

SECTION 7: ITER CANADA PLAN TO HOST ITER

LICENSING OF ITER IN CANADA

7.1 INTRODUCTION

The Iter facility in Canada will be required to be licensed as a nuclear facility by the Canadian Nuclear Safety Commission (CNSC), ie. the Canadian nuclear regulator, under the provisions and Regulations of the Canadian *Nuclear Safety and Control Act (NSCA)*. Section 7.2 will describe the Canadian licensing process, both in general and as it will be specifically applied to Iter sited at Clarington. The requirements for the licensing of Iter in Canada are anticipated and provided for in the current *Act* and Regulations.

The Canadian licensing process will also require a formal environmental assessment, under the Regulations of the *Canadian Environmental Assessment Act (CEAA)*. The environmental assessment process in Canada is described in Section 7.3 and it also is designed to accommodate projects such as Iter.

A comprehensive plan to license Iter in Canada has been developed in consultation with the Canadian Nuclear Safety Commission (CNSC) and the Canadian Environmental Assessment Agency (CEAA). Considerable work has already been completed by Iter Canada that will lead to the required license. This is described, along with the work still to be done during the negotiations process, in Section 7.4. It should be noted that this work by Iter Canada is being done on behalf of the eventual Iter Legal Entity, as the Iter Legal Entity will be the licensee of the Canadian Nuclear Safety Commission.

To fully understand this Section of the Plan, the follow are included for easy reference:

Attachment 7-A: An overview of the *Canadian Nuclear Safety and Control Act*.

Attachment 7-B: An overview of the *Canadian Environmental Assessment Act*.

Attachment 14-3: The complete text of the *Canadian Nuclear Safety and Control Act* and Regulations.

Attachment 14-4: The complete text of the *Canadian Environmental Assessment Act* and Regulations.

Due to the varying licensing processes among the potential host countries, and the significant differences in the Canadian licensing process, compared with the other countries, Iter Canada proposes that early in the negotiation phase (See Section 4) a

workshop, hosted by Iter Canada, be convened to fully present the Canadian process that the Iter project will be subject to in Canada. This would include the participation of representatives of the Canadian Nuclear Safety Commission and the Canadian Environmental Assessment Agency.

7.2 THE CANADIAN LICENSING PROCESS

7.2.1. **Government Control of Nuclear Activities in Canada:** The Government of Canada was one of the first jurisdictions to create legislation to provide for civil regulation of nuclear energy when it passed the *Atomic Energy Control Act* in 1946. This early legislation established complete federal control over all aspects of the civil utilization of nuclear energy and nuclear materials, and established the Atomic Energy Control Board (AECB) as the regulatory body to regulate these important activities. The Federal Government has continued to demonstrate clear federal jurisdiction over the control of nuclear activities in Canada with the recent introduction of the *Nuclear Safety and Control Act (NSCA)*, which came into effect on 31 April 2000. The *Nuclear Safety and Control Act* maintains full federal control over all aspects of nuclear energy and nuclear materials and created the Canadian Nuclear Safety Commission (CNSC) to continue the regulatory activities of the former AECB.

The importance the Federal Government continues to assign to the proper regulation of nuclear activities is stated in the preamble to the *Nuclear Safety and Control Act*, which recognizes that:

“it is essential in the national and international interests to regulate the development, production and use of nuclear energy and the production, possession and use of nuclear substances, prescribed equipment and prescribed information,

and,

It is essential in the national interest that consistent national and international standards be applied to the development, production and use of nuclear energy”.

This new nuclear regulatory legislation provides a modern, up-to-date base for the regulation of a fusion facility in Canada.

7.2.2. **Fusion Under the Nuclear Safety and Control Act:** The *Nuclear Safety and Control Act* clearly covers the anticipated licensing of a fusion facility.

“**Nuclear energy**” in the *Nuclear Safety and Control Act* is defined as “any form of energy released in the course of nuclear fission or nuclear fusion or of any other nuclear transmutation”. (See section 2 of the Act.)

A “**nuclear facility**” in the *Nuclear Safety and Control Act* is defined, amongst other classes, as meaning “**a nuclear fission or fusion reactor, or sub critical nuclear assembly**”. (See section 2 of the Act.)

7.2.3. **The New Regulations:** The new Regulations issued under the new *Nuclear Safety and Control Act* also came into effect on 31 April 2000. These Regulations also clearly anticipate the licensing of a fusion facility. Under these Regulations a fusion facility is defined as a Class I Nuclear Facility (See Attachment 14-3). The Regulations in Canada are partially facility specific, such as the Class I Nuclear Facilities Regulations, and partially generic, such as the Radiation Protection Regulations. Facility specific regulations contain few quantitative technical requirements, leaving these to be developed through dialog between the applicant and the CNSC. An important exception to the lack of quantitative regulations applying to large facilities are the dose limits contained in the Radiation Protection Regulations, however these are consistent with internationally recommended standards.

7.2.4. **Licensing Model for Nuclear Facilities in Canada:** The licensing of major nuclear facilities in Canada has depended strongly on a regulatory model where the regulator states general safety objectives, and the applicant proposes the design of the facility and the controls necessary to meet those general safety objectives. This model provides the maximum flexibility for the licensing of new facilities such as a fusion reactor, but it also demands high standards of performance from both the regulator and the applicants. Good communication between the applicant and the regulator is also essential in this regulatory model.

That the CNSC as regulator can continue to use this model under the new *Nuclear Safety and Control Act* is clear from the Objects of the CNSC as stated in the new act (see section 9 of the Act) which are:

“to regulate the development, production and use of nuclear energy and the production, possession and use of nuclear substances, prescribed equipment and prescribed information in order to

- (i) prevent unreasonable risk, to the environment and the health and safety of persons, associated with that development, production, possession and use,*
- (ii) prevent unreasonable risk to national security associated with that development, production, possession and use,*
- (iii) achieve conformity with measures of control and international obligations to which Canada has agreed.*

An example of this process is the establishment by the CNSC in regulations, of the basic dose limits. These regulations set out the maximum exposures allowed for nuclear energy workers and members of the public, and generally follow international standards. The applicant for a license to operate a nuclear facility must describe to the regulator, exactly how the design and operation of the proposed facility will ensure that these dose regulations are met. This licensing system generally avoids placing restrictions on the applicant on how the plant will be designed and operated to meet the safety requirements. This licensing model is intended to encourage the applicant to produce innovative approaches to safe design and to aim for very high standards of safety and protection of the public.

- 7.2.5. **Licensing Process in Canada:** An applicant for a license for a fusion facility in Canada would provide the CNSC with a letter-of-intent to open the licensing process (see Section 7.4 for this applied to Iter in Canada). Much of the information necessary in the application is already specified in the regulations or in guides. The few pre-specified quantitative technical regulatory limits, such as the dose regulations, are already established and the designers can incorporate these limits into the safety analyses. The applicant would provide the detailed design and show how the workers and the public will be protected. Guidance for the applicant in the information to be submitted is available in Regulatory Guidance Documents (RGDs) described below.

Some additional dialog between the applicant and the regulator can be anticipated where there are new hazards that have not been encountered by the regulator. An example for a fusion facility might be the protection required from the hazards of large magnetic fields.

When all issues have been resolved, the CNSC would issue a license, often with some conditions specific to the facility. This power to include a license condition specific to a facility is a useful and valuable regulatory tool and allows flexibility that may not be available in countries that use a more prescriptive licensing system. The licensing of a large facility would normally progress through several stages, the first being the site license, the second the construction license, and the third, the license to operate the facility.

At an early stage in the licensing, the CNSC will make a determination of the need for an environmental assessment.

- 7.2.6. **The Environmental Assessment Process in Canada:** In Canada, a nuclear facility may be subject to an environmental assessment process that is public in nature, and that may be conducted by an agency other than the nuclear regulator. The pertinent legislation is the *Canadian Environmental Assessment Act (CEAA)* (See Attachment 7-B and 14-4). Due to the critical nature of the environmental assessment process to the successful siting of Iter on the Clarington site, this process is described more fully in Section 7.3 below.

The “triggering” of the environmental assessment review process for a fusion facility would be a letter-of-intent to the CNSC to seek a license to site or construct. The CNSC will make the original determination if an environmental assessment process is required, and will contribute to the determination of what level of assessment process is required.

Of the nearly 25,000 environmental assessments conducted under the *Canadian Environmental Assessment Act* to date, more than 99 percent have involved the less onerous Screening level of assessment. The type of project undergoing screening varies widely, and can be applicable to both large and small scale projects.

As of mid-1999, 46 proposed projects required a more extensive form of environmental assessment, ie. a Comprehensive Study, and 23 of these studies were still under way as of mid-year 2000.

Since the introduction of the *Act*, five projects have undergone the review by a Panel, with another four Panel reviews are underway as of mid-1999. The majority of these Panel reviews were performed co-operatively, either combining the federal process with that of a provincial jurisdiction, or by combining with another federal review process, such as that of the National Energy Board which is responsible for projects associated with the Canadian oil and gas industry.

The Federal Minister of the Environment is now conducting a review of the *Canadian Environmental Assessment Act*, commonly referred to as the Five-Year Review, and one of the major goals is to improve the predictability, consistency and timeliness of the federal process. Introducing greater certainty, consistency and timeliness could result in savings in cost and time to industry, government and other stakeholders; reductions in the likelihood of litigation; and an improved climate for private sector investment.

Any improvements arising from this Five-Year Review could be in place by the time a fusion facility is licensed in Canada.

- 7.2.7. **The Canadian Nuclear Safety Commission Hearing Process:** In conducting its licensing process the CNSC provides extensive information to the public or any other interested parties. The licensing hearings are open to the public and the technical licensing documents are available for review by any interested party. The open access offered by the CNSC has always been balanced by sound management of the licensing process and good control over all participants in the process. The CNSC has full and complete control over the hearing process. The *Nuclear Safety and Control Act* establishes the Commission as a court of record, with the power to issue summons to appear and to administer oaths. At the same time, the *Nuclear Safety and Control Act*

directs the CNSC (see section 20 of the *Act*) to continue its informal and expeditious process by requiring that:

“All proceedings before the Commission shall be dealt with as informally and expeditiously as the circumstances and considerations of fairness permit, but, in any case, within the prescribed period of time”.

The *Nuclear Safety and Control Act* does not bind the Commission to the legal rules of evidence and gives it the power to maintain order during its proceedings and to limit the participation of any person in its proceedings or to eject from the proceedings, any person who disrupts the proceedings. The AECB has an excellent reputation for conducting short, but open proceedings and has never allowed unreasonable procedural delays in reaching a licensing decision. The CNSC is expected to continue this practice.

The CNSC is the last level of technical appeal that is available for parties that wish to challenge the final decision of the Commissioners. Since 1946, no licensing decision of the AECB (the precursor to the CNSC) has been successfully challenged in court.

- 7.2.8. **Flexibility of the Canadian Regulator:** The nuclear regulator in Canada is responsible for the control of all nuclear activities. These include licensing of uranium and thorium mines, nuclear material processing facilities, uranium hexafluoride production plants, fuel fabrication plants, nuclear power reactors, research facilities, accelerators, radioisotopes for both industrial and medical purposes, transportation of nuclear materials, engineered above ground spent fuel storage facilities, waste management sites, and eventual disposal of all nuclear materials. The nuclear regulator is also responsible for the licensing of physical security of nuclear materials and facilities and for the application of safeguards to appropriate facilities and materials and the export control of nuclear materials, equipment and information. Few regulatory bodies in other countries have such a large span of licensing focused in one regulatory body. This wide span of experience provides an integration of licensing functions and a foundation for the flexible licensing system that provides close to a “one stop shopping” licensing process.
- 7.2.9. **Technical Support for License Applicants:** In addition to the *Nuclear Safety and Control Act* and its Regulations, there is a large set of non-mandatory regulatory documents that provide information on process or guidance to licensees, on how to meet the mandatory requirements or how to operate safely. These documents have recently been organized into the following five categories, Policies, Standards, Guides, Notices and Procedures. These five categories are generally referred to as Regulatory Guidance Documents (RGDs).

These Regulatory Guidance Documents describe policies, principles, standards, criteria, factors or procedures that the CNSC considers or follows in the exercise of its regulatory authority. Regulatory Guidance Documents are intended to guide the conduct of all persons subject to regulatory requirements, and others involved with the regulatory process. In general, these documents suggest or promote compliance approaches or standards acceptable to the regulator, but do not preclude other ways to satisfy the intent of the regulatory requirements. Compliance with Regulatory Guidance Documents is optional, unless required by its incorporation into a license. If a standard or procedure is incorporated in a license, it becomes a license condition and becomes mandatory with risk of sanctions for breach of the condition.

The CNSC uses these five classes of Regulatory Guidance Documents to organize and communicate regulatory guidance as follows;

A **Regulatory Policy** is a Regulatory Guidance Document that describes the philosophy, principles or fundamental factors that the CNSC uses to direct the actions of CNSC staff and guide the conduct of persons subject to regulatory requirements, as well as others who interact with the CNSC's regulatory process.

A **Regulatory Standard** is a Regulatory Guidance Document that describes detailed specifications, criteria or actions that can be objectively measured; are acceptable to the CNSC as meeting regulatory requirements; and that may be suitable for incorporation into CNSC licenses.

A **Regulatory Guide** is a Regulatory Guidance Document that describes criteria or actions, which the CNSC accepts and recommends as meeting regulatory requirements, but which are not suitable for incorporation into licenses.

A **Regulatory Notice** is a Regulatory Guidance Document that provides case-specific advice and information to alert licensees and others about significant health, safety or compliance issues that should be acted upon in a timely manner.

A **Regulatory Procedure** is a Regulatory Guidance Document that describes the work processes that the CNSC follows.

All of these non-mandatory regulatory documents support the Canadian regulatory system and assist the applicant in obtaining a license.

Many Regulatory Guidance Documents are already in existence that would provide guidance to an applicant seeking to license a fusion facility. These would include, for example, documents such as, “Decommissioning Planning for Licensed Activities”, and “Financial Guarantees for the Decommissioning of Licensed Activities”.

- 7.2.10. **The License Renewal Process:** Licenses to Site, Construct, and Decommission are issued only once by the CNSC to permit work to proceed in an orderly manner. Once a license is issued, the project would proceed as any normal non-nuclear project subject to compliance with environmental, safety and labour legislation.

Licenses to Operate a Nuclear Facility in Canada are based on the generally recognized need worldwide to periodically review performance of the licensee against the licensing basis. In Canada, the onus is on the licensee to demonstrate through periodic applications for license renewal, that the facility continues to be operated within the licensing basis established in the original license. Observed changes that occur in the facility operation such as aging must be shown to be within the assumed bounds.

In general, if the facility continues to be operated within the basis of the original license, and plans for emerging issues not considered in the original licensing basis are put forward and commitments met to the satisfaction of the CNSC, license renewal is assured. The normal period for license renewal during the operating phase is two years. However, there is a movement currently being developed to extend this period out to a five-year renewal process.

This License Renewal Process requires the continued maintenance of the licensing basis by the licensee, and the continued attention put to safety performance. It also provides the licensee with some flexibility in altering the nature and use of the facility on an on-going basis as a research facility might require, without a complete initial re-application provided the assumptions made on the impact on the environment in the original environmental assessment continue to be valid.

- 7.2.11. **Decommissioning of a Nuclear Facility in Canada:** The new Nuclear Safety and Control Act of Canada requires the CNSC to ensure that appropriate financial guarantees are in place for the decommissioning of a nuclear facility. The CNSC considers a segregated fund as an appropriate means to comply with the requirement. As part of the licensing process, the licensee is required to submit a proposed decommissioning plan and estimate of the future cost of decommissioning, along with a financial plan demonstrating how the liabilities will be met. There is no prescribed formula for funding. The CNSC must agree with the plan submitted.

The plan could include recognition that the liabilities incurred are a function of the use of the facility. For example, if decommissioning of the facility were to occur just after a phase of little or no material activation, the cost of decommissioning would be substantially less than after a protracted period of DT burn. Thus the size of the fund at the earlier point could be substantially smaller than later on.

The plan may also include periods following operation for “cooling off”, as well as acceptable actuarial assumptions on the investment growth of the fund.

The CNSC will require guarantees that the licensee has appropriate funds set aside to return the site to a green field, according to the plan submitted. It should be noted that in Canada, if the licensee was to default prior to decommissioning, the CNSC has the legal right to assume the Trusteeship of the segregated fund and direct its expenditure as appropriate to complete decommissioning and to further pursue legal action to recover any shortfall.

7.2.12. **The Proposed Location of the Canadian Site:** The proposed location for the fusion facility in Canada is adjacent to the Darlington Nuclear Generating Station. The CNSC is intimately familiar with this site through the licensing of the Darlington Nuclear Generating Station. The CNSC also has a local office on this site staffed with qualified inspectors. The extensive environmental information and experience already available, and the existing staffed site office, should contribute to reducing the costs and time of the regulator in reviewing the license application.

The provincial and regional political officials responsible for this site are familiar with the CNSC and have participated in the CNSC licensing process. It should also be noted that the regulator has held its formal regulatory meetings in the Clarington area from time-to-time, as part of its goal to being open and accessible to the public.

Good communications links are in place and can be utilized by Iter Canada and the Iter Legal Entity for a fusion facility. The public in the region of the site is also familiar with the licensing process of the CNSC. Many members of the public have frequently taken advantage of the access that the CNSC provides to the public and all other interested parties in conducting its licensing process.

7.2.12. Conclusions to the Licensing Process in Canada:

- In Canada, the licensing process is well defined, well understood, straightforward and workable for a fusion facility;
- In Canada, the federal government has clear and complete jurisdiction over the licensing of a fusion facility;
- The new *Nuclear Safety and Control Act* and the Regulations recently put into force clearly anticipate licensing of a fusion facility;
- The CNSC is the sole health and safety regulator and has licensed the full spectrum of nuclear activities in Canada for more than 50 years;

- The CNSC manages a flexible regulatory system, with competent staff, that can be expected to license a fusion facility within reasonable deadlines;
- The CNSC proceedings are open, balanced, well managed and fast. When issued, the CNSC licenses are sound and highly resistant to further legal challenges by objectors;
- The proposed site has many attractive and known features that will contribute to an efficient licensing process;
- Iter Canada, through several of its Members and Directors, has extensive experience in the original licensing and operating of major nuclear facilities in Canada. Iter Canada also has experience in the continuing licensing dialog carried out between major nuclear licensees and the AECB, and its successor the CNSC. Iter has additional access to an even wider range of licensing experience and the expertise to take maximum advantage of the flexible Canadian licensing system.

7.3 ENVIRONMENTAL ASSESSMENT

7.3.1 **Determination of the Requirement for an Environmental Assessment**

Process: The environmental assessment process begins with the Letter-of-Intent to construct Iter in Canada. This is submitted to the regulator, the Canadian Nuclear Safety Commission, in order to obtain a license to construct. It is this license application which triggers the environmental assessment (Attachment 14-4, *CEAA section 5(d)*).

Attached to the Letter-of-Intent is a description of the Iter project. The description includes the identification and characterization of the location, facilities or physical works involved in the construction and normal operation of the project. It also includes a description of the physical and biological environments within the areas potentially affected by the project, as well as corporate and contact information.

Following this submission, the CNSC will review the project description and determine whether it is a project as defined in section 2 of the *Canadian Environmental Assessment Act (CEAA)*. The CNSC will also determine the applicability of section 5 of the *CEAA*, and if the CNSC is likely to be the Responsible Authority (RA). Interpretation of these two sections of the *CEAA* will likely result in the Iter project being declared a project requiring an environmental assessment, and that the CNSC is the Responsible Authority.

7.3.2. **Initiation of the Environmental Assessment:** The CNSC will then inform the Canadian Environmental Assessment Agency and other Federal

Authorities of their determination. A public registry for the assessment will also be set up by the CNSC as required by section 55 of *CEAA* and includes a list of documents pertaining to the environmental assessment.

A public involvement program is required for Iter pursuant to section 18(3) of *CEAA*. As the Responsible Authority, the CNSC will be responsible for ensuring this public involvement. They may direct the proponent to conduct a public involvement program that meets their specifications. This program seeks to identify stakeholders (including the federal government, business community, media, neighbours and the general public) based on a set of criteria such as proximity to the project, economics, use of area and environmental concerns. Communication options may include newsletters, open houses, community centre displays and websites.

Based on the information provided by the proponent, the CNSC will consult the Comprehensive Study List (section 21-24 of *CEAA*) and the Exclusion List (section 7(1)(a) of *CEAA*) to determine if they apply to the project.

Whether the project follows a Comprehensive Study or Screening track, the CNSC can delegate the preparation of the environmental assessment to the applicant, in this case the Iter Legal Entity. However, the CNSC alone is responsible for ensuring that the assessment is conducted in compliance with the *CEAA*.

- 7.3.3. **The Scoping of the Environmental Assessment:** The *first step* of the process consists of the project and assessment scope. This step establishes the boundaries of the Screening or Comprehensive Study by defining the components of the proposed activity and the environmental effects that should be included under the environmental assessment.

In determining the scope of the project, the CNSC must consider the facilities or physical works involved in the operation of Iter and the specific undertakings that will be carried out in relation to these facilities. The scope of the assessment considers certain factors such as the environmental effects of the project during normal operations and accidents, as well as actions to mitigate any significant adverse environmental effects of the project. The complete list of factors is found in section 16 (1)(a) to (d) of the *CEAA* (see Attachment 14-4).

Inclusion of additional factors such as the purpose of the project and the need for any follow-up program, pursuant to section 16(1)(e) of the *CEAA*, are at the discretion of the regulator.

- 7.3.4. **Community and Stakeholder Consultation:** Community and stakeholder consultation is an important feature of the process, pursuant to section 4(d) of *CEAA*. The CNSC, as the Responsible Authority, determines both the

level and extent of public involvement. While the applicant may undertake the public involvement program, the CNSC may provide direction by recommending methods to solicit public input, and by advising on appropriate documentation to interested stakeholders and responses to public comments received.

7.3.5. **Assessment of the Environmental Effects:** The *second step* of the process is to assess the environmental effects of the project. This consists of three tasks:

- A description of the project;
- A description of the existing environment; and
- The analysis of the project-environment interactions.

For the first task, the project's components or activities are described in greater detail than at the letter-of-intent stage, including its location, physical layout and design, construction plans and operating procedures, sources and quantities of emissions and waste management, both for normal operations and for malfunctions and accidents.

A description of the existing environment identifies the physical, biological and social characteristics of the environment including present land use, resource use, landscape features, and species habitat and interrelationships. This discussion focuses on the main environmental components chosen for assessment.

Subsequently, information on the project and the existing environment can be used to identify potential links between them, by comparing the location and timing of project activities with the sensitivity, seasonal presence and abundance of environmental features. Based on these linkages, determination of the valued ecosystem components can be made. A discussion of cumulative effects is also included in this section. Cumulative effects are changes in the environment that are caused by an action in combination with past, present and future human actions. This type of study expands both the time frame and scale of the assessment, and considers their effect on the valued ecosystem components.

7.3.6. **Identification of Mitigation Measures:** Based on the analysis of the project/environment linkages, the *third step* of the environmental assessment process is to identify possible means of mitigation to eliminate, reduce or control Iter's likely environmental effects, pursuant to section 2 of *CEAA*.

7.3.7. **Determination of the Significant Adverse Environmental Effects:** The *fourth step* of the process is to consider the significance of the adverse

environmental effects. Again, the analysis of the project/environment linkages and environmental components provides information on the residual environmental effects, after application of mitigation measures. Criteria to determine the significance of these effects may include magnitude, duration, ecological importance and geographic extent.

7.3.8. **Environmental Assessment Conclusions:** The *fifth step* of the process is for the applicant to form a conclusion regarding the project's significant adverse effects on the environment.

7.3.9. **The Canadian Nuclear Safety Commission Review:** After completion of the environmental assessment, the CNSC will review the structure and content of the document to determine if it complies with their initial assessment of the project and its effects.

Since concerns about the project can trigger a public review, issues raised by the public must be addressed explicitly upon completion of the environmental assessment report. In this case, the CNSC will establish a public comment period on the report and will provide the public with an opportunity to examine the environmental assessment before it makes any decision on whether to provide a license for the project. During this comment period, the CNSC must consider whether public concerns warrant referral to Mediation or a Panel Review.

7.3.10. **The Canadian Nuclear Safety Commission Recommendations:** Following the public comment period, CNSC staff will submit its recommendations on licensing to the Commission in a public hearing (See Section 7.2.7.). In turn, the CNSC will make a decision, pursuant to the *Act*, on whether the project is likely to cause significant adverse environmental effects and will determine an appropriate course of action.

As shown above, the overall process in Canada for the conduct of an Environmental Assessment is well defined. The regulator for nuclear installations, the Canadian Nuclear Safety Commission, should be the responsible authority for both determining the scope of assessment to be conducted, and later for accepting the results of the assessment in their determination for the issue of a license.

Public input is sought both at the stage of determining the scope of the environmental assessment to be conducted, and in the review of the environmental assessment reports. Individuals, including any special interest groups, have the right to make complaints to the courts. However, since the process for the conduct of an environmental assessment is well established through legislation, the only basis that the courts will consider for overturning a decision by the CNSC is if the CNSC is shown to have not followed the prescribed process.

7.4 THE LICENSING PLAN FOR ITER IN CANADA

Iter Canada has initiated the formal licensing process in Canada for Iter at the Clarington site. This initiative is to provide the assurance to the Iter participants that a license can be obtained in Canada concurrent with the creation of the Iter Legal Entity under the provisions of the Joint Implementation Agreement.

A brief description of some of the main activities for the Clarington Site is given below:

7.4.1: **Letter-of-Intent:** The Iter Legal Entity (The Iter International Fusion Energy Institute, or “The Iter Institute” for short) has been created initially as a Canadian domestic corporation (see Section 3.4) for purposes of submitting the letter-of-intent for a license to construct Iter to the Canadian Nuclear Safety Commission. This Letter-of-Intent is included as Attachment 7-C. It should be noted that this Letter-of-Intent had been reviewed and accepted by the Director and the Joint Central Team prior to its submission to the Canadian Nuclear Safety Commission.

Appropriate resources have been assigned from member companies of Iter Canada to the Iter Legal Entity, for purposes of preparing the technical documentation required and managing the process. It is noted that prior to the actual issuance of the license, the Iter Legal Entity would be established in its final form of an international organization, but with all the Parties to the Joint Implementation Agreement becoming members.

The information contained in the Letter-of-Intent was sufficient to “trigger” an Environmental Assessment as required under the *CEAA*, with the CNSC as the Regulatory Authority. The Iter project has now been designed as a Screen level environmental assessment. The CNSC is required to provide notice to other Government Departments, and the public, of the intent by the proponent to build Iter at Clarington.

At this stage, it is not necessary to formally apply for a license from the CNSC to initiate the Environmental Assessment process.

7.4.2. **CNSC Environmental Assessment Process Initiation:** Based on further information provided by the Iter Institute, the CNSC staff has prepared a “Scoping” document defining the exact process to be followed and the requirements that must be addressed in an Environmental Assessment report. The draft environmental assessment scoping document is shown in Attachment 7-D (to follow).

Clarington is within 50 kilometres of the Pickering Nuclear Generating Station and is located in the same biological and social environment as Pickering. A

recent Scoping report prepared for the restart of the Pickering A station by the CNSC staff is expected to provide a model for the Iter project environmental assessment requirements on the Clarington site.

- 7.4.3. **Environmental Assessment Report:** An environmental assessment report is prepared in response to the Scoping Report. Although the CNSC is responsible for this report as the Responsible Authority, the CNSC has tasked the Iter Institute to engage suitable resources to prepare the report. The report must address all requirements as outlined in the Scoping report.
- 7.4.4. **Public Input Process:** Opportunities must be provided by the CNSC to the public at large, and in the community around Clarington in particular, to provide comment to the CNSC on the Environmental Assessment Report. In practice for projects of this size, the proponent is likely to conduct its own public information and input process, and this is this has been initiated by the Iter Institute. Provided the methods used by the proponents are reviewed and agreed in advance by the CNSC, public input acquired through this method may be considered by the CNSC in its deliberations.

For Iter at Clarington, the CNSC will conduct its own public notification program, and will solicit and receive public input directly. However, Iter Canada will also be conducting a public awareness program, and data gathered through this program will be provided to the CNSC as additional input. The CNSC must also obtain review and input from other Government authorities.

After all input has been received, the CNSC staff will examine the Environmental Assessment Report in light of the requirements, and will disposition input from the public and other Government Departments. If additional issues are raised which are not fully addressed in the Environmental Assessment Report, which the CNSC staff considers materially relevant to the issue of a license, further work would be done to address the issue.

At the conclusion to the EA process, the CNSC will prepare a summary of their findings and if all requirements are satisfied, will submit a recommendation to the CNSC relative to the environmental impact of the proposed project.

- 7.4.5. **Technical Licensing Process:** The Iter Legal Entity, building on previous and current work conducted by the JCT, will prepare the various licensing documents required. Resources of the Legal Entity may be augmented as required by Iter Canada member companies, should work be initiated prior to setting up the full Iter Project team.

Two key pre-licensing activities have been initiated. One is to continue the work initiated by Iter Canada to provide an interpretation of the *Nuclear Safety and Control Act* and Regulations as they might apply to Fusion. The conclusion of this process would be an agreed “Licensing Basis Document” between the

applicant and the CNSC staff. This document would establish an accepted interpretation of the licensing requirements, as they would apply to fusion in Canada. The CNSC staff would commit to the applicant that if the requirements as outlined in the agreed basis were met, that a positive recommendation to the Commission to license would be made by the CNSC Staff.

A second key area is the completion of the Final Design Report (GSSR and Design Documents). This work is essential to permit the completion of the licensing basis agreement, and preparation of the site specific Preliminary Safety Report (PSR).

The site specific Preliminary Safety Report will be based largely on the product of the Joint Central Team/International Team, edited as required to include technical resolution of site specific design and licensing issues. Continued support of the Design Authority (currently the JCT), whether part of the Iter Legal Entity or not is essential for this activity. This will in due course be undertaken under the Coordinated Technical Activities.

The Preliminary Safety Report itself may be organized into chapters corresponding to the IAEA guideline for Safety Report preparation as shown, or left to a large extent in the same format as the GSSR to be issued by the JCT.

- 7.4.6. **Quality Assurance Program:** The Iter Legal Entity must show a commitment to an appropriate QA policy, and provide developed QA programs and procedures to the CNSC in the areas of design, procurement, and construction. This must be documented as part of the licensing submissions.

Since the Iter JCT has already conducted a large part of the design, it will be essential to demonstrate to the CNSC that prior design and analysis work, on which safety performance is based, has been conducted under an appropriate QA program in design and procurement. Assistance of the JCT will be required to demonstrate this, and/or to develop the appropriate transitional verifications and validations required permitting reliance on prior work.

- 7.4.7. **Systems Classifications:** Safety and safety related systems would need to be classified according to the safety significance for purposes of identifying appropriate technical standards. This is of particular importance to pressure boundaries and confinement barriers.

The SIC approach utilized to date by the Iter JCT has been examined and is likely to provide a good basis to support this activity, provided additional criteria are developed to include consideration of the risk to in-plant workers induced by the failure of safety and safety related systems.

System classification is an important step to setting the framework for approvals and audits conducted by the CNSC throughout the design, procurement and construction processes.

- 7.4.8. **Safeguards Measures:** Although Iter is not expected to have any implications with respect to the control of nuclear weapons proliferation, the CNSC will require a formal declaration of any Safeguards considerations, supported by a review of items to be imported to verify their exemption.
- 7.4.9. **Construction Program:** Details on the construction program concerning schedule and major item procurement will be provided to the CSNC. In the case of Iter, submission of information regarding procurement of safety and safety related equipment can be made at an early stage to permit the early manufacture of long lead items, prior to the issue of a construction license. Items not having a safety function may be procured at any time.
- 7.4.10. **Operations Program:** Information on the proposed operations organization, with particular emphasis on identifying those positions and training requirements for individuals carrying an authority for the safe operation of the facility, must be submitted as part of the application for the Construction license. This permits the CNSC to identify internal support requirements for authorized staff training that must take place prior to the issue of an Operating License.
- 7.4.11. **Miscellaneous Submissions:** Specific information as required by the *Nuclear Safety and Control Act* and Regulations must be submitted in support of the license application (Environmental Protection Policy and Effluent Monitoring Program, Worker Health and Safety including Hazardous Materials control programs, and Security plans.

One key submission will be the preliminary decommissioning plan. This plan must describe the expected activities to decommission the facility at various stages in its life if required, and propose a financial plan to guarantee that funds will be available to support the execution of the plan.

- 7.4.12. **CNSC Review and License Issue:** Based on all of the above submissions, the CNSC staff will review all information against the requirements of the *Nuclear Safety and Control Act*, Regulations, *Canadian Environmental Assessment Act*, and licensing basis agreement to determine if the applicant has met all the requirements to obtain a license to construct. The CNSC staff will initially review their findings at one or two formal meetings with the Commission, prior to submitting a final Board Memorandum Document recommending the Commission approve the licensing request. The applicant will be permitted representation at a public meeting, and will be available to answer questions by the Commission. The Commission will then deliberate “in camera” and will issue its record of decision three days after the Commission meeting in which

the final Board Memorandum Document is presented. The Commission is not required to write a record of judgment outlining the basis for its decision.

Third parties not agreeing with the decision may only seek recourse through the courts since there is no appeal process available to third parties. However, petitions to the court generally only have merit if based on a failure of the CNSC to follow due process, rather than the basis of their decision.

7.5 CONCLUSIONS

Based on the regulatory regime existing in Canada, the knowledge of Iter Canada of the Iter project, the expertise within Iter Canada, the plan established for the Iter licensing process in Canada, the expertise and knowledge within the Joint Central Team, the discussions with the Canadian regulators, and the work done to date, Iter Canada is fully confident that a license can be obtained for Iter at the Clarington site.

The licensing process will continue throughout the negotiations period (Section 4) and Iter Canada will keep the Iter Parties fully informed on progress towards licensing of Iter in Canada. This process will give assurance to all the Iter Parties during the negotiating process, prior to the receipt of the license and the ratification of the Joint Implementation Agreement that Iter can be built and operated in Canada.

Iter Canada believes, based on this Section of the Plan, that Canada provides the most attractive licensing environment in the world today for a fusion facility.

7.6 ATTACHMENTS

- 7-A: Overview of the Canadian Nuclear Safety Control Act. See Section 14 for the complete text of the Canadian Nuclear Safety and Control Act and Regulations.**
- 7-B: An Overview of the Canadian Environmental Assessment Act. See Section 14 for the complete text of the Canadian Environmental Assessment Act and Regulations.**
- 7-C: Letter-of-Intent for the License to Construct Iter at Clarington**
- 7-D: Draft Scope of the Environmental assessment (to follow)**

7-A: An overview of the Canadian Nuclear Safety and Control Act

7-B: An Overview of the Regulations of the Canadian Environmental Assessment Act.

7-C: Letter-of-Intent for the License to Construct Iter at Clarington