

ADMINISTRATION

January 31, 2014

NK21-CORR-00531-11068
NK29-CORR-00531-11472

2014 01 31 11:41

CNSC CCSN



4318346

Mr. M. Dallaire
Director, Regulatory Policy Directorate
Canadian Nuclear Safety Commission
P.O. Box 1046
280 Slater Street
Ottawa, Ontario
K1P 5S9

1-01-02

FILE DOSSIER	1-8-8-0
REFERRED TO REFERÉ À	Dallaire, M.

Dear Mr. Dallaire:

Bruce Power Comments on REGDOC 2.3.1, Commissioning of Reactor Facilities

The purpose of this letter is to provide Bruce Power comments on REGDOC 2.3.1, Commissioning of Reactor Facilities.

Bruce Power is concerned with the content of the proposed Regulatory Document regarding commissioning of reactor facilities. The proposed document extends requirements well beyond those required for commissioning and seems to confuse what would be required to obtain a Construction or Operating licence under the *General Nuclear Safety and Control Regulations* and *Class I Nuclear Facilities Regulations* with requirements for commissioning activities of a reactor facility. For example, the document has requirements for management systems, qualifications and training, emergency management and discusses issues such as minimum shift complement. While there are aspects of these issues that need to be in place during the commissioning of a reactor facility, these requirements are described by other documents such as CSA N286 for management systems, REGDOC 2.2.2 for training and REGDOC 2.10.1 for emergency preparedness and the licensees methods to meet these requirements will have already been reviewed by CNSC staff, for licensing purposes, well ahead of any commissioning activities. The scope of the document is also of concern. Bruce Power would strongly object to this document applying to existing facilities as currently written.

Bruce Power notes that it is also highly undesirable to have multiple requirements contained in different regulatory documents and standards that occasionally do not align. This has been noted in other proposed CNSC regulatory documents as well. It would be much more palatable to licensees if the CNSC focused the regulatory documents to the topic at hand and merely referenced other requirements that are contained in other documents instead of trying to repeat or redefine them.

Bruce Power Frank Saunders Vice President - Nuclear Oversight and Regulatory Affairs
P.O. Box 1540 B10 4th floor W Tiverton ON N0G 2T0
Telephone 519 361-5025 Facsimile 519 361-4559
frank.saunders@brucepower.com



Bruce Power suggests documents like this one for commissioning should be prepared via the Canadian Standards Association process, rather than being developed in isolation by CNSC staff. The CSA ensures through the approved Canadian Standards process that the broad range of required expertise is brought to bear in the discussion and that input from all relevant jurisdictions is incorporated. We would also like to note that the CNSC Regulatory Framework Plan, in some cases such as Electrical System Design, appears to be planning to duplicate requirements that already exist in current CSA Standards.

Bruce Power's detailed comments on REGDOC 2.3.1 are contained in Attachment A.

If you require further information or have any questions regarding this submission, please contact Mr. Maury Burton, Department Manager, Regulatory Affairs, at (519) 361-5291.

Yours truly,

A handwritten signature in black ink, appearing to read 'FSA', is written over a printed name. Below the signature, the initials 'FSK' are handwritten in a smaller, simpler script.

Frank Saunders
Vice President Nuclear Oversight and Regulatory Affairs
Bruce Power

cc: CNSC Bruce Site Office (Letter only)
R. Lojk
C. Moses
G. Rzentkowski (Letter only)
consultation@cnscccsn.gc.ca

Attach.

Attachment A

Bruce Power Comments on REGDOC 2.3.1

#	Document Section/ Excerpt of Section	Industry Issue	Suggested Change (if applicable)	Major Comment/ Request for Clarification	Impact on Industry, if major comment
1	General	<p>The document contains a lot of subject matter that is not directly commissioning related and would be dealt with through licensing processes.</p> <p>Furthermore, there is overlap with requirements contained in other REGDOCs.</p>	<p>Remove essentially all of Section 3 as it deals with management system. This information is required to get a licence and covered under CSA N286 requirements. Training and emergency preparedness are also covered in N286 and other REGDOC documents.</p> <p>Review this REGDOC and remove any requirements contained in other REGDOCs.</p> <p>Another example is to remove section 3 which is covered by the licensees' management system which is a requirement of the licensees' application.</p>	CRITICAL COMMENT	<p>Issues such as emergency preparedness, training, management system and minimum complement should not be covered by a commissioning document. Recent REGDOCs are consistently being written with overlapping requirements and in many cases conflicting or different requirements. The document should focus on commissioning only and be focused for new facilities or rewritten to allow a graded approach and guidance for other applications.</p>
2	General	<p>The document (especially the appendices) is written with too much detail and reference to CANDU. The scope of the document covers all power and heat reactors including SMRs.</p>	<p>The appendix information needs to reflect the scope of the document, i.e. Be more technology neutral</p>	Clarification	

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3	General	<p>The terms “Licensee” and “Operating Organization” are not used consistently and context can be confusing.</p> <p>e.g. first paragraph and last sentence in 2nd last paragraph of 3.2</p>	<p>Suggest the term “licensee” be used when defining responsibilities for work typically governed by the construction license and “operating organization” be used when describing responsibilities governed by the operating license or accepting transferred systems.</p>	Clarification	
4	1.2 First Paragraph “...the principles set out in this document also apply to commissioning activities related to the life extension, refurbishment and modification of an existing reactor facility.”	<p>The principles for commissioning a new reactor facility should not be the same as return to service after life extension. Commissioning activities in life extension are limited to those SSCs which have been modified or placed in a condition where design intent must be re-demonstrated.</p>	<p>Regulatory document applies only to commissioning new reactor facilities or clarify that principles apply to those SSCs which have been modified or placed in a condition where design intent must be re-demonstrated.</p> <p>Suggest that N286 requirements for commissioning apply to existing facilities. Suggest that REGDOC-2.3.1 be used as guidance for existing facilities.</p>	Major Comment	<p>Interpretation of requirement as written can lead to uncertainty in return to service scope and potentially result in increased cost and schedule.</p> <p>The requirements and guidance specified in REGDOC-2.3.1 is excessive. A notable number of the requirements compromise the regulator’s independence and the regulator’s oversight role.</p> <p>When the regulator approves specific acceptance criteria (which would be contained in a specific document), it is no longer clear who exactly is responsible for their contents – the licensee or the regulator.</p>

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5	1.2, Scope; 2nd Paragraph; 1st , 2nd & 3rd Sentences, “This document is not intended to override the requirements of other regulatory documents, codes and standards. Rather, it aims to provide a framework within which these can be applied to provide assurance that commissioning is effectively managed. Applicable regulatory documents, codes and standards are referenced in this document”.	The 3rd sentence adds confusion to scope of REGDOC. The list of applicable regulatory documents, codes and standards referred to appear to be in the Reference section on page 35; but this is not clearly stated. Why is this reference made? Does it mean that only the listed documents are what is being referred to in the 1st sentence that states “is not intended to override the requirements of other regulatory documents, codes and standards”? Meaning, does this “not intended” statement only apply to the listed documents?	Delete 3rd sentence. Paragraph two should read: 1.2, Scope; 1st Para This regulatory document applies to the commissioning of a new reactor facility. Rather, it aims to provide a framework within which these can be applied to provide assurance that commissioning is effectively managed.	Clarification	If recommended deletion not made, a clarification as to the relationship between the Reference part of document referred to in 3rd sentence and the reference to “the requirements of other regulatory documents, codes and standards” in the 1st sentence.
6	2, Commissioning Program	The term ‘program’ is currently used to refer to governance associated with a specific function (e.g. Configuration Management Program, Maintenance Program). The content of Section 2 appears to refer to a specific commissioning plan for a reactor unit and/or associated equipment.	Suggest using ‘Commissioning Plan’ to delineate from governance for operating nuclear power plants.	Clarification	

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7	2, 2nd Bullet on Page 2, “defines clear responsibilities for commissioning activities and oversight, specifying interfaces between construction, commissioning and operating organizations”.	There is an important interface between the commissioning organization and the design organization when interpreting the results of the commissioning tests to confirm that the design intent has been demonstrated.	Change text to: “defines clear responsibilities for commissioning activities and oversight, specifying interfaces between design, construction, commissioning and operating organizations”	Clarification	
8	2, First Paragraph Page 3, “The licensee shall submit the commissioning program to the CNSC for approval at least one year before commencing commissioning activities.”	It is already a requirement to submit this as part of the operating licence application (Sec 6c of the Class I Facility Regulations).	Remove this requirement as it is already considered as part of the operating licence application.	Major comment	This is an unnecessary duplicate requirement.
9	2, Last Paragraph Page 3, “The content of the final safety analysis report shall be updated according to commissioning results.”	Since any design requirements must be proven to be met during commissioning and the design meeting the requirements must be analyzed to be safe, it is not clear what types of updates are anticipated.	Please clarify the types of safety analysis report updates expected. Would these included system design and functional description updates or safety analysis updates or something else?	Clarification	
10	2, Commissioning Program	1st bullet – should be removed. The licence will ensure all activities are conducted under a Management Program. Please also refer to comment 1.	Delete the 1st bullet.	Clarification	

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11	2, Commissioning Program	13th bullet – should be removed. The licensee’s Management System and Training program Licence condition will ensure all personnel participating in licensed activities are trained and qualified. Please refer to comment 1.	Delete the 13th bullet.	Clarification	
12	2, Commissioning Program 3rd Last Paragraph	CNSC should accept programs not approve them	Replace word “approval” with “acceptance”	Clarification	
13	Page 2 Section 2, Bullet 4, “outlines the testing and verification activities that must be performed to ensure that structures, systems and components (SSCs) important to safety are built as designed and meet the requirements of the facility design and safety analysis”.	Define the meaning of ‘SSCs <u>Important to Safety</u> ’.		Clarification	

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14	3.1, "...using a management system meeting the requirements of CSA N286-12"	Introducing this specific requirement could create a conflict with Power Reactor Operating Licence (PROL) requirements since an additional reference to management system requirements is made in the PROL. Please also refer to comment 1	Suggest changing word to "All commissioning and related activities performed by the licensee shall be developed and implemented in accordance with the management system requirements referenced in the facility licence."	Major Comment	Conflict between licence requirements makes the requirements unclear and could increase the probability of non-compliance and regulator and licensee effort required to resolve administrative concerns. The suggested wording is clearer in terms of the applicable management system requirements and also helps maintain currency of the REGDOC should CSA N286-12 be substantially revised or superseded.
15	3.3, Transfer of SCCs and the reactor facility	Prior to fuel-in-core testing, all systems shall be under the control of the operating organization.	Suggest changing to: "Prior to fuel-in-core testing, all reactor safety and control systems shall be under the control of the operating organization."	Major Comment	It is not practical that all systems will be under the control of the operating organization at the time initial fuel in core testing.
16	Page 5, Section 3.3, Paragraph 3, "Before the transfer takes place, representatives of the organizations involved in the handover process shall carry out facility walk downs of all systems".	N286-12 uses the term turnover. Are handover and turnover interchangeable?	Change Handover to Turnover	Clarification	

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17	Page 5, Section 3.3, Paragraph 5, "After the transfer, any turnback for rework/repair shall remain under the ownership of the operating organization".	This is already covered by the first sentence in section 3.3	Suggest removing the sentence; "Before the transfer takes place, representatives of the organizations involved in the handover process shall carry out facility walk downs of all systems."	Clarification	
18	Page 5, Section 3.3, "The transfer of shall be documented."	The sentence is incomplete.	Suggest changing text to: "The transfer of SSCs shall be documented."	Clarification	
19	3.4, "Qualifications and training Personnel engaged in commissioning activities shall have appropriate training, qualifications and competence to perform their assigned tasks effectively".	This section is redundant with the requirements of CSA N286-05 and -12. Section 5.3 Personnel are competent at the work they do. This requirement is already incorporated into PROLs; therefore duplicative and redundant REGDOCs should not be created.	Remove reference to training requirements in this REGDOC.	Major Comment	Introduction of this requirement would result in licensees having to create a separate, parallel training program specifically for commissioning. This would negatively impact line management oversight and responsibility for training. This would add cost and could potentially undermine safety since a truly systematic approach is not employed to identify required training.
20	3.5 "Non-conformances of safety significance should be treated as events by the licensee, and resolved via a corrective action program in a graded manner".	Clarification is required as to the intent of statement "treated as <u>events</u> by the licensee" in the 2 nd paragraph of the Guidance section.		Clarification	

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21	Page 6, Section 3.5, Paragraph 1, "Commissioning activities that do not conform to requirements shall be identified, and corrective actions shall be employed for their resolution".	The requirement is too specific and does cover all situations.	Change to "Commissioning activities that do not conform to requirements shall be addressed through the corrective action program."	Clarification	
22	3.6, Emergency Management	This section does not belong in this REGDOC. The Construction and Operating Licences will include Emergency Management Licence Conditions citing REGDOC 2.10.1. All EP requirements should be contained in REGDOC 2.10.1 See comment 1		Clarification	
23	4.2, Top of Page 8 "...and shall support analytical tool validation."	Safety analysis and design analytical tools are required to be validated prior to use under existing regulatory requirements (CSA N286.7). See comment 1 regarding duplication.	Suggest deleting this requirement.	Major Comment	See comment 1

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24	4.2, Middle of Page 8, "For multi-unit reactor facilities: ...special provisions shall be made to ensure that the commissioning tests of a unit do not jeopardize the safety of another unit; such provisions shall include...obtaining the required approvals from the CNSC..."	Approval by Authorized Personnel (Shift Manager, Control Room Shift Supervisor/Controlling Authority) is current practice for such tests. It is not clear how requiring CNSC approvals for testing increases the level of safety. CNSC staff may not have specific knowledge of the state of the unit at the exact time of the test and such involvement could jeopardize the regulator's independent oversight function. Such approvals blur the lines of responsibility for safe operation and imply the regulator is responsible for safety of the test.	Suggest removing "...and obtaining the required approvals from the CNSC" From the second bullet in the middle of Page 8.	Major Comment	Clarification requested The biggest impact on licensees will be the lack of clarity with respect to responsibility for safe testing. When the regulator gives approval for specific tests, the regulator assumes responsibility for a safe outcome. If the testing outcome is detrimental, who would bear any social, reputation, health and safety, and financial penalty associated with the negative outcome?
25	4.2, Guidance Section, Page 8 "offsite tests"	What is meant by off-site tests? Does "offsite tests" refer to tests completed outside the construction area, the protected area, the site, or somewhere else?		Clarification	
26	Page 7, Section 4.2, Paragraph 3, "The commissioning program shall have provisions to ensure that there have been no omissions in testing complex systems".	Covered by previous paragraphs document	Delete	Clarification	

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27	4.3, Bottom of Page 8, "Acceptance criteria shall be classified as either important to safety or not important to safety."	Will lead to a tiered system for acceptance criteria with no improvement in safety.	Suggest deleting sentence.	Clarification	
28	4.3, Top of Page 9, "CNSC approval of the acceptance criteria important to safety may be needed before performing the commissioning tests This will depend on the facility-specific commissioning program."	It is not clear what safety objective is met by obtaining CNSC approvals of acceptance criteria for individual tests. Licensees have qualified and competent teams of staff dedicated to adequately commissioning prior to turnover to Operations. Such approvals compromise the regulator's independence and blur the lines of responsibility for safe operation.	Delete first paragraph on Page 9.	Major Comment	<p>This item introduces a conflict with the oversight role of the CNSC. Delays could be introduced that jeopardize overall commissioning performance since some commissioning tests are highly time-dependent. The delay would be justified if there were a safety benefit associated with it. Due to the vague statement included in the REGDOC Guidance for acceptance criteria, it is not clear that any delays would have a positive safety impact.</p> <p>It is expected that the issuance of a licence would cover any CNSC approval as the construction and commissioning program is part of the applications.</p>

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29	4.4, Test Procedures	Apart from the first sentence "All commissioning tests shall be performed in accordance with the commissioning program and authorized written procedures "section 4 is excessively prescriptive and covered by CSA N286 and addressed in the managed systems of the licensees	Delete everything after the first sentence.	Major Comment	This is an unnecessary duplication of requirements which will lead to confusion. In addition this restricts industry options in how Licensees choose to implement test programs and increases costs significantly.
30	4.5, Formal Reports	A graded approach as outlined in N286 should be allowed	Change expectations for formal reports to allow a graded approach to reporting to be consistent with N286	Major comment	Conflicts with requirements of CSA N286
31	Page 12, Section 4.5, Paragraph 4, "The reactor facility design, operational and safety documentation shall be updated during the commissioning process to reflect test results and resolution of deviations".	Updating all documentation during the commissioning process is not practical .Some updates will be done in a timely fashion following commissioning in accordance with the licensee's commissioning program	Modify to state "The reactor facility design, operational and safety documentation shall be updated to reflect test results and resolution of deviations"	Major comment	Will put unnecessary timing limits on updates of documentation

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32	4.6 Guidance, Major modifications to test procedures "The CNSC should be informed in advance of any major modifications to test procedures."	What is considered a major modification to test procedures? It is not clear what objective is met by informing the CNSC of test procedure modifications. This could potentially create a large administrative burden on the regulator since, particularly for a new facility, many thousands of tests may be performed during commissioning. This administrative burden could distract from the safety-important items the regulator would oversee.	Define major modification.	Clarification	
33	Page 14, Section 4.6, 2nd last Paragraph, "Proposals for design modifications to address a deviation should consider regulatory requirements and the stipulations of the operating organization. Proposals for modifications should assess the impact on other systems as well as safety implications for the commissioning program or individual tests".	Second sentence; "Proposals for modifications should assess the impact on other systems as well as safety implications for the commissioning program or individual tests." is covered by the first sentence.	Delete "Proposals for modifications should assess the impact on other systems as well as safety implications for the commissioning program or individual tests."	Clarification	
34	Appendix D, "performance of the following, at higher power levels: crash cool rundown test"	A crash cool rundown will put the unit through unnecessary stresses. The design intent can be demonstrated via individual Steam relief Valves testing.	Delete "crash cool rundown test"	Major Comment	CNSC staff should not be dictating Commissioning tests via this REGDOC. It would be more appropriate to do through the licensing process in order to take all design conditions into consideration.

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35	Appendix B, Page 23, "power conversion system"	Use of the term "power conversion system" will lead to confusion with electrical systems.	Suggest using "Secondary Side "	Clarification	