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*New
Nuclear*

-----Original Message-----

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Subject: [Energy-vision] New CNSA Guidelines on New Nuks Plant Approvals

FYI....Christine

cnsC Releases Information Document

On February 23, 2006, the Canadian Nuclear Safety Commission (CNSC), Canada's nuclear regulator, released an information document entitled Licensing Process for New Nuclear Power Plants in Canada. The information document was prepared in response to requests of governments, CNSC licensees and stakeholders and provides an overview of the CNSC's licensing process for new nuclear power plants in Canada. The information document also provides a brief description of Canada's nuclear regulatory framework.

The information document discusses the major steps in the licensing process, including the completion of an environmental assessment. The contents of the information document are reflective of the requirements of Canada's Nuclear Safety and Control Act and its regulations, which characterize nuclear power plants as Class I nuclear facilities. Separate licences are required for each of the following five phases in the life cycle of a nuclear power plant: (1) site preparation; (2) construction; (3) operation; (4) site decommissioning; and (5) site abandonment. The information document also comments on the level of public involvement throughout the CNSC's licensing process for new nuclear power plants in Canada.

The information document's executive summary also explains that the CNSC is in the process of updating its regulatory framework for nuclear power plants. It is expected that the updated framework will incorporate international standards and best practices, to the extent practicable.

It is anticipated that additional regulatory documents related to the licensing of new nuclear power plants will be developed by the CNSC over the next few years.

For more information and a copy of the CNSC's new information document, see:

http://www.nuclearsafety.gc.ca/eng/media/news/news_release.cfm?

Energy-vision mailing list

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CNSC publishes information document on licensing process for new nuclear power plants in Canada

06-02

FOR IMMEDIATE RELEASE

February 23, 2006

Ottawa – The Canadian Nuclear Safety Commission (CNSC) released today an information document entitled *Licensing Process for New Nuclear Power Plants in Canada*. The document is the precursor to a series of regulatory documents which will be developed over the next few years and responds to requests for guidance from governments, CNSC licensees and stakeholders on the regulatory requirements and process for licensing such facilities.

The document discusses the licences required for the different phases in the life-cycle of a nuclear power plant, the Environmental Assessment process, timeframe considerations and opportunities for the public's involvement in the licensing process.

"While the CNSC has not yet received any applications to start the licensing process for any new nuclear power plants, the information document was prepared as part of the CNSC's due diligence", said Linda J. Keen, President and CEO of the CNSC. "As such, it ensures stakeholders have a well-informed understanding of the licensing process."

The information document entitled *Licensing Process for New Nuclear Power Plants in Canada* can be viewed on the CNSC's website at www.nuclearsafety.gc.ca.

-30-

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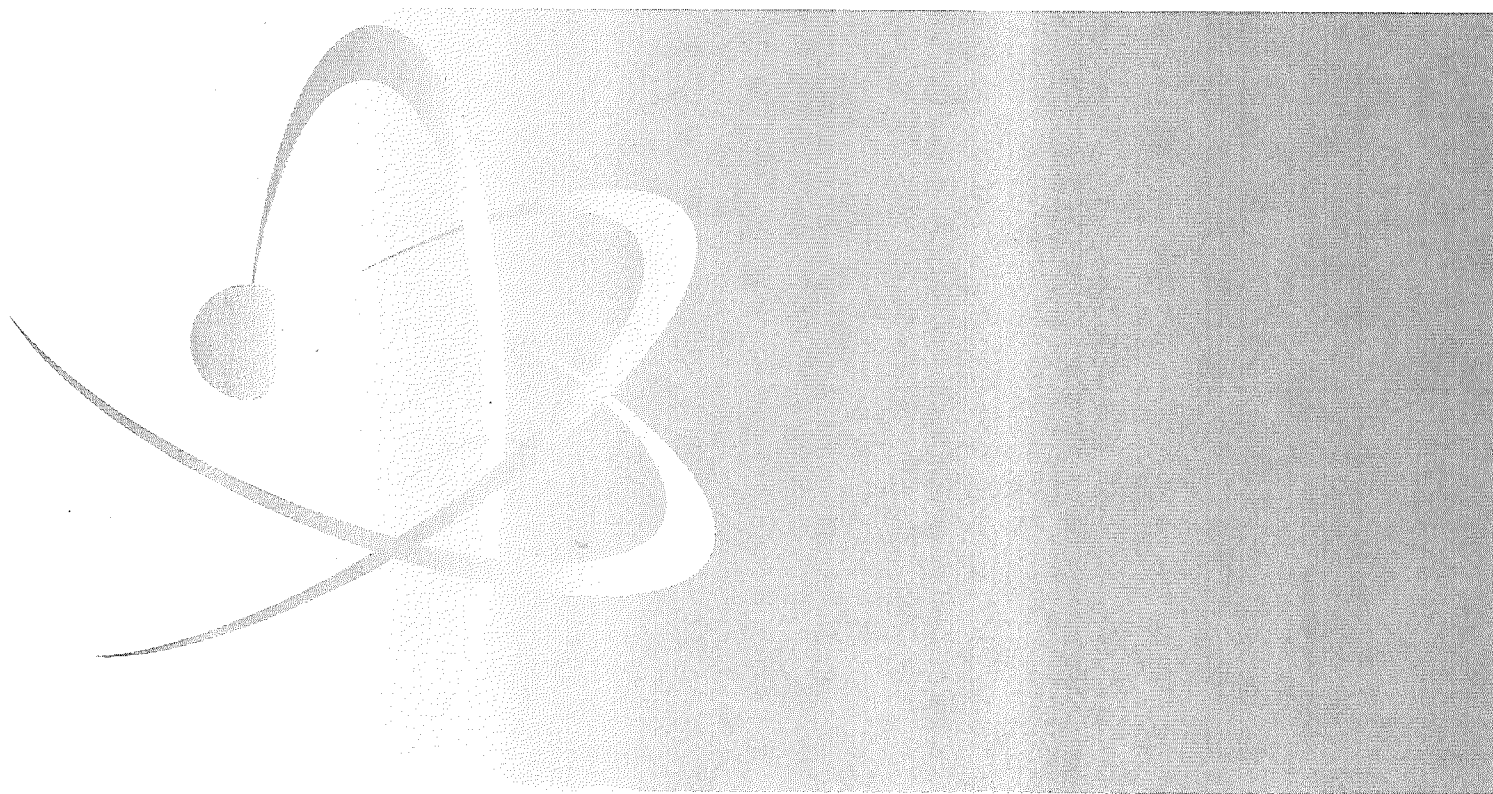


Canadian Nuclear
Safety Commission

Commission canadienne
de sûreté nucléaire

Licensing Process for New Nuclear Power Plants in Canada

INFO-0756



February 2006

Canada

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LICENSING PROCESS FOR NEW NUCLEAR POWER PLANTS IN CANADA

Canadian Nuclear Safety Commission

February 2006

Licensing Process for New Nuclear Power Plants in Canada

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LICENSING PROCESS FOR NEW NUCLEAR POWER PLANTS IN CANADA

EXECUTIVE SUMMARY

This document describes the licensing process for new nuclear power plants in Canada, taking into consideration the requirements of the *Nuclear Safety and Control Act* (NSCA) and regulations made under the NSCA.

This document covers only the major steps in licensing a new nuclear power plant. It does not address any approvals that may be required once a licence to prepare a site, or construct, operate or decommission a reactor are issued, nor does it describe the technical requirements used to support the assessment of licence applications.

The Canadian Nuclear Safety Commission (CNSC) is currently updating its regulatory framework for nuclear power plants. The updated framework will draw upon international standards and best practices, including the International Atomic Energy Agency's (IAEA) nuclear safety standards, to the extent practicable. The IAEA's standards set out high-level safety goals that apply to all reactor designs; that is, they are technology-neutral. Aligning the CNSC's regulatory framework for new nuclear power plants with international standards and best practices allows the CNSC to build on advances in safety and on the experiences of the international regulatory community. Canadians, therefore, can be assured that any new nuclear power plants built in Canada will meet the highest standards for health, safety, security and environmental protection.

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1. INTRODUCTION

The Canadian Nuclear Safety Commission (CNSC) is responsible under the *Nuclear Safety and Control Act* (NSCA) for regulating all nuclear facilities and nuclear-related activities in Canada. Before any person or company can prepare a site for, construct, operate, decommission or abandon a nuclear facility, or possess, use, transport or store nuclear substances, they must obtain a licence issued by the CNSC.

This document provides an overview of the process for licensing new nuclear power plants in Canada, taking into consideration the requirements of the NSCA and associated regulations. The description of the process also takes into account a key prerequisite for a licence to be issued by the Commission, which is the completion of an environmental assessment (EA) pursuant to the *Canadian Environmental Assessment Act* (CEAA).

2. THE NUCLEAR REGULATORY FRAMEWORK IN CANADA

The Parliament of Canada first established legislative control and federal jurisdiction over the development and use of nuclear energy and nuclear substances with the introduction of the *Atomic Energy Control Act* (AECA) in 1946, at which time the Atomic Energy Control Board (AECB) was established. Since the AECA had been in place for 50 years, it became clear that it was necessary to update the regulatory requirements in order to include key areas such as environmental protection and improved protection of health, safety and security. The Canadian Nuclear Safety Commission was established as the successor to the AECB when the NSCA came into force in May 2000.

The CNSC regulates the use of nuclear energy and materials to protect health, safety, security and the environment and to respect Canada's international commitments on the peaceful use of nuclear energy¹. It is an independent federal regulatory agency and quasi-judicial administrative tribunal. The CNSC is comprised of two components: a Commission tribunal and a staff organization². The Commission has the responsibility 1) to establish regulatory policies on matters relating to health, safety, security and the environment, 2) to make legally binding regulations, and 3) to make licensing decisions based on laws and regulations. CNSC staff review applications for licences against regulatory requirements, make recommendations to the Commission, and enforce compliance with the NSCA, regulations, and any licence conditions imposed by the Commission.

The NSCA also provides the Commission with the authority to set and enforce standards in the areas of health, safety, security and environmental protection related to nuclear energy and with respect to the implementation of Canada's policies and obligations concerning the non-proliferation of nuclear weapons.

Section 26 of the NSCA prohibits any person from preparing a site, constructing, operating,

¹ The CNSC's mandate is set out in section 9 of the *Nuclear Safety and Control Act*.

² The Canadian Nuclear Safety Commission is referred to as the 'CNSC' when referring to the organization and its staff in general, and as the 'Commission' when referring to the tribunal component.

decommissioning or abandoning a nuclear facility without a licence granted by the Commission. Section 24(4) of the NSCA further states that “no licence may be issued unless, in the opinion of the Commission, the applicant:

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

In making a licensing decision, the Commission considers the applicant’s request, recommendations from CNSC staff, and any written or oral presentations from intervenors (including the public) made during public hearings. The *CNSC Rules of Procedure* set out requirements for participation in public hearings held by the Commission. Section 5 of this document provides additional information on public participation in the licensing process.

As noted above, CNSC staff review licensing applications against the requirements of the NSCA, as well as CNSC regulations, standards and guides, taking into consideration input from other departments and agencies.

Licences granted by the Commission may contain conditions that must be met by licensees, in addition to the responsibility for meeting the requirements of the NSCA and associated regulations. The regulations issued under the NSCA that apply to nuclear power plants are:

- the *General Nuclear Safety and Control Regulations*;
- the *Radiation Protection Regulations*;
- the *Class I Nuclear Facilities Regulations*;
- the *Nuclear Substances and Radiation Devices Regulations*;
- the *Packaging and Transport of Nuclear Substances Regulations*;
- the *Nuclear Non-Proliferation Import and Export Control Regulations*; and
- the *Nuclear Security Regulations*.

These regulations provide licence applicants with general performance criteria, and list information which applicants must submit to the CNSC as part of the licence application. Applications for licences must be accompanied by licence fees, as set out in the *CNSC Cost Recovery Fees Regulations (2003)*.

The information submitted by an applicant in support of its application for a licence may be referenced in the licence conditions. In that case, the information becomes a legal requirement.

Other legislation enacted by Parliament with which applicants are required to comply includes, but is not limited to:

- the *Nuclear Liability Act*;
- the *Nuclear Fuel Waste Management Act*;

- the *Canadian Environmental Assessment Act*;
- the *Canadian Environmental Protection Act*;
- the *Fisheries Act*;
- the *Species at Risk Act*;
- the *Migratory Bird Convention Act*; and
- the *Canada Water Act*.

On behalf of the Government of Canada, the CNSC implements the safeguards agreement and Additional Protocol between Canada and the International Atomic Energy Agency (IAEA) for the verification of Canada's commitments concerning the peaceful use of nuclear energy and materials. The CNSC also cooperates with other national governments to ensure compliance with the non-proliferation terms and conditions of Canada's bilateral nuclear cooperation agreements and in advancing multilateral nuclear non-proliferation arrangements.

In addition to the regulations issued under the NSCA, the CNSC issues regulatory documents on matters related to its mandate. The main classes of regulatory documents developed by the CNSC are Regulatory Policies, Regulatory Standards, Regulatory Guides and Regulatory Notices. Regulatory documents provide guidance to licence applicants on acceptable ways of complying with regulatory requirements, and form the basis for the assessment of licence applications. All regulatory documents are developed through a transparent consultative process with stakeholders, which include licensees, government, non-governmental organizations and the general public.

The CNSC is updating its regulatory framework for new nuclear power plants. The updated framework will draw upon international standards and best practices, including the IAEA's nuclear safety standards, to the extent practicable. These standards set out high-level safety goals and requirements that apply to all reactor designs; that is, they are technology-neutral. Canada has been an active participant in the development of these IAEA standards, as well as the supporting technical documents which provide more specific technical requirements and best practices for the siting, design, construction, operation and decommissioning of new nuclear power plants. These standards and technical documents have served as references and benchmarks for the CNSC's nuclear regulatory requirements for many years.

While the continued successful operation of nuclear power plants throughout the world shows that they can be operated safely, as with any other complex technology (such as airplanes and automotive vehicles), new ideas and advances in engineering mean there will always be room for safety improvements. Aligning the CNSC's regulatory framework for new nuclear power plants with international standards and best practices allows the CNSC to build on advances in safety and on the experiences of the international regulatory community. Canadians, therefore, can be assured that any new nuclear power plants built in Canada will meet the highest standards for health, safety, security and environmental protection.

It is important to note that it is the responsibility of licence applicants to choose the nuclear power plant technology that best meets the safety goals, as well as their corporate business plans and strategies. A regulatory framework that is technology-neutral ensures the CNSC does not, through regulation, inappropriately limit the choice of technology available to companies who

may wish to build and operate new nuclear power plants in Canada. However, all technology proposed will need to meet the standards for health, safety, security and environmental protection.

3. LICENSING PROCESS FOR NEW NUCLEAR POWER PLANTS

The licensing process under the NSCA is initiated by an application sent by the proponent to the CNSC. As stated in the *CNSC Rules of Procedure*, the application must be filed with the Secretary of the Commission.

In the CNSC's regulatory regime, nuclear power plants are defined as Class I nuclear facilities, and the regulatory requirements for these facilities are found in the *Class I Nuclear Facilities Regulations*. The regulations also require separate licences for each of the five phases in the life-cycle of a nuclear power plant:

- (1) a licence to prepare a site;
- (2) a licence to construct;
- (3) a licence to operate;
- (4) a licence to decommission; and
- (5) a licence to abandon³.

The CNSC's assessment of information submitted by applicants in support of their application is carried out with input from other federal and provincial government departments and agencies responsible for regulating health and safety, environmental protection, emergency preparedness, and the transportation of dangerous goods.

The NSCA does not have provisions for combined licences for site preparation, construction, or operation. Separate licences must, therefore, be granted for each phase, and would be issued in sequence. However, applications to prepare a site, to construct and to operate a new nuclear power plant would be assessed in parallel. Additional information on the licensing process under the NSCA is provided in section 3.2 of this document.

In addition to the five licensing steps pursuant to the NSCA and its regulations, Section 5(1)(d) of the CEAA stipulates that an EA must be carried out to identify whether a project is likely to cause significant environmental effects before any federal authority issues a permit or licence, grants an approval or takes any other action for the purpose of enabling the project to be carried out in whole or in part. More information on EAs is available in the next section.

³ Licences to abandon nuclear power plants are not discussed further in this document.

3.1 A PREREQUISITE FOR LICENSING: ENVIRONMENTAL ASSESSMENT UNDER THE CANADIAN ENVIRONMENTAL ASSESSMENT ACT

EAs are initiated following an application under the NSCA for a licence to prepare the site, and are carried out under the CEAA. EAs identify whether a specific project is likely to cause significant environmental effects, and that potentially significant adverse effects are identified and mitigated to the extent possible. By considering environmental effects and mitigation early in project planning, potential delays and unnecessary costs can be avoided or reduced. EAs are carried out when any of the following conditions apply to a proposed project:

- federal, provincial or territorial government approval is needed;
- federal land is needed; or
- federal funding is needed.

In the context of licensing a new nuclear power plant, this means that before any licensing decision can be made with respect to the new nuclear power plant, an EA must be completed with a decision that the project is not likely to cause significant adverse environmental effects with the available mitigation measures. If the decision on the EA is negative, the project will not proceed.

Large-scale and environmentally-sensitive projects usually undergo a more intensive environmental assessment called a comprehensive study, which includes mandatory opportunities for public participation. Nuclear power plants are identified in CEAA's *Comprehensive List Study Regulations*, which identifies the projects for which comprehensive studies are mandatory. The EA for a new nuclear power plant would, therefore, be conducted as a comprehensive study, unless referred by the Commission (starting with a recommendation from CNSC staff) or the Minister of the Environment for review by an EA panel or mediator. A project is referred for review to an EA panel in the following cases:

- when it may cause significant adverse environmental effects, after taking into account mitigation measures;
- when it is uncertain whether a project will cause significant environmental effects, given the implementation of mitigation measures; or
- where public concerns warrant referral.

If a decision is made to refer the EA for a new nuclear power plant for review by an EA panel, the CEAA provides for one of the following three approaches to be taken:

- a panel review conducted by a panel appointed by the Minister of the Environment;
- a substitution arrangement whereby the Commission process is used as a complete substitute for an environmental assessment panel review; or
- a joint review process, whereby the Commission (represented by one or more members) is supplemented with temporary member(s) appointed by the Minister of the Environment.

The approach chosen for the panel review would require approval by the federal Minister of the

Environment. The decision by the Minister of the Environment is based on discussions between the CNSC as the primary responsible authority (RA) for the EA, other identified responsible authorities, the Canadian Environmental Assessment Agency and other federal departments and agencies having an interest in the project. The procedures for the conduct of the panel review would depend on the approach selected, but would incorporate, as appropriate, the procedures set out in the 1997 Ministerial Guidelines entitled *Procedures for an Assessment by a Review Panel* (available at http://www.ceaa-acee.gc.ca/013/0001/0007/panelpro_e.htm).

The key documents involved in a panel review are:

- Terms of Reference of the panel: issued by the Minister of the Environment, following consultation with the RAs;
- EA Guidelines: developed by federal departments and agencies or the panel, usually after public consultation, and issued to the licence applicant;
- Environmental Impact Study (EIS): developed by the licence applicant, in response to the requirements of the EA Guidelines;
- Report of the Review Panel: prepared by the panel following public hearings, submitted to the Minister of the Environment, and made available to the public; and
- Government Response: prepared by the RA, in consultation with other federal government departments, and submitted for approval by the Governor in Council, before being released to the proponent and the public.

Note that there may be a need to harmonize the federal EA process with provincial requirements and coordinate EA activities where possible. Given the potential for overlapping EAs, the CEAA allows the federal Minister of the Environment to enter into agreements with provincial and territorial governments relating to the EA of projects where both governments have an interest. These agreements provide guidelines for the roles and responsibilities of each government in the assessment of such projects.

Figure 1 provides a graphic representation of the generic EA panel review process.

3.2 LICENSING PROCESS UNDER THE *NUCLEAR SAFETY AND CONTROL ACT*

The process that the CNSC follows for the assessment of a licence application under the NSCA is depicted in the process map in Figure 2. This process map shows key activities carried out by the applicant, CNSC staff and the Commission. Information to be provided by the applicant when applying for a licence for site preparation, or construction, operation or decommissioning of a new nuclear power plant is specified in:

- Section 3 of the *General Nuclear Safety and Control Regulations*;
- Sections 3 through 7 of the *Class I Nuclear Facilities Regulations*;
- the *Nuclear Security Regulations*;
- the *Radiation Protection Regulations*;
- the *Packaging and Transport of Nuclear Substances Regulations*; and
- the *Nuclear Substances and Radiation Devices Regulations*.

Licence applications must contain all of the information specified in the regulations mentioned above. This information should be comprehensive and complete at the time the application is submitted, so that the CNSC's assessment of the application can be as effective and efficient as possible, and so that any concerns can be identified at the earliest possible time. This, in turn, will optimize the time needed by CNSC staff to carry out the regulatory assessment and prepare recommendations regarding the application for consideration by the Commission.

In addition, information on decommissioning plans and financial guarantees for the new nuclear power plant are required early in the licensing process. The *Class I Nuclear Facilities Regulations* require applicants to provide information on the proposed plan for decommissioning their nuclear facility or site. In addition to this information on decommissioning plans, the *General Nuclear Safety and Control Regulations* require that information on financial guarantees accompany licence applications. Financial guarantees are required in order to ensure that sufficient funds are available for decommissioning the plant at the end of its useful life, and for the long-term management of spent nuclear fuel. Information on proposed financial guarantees should include any obligations for funding the decommissioning and long-term management of nuclear fuel waste pursuant to the *Nuclear Fuel Waste Management Act*.

Early communication with the CNSC can help the applicant develop a good understanding of the regulatory requirements for new nuclear power plants, the licensing process and the information to be submitted in support of a licence. Early communications also enable the CNSC to plan for the regulatory review, including making sure that qualified staff are available to carry out the assessment.

3.2.1 Site Preparation

Prior to issuing a licence to prepare a site for construction of a new nuclear power plant, the Commission must be satisfied that it is feasible to design, construct and operate the facility on the proposed site in a manner that will meet all health, safety, security and environmental protection requirements. In addition, the Commission cannot issue a site preparation licence unless a positive decision has been made on the EA as required by Section 5(1)(d) of the CEAA. The CNSC will also need to be assured that the site meets all applicable regulatory requirements.

The following aspects are considered in the evaluation of the suitability of a site over the life of a nuclear power plant:

- the potential effects of external events (such as seismic events, tornadoes and floods) and human activity on the site;
- the characteristics of the site and its environment which could influence the transfer to persons and the environment of radioactive and hazardous material that may be released; and
- the population density, population distribution and other characteristics of the region, insofar as they may affect the implementation of emergency measures and the evaluation of the risks to individuals, the surrounding population and the environment.

Specific information required to obtain a licence to prepare a site is listed in Section 4 of the *Class I Nuclear Facilities Regulations* (available at <http://laws.justice.gc.ca/en/n-28.3/sor-2000-204/153624.html>).

The goal of the CNSC at the site preparation stage is to ensure that the site characteristics which have an impact on health, safety, security and the environment have been identified and that these characteristics can, and will, be taken into consideration in the design and operation of the new nuclear power plant. The technical information arising from consideration of external events, site specific characteristics and supporting safety assessments, are used as input into the design of the new nuclear power plant, and must be included in the application.

CNSC staff's conclusions and recommendations from these reviews are documented in reports submitted to the Commission. It is the Commission, not CNSC staff, which issues the licence to prepare the site after holding a public hearing, where all parties (applicant, CNSC staff and intervenors) have the opportunity to participate. As noted earlier, the Commission may not issue a licence unless it is satisfied that the applicant will make adequate provisions to protect health, safety, security and the environment, and to implement international obligations to which Canada has agreed. It is the responsibility of the applicant to demonstrate to that it will make such provisions when applying for a licence.

Licences are typically issued with conditions, which may include "hold points" where CNSC approval is required before further work may proceed.

Figure 1: The Generic EA Panel Review Process

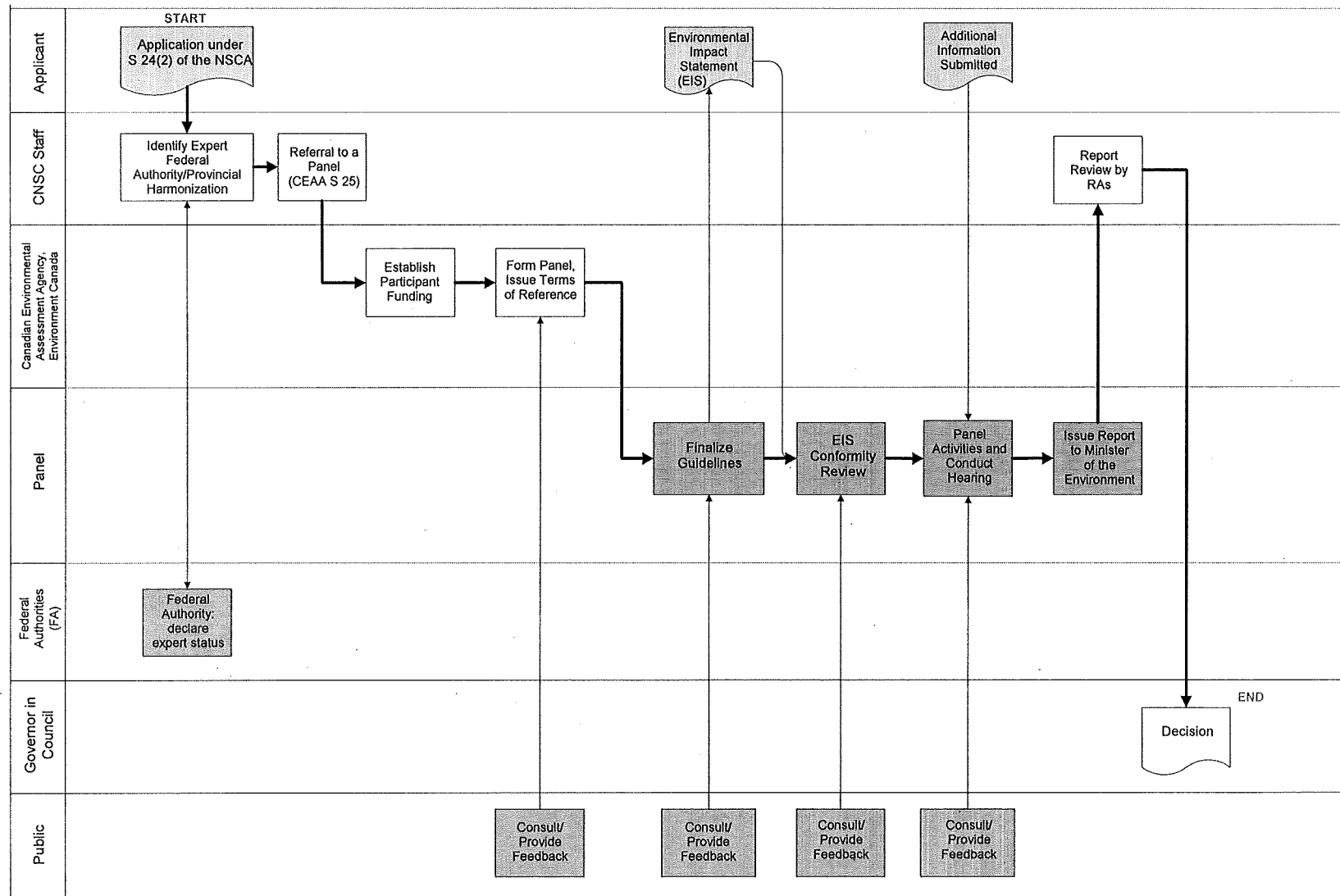
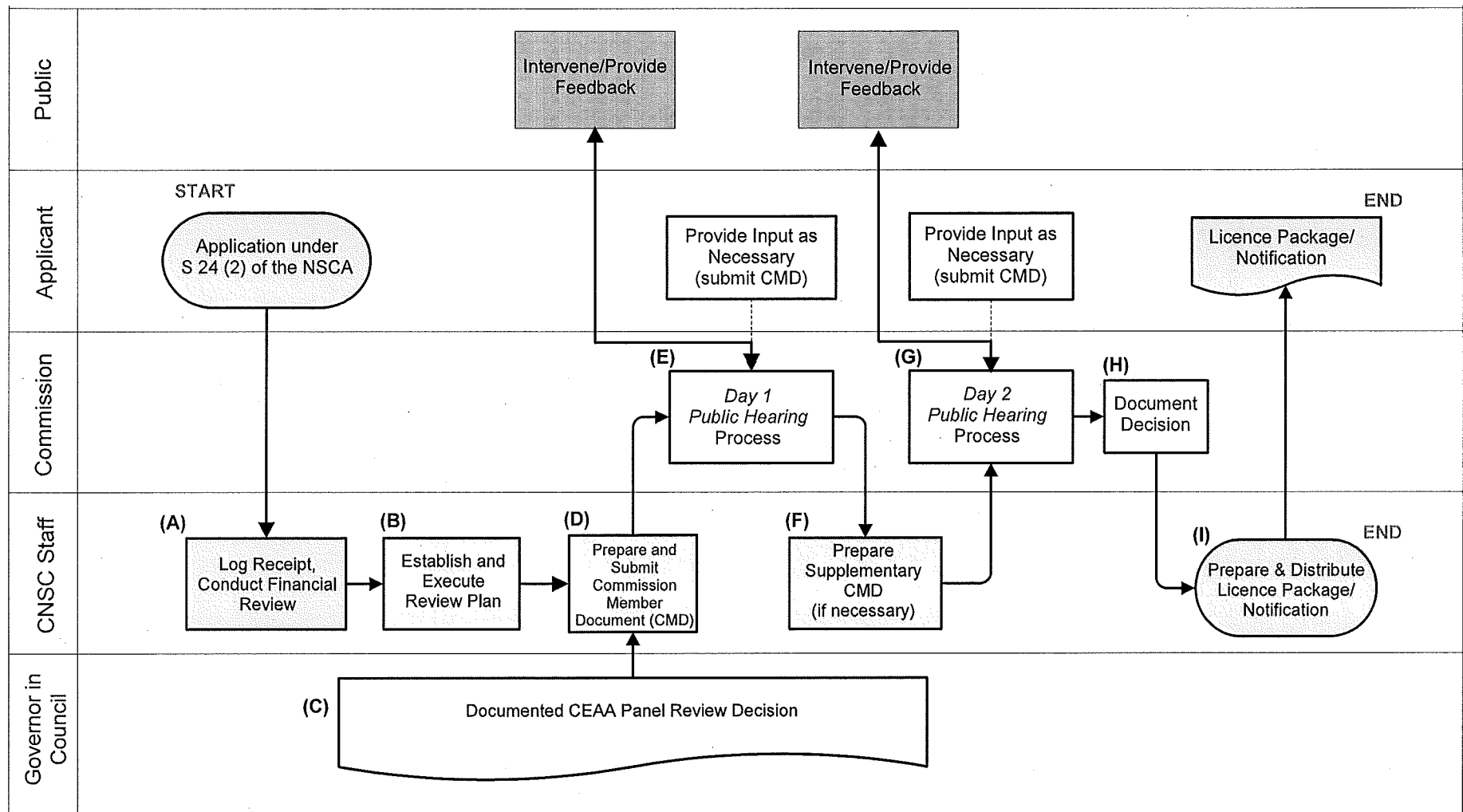


Figure 2: The Process for Obtaining a Licence under the *Nuclear Safety and Control Act*



3.2.2 Construction

When applying for a licence to construct a new nuclear power plant, it is the responsibility of the applicant to demonstrate to the CNSC that the proposed design of the new nuclear power plant conforms to regulatory requirements and, if constructed as designed, will provide for safe operation on the designated site over the proposed plant life. Information required in support of the application to construct a new nuclear power plant includes, for example:

- a description of the proposed design for the new nuclear power plant, taking into consideration physical and environmental characteristics of the site;
- environmental baseline data on the site and surrounding area;
- a Preliminary Safety Analysis Report showing the adequacy of the design;
- measures to mitigate the effects on the environment and health and safety of persons that may arise from the construction, operation or decommissioning of the facility;
- information on the potential releases of nuclear substances and hazardous materials, and proposed measures to control them; and,
- programs and schedules for recruiting and training operations and maintenance staff.

A more complete listing of the information required to obtain a licence to construct a new nuclear power plant is listed in Section 5 of the *Class I Nuclear Facilities Regulations* (available at <http://laws.justice.gc.ca/en/n-28.3/sor-2000-204/153624.html>).

Upon receipt of the construction licence application, the CNSC performs a comprehensive assessment of the design documentation, Preliminary Safety Analysis Report and other information required by the regulations. The assessment focuses on determining whether the proposed design and safety analysis, along with other required information, comply with regulatory requirements. This review involves both rigorous engineering and scientific analysis and engineering judgement, taking into consideration the CNSC's experience and knowledge of best practices in nuclear plant design and operation gained from existing power plants in Canada and around the world.

In addition to reviewing the information included in the application, the CNSC also verifies that any outstanding issues from the site preparation stage have been resolved.

CNSC staff's conclusions and recommendations from these reviews are documented in reports submitted to the Commission; the Commission then makes the final decision on the issuance of the construction licence. As noted earlier, the Commission may not issue a licence unless it is satisfied that the applicant will make adequate provisions to protect health, safety, security and the environment, and to implement international obligations to which Canada has agreed. As such, it is the responsibility of the applicant to show that there are no major safety issues outstanding at the time the Commission considers the application for a construction licence.

During the construction phase, the CNSC carries out compliance activities to verify that the licensee is complying with the NSCA, associated regulations and its licence. Such compliance activities focus on confirming that plant construction is consistent with the design, and confirming that quality assurance requirements are being met.

3.2.3 Operation

When applying for a licence to operate a new nuclear power plant, it is the responsibility of the applicant to demonstrate to the CNSC that it has established the safety management systems, plans and programs that are appropriate to ensure safe and secure operation. Information required in support of the application for a licence to operate includes, for example:

- a description of the structures, systems and equipment at the nuclear power plant, including their design and operating conditions;
- the Final Safety Analysis Report; and
- proposed measures, policies, methods and procedures for:
 - commissioning systems and equipment;
 - operating and maintaining the nuclear facility
 - handling nuclear substances and hazardous materials;
 - controlling releases of nuclear substances and hazardous materials into the environment;
 - preventing and mitigating the effects on the environment and health and safety resulting from operation and decommissioning of the plant;
 - assisting off-site authorities in emergency preparedness activities, including assisting off-site authorities to deal with an accidental off-site release; and
 - nuclear security.

A more complete listing of the specific information required to obtain a licence to operate a new nuclear power plant is found in Section 6 of the *Class I Nuclear Facilities Regulations* (available at <http://laws.justice.gc.ca/en/n-28.3/sor-2000-204/153624.html>).

In addition to assessing the information included in the application to operate the new nuclear power plant, the CNSC also verifies that any outstanding issues from the construction licensing stage have been resolved.

CNSC staff's conclusions and recommendations from these reviews are documented in reports submitted to the Commission, which makes the final decision on the issuance of the operating licence.

The licence to operate will enable the operator to load nuclear fuel and begin commissioning. The purpose of the commissioning activities is to demonstrate that the plant has been constructed in accordance with the design, and that the systems, structures and components important to safety are functioning reliably. The initial operating licence is typically issued with conditions (hold points) to load nuclear fuel, permit reactor start-up, and operation at power in steps up to the design rating of the plant. All relevant commissioning tests must be satisfactorily completed before hold points can be relinquished.

During subsequent long-term operation of the plant, the CNSC carries out compliance activities to verify that the licensee is complying with the NSCA, associated regulations and its licence. If the compliance activities identify a non-compliance or an adverse trend, there is a range of

possible actions that the CNSC can take, ranging from a requirement for licensee action to prosecutions.

3.2.4 Decommissioning

As noted above, information on decommissioning plans and financial guarantees will, in practice, be taken into account at all stages of licensing (site preparation, construction and operation). At the end of a nuclear power plant's useful life, it will be necessary to decommission the facility. This will require a separate licence from the Commission. Factors taken into account when evaluating an application to decommission a nuclear power plant include, but are not limited to:

- the major components and systems within the facility, to ensure that they are properly considered during decommissioning planning;
- the design features that will facilitate the decommissioning activities and reduce the spread of contamination during operation;
- the expected levels of activation and contamination within the facility following the end of operation;
- an assessment of structures to ensure that they are capable of being maintained for the proposed period of storage and monitoring;
- the disposal of some of the nuclear materials and radiation devices (e.g., fresh fuel, spent fuel, heavy water likely contaminated with tritium and other prescribed nuclear materials); and
- the quantities or volumes of wastes of all types (radioactive and hazardous) expected during the decommissioning activities.

A listing of the specific information to be provided in support of an application to obtain a licence to decommission a nuclear power plant is found in Section 7 of the *Class I Nuclear Facilities Regulations* (available at <http://laws.justice.gc.ca/en/n-28.3/sor-2000-204/153624.html>).

In addition, the licensee must show that they have sufficient funds to decommission the plant and provide for the long-term management of spent nuclear fuel.

4. CONSIDERATIONS REGARDING THE TIMEFRAME FOR LICENSING NEW NUCLEAR POWER PLANTS IN CANADA

The regulatory effort required for new plant licensing, from receipt of the initial application to commercial operation, can be divided into four stages:

- EA;
- licence to prepare the site;
- licence to construct; and
- licence to operate.

Figure 3 shows the process map for licensing a new nuclear power plant, including the EA, work carried out by the CNSC to assess applications, key decision points in the process and activities performed by the applicant.

The NSCA does not have provisions for combined licences for site preparation, construction, or operation. Separate licences must, therefore, be granted for each phase, and would be issued in sequence. However, applications to prepare a site, to construct and to operate a new nuclear power plant would be assessed in parallel.

Factors that may influence the duration of the licensing process include:

- the EA process could take up to 36 months, depending on whether the EA is carried out as a comprehensive study or carried out by a panel, and depending on the amount of time required by the licence applicant to prepare the necessary documentation (e.g. EIS, providing additional information requirements). This is a best estimate, based on past experience;
- the information required to accompany the application is submitted in a comprehensive and complete package so that the assessment of the application can be carried out in an effective, efficient and timely manner;
- the time required for the applicant to carry out its activities (i.e. prepare the site, and construct and commission the new nuclear power plant);
- whether there are any major safety issues that require resolution before CNSC staff can prepare their recommendations to the Commission; and
- whether the CNSC has the resources to carry out its review in a timely manner.

Given these factors, it is difficult to specify the duration of the licensing process.

5. PUBLIC INVOLVEMENT IN THE LICENSING PROCESS

The CNSC is committed to operating with a high level of transparency. This includes engaging stakeholders through a variety of appropriate consultation processes, effective information sharing and communications.

An EA for a new nuclear power plant, conducted either at the comprehensive study or panel review level, provides significant opportunities for public participation. If a decision is made to refer the project to a review by an EA panel, these opportunities include commenting on draft EIS Guidelines, commenting on the EIS and participating in public hearings. In addition, in panel reviews, there is also a provision for funding to assist participants in preparing for and participating in the review. These funds are provided and administered by the Canadian Environmental Assessment Agency.

Consideration of licence applications for new nuclear power plants by the Commission follows the public hearing process as set out in the *CNSC Rules of Procedure*, which are available on the CNSC's Web site at www.nuclearsafety.gc.ca. Typically, public hearings for licensing applications for nuclear power plants take place over two hearing days in a ninety-day period.

Public hearings give affected parties and members of the public an opportunity to be heard before the Commission. The timelines for both one-day and two-day hearings, based on the *CNSC Rules of Procedures*, are shown in Figure 4.

Licensing decisions for new nuclear power plants will likely be made after a two-day public hearing held over a ninety-day period. Following Hearing Day 2, the Commission members will deliberate and render a Record of Proceedings, including Reasons for Decision. Typically, the Record of Proceedings and Reasons for Decision are published within six weeks after the close of the hearing.

In addition to the formal licensing process, the CNSC encourages licence applicants to undertake pre-application communications activities, such as public consultations, regarding their plans for new nuclear power plants. The CNSC has issued a regulatory guide which provides general information to licensees on the regulatory requirements for public information programs.

Figure 3: Licensing Process for a New Nuclear Power Plant in Canada

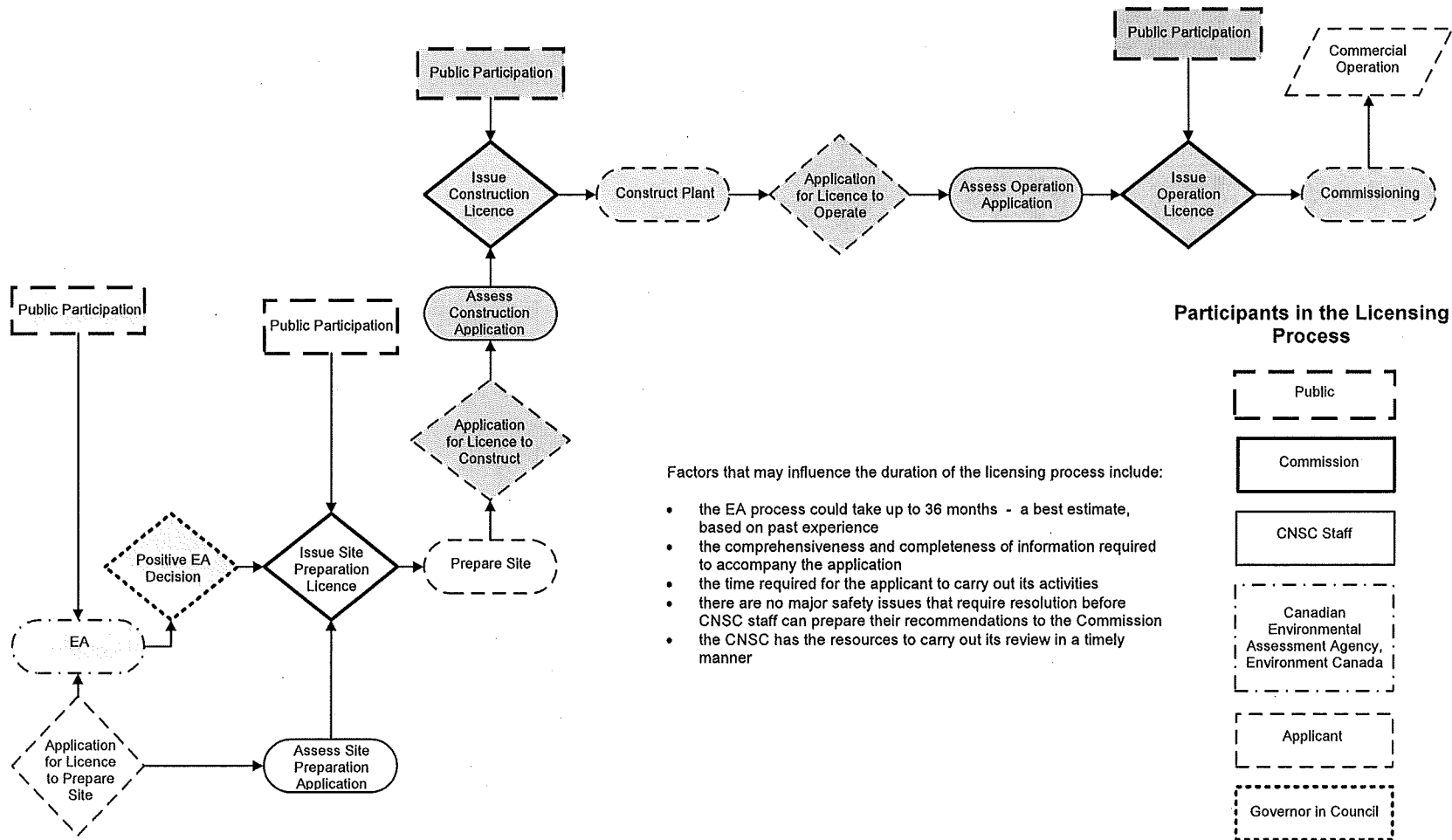
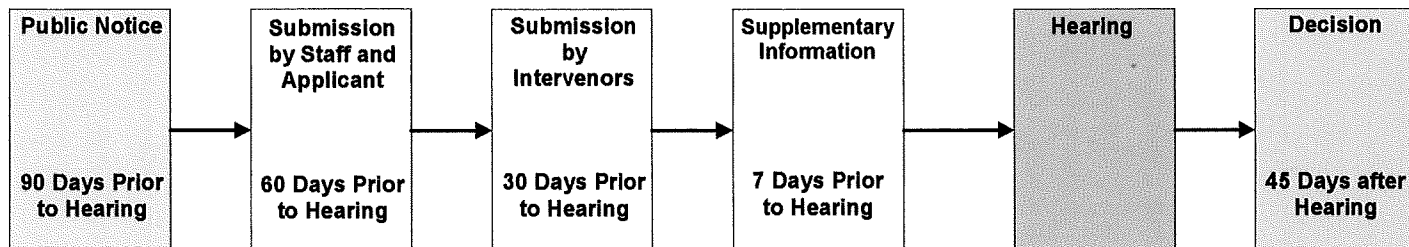


Figure 4: Timelines for One-Day and Two-Day Hearings

One-Day Hearing (~ 5 Months)



Two-Day Hearing (~ 6 Months)

