



Human Performance Management Personnel Certification, Volume III: Certification of Reactor Facility Workers

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Canadian Nuclear Safety Commission
280 Slater Street
P.O. Box 1046, Station B
Ottawa, ON K1P 5S9
Canada

Tel.: 613-995-5894 or 1-800-668-5284 (in Canada only)

Fax: 613-995-5086

Email: cpsc.info.ccsn@cpsc-ccsn.gc.ca

Website: nuclearsafety.gc.ca

Facebook: facebook.com/CanadianNuclearSafetyCommission

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Preface

This regulatory document (REGDOC) is part of the CNSC's Human Performance Management series of REGDOCs, which covers human factors, personnel training, and personnel certification. The full list of REGDOC series is included at the end of this document and can also be found on the [CNSC's website](#).

REGDOC-2.2.3, *Personnel Certification, Volume III: Certification of Reactor Facility Workers* specifies the detailed requirements and guidance related to the certification of workers employed at reactor facilities operated in Canada.

This document is the second version of REGDOC-2.2.3, *Personnel Certification, Volume III: Certification of Persons Working at Nuclear Power Plants*, published in September 2019. A document showing the changes made to the first version is available from the CNSC upon request.

Complementary Regulatory Documents

The requirements and guidance documented in this REGDOC are in addition to the requirements and guidance applicable to reactor facility workers in general. Workers certified or seeking certification by the CNSC are therefore not exempt from any applicable requirements specified in other REGDOCs.

In particular, this document must be read in conjunction with complementary REGDOCs in the Human Performance Management series and other safety and control areas (SCAs) referenced in the licence or accompanying licensing documentation, as applicable. A comprehensive list of complementary REGDOCs of relevance is included at the end of this document as additional information.

Regulatory Approach

For information on the implementation of regulatory documents and on the graded approach, see REGDOC-3.5.3, *Regulatory Fundamentals*.

The words “shall” and “must” are used to express requirements to be satisfied by the licensee or licence applicant. “Should” is used to express guidance or that which is advised. “May” is used to express an option or that which is advised or permissible within the limits of this regulatory document. “Can” is used to express possibility or capability.

Nothing contained in this document is to be construed as relieving any licensee from any other pertinent requirements. It is the licensee's responsibility to identify and comply with all applicable regulations and licence conditions.

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Personnel Certification: Certification of Reactor Facility Workers

1. Introduction

The Canadian Nuclear Safety Commission (CNSC) requires that the reactor facility workers employed in certain positions of immediate relevance to nuclear safety, which are identified in the applicable licences, must be certified by the CNSC as qualified to carry out their duties. For the purpose of this REGDOC, these positions are referred to as designated positions.

1.1 Purpose

The purpose of this REGDOC is to specify the detailed requirements and to provide guidance pertinent to the certification of the reactor facility workers employed or seeking employment in designated positions.

1.2 Scope

When referenced in a licence, this REGDOC applies to:

- a. all workers seeking certification by the CNSC, or seeking to maintain or renew such a certification, for employment in one of the designated positions identified in the licence;
- b. the licensee operating the reactor facility identified in the licence; and
- c. the personnel identified in this REGDOC and involved in the training and evaluation, or the certification examination and requalification testing, of workers employed or seeking employment in designated positions at the reactor facility identified in the licence.

This REGDOC comprises three parts as follows:

- a. Part I describes the regulatory and procedural devices comprising the CNSC personnel certification scheme relevant to reactor facility workers;
- b. Part II specifies the prerequisites that reactor facility workers must meet to be eligible for the personnel certification processes described in Part I; and
- c. Part III describes the organizational and physical infrastructures that the licensee must implement to support the personnel certification scheme described in Part I and achieve the worker qualifications specified in Part II.

1.3 Relevant Legislation

The following provisions of the *Nuclear Safety and Control Act* (NSCA or the Act) and the regulations made under the Act are relevant to this document:

- a. NSCA, paragraphs 21(1)(i), 37(2)(b), 44(1)(k) and 44(1)(l);
- b. *General Nuclear Safety and Control Regulations* (GNSCR), paragraphs 12(1)(a) and 12(1)(b); and
- c. *Class I Nuclear Facilities Regulations* (Class I Regulations) section 10, subsections 9(2), 9(3), 9(4), 11(1), 11(2), 12(1), 12(2), 13(1), 14(5) and paragraph 14(2)(e).

1.4 National and International Standards

Key principles and elements used in developing this document are consistent with national and international standards. The following standards are relevant to this REGDOC:

- a. IAEA Nuclear Energy Series NG-T-2.8, *Systematic Approach to Training for Nuclear Facility Personnel: Processes, Methodology and Practices*;
- b. IAEA Safety Standard NSG 2.8, *Recruitment, Qualification and Training of Personnel for Nuclear Power Plants*;
- c. IAEA TECDOC 525, *Guidebook on Training to Establish and Maintain the Qualification and Competence of Nuclear Power Plant Operations Personnel*;
- d. IAEA TECDOC 1502, *Authorization of Nuclear Power Plant Control Room Personnel*;
- e. *International Standard ISO/IEC 17000, Conformity assessment – Vocabulary and general principles*; and
- f. *International Standard ISO/IEC 17024, Conformity assessment – General requirements for bodies operating certification of persons*.

Part I – Personnel Certification Scheme

Part I describes the regulatory and procedural devices comprising the CNSC personnel certification scheme relevant to reactor facility workers.

2. Background Information

The relevant legislation authorizes the Commission and Designated Officers (DO) to certify workers as qualified to carry out their duties, to renew the certification of certified workers, and to decertify certified workers following due process. The reactor facility workers certified by the CNSC are issued certificates as proof of certification specifying, among other information, a date of expiry. In accordance with regulations, certifications issued by the CNSC expire five (5) years after their date of initial issuance or renewal. Consequently, certified workers must apply for the renewal of their certification(s) before the expiry date specified on their certificate(s).

3. Employment Stipulations

3.1 Permitted Employment

Certificates issued by the CNSC to reactor facility workers permit the employment of the worker identified on the certificate:

- a. on a full, part-time, or temporary basis;
- b. as an employee or a contractor;
- c. by, and only by, the specified licensee;
- d. at, and only at, the specified reactor facility; and
- e. in, and only in, the specified designated position.

Guidance

Certificate Transferability – The certificates issued by the CNSC to reactor facility workers are not transferable between reactor facilities and licensees.

Employee-employer Relationship – The licensee is responsible for the competency of all workers employed at the reactor facility identified in the licence, regardless of the contractual agreement binding certified workers and the licensee as employer.

Multiple Certifications – The CNSC may certify a worker for employment in more than one designated position, as long as the worker holds a valid certificate for each designated position, meets the employment and training requirements linked to each designated position, and can safely and competently perform the duties of each designated position.

3.2 Employment Status

The licensee shall assign an employment status to each certified worker in accordance with the following categories:

- a. an *active* status is assigned to a worker who:
 - i. holds a valid certificate;
 - ii. attends the scheduled continuing training;

- iii. meets the applicable minimum employment requirements; and
- iv. continues to be able to perform the duties of the pertinent designated position safely and competently;
- b. an *inactive* status is assigned to any certified worker who holds a valid certificate, but was formally removed from duty in accordance with either one of the processes specified in subsections 18.3 and 18.4;
- c. an *uncertified* status is assigned to a worker whose certificate has expired; and
- d. a *decertified* status is assigned to a worker decertified by the CNSC.

Guidance

Certificate Validity – A valid certificate is a certificate duly issued by the Commission or a DO that has not yet expired.

End of Employment – The CNSC will not decertify workers holding a valid certificate who retire or announce their retirement or, for any other reason, cease to work in, or train for, a designated position. In such cases, the management of prolonged absence and removal from duty criteria specified in subsection 18.3 apply until the certificate expires, unless the worker is reinstated to duty as per subsection 18.518.5 before the certificate expires.

Multiple Certifications – When a worker holds multiple certifications, a distinct employment status is assigned to the worker in relation to each applicable designated position.

3.3 Employment Record

The licensee shall maintain, in accordance with subsection 19.2, a continuous and auditable employment record for each worker certified by the CNSC including, at a minimum:

- a. the employment status assigned to the worker; and
- b. the number of complete shifts and hours of work performed in a designated position by the worker, specifying:
 - i. the relevant designated position; and
 - ii. the date when each complete shift and hour of work were performed.

Guidance

Applicability – This subsection applies to any certified worker, whether an employee or a contractor, but only in relation to the reactor facility identified on the certificate(s).

4. The Designated Positions

This REGDOC applies to the certification of the reactor facility workers employed or seeking employment in the following generic classes of designated positions:

- a. auxiliary system operator (ASO);
- b. reactor operator (RO);
- c. shift supervisor; and
- d. senior health physicist (SHP).

4.1 Site-specific Designated Positions

The station-specific designated positions corresponding to the generic classes of designated positions are identified in the applicable licences and are associated with the generic classes of designated positions in Appendix A.

4.2 Designated Position Staffing

The site-specific designated positions referenced in reactor facility licences shall be staffed with workers expressly certified by the CNSC as qualified to perform the duties of the said designated positions.

4.3 Roles and Responsibilities of Certified Workers

When in possession of a valid certificate, workers are deemed qualified to perform the duties of the pertinent site-specific positions listed in Appendix A in accordance with the licensee's established management system, including the roles and responsibilities documentation found acceptable by the CNSC.

5. Personnel Certification Applications

5.1 General Provisions

5.1.1 Complete Application

In accordance with regulations, the Commission or a DO may certify a worker, or renew the certification of a worker, only on receipt of a complete application from the applicant.

An application is deemed complete when it contains all the required information and contains no error. Applications deemed incomplete as a result of minor omissions and typographic errors will be processed once the applicant has submitted a revised application or provided additional information to the satisfaction of the CNSC.

5.1.2 Basic Information

All applications for certification or the renewal of a certification, and all requests for decertification, shall include the following information:

- a. the purpose of the application or request;
- b. the legal name of the worker, including a first name, a surname, and a middle name or initial when possible;
- c. the designated position in which the worker is or will be employed;
- d. the reactor facility, including, where applicable, a specific reactor or reactor group, where the worker is or will be employed;
- e. the licensee operating the said reactor facility;
- f. the effective date of the application or request;
- g. the legal name, position, contact information, and signature of the authorized applicant; and
- h. a valid return mailing or email address.

5.1.3 Authorized Applicant

Applications and requests made under the provisions of this REGDOC shall be signed by a signatory officially authorized by the pertinent licensee to represent the said licensee.

Guidance

In the reactor facility context, the applicant is the licensee, who necessarily needs to be represented by an authorized signatory referred to as the authorized applicant.

5.1.4 Transmission

An authorized applicant may submit an application for certification or the renewal of a certification, or any request referenced in this REGDOC, including a request for decertification, either in printed or electronic form.

Printed submissions must be delivered to the following address:

Canadian Nuclear Safety Commission
280 Slater Street, P.O. Box 1046, Station B
Ottawa, ON K1P 5S9

Electronic submissions must be emailed to forms-formulaires@cnsccsn.gc.ca and should include a complimentary copy (cc) to pcd-dap@cnsccsn.gc.ca.

5.2 Application for Certification

In addition to the general provisions specified in subsection 5.1, an application for certification shall meet the requirements specified in this subsection.

5.2.1 Application Schedule

The licensee may apply for the certification of a qualified worker at any time.

5.2.2 Worker Competency Declaration

In accordance with regulations, the application shall state that the worker:

- a. meets the applicable qualification requirements referred to in the licence;
- b. has successfully completed the applicable training program and examination referred to in the licence; and
- c. is capable, in the opinion of the licensee, of performing the duties of the position.

Guidance

Worker Competency – In context, competency is the ability of the worker to safely and competently perform the duties of the relevant designated position using the knowledge, skills, and safety-related attributes demonstrated by the worker.

5.2.3 Personnel Selection

The application shall describe how the applicable prerequisites of the personnel selection program mandated in section 12 were met, including, but not limited to:

- a. the worker's education or literacy level upon selection for initial training;
- b. any education or literacy level equivalency recognized by the licensee;
- c. any prior work experience required by the CNSC or the licensee;
- d. any personnel selection interview undergone by the worker;
- e. any personnel selection test administered to the worker, including any medical screening; and
- f. any exemption explicitly sanctioned in this REGDOC that was employed by the licensee.

5.2.4 Worker Qualification Summary

The application shall provide a chronological summary of the qualifications achieved by the worker covering the initial training components, the certification examinations, and all other personnel certification milestones successfully completed by the worker.

The worker qualification summary should offer sufficient evidence that the worker meets all of the applicable qualifications specified in Part II. At a minimum, this summary shall include, as applicable depending on the designated position:

- a. the date of each cumulative or final formal evaluation marking the completion of each initial training component;
- b. the date of each knowledge-based certification examination;
- c. the date of the performance-based certification examination;
- d. any remedial action required by CNSC staff as a result of a certification examination administered by CNSC staff;
- e. the date of completion of any period of work under supervision, including the total number of supervised work hours; and
- f. the date of the management interview.

Guidance

Interpretation – The dates referenced in the worker qualification summary are the dates on which the evaluations, examinations, and interview were conducted, not the dates on which their grading was finalized.

5.2.5 Supporting Documentation

The licensee is not required to append any supporting documentation to the application as proof of competency; however, comprehensive personnel records shall be maintained in accordance with subsection 19.2 and made available for verification by the CNSC upon request.

5.2.6 Effective Date of Certification

Unless the applicant requests a deferment, the effective date of the certification will be that of the certification decision made by the Commission or a DO.

5.2.7 Certification Deferment

The licensee may request that the effective date of certification be delayed up to 60 calendar days from the effective date of application for certification.

Guidance

Limitation – In order to provide licensees with scheduling flexibility, the CNSC will consider any preference expressed by the applicant regarding the effective date of certification, as long as the preferred date falls within the aforementioned 60-day period. Notwithstanding, the CNSC is not obligated to comply with any request for certification deferment.

5.3 Application for Certification Renewal

In addition to the general provisions specified in subsection 5.1, an application for the renewal of a certification shall meet the requirements specified in this subsection.

5.3.1 Application Schedule

The licensee shall apply for the renewal of the certification of a requalified worker no later than the date of expiry specified on the certificate.

When the licensee fails to meet the aforementioned certification renewal deadline, the licensee must instead apply for certification following certificate expiry.

Guidance

Normal Processing Time – In order to avoid having to remove the worker from duty in accordance with sub-subsection 18.4.4 followed by a reinstatement as per subsection 18.5 and sub-subsection 18.6.4, the application should be made well in advance of the certificate expiry date, preferably allowing for a normal processing time of 60 calendar days.

Certification Renewal Deadline – The CNSC will accept any certification renewal application signed and dated before midnight on the day of the certificate expiry, as long the application is sent to the CNSC before midnight on the same day for an electronic submission, or received by the CNSC within a reasonable delay for a printed application sent by mail or courier.

Incomplete Application – When a certification renewal application submitted before the deadline is found to be or remains incomplete after the certificate has expired, the application will be accepted, but the technical assessment will be paused until a revised application or additional information is submitted by the licensee to the satisfaction of the CNSC.

Prohibited Employment – If the certificate expires while the certification renewal application is being processed by CNSC staff, the worker is not legally qualified to work in the pertinent designated position until the certification has been officially renewed by the CNSC.

5.3.2 Worker Competency Declaration

In accordance with regulations, the application shall state that the worker:

- a. has safely and competently performed the duties of the position for which the worker was certified;

- b. continues to receive the applicable training referred to in the licence;
- c. has successfully completed the applicable requalification tests referred to in the licence for renewing the certification; and
- d. is capable, in the opinion of the licensee, of performing the duties of the position.

Guidance

Worker Competency – In context, competency is the ability of the worker to safely and competently perform the duties of the relevant designated position using the knowledge, skills, and safety-related attributes demonstrated by the worker.

5.3.3 Worker Requalification Summary

The application shall provide a chronological summary of the requalification requirements met by the worker during the current certification period covering the continuing training components, the requalification tests, and all other personnel certification milestones successfully completed by the worker.

The worker requalification summary should offer sufficient evidence that the worker meets all of the applicable requalification requirements specified in Part II. At a minimum, this summary shall include, as applicable depending on the designated position:

- a. confirmation that the worker attended continuing training and successfully underwent formal evaluations compliant with the requirements specified in section 13, including suitable update, refresher, simulator-based, and nuclear emergency response training;
- b. the dates of all knowledge-based requalification tests successfully completed;
- c. the dates of all performance-based requalification tests successfully completed;
- d. the total number complete shifts and hours of shiftwork in the designated position performed by the worker over the current certification period; and
- e. any remedial action required by CNSC staff as a result of a requalification test administered by CNSC staff.

Guidance

Interpretation – The dates referenced in the worker requalification summary are the dates on which the tests were conducted, not the dates on which their grading was finalized.

5.3.4 Supporting Documentation

The licensee is not required to append any supporting documentation to the application as proof of competency; however, comprehensive personnel records shall be maintained in accordance with subsection 19.2, and made available for verification by the CNSC upon request.

Guidance

Applicability – The supporting documentation referenced in this subsection pertains to any knowledge or performance-based requalification test that the worker completed during the current

certification period, in either a lead or supporting role, and whether or not the worker successfully completed the said test.

5.3.5 Effective Date of Renewal

Unless the applicant requests a specific date of issuance, the effective date of the certification renewal will be made to coincide with the date of expiry of the existing certification.

Guidance

Certificate Expiry – When the certificate expires before the application can be processed by CNSC staff and a renewed certificate issued by the CNSC, the effective date of the certification renewal will be made to coincide with the date of expiry of the existing certification.

5.3.6 Early Certification Renewal

The licensee may request that the certification renewal be made effective before the expiry date specified on the certificate, but no later than 60 calendar days from the effective date of application for certification renewal.

Guidance

Limitation – In order to provide licensees with scheduling flexibility, the CNSC allows the renewal of the certification of reactor facility workers at any time before the end of the certificate validity period. This allowance is made because shortening the certification period effectively increases the requalification testing frequency. However, the CNSC will not postpone the effective date of the certification renewal any more than 60 calendar days past the effective date of the application for certification renewal. This restriction is imposed to ensure that the proof of worker competency provided at the time of application is relatively recent, and is therefore valid.

5.4 Application for Recertification within Five Years of a Certificate Expiry

In addition to the general provisions specified in subsection 5.2, an application for certification submitted no later than five (5) years following the expiry of a certificate issued in relation to the same designated position shall meet the requirements specified in this subsection.

Guidance

Applicability – This section applies to the certification of a worker for employment in the same designated position as the one identified on an expired certificate when the applicant has failed to submit a certification renewal application before the certification renewal deadline specified in sub-subsection 5.3.1.

5.4.1 Application Schedule

The licensee may apply for the recertification of a worker in accordance with subsection 5.4.1 no later than five (5) years after the date of expiry specified on the certificate.

A worker whose certificate expired more than five (5) years prior to the date of application must meet additional requirements specified later in subsection 5.5.

5.4.2 Worker Competency Declaration

In accordance with regulations, the application shall state that the worker:

- a. meets the applicable qualification requirements referred to in the licence;
- b. has successfully completed the applicable training program and examination referred to in the licence; and
- c. is capable, in the opinion of the licensee, of performing the duties of the position.

Guidance

Important Note – To satisfy the condition set by subsection 9(2) of the Class I Regulations, the correct worker competency declaration for a recertification is the same as the one required for a certification.

5.4.3 Worker Requalification Summary

The application shall provide a chronological summary, including the effective date of completion of each step, of a suitable reinstatement process, including:

- a. the tailored training, including any knowledge and performance-based refresher and update training, completed by the worker;
- b. the knowledge-based requalification test successfully completed by the worker and the grade, in percentage, obtained by the worker;
- c. the performance-based requalification test or series of tests successfully completed by the worker;
- d. the work under supervision (WUS) hours completed by the worker; and
- e. the management interview.

The applicable worker requalification requirements are specified in Part II.

5.4.4 Supporting Documentation

The following supporting documentation shall be appended to the application:

- a. the tailored training needs analysis (TNA) or a summary of the said TNA;
- b. the individual training plan (ITP) or a summary of the ITP;
- c. the knowledge-based requalification test successfully completed by the worker, including the worker's answers and the grade, in percentage, obtained by the worker;
- d. the performance-based requalification test or series of tests successfully completed by the worker;
- e. a suitable record, signed by an authorized licensee representative, of the WUS hours completed by the worker; and
- f. a recording, transcript, or the minutes of the mandated management interview.

5.4.5 Effective Date of Certification

The effective date of the certification will be that of the certification decision made by the Commission or a DO.

5.5 Application for Recertification Following Decertification or Certificate Expiry after Five Years

In addition to the general provisions specified in subsection 5.1, an application for the certification of a worker following decertification by the CNSC, or following a certificate expiry that occurred more than five (5) years prior to the effective date of the application for recertification, shall meet the requirements specified in this subsection.

Guidance

Applicability – This subsection applies to the certification of a worker for employment in the same designated position as the one identified on a certificate in relation to which the worker was previously decertified by the CNSC, or which expired more than five (5) years prior to the effective date of the current application.

5.5.1 Application Schedule

The licensee may apply for the recertification of a worker following decertification at any time after being informed of the Commission or DO's decision to decertify the worker.

The licensee may apply for the recertification of a worker following certificate expiry in accordance with subsection 5.5 no earlier than five (5) years after the effective date of expiry specified on the certificate of the worker.

5.5.2 Worker Competency Declaration

The application shall state that the worker:

- a. meets the applicable qualification requirements referred to in the licence;
- b. has successfully completed the applicable training program and examination referred to in the licence;
- c. is capable, in the opinion of the licensee, of performing the duties of the position.

Guidance

Important Note – To satisfy the legal requirement set by subsection 9(2) of the Class I Regulations, the correct worker competency declaration for a recertification is the same as the one required for a certification.

5.5.3 Recertification Substantiation

The application shall present a substantiated argument in support of the recertification of the worker, explaining why the CNSC should certify a worker previously decertified by the CNSC, or whose certificate expired more than five (5) years prior to the date of application, including:

- a. a description of the remedial actions taken by the licensee, including any remedial training, to ensure that any deficiency identified as part of the basis for the prior decertification has been adequately remedied, as applicable;

- b. a summary of a suitable reinstatement process and the effective date of completion of each step, including:
 - i. the tailored training, including any knowledge and performance-based refresher and update training, completed by the worker;
 - ii. the knowledge-based certification examination successfully completed by the worker, including the worker's answers and the grade, in percentage, obtained by the worker;
 - iii. the performance-based certification examinations successfully completed by the worker;
 - iv. the WUS hours completed by the worker; and
 - v. the management interview; and
- c. a description of any relevant mitigating circumstances.

The applicable worker requalification requirements are specified in Part II.

5.5.4 Supporting Documentation

The following supporting documentation shall be appended to the application:

- a. the tailored training needs analysis (TNA) or a summary of the said TNA;
- b. the individual training plan (ITP) or a summary of the ITP;
- c. the knowledge-based certification examination successfully completed by the worker, including the worker's answers and the grade, in percentage, obtained by the worker;
- d. the performance-based certification examination successfully completed by the worker;
- e. a suitable record, signed by an authorized licensee representative, of the WUS hours completed by the worker;
- f. a recording, transcript, or the minutes of the mandated management interview; and
- g. any other documentation deemed essential to the safety case.

5.5.5 Effective Date of Certification

The effective date of the certification will be that of the certification decision made by the Commission or a DO.

6. Refusal to Certify and Decertification

6.1 Background Information

In accordance with the relevant legislation, the Commission or a DO may refuse to issue or renew a certification upon receiving an application for certification or the renewal of a certification, and may initiate the decertification of a certified worker on its own motion or upon request. Prior to making a final decision, the Commission or a DO will give prior notice of the proposed decision and offer the licensee and the worker concerned with an opportunity to be heard, either in support or against the proposed decision.

6.2 Licensee Requests for Decertification

The licensee may request the decertification of a certified worker employed at the reactor facility identified in the licence. All such requests shall be submitted in writing and contain the following information:

- a. the legal name of the certified worker that is to be decertified, as shown on the most recent certificate issued to the worker;

- b. the title of the designated position shown on the certificate;
- c. a description of the basis for the request;
- d. supporting documentation establishing a sufficient basis for a decertification;
- e. the corporate name of the licensee employing the worker;
- f. the legal name, position, and signature of an authorized licensee representative; and
- g. the effective date of the request.

6.3 Requesting an Opportunity to be Heard

A licensee or a worker who has received notice of a proposed decision may request an opportunity to be heard within 30 calendar days of the receipt of the notice either orally or in writing. All such requests should contain the information and be transmitted to the CNSC in accordance with the general provisions specified in subsection 5.1.

6.4 The Commission or Designated Officer Decision

On completion of an opportunity to be heard, the licensee and the worker concerned will be notified in writing of the Commission or DO decision and the rationale for the decision.

7. Application for Senior Health Physicist Examination or Requalification Testing

The licensee may request the CNSC to administer a certification examination or a requalification test to a worker seeking certification or the renewal of a certification for employment as senior health physicist (SHP) once the worker has met the pertinent prerequisites specified in Part II.

The application shall be submitted in writing in accordance with the general provisions of the personnel certification application processes specified in subsection 5.1, stating:

- a. that the worker “has successfully completed the applicable training referenced in the licence”, specifying the effective date of completion of the initial or continuing training referenced in section 10; and
- b. that the worker has successfully undergone the management interview described in section 10, specifying the date of the interview.

Guidance

Early Notification – Given the time required for CNSC staff to prepare, conduct, and grade each examination or test, the licensee should notify the CNSC as early as possible in advance of the formal application for certification examination or requalification test.

Candidate Availability – The licensee should specify, as part of any early notification and the formal application, alternate dates when the worker will be qualified and available to take the certification examination or requalification test.

8. Administrative Processes

8.1 Legal Name Change

The licensee shall promptly:

- a. inform the CNSC of any change in the legal name of any worker employed or training for employment in a designated position; and
- b. request that the CNSC issue a replacement certificate for any certified worker who has officially changed their legal name.

Guidance

Purpose – The CNSC needs to know the legal identity of all workers employed or training for employment in a designated position in order to maintain accurate personnel certification records and issue certificates to the correct persons.

8.2 Replacement Certificates

The licensee may request that the CNSC reissue a certificate on the behalf of the worker if:

- a. the certificate has been lost;
- b. some of the information shown on the certificate is no longer legible; or
- c. the legal name of the worker was officially changed, as mandated in subsection 8.1.

All requests for a replacement certificate must specify:

- a. the purpose and the rationale for the request;
- b. the legal name of the worker, as shown on the most recent certificate issued to the worker;
- c. the new legal name that is to appear on the replacement certificate, as applicable;
- d. the title of the designated position shown on the certificate;
- e. the corporate name of the licensee employing the worker;
- f. the legal name, position, and signature of an authorized licensee representative; and
- g. the effective date of the request.

Part II – Worker Qualifications

Part II specifies the prerequisites that reactor facility workers must meet to be eligible for the personnel certification processes described in Part I. These prerequisites apply to two distinct groups of certified workers: operations personnel and senior health physicists.

Subpart A - Operations Personnel

9. Operations Personnel Certification

The requirements specified in this section pertain to workers employed or seeking employment in one of the following designated positions:

- a. auxiliary system operator (ASO);
- b. reactor operator (RO); and
- c. shift supervisor.

9.1 Core Qualifications for Operations Personnel

A worker seeking certification for employment as an ASO, RO or shift supervisor shall meet, at the time of application for certification, the core qualifications for operations personnel specified in this subsection.

9.1.1 Personnel Selection

The worker must have met, prior to the start of their initial training, the basic prerequisites specified in subsection 12.2 as part of the personnel selection program mandated in section 12.

9.1.2 General Knowledge

The worker must have successfully completed general training based on a training system and must possess adequate knowledge of the applied science and engineering principles relevant to the design and operation of the reactor(s) and the systems, subsystems, and equipment installed in the reactor facility identified in the licence.

9.1.3 Plant Familiarization

The worker must have successfully completed, prior to the start of the station-specific training specified next in sub-subsection 9.1.4, plant familiarization training based on a training system and must possess, at a minimum, adequate knowledge of:

- a. the physical layout of the reactor facility identified in the licence, including the location and size of the major systems, subsystems and equipment, and the time and effort required for field personnel to operate, upon direction by certified workers, the systems, subsystems, and equipment located outside of the main control room (MCR); and
- b. the organizational infrastructure necessary to operate the said reactor facility under normal, abnormal, and emergency conditions, including the mandate, roles and responsibilities of the key personnel and groups of personnel.

9.1.4 Baseline Station-specific Knowledge

The worker must have successfully completed baseline station-specific training based on a training system and must possess adequate knowledge of the design and the precise operation, under normal, abnormal, and emergency conditions, of the reactor(s) and associated systems, subsystems, and equipment installed in the reactor facility identified in the licence.

Guidance

Clarification – The baseline station-specific training covers the station-specific knowledge that, for ASO candidates, is required of a certified ASO or, for RO and shift supervisor candidates, is required of a certified RO. In other words, shift supervisors are expected to possess station-specific knowledge equivalent to that of ROs, in addition to the supplementary station-specific knowledge specified later in subsection 9.29.2.

9.1.5 Nuclear Emergency Management

The worker must possess adequate knowledge of nuclear emergency response (NER) and the management of beyond-design-basis accidents (BDBA), including the roles and responsibilities of certified workers regarding emergency operating procedures and severe accident management.

9.1.6 On-the-job Training

The worker must have successfully completed on-the-job training (OJT) based on a training system covering the relevant knowledge and skills (K&S) and safety-related attributes acquired or reinforced most effectively through OJT.

9.1.7 Simulator-based Training

The worker must have successfully completed simulator-based training based on a training system covering the relevant K&S and safety-related attributes acquired or reinforced most effectively through simulated scenarios.

9.1.8 Knowledge-based General Certification Examination

The worker must have successfully completed a general knowledge examination confirming that the worker possesses the general knowledge necessary to perform the duties of the pertinent designated position safely and competently.

9.1.9 Knowledge-based Station-specific Certification Examination

The worker must have successfully completed a station-specific knowledge examination confirming that the worker possesses the station-specific knowledge necessary to perform the duties of the pertinent designated position safely and competently.

9.1.10 Performance-based Certification Examination

The worker must have successfully completed, within two (2) years of the application for certification, a performance-based certification examination conducted in a full-scope simulator or approved alternative confirming that the worker can perform the duties of the pertinent designated position safely and competently.

Guidance

Interpretation – For the purpose of calculating the expiry date of the performance-based certification examination results, the reference date is the date on which the examination was conducted, not the date on which the grading was finalized.

9.1.11 Work Under Supervision

The worker must have successfully performed a minimum number of hours of work under supervision (WUS) acceptable to the CNSC, in the pertinent designated position and under the supervision of a qualified worker certified to work in the pertinent designated position.

Guidance

Compliance Scheme – Article A.Appendix B specifies the minimum number of WUS hours acceptable to the CNSC for the pertinent reactor facilities in service at the time of publication of the current version of this REGDOC.

9.1.12 Management Interview

The worker must have successfully undergone a formal management interview conducted by an authorized manager who thereby confirmed that the worker can perform the duties of the pertinent designated position safely and competently.

The management interview must be conducted after all the other requirements specified in subsection 9.1 have been met.

Guidance

Schedule – The management interview is the last activity conducted prior to the application for certification, as it is intended as the final worker competency evaluation.

9.2 Supplementary Qualifications for Shift Supervisors

In addition to the core qualifications for operations personnel specified in subsection 9.1, a worker seeking certification for employment as shift supervisor shall meet, at the time of application for certification, the supplementary requirements specified in this subsection.

9.2.1 Supplementary Personnel Selection Criteria

The worker must have met the supplementary prerequisites for shift supervisors specified in subsection 12.2 as part of the personnel selection program mandated in section 12.

9.2.2 Supplementary Station-specific Knowledge

The worker must have successfully completed supplementary station-specific training based on a training system and must possess the supplementary knowledge specifically required of shift supervisors concerning the design and the precise operation, under normal, abnormal, and emergency conditions, of the reactor(s) and associated systems, subsystems, and equipment installed in the reactor facility identified in the licence.

Guidance

Clarification – The supplementary station-specific training for shift supervisors covers any supplementary station-specific knowledge that is required of a certified shift supervisor, in addition to the station-specific knowledge required of a certified RO.

9.2.3 Supplementary Knowledge-based Station-specific Certification Examination

The worker must have successfully completed a supplementary station-specific knowledge examination confirming that the worker possesses the supplementary station-specific knowledge specifically required of shift supervisors to perform their duties safely and competently.

9.3 Requalification of Operations Personnel

A certified worker seeking the renewal of a certification for employment as an ASO, RO or shift supervisor shall meet, at the time of application for certification renewal, the requirements specified in this subsection.

9.3.1 Continuing Training

The certified worker must have successfully continuing training based on a training system comprising knowledge and performance-based refresher and update components delivered by means of effective instructional methods, including simulator-based training.

9.3.2 Knowledge-based Requalification Testing

The certified worker must have successfully completed, within two (2) years of the application for certification renewal, a knowledge-based requalification test or series of tests confirming that the worker has retained the knowledge necessary to perform the duties of the pertinent designated position safely and competently.

Guidance

Interpretation – For the purpose of calculating the expiry dates of the knowledge-based requalification test results, the reference dates are the dates on which the tests were conducted, not the dates on which their grading was finalized.

9.3.3 Performance-based Requalification Testing

The certified worker must have successfully completed, within two (2) years of the application for certification renewal, and in a lead role, a performance-based requalification test or a series of tests conducted in a full-scope simulator or approved alternative confirming that the worker can perform the duties of the pertinent designated position safely and competently.

Guidance

Interpretation – For the purpose of calculating the expiry dates of the performance-based requalification test results, the reference dates are the dates on which the tests were conducted, not the dates on which their grading was finalized.

9.3.4 Minimum Employment of Operations Personnel

The certified worker must have been sufficiently employed in the pertinent designated position to maintain an adequate competency level.

Guidance

Interpretation – The CNSC does not prescribe a specific number of hours in relation to the minimum employment referred to in this subsection. Notwithstanding, the licensee should ensure that, to the fullest extent possible, every certified worker is sufficiently exposed to the duties of the designated position by standing solo or supervised shifts on a regular or periodic basis, throughout the certification period.

Important Note –The licensee should note that the Class I Regulations do not allow the CNSC or a DO to renew a certification unless the certified worker has “safely and competently performed the duties” of the relevant designated position.

9.4 Qualifying for Recertification within Five Years of a Certificate Expiry

A worker seeking certification for employment as an ASO, RO or shift supervisor within five (5) years of the expiry of a prior certification for the same position shall meet, at the time of application for recertification, the requirements specified in this subsection.

9.4.1 Tailored Training

The worker must have successfully completed approved tailored training, comprising knowledge and performance-based refresher and update training, based on a documented, tailored training needs analysis (TNA) and a documented individual training plan (ITP).

At a minimum, this tailored training shall cover any scheduled refresher training and update training, including any simulator-based training, that the worker missed during the interim period between the certificate expiry and the application for recertification.

9.4.2 Knowledge-based Requalification Testing

The certified worker must have successfully completed, within two (2) years of the application for recertification, a knowledge-based requalification test or series of tests confirming that the worker has retained the knowledge necessary to perform the duties of the pertinent designated position safely and competently.

Guidance

Interpretation – For the purpose of calculating the expiry dates of the knowledge-based requalification test results, the reference dates are the dates on which the tests were conducted, not the dates on which their grading was finalized.

9.4.3 Performance-based Requalification Testing

The certified worker must have successfully completed, within two (2) years of the application for recertification, and in a lead role, a comprehensive simulator-based requalification test confirming that the worker can perform the duties of the pertinent designated position safely and competently.

Guidance

Interpretation – For the purpose of calculating the expiry date of the performance-based requalification tests results, the reference date is the date on which the test was conducted, not the date on which the grading was finalized.

9.4.4 Work Under Supervision

The worker must have successfully performed the duties of the pertinent designated position under the supervision of a qualified worker certified for employment in the same designated position, and for a number of complete shifts deemed sufficient by the licensee to confirm that the worker can perform the duties of the pertinent designated position safely and competently.

9.4.5 Management Interview

The worker must have successfully undergone a formal management interview conducted by an authorized manager who thereby confirmed that the worker can perform the duties of the pertinent designated position safely and competently.

The management interview must be conducted after all other requirements previously specified in subsection 9.4 have been met.

Guidance

Schedule – The management interview is the last activity conducted prior to the application for recertification, as it is intended as the final worker competency evaluation.

9.5 Qualifying for Recertification Following Decertification or Certificate Expiry after Five Years

A worker seeking certification for employment as an ASO, RO or shift supervisor following decertification by the CNSC, or following the expiry of a certificate that occurred more than five (5) years before the date of application, shall meet, at the time of application for recertification, the requirements specified in this subsection.

9.5.1 Decertification Basis Remediation

When the worker is seeking certification following decertification, any deficiency identified as part of the basis provided by the CNSC for the decertification of the worker must no longer exist or have been remedied by the licensee to the satisfaction of the CNSC.

Guidance

Depending on the basis for the decertification, remediation may involve any means or method used to rectify or remedy the cause of the decertification, including, but not limited to, administrative measures, remedial training, rehabilitation, or therapy.

9.5.2 Tailored Training

The worker must have successfully completed approved tailored training, comprising knowledge and performance-based refresher and update training, based on a documented, tailored training needs analysis (TNA) and a documented individual training plan (ITP).

At a minimum, the tailored training referenced in this subsection shall cover any scheduled refresher training and update training, including any simulator-based training, that the worker missed during the interim period between the decertification or certificate expiry and the application for recertification.

9.5.3 Knowledge-based Station-specific Certification Examination

The worker must have successfully completed, within two (2) years of the application for recertification, a station-specific knowledge confirming that the worker possesses the station-specific knowledge necessary to perform the duties of the pertinent designated position safely and competently.

When the worker is seeking certification as a shift supervisor, the licensee shall administer both baseline and supplementary station-specific examinations.

Guidance

Interpretation – For the purpose of calculating the expiry date of the knowledge-based certification examination results, the reference date is the date on which the examination is conducted, not the date on which the grading is finalized.

9.5.4 Performance-based Certification Examination

The worker must have successfully completed, within two (2) years of the application for recertification, a performance-based certification examination conducted in a full-scope simulator or approved alternative confirming that the worker can perform the duties of the pertinent designated position safely and competently.

Guidance

Interpretation – For the purpose of calculating the expiry date of the performance-based certification examination results, the reference date is the date on which the examination is conducted, not the date on which the grading is finalized.

9.5.5 Work Under Supervision

The worker must have successfully performed the duties of the pertinent designated position under the supervision of a qualified worker certified for employment in the same designated position, and for a number of complete shifts deemed sufficient by the licensee to confirm that the worker can perform the duties of the pertinent designated position safely and competently.

9.5.6 Management Interview

The worker must have successfully undergone a formal management interview conducted by an authorized manager who thereby confirmed that the worker can perform the duties of the pertinent designated position safely and competently.

The management interview must be conducted after all other requirements specified in subsection 9.5 have been met.

Guidance

Schedule – The management interview is the last activity conducted prior to the application for certification, as it is intended as the final worker competency evaluation.

Subpart B – Senior Health Physicists

10. Senior Health Physicists Certification

The requirements specified in this section pertain to workers employed or seeking employment as senior health physicist (SHP).

10.1 Qualifications for Senior Health Physicists

A worker seeking certification for employment as a SHP shall meet, at the time of application for certification, the requirements specified in this subsection.

10.1.1 Personnel Selection

The worker must have met, prior to the start of their initial training, any applicable position-specific prerequisites set by the licensee as part of the personnel selection program mandated in section 12.

10.1.2 Prior Education

Irrespective of any applicable prerequisites set by the licensee as part of the personnel selection program, the worker shall:

- a. hold a degree in health physics granted by a recognized university; or
- b. hold a Baccalaureate in engineering or science granted by a recognized university, and have successfully completed a suitable series of courses offered by a recognized educational institution or learning provider covering the current radiation protection principles and methods.

10.1.3 Prior Work Experience

Irrespective of any applicable prerequisites set by the licensee as part of the personnel selection program, the worker shall possess at least four (4) years of relevant experience, including two (2) years as a health physicist or an equivalent position at the reactor facility identified in the licence.

10.1.4 Initial Training

The worker must have successfully completed initial training based on a training system covering the knowledge, skills, and safety-related attributes required to safely and competently perform the duties of a SHP employed at the reactor facility identified in the licence.

10.1.5 Radiation Protection Expertise

The worker must, in consequence of the education, work experience, and initial training previously specified in subsection 10.1, possess expert knowledge of radiation theory, including radiation hazards, and of radiation protection theory and practices, including the radiation protection procedures relevant to the operation of the reactor facility identified in the licence under normal, abnormal, and emergency conditions.

10.1.6 Management Interview

The worker must have successfully undergone a formal management interview conducted by an authorized manager who thereby confirmed that the worker can perform the duties of a SHP safely and competently.

The management interview must be conducted after the worker has successfully completed the initial training previously referenced in sub-subsection 10.1.4, and before the certification examination specified next in sub-subsection 10.1.7.

10.1.7 Certification Examination

The worker must have successfully completed a knowledge-based examination administered by CNSC staff covering the radiation protection principles, methods, and practices related to the operation of the reactor facility identified in the licence.

Guidance

Knowledge Areas – Article A.Appendix C provides a summary of the key knowledge areas and topics sampled by CNSC staff during the SHP certification examinations and requalification tests.

10.2 Requalification of Senior Health Physicists

A worker seeking the renewal of a certification for employment as a SHP shall meet, at the time of application for certification renewal, the requirements specified in this subsection.

10.2.1 Continuing Training

The worker must have successfully completed refresher and update training based on a training system covering the knowledge, skills, and safety-related attributes required to safely and competently perform the duties of a SHP employed at the reactor facility identified in the licence.

10.2.2 Management Interview

The worker must have successfully undergone a formal management interview conducted by an authorized manager who thereby confirmed that the worker can perform the duties of a SHP safely and competently.

The management interview must be conducted after the worker has successfully completed the continuing training previously referenced in sub-subsection 10.2.1, and before the requalification test specified next in sub-subsection 10.2.3.

10.2.3 Requalification Testing

The worker must have successfully completed a knowledge-based requalification test administered by CNSC staff covering the radiation protection principles, methods, and practices related to the operation of the reactor facility identified in the licence.

Guidance

Knowledge Areas – Article A.Appendix C provides a summary of the key knowledge areas and topics sampled by CNSC staff during the SHP certification examinations and requalification tests.

10.3 Qualifying for Recertification Following Decertification or Certificate Expiry

A worker seeking certification for employment as a SHP following decertification by the CNSC, or following the expiry of the certificate, shall meet, at the time of application for recertification, the requirements specified in this subsection.

10.3.1 Decertification Basis Remediation

When the worker is seeking certification following decertification, any deficiency identified as part of the basis provided by the CNSC for the decertification of the worker must no longer exist or have been remedied by the licensee to the satisfaction of the CNSC.

Guidance

Depending on the basis for the decertification, remediation may involve any means or method used to rectify or remedy the cause of the decertification, including, but no limited to, administrative measures, remedial training, rehabilitation, or therapy.

10.3.2 Tailored Training

The worker must have successfully completed approved tailored training, comprising knowledge and performance-based refresher and update training, based on a documented, tailored training needs analysis (TNA) and a documented individual training plan (ITP).

At a minimum, the tailored training referenced in this subsection shall cover any scheduled knowledge refresher and knowledge update training that the worker missed during the interim period between decertification or the certificate expiry and the application for certification.

10.3.3 Management Interview

The worker must have successfully undergone a formal management interview conducted by an authorized manager who thereby confirmed that the worker can perform the duties of a SHP safely and competently.

The management interview must be conducted after the worker has successfully completed the tailored training previously referenced in sub-subsection 10.3.2, and before the certification examination specified next in sub-subsection 10.3.4.

10.3.4 Certification Examination

The worker must have successfully completed a knowledge-based examination administered by CNSC staff covering the radiation protection principles, methods, and practices related to the operation of the reactor facility identified in the licence.

Part III – Licensee Organizational and Physical Infrastructures

Part III describes the organizational and physical infrastructures that the licensee must implement to support the personnel certification scheme described in Part I and achieve the worker qualifications specified in Part II.

Subpart C – Organizational Infrastructure

11. Policies and Procedures

11.1 Training and Qualifying Workers for Initial Certification

The licensee shall establish and document effective policies and procedures to train and qualify the workers seeking certification for employment in designated positions.

11.2 Maintaining the Qualification of Certified Workers

The licensee shall establish and document effective policies and procedures to train and maintain the qualification of the certified workers employed in designated positions.

12. Personnel Selection Program

The licensee shall implement and document an effective personnel selection program that ensures the selection of suitable candidates for entry in the initial training programs referenced in this REGDOC.

12.1 Personnel Selection Program Requirements

As an integral part of the mandated personnel selection program, at a minimum and for each designated position identified in the licence, the licensee:

- a. shall set a minimum prior education level or minimum literacy and numeracy levels commensurate with the duties of the designated position and consistent with the entry level of a suitable initial training program;
- b. shall demand that candidates selected on the basis of their prior education level provide a diploma or other official proof of successful completion of a suitable course of study issued by a recognized educational institution or learning provider;
- c. may recognize equivalencies to any minimum education, literacy, or numeracy level set by the licensee;
- d. shall use standardized tests and proven methods to assess whether or not candidates selected on the basis of a literacy or numeracy level, or a recognized equivalency, do in fact meet the applicable minimum standards;
- e. shall determine whether or not prior work experience may be desirable or required and make plans, as may be applicable, to provide relevant work experience to candidates prior to their entry in a suitable initial training program;
- f. may use standardized tests and proven methods, or require a medical assessment performed by a licensed physician, to assess whether or not candidates have any permanent, physical or mental limitation that would prevent them from performing the duties of the pertinent designated position safely and competently;

- g. shall identify attributes and aptitudes deemed essential to safely and competently perform the duties of the designated position, including integrity, leadership, and resilience, as may be pertinent; and
- h. should use standardized tests and proven methods to assess whether or not candidates possess the applicable essential attributes and aptitudes.

Guidance

Prior Education – The licensee should set personnel selection criteria based on a considered rationale, and avoid setting prescriptive requirements for the sake of expediency, including specific education prerequisites, if suitable candidates may thereby be unduly excluded. The CNSC recognizes that modern learners may acquire acceptable levels of prior knowledge and literacy through various methods and avenues, including distant learning and homeschooling, and from jurisdictions other than provincial authorities, depending on individual circumstances.

Work Experience – In the context of the personnel selection program, relevant work experience means any employment in a role or position of an operational or technical nature providing:

- a. the candidate with:
 - i. meaningful exposure to the organization and the daily operation of a reactor facility in some way relevant to the duties of the relevant designated position; and
 - ii. an opportunity to develop transferable knowledge and skills (K&S) and safety-related attributes that will eventually be valuable to the successful candidate once employed in a designated position; and
- b. the management team with an opportunity to evaluate the prospective candidate against the pertinent personal selection criteria, in particular any essential or desirable attribute, including integrity, leadership and resilience.

12.2 Personnel Selection Criteria

12.2.1 Basic Prerequisites

Prior to the start of their initial training, candidates selected for entry in any initial training program for operations personnel shall:

- a. have provided sufficient proof of any applicable prior education level;
- b. have demonstrated literacy and numeracy levels commensurate with the duties of the pertinent designated position;
- c. have gained any work experience identified by the licensee as essential;
- d. possess all the safety-related attributes and aptitudes deemed essential by the licensee; and
- e. meet all other applicable position-specific selection criteria set by the licensee.

12.2.2 Supplementary Prerequisites for Shift Supervisors and Senior Health Physicists

In addition to meeting the applicable basic prerequisites, shift supervisor and senior health physicist candidates shall, to the licensee's knowledge:

- a. possess known leadership skills or potential; and
- b. have consistently demonstrated a high level of integrity.

12.3 Selection of Reactor Operators for Shift Supervisor Training

A worker certified or previously certified for employment as reactor operator (RO) at the reactor facility identified in the licence may be selected for entry in an initial training program for shift supervisor candidates in accordance with the requirements specified in this subsection.

12.3.1 Performance as Reactor Operator

Prior to being selected for shift supervisor training, the worker must:

- a. have performed the duties of a RO safely and competently; and
- b. be known to possess the safety-related attributes and aptitudes required of a shift supervisor.

12.3.2 Personnel Selection Exemption

The licensee may exempt the worker from any education level or prior work experience normally required of shift supervisor candidates.

12.3.3 Notification of Selection for Shift Supervisor Training

Prior to allowing the worker to enter an initial training program for shift supervisor candidates, the licensee shall notify the CNSC, to include:

- a. the full legal name of the worker;
- b. a confirmation that the worker performed the duties of a RO safely and competently and possesses the safety-related attributes and aptitudes required of a shift supervisor; and
- c. a summary of any personnel selection exemption employed as part of the selection of the worker.

12.3.4 Added Information Upon Application for Certification

The application for initial certification of the worker shall include a summary of any exemption(s) employed as part of the selection of the worker for shift supervisor training.

12.4 Advancement to Senior Shift Supervisor

Any certified shift supervisor who, as a member of the minimum shift complement, exercises authority over any number of certified shift supervisors shall, prior to being employed in such a senior shift supervisor position, have been selected and trained by the licensee for the express purpose by means of a documented process meeting the minimum requirements specified in this subsection.

The licensee shall not allow any worker to act as senior shift supervisor who is not duly qualified to exercise authority over other certified shift supervisors in accordance with the established advancement to senior shift supervisor process.

Guidance

Applicability – This subsection applies when the management system implemented at the reactor facility requires the presence of at least one senior shift supervisor having authority over at least one shift supervisor as part of the minimum shift complement.

Special Circumstances – The CNSC recognizes that, at reactor facilities employing senior shift supervisors, the role and responsibilities of all shift supervisors may include making safety-significant or otherwise time-sensitive decisions when the senior shift supervisor on duty is undisposed or unavailable. Therefore, nothing in this REGDOC should be construed as preventing any certified shift supervisor from making operational or safety-critical decisions normally delegated to the senior shift supervisor as the situation dictates.

12.4.1 Minimum Experience as Shift Supervisor Prior to Advancement

The worker must have safely and competently performed the duties of a shift supervisor at the reactor facility identified in the licence for a minimum number of complete shifts and a minimum number of hours of shiftwork acceptable to the CNSC prior to being selected for advancement to the senior shift supervisor position.

Guidance

Compliance Scheme – Article A.Appendix B specifies the minimum numbers of complete shifts and hours of shiftwork acceptable to the CNSC for the pertinent reactor facilities in service at the time of publication of the current version of this REGDOC.

12.4.2 Supplemental Training

The worker must have successfully completed training based on a training system, including OJT, covering the K&S and safety-related attributes required to safely and competently perform the duties of the senior shift supervisor, as defined by the implemented management system and the documented role and responsibilities, prior to advancement to the senior shift supervisor position.

12.4.3 Work Under Supervision

The worker must have performed the duties of the senior shift supervisor under the supervision of a worker certified as senior shift supervisor for a number of complete shifts that the licensee considers necessary to confirm that the worker can perform the said duties competently and safely, prior to advancement to the senior shift supervisor position.

12.4.4 Notification of Advancement to Senior Shift Supervisor

The licensee shall inform the CNSC, prior to allowing the worker to act as senior shift supervisor, of any senior shift supervisor qualification received by the worker. This communication shall include a summary, showing the effective date of completion in each case, of the requirements successfully met by the worker as part of the relevant advancement process.

12.5 Personnel Transfer

The licensee shall implement and document an effective personnel transfer process compliant with the requirements and guidance specified in this subsection.

Guidance

Applicability – This section applies to the case of a worker who will be seeking certification for employment in a designated position at the reactor facility identified in the licence (the gaining reactor facility) after being transferred from another reactor facility of an equal or comparable design (the ceding reactor facility). When a worker is transferred between reactor facilities differing significantly in design or concept of operation, the worker should be hired and trained as any other candidate in accordance with the established personnel selection process and by means of the full initial training program.

12.5.1 Personnel Transfer Process

As an integral part of the mandated personnel transfer process, the licensee of the gaining reactor facility:

- a. should obtain, from the licensee of the ceding reactor facility:
 - i. the training and qualification records and, if applicable, the certification examination history, of the worker;
 - ii. confirmation that the worker performed their duties in a safe and competent manner, be it in a designated position or not; and
 - iii. confirmation that the worker is trustworthy;
- b. may administer a single or a series of standardized general knowledge test(s) based on proven methods to identify any gaps in the general knowledge of the transferred worker;
- c. may use the results of the aforementioned general knowledge test(s) as part of a tailored training needs analysis (TNA) and the development of an individual training plan (ITP), on a case-by-case basis;
- d. may administer a general knowledge certification examination to the transferred worker to ascertain that said worker possesses adequate general knowledge;
- e. may employ one or both potential exemptions explicitly sanctioned later in this subsection; and
- f. shall ensure that the worker meets all of the applicable personnel selection criteria in effect at the gaining reactor facility prior to the worker entering one of the initial training programs referenced in this REGDOC.

Guidance

Best Practice – The CNSC recognizes that the gaining reactor facility licensee cannot be held accountable for a refusal, on the part of the ceding reactor facility licensee, to share personal information related to the worker, and therefore does not make every aspect of the personnel transfer process mandatory. Nevertheless, the gaining reactor facility licensee should ascertain, to the fullest extent possible, the suitability of the worker as a candidate for the applicable initial training program.

12.5.2 Initial Training

Except for the potential exemption explicitly sanctioned next in sub-subsection 12.5.3, the transferred worker shall successfully complete the same initial training that is administered to other workers seeking certification for employment in the relevant designated position at the gaining reactor facility.

12.5.3 General Knowledge Training Exemption

The licensee is not obligated to administer additional general knowledge training to the transferred worker if the said worker has previously successfully completed general knowledge training that:

- a. is equivalent to the general knowledge training administered to workers seeking employment in the same designated position at the gaining reactor facility;
- b. was administered in accordance with the applicable requirements specified in this REGDOC; and
- c. is, in all other respects, acceptable to the gaining reactor facility licensee.

Guidance

Limitation – The general knowledge training is the only component of any initial training program specified in this REGDOC from which the transferred worker may be exempted.

12.5.4 Certification Examinations

Except for the potential exemption explicitly sanctioned next in sub-subsection 12.5.5, the transferred worker shall successfully complete the same certification examinations as those administered to other workers seeking certification for employment in the relevant designated position at the gaining reactor facility.

12.5.5 General Knowledge Examination Exemption

The licensee is not obligated to administer an additional general knowledge certification examination to the transferred worker if the said worker previously received a passing grade on a general knowledge examination that:

- a. is equivalent to the general knowledge examination administered to workers seeking employment in the same designated position at the gaining reactor facility;
- b. was administered by qualified examiners in accordance with the conditions set in the gaining reactor facility licence or any associated licensing documentation, including the detailed requirements specified in any REGDOC referenced in the said licence or licensing documentation; and
- c. is, in all other respects, acceptable to the gaining reactor facility licensee.

Guidance

Limitation – The general knowledge certification examination is the only personnel certification examination from which the transferred worker may be exempted.

12.5.6 Notification of Personnel Transfer

The licensee shall notify the CNSC, prior to the start of the initial training of the transferred worker, of any sanctioned exemption employed as part of the transfer of the worker.

12.5.7 Added Information Upon Application for Certification

At the time of application for certification, the transferred worker shall meet all of the personnel certification requirements applicable to any worker seeking certification for employment in the relevant designated position at the reactor facility identified in the licence.

The application for initial certification of the transferred worker shall include a summary of any exemption(s), TNA, ITP, personnel selection test(s), and certification examination employed as part of the transfer of the worker.

Guidance

Exemption Basis – The potential exemptions referenced in this section assume an adequate degree of equivalency between the general training and the general knowledge examination successfully completed by the candidate and those administered at the gaining reactor facility. The CNSC is not obligated to certify any worker previously granted an exemption by the licensee if the CNSC is not satisfied that a sufficient degree of equivalency did in fact exist when the exemption was granted. The licensee should consult CNSC staff when in doubt.

Licensee Discretion – The potential exemptions referenced in this section are not mandatory. The gaining reactor facility licensee remains free to require that the transferred worker successfully complete additional general training and an additional general knowledge examination, regardless of any general training or certification examination previously successfully completed by the transferred worker.

13. Training Programs

13.1 Initial Training Programs

The licensee shall implement and document distinct initial training programs specifically designed to prepare workers for employment in each designated position identified in the licence, and to qualify the said workers for certification by the CNSC in accordance with the applicable worker qualifications specified in Part II.

13.2 Continuing Training Programs

The licensee shall implement and document distinct continuing training programs specifically designed to maintain the competency of workers employed in each designated position identified in the licence, and to requalify the said workers for certification renewal by the CNSC in accordance with the applicable worker requalification requirements specified in Part II.

Guidance

Purpose – The purpose of the continuing training programs is to ensure that certified workers:

- a. retain the essential K&S and safety-related attributes acquired during their initial training; and
- b. acquire new K&S and safety-related attributes as necessary to deal successfully with the relevant procedural and technical changes implemented over time.

13.2.1 Update Training

All continuing training programs designed to requalify certified workers shall include suitable update training, including formal knowledge and performance-based evaluations, covering any relevant technical or procedural changes implemented at the reactor facility identified in the licence, as well as the relevant lessons-learned acquired by the industry over time, including, but not limited to:

- a. changes to reactor facility systems and subsystems;
- b. changes to licensee and station-specific policies, standards, and procedures;
- c. amendments to, or exemptions from, regulatory requirements;
- d. amendments to the licensee's licence or to documents referenced in the said licence; and
- e. station-specific and industry operational experience (OPEX) and operating events.

The licensee shall deliver the knowledge update training referenced in this REGDOC promptly following the occurrence of the initiating change or event using effective instructional methods, including suitable simulator-based training whenever pertinent.

13.2.2 Refresher Training

All continuing training programs designed to requalify certified workers shall include suitable refresher training, including formal knowledge and performance-based evaluations, covering the essential K&S and safety-related attributes that certified workers acquired during their initial training and which must be periodically reviewed and applied to ensure adequate retention.

The licensee shall deliver the knowledge refresher training referenced in this REGDOC on a regular basis and according to a training cycle not exceeding five (5) years, using effective instructional methods, including suitable simulator-based training whenever pertinent.

Guidance

Best Practice – Allowing for individual circumstances, certified workers should attend sufficient refresher training to review all the applicable K&S and safety-related attributes during each five-year certification period preceding a renewal of their certification.

13.2.3 Simulator-based Continuing Training for Operations Personnel

All continuing training programs designed to requalify operations personnel shall include suitable simulator-based training designed to ensure that operations personnel maintain their qualification by applying their K&S and safety-related attributes through recurrent performance-based training covering varied simulated scenarios under normal, abnormal and, to the extent possible, emergency conditions.

At a minimum, the continuing simulator-based training for operations personnel shall include:

- a. simulator-based exercises covering the normal reactor manoeuvres and plant evolutions infrequently performed by certified workers while on duty;
- b. simulator-based exercises covering varied scenarios:
 - i. challenging the diagnostic and decision-making abilities of certified workers; and
 - ii. ensuring that certified workers remain proficient in selecting and executing the correct operational procedures under abnormal and emergency conditions; and

- c. exercises and drills ensuring that certified workers are ready to respond to accidents and emergencies.

Guidance

Best Practice – The simulator-based continuing training should in particular cover those situations requiring that safety-significant and time-sensitive decisions be made and implemented promptly in order to prevent harm to workers, the public, or the environment.

13.2.4 Nuclear Emergency Response Training

The licensee shall conduct, on a periodic basis, nuclear emergency response training to ensure that certified workers are adequately prepared to respond to credible beyond-design-basis accidents (BDBA) and manage nuclear emergencies in accordance with the established emergency operating procedures and severe accident management guidelines.

Guidance

Instructional Strategies and Methods – Nuclear emergency response training should focus on the roles and responsibilities relevant to certified workers, and may be delivered through any effective means, from classroom (tabletop) exercises to the participation of certified workers in full-scale nuclear emergency response exercises (NEREX).

Complementary Regulatory Documents – Further requirements and guidance pertinent to the personnel involved in accident management and nuclear emergency preparedness and response can be found in the applicable complementary REGDOCs listed as additional information at the end of this REGDOC.

13.3 Training System for Reactor Facilities

The initial and continuing training programs referenced in this REGDOC shall be consistent with a training system for reactor facilities acceptable to the CNSC.

In the event that the licensee intends to contract out, in whole or in part, the responsibility for any aspect of the training referenced in this REGDOC, the licensee shall obtain prior approval from the CNSC and, if such approval is granted, shall ensure that the requirements and guidance specified in this and any relevant complementary REGDOC are complied with by the contracted party or parties.

Guidance

Instructional Strategies and Methods – In implementing and administering the initial and continuing training referenced in this REGDOC, the licensee is free to employ any effectual instructional strategies and any combination of recognized instructional methods, including self-paced learning, remote learning, and e-learning.

Complementary Regulatory Document – Further requirements and guidance pertaining to personnel training, including training systems, can be found in the applicable complementary REGDOC listed as additional information at the end of this REGDOC.

Training Program Samples – Article A.Appendix D contains examples of training programs initially implemented at CANada Deuterium Uranium (CANDU) reactor facilities and found acceptable by the CNSC. Notwithstanding this added guidance, a suitable training program is based on a reactor facility training system, as mandated by the CNSC.

13.4 Formal Learner Evaluations

All initial and continuing training referenced in this REGDOC shall include formal evaluations, either knowledge-based or performance-based as appropriate, designed to assess the individual progress of each learner within the mandated training, including any tailored training.

The licensee shall administer all such formal evaluations in accordance with a documented process specifying:

- a. the requirements applicable to each type of knowledge and performance-based evaluations required;
- b. the number and the scope of each evaluation and type of evaluation in relation to appropriate training segments or milestones;
- c. procedures for the design, development, conduct and grading of the evaluations; and
- d. qualification requirements for the personnel responsible for design, development, conduct, and grading of the evaluations.

All formal evaluations shall be administered either by qualified trainers or by qualified examiners as part of a documented instructional strategy.

Guidance

Purpose – The purpose of the formal learner evaluations differs from that of the certification examinations and requalification tests in that the former provide a timely measure of the learner’s progression at key milestones throughout the pertinent training program, while the latter serve as formal proof of worker competency for the purpose of seeking certification by the CNSC. The results of the learner evaluation can also be used to provide learners with learning feedback, and help managers and instructors determine an appropriate time, on a group or individual basis, when the examiners should administer the personnel certification examinations and the requalification tests required by the CNSC.

13.5 Trainer Qualifications

The licensee shall ensure that the personnel tasked with administering the training and formal evaluations referenced in this REGDOC are duly qualified to administer training and formal evaluations to the workers certified or seeking certification by the CNSC.

14. Certification Examination and Requalification Testing

14.1 Separation of the Training and Examination Functions

The licensee shall ensure that, to the greatest extent possible, adequate separation and an arms-length relationship is maintained between the trainers delivering the training referenced in this

REGDOC and the examiners administering certification examinations and requalification tests on behalf of the CNSC. At a minimum:

- a. no knowledge or performance-based certification examination or requalification test administered in accordance with the requirements specified in this REGDOC shall be designed, developed, administered, or graded, in whole or in part, by an examiner who acted, or is acting, as trainer to any of the candidates undergoing the examination or test in relation to the knowledge or skills specifically covered by the said examination or test;
- b. no trainer or examiner shall benefit, financially or otherwise, from the success rate of the candidates undergoing any formal evaluation, certification examination, or requalification test referenced in this REGDOC.

Guidance

Purpose – The purpose of maintaining sufficient separation between trainers and examiners is to ensure that the primary proof of competency required by the CNSC at the time of certification or the renewal of a certification, namely the certification examination or requalification test results, was obtained by qualified examiners independently of the pertinent trainers. In the personnel certification context, the examiners’ opinion of worker competency must be an autonomous validation of the trainers’ opinion on the matter, since the examiners are tasked with representing the certifying body, rather than the employer. This separation is a fundamental aspect of best practice for certifying bodies. The Commission or DO requires satisfactory proof of competency in order to form a sensible opinion of worker competency prior to making any personnel certification decision.

Best Practice – Ideally, the training and examination personnel should be members of distinct staffs, led by different managers; however, the CNSC recognizes that this level of separation is neither essential, nor always feasible.

14.2 Certification Examinations

The licensee shall ensure that the knowledge-based and performance-based certification examinations referenced in this REGDOC are designed, developed, conducted, and graded by qualified examiners in accordance with the applicable CNSC requirements specified or referenced in the licence or accompanying licensing documentation.

14.3 Requalification Testing

The licensee shall ensure that the knowledge-based and performance-based requalification tests referenced in this REGDOC are designed, developed, conducted, and graded by qualified examiners in accordance with the applicable CNSC requirements specified or referenced in the licence or accompanying licensing documentation.

14.4 Security of Certification Examinations and Requalification Tests

The licensee shall implement and document effective policies and procedures to control access to, and the use of, the formal evaluations, certification examinations, and requalification tests referenced in this REGDOC.

The associated security measures shall meet the following minimum requirements:

- a. only personnel with a valid need-to-know shall have access to the pertinent formal evaluations, certification examinations, and requalification tests, as well as any associated documentation and materials providing a direct clue of their content;
- b. trainers shall not have access to, or prior knowledge of, the specific content of any certification examination or requalification test administered to their learners;
- c. answers to modified essay question (MEQ) examinations and tests shall be protected from unauthorized access;
- d. answer keys to multiple choice question (MCQ) examinations and tests shall be protected from unauthorized access;
- e. any repository, physical or virtual, containing MEQ or MCQ examinations and test questions shall be protected from unauthorized access;
- f. in order to discharge their duties, CNSC staff participating to compliance verification activities, including but not limited to inspections, shall be exempt from any security measure established by the licensees in accordance with the requirements specified in this subsection.

Guidance

CNSC Staff Access – CNSC staff will take appropriate precautions consistent with the security standards applicable to federal employees and the security measures specified in this subsection. In addition, CNSC staff will respect the relevant licensee procedures to the fullest extent possible. However, no CNSC inspector nor any other member of an inspection team may be denied access to any information required by CNSC staff members to discharge their duties under the Act.

14.5 Examiner Qualifications

The licensee shall ensure that the personnel tasked with administering the certification examinations and requalification tests referenced in this REGDOC have successfully completed suitable training and are duly qualified to administer certification examinations and requalification tests to the workers certified or seeking certification by the CNSC.

15. Work Under Supervision

The licensee shall establish and document, for each applicable designated position identified in the licence, effective procedures for the administration of the work under supervision (WUS) referenced in this REGDOC.

All mandated WUS periods shall meet the following objectives:

- a. WUS shall provide the worker being evaluated with a meaningful opportunity to demonstrate a functional level of competency and the ability to stand solo shifts as lead operator or shift supervisor; and
- b. WUS shall provide operations managers with a sufficient observation period to confirm that the worker being evaluated can be trusted to stand solo shifts as lead operator or shift supervisor and can perform the relevant duties safely and competently.

When implemented as part of an initial training program, WUS shall not begin until the responsibility for the learner's performance has been transferred from the training authority to the operations authority.

Guidance

Supervising Authority – Given that WUS primarily serves a performance evaluation function, rather than a training function, WUS periods are supervised by certified operations personnel under the authority of the operations management team. When attending an initial training program, the learner should have acquired a functional level of competency prior to the start of the WUS period.

On-the-job Training – Notwithstanding the primary purpose of the mandated WUS, the licensee may conduct OJT and mentorship during any WUS period, notably as an integral part of an initial training program.

16. Management Interviews

The licensee shall establish and document effective procedures for preparing and conducting the various management interviews referenced in this REGDOC.

Each mandatory management interview shall serve an evaluation function and:

- a. be conducted orally by a minimum of one manager authorized to represent the licensee and to conduct the said interview;
- b. provide the worker being evaluated with a meaningful opportunity to demonstrate an adequate level of competency;
- c. provide at least one member of the operations management team with a meaningful opportunity to make a final determination of worker competency; and
- d. be recorded in writing or via any other retrievable medium, the record of which shall be retained and made available to the CNSC upon request.

Guidance

Purpose – The purpose of the management interview is to ensure that the licensee and the operations management team make a final determination of adequate worker competency, and take ownership of each candidate individually, prior to their presentation for certification by the CNSC or their reinstatement to duty following a removal for cause.

17. Administrative Policies and Procedures Applicable to Workers in Training

The policies and procedures specified in this section apply to any worker, whether certified or not, who is attending one of the initial training programs referenced in this REGDOC, in the context of, and in relation to, the said training.

17.1 Reintegration of Worker in Training Following a Prolonged Training Interruption

The licensee shall establish and document an effective process to manage the case of any worker reintegrating an initial training program after a prolonged training interruption. As an integral part of this process, the licensee shall:

- a. perform a formal evaluation, including knowledge and performance-based testing as warranted, to assess the K&S retention of the worker and to identify any K&S gap that the worker may have developed during the period of absence;

- b. determine the need for remedial training based on a tailored training needs analysis (TNA), considering any K&S forgotten by the worker and any changes or updates to the essential K&S and safety-related attributes that occurred during the period of absence;
- c. formulate and implement a remedial individual training plan (ITP) as may be necessary;
- d. ensure that the worker, at a minimum, successfully completes any training and formal evaluation(s) missed during the period of absence; and
- e. determine a suitable point of re-entry in the relevant initial training program.

At a minimum, any worker who is absent from an initial training program for a period of six (6) months or more shall undergo a formal reintegration process meeting the requirements specified in this subsection.

Guidance

Best Practice – The licensee should ensure, on a case-by-case basis, that workers who absent themselves from initial training to any significant extent are evaluated and remediated as necessary to ensure adequate K&S retention prior to their reintegration in an initial training program

18. Administrative Policies and Procedures Applicable to Certified Workers

The policies and procedures specified in this section apply to all certified workers in the context of, and in relation to, their employment in the relevant designated position(s).

18.1 Fitness for Duty

The licensee shall implement and document effective fitness-for-duty policies and procedures providing the CNSC with reasonable assurance that certified workers are free of any physical or mental impairment that could hinder their ability to perform the duties of the pertinent designated position(s) safely and competently.

The fitness-for-duty policies and procedures applicable to certified workers shall be implemented consistently with the requirements and guidance specified in this and complementary REGDOCs regarding fitness for duty, including those related to the management of worker fatigue and the management of alcohol and drug use.

Guidance

Complementary Regulatory Documents – Further requirements and guidance pertaining to the management of worker fatigue and the management of alcohol and drug use, including testing, can be found in the applicable complementary REGDOCs listed as additional information at the end of this REGDOC.

18.2 Minimum Employment of Certified Workers

The licensee shall ensure that certified workers are employed in the designated position(s) specified on their certificate(s) to the extent necessary to maintain an adequate competency level throughout the full duration of their certification.

18.2.1 Minimum Shift Requirement for Operations Personnel

Any worker certified for employment as ASO, RO or shift supervisor shall perform the duties of a lead ASO, RO or shift supervisor for a minimum number acceptable to the CNSC of complete shifts per calendar quarter amounting to a minimum number acceptable to the CNSC of hours of shiftwork per calendar quarter.

Each worker shall perform the mandated minimum employment as the lead incumbent, as opposed to a back-up or supernumerary capacity, and, to the fullest extent possible, in relation to a fuelled and operating reactor or group of reactors.

Guidance

Purpose – The purpose of the minimum employment requirement is to ensure that certified workers performing shiftwork are exposed to the duties of the pertinent designated position at a sufficient frequency to maintain an adequate competency level, primarily in relation to those routine tasks that are neither safety-significant nor time-sensitive, and may therefore be performed while on duty without negatively impacting nuclear safety. Safety-significant or time-sensitive K&S and safety-related attributes should be systematically covered during continuing training.

Minimum Requirement – The licensee is not obligated to ensure that every single shift worked by certified shift workers meets the requirements and guidance specified in this subsection, as long as each certified shift worker is sufficiently employed as to meet the applicable minimum employment requirement on a quarterly basis.

Compliance Scheme – Article A.Appendix B specifies the minimum shift requirements acceptable to the CNSC for the pertinent reactor facilities in service at the time of publication of the current version of this REGDOC.

Complete Shift – A complete shift means a minimum of four (4) consecutive hours of work in a designated position as a lead operator or shift supervisor that is preceded by a formal turnover of the responsibilities for the shift with an outgoing counterpart, and is concluded by an equal turnover with an incoming counterpart.

Normal Shift Duration – The CNSC acknowledges that the licensee may implement, either as the norm, or to manage work schedules on an individual basis, varied, but equally effective shift rotations and durations, including, but not limited to, a normal shift duration of 12 hours.

Minimum Shift Duration – Given the known concerns and mandated restrictions regarding worker fatigue, the CNSC will not define a minimum shift duration other than the aforementioned minimum duration of four (4) consecutive hours, which is defined merely to ensure that each complete shift recorded for the purpose of meeting a minimum shift requirement, does in fact constitute meaningful exposure to the duties of the relevant designated position. This minimum shift duration strictly applies to the complete shifts recorded and reported to the CNSC for this express purpose.

Reasonable Accommodation – In order to provide the licensee with sufficient flexibility to manage individual circumstances, including, but not limited to, workers suffering from chronic illnesses or pain, certified shift workers are free to perform complete shifts of any acceptable

minimum duration as long the applicable minimum number of complete shifts and total hours of shiftwork are met on a quarterly basis.

Senior Shift Supervisors – Once qualified, senior shift supervisors are permitted to perform the duties of any, and all, of the applicable, site-specific shift supervisor positions listed in Article A.Appendix A, and may therefore stand shifts in any shift supervisor position interchangeably in order to meet an applicable minimum shift requirement.

18.2.2 Minimum Shift Requirement Deferment

When an ASO, RO or shift supervisor fails to meet, during any given calendar quarter, an applicable minimum shift requirement, the omitted number of complete shifts and hours of shiftwork shall be performed in the following calendar quarter, in addition to the minimum shift requirement strictly applicable to the latter calendar quarter.

18.2.3 Minimum Employment of Senior Health Physicists

The licensee shall ensure that workers certified for employment as SHP regularly perform the duties of a SHP throughout the full duration of their certification.

18.3 Management of Prolonged Unemployment

Any certified worker shall be formally removed from the duties of the pertinent designated position and assigned an inactive employment status who, for a period lasting six (6) consecutive months or more, regardless of the rationale, is or will be unable to:

- a. attend the scheduled continuing training; or
- b. meet an applicable quarterly minimum shift requirement.

Guidance

Applicability – This subsection applies to any certified worker who meets one or both of the prolonged unemployment criteria regardless of the circumstances. Relevant circumstances encompass, but are not limited to, any competing work assignment, including a temporary or permanent reassignment inside or outside of the reactor facility, and any prolonged leave of absence, including sabbatical, medical, parental, and maternity leave. In addition, any worker holding a valid certificate who ceases to attend continuing training or meet the applicable minimum employment requirement, be it voluntarily or not, including due to a planned retirement, should likewise be formally removed from duty in accordance with this subsection and may be reinstated to duty in accordance with the baseline reinstatement process specified later in subsection 18.5, as the situation later dictates.

18.4 Removal from Duty for Cause

Any certified worker who meets any one of the criteria specified next in this subsection shall be formally removed from the duties of the pertinent designated position for cause and assigned either an inactive or uncertified employment status as applicable.

18.4.1 Failure to Meet a Minimum Employment Requirement

The worker has failed to meet an applicable quarterly minimum shift requirement for two consecutive calendar quarters.

Guidance

Applicability – This criterion applies to a certified shift worker who was expected to meet an applicable minimum shift requirement, and has already failed to meet the said requirement for two consecutive calendar quarters. Workers who are unable to perform sufficient shiftwork due to a prolonged absence or a competing work assignment should be managed under the prolonged unemployment provisions previously specified in subsection 18.3.

18.4.2 Requalification Test Failure

The worker has failed a requalification test, be it in a lead or supporting role.

18.4.3 Inability to Work Safely and Competently

The worker was the subject of a verified positive alcohol or drug test administered in accordance with the fitness-for-duty program mandated by the CNSC, or is otherwise deemed unfit, by the licensee, to perform the duties of a designated position safely and competently for any reason, including, but not limited to:

- a. a medical or physical condition, be it permanent or temporary;
- b. a mental health condition, be it permanent or temporary;
- c. inadequate performance while on duty, including any action or decision that puts at risk the health and safety of workers, the public, or the environment;
- d. a demonstrated unwillingness or failure to take the necessary precautions to protect the health and safety of workers, the public, or the environment; and
- e. a demonstrated lack of integrity or trustworthiness.

Guidance

Applicability – In regard to any medical, physical and mental health condition, the removal from duty criterion applies to the case of a certified worker who must be removed from duty by the licensee, with or without the worker's consent, because the resulting physical, physiological or mental impediment directly interferes with the worker's ability to perform the duties of the pertinent designated position safely and competently, regardless of the expected duration of the underlying condition.

18.4.4 Certificate Expiry

The certificate of the worker has expired.

18.4.5 Proposed Decision Not to Certify or to Decertify

The worker was identified by the CNSC as the worker concerned in a proposed decision not to certify or a proposed decertification, while a final certification decision by the Commission or a DO remains pending.

Guidance

Applicability – The removal criterion specified here is relevant in two cases only: a proposed decertification, or a proposed decision not to renew a certification. The case of a proposed decision not to grant an initial certification is irrelevant, since any worker concerned in such a case would not yet be employed in a designated position, and therefore could not be removed from the duties of the pertinent designated position.

18.5 Baseline Reinstatement Process

No certified worker who has been removed from the duties of a designated position shall be allowed to perform the said duties until the worker has successfully undergone a suitable baseline reinstatement process compliant with the requirements specified next in this subsection.

Guidance

Applicability – The baseline reinstatement process applies to all certified workers removed from duty, regardless of the rationale. The remediation process specified later in subsection 18.6 is in addition to the baseline reinstatement process, but applies only to certified workers removed from duty for cause.

18.5.1 Update Training

The worker must have completed suitable update training covering any relevant technical or operational changes implemented, and any relevant lessons-learned collected, while the worker was formally removed from the duties of the designated position, including, but no limited to:

- a. changes to reactor facility systems and subsystems;
- b. changes to licensee and station-specific policies, standards, and procedures;
- c. amendments to, or exemptions from, regulatory requirements;
- d. amendments to the licensee's licence or to documents referenced in the said licence; and
- e. station-specific and industry operational experience (OPEX) and operating events.

18.5.2 Refresher Training

The worker must have successfully completed suitable refresher training commensurate with the duration of the period of absence or removal from duty of the worker.

At a minimum, this refreshed training shall encompass any scheduled refresher training that the worker failed to attend while the worker was formally removed from the duty.

18.5.3 Simulator-based Training

For operations personnel, the worker must have successfully completed suitable simulator-based training covering a number and variety of scenarios commensurate with the duration of the period of absence or removal from duty of the worker.

At a minimum, this simulator-based training shall challenge the diagnostic and decision-making skills of the worker and encompass any simulator-based training that the worker failed to attend during the period of absence or removal from duty of the worker.

18.5.4 Work Under Supervision

For operations personnel, the worker must have successfully performed the duties of the pertinent designated position under the supervision of a worker certified for employment in the same designated position, and for a number of complete shifts deemed sufficient by the licensee to confirm that the worker can perform the said duties competently and safely.

18.5.5 Management Interview

When previously removed from duty for cause, the worker must have successfully undergone a formal management interview.

Guidance

Applicability – The management interview is not mandatory for workers being reinstated to duty after a period of prolonged unemployment.

18.6 Remediation Following Removal for Cause

In addition to the baseline reinstatement process previously specified in subsection 18.5, no certified worker who has been removed from duty for cause based on one of the criteria defined in subsection 18.4 shall be allowed to perform the duties of the relevant designated position until the worker has successfully undergone suitable remediation consistent with the applicable cause for the removal, as specified in this subsection.

18.6.1 Failure to Meet a Minimum Employment Requirement

The licensee may reinstate a worker to the duties of the pertinent designated position following a failure to meet a minimum employment requirement, if:

- a. the circumstances that prevented the worker from performing the duties of the pertinent designated position no longer exist; and
- b. the worker has performed, under the supervision of a worker certified for employment in the relevant designated position, a number of complete shifts and hours of shiftwork no less than the minimum number of complete shifts and hours of shiftwork that the worker failed to complete in the quarter preceding the removal from duty.

18.6.2 Requalification Test Failure

The licensee may reinstate a worker to the duties of the pertinent designated position following a requalification test failure once the worker has successfully completed a requalification test equivalent to the failed requalification test.

This supplementary requalification test must be equivalent in all respects, but must not be the same as the failed requalification test, nor any retake test subsequently failed by the candidate as part of the reinstatement process. Furthermore, the established restrictions regarding the allowed topic overlap between requalification tests shall apply.

18.6.3 Inability to Work Safely and Competently

The licensee may reinstate a worker to the duties of the pertinent designated position following a removal from duty due to an inability to work safely and competently, if:

- a. the basis for the removal from duty has been adequately remedied or mitigated, or no longer exists; and
- b. when the cause of the removal from duty was linked to a fitness-for-duty requirement specified in a complementary REGDOC, including, but not limited to, a verified positive alcohol or drug test, any applicable remediation has been successfully completed by the worker.

18.6.4 Certificate Expiry

The licensee may reinstate a worker to the duties of the pertinent designated position following a certificate expiry once officially informed of the Commission or DO's decision to recertify or to renew the certification of the worker.

18.6.5 Proposal Decision Not to Certify or to Decertify

The licensee may reinstate a worker to the duties of the pertinent designated position who was the subject of a proposed decision not to certify or to decertify once officially informed of the Commission or DO's decision to certify, or not to decertify, the worker.

18.7 Notification of Change in Employment Status

18.7.1 Notification of Removal

The licensee shall promptly inform the CNSC of any certified worker removed from the duties of a designated position, be it due to a prolonged period of unemployment, or a removal for cause, specifying:

- a. the full legal name of the worker;
- b. the relevant designated position;
- c. the resulting employment status assigned to the worker as per subsection 3.2; and
- d. the basis for the removal from duty as per subsection 18.3 or 18.4.

18.7.2 Notification of Reinstatement

The licensee shall promptly inform the CNSC of any certified worker reinstated to the duties of a designated position, to include:

- a. the full legal name of the worker;
- b. the relevant designated position;
- c. the resulting employment status assigned to the worker as per subsection 3.2;
- d. the basis for the prior removal from duty and a confirmation that the said basis no longer exists or has been adequately remedied, as applicable;
- e. a summary of the baseline reinstatement process successfully completed by the worker; and
- f. when following a removal for cause, a summary of any remediation action(s) taken to satisfy the applicable requirements specified in subsection 18.6.

Guidance

Applicability – Items 18.7.2.e and 18.7.2.f are not mandatory following a recertification, since the CNSC is made aware of the particulars of the case by means of the application process.

19. Information Management

The licensee shall implement and document effective information management policies and procedures ensuring:

- a. the retention and ready retrieval of the corporate documentation and proof-of-competency records related to personnel certification;
- b. the safeguard and control of sensitive information pertaining to personnel certification; and
- c. the unrestricted access, by authorized CNSC staff, to the corporate documentation and personnel records specified next in this section.

19.1 Corporate Documentation

19.1.1 Roles and Responsibilities

The licensee shall document, retain, and make available to the CNSC upon request, the roles and responsibilities of:

- a. certified workers;
- b. all personnel, including management, involved in the training and qualification of workers seeking or holding a certification, including trainers, examiners, and managers delegated with relevant approval authorities.

19.1.2 Operational Procedures

The licensee shall retain, and make available to the CNSC upon request, a copy of the latest version of the licensee and station-specific policies, procedures, and technical diagrams referenced by certified workers to perform the duties of the designated positions safely and competently, including those related to:

- a. operating policies and principles;
- b. worker performance expectations;
- c. radiation protection;
- d. normal and abnormal operations;
- e. abnormal incidents;
- f. power reduction actions; and
- g. severe accident management.

19.1.3 Training and Qualifying Governance

For each designated position referenced in the licence, the licensee shall document, retain, and make available to the CNSC upon request, the policies, standards, and procedures for training and qualifying the workers seeking a certification, and for training and maintaining the qualification of the workers holding a certification, including the procedures for:

- a. administering the initial and continuing training;

- b. preparing and administering the formal learner evaluations administered as part of the initial and continuing training;
- c. preparing and administering certification examinations and requalification tests;
- d. managing work under supervision (WUS) periods;
- e. preparing and administering management interviews; and
- f. maintaining comprehensive and accurate personnel records.

19.1.4 Trainer and Examiner Qualifications

The licensee shall document, retain, and make available to the CNSC upon request, a record of the qualifications of the trainers and examiners referenced in this REGDOC.

19.2 Personnel Records

For each worker certified or seeking certification for employment in a designated position, the licensee shall retain, and make available to the CNSC upon request, adequate personnel records for a retention period equal to the duration of the employment of the worker, be it as an employee or a contractor, plus five (5) years after the worker ceases to be employed in any capacity.

At a minimum, the said personnel records shall encompass:

- a. **Education or Literacy Level** – The name and address of any educational institution or learning provider from which the worker obtained an accreditation, including any diploma, degree or certificate, and a copy of any diploma, degree, or certificate, required by the licensee’s personnel selection program.
- b. **Prior Work Experience** – Comprehensive records of any employment period(s) required by the licensee’s personnel selection program, or as part of the mandated plant familiarization training, including, in each case, the name of the employer, the address of the worksite, and the effective start and end dates.
- c. **Personnel Selection Interviews and Tests** – Comprehensive records of any personnel selection interview or test, including the effective date and results in each case, administered as part of the licensee’s personnel selection program.
- d. **Personnel Transfer** – Comprehensive records of any information required or collected as part of a personnel transfer.
- e. **Advancement** – Comprehensive records of any information required or collected as part an advancement to a shift supervisor or senior shift supervisor position.
- f. **Training** – Comprehensive records of the initial training and continuing training successfully completed by the worker, including the start and end dates of each distinct training period or milestone.
- g. **Formal Evaluations** – Comprehensive records of the formal evaluations administered to the worker as part of their initial or continuing training, including, in each case, the dates on which the evaluations were conducted, the results, and the full legal name(s) of the evaluator(s).
- h. **Work Under Supervision** – Comprehensive records of any work under supervision performed by the worker, including, in each case, the associated requirement being met, the date of each shift worked under supervision, and the full legal name of, and the CNSC certification held by, the certified worker who supervised the worker.
- i. **Management Interviews** – Comprehensive records of the management interviews undergone by the worker, including, in each case, the date of the interview, the full legal name(s) and position(s) of the interviewer(s), and a verbatim or summary description of the questions and answers exchanged during the interview.

- j. **Certification Examinations** – The certification examination records referenced in the licence or any accompanying licensing documentation, or any complementary REGDOC referenced in this REGDOC, the licence or any accompanying licensing documentation.
- k. **Requalification Tests** – The requalification testing records referenced in the licence or any accompanying licensing documentation, or any complementary REGDOC referenced in this REGDOC, the licence or any accompanying licensing documentation.
- l. **Employment Records** – The employment records specified in subsection 3.3.
- m. **Fitness for Duty** – Any information collected regarding the worker’s fitness for duty, except for any sensitive or privileged information protected by privacy laws.
- n. **Removals and Reinstatements** – Comprehensive records of all removals from, and reinstatements to, the duties of a designated position, including in each case, the effective date of removal and the basis for the removal and, when applicable, the effective date of reinstatement and the actions taken to reinstate the worker.

Guidance

Adequacy – Adequate personnel records are accurate, comprehensive, readily retrievable, and provide auditors and inspectors with reasonable assurance that the documentation preserved as proof of competency is genuine.

Subpart D – Physical Infrastructure

The licensee shall ensure that the reactor facility is equipped or associated with the physical infrastructure necessary to administer the knowledge-based and performance-based training, certification examinations, and requalification tests specified in this REGDOC, including, at a minimum, the facilities specified next in subpart D.

20. Knowledge-based Training and Examination Facilities

The licensee shall ensure that trainers and examiners have access to adequate facilities allowing for the administration of the pertinent knowledge-based training, certification examinations, and requalification tests in compliance with the applicable CNSC requirements referenced in the licence or accompanying licensing documentation, including the required security measures.

All knowledge-based training, certification examinations, and requalification tests referenced in this REGDOC shall be delivered in facilities acceptable to the CNSC.

Guidance

Adequate Facility – The knowledge-based training and examination facilities referenced in this section do not have to be spaces entirely dedicated to training or examination and testing, and may be a virtual space, in the case of remote learning. Any room may be utilized that provides an adequate learning or testing environment, including sufficient lighting and ventilation, and is temporarily or permanently arranged in such a manner as to ensure the security of any certification examination or requalification test conducted within.

21. Performance-based Training and Examination Simulator Facility

The licensee shall ensure that trainers and examiners have access to a full-scope simulator, or an alternate simulator acceptable to the CNSC, that permits the administration of the pertinent performance-based training, certification examinations, and requalification tests in compliance with the applicable CNSC requirements referenced in the licence or accompanying licensing documentation, including the required security measures.

All performance-based training, certification examinations, and requalification tests referenced in this REGDOC shall be delivered using simulator facilities or systems acceptable to the CNSC.

21.1 Simulation Capabilities

The simulator shall be capable of simulating, realistically and in real time, all significant plant manoeuvres and transients that may occur under normal and abnormal operating conditions, including:

- a. reactor start-up and shutdown;
- b. major plant upsets and accident conditions;
- c. all significant failures of systems and associated subsystems and equipment, and the consequences of such failures; and
- d. the system and equipment responses to operator actions.

For conditions and failures that may vary in magnitude, such as pipe breaks, loss of inventory, loss of flow, loss of pressure, and loss of vacuum, the simulator shall have adjustable rates to simulate all possible degrees of severity of a condition or failure that affect system responses or operator actions.

Guidance

Simulation should be autonomous once the simulated scenario has been initiated, requiring minimum intervention from the simulator operator or other personnel, except to control the evolution of the simulated scenario, including the introduction of scripted malfunctions and the potential need for pausing and resuming the simulation.

21.2 Physical Layout

To the fullest extent possible, the simulator shall replicate the operating and monitoring systems and equipment available to certified workers in the main control room, as well as the spatial relationships linking these systems and equipment.

In cases where the CNSC has accepted the use of a simulator other than a full-scope simulator, either to complement or as an alternative to the full-scope simulator, the said alternate simulator shall meet the requirements specified in this section to the fullest extent possible, within the physical restrictions or functional limitations inherent to the alternate simulator.

21.3 Simulator Operating Room

The simulator operating room shall be shielded from the main control room replica in such a manner as to prevent the candidate(s) being evaluated from seeing or hearing any data being recorded, any input entered in the simulator, or any communication between the simulator operator and the examiner(s) and other examination team members.

Guidance

Adequate Facility – The simulator facility should allow for the monitoring of the actions and communications of the candidate(s) from the simulator operating room without interfering with the conduct of any certification examination or requalification test.

21.4 Communication Systems and Equipment

The simulator shall be equipped with functional replicates of the communication or warning system(s) or equipment used by certified workers in the main control room of the simulated reactor facility, including, as applicable:

- a. telephones or other two-way, internal communication system;
- b. a radiation emergency warning system, including any visual or audible alarm;
- c. a fire emergency warning system, including any visual or audible alarm; and
- d. a public address system.

21.5 Data-recording Systems and Equipment

In order to facilitate the conduct and grading of the performance-based certification examinations and requalification tests referenced in this REGDOC, the simulator shall be equipped with

adequate data-recording systems and equipment meeting the minimum requirements specified next in this subsection.

21.5.1 Recording of Operator Actions

The simulator shall allow for the recording, retrieval, and printing, in chronological order, along with the time of occurrence, of:

- a. all malfunctions initiated by the simulator operator; and
- b. all the operator actions performed by the candidate(s) via the simulated control panels and instrumentation.

21.5.2 Recording of System Parameters

The simulator shall allow for:

- a. the recording, retrieval, and printing all the system parameter values relevant:
 - i. to the evaluation of the operator actions performed by the candidate(s); and
 - ii. for maintenance purpose, the verification of the simulator fidelity; and
- b. the graphical representation and printing of the variation of the said system parameter values in relation to time, in accordance with an adequate sampling frequency, and for a minimum recording period of two hours.

21.5.3 Audiovisual Recording System

The simulator shall be equipped with an audiovisual recording system allowing for:

- a. recording and replaying the actions performed by each candidate being evaluated;
- b. recording and replaying all vocal communications, including telephone exchanges, between the candidate(s) being evaluated and the other members of the operating team;
- c. unequivocal identification of the voice of each candidate being evaluated;
- d. the identification, live and during replay, of the operating controls, instruments, and electronic or printed references used by the candidate(s) being evaluated; and
- e. the overlay of the time, real or simulated, on the audiovisual recordings.

Guidance

Purpose – The primary purpose of the audiovisual recording system is to provide the examiner(s) with added information at the time of grading, in the event that some operator actions and communications are not observed during the evaluation, or some of the observations made by the examiner(s) during the evaluation are contradictory or equivocal.

Desirable Features – The cameras necessary to meet the requirements specified in this subsection may be fixed or remotely operated by an operator. Ideally, some cameras should be remotely operated and be capable of zooming and panning the frame in and out, and in all three dimensions, therefore allowing the operator to follow the movements of the candidate(s), and to

identify the operational procedures and technical drawings consulted, and the instrumentation used, by the candidate(s).

21.5.4 Control of Audiovisual Data

The licensee shall establish and document effective policies and procedures to control the access to, and the use of, the audiovisual data collected during the design, development, and conduct of certification examinations and requalification tests.

Appendix A : The Station-specific Designated Positions

This appendix specifies which station-specific position(s) correspond(s) to each generic class of designated positions referenced in this REGDOC, for the relevant reactor facility in operation at the time of publication of the current version of this REGDOC.

A.1 Station-specific Positions Requiring an Auxiliary System Operator (ASO) Certification

CANDU Reactor Facilities					
Facility	Bruce	Darlington	Gentilly-2	Pickering	Point Lepreau
ASO Position	Unit 0 Control Room Operator	Unit 0 Control Room Operator	None	None	None

A.2 Station-specific Positions Requiring a Reactor Operator (RO) Certification

CANDU Reactor Facilities					
Facility	Bruce	Darlington	Gentilly-2	Pickering	Point Lepreau
RO Position	Authorized Nuclear Operator	Authorized Nuclear Operator	None	Authorized Nuclear Operator	Control Room Operator

A.3 Station-specific Positions Requiring a Shift Supervisor (SS) Certification

CANDU Reactor Facilities					
Facility	Bruce	Darlington	Gentilly-2	Pickering	Point Lepreau
SS Position	Control Room Shift Supervisor	Control Room Shift Supervisor	None	Control Room Shift Supervisor	Shift Supervisor
Senior SS Position	Shift Manager	Shift Manager	None	Shift Manager	None

A.4 Station-specific Positions Requiring a Senior Health Physicist (SHP) Certification

CANDU Reactor Facilities					
Facility	Bruce	Darlington	Gentilly-2	Pickering	Point Lepreau
SHP Position	Authorized Health Physicist	Responsible Health Physicist	Responsible technique de radioprotection	Responsible Health Physicist	Senior Health Physicist

Appendix B : Compliance Schemes Acceptable to the CNSC

This appendix specifies schemes acceptable to the CNSC that the licensee must implement at the specified reactor facilities to be compliant with the referenced requirements, for the relevant reactor facilities in service at the time of publication of the current version of this REGDOC.

Mandatory Personnel Certification Schemes for CANDU Reactor Facilities

Reference	Description	Requirement
Sub-subsection 9.1.119.1.11	Minimum number of hours of work under supervision (WUS) required for the initial certification of operations personnel	The worker must have successfully performed 360 hours of WUS in the pertinent designated position, under the supervision of a qualified worker certified to work in the said designated position.
Sub-subsection 12.4.1	Minimum experience prior to advancement to a senior shift supervisor position	The worker must have safely and competently performed the duties of a shift supervisor at the reactor facility identified in the licence for a minimum of 80 complete shifts amounting to a minimum of 960 hours of shiftwork prior to being selected for advancement to the senior shift supervisor position.
Sub-subsection 18.2.1	Minimum shift requirement for operations personnel	Any worker certified for employment as ASO, RO or shift supervisor shall perform the duties of a lead ASO, RO or shift supervisor, respectively, for a minimum of four (4) complete shifts per calendar quarter amounting to a minimum of 48 hours of shiftwork per calendar quarter.

Appendix C : Senior Health Physicist Examination and Testing Topics

The certification examinations and requalification tests administered by CNSC staff to workers seeking certification or the renewal of a certification for employment as senior health physicist cover topics divided into three parts, each covering a specific knowledge area, as exemplified in this appendix.

C.1 Regulations and Reactor Operating Licence

The relevant topics include, but are not limited to:

- a. the relevant provisions of the NSCA;
- b. the relevant regulations made pursuant to the NSCA, namely the:
 - i. *General Nuclear Safety and Control Regulations*;
 - ii. *Radiation Protection Regulations*;
 - iii. *Class I Nuclear Facilities Regulations*;
 - iv. *Nuclear Substances and Radiation Devices Regulations*; and
 - v. *Packaging and Transport of Nuclear Substances Regulations*; and
- c. the reactor facility licence and the documentation referenced in the licence.

C.2 Radiation Protection

The relevant topics include, but are not limited to:

- a. safety culture;
- b. reactor facility design, operation, and maintenance;
- c. the relevant licensee and station-specific policies, standards, and procedures;
- d. the radiation protection principles, methods and practices related to the operation of the reactor facility identified in licence; and
- e. the relevant international standards, including those of the International Commission on Radiological Protection (ICRP).

C.3 Roles and Responsibilities

The relevant topics include, but are not limited to:

- a. the responsibilities and authority of the senior health physicist; and
- b. the responsibilities and authority of the workers who interact with the senior health physicist.

Appendix D : Station-specific Training Samples

This appendix contains examples of station-specific knowledge areas covered by station-specific training programs initially implemented at CANDU reactor facilities and found acceptable by the CNSC. These examples are included as additional guidance to newly licensed reactor facility operators trying to establish suitable training programs. Notwithstanding this added guidance, a suitable training program is based on a reactor facility training system found acceptable by the CNSC.

D.1 Station-specific Training for Reactor Operators

The relevant training areas may include:

- a. design and operation of reactor facility systems;
- b. integrated operation of reactor facility systems including, where applicable, interfaces between the systems of a reactor unit and those of other reactor units and common and auxiliary systems;
- c. expected response of reactor facility systems and units to abnormal and accident conditions;
- d. technical bases for emergency operating procedures;
- e. diagnosis of equipment failures and assessment of abnormal plant conditions;
- f. phenomena that may significantly affect reactor core reactivity and neutron flux shape;
- g. reactor fuelling, fuelling limitations, fuel handling and storage, and irradiated fuel cooling;
- h. configuration of systems and equipment isolation required for maintenance activities;
- i. safety culture;
- j. principles of nuclear safety and their application;
- k. the operating licence and the documents referenced in the operating licence;
- l. situations that may result in the violation of the conditions of the operating licence and the operating policies and principles (OPP);
- m. administrative procedures related to reactor facility operation and maintenance; and
- n. the responsibilities and authority of a reactor operator, and that of the other members of the reactor facility personnel who interface with the reactor operator.

D.2 Supplementary Station-specific Training for Control Room Shift Supervisors

The relevant training areas may include, in addition to those relevant to station-specific training for reactor operators:

- a. reactor physics, principles of reactor operation and fuelling strategies;
- b. phenomena that may significantly affect reactor core reactivity and neutron flux shape;
- c. properties of irradiated fuel, principles of fuel cooling and physics of fuel failures;
- d. operating constraints and limits associated with reactor fuelling and irradiated fuel cooling;
- e. reactor safety, heat transfer mechanisms and fluid mechanics;
- f. primary and back-up heat sinks;
- g. conventional and radiation hazards to reactor facility personnel and to the public, including hazards from postulated accident conditions;
- h. handling of conventional and radiation emergencies;
- i. handling of an intruder or of a terrorist attack;
- j. design requirements of safety-related equipment and systems;
- k. design features and limitations of reactor facility equipment and systems;
- l. chemical control of systems;
- m. diagnosis of equipment failures and assessment of abnormal plant conditions;
- n. expected response of reactor facility systems and units to abnormal and accident conditions;

- o. operating strategies;
- p. reactor facility safety analyses, including major assumptions in the reactor facility accident analyses and technical bases for emergency operating procedures;
- q. configuration of systems and equipment isolation required for maintenance activities;
- r. design and operation of reactor facility systems for which the reactor operators do not have direct operational control, including common systems and fuel handling systems;
- s. the licensee's policies, standards, and procedures;
- t. the operating licence and the documents referenced of the operating licence;
- u. situations that may result in the violation of the conditions of the operating licence and the OPP;
- v. requirements pertaining to reactor facility operation in Federal and Provincial Acts and Regulations, and any relevant standards and codes;
- w. responsibilities and authority of the control room shift supervisor, of the plant shift supervisor, and of other members of the reactor facility personnel who report to, or interface with, the control room shift supervisor and the plant shift supervisor; and
- x. qualification requirements of the members of the reactor facility personnel who report to the control room shift supervisor and the plant shift supervisor.

D.3 Station-specific Training for Senior Health Physicists

The relevant training areas may include:

- a. the relevant provisions of the NSCA;
- b. the regulations made pursuant to the NSCA, including the:
 - i. *General Nuclear Safety and Control Regulations*;
 - ii. *Radiation Protection Regulations*;
 - iii. *Class I Nuclear Facilities Regulations*;
 - iv. *Nuclear Substances and Radiation Devices Regulations*; and
 - v. *Packaging and Transport of Nuclear Substances Regulations*;
- c. safety culture;
- d. the responsibilities and authority of the senior health physicist;
- e. the responsibilities and authority of the members of the reactor facility personnel who interact with the senior health physicist;
- f. the responsibilities and authority of the members of external organizations who interact with the senior health physicist, notably in the nuclear emergency management context;
- g. the operating licence and the documents referenced in the operating licence;
- h. the licensee's and reactor facility policies, standards, and procedures; and
- i. reactor facility design, operation, and maintenance.

Glossary

For definitions of terms used in this document, see [REGDOC-3.6, *Glossary of CNSC Terminology*](#), which includes terms and definitions used in the [Nuclear Safety and Control Act](#) and the regulations made under the Act, as well as in CNSC regulatory documents and other publications.

Abbreviations

Abbreviation	Meaning
Act	Nuclear Safety and Control Act
ASO	Auxiliary System Operator
CANDU	CANada Deuterium Uranium
Class I Regulations	Class I Nuclear Facilities Regulations
CNSC	Canadian Nuclear Safety Commission
DO	Designated Officer
GNSCR	General Nuclear Safety and Control Regulations
ITP	Individual Training Plan
K&S	Knowledge and Skills
MCQ	Multiple Choice Question
MCR	Main Control Room
MEQ	Modified essay question
NSCA	Nuclear Safety and Control Act
OJT	On-the-Job Training
REGDOC	Regulatory Document
RO	Reactor Operator
SCA	Safety Control Area
SHP	Senior Health Physicist
TNA	Training Needs Analysis
WUS	Work Under Supervision

Additional Information

This document must be read in conjunction with complementary CNSC REGDOCs in the Human Performance Management series and other safety and control areas. The documents listed in this section are the complementary REGDOCs relevant to the current version of REGDOC-2.2.3 Volume III.

1. REGDOC-2.1.1, *Management System*
2. REGDOC-2.1.2, *Safety Culture*
3. REGDOC-2.2.1, *Human Factors*
4. REGDOC-2.2.2, *Personnel Training*
5. REGDOC-2.2.3, *Personnel Certification, Volume IV: Certification Examination and Requalification Testing of Reactor Facility Workers* (under development)
6. REGDOC-2.2.4, *Fitness for Duty: Managing Worker Fatigue*
7. REGDOC-2.2.4, *Fitness for Duty, Volume II: Managing Alcohol and Drug Use*
8. REGDOC-2.2.5, *Minimum Staff Complement*
9. REGDOC-2.3.2, *Accident Management*
10. REGDOC-2.10.1, *Nuclear Emergency Preparedness and Response*
11. REGDOC-3.1.1, *Reporting Requirements for Nuclear Power Plants*

CNSC Regulatory Document Series

Facilities and activities within the nuclear sector in Canada are regulated by the CNSC. In addition to the *Nuclear Safety and Control Act* and associated regulations, these facilities and activities may also be required to comply with other regulatory instruments such as regulatory documents or standards.

CNSC regulatory documents are classified under the following categories and series:

1.0 Regulated facilities and activities

- Series
- 1.1 Reactor facilities
 - 1.2 Class IB facilities
 - 1.3 Uranium mines and mills
 - 1.4 Class II facilities
 - 1.5 Certification of prescribed equipment
 - 1.6 Nuclear substances and radiation devices

2.0 Safety and control areas

- Series
- 2.1 Management system
 - 2.2 Human performance management
 - 2.3 Operating performance
 - 2.4 Safety analysis
 - 2.5 Physical design
 - 2.6 Fitness for service
 - 2.7 Radiation protection
 - 2.8 Conventional health and safety
 - 2.9 Environmental protection
 - 2.10 Emergency management and fire protection
 - 2.11 Waste management
 - 2.12 Security
 - 2.13 Safeguards and non-proliferation
 - 2.14 Packaging and transport

3.0 Other regulatory areas

- Series
- 3.1 Reporting requirements
 - 3.2 Public and Indigenous engagement
 - 3.3 Financial guarantees
 - 3.4 Commission proceedings
 - 3.5 CNSC processes and practices
 - 3.6 Glossary of CNSC terminology

Note: The regulatory document series may be adjusted periodically by the CNSC. Each regulatory document series listed above may contain multiple regulatory documents. Visit the CNSC's website for the latest [list of regulatory documents](#).