

June 24, 2014

CD# N-CORR-00531-06591

**MR. B. TORRIE**  
Director General  
Regulatory Policy DirectorateCanadian Nuclear Safety Commission  
280 Slater Street  
Ottawa, Ontario  
K1P 5S9

Dear Mr. Torrie:

**OPG Comments on Draft REGDOC-2.3.1, "Conduct of Licensed Activities: Construction of Reactor Facilities"**

The purpose of this letter is to provide OPG's comments on draft REGDOC-2.3.1, "Conduct of Licensed Activities: Construction of Reactor Facilities". The comments in Attachment 1 are derived from a consolidated set of Industry comments.

As an observation, this draft document represents Canadian good practices for planning, monitoring and conducting construction activities for reactor facilities. However, there are many "shall" statements associated with good practices for project management and licensee/contractor interfaces that may be beyond the mandate for regulatory oversight under the Nuclear Safety and Control Act, which should be included as guidance as opposed to requirements. This regulatory document should be revised to clarify and separate regulatory requirements ("shall" statements) from guidance ("should" statements). OPG's preference would be to remove all guidance statements associated with good practices for project management and licensee/contractor interfaces, since these good practices are already reflected in recognized standards, such as those issued by the Canadian Standards Association, e.g. CSA N286.

There are overlaps between the requirements in REGDOC-2.3.1 and CSA N286. The text should be reviewed to avoid overlapping requirements, and the focus of this document should be on the specific requirements needed for regulatory compliance and verification of licensed activities related to the construction of reactor facilities.

Furthermore, OPG believes that REGDOC 2.3.1 should not apply to nuclear refurbishment projects. For OPG licensed nuclear operating facilities all necessary infrastructure is in place and is adequately governed by existing programs and procedures, e.g. Engineering

Change Control, OP&Ps, and Operating Manuals, as well as the broad basis of governance put in place to support our operations. The operating/refurbishment culture is different from a "green field" project culture and combining requirements for green field and refurbishment projects under a single REGDOC is not warranted, nor advisable.

If you have any questions regarding this submission, please contact the undersigned at [robin.manley@opg.com](mailto:robin.manley@opg.com), or at (905) 839-6746, extension 5264.

Sincerely,



Robin Manley  
Director  
Nuclear Regulatory Affairs

Attach.

cc: [consultation@cnscccsn.gc.ca](mailto:consultation@cnscccsn.gc.ca)

Attached to OPG Letter, R. Manley to B. Torrie, "OPG Comments on Draft REGDOC-2.3.1,  
"Conduct of Licensed Activities: Construction of Reactor Facilities,"  
CD# N-CORR-00531-06591

## **ATTACHMENT 1**

**OPG Comments on REGDOC-2.3.1 Conduct of Licensed Activities: Construction  
of Reactor Facilities**

## Attachment 1: OPG Comments on REGDOC-2.3.1, Conduct of Licensed Activities: Construction of Reactor Facilities

#	Document Section	Industry Issue	Suggested Change (if applicable)	Major Comment/ Request for Clarification	Impact on Industry, if major comment
1.	General comment:	The document seems to broadly assume construction of a new plant and therefore, focuses on requirements for construction activities. It does not differentiate on what is applicable for a major modification/refurbishment, as compared to new build. Please also see comments on Section 1.2.	REGDOC should be rewritten to clarify. Preference is to make document specific to construction of new facilities only.	Clarification	
2.	General	The document is good guidance; however, there are many “shall” statements that may be beyond the mandate of the CNSC. While many of the project management issues are good guidance, they should not be requirements.	REGDOC should be rewritten to clarify and separate regulatory requirements (shall statements) from guidance (should statements)	Clarification	
3.	General	<p>There are four general themes for this document:</p> <ol style="list-style-type: none"> <li>1. It is a good guidance document.</li> <li>2. It tries to regulate good project management or business practices which are not a regulatory function. This is guidance.</li> <li>3. It mixes modifications and new build/major projects which is inappropriate; there are similarities in approaches but not in degree.</li> <li>4. There is much redundancy with CSA N286. There is no need to repeat N286 requirements in this</li> </ol>	REGDOC should be rewritten to clarify. Preference is to make document specific to construction of new facilities only.	Clarification	

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		REGDOC.			
4.	General	This document is similar to the recent commissioning document (REGDOC-2.3.1) that puts requirements on Management System, Training and Aging Management (as examples). Given that there are already existing standards and REGDOCs covering these aspects, this document should not be covering the same ground. Some high level guidance strictly related to construction in those areas may be acceptable; however, requirements should not be included here as they would be already fulfilled to get a construction licence.	REGDOC should be rewritten to clarify.	Clarification	
5.	General	This document does not appear to align with the Construction Licence Application Guide.	REGDOC should be rewritten to align with the Construction Licence Application Guide.	Clarification	
6.	Preface	This REGDOC is a companion piece to Commissioning of Reactor Facilities, which was available for review in November of 2013 and commented on by Industry. OPG understands that before publication, these two documents will be put together as discrete parts of a larger document entitled REGDOC-2.3.1, Operating Performance: Conduct of Licensed Activities.	Ensure that industry has an opportunity to comment on the REGDOC once the two companion documents are consolidated into REGDOC-2.3.1, Operating Performance: Conduct of Licensed Activities.	Clarification	

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7.	1.2, para. 1	Document should not be applicable to “a major modification/ refurbishment of an existing reactor facility”.	Delete requirement.	MAJOR	Document is focussed on New Build Construction. Stations are currently following approved programs and procedures for modification/refurbishment and adding this additional requirements document can lead to inconsistencies and additional costs related to contract modifications
8.	2.	<p>Some of the items listed as Licensee responsibilities are not necessarily performed by the Licensee, but the Licensee is responsible to ensure that they are completed. These items conflict with the licensee’s expectation that the contractor works within their own QA program. For example:</p> <ul style="list-style-type: none"> <li>7. preparing and updating construction program documents</li> <li>8. establishing construction instructions and procedures</li> <li>9. Performing inspections, tests and verification of items important to safety</li> <li>10. Evaluating inspection findings</li> </ul>	<p>Change to:</p> <ul style="list-style-type: none"> <li>7. ensuring construction program documents are prepared and updated. The Licensee may provide guidance documents that are not to contravene the contractor’s quality manual.</li> <li>8. Ensuring construction instructions and procedures are established</li> <li>9. ensuring inspections, tests and verification of items important to safety</li> <li>10. ensuring inspection findings are evaluated and reporting the evaluation results to the CNSC</li> </ul>	MAJOR	Potential for confusion of roles.
11.	2., Item 1	More common term is “smart/intelligent buyer.”	Change “intelligent customer” to “smart/intelligent buyer”	Clarification	
12.	2., Note 1	Organization may be performing oversight to	Change to	MAJOR	Lack of consistency in this note from what is stated in section 3. Need to

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		ensure supervisors are trained and supervision is effective, vs. performing the supervision.	"...an organization that knows what is required ... provides adequate oversight and/or supervises the work and technically reviews the output before, during and after implementation."		allow flexibility for contract supervisors to supervise work, while licensee still ensures that quality is maintained.
13.	2., item 2	Shared goals and processes is a good project management tool. It is not a safety significant activity.	Delete item or take it out of the "shall" umbrella and include in a "should" or "may" clause, i.e. the Guidance portion of the document.	MAJOR	These statements are too prescriptive and go beyond "what" things get done, and infringe on "how" things get done.
14.	3.	It mandates CSA 286-12 when licensee should actually be directed towards the standard in their licence.	Please delete version number for CSA 286	Clarification	
15.	3.1.2	The requirement for agreement upon the interfaces can be interpreted to mean that the CNSC has to agree upon the interfaces between: <ul style="list-style-type: none"> <li>• The licensee and the reactor designer, and/or</li> <li>• the reactor designer, manufacturers, construction organizations and contractors.</li> </ul>	Suggest changing text to:  Before construction starts, the interfaces between the licensee, the CNSC and other regulatory authorities shall be defined, agreed upon and understood such that the CNSC and other regulatory authorities are provided with relevant performance issues that have affected, or have the potential to affect, the quality of construction and future operational safety.	MAJOR	As written, the requirement could be interpreted to mean that the CNSC and other regulatory authorities have a role in the contractual arrangements from a business perspective which would exceed their regulatory mandate.
16.	3.1.3	As written, the requirement is overlapping the requirements in CSA N286-12.	<b>Suggest changing text to:</b>  The licensee shall develop measures to ensure that contractors and sub-contractors meet their respective contractual	MAJOR	As written, the requirement could be interpreted to mean that the CNSC has a role in the contractual arrangements from a business perspective which would exceed their regulatory mandate.

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			<p>obligations in accordance with an appropriate safety management system, such as CSA N286, <i>Management system requirements for nuclear facilities</i>.</p> <p><b>Identify the entire section below as a Guidance section:</b></p> <p><b>Guidance</b> Examples of contractual obligations where performance has the potential to affect the quality of construction and future operational safety performance include:</p> <ol style="list-style-type: none"> <li>1. for selection of contractors:               <ol style="list-style-type: none"> <li>a. confirmation that the contractors have the ability to supply the goods or service (include items 'b' to 'e')</li> </ol> </li> <li>2. for contract management:               <ol style="list-style-type: none"> <li>a. evidence of a positive safety culture (include items 'b' to 'g')</li> </ol> </li> <li>3. for contractor supply chain (manufacturing and construction) activities:               <ol style="list-style-type: none"> <li>a. pre-screening of sub-contractors used by</li> </ol> </li> </ol>		

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			<p style="text-align: center;"><b>the contractor, to ensure the sub-contractors are acceptable and to incorporate them into the licensee’s supply chain program (include items ‘b’ to ‘e’).</b></p> <p><b>The above guidance should also extend to the contractor’s measures to ensure its sub-contractors meet their respective contractual obligations.</b></p>		
17.	3.1.3, item 2. b	Need to control foreign material impacts like corrosion.	Change to: “evidence that the contractor satisfies all contractual requirements related to health and safety, environment, security, <b>control of materials</b> and quality.”	Clarification	
18.	3.1.3, 2. c, d, f, g	<b>Good project management; not safety significant and ought not to be subject to regulatory scrutiny.</b>	<b>Delete items.</b>	<b>MAJOR</b>	<b>These statements are too prescriptive and go beyond “what” things get done, and infringe on “how” things get done.</b>
19.	3.1.3, item 3. b	History docket reviews are reviewed once projects are complete, or the equipment is turned over to a Licensee. Licensee does not necessarily review contractor purchasing documentation <i>prior</i> to a PO being placed	Change to: Review of contractor’s history documents to confirm purchasing requirements are met	Clarification	
20.	Glossary (definition of “construction” as used in section 4)	Definition of “Construction” in Glossary includes procurement and manufacturing, which are not considered part of	change definition of construction to remove references to procurement and manufacturing: “The	Clarification	

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		construction	process of assembling the components ...”		
21.	4, Item 3	The requirement “the design is sufficiently complete” is ambiguous and has historically caused significant debate on when it is achieved.	Please modify to state “the design is sufficiently complete as agreed between the licensee and the contractor ”	Clarification	
22.	4, item 14	Too vague – what is the starting point by which we ought to assure infrastructure is in place? Construction will have to have started in order to get the infrastructure in place	Delete item. Unnecessary, and incidental to safety of the final constructed station	Clarification	
23.	4., item 15	Licensees do not regulate the quality of construction cranes, scaffolds, temporary structures and temporary equipment.	Delete item	Clarification	
24.	5. Para. 4	The reference to training of personnel involved in commissioning and operation does not belong in a regulatory document on construction of nuclear reactors.	Preferably delete paragraph else it should be rewritten	Clarification	
25.	6.3, Item 5.	Assessment of evacuation times is new and not something Licensees do for existing facilities.	Change to: “Emergency Preparedness shall consider ....evacuation times ....”	Clarification	
26.	6.3, para. 3	Clarification required on how far away is “nearby.”	Suggest being more specific. Terms “nearby” and “in close proximity” are open to interpretation. For example, replace those terms with “on the same site.”	Clarification	
27.	6.4. Para. 1	Editorial	Add word “as” so second sentence reads “such as spent	Clarification	

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			fuel pools”		
28.	6.5	Clarity required on what exactly is meant by “controls”	Suggested change: “Fire protection controls, i.e. temporary measures to mitigate potential fires, shall be available until final systems for plant fire detection, ...”	Clarification	
29.	6.7	REGDOC-2.6.3 is not a draft document. It was issued in March 2014.	Remove “draft”	Clarification	
30.	7.1, Para. 1	<b>The text includes a requirement that is applicable to regulatory bodies, and recommended good practices. It is suggested that the text be split into a requirement and guidance.</b>	<b>Suggest changing text to:</b> <b>Requirement:</b> “Planning, scheduling and work sequencing shall identify and include provisions for hold and witness points by various parties, such as the licensee, architects/engineers, authorized inspection agencies and the CNSC.”  <b>Guidance</b> “To ensure construction sequencing will not be adversely affected by later construction activities, planning, scheduling and work sequencing should identify and include provisions for: 1. items with long lead times (long-lead items) 2. onsite manufacturing, modular assembly and testing activities.”	<b>MAJOR</b>	<b>As written, the requirement is not technology neutral and enters into the business transaction aspects of the interface between the licensee and the construction contractor.</b>
31.	7.1, Para. 2	Suggest rewording the requirement and splitting it into a requirement and guidance	Suggest changing text to: Requirement “Post-drilling of concrete shall be kept to a minimum.”	Clarification	

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	and plant fixtures so that post-drilling of concrete is kept to a minimum.		Guidance: “Consideration should be given to the design of components and plant fixtures, such as the form of cast-in components, so that post-drilling of concrete is kept to a minimum.”		
32.	7.2, para. 2	Suggest rewording the requirement for clarity.	Suggest changing text to:  Environmental conditions shall be confirmed to remain within their allowable limits by periodic monitoring.	Clarification	
33.	7.3 para. 3 & 4	These paragraphs are not appropriate as regulatory requirements.	Remove this text.	Clarification	
34.	7.4, para. 1	Missing lay-up requirement.	Modify as follows: “Fluid and gas piping systems, and associated components shall be <b>laid up</b> , cleaned, flushed and conditioned according to applicable chemistry requirements.”	Clarification	
35.	7.4	These requirements are generally not considered part of construction, but rather commissioning.	Delete text from construction part of REGDOC-2.3.1, and move text to commissioning part of REGDOC-2.3.1.	Clarification	
36.	7.4, item 3	What is meant by storage capacity? Does it refer to storage of chemicals?	Clarify requirement.	Clarification	
37.	7.4, item 6	Does this mean recirculation?	Use the term “system recirculation.”	Clarification	
38.	7.4/8.4/9./9.1/9.2	The more common term use in the industry for “transfer” is “turnover”.	Replace instances of “transfer” with “turnover” as appropriate	Clarification	
39.	8.1, Guidance item 10	Missing additional	Modify as follows:	Clarification	

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		<p>requirements on cleanliness of components.</p> <p>Need assurance that components are free of surface FME to avoid issues on restart, e.g. boiler sulfate issues at Pt. Lepreau post-refurbishment.</p>	<p>“the compatibility of cleaning methods and materials with the components being cleaned and cleanliness of components after cleaning. The latter includes any remnants of preservatives or cleaning agents on components before installation.”</p>		
40.	8.1 & 8.2	<b>All of Section 8.1 and 8.2 belongs in REGDOC-2.5.2, because the technical documents for procurement are an engineering activity, not a construction activity.</b>	<b>Move Sections 8.1 and 8.2 to a new section in REGDOC-2.5.2.</b>	<b>MAJOR</b>	<b>Engineering activities should be contained within REGDOC-2.5.2.</b>
41.	8.3.1/8.3.2	One of the purposes of these sections is to eliminate counterfeit items. However this is not explicitly stated.	Add that one of the reasons for inspection and identification of components is to eliminate counterfeit items.	Clarification	
42.	Sections 8.3.1, 8.3.2, 8.3.3, 8.3.4	<b>We do not consider that these requirements apply to ALL components that are received. Need to exclude low cost, easily replaceable, components, or limiting it to components used in some sub-set of station systems.</b>	<b>See 8.3.7 “items important to safety of nuclear facilities” – Suggest similar wording be incorporated in these sections.</b>	<b>MAJOR</b>	<b>The statements as written have licensees doing a very detailed receipt inspection on every item, e.g., every box of light switches. They make every cardboard box subject to being qualified. The section establishes sensible requirements for certain components, but OPG does not believe the universal applicability of the requirements is what was intended.</b>
43.	8.3.7, para. 4	This text belongs under guidance.	Suggest changing text from “Onsite manufacturing may include:” to “ <b>Guidance</b> Examples of onsite manufacturing include:”	Clarification	
44.	8.3.7, bullet 1.	Suggest changing the text to encompass the entire concrete and backfill construction	Suggest changing text to: “Concrete mix, core extraction and testing for the entire concrete and backfill program	Clarification	

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			in accordance with the technical specifications covering the supply of concrete and backfill”		
45.	8.3.7, para. 5	Licensee may only ensure that the rules and procedures are established for onsite testing facilities.	Change to: “Ensure the rules and procedures are established for onsite testing facilities”	Clarification	
46.	8.4, para. 2.	The CSA standard N286 which the industry must comply with, already covers the process for completion assurance and does not require repeating in the REGDOC.	Please delete second paragraph.	Clarification	
47.	9.1	Good project management; not safety significant and need not be subject to regulatory scrutiny.	Delete item. These statements are unnecessarily prescriptive.	Clarification	
48.	9.1 and 9.2	Licensees use the term “turnover” instead of “handover”.	Replace “handover” with “turnover”	Clarification	
49.	11, para. 1	Suggest rewording the requirement to clarify the intent.	Suggest changing text to: The control of construction records shall be established at the beginning of the construction program for input into the schedule for accomplishing construction activities.	Clarification	
50.	11, Para. 2	Suggest rewording to clarify requirements and guidance.	Suggest changing text to:  “Construction records shall be compiled, particularly in inaccessible areas or areas that will be subject to intense radiation, to facilitate the planning of work in these areas during commissioning,	Clarification	

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			<p>operation and decommissioning. These visual construction records of as-built conditions shall show identification marks and shall be catalogued with descriptive captions. This will ensure that visual records made during subsequent inspections or maintenance work can be easily compared, and will help in any work preparation.”</p> <p><b>Guidance</b> “Construction records should include photographic and, where appropriate, video records and computer simulations.”</p>		