



# Protocol for National Research Universal Licensing Activities

*July 15, 2008*

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This protocol is essentially administrative in nature. Nothing in this protocol or any statement in this protocol is to be construed or interpreted as affecting the jurisdiction and discretion of the Commission in any assessment of any application for licensing purposes under the *Nuclear Safety and Control Act (NSCA)*. It is not intended to constitute a deviation or inference to a proposed amendment to the current licence for the National Research Universal (NRU).

## **1. Objective**

The objective of this protocol is to provide a framework within which AECL and CNSC staff will work to prepare the necessary information for the Commission to assess the continued operation of the NRU reactor beyond the current licence period. NRU is operated under the Nuclear Research and Test Establishment Operating Licence for Chalk River Laboratories [1] that expires October 31, 2011. Licensing activities for NRU will take place within the wider context of licence renewal for Chalk River Laboratories, taking into account the health directive for the disruption of isotope production as an input for evaluating various options without compromising safety.

## **2. Introduction**

The legal framework for licence renewal is derived from the *Nuclear Safety and Control Act (NSCA)* [2] and supporting regulations.

Following the Directive [3] from the Governor in Council, in considering all the risk to Canadians, the AECL and CNSC staff are coordinating their effort for the licensing of the NRU, to meet the mandates and accountability responsibilities of both organizations.

In engaging in this coordinated effort and working responsibly in the public interest, the CNSC maintains its independence as the Canadian Nuclear regulator and AECL continues to be solely responsible for the safe operation of the NRU reactor.

It is understood that:

- safety will not be compromised in making licensing recommendations to the Commission;
- the licensing activities will be conducted on a best effort basis to minimize, to the extent possible, disruption of the production of medical isotopes; and
- the objective is to produce a comprehensive body of information and recommendations to allow the Commission to render its decision regarding the application for a licence renewal.

This protocol sets out the framework within which both organizations will work and establishes a high level estimate of the timeline.

### **3. Approach to Licensing**

To fully address the responsibilities for safety and accountability, and to serve the Canadian public, both the Canadian Nuclear Safety Commission and Atomic Energy of Canada Limited recognize the importance of a well-planned and coordinated working arrangement.

Both organizations recognize the complexity of the matter and agree to implement an Integrated Safety Review (ISR) of the facility. The ISR process for NRU will be fully defined at an early stage of the work process. It will rely on the guidance set out in the IAEA Safety Guide: Periodic Safety Review of Nuclear Power Plants [4], and the CNSC Regulatory Document: Life Extension of Nuclear Power Plants [5], recognizing that NRU is a research facility approaching licence renewal not a power plant undergoing life extension.

### **4. Schedule**

The schedule set out in the statement of work in this protocol is intended to align with the timeline for the site licence renewal in 2011 and the lead time notices required in the *Canadian Nuclear Safety Commission Rules of Procedure*.

It is recognized that the schedule includes a large amount of work and there may be execution risks that could cause delays. To preserve the completion of the objectives, the delay risks will be dealt with in a timely manner through adjustments of resources or the timeline of this protocol. These adjustments will be made through the protocol revision process outlined below.

### **5. Roles and Responsibilities**

#### **5.1 CNSC Governance Structure**

The CNSC has created the NRU Licensing Extension Steering Committee (NRULESC) to provide strategic level direction and senior management oversight and support to the programs associated with the NRU licensing extension beyond 2011.

The NRULESC is chaired by the Executive VP, Regulatory Operations Branch (ROB) and formed by all relevant executive directorates, including:

- Vice-President of the Technical Support Branch
- Vice-President of the Regulatory Affairs Branch;
- Director General of the Directorate of Nuclear Cycle and Facilities Regulations;
- Director General of the Directorate of Assessment and Analysis;
- Director General of the Directorate of Environmental and Radiation Protection and Assessment;
- Director of Chalk River Laboratories Compliance and Licensing Division;
- Director of Reactor Thermalhydraulic Division;
- Project Manager (Secretary)

The objectives of the Steering Committee are to enable CNSC staff to fulfill its mandate of providing recommendations to the Commission regarding the re-licensing of the NRU in 2011. Its enabling function is fulfilled by ensuring that the NRU licensing activity:

- receives appropriate priority;
- is adequately resourced;
- progresses;
- is conducted in accordance with project management practices;
- contains appropriate review plans;
- is consistent in its application and requirements; and
- follows agreed process and technical direction.

The NRULESC is directly accountable to the CNSC President through the EVP ROB.

## 5.2 AECL Governance Structure

AECL has established a steering committee to provide oversight and executive support for re-licensing activities. The committee is chaired by the Senior Vice-President CRL and Chief Nuclear Officer, and includes representation from CRL Operations and Regulatory Affairs, as follows:

- General Manager Programs and Nuclear Oversight, and Chief Regulatory Officer
- Vice President and General Manager CRL Operations
- Director NRU Operations
- Director Regulatory Affairs and Safety Analysis
- CRL Chief Engineer
- Manager Operations Safety and Licensing
- NRU ISR Safety and Licensing Manager (Secretary)

## 6. Organization Representatives

The organization representatives for these activities (ORs) are responsible for all matters concerning the work under this Protocol and bring the matter to their respective governance bodies, should problems arise during the work that may affect the schedule or the scope of the work.

For the purposes of this Protocol, CNSC staff shall be represented by:

1. The Director, CRLCL Division, DNCFR (position currently held by M. Santini), for matters related to governance  
Telephone Number: (613) 943-2923  
Mobile Telephone: (613) 222-2064  
Fax Number: (613) 995-5086  
e-mail: Miguel.Santini@cnsccsn.gc.ca

2. The NRU LE-Project Manager (position currently held by B. Pearson) for matters related to implementation.  
Telephone Number: (613) 996-9056  
Mobile Telephone: (613) 282-7577  
Fax Number: (613) 995-5086  
e-mail: [Bruce.Pearson@cnsccsn.gc.ca](mailto:Bruce.Pearson@cnsccsn.gc.ca)

For the purposes of this Protocol, AECL shall be represented by:

1. The Manager, Operations Safety and Licensing (position currently held by A. McIvor) for matters related to governance  
  
Telephone Number: (613) 584 8811 x46787  
Mobile Telephone: (613) 633 9036  
Fax Number: (613) 584 8198  
e-mail: [mcivora@aecl.ca](mailto:mcivora@aecl.ca)
2. The NRU ISR Safety and Licensing Manager (position currently held by R. Leung) for matters related to implementation  
  
Telephone Number: (905) 823 9040 x34455  
Mobile Telephone: (647) 229 2630  
e-mail: [leungr@aecl.ca](mailto:leungr@aecl.ca)

Either Party hereto may, by written notice, change any of its appointees mentioned above.

## **7. Statement of Work**

This set of high level tasks/milestones are derived from the ISR process documented in RD-360. It is recognized that work performed in support of relicensing in 2005 and 2006 provides a basis for a comprehensive ISR. The work described in this protocol builds on that basis.

This protocol defines the high-level structure of the ISR process that will be followed. An early activity will be to gather the necessary information to form a complete Level I plan, with milestones and deliverables.

### **7.1 NRU Relicensing technical scope**

The technical scope of the work includes the production, review of documentation generated in the Integrated Safety Review of the NRU Reactor for the licence renewal in 2011, presentation of recommendations to the Commission in relation of the licence renewal, and related design upgrades of the NRU reactor as determined by the Commission in the operating licence. This scope is divided in four phases.

Phase I	Definition and development of a specific ISR approach for NRU	Assessment of Status Quo
		Level I project Plans
		ISR scope and basis
Phase II	Integrated Safety Review execution	Level II Project Plan
		Presentation to the Commission at mid-Term (CMDs)
		Safety factors reports (production and acceptance)
		EA Approval (if applicable)
Phase III	Licence renewal	Global Assessment and IIP submitted and accepted
		Production and submission of CMDs to the Commission for Licensing decision
Phase IV	Improvement Implementation Program start	Presentations to the Commission
		Scope to be determined

The time periods for each phase are shown in Section 7.2

The scope for Phase I to III include:

1. Development and review of documents described in Section 7.2, that will be updated as necessary and agreed in writing by both parties, and such other documents that may be necessary to support the topical reviews.
2. Discussion of any issues arising from the work performed under this protocol that could be considered as a potential barrier to future operation of NRU. Set-up and implement a conflict resolution mechanism on the technical issues described in Section 7.3
3. Quarterly reporting, in format agreed by the parties, of technical and schedule progress and percentage of work completed.
4. Periodic reporting to Government on progress
5. Periodic press releases
6. AECL request of licence renewal of the reactor and establishment of the expected life of the reactor.
7. CNSC staff issuance of a recommendation to the Commission with respect to licence renewal beyond 2011

Scope and timetable for Phase IV is to be determined during the execution of the previous phases.

## 7.2 Activities and Deliverables

The deliverables in the following sections are divided in:

Documents

Other deliverables

Common Deliverables  
 Meetings  
 Quarterly Reports  
 Press releases  
 AECL Additional Deliverables  
 CNSC Additional Deliverables

### 7.2.1 Document Deliverables

Document Deliverables	Target Dates	Organization
<b>Phase I</b>		
Comprehensive list of issues produced for NRU, from ImpActs, fire hazard assessment, previous safety assessments, audits, licensing correspondence etc.	August 2008	AECL
Risk prioritization of outstanding issues in the current Licensing Strategy document [6]	August 2008	both
Discussions and agreement on the scope of key issues including: <ul style="list-style-type: none"> <li>- Tritium issues in coolant and bays</li> <li>- Waste management strategy</li> </ul>	October 2008	both
Discussions on whether EA is required and if so its scope	October 2008	both
Complete Level I project plan	November 2008	AECL
Complete Level I review plan	November 2008	CNSC staff
Discussions and agreement on ISR scope and project plan	December 2008	both
<b>Phase II</b>		
ISR Basis	March 2009	AECL
EA determination for the cumulative effects from the proposed extended long-term operation	March 2009	CNSC staff
Acceptance of ISR document	April 2009	CNSC staff
Complete Level II coordinated project plans	May 2009	both
EA Guidelines for relicensing to the Commission (TBD)	June 2009	CNSC staff
ISR presentation (mid term report for CRL Site licence) to the Commission for information	2009	Both
Environmental statement report (TBD)	January 2010	AECL
Safety Factors Reports (identifies gaps and actions)	March 2010	AECL



<b>Document Deliverables</b>	<b>Target Dates</b>	<b>Organization</b>
EA Screening Report (TBD)	July 2010	CNSC staff
Complete review and acceptance of Safety Factors Report	October 2010	CNSC staff
CNSC decision on EA approval	November 2010	CNSC Commission
Global Assessment and IIP Submission	January 2011	AECL
Global Assessment and IIP Acceptance	April	CNSC staff
<b>Phase III</b>		
CMDs for Hearing Day 1	April 2011	All
Licence renewal Day-01	June 2011	All
CMDs for Hearing Day 2	July 2011	All
Licence renewal Day-02	September 2011	All
CNSC licensing decision	October 2011	CNSC Commission
<b>Phase IV</b>		
If NRU operation continues under a renewed licence IIP starts as per ISR – Detailed Project Plan to be developed		

## 7.2.2 Other deliverables

### 7.2.2.1 Common Deliverables

#### **Meetings**

##### **Working Level Meetings**

Monthly AECL/CNSC review meetings will be held to review progress on the work and highlight any potential major issues or disputes. Attendance at these review meetings will be, at a minimum,

- Director CRLCLD (CNSC)
- Project Manager CRLCLD (CNSC),
- Manager Operations Safety and Licensing, (AECL)
- NRU ISR Safety and Licensing Manager (AECL)

##### **Technical Meetings**

Meetings between technical experts at the CNSC and AECL will be arranged as the need arises. The organization representatives or their designates will participate in technical meetings to provide continuity across licensing activities.

### **Executive Meetings**

To be arranged quarterly or more frequently to follow up progress or by the conflict resolution process. Minimum attendance at these Executive meetings will be the Executive VP ROB from CNSC; and SVP CNO from AECL.

### **Quarterly Reports**

Quarterly reports to the respective Steering Committees and Presidents, in format agreed to the parties, of technical and schedule progress and percentage of work completed. The first such report is to be provided by September 30, 2008. The process for preparation of the report will be determined at later date upon agreement of format.

### **Press Releases**

Any information destined for release to the media will be coordinated by the ORs from both organizations. Common press releases will be issued through the respective Communication Departments.

### **Other Updates**

Coordinated periodic updates to Government on progress will be prepared and presented by AECL. AECL and CNSC staff will review and contribute to third party updates.

#### **7.2.2.2 AECL Additional Deliverables**

In addition to the deliverables described in previous sections, AECL will deliver:

- EA impact statements and CMDs as required.
- CMDs as required;
- For Phases I to III, AECL will provide responses to actions from meetings between AECL and CNSC representatives pursuant this Protocol and submit any supporting documents that may be required to address issues identified.

#### **7.2.2.3 CNSC Additional Deliverables**

In addition to the deliverables described in previous sections, CNSC will deliver

- EA guidelines, if needed for re-licensing
- EA screening report if needed for re-licensing
- CMDs as required;
- Letters on submissions indicating the general acceptability or otherwise of the submission or topics and identify any items for resolution.
- Any issues relating to NRU relicensing or licensability identified by CNSC in the course of the reviews will be resolved by a closure letter or documented path forward.

### **7.3. Conflict Resolution Process**

CNSC staff and AECL staff have agreed to coordinate licensing work related to NRU operation beyond 2011 under the *Nuclear Safety and Control Act*. Disagreements may arise during the execution of the work. A review and dispute resolution mechanism will be used during the review to ensure fairness and assist timely completion.

### **Step 1: Identification of the Issue & Resolution at the staff level**

1. Monthly AECL/CNSC review meetings will be held to review progress and highlight any potential major issues or disputes.
2. The framework for a decision on an issue will be the Government policies on regulatory effectiveness and the licensing requirements stated in, or referenced in, the ISR Basis Document, once this has been agreed to by both parties.
3. It is the intention of both parties to resolve issues at this level.
4. If an issue cannot be resolved at this level, it will be documented (typically, a brief factual summary of the issue and a paragraph representing the view of each organization) by the individuals in Para. 1 within two weeks of failure to resolve, and forwarded to the Senior Management Level (Step 2).

### **Step 2: Resolution at the Senior Management Level**

1. A Step 1 issue, once documented, will be provided to the Director General, Directorate of Nuclear Cycle and Facilities Regulations (CNSC), the Director General, Assessment and Analysis (CNSC), the General Manager Programs and Nuclear Oversight (AECL), and the Vice President and General Manager CRL Operations (AECL) for resolution. A meeting will be called, normally within 30 days, to resolve the issue, and the resolution documented.
2. Issues that cannot be resolved at this level will be referred to the Executive Vice-President Level (Step 3) within two weeks, supported by the original or revised documentation from Step 1.

### **Step 3: Resolution at the Executive Level**

A Step 2 issue, with documentation, will be sent to the Executive Vice President, Regulatory Operations Branch (CNSC) and the Senior Vice President and Chief Nuclear Officer (AECL) for resolution. A meeting will be called, normally within 30 days, to resolve the issue, and the resolution documented.

## **8. Future Revisions of the Protocol**

Revisions of this protocol will be coordinated by the organization representatives and must be approved by the organizations' governance structures and Presidents.

Revisions may include:

1. Adjustments to the time table;
2. Inclusion of temporary licence extension strategy; and
3. Other revisions as required.

## 9. References

- [1] Nuclear Research and Test Establishment Operating Licence, Chalk River Laboratories, NRTEOL-01.01/2011
- [2] Nuclear Safety and Control Act , 1997, c.9 N-28.3
- [3] Nuclear Safety and Control Act, Directive from Governor in Council to the Canadian Nuclear Safety Commission Regarding the Health of Canadians, SOR/2007-282
- [4] IAEA Safety Guide, Periodic Review of Nuclear Power Plants, NS-G-2.10, 2003
- [5] Regulatory Document Life Extension of Nuclear Power Plants RD-360, February 2008
- [6] Licensing Strategy for AECL's NRU Licensability Extension project, Lamarre to McGee 2006 February 28 (referenced by Condition 19 in the CRL Licence).

## 10. Glossary of Terms

CNO	Chief Nuclear Officer (AECL)
CRLCLD	Chalk River Laboratories Compliance and Licensing Division (CNSC)
EA	Environmental Assessment
IIP	Integrated Implementation Plan
ISR	Integrated Safety Review
LE	Licensing Extension
NRU	National Research Universal reactor
NRULESC	NRU Licensing Extension Steering Committee (CNSC)
OR	Organization Representative (see Section 6)
PSR	Periodic Safety Review
ROB	Regulatory Operations Branch (CNSC)

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H. MacDiarmid  
President and Chief Executive Officer  
ATOMIC ENERGY OF CANADA LIMITED

*Date:*

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M. Binder  
President and Chief Executive Officer  
CANADIAN NUCLEAR SAFETY COMMISSION

*Date:*