial reuse of the PNGS site for industrial or commercial uses so that it is not seen simply as nuclear waste storage site;
- Providing advance information to the Region for the traffic impacts of each phase of decommissioning well in advance so that necessary infrastructure can be funded, planned and built in a timely way; and
- Committing to include funding in the Financial Guarantee to cover the cost of the mitigations noted above and necessary to support the community during the decommissioning process.

We request that the CNSC include these as non-regulatory conditions as requirements for the relicensing of the Pickering Nuclear Generating Station as requested by OPG and in keeping with the Province's direction to OPG in the 2017 Long-Term Energy Plan.

**We also request that the Region be formally consulted by the CNSC and OPG in advance on the matter of an Environmental Assessment for the decommissioning of PNGS and Durham Region's role in it.**



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## 8 Appendix A - Legislated Responsibilities of the Regional Municipality of Durham

The following chart lists key pieces of applicable legislation but is not an exhaustive list.

| Regional Responsibility:   | Legislation:   |
|--|--|
| <b>Borrowing of Money for Capital Expenditures of Upper and Lower Tier Municipalities</b>  | Municipal Act, 2001.   |
| <b>Community and Land Use Planning</b> including: the Regional Official Plan and implementation thereof; approval authority function for lower-tier municipal official plans and amendments thereto; industrial, commercial and residential development approvals; Land Division consent applications; administration of development charges; strategic land use planning; plan of subdivision and condominium approvals; and site plan application commenting function.   | Planning Act; Greenbelt Act 2005; Oak Ridges Moraine Conservation Act, 2001; Oak Ridges Moraine Protection Act, 2001; Lake Simcoe Protection Act, 2008; Places to Grow Act, 2005; Development Charges Act, 1997. Climate Change Mitigation and Low-carbon Economy Act, 2016 Growth Plan for the Greater Golden Horseshoe, 2017 |
| <b>Economic Development and Tourism</b>  | Municipal Act, 2001  |
| <b>Emergency Management</b> including detailed arrangements and procedures for implementing precautionary and protective measures; detailed planning for public alerting system requirements, public education program, and provision of emergency communications; arrangements to receive and accommodate evacuees; carry out the required response as prescribed by the province; conduct training and exercises to prepare Regional staff; ensure availability of essential facilities, emergency centres, resources and equipment required by the Region to respond. | Emergency Management and Civil Protection Act, 2009, Provincial Nuclear Emergency Response Plan, 2017  |
| <b>Emergency Services</b> including: 9-1-1 management; land ambulance services and police services.  | Municipal Act, 2001; Ambulance Act; Police Services Act; Development Charges Act, 1997.  |
| <b>Policing</b>  | Several acts recently amended by the Safer Ontario Act 2018 including for  |

|   |   |
|---|---|
|   | example the Police Services Act.  |
| <b>Property Taxes</b>   | Municipal Act, 2001; Assessment Act, RSO 1990; Electricity Act, 1998  |
| <b>Provincial Offences Court</b> including: prosecution services, court administration and collection of fines.   | Provincial Offences Act   |
| <b>Public Health Programs and Services and Paramedic Services</b>   | Health Protection and Promotion Act, the Ambulance Act, and numerous other acts and regulations which reference public health.  |
| <b>Regional Roads, Bridges and Traffic Signals</b>  | Municipal Act, 2001; Planning Act; Highway Traffic Act; Development Charges Act, 1997.  |
| <b>Social Services</b> including: arrangements to receive and accommodate evacuees; child care centres; nursery school programs; Durham Behaviour Management Services (children); family counselling; long-term care and services for seniors; Ontario Works; and social housing. | Municipal Act, 2001; Day Nurseries Act; Child and Family Services Act; Ontario Works Act, 1997; Ontario Disability Support Program Act, 1997; Family Benefits Act; Social Housing Reform Act, 2000; Child and Family Services Act; Occupiers Liability Act. |
| <b>Solid Waste Management</b> including diversion, recycling, compostables, yard waste, white goods and bulk items.   | Development Charges Act, 1997; Municipal Act, 2001; the Resource Recovery and Circular Economy Act, 2016, the Waste Diversion Transition Act, 2016, Environmental Protection Act.   |
| <b>Transit and Specialized Transit Services</b>   | Municipal Act, 2001; Accessibility for Ontarians with Disabilities Act, 2005.   |
| <b>Water infrastructure and services:</b> drinking water supply, treatment, distribution and billing; and waste management  | Development Charges Act, 1997; Municipal Act, 2001; Ontario Water Resources Act; Safe Drinking Water Act, 2002; and Clean Water Act, 2006.  |
| <b>Wastewater infrastructure and services</b> sewage collection, treatment and billing  | Development Charges Act, 1997; Municipal Act, 2001; Ontario Water Resources Act.  |
| By-law Enforcement  | Numerous Acts and Regional By-laws.   |

**References to Acts include references to applicable Regulations and Plans.**

Additionally, the Region has numerous agreements with public-sector partners that may govern the activities noted above, in addition to Council-adopted policies and initiatives that may be applicable, including:

- a. Growing Together, Reaching Further, Aspiring Higher: A New Strategic Plan for Durham Region 2015-2019;
- b. Durham Region Official Plan
- c. Transportation Master Plan 2018
- d. Long Term Transit Strategy 2010
- e. Long Term Waste Management Strategy 2000 - 2020
- f. 2018 Regional Servicing and Financing Studies for roads, water and sewer waste and transit
- g. Annual Accessibility Plan (covers all regional services per Ontarians with Disabilities Act, 2001)
- h. Durham Regional Police Strategic Business Plan (3-year plan)
- i. From Vision to Action, Region of Durham Community Climate Change Local Action Plan, 2012
- j. Towards Resilience: Region of Durham Community Climate Adaptation Plan 2016

While this list is not exhaustive, it does include the key documents that lay out the framework for the Region's infrastructure and relevant services

## 9 Appendix B: Recommendations from the Region of Durham

1. **As conditions of relicensing PNGS, the CNSC should include the following requirements:**
  - **Provincial action to ensure the timely, transparent and accountable implementation of the updated PNERP;**
  - **completion and release by the Province of the additional technical assessment study it is commissioning to identify whether evacuation zones or KI distribution distances should be expanded; and**
  - **an obligation for the Province and/or OPG to provide funding to the Region of Durham to support implementation of the 2017 PNERP and related Pickering Implementation Plan.**
2. **To strengthen community support for the extended operation of PNGS, the CNSC should direct OPG to seek from the Province the changes necessary to ensure that a fair and equitable level of property tax on the generating assets at PNGS and DNGS is paid to the Region and area municipalities in support of the Durham community.**
3. **To recognize the Region's commitment and bolster community support for the PNGS licence renewal, the CNSC should impose non-regulatory conditions requiring:**
  - **mitigation of socio-economic impacts in ways consistent with those described in the Environmental Assessment (EA) for the Kincardine DGR, and**
  - **that OPG enter into a community benefits agreement with Durham Region as part of the effort to mitigate the impacts of ongoing nuclear waste storage in the Region.**
4. **The Region requests the CNSC to commit that the Region of Durham will be formally notified of and engaged in the decision-making process with respect to conducting an EA for PNGS decommissioning since our community will be directly affected for decades by the decommissioning process.**
5. **The Region requests that OPG be directed to mitigate the negative impacts of PNGS end of commercial operations, including preparing transition plans for the affected workers to be shared with the Region in advance.**

- 6. In the interests of transparency and planning ahead, the Region asks the CNSC to require, as a condition of relicensing, that OPG and the Province provide to the Region of Durham the detailed assumptions, projections and data necessary to understand the impact of the various phases of decommissioning on the Regional economy, the needs for Regional service and property tax revenue, including:**
  - **the projected number of employees (and/or contractor staff) from the site for each year of the decommissioning plan;**
  - **the type and level of assessment that will be attracted by the structures and activities on the site at each phase; and**
  - **that this information be provided within 60 days of approval by the CNSC of this application and updated every five years.**
  
- 7. That in regard to mitigating the economic impacts and stigma associated with PNGS closure, the Region recommends that the CNSC require OPG to:**
  - **Provide a written commitment to the Region on beneficial reuse of the PNGS site;**
  - **Investigate and launch projects and partnerships to reuse portions of the site as soon as possible;**
  - **Provide a clearly articulated plan for “Repurposing Pickering” as the basis for selecting a site restoration approach; and**
  - **meet provincial standards for brownfield site restoration suitable for proposed future uses of an industrial site.**
  
- 8. To mitigate the considerable uncertainty around the timing of the removal of nuclear waste from the Pickering site, the Region requests the CNSC to require that the financial guarantee for the decommissioning of PNGS incorporate annual payments to the Region of Durham (indexed to inflation) per unit of waste stored in Durham Region.**
  
- 9. The Region asks CNSC to direct OPG to provide information to the Region for the transportation and traffic impacts of each phase of decommissioning well in advance so that necessary infrastructure can be planned and built in a timely way. OPG should engage with the Region to reach agreement on impact mitigation and funding at least a decade before starting these activities.**

- 10. The Region requests the CNSC to advise the NWMO that Durham Region and its area municipalities should be included as a key stakeholder in the NWMO discussions of transportation planning for used fuel waste. NWMO should engage with the Region to reach agreement on impact mitigation and funding at least a decade before starting the nuclear waste removal activities.**
- 11. Plans for forecasting, mitigating and monitoring emissions impacts at the dismantling, demolition and site restoration phases should be included in OPG's decommissioning plan and a related environmental assessment.**



## 10 Glossary of Acronyms

|        |   |
|--------|---|
| CNSC   | Canadian Nuclear Safety Commission                            |
| COW    | Committee of the Whole  |
| CPZ    | Contingency Planning Zone                                     |
| CVA    | Current Value Assessment                                      |
| DEMO   | Durham Emergency Management Office                            |
| DGR    | Deep Geological Repository                                    |
| DNGS   | Darlington Nuclear Generating Station                         |
| DNHC   | Durham Nuclear Health Committee                               |
| DRHD   | Durham Region Health Department                               |
| DRPS   | Durham Regional Police Service                                |
| EA     | Environmental Assessment                                      |
| GHG    | greenhouse gas  |
| IAEA   | International Atomic Energy Agency                            |
| KI     | potassium iodide  |
| L&ILW  | low and intermediate level waste                              |
| LTEP   | Long-Term Energy Plan   |
| MOU    | Memoranda of Understanding                                    |
| MPAC   | Municipal Property Assessment Corporation                     |
| NWMO   | Nuclear Waste Management Organization                         |
| OEFC   | Ontario Electricity Financial Corporation                     |
| OFMEM  | Office of the Fire Marshal and Emergency Management (Ontario) |
| OPG    | Ontario Power Generation                                      |
| OSART  | Operational Safety Review Team                                |
| PDP    | Preliminary Decommissioning Plan                              |
| PILs   | Payments in Lieu (of property taxes)                          |
| PJ     | petajoules  |
| PNERP  | Provincial Nuclear Emergency Response Plan                    |
| PNGS   | Pickering Nuclear Generating Station                          |
| REGDOC | regulatory document   |