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The *Nuclear Fuel Waste Act* and Canada's Plan for the Long-Term Management of its Nuclear Fuel Waste

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List of Abbreviations

AECL	Atomic Energy of Canada Limited
APM	Adaptive Phased Management
CANDU	Canada Deuterium Uranium
CNSC	Canadian Nuclear Safety Commission
HQ	Hydro Québec
NBPC	New Brunswick Power Corporation
NFWA	*Nuclear Fuel Waste Act*
NSCA	*Nuclear Safety and Control Act*
NWMO	Nuclear Waste Management Organization
OPGI	Ontario Power Generation Inc.

1. Introduction

In 2002, the Government of Canada passed the *Nuclear Fuel Waste Act* (NFWA) which came into force on November 15 of the same year.[1] The purpose of the NFWA is to "provide a framework to enable the Governor-in-Council to make, from the proposals of the waste management organization, a decision on the management of nuclear fuel waste that is based on a comprehensive, integrated and economically sound approach for Canada."[2]

The NFWA is administered by Natural Resources Canada, through the Nuclear Fuel Waste Bureau, which is the body charged with oversight of the initial decision-making process with respect to the long-term management of Canada's nuclear fuel waste.[3] In Canada, the term Governor-in-Council refers to the Governor General of Canada acting by, with the advice of, and with the consent of, the Queen's Privy Council for Canada.[4] The Privy Council Office provides impartial public service advice and support to the Prime Minister and Cabinet.[5] For the purposes of this paper, the term Governor-in-Council can be understood to mean the Government of Canada. Essentially it is the Federal Cabinet.

"Nuclear fuel waste" for the purposes of the NFWA is defined as "irradiated fuel bundles removed from a commercial or research nuclear fission reactor."[6] This term is to be interpreted as synonymous with used nuclear fuel, the terminology preferred by industry.[7] While not evident from the legislative definition, "nuclear fuel waste" refers only to domestic nuclear fuel waste, meaning produced in Canada, as "there is no intention to accommodate or manage foreign nuclear fuel waste" through the means provided for by the NFWA.[8] More specifically, nuclear fuel waste refers to high-level waste, and does not refer to low and intermediate-level waste. Low-level waste refers to articles that have been used at nuclear facilities, for example gloves, clothes, and floor sweepings, and intermediate-level waste that includes reactor components, and items

[1] *Nuclear Fuel Waste Act*, SC 2000, c 23.

[2] *Ibid*, s 3.

[3] Natural Resources Canada, "Nuclear Fuel Waste Bureau" (14 October 2009), <http://www.nrcan.gc.ca/energy/uranium-nuclear/nuclear-fuel-waste-Bureau/7735>.

[4] Privy Council Office, "Governor-in-Council Appointments Procedures Guide" (9 December 2010), online: <http://www.pco-bcp.gc.ca/index.asp?lang=eng&page=secretariats&sub=oic-ddc&doc=procedure-processus-eng.htm>.

[5] Privy Council Office, "About the Privy Council Office" (25 November 2014), online: <http://www.pco-bcp.gc.ca/index.asp?lang=eng&page=about-apropos>.

[6] *Supra* note 1, s 2.

[7] Natural Resources Canada, Energy Sector, Fuel Waste Bureau, "Frequently Asked Questions" (11 March 2009), online: <http://www.nrcan.gc.ca/energy/uranium-nuclear/nuclear-fuel-waste-Bureau/7743>.

[8] *Ibid*.

such as used filters.[9] As neither low-level waste nor intermediate-level waste are included in the definition of nuclear fuel waste, neither are covered by the NFWA.

Of interest, however, is the plan being developed to address Canada's long-term management of low-level and intermediate-level waste. Ontario Power Generation Inc., addressed below as a primary source of nuclear fuel waste in Canada, is proposing to construct and operate a deep geologic repository to house this waste, at the Bruce Power nuclear site in Kincardine, Ontario, Canada, approximately one mile from Lake Huron.[10] Bruce Power is Canada's first private nuclear generator.[11]

Finally, "management" for the purposes of the NFWA is defined as "long-term management by means of storage or disposal, including handling, treatment, conditioning or transport for the purpose of storage or disposal."[12] The fundamental elements of the purpose of the NFWA are, therefore, the establishment of a waste management organization, and the mandate of the organization, which is to propose to the Government of Canada pathways for the long-term management of Canada's nuclear fuel waste. While not made plain from the Purpose section of the NFWA, the waste management organization, in addition to proposing approaches, is tasked with implementing the approach that is eventually selected as Canada's plan.[13]

This research paper will address Canada's plan for the long-term management of its nuclear fuel waste. In addition to exploring the plan itself, the specific issues for analysis and discussion include a review of the key provisions of the NFWA, which serve as the legislative underpinnings for the development of Canada's plan; a discussion of the waste management organization created pursuant to the NFWA; identification of the substantive progress that has been made in satisfying the intentions of the NFWA; a review of the legal challenges that have been brought forward involving the NFWA, the waste management organization, and the plan to date; and a hypothetical challenge that could be made to Canada's plan.

For context and to better situate the analysis and discussion, this research paper will begin with an outline of the sources and locations of nuclear fuel waste in Canada, the current interim nuclear fuel waste management methods being used, regulation of current nuclear fuel waste in Canada, and how the current scheme intersects with the NFWA and Canada's long-term management of its nuclear fuel waste.

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[9] Ontario Power Generation, "The Deep Geologic Repository – What is low and intermediate-level nuclear waste" (26 October 2013), online: <http://opgdgr.com/>.

[10] Nuclear Waste Management Organization, *Learning More Together – Annual Report 2012* (Toronto: March 2013) at 105.

[11] Bruce Power, "About Us" (26 October 2013), online: <http://www.brucepower.com/about-us/>.

[12] *Supra* note 1, s 2.

[13] *Ibid*, s 6(1).

2. Nuclear Fuel Waste in Canada – Background and Context

Sources and Current Locations of Nuclear Fuel Waste in Canada

There are four primary sources of nuclear fuel waste in Canada: Ontario Power Generation Inc. (OPGI), Hydro Québec (HQ), New Brunswick Power Corporation (NBPC), and Atomic Energy of Canada Limited (AECL).[14] Canada's nuclear fuel waste is largely in irradiated fuel bundle form, discharged from twenty-two Canada Deuterium Uranium (CANDU) reactors,[15] which are Canadian-invented, pressurized heavy water reactors that use heavy water for coolant, and natural uranium for fuel.[16] If the irradiated fuel bundles were to be stacked one on top of another, the current extent of Canada's nuclear fuel waste would fit into six hockey rinks, with bundles stacked from the surface of the ice, to the top of the hockey rink perimeter boards.[17] This quantity is anticipated to double by the end of the various planned operational periods for Canada's existing nuclear reactors.[18]

OPGI owns twenty CANDU reactors and produces approximately 87% of Canada's nuclear fuel waste, HQ owns one CANDU reactor and produces approximately 6% of Canada's nuclear fuel waste, and NBPC also owns one CANDU reactor and produces about 5% of Canada's nuclear fuel waste.[19] AECL, which is a Canadian federal Crown company, generates waste from prototype and research reactors, and is responsible for about 2% of Canada's nuclear fuel waste.[20] In addition to these four sources, other Canadian waste owners, including universities, for example, generate a minimal amount of nuclear fuel waste.[21]

Current Interim Nuclear Fuel Waste Management Methods

At present, and until the establishment of Canada's permanent repository for its nuclear fuel waste, all of Canada's nuclear fuel waste is being held on an interim basis at the nuclear reactor sites where the waste is generated, meaning in Ontario for OPGI, Quebec for HQ, New Brunswick for NBPC, and in the case of AECL, at the company's nuclear

[14] *Supra* note 7.

[15] *Ibid*.

[16] CANDU Owners Group, "CANDU Reactors" (28 June 2013), online: <http://www.candu.org/candu_reactors.html>.

[17] Nuclear Waste Management Organization, "Description of Canada's Repository for Used Nuclear Fuel and Centre of Expertise" (October 2012) at 4.

[18] *Supra* note 10 at 12.

[19] *Supra* note 7.

[20] *Ibid*.

[21] *Ibid*.

research facilities in Manitoba and Ontario.[22] The nuclear fuel waste is stored onsite in dry canisters.[23] Prior to placement in dry canisters, the nuclear fuel waste in fuel bundle form, is left in water-filled pools for seven to ten years, to allow heat and radioactivity to decrease.[24]

Regulation of Nuclear Fuel Waste Currently Held in Canada

The facilities owned by OPGI, HQ, NBPC, and AEC which are currently holding the nuclear fuel waste are all facilities licensed by the Canadian Nuclear Safety Commission (CNSC), Canada's regulator for the use of nuclear energy and materials.[25] The *Nuclear Safety and Control Act* (NSCA),[26] established the CNSC in 2000,[27] the same year the NSCA legislation came into force. The mission of CNSC is to "protect the health, safety and security of Canadians and the environment, and to implement Canada's international commitments on the peaceful use of nuclear energy."[28] The objectives of the CNSC are primarily to "regulate the development, production and use of nuclear energy, and the production, possession and use of nuclear substances, prescribed equipment and prescribed information," to prevent unreasonable risk to the environment, health and safety, and national security.[29] The CNSC replaced its predecessor, the Atomic Energy Control Board, which had been in existence since 1946.[30]

The Intersection of the *Nuclear Fuel Waste Act* and the *Nuclear Safety and Control Act*

The NSCA, and the CNSC as the regulator for nuclear energy and nuclear substances, are relevant to the long-term management of nuclear fuel waste in Canada. The CNSC, pursuant to the NSCA, will be charged with licensing the activities associated with the implementation of Canada's approved long-term management approach that is established pursuant to the NFWA.[31] The NFWA and the waste management organization established pursuant to it are therefore joined, in a complementary manner,

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[22] *Supra* note 10 at 10.

[23] *Supra* note 7.

[24] *Supra* note 10 at 12.

[25] *Ibid* at 10.

[26] *Nuclear Safety and Control Act*, SC 1997, c 9.

[27] Canadian Nuclear Safety Commission, "About CNSC" (24 July 2014), online: <http://nuclearsafety.gc.ca/eng/about-us/index.cfm>.

[28] Canadian Nuclear Safety Commission, "Our Mission" (26 March 2014), online: <http://nuclearsafety.gc.ca/eng/about-us/our-mission.cfm>.

[29] *Supra* note 26, s 9.

[30] *Supra* note 27.

[31] *Supra* note 7.

by the NSCA and the CNSC, to meet the Government of Canada's policy objectives with respect to the long-term management of Canada's nuclear fuel waste.[32]

3. The Nuclear Waste Management Organization

The bulk of the NFWA establishes the waste management organization charged with proposing to the Governor-in-Council a pathway for the long-term management of Canada's nuclear fuel waste, identifies the organization's purpose, sets its financing, establishes the study methodology it must follow in establishing its proposal, and identifies when the organization can abandon the accepted approach.[33]

Membership and Purpose

The waste management organization is a corporation established by the nuclear energy corporations,[34] with nuclear energy corporations defined collectively as OPGI, HQ, and NBPC, any of their assignees, any assignee of AECL, and "any other body that owns nuclear fuel waste resulting from the production of electricity by means of a commercial nuclear reactor."[35] In 2002, in accordance with the NFWA, the OPGI, HQ, and NBPC, and other members established the Nuclear Waste Management Organization (NWMO), with the NWMO's fundamental purpose being to assume responsibility for Canada's long-term management of its nuclear fuel waste.[36]

The role of the NWMO, on a non-profit basis, is to propose to the Government of Canada potential approaches for the management of Canada's nuclear fuel waste, and to implement the approach that is eventually selected.[37] It shall, for a reasonable fee, offer its nuclear fuel waste management services associated with the selected approach to AECL, and to all owners of nuclear fuel waste produced in Canada that are not part of the waste management organization.[38] It shall create an Advisory Council to examine the study on proposed approaches that it will submit to the Minister of Natural Resources.[39]

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[32] *Ibid*.

[33] *Supra* note 1.

[34] *Ibid*, s 6(1).

[35] *Ibid*, s 2.

[36] Nuclear Waste Management Organization, "About the NWMO" (13 October 2013), online: <http://www.nwmo.ca/about>.

[37] *Supra* note 1, s 6(1).

[38] *Ibid*, s 7.

[39] *Ibid*, s 8.

Financing

The NWMO is to be financed by funds from OPGI, HQ, NBPC, and AECL held in trust, with initially on the coming into force of the NFWA OPGI paying $500,000,000; HQ paying $20,000,000; NBPC paying $20,000,000; and AECL paying $10,000,000;[40] and each year thereafter each respectively paying $100,000,000; $4,000,000; $4,000,000; and $2,000,000.[41] Only the NWMO can withdraw from the trust, and withdrawals are only to be for the purpose of implementing the selected nuclear fuel waste management approach, with implementation including the mitigation of significant socio-economic effects on a community.[42] The first withdrawal is only permitted following receipt of the appropriate construction or operation license from the CNSC.[43]

Study Methodology in Establishing the Proposal by the Nuclear Waste Management Organization to the Government of Canada

The NWMO is not granted free reign with respect to the study methodology it is to use in determining proposed approaches for the long-term management of Canada's nuclear fuel waste. Within three years of the NFWA coming into force, the NWMO is to submit to the Minister of Natural Resources a study indicating NWMO's proposed approaches for the waste, with the Advisory Council's comments on the proposed approaches appended, along with the NWMO's recommended approach clearly stated.[44]

Three different methods for managing the nuclear fuel waste must be addressed as the sole basis for at least one of the NWMO's proposed approaches: deep geological disposal into the Canadian Shield, storage at nuclear reactor sites, and above or below ground centralized storage.[45] For each approach, the NWMO's study must include a technical description of the approach; an economic region for its implementation; and a comparison of risks, costs, and benefits of the approach as compared with other approaches, accounting for ethical, social, and economic factors.[46] The NWMO must also submit a statement on what services the NWMO would offer for each approach; and an implementation plan to meet each approach, which would include the activities required,

[40] *Ibid*, ss 9, 10(1).
[41] *Ibid*, s 10(2).
[42] *Ibid*, s 11.
[43] *Ibid*, s 11(3).
[44] *Ibid*, s 12(1).
[45] *Ibid*, s 12(2).
[46] *Ibid*, s 12(4).

timeline, mitigation of socio-economic effects, and a public and Aboriginal consultation program.[47]

Permissible Abandonment of the Approach Accepted by the Government of Canada

The NFWA allows the NWMO to abandon its proposed, accepted approach in favor of a different approach in two narrow situations. First, this shift is permitted when the NWMO cannot, for technical reasons outside of its control, implement the long-term nuclear waste management approach selected by the Governor-in-Council.[48] Second, this shift is permitted when a new technological method, different from the accepted approach, has been developed, so long as it has been supported by international governmental organization experts, who deal with nuclear matters, that have provided scientific and technical review for the new method.[49] In either situation, the NWMO must propose a new approach via the NWMO's triennial report.[50]

The NWMO is to submit to the Minister of Natural Resources annual reports outlining its activities for the past fiscal year, in addition to more thorough triennial reports, which begin once the Governor-in-Council has selected a long-term nuclear fuel waste approach.[51] When the NWMO wishes to abandon a previously selected approach in favor of its new proposal, the Minister of Natural Resources must assess whether the new proposal is technically and economically feasible in Canada, and if so, it can recommend the approach to the Governor- in-Council, which has the discretion to approve the new approach.[52]

4. Canada's Plan for the Long-Term Management of its Nuclear Fuel Waste

The Recommendation, in Brief

In November of 2005, the NWMO recommended to the Minister of Natural Resources that the Government of Canada implement an option for the long-term management of its nuclear fuel waste that the NWMO termed Adaptive Phased Management (APM).[53] APM has two core elements: a technical method, and a management system.[54] While the APM

[47] *Ibid*, ss 12(5)-12(7).
[48] *Ibid*, s 20(1).
[49] *Ibid*, s 20(2).
[50] *Ibid*, ss 20(1)-20(2).
[51] *Ibid*, s 18.
[52] *Ibid*, ss 20(4)-20(5).

option does not line up squarely with any one of the three methods of nuclear fuel waste disposal mandated for study by the NFWA (namely deep geological disposal in the Canadian Shield, storage at nuclear reactor sites and above or below ground centralized storage), the NWMO was not specifically precluded under the NFWA[55] from effectively presenting a fourth option.[56]

Three-Year Development of the Adaptive Phased Management Approach

In developing its recommendation of APM, pursuant to its obligation under section 12 of the NFWA, the NWMO over a three-year period from its creation in 2002 to the presentation of its proposal in 2005, engaged in a comprehensive study, assessing the risks, benefits, and costs of the three statutorily identified methods for managing the nuclear fuel waste.[57]

The comprehensive study culminated in three milestone documents produced prior to the final study document in which the formal APM recommendation was made, with each document forming the basis for public engagement and dialogue.[58] The three milestone documents, in broad brush terms, were as follows: the first was titled *Asking The Right Questions*, which described the nuclear fuel waste disposal issue, proposed key questions that could be used in assessing the options, and invited public comment; the second was titled *Understanding the Choices*, which explained the management options, detailed the option assessment framework, and presented a preliminary assessment for public discussion; and the third was a *Draft Study Report*, which proposed the APM option, and invited more public dialogue to refine the APM recommendation.[59]

The Role of the Canadian Voice

The NWMO proceeded via an iterative process, developed in part to be responsive to expectations expressed by Canadians.[60] The NWMO, presumably informed by its public consultation requirement specifically identified in subsection 12(7) of the NFWA,

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[53] Nuclear Waste Management Organization, *Final Study: Choosing a Way Forward – The Future Management of Canada's Used Nuclear Fuel* (November 2005) at 4.

[54] Nuclear Waste Management Organization, *Final Study Summary: Choosing a Way Forward – The Future Management of Canada's Used Nuclear Fuel* (November 2005) at 4.

[55] *Supra* note 1.

[56] *Supra* note 53 at 24.

[57] *Supra* note 1, s 12.

[58] Nuclear Waste Management Organization, "Backgrounder: NWMO's Final Study Report" (November 2005) at 2.

[59] *Ibid*.

[60] *Supra* note 58.

proceeded through its study understanding that in developing a socially acceptable recommendation, Canadians' views on the risks, benefits, and social implications of the potential approaches are no less than critical.[61] The study methodology, therefore, included significant interaction and dialog with the Canadian public, with the analysis supporting each of the milestone documents being shaped by the values of Canadians.[62]

The NWMO early on identified two important requirements from the perspective of Canadians: first, the recommended approach had to reflect safety and security for people, communities and the environment; and second, the recommended approach had to reflect fairness, to both current and future generations.[63] The implications of these two requirements were understood to be that the current generation should not shoulder the responsibility for achieving a safe, long-term answer to the current nuclear fuel waste problem; the plan must remain flexible so that future generations can play a part in decision-making; and current and future Canadian generations must be able to monitor nuclear fuel waste to ensure its safety, which also means allowing access to the waste should safety be compromised, or science provide a better method for disposal.[64] In addition, the NWMO in completing its assessment consciously adopted an ethical framework that "resulted in social and technical aspects of safety and risk being treated in a holistic and integrated way."[65]

Adaptive Phased Management, in Detail

The President of the NWMO at the time of the 2005 submission to the Minister of Natural Resources that recommended APM as the path forward described it as "… firmly rooted in values that Canadians hold dear," and "… flexible, allowing for the ongoing involvement of citizens in decision-making about how it is implemented."[66] APM at its core is made of a technical method element, and a management system element.[67] The technical method element has as its end point a centralized repository for Canada's nuclear fuel waste, with the waste isolated and contained deep underground in a suitable rock formation.[68] The methods of nuclear fuel waste disposal mandated for study in section 12 of the NFWA identified deep geological disposal in the Canadian Shield. However, the NWMO did not limit disposal to the Canadian Shield, instead

[61] *Supra* note 54 at 3.

[62] *Ibid* at 3.

[63] *Ibid* at 3.

[64] *Ibid* at 3.

[65] *Ibid* at 3

[66] Nuclear Waste Management Organization, News Release, "NWMO Recommends Adaptive Phased Management" (3 November 2005) at 1.

[67] *Supra* note 54.

[68] *Supra* note 66.

recommending disposal in the Canadian Shield, Ordovician sedimentary rock, or an alternative suitable rock site.[69]

While deep geological disposal in the Canadian Shield would perform well in the very long-term due to isolation of the waste by engineered and natural barriers, the NWMO found uncertainty remained with respect to actual performance over thousands of years, for which it is not possible on the front end to obtain satisfactory, or conclusive, evidence.[70] Furthermore, a main weakness of the method was its lack of adaptability over time, which Canadians made clear was an important objective.[71] Without adaptability, the method in future years could impact other objectives Canadians identified as paramount, such as public health and safety, and environmental integrity.[72] In addition, the shorter-term concern was that deep geological disposal in the Canadian Shield was too inflexible to be able to change in response to new, beneficial scientific knowledge.[73] Deep geological disposal in the Canadian Shield, therefore, was essentially unfavorable to any potential change, making it too permanent and inflexible of an option in the eyes of the Canadian public, and the NWMO.

The management system element outlines a methodology and decision-making process that is phased and adaptive, where deliberate decision points will allow new social learning and new technologies to be incorporated.[74] For example, if deemed necessary at the appropriate time, this method would allow, on a contingency basis, for the shallow storage of nuclear fuel waste at the central site.[75] Overall, the management system element allows for appropriate options to be evaluated, with room for modification to the plan, before moving ahead with a subsequent step.[76] Further key components of APM include continuous monitoring, the potential for retrieving the nuclear fuel waste, continuous engagement with Canadians, and the ability to integrate advances in natural and social sciences, Aboriginal traditional knowledge, and Canadian society's values and expectations.[77]

The technical method element, the management system element, and the key components of APM are reflected in the three phases of implementation set out for the approach.[78] The first phase is anticipated to last for thirty years, and is devoted to making preparations for the management of centralized nuclear fuel waste; the second phase is anticipated to last for the following thirty years, and will be used for centralizing storage

[69] *Supra* note 54 at 8.
[70] *Ibid* at 3-4.
[71] *Ibid* at 3.
[72] *Ibid* at 4.
[73] *Ibid* at 3.
[74] *Supra* note 66.
[75] *Ibid*.
[76] *Ibid*.
[77] *Supra* note 54 at 8.
[78] *Ibid* at 4-5.

and confirming the suitability of technology; and the third phase, which begins after the second phase is completed (recognizing flexibility is needed to complete the second phase) and spans into perpetuity, will address the long-term containment, isolation, and monitoring of the nuclear fuel waste.[79] The intention is for citizen engagement to always be a foundational element of APM, because as the NWMO has identified, "[i]n a democratic society, the inclusiveness and the integrity of the process by which decisions are taken are key."[80]

5. Substantive Progress made in Satisfying the Intentions of the *Nuclear Fuel Waste Act*

The Government of Canada's Acceptance of the Adaptive Phased Management Approach

On June 14, 2007, two years after the NWMO submitted to the Minster of Natural Resources its study setting out its proposed approaches for the long-term management of Canada's nuclear fuel waste and its recommendation that the Government of Canada adopt the APM approach, the Government formally accepted the NWMO's recommendation, and APM became Canada's way forward.[81] The Minister of Natural Resources, at the time of the acceptance of the proposal, characterized APM as Canada's strongest option, one that "enables [the current] generation to take action now to put measures in place that safeguard the public while being respectful of the environment and to future generations."[82]

Site Selection

The Minister of Natural Resources in accepting APM set a clear expectation for the site selection process, the next phase of the NWMO's mandate, by indicating his anticipation that it would take two years to develop "a collaborative, community-driven site selection process," which would be "open, transparent, inclusive, and … built on a solid foundation of trust, integrity and respect for Canadians and the environment."[83]

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[79] *Ibid* at 4-6.

[80] *Supra* note 55 at 6.

[81] Natural Resources Canada, News Release, "Canada's Nuclear Future: Clean, Safe, Responsible" (14 June 2007), online: <http://www.nrcan.gc.ca/energy/uranium-nuclear/nuclear-fuel-waste-Bureau/7785>.

[82] Nuclear Waste Management Organization, "Letter from the Minister of Natural Resources Canada to Ken Nash, President, Nuclear Waste Management Organization" (9 July 2007) at 1, online: <http://www.nwmo.ca/uploads_managed/MediaFiles/572_LettertoNWMOfromMinisterLunn-July92007.pdf>.

[83] *Ibid*.

Furthermore, the Minister recognized that it would "require considerable time, patience, and effort to effectively implement the government's decision" to proceed with APM.[84]

The Minister, in effect, steadfastly endorsed the NWMO's vision for site selection. Although site selection was not formally a part of the study, the principles allowed a response to the "many" who wanted the NWMO to elaborate on the APM site selection process.[85] The NWMO envisioned that the site selection process would result in a precise location for the centralized repository being determined not by legislative force, but rather through NWMO's efforts to find a community that is well informed about the considerations that accompany the decision to host the centralized repository, and that would still be willing take on the project.[86] The site would have to meet technical criteria with respect to the existence of engineered and natural barriers to protect humans, the biosphere, and "other life forms," and would, through implementation of the APM approach, have to ensure that the aspirations of any affected communities' social, cultural, and economic are addressed.[87]

While any Canadian community would be invited to express interest in becoming a host community, the NWMO's intended process for site selection would dictate that fairness is central to selecting a host.[88] Fairness, in the view of the NWMO, means that it will focus its efforts in the four Canadian provinces that already have a direct involvement in the nuclear fuel cycle, meaning Ontario, New Brunswick, Quebec and Saskatchewan.[89]

From 2008 to 2010, the NWMO devised the site selection process,[90] resulting in a formalized nine step process to determine the appropriate location for the site which will become the deep geological repository that is the basis for the technical branch of the APM approach.[91] The process is designed such that individual communities engage in nine steps "at a pace and in a manner that reflect their needs and preferences," with individual communities anticipated to be at different steps in the process at any given time.[92] The NWMO estimates that it will take ten years from the start of the site selection

[84] *Supra* note 82 at 2.

[85] *Supra* note 53 at 228.

[86] *Supra* note 54 at 8.

[87] *Ibid* at 8.

[88] *Ibid* at 6.

[89] *Ibid* at 6.

[90] *Supra* note 10 at 11.

[91] Nuclear Waste Management Organization, *Moving Forward Together: Process for Selecting a Site for Canada's Deep Geological Repository for Used Nuclear Fuel* (Toronto: May 2010) at 20.

[92] *Ibid* at 21.

process in May 2010 to confirm which Canadian community will house the deep geological repository.[93]

The Nine Step Process for Site Selection

The following nine steps make up the core of the site selection process:[94]

1) The NWMO, through a broad program, informs Canadians of the APM approach generally, and the siting process specifically;

2) Canadian communities wanting more information are briefed by the NWMO, and undergo the NWMO's initial suitability screening, which includes assessing whether the site comprises enough land mass to house the anticipated surface and underground facilities. The land mass must be outside of protected areas, heritage sites, provincial parks with no known groundwater resources at repository depth, and areas with economically exploitable natural resources;

3) Communities that remain interested undergo the NWMO's preliminary assessment of suitability, which involves the NWMO and community authorities entering into a Memorandum of Understanding outlining the scope of work for the preliminary assessment. The scope of work involves assessing geo-scientific and community well-being related criteria (social, economic, and cultural);

4) The communities geographically surrounding interested communities are engaged, and detailed site evaluations including field investigations are completed, with the aim of further addressing suitability;

5) If suitability is confirmed, then communities decide whether to accept the project, and if so, propose their terms and conditions of acceptance;

6) The NWMO selects a preferred site, and the NWMO and the selected community formalize an agreement for the selected community to serve as the project site;

7) The appropriate regulatory authorities review the project, and approve if appropriate;

8) An underground demonstration facility is established to confirm site characteristics;

9) The deep geological repository and above ground facilities are constructed.

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[93] Nuclear Waste Management Organization, "Moving Forward Together: Canada's Plan for the Long-Term Management of Used Nuclear Fuel – Site Selection Process FAQs" (October 2013), online: <http://www.nwmo.ca/sitingprocess_faqs#c9>.

[94] *Supra* note 91 at 22-30.

Throughout this process, multiple entry points exist for third party review and advice,[95] the contribution of Aboriginal traditional knowledge (for example, regarding the land and ecology),[96] funding to support community participation,[97] and regulatory review at the federal, provincial, and municipal levels.[98]

The Current Step

As of December 31, 2012, four Canadian communities were proceeding through Step 2, and seventeen were proceeding through Step 3, with no communities having completed and surpassed Step 3.[99] The four communities in step 2, and fifteen of the seventeen communities in step 3, are located in the province of Ontario, with two communities from the province of Saskatchewan making up the balance of the communities in Step 3.[100]

Suspension of Expressions of Interest

The NWMO, however, as of September 30, 2012 and following a six month notice period, suspended receipt of expressions of interest from potential host communities.[101] The reasoning behind the suspension of interest appears to be based on the NWMO having received significant and robust interest from prospective host communities, with the NWMO having to manage the allocation of resources in response. The NWMO has explained that suspension will allow for the "best knowledge and expertise" to be applied to the studies underway and those to be conducted in the future, and will allow the NWMO to fully support not only the communities currently participating, but also the surrounding communities, and engaged Aboriginal persons.[102]

Site Selection for the Centralized Repository Continues

While the NWMO since the suspension of expressions of interest has still been providing project briefings to any interested communities, neither the suitability screenings nor preliminary assessments at the heart of Steps 2 and 3 are taking place.[103] The suspension, however, does not mean that the NWMO has essentially found a suitable site, as the

[95] *Ibid* at 42-43.

[96] *Ibid* at 38.

[97] *Ibid* at 22-28.

[98] *Ibid* at 44-45.

[99] *Supra* note 10 at 44.

[100] *Ibid* at 44.

[101] Nuclear Waste Management Organization, "Suspension of Expressions of Interest" (1 October 2012) at 2.

[102] *Ibid*.

[103] *Supra* note 101 at 2.

NWMO recognizes that the outcomes of the ongoing studies are uncertain, and has explicitly reserved the right to reopen receipt of expressions of interest in the future, should the NWMO deem it necessary to study additional communities.[104] The NWMO, therefore, is underway with the implementation of the APM approach. While still many years away from having a host site finalized, a sufficient amount of progress has been made for some litigation to commence with respect to the NWMO, and its associated activities.

6. Legal Challenges to Date Involving the *Nuclear Fuel Waste Act*, the Nuclear Waste Management Organization, and the Adaptive Phased Management Approach

The NFWA, the NWMO, and Canada's APM approach for the long-term management of its nuclear fuel waste have been a part of three legal challenges to date, two of which are not central to the content of this paper.[105] The third legal challenge, however, raises substantive issues with respect to the choice of APM as Canada's plan.

Mushkegowuk Council (Stan Louttit) v. Attorney General of Canada, Minister of Natural Resources, and the Nuclear Waste Organization et al.

On July 16, 2007, approximately one month after the Government of Canada formally accepted the NWMO's recommendation to proceed with APM, the Mushkegowuk Council, an assembly of seven First Nations communities located in the James Bay region of Ontario, Canada, led by Council Chief Stan Louttit, filed an application for judicial review in Canada's Federal Court.[106] The application sought to review the decision by the Minister of Natural Resources to recommend to the Governor-in-Council

[104] *Ibid* at 3.

[105] In *Baird v R*, 2007 FCA 48, a self-represented inventor with patents for technology associated with the disposal of nuclear fuel waste sued the Crown for over $30 billion in damages, alleging that the Crown destroyed his economic life, and discriminated against him based on the Canadian Charter of Rights and Freedoms. The claim ended shortly after it began. The Plaintiff's Statement of Claim was struck for lacking the material facts and particulars that were needed to address the basic elements of the Crown's alleged liability, such as who, what, when, where, and how the liability arose. In *Nuclear Waste Management Organization v Minister of National Revenue*, 2012 TCC 217, employees of the NWMO brought a claim against the Minister of National Revenue. The issue was whether members of the NWMO Advisory Council were employees engaged in pensionable employment, or whether they were private contractors. The Tax Court held they were employees.

[106] *Application for judicial review re Mushkegowuk Council (Stan Louttit) v Attorney General of Canada, Minister of Natural Resources, and the Nuclear Waste Organization et al*, Federal Court (16 July 2007).

that APM be selected as Canada's method for long-term disposal of its nuclear fuel waste.[107] The application for judicial review remained active for four years until October 31, 2011 when the application was discontinued by the Applicant.[108]

The limited application materials suggest that the Applicant was advancing three grounds for judicial review.[109] First, the decision by the Minister of Natural Resources resulted in an error of law, fact, and mixed law and fact, as it did not adequately consider information with respect to earthquake hazards in the areas proposed for disposal, in part because the NWMO did not consider the evidence.[110] Second, the Governor-in-Council and the Minister of Natural Resources either did not adequately disclose, or disclosed false information with respect to, the quantity of nuclear fuel waste to be dealt with, which resulted in natural justice and procedural fairness concerns, because interested parties could not appropriately address the issues.[111] Third, a failure by the Government of Canada to consult the seven First Nations with respect to proposing to dispose of the nuclear fuel waste on their traditional lands, resulted in a breach of the government's Constitutional duty to consult Aboriginal peoples.[112]

Without the benefit of reviewing supporting evidentiary materials for additional context, on their face, the grounds for judicial review do not appear to accurately reflect how the study presented to the Minister of Natural Resources that recommended APM for selection, the information based on which the government's choice would have been made, dealt with site selection. The grounds for judicial review are largely based on the conclusion that the accepted APM approach in fact proposed to dispose of the nuclear fuel waste on the lands of the seven First Nations of the Mushkegowuk Council. This is not the case. The intention of the study was overtly not to select a host site. The study did address siting, but without any substantive context, as siting was addressed unofficially by the NWMO by including principles that could frame the site selection process. A key principle was that community interest, not legislative force, would drive the site selection process. The NWMO did, however, identify that it envisioned focusing its efforts within the four Canadian provinces that already have a direct involvement in the nuclear fuel cycle, which includes the province of Ontario, where the seven First Nations of the Mushkegowuk Council lands are located. There was no proposal, however, identifying or confirming with any level of certainty any specific lands, much less the lands associated with the seven First Nations of the Mushkegowuk Council. It is therefore not clear, without the evidentiary support behind the grounds for judicial review, how the Applicant

[107] *Ibid* at 3.

[108] *Recorded Entries for T-1305-07 Mushkegowuk Council (Stan Louttit) v Attorney General of Canada, Minister of Natural Resources, and the Nuclear Waste Organization et al*, Federal Court (Filed 31 October 2011).

[109] *Supra* note 106 at 5-7.

[110] *Ibid* at 5-7.

[111] *Ibid* at 5-7.

[112] *Ibid* at 5-7.

arrived at the interpretation that first, a proposal for host sites was made, and second, that the proposal was specifically with respect to the lands of the assembly of the seven First Nations of the Mushkegowuk Council.

7. A Hypothetical Challenge that Could be Made to Canada's Plan for the Long-Term Management of Its Nuclear Fuel Waste

The lack of substantive legal challenges to date involving the NFWA, the NWMO, or the APM approach should not be taken to mean that the above will not be challenged in the future. While not fully developed in the *Mushkegowuk Council* matter, the concept of the Crown's Constitutional duty to consult, and if appropriate, accommodate Aboriginal persons is one potential avenue by which Canada's long-term plans for management of its nuclear fuel waste could be challenged.

The Crown's Constitutional Duty to Consult, and if Appropriate, Accommodate Aboriginal Persons

The Crown's Constitutional duty to consult, and if appropriate, accommodate Aboriginal persons, also referred to as the Crown's duty to consult, has at its heart the honour of the Crown.[113] The honour of the Crown affirms that the Crown must act honourably in any and all dealings with Aboriginal persons.[114] The honour of the Crown has at its source the historic assertion by the Crown of sovereignty over Aboriginal persons, an assertion made despite prior Aboriginal occupation.[115] The Supreme Court of Canada's seminal explanation of the honour of the Crown is the following:

> Put simply, Canada's Aboriginal peoples were here when Europeans came, and were never conquered. Many bands reconciled their claims with the sovereignty of the Crown through negotiated treaties. Others […] have yet to do so. The potential rights embedded in these claims are protected by s. 35 of the *Constitution Act, 1982*. The honour of the Crown requires that these rights be determined, recognized and respected. This, in turn, requires the Crown, acting honourably, to participate in processes of negotiation. While this process continues, the honour of the Crown may require it to consult and, where indicated, accommodate Aboriginal interests.[116]

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[113] *Taku River Tlingit First Nation v British Columbia (Project Assessment Director)*, 2004 SCC 74 at para 24.

[114] *Ibid*.

[115] *Supra* note 113.

[116] *Haida Nation v British Columbia (Minister of Forests)*, 2004 SCC 73 at para 25.

The honour of the Crown is to be interpreted expansively, not narrowly, at all times.[117] The honour of the Crown has been "enshrined" in subsection 35(1) of the *Constitution Act, 1982*, which both recognizes and affirms existing Aboriginal rights and titles.[118]

Fundamental, therefore, to the honour of the Crown and its duty to consult is section 35 of the *Constitution Act, 1982*, which states the following:[119]

> Recognition of existing aboriginal and treaty rights
>
> 35.(1) The existing aboriginal and treaty rights of the aboriginal peoples of Canada are hereby recognized and affirmed.
>
> Definition of "aboriginal peoples of Canada"
>
> (2) In this Act, "aboriginal peoples of Canada" includes the Indian, Inuit and Métis peoples of Canada.
>
> Land claims agreements
>
> (3) For greater certainty, in subsection (1) "treaty rights" includes rights that now exist by way of land claims agreements or may be so acquired.
>
> Aboriginal and treaty rights are guaranteed equally to both sexes
>
> (4) Notwithstanding any other provision of this Act, the aboriginal and treaty rights referred to in subsection (1) are guaranteed equally to male and female persons.

Subsection 35(1) of the Constitution Act, 1982, which addresses the recognition of existing Aboriginal and treaty rights, holds as an essential purpose the "negotiation of just settlement of Aboriginal claims."[120] In satisfying this purpose, what specifically is required to meet the honour of the Crown will vary depending on the circumstances.[121] One possibility, however, is that the Crown will be required to consult, and if appropriate, accommodate, Aboriginal peoples before making decisions.[122]

The Legal Test to Establish Whether the Crown has a Duty to Consult

The Crown's duty to consult arises when the Crown has knowledge (actual or constructive) of Aboriginal or treaty rights (potential or established) that may be

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[117] *Supra* note 113.
[118] *Ibid*.
[119] *Constitution Act, 1982*,, s 35.
[120] *Supra* note 113.
[121] *Ibid* at para 25.
[122] *Ibid* at para 25.

adversely affected by contemplated Crown conduct.[123] The test for whether the Crown has a duty to consult contains three key elements. First, the Crown must have real or constructive knowledge of a potential or established Aboriginal or treaty right.[124] Second, the Crown must be contemplating conduct or making a decision.[125] Third, there must be a possibility that the Crown's contemplated conduct or the decision being made may affect the potential or established Aboriginal or treaty right.[126] The spirit of the test for whether the Crown has a duty to consult is the claimant having to show, that if the Crown action were to proceed, a cause and effect relationship between the contemplated Crown conduct or decision, and the potential for adverse impacts on potential or established Aboriginal claims or rights.[127]

Hypothetical Application of the Duty to Consult Analysis to Canada's Plan for the Long-Term Management of its Nuclear Fuel Waste

At set out above, Canada's plan for the long-term management of its nuclear fuel waste began in earnest with the promulgation of the NFWA, and has advanced through the establishment of the NWMO, the recommendation by the NWMO to the Canadian government that the government implement APM, and the acceptance by the Canadian government of APM. The NWMO is now implementing APM, and to that end has developed and initiated a nine step process to select the site that will eventually host the deep geological centralized repository. Once the host site is selected, the continued implementation of APM will be dependent on regulatory review at various required entry points.

Given this scenario, a hypothetical challenge that could be made to Canada's plan for the long-term management of is nuclear fuel waste could come in the form of an Aboriginal group claiming that the Crown has a Constitutional duty to consult, and if appropriate, accommodate Aboriginal persons when implementing the plan, and that the duty was breached. The following analysis would apply.

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[123] *Ibid* at para 25. Also see generally *Mikisew Cree First Nation v Canada (Minister of Canadian Heritage)*, 2005 SCC 69, which amended the test for whether the Crown has a duty to consult to reflect that the duty to consult is also engaged when established Aboriginal or treaty rights are at issue. This differed from earlier iterations of the test which set out that the duty to consult was engaged only when potential (rather than established) Aboriginal or treaty rights were at issue.

[124] *Rio Tinto Alcan Inc v Carrier Sekani Tribal Council*, 2010 SCC 43 at para 31.

[125] *Supra* note 124 at para 42.

[126] *Ibid* at para 45.

[127] *Ibid* at para 45.

Three-Part Test for Whether the Crown has a Duty to Consult

Part 1 – The Crown must have real or constructive knowledge of a potential or established Aboriginal or treaty right.[128]

Canada's plan involves the core element of site selection. The host site will be land somewhere in Canada, with site selection progress to date focusing on the Canadian provinces of Ontario and Saskatchewan. Part 1 of the test for whether the Crown has a duty to consult will involve land — the Crown must have real or constructive knowledge of a potential or established Aboriginal or treaty right with respect to the land involved in Canada's plan.[129]

The Aboriginal or treaty right would most likely be argued to attach to the land selected as the host site, but could strategically be argued to attach to land associated with the host site, for example including transportation routes via which nuclear fuel waste would travel to the host site. This would, presumably, open up the pool of potential Aboriginal claimants to those claiming rights to land far outside of the geographic footprint of the host site, as nuclear fuel waste is currently being stored on an interim basis in various parts of Canada, and the waste would have to travel from interim locales to the host site that is eventually selected.

The Crown would be found to have actual knowledge of an Aboriginal or treaty right to the land at issue (host site, transportation route, or otherwise) if the claimant Aboriginal group had previously filed a claim in court regarding their right to the land, or had made a claim about the context of previous negotiations with the Crown.[130] The Crown would also be found to have had actual knowledge if a treaty right could be impacted.[131] The Crown would be found to have had constructive knowledge of an Aboriginal or treaty right to the land at issue if the land was "known or reasonably suspected to have been traditionally occupied by an Aboriginal community," or if it could be reasonably anticipated that Aboriginal rights could be impacted.[132]

Satisfaction of Part 1 of the test would, therefore, depend on whether the Crown had actual or constructive knowledge of the claimant Aboriginal group's assertion of a right to the land at issue. Of interest would be how to properly characterize the land at issue – what geographic regions of Canada outside of the footprint of the host site could be argued to be impacted such that potential or established Aboriginal or treaty rights apply? How far outside of the boundaries of the host site could this reach, and on what basis, considering the host site would be a finite pinpoint on the map of Canada?

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[128] *Ibid*.

[129] *Ibid* at para 40.

[130] *Ibid* at para 40.

[131] *Ibid* at para 40.

[132] *Ibid* at para 40.

Part 2 – The Crown must be contemplating conduct or making a decision.[133]

The key issue from the perspective of an Aboriginal claimant for this part of the test is what Crown conduct or decision could be used as an entry point. This is important as the duty to consult is not limited to the government's application of statutory powers, nor is it limited to decisions that immediately impact lands at issue.[134] Because a potential, rather than actual, adverse impact can satisfy the test, the duty to consult is also applicable to "strategic, higher level decisions" if those decisions could have an impact on Aboriginal claims and rights.[135] An Aboriginal claimant raising the duty to consult in the context of Canada's plan for the long-term management of its nuclear fuel waste would, therefore, have to isolate some form of Crown action in the context of which the duty to consult is applicable.

A potential point of contention with respect to APM would be site selection. The NWMO is charged with selecting a host site. The NWMO selecting a host site would not, however, be an example of a Crown action. The NWMO is the decision-maker, not the Crown. The NWMO is a private corporation, and is specifically "not an agent of Her Majesty in right of Canada."[136] Actions of the NWMO with respect to Aboriginal groups, however, could be relevant to an assessment of the adequacy of the Crown's consultation efforts, should a duty to consult be found to exist.[137]

Site selection will, however, require extensive regulatory review, as will other elements of APM. Regulatory review is not imminent; considering the NWMO is currently engaged in the preliminary steps of the process it has developed for site selection. The regulatory permitting that will apply to the host site specifically, or to elements of APM more broadly, may on some level, depending on the regulatory scheme, require Crown authorization. In such a situation, there would be Crown action that would qualify as Crown conduct or the Crown making a decision.[138] Historically, however, there has been clear Crown action that could have satisfied Part 2 of the test for whether

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[133] *Ibid* at para 42.

[134] *Ibid* at paras 43-44.

[135] *Ibid* at para 44.

[136] *Supra* note 1, s 6.

[137] See generally *Rio Tinto Alcan Inc v Carrier Sekani Tribal Council*, *supra* note 124. A full treatment of the ability of the Crown to rely on the Aboriginal engagement or consultative-type actions by others to satisfy the Crown's duty to consult, when assessing adequacy of consultation, is beyond the scope of this paper. Those outside efforts, however, could be relevant to the assessment of the adequacy of the Crown's consultation, and could be relevant to the accommodation of any Aboriginal concerns. This is a developing, and at times contentious, issue in Canadian Aboriginal law.

[138] A review of the regulatory scheme at large (federal, provincial, and municipal) which could apply to site selection and the elements of APM into the future is beyond the scope of this paper. For the purposes of the duty to consult analysis in this paper, suffice it to say that it is likely that within the site selection and APM regulatory scheme at large, there will be some element of Crown authorization required, with Crown authorization then being a suitable Crown action for the purposes of the duty to consult analysis.

the duty to consult arises. The Minister of Natural Resources' recommendation to the Governor-in-Council to proceed with APM, and the Governor-in- Council's acceptance of this recommendation, are both Crown decision points.

The application for judicial review in *Mushkegowuk Council (Stan Louttit) v. Attorney General of Canada, Minister of Natural Resources, and the Nuclear Waste Organization et al*. relied on the Minister of Natural Resource's recommendation to the Governor-in-Council as prompting Crown action.[139] As this application has been discontinued, it is unknown how the applicants would have faired on the merits of their claim that the Government of Canada failed to consult the seven First Nations of the Mushkegowuk Council with respect to proposing to dispose of the nuclear fuel waste on their traditional lands.[140] In addition, the NFWA itself identifies instances where the Minister of Natural Resources, outside of the Minister's recommendation to the Governor-in-Council, is charged with making what could be considered decisions by the Crown. The Minister of Natural Resources pursuant to subsection 16(3) of the NFWA is to approve financial requirements identified by the NWMO as necessary for the management of nuclear fuel waste.[141] An Aboriginal claimant could conceivably use this approval as an entry point.

Furthermore, pursuant to section 19 of the NFWA, the Minister of Natural Resources is to issue public statements following receipt of certain annual reports prepared by the NWMO.[142] It would be open to an Aboriginal claimant to make the argument, albeit a creative one that the Minister's statement, in and of itself or with respect to its substantive content, is Crown conduct or Crown decision-making. While the Minister making a statement may reach the outer limits of what qualifies as Crown action for the purposes of the test for the duty to consult, it is an additional route that could, depending on the circumstances, be worth taking.

An additional route that could be explored by an Aboriginal claimant with respect to establishing Crown conduct is just how far removed the decision by the NWMO to select a particular host site is from Crown action, and whether the NWMO's selection of a site really ought not to be considered a Crown action. The NWMO itself (as opposed to an organization without a name, which is what the NFWA refers to) could be argued to be, in essence, a statutory construct, created by the Crown, with its fundamental structural elements dictated by the Crown. While the NWMO retains significant discretion throughout the implementation of APM, at its core, the NWMO could perhaps be characterized as a body created by the Crown, with the Crown having made many decisions with respect to the NWMO's configuration, purpose, and parameters.

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[139] *Supra* note 106 at 3.

[140] *Ibid* at 5-7.

[141] *Supra* note 1, s 16(3).

[142] *Ibid*, s 19.

In addition, site selection, a decision for which the NWMO is responsible, is so fundamentally significant to Canada and Canadians at large, that arguably it must on some level, for example as a policy matter, be considered to be an action of the Canadian government.

Therefore, given the nexus between the Crown and the NWMO, while novel, the argument could be advanced that the decision with respect to site selection by the NWMO ought to qualify as a Crown action. The benefit to making this argument could be that challenges with respect to a site selected by the NWMO are able to be brought sooner in time, as compared with, for example, challenges based on Crown authorizations of future regulatory permits.

As site selection and the broader APM are in relatively early phases, it is likely that any challenges based on the Crown's duty to consult will be made once additional Crown conduct or decision-making has taken place, the timeline for which at this point is unknown. Only in the future will the scope of novel arguments with respect to Crown action, if any such arguments are made, become apparent.

Part 3 – There must be a possibility that the Crown's contemplated conduct or the decision being made may affect the potential or established Aboriginal or treaty right.[143]

Recent case law has narrowed Part 3 of the test for the Crown's duty to consult with respect to what kinds of causal relationships between the proposed Crown action and the potential for adverse impacts on Aboriginal or treaty rights will meet the test. An Aboriginal claimant challenging Crown action associated with the site selection process or APM on the basis of the duty to consult will not be able to sustain a claim based on any past wrongs, which includes any prior breaches of the Crown's duty to consult.[144] In addition, the impacts must go further than speculation, as "the adverse effect must be on the future exercise of the [Aboriginal or treaty] right itself."[145] Furthermore, a continuing breach will not satisfy Part 3 of the test.[146] Past and continuing breaches are more appropriately remedied by damages.[147] What remains, therefore, is that the Crown's duty to consult will be triggered by Crown action that puts "current claims and rights in jeopardy."[148]

An Aboriginal claimant could hypothetically satisfy this part in the context of site selection in the following way. The Crown action with respect to site selection could be

[143] *Supra* note 124 at para 45.
[144] *Ibid* at para 45.
[145] *Ibid* at para 46.
[146] *Ibid* at para 48.
[147] *Ibid* at para 49.
[148] *Ibid* at para 49.

authorization of regulatory permitting, or if successfully established, the NWMO choosing the site, or otherwise. The Aboriginal or treaty right could be the right to hunt caribou. Caribou follow particular migratory patterns. The Aboriginal claimant could advance the argument that the location of the site itself as lands where caribou traverse, the increase in noise associated with the construction of the site, or the increase in traffic due to transportation of nuclear fuel waste adjacent to lands caribou use in their migration, adversely impact the future exercise of the Aboriginal right to hunt caribou. The adverse impact could come in the form of migratory pathways being disrupted, resulting in, for example, the traditional hunt locations and yields being impacted. Analogous claims can be made with respect to various iterations of the Aboriginal right to hunt.

Crown action affecting Aboriginal or treaty rights can, therefore, take many forms. Part 3 of the test for the Crown's duty to consult, while narrowed, could conceivably still be met in several instances. The precise form that an actual adverse impact, if any, could take in the site selection and APM context would become apparent as the project progresses.

The Content of the Duty to Consult

If the Crown's duty to consult is found to be engaged based on the above three-part test, then the immediate logical question is what the content of that duty ought to be. While the content of the duty is heavily dependent on the circumstances, generally the content can be conceptualized as "proportionate to a preliminary assessment of the strength of the case supporting the existence of the right or title, and to the seriousness of the potentially adverse effect upon the right or title."[149]

Where the claim to an Aboriginal or treaty right is weak, the duty on the Crown may be limited to giving notice of the proposed action, disclosing information about the action, and following up with discussion of any related issues.[150] Where the claim is strong or even established, the potential for infringement is significant to the Aboriginal peoples, and there is a high risk of non-compensable damage, "deep consultation" may be required.[151] This could include the chance for the Aboriginal claimant to make submissions to Crown, or to formally participate in the decision-making process in other ways, and could result in the Crown having to prepare written reasons showing how Aboriginal concerns were considered and reflected in the Crown action.[152]

[149] *Supra* note 116 at para 39.
[150] *Ibid* at para 43.
[151] *Ibid* at para 44.
[152] *Ibid* at para 44.

The content of the duty to consult, therefore, varies with the specific circumstances in which the duty has arisen.[153] In any future application of the duty to consult analysis to Canada's plan for the long-term management of its nuclear fuel waste, it will be the strength of the claim to an Aboriginal or treaty right, and the degree to which the adverse effect may impact the right or title, that would determine how robust the content of the duty to consult would be.

A Key Practical Implication of the Duty to Consult Being Engaged and Breached

A key practical implication of the Crown's duty to consult being engaged and breached is that the Crown may have a resulting duty to alter its intended governmental plans or policies, in order to accommodate the potentially adversely affected Aboriginal interests.[154] The remedy for a breach of the duty to consult, similar to what would be required to fulfill the honour of the Crown and the content of the duty to consult, will vary with the circumstances.[155]

The context of Canada's plan for the long-term management of its nuclear fuel waste is such that the timeline for implementation is long and the end result is reached by pieces of the plan falling into place in a required, fixed sequence. Alterations to the plan that would be required to accommodate adversely affected Aboriginal interests as a result of the Crown's duty to consult being engaged and breached could result in disruptions to the project plan. The Crown, the NWMO, and other interested parties will, therefore, all have an interest in ensuring that the Crown's duty to consult is executed appropriately.

8. Conclusion

Since the 1950s, various sectors of the nuclear industry in Canada have made efforts towards finding solutions to the nuclear fuel waste disposal issue.[156] The Government of Canada in 2002, with the promulgation of the NFWA, opened the door for the NWMO to develop, recommend, and implement Canada's approach to the long-term management of its nuclear fuel waste.

The NWMO has recommended to the Government of Canada, and the government has accepted, APM as the pathway forward for the long-term management of Canada's nuclear fuel waste. The NWMO has since been focused on the implementation of APM,

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[153] *Supra* note 124 at para 36.

[154] *Supra* note 113 at para 25.

[155] *Supra* note 124 at para 37.

[156] A Stanley, "Risk, Scale and Exclusion in Canadian Nuclear Fuel Waste Management" (2006) 4:2 ACME: An International E-journal for Critical Geographies 194-227.

with selection of the Canadian community that will eventually host the deep geological centralized repository currently underway, and the NWMO's decision on site selection anticipated in approximately 2020.

To date there has been relatively minimal legal pushback involving the NFWA, the NWMO, and the APM approach. This may not, however, remain the situation in the future. As the NWMO processes continue to unfold, the APM progresses, regulatory permitting becomes a reality, and associated Crown conduct and decision-making becomes concrete, the potential exists for various attractive entry points for challenge, depending on the potential party.

Challenge to Canada's long-term plans for the management of its nuclear fuel waste could hypothetically be brought based on the Crown's Constitutional duty to consult, and if appropriate, accommodate Aboriginal persons. A challenge in this context could not only be brought based on more traditional legal principles. It could also serve as the vehicle by which traditional legal principles are expanded and reworked, in response to innovative and forward- thinking legal analysis and arguments.

The NWMO is currently working through Step 3 of a nine step process for site selection. The APM implementation plan is, therefore, in its relative infancy, considering the phase of APM that deals with the long-term containment, isolation, and monitoring of the nuclear fuel waste at issue is anticipated to begin in approximately sixty years. It is, therefore, not possible at this point in time to predict, with any level of certainty, where and when the most contentious, and the most revered, elements of Canada's long-term plans for the management of its nuclear fuel waste will appear. Canadians and likely the global nuclear community at large, will watch with great interest as the NWMO, the APM approach, and the Canadian government work towards finality with respect to, or at least management in perpetuity for, Canada's nuclear fuel waste.

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