

Comments received during first round / Commentaires reçus lors de la première période :

REGDOC 2.3.2: Accident Management

Comments received from public consultation / Commentaires reçus dans le cadre du processus de consultation

Comments received:

- during first round (20 August to 19 October 2013): 82 comments from 5 reviewers
- during feedback period (22 November to 6 December 2013): no comments were received
- additional comments received from industry July 2014 (comments 83 to 93)

Commentaires reçus :

- lors de la première période (du 20 août au 19 octobre 2013): 82 commentaires reçus de cinq (5) examinateurs
- lors de la période des observations (du 22 novembre au 6 décembre): aucun commentaire reçu
- commentaires supplémentaires reçus de l'industrie en juillet 2014 (commentaires 83 à 93)

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	Section	Organization	Comment	CNSC Response
1.	0.0 General	Ontario Power Generation (OPG), Atomic Energy Canada Limited (AECL), Bruce Power (Bruce)	The overall document structure is quite different from REGDOC-2.10.1. In particular the separate requirements and guidance sections rather than the inclusion of guidance subsections with the requirements. Standard format for REGDOCs.	While the input was noted, no change was made to the document as a result of the comment. A standard format for REGDOC 2.3.2 and 2.10.1 was not followed due to the differences in the types of guidance provided to the requirements. In 2.10.1 there is a close relationship between the requirements listed and the specific guidance which follows. In 2.3.2 requirements are based on four categories: general requirements, equipment and instrumentation requirements, procedural and guideline requirements, and human and organizational performance requirements. Meanwhile the guidance sections are laid out in the order of development (preparation), implementation, evaluation (review), and documentation for accident management programs. To have followed the 2.10.1 structure would have led to significant repetition of guidance information for no extra value.
2.	0.0 General	OPG, AECL	The title of the REGDOC is "Accident Management" and the REGDOC defines "Accident Management" as "The taking of a set of actions during the evolution of an accident to prevent the escalation of the accident, to mitigate the consequences of the accident, and to achieve a long-term safe stable state after the accident." The	The REGDOC was modified as a result of comments provided. We recognize industry's concern related to the definition and scope of "Accident Management" given in the REGDOC being different and broader from those given in IAEA NS-G-2.15 and SRS-32.

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			<p>definition is meant to cover both design basis and beyond design basis accident strategies.</p> <p>The REGDOC indicate that “Key principles and elements used in developing this document are consistent with International Atomic Energy Agency (IAEA) safety principles, guides and reports.....” such as in IAEA Safety Standards Series No. NS-G-2.15, severe accident Accident Management Programmes for Nuclear Power Plants and IAEA Safety Reports Series No. 32, Implementation of Accident Management Programmes in Nuclear Power Plants. However, both the aforementioned IAEA documents define “Accident Management” as: “The taking of a set of actions during the evolution of a beyond design basis accident: (a) To prevent the escalation of the event into a severe accident; (b) To mitigate the consequences of a severe accident; (c) To achieve a long term safe stable state.”</p> <p>In the REGDOC the term “Accident Management” covers both design basis and beyond design basis accidents actions, whereas in the IAEA documents “Accident Management” covers beyond design basis accident only. Therefore the intended definition of the term “Accident Management” in this REGDOC is not consistent with the definition in IAEA documents.</p> <p>The REGDOC title should be changed to “Accident Control and Management” where “accident control” is used for DBA and “accident management” is used for BDBAs.</p> <p>The IAEA definition and scope of “Accident Management” is different than the intended definition and scope of “Accident Management” in REGDOC - 2.3.2 this differentiation needs to be made clear in order to avoid confusion within the industry.</p>	<p>The previously defined “accident management” in these documents pre-dates Fukushima lessons and does not adequately reflect current CNSC expectations. The direction being taken in the REGDOC 2.3.2 is consistent with international approaches to accident management emerging from assimilation of Fukushima’s lessons learned.</p> <p>The definition of “Accident Management” in the IAEA NS-G-2.15 report (published in 2009) and SRS-32 report (published in 2004) is for “Severe Accident Management” (SAM) only, as indicated by the title of NS-G-2.15: “<i>Severe Accident Management Programs for NPPs</i>”. This approach to accident management predates Fukushima experience.</p> <p>REGDOC (Section 1.2 – Scope), states: “an integrated accident management program (IAMP) refers to all arrangements needed to manage any accident affecting a reactor facility.” Therefore, the definition of “Accident Management” given in this REGDOC is evolved from the existing IAEA definition and adapted to cover both design basis (DBAs) and beyond design basis accidents (BDBAs).</p> <p>This expansion of previous accident management approach into an integrated approach is aligned with the CNSC Fukushima Task Force recommendation 9(b): “a dedicated regulatory document be developed on accident management”.</p> <p>Accident management is recognized as an important component in the overall licensees’ capabilities to ensure the risks associated with operating nuclear reactors remain low. Licensees need to be able to demonstrate that they have an appropriate program in place to manage deviations from normal operation up to severe accidents.</p> <p>The CNSC effort is also consistent with recent international collaboration on lessons learned from the Fukushima accident. Please note that, in November 2013, Nuclear Energy Agency</p>

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				<p>(NEA) and Committee on Nuclear Regulatory Activity (CNRA) had issued a report on "Accident Management Insights after the Fukushima Daiichi NPP Accident". The Task Group on Accident Management (TGAM) members conclude that integrated accident management (IAM)</p> <p><i>IAM is the expansion of existing accident management approaches into a comprehensive approach, combining current good practices and new findings coming from post-Fukushima studies that incorporates all arrangements needed to manage as efficiently as possible any accident affecting the NPP with potential release of radioactive material.</i></p> <p>Here the definition of accident management is given to address accidents resulting from all kinds of initiators. The IAM approach intends to integrate all available on-site and off-site resources. IAM includes both preventive and mitigative arrangements in a graded approach emphasizing first preventing severe accidents, and if this fails, to mitigate, as appropriate, the consequences.</p> <p>Therefore, the definition and scope given in CNSC REGDOC-2.3.2 reflect current accident management insights and common views on IAM from participating NEA member states and associated countries.</p> <p>Furthermore, there is no definition and usage of the term "Accident Control" in IAEA and other international agencies documents. The suggested term "Accident Control" could lead to the unintended confusion – as it could be construed that the control of accidents would be required to be achieved through use of "control systems". This could imply extensive design modifications to those systems. The current practice is to manage Design Basis Accidents with the use of "safety systems" but not the "control systems".</p> <p>Based on the above listed reasons REGDOC 2.3.2 will not replace "Accident Management" with "Accident Control and</p>

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				<p>Management". However, CNSC staff acknowledges and shares industry's view that the scope and means of accident response would be different depending on the severity of an accident.</p> <p>As a result of comments the following text has been added:</p> <p>Accident management is an important component in the overall licensees' capabilities to ensure the risks associated with operating nuclear reactors remain low. Licensees need to be able to demonstrate that they have an appropriate program in place to manage deviations from normal operation up to severe accidents. The definition of "Accident Management" given in this REGDOC is in line with international practice and has evolved from the existing IAEA definition and adapted to cover both DBAs and BDBAs.</p>
3.	0.0 General	OPG, AECL, Bruce, New Brunswick Power (NB Power)	<p>The REGDOC needs to recognize the IAMPs are already built into licensees existing Management Systems Manuals (MSMs). In addition, recognition that existing programs/documents will be maintained or revised to meet this REGDOC.</p> <p>Suggest renaming REGDOC "Accident Control and Management – ACM". Include a note to the effect that implementing procedures, e.g., programs and role titles may not be identical at each facility.</p> <p>There is a danger that it can be interpreted that Licensees will be required to develop a standalone IAMP document containing all of the requirements defined in this REGDOC. This is contrary to the CSA N286 philosophy of an integrated Management System.</p> <p>Development and management of a separate IAMP document would be an unnecessary administrative burden on the licensees.</p>	<p>The REGDOC was modified as a result of comments provided.</p> <p>CNSC staff acknowledges that the requirements specified in REGDOC 2.3.2 have already largely been built into the licensees' existing management system documentation.</p> <p>Licensees are not required to create a separate IAMP document; however a systematic gap analysis may be requested to demonstrate the existence of all requisite components.</p> <p>To address industry's concerns, the text was modified to clarify that a separate IAMP will not be required by adding the following text at the end of Section 2:</p> <p>"AOOs and DBAs are included in the IAMP to ensure that they do not progress to more challenging accidents and that their consequences are mitigated to be within established limits. Essential features for mitigation of AOOs and DBAs already exist in operating reactors and include:</p>

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				<ul style="list-style-type: none"> • design provisions allowing automatic actuation of control and/or safety systems to terminate the vast majority of events • EOPs to respond to events within the design basis • the associated programs for equipment maintenance, human performance, training, and shift complement <p>A plant-specific IAMP builds on the existing components/documents and integrates all available provisions for accident management."</p>
4.	0.0 General	OPG, AECL, Bruce, NB Power	<p>The definition of "Accident Management" in this document is not consistent with the IAEA definition.</p> <p>Suggested definition of "Accident Management": "The taking of a set of actions during the evolution of an accident that progresses beyond the design basis to a severe accident, to prevent the further escalation of the accident, to mitigate the consequences of the accident, and to achieve a long-term safe stable state after the accident. The actions under defence in depth Level 4, using additional safety features and supporting guidelines are encompassed within accident management."</p> <p>Correct usage of the terms Accident Management and Accident Control is essential for understanding of the REGDOCS and correct application. It is important to maintain the distinction between design basis (DB) and beyond design basis (BDB). Using a term that is internationally acknowledged as referring to a BDB state in a manner that is inclusive of DB has the potential to create significant confusion.</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to Comment 2 for the definition of "Accident Management".</p> <p>Regarding the concern on maintaining "the distinction between design basis (DB) and beyond design basis (BDB)", CNSC staff acknowledge that many aspects are distinct and different between treatment of the accidents that do not challenge core integrity and that of the accident with core degradation. However, the essence of accident management is to utilize the available materiel and human resources to provide counteracting responses regardless of its progression into a stage belonging to DBA or BDBA.</p> <p>Many elements are common for DBA management or BDBA/severe accident management. They include:</p> <ul style="list-style-type: none"> • identification of equipment used for accident management (although management of DBA mainly relies on control and safety systems whereas severe accident management uses all available SSCs including the complementary design features, the process of the identification has many in common) • guidance for counteracting responses to an accident

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				<p>(although EOPs are developed to address DBA events and SAMGs to cope with severe accidents, a procedural mechanism for accident management is required)</p> <ul style="list-style-type: none"> •human and organizational performance (HOP) (EOP implementation primarily involves the operations organization while SAMG implementation has wider organizational implications; the requirement for HOP must be specified accordingly) <p>The essential features for mitigation of DBAs already exist in operating reactors. For example, design provisions allow automatic actuation of safety systems to determinate the vast majority of events. As well, EOPs for control room operators respond to practically all events within the design basis.</p> <p>However, a BDBA or severe accident can start with a DBA. For example, the TMI-2 event initiated from a simple failure of main feedwater pumps (AOO or DBA), combined with a pressure relief valve stuck open, inadequate instruments, and operators-reduced emergency cooling water flow into the primary system.</p> <p>The post-Fukushima updated guidance in the revised G-306 ("<i>Severe Accident Programs for Nuclear Reactors</i>") has been incorporated into this REGDOC. It specifies the accident management requirements to cover the whole spectrum of any accident affecting an NPP, with a focus on BDBAs/severe accidents.</p> <p>This integrated approach ensures that the high-level requirements and adequate guidance for accident management are captured in a consolidated regulatory document. As elaborated in the response to Comment 2, this approach consistently reflects the recent international collaboration on accident management insights after the Fukushima accident, under NEA/CNRA.</p>

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				<p>Regarding additional safety features, the definition of complementary design features was modified to reflect the definition provided in 2.5.2:</p> <p>“complementary design feature</p> <p>A design feature added to the design as a stand-alone structure, system or component (SSC) or added capability to an existing SSC to cope with design extension conditions.</p> <p>Note: Complementary design features may also be referred to as “additional safety features”.</p>
5.	0.0 General	OPG, AECL	<p>The term “Integrated Accident Management Programs (IAMPs)” is used.</p> <p>Industry preference is for CNSC REGDOCs to only specify requirements. Whether a specific program document needs to be developed is an implementation issue that should be left to licensee discretion.</p> <p>Suggested change: Wherever the term “Integrated Accident Management Programs (IAMPs)” is used in this REDDOC replace with “Accident Control and Management (ACM) requirements”.</p> <p>There is a danger that it can be interpreted that licensees will be required to develop a stand alone IAMP document containing all of the requirements defined in this REGDOC. This is contrary to the CSA N286 philosophy of an Integrated Management System. Development and management of a separate IAMP document would be an unnecessary administrative burden on the licensees.</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the responses to comments 2, 3 and 4.</p>
6.	0.0 General	OPG, AECL, Bruce, NB Power	<p>Accident Control requires to be similarly defined to ensure correct application of the terms in the text:</p> <p>Suggested definition of “Accident Control”: The taking of a</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the responses to comment 2 and 4.</p>

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			<p>set of actions during the evolution of a design basis accident to prevent the escalation of the accident, to mitigate the consequences of the accident, and to achieve a long-term safe stable state after the accident. The actions under defence in depth Level 3, utilizing engineered safety features and accident procedures are encompassed within accident control.</p> <p>Correct usage of the terms Accident Management and Accident Control is essential for understanding of the REGDOCS and correct application. It is important to maintain the distinction between design basis (DB) and beyond design basis (BDB).</p>	
7.	0.0 General	OPG, Bruce	<p>Major - Correct application of the terms "Accident Management" and "Accident Control" throughout the document.</p> <p>Attachment 1 includes all occurrences of the terms and the suggested aligned usages of the terms.</p> <p>Correct usage of the terms Accident Management and Accident Control is essential for understanding of the REGDOCS and correct application. It is important to maintain the distinction between design basis (DB) and beyond design basis (BDB).</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the responses to comments 2 and 4.</p>
8.	0.0 General	OPG, AECL, Bruce	<p>The document does not include any specific reference to the new Emergency Mitigating Equipment and the associated Emergency Mitigating Equipment Guidelines being implemented as an important part of the accident management programs at Canadian NPPs.</p> <p>Suggested Change: Text should be revised to include references to EME and EMEG in Section 2, Section 3.4, and the Glossary. Figure 1 and Figure 2 (appendix A) should be revised to show EME and EMEG relationships.</p> <p>EME is an important part of accident management at Canadian NPPs and its positioning within Accident</p>	<p>The REGDOC was modified as a result of comments provided.</p> <p>CNSC staff agrees that the Emergency Mitigating Equipment (EME) and associated Emergency Mitigating Equipment Guidelines being implemented are an important part of the accident management programs at Canadian NPPs.</p> <p>This REGDOC refers to EME as supplementary equipment, which is widely used elsewhere around the world.</p> <p>To incorporate the suggestion, revision of the following paragraph in Section 4.3.1 – Equipment provisions, is proposed to mention EME</p>

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			Management needs to be clearly documented.	<p>“For the most serious BDBA challenges, such as an extended loss of heat sinks, buildup of a diverse and flexible mitigation capability should be considered. For example, portable or supplementary equipment (that may be also referred to emergency mitigating equipment) can provide multiple means of obtaining power and water to support key safety functions for all reactors at a site.”</p> <p>We added “supplementary equipment”, together with EME and EMEG, into the Glossary. We will not add EME in Figure 1 since any EME for design extension conditions including severe accidents is considered under complementary design features.</p> <p>Figure 2 was modified to include EMEG.</p>
9.	0.0 General	Bruce	<p>(Listed sections Section 3.4 Bullet 1, Section 5.2 , Section 5.3, Section 6.1) There needs to be some guidance provided on the level of verification and validation required/expected.</p> <p>Provide guidance on verification and validation. The level of guidance contained in 5.2 is not sufficient as it does not specify CNSC expectations on the method of verification/validation or the level of detail required.</p> <p>The level of validation needs to be commensurate with the nature of risk related to the procedures and guidelines for example; minor risks should only require low level desktop validation whereas major risks could require a full HF validation following guidance in G-278.</p>	<p>The REGDOC was modified as a result of comments provided.</p> <p>Section 5.2 provides guidance for verification of procedures (e.g., EOPs) and guidelines (e.g., SAMGs and EMEGs). In response to this comment concerning insufficient guidance on verification and validation, additional guidance was provided in Section 5.2. The full section now reads:</p> <p>5.2 Verification and validation of procedures and guidelines</p> <p>The overall process of verification and validation should be formally documented.</p> <p>The objectives of the verification and validations of accident management procedures and guidelines are to:</p> <ul style="list-style-type: none"> • confirm their usability, in terms of being easily understood and followed by their users • verify technical accuracy, meaning identification of the correct equipment and line-ups • demonstrate that procedures and guidelines achieve the

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				<p>goals for which they were developed</p> <ul style="list-style-type: none"> • assure completeness of scope, that is, to provide adequate guidance for all expected activities • confirm that all specified actions are possible (i.e., consider possible challenges and threats to the personnel) and identify alternatives where appropriate. <p>Section 5.3 has already provided sufficient guidance for human and organization performance.</p> <p>With the expansion of Section 5.2 above, Section 6.1 is considered to be sufficient to guide the review of IAMP.</p>
10.	0.0 General	Michel A. Duguay (M.A. Duguay)	<p>In general I think that the new document is excellent, but is very demanding in terms of implementation in the field. One can see that many severe accident scenarios have been thoughtfully considered and analysed in detail. Implementing in practice all the demands and recommendations in REGDOC 2.3.2 will not be easy for the nuclear industry. A strictly monitored implementation of REGDOC 2.3.2 would most likely significantly reduce the negative consequences of a nuclear core-melt accident.</p> <p>However, in several letters to the CNSC my colleagues and I have made a case for paying focussed attention to nuclear engineer John Waddington's October 2009 article on nuclear safety. Waddington and many analysts have pointed out the crucial role played by the so-called "institutional failure" phenomenon largely responsible for major accidents in many different fields. Unless CNSC management can respond adequately to this challenge, the probability of occurrence of a severe nuclear accident will be reduced at best by a factor of two, well short of the factor of 10 reduction that John Waddington proposes as an objective.</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>As with all regulatory documents, the CNSC will develop implementation strategies for the document as appropriate for the facilities to which it will apply. CNSC compliance activities will be undertaken to will oversee its implementation.</p> <p>These compliance activities will be done independent from any of the licensee's own verification activities.</p>
12.	0.0 General	M.A. Duguay	Regulatory document REGDOC 2.6.3 on "Fitness for Service, Aging Management" talks on page 3 about physical aging and about "the need to derate the reactor	While the input was noted, no change was made to the document as a result of the comment.

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			power to maintain safety margins". In view of Article 9 of the Nuclear Safety and Control Act (NSCA) of 1997, isn't it a logical application of REGDOC 2.3.2 that the CNSC should derate the power level of older reactors, such as the ones in the Pickering nuclear power plant? This would of course improve nuclear safety and it would benefit the nuclear workers in extending their active work life, and in improving their retirement benefits.	There are various measures that may be done to mitigate aging effects at nuclear facilities. <i>REGDOC-2.6.3, Aging Management</i> describes aging management expectations, which are outside the scope of this document.
13.	0.0 General	M.A. Duguay	Article 9 of the NSCA stipulates that the CNSC should seek to keep the nuclear accident probability at a socially acceptable level and to inform the public in an objective and scientific manner. At the moment the CNSC does not fully comply with Article 9 of the NSCA. If the CNSC does not fully comply with the NSCA, why should the nuclear industry be forced to comply?	<p>Setting clear regulatory expectations that reflect best regulatory practice is one of the objectives of the CNSC Regulatory Framework Program and is one of the means by which the CNSC achieves its regulatory responsibilities.</p> <p>This comment, however, is outside the scope of this particular document as there were no specific suggestions as to document modifications.</p>
14.	0.1 Preface	OPG, AECL	<p>The first sentence of the third paragraph currently reads as follows: "Accident management is a commitment to the defence-in-depth approach and is an important component in the licensee's overall capabilities...."</p> <p>Suggested change: "Accident control and management a commitment to the defence-in-depth approach and is an important component in the licensee's overall capabilities....."</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>
15.	1.1	OPG, AECL	The first sentence in the first paragraph currently states as follows: "REGDOC-2.3.2, Accident Management, sets out the requirements and guidance of the Canadian Nuclear Safety Commission (CNSC) for the development, implementation and validation of"	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>

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			<p>Suggested change: "REGDOC-2.3.2, Accident Control and Management, sets out the requirements and guidance of the Canadian Nuclear Safety Commission (CNSC) for the development, implementation and validation of</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	
16.	1.2	OPG, AECL, Bruce	<p>Figure 1, Glossary: "... beyond-design-basis accidents (BDBAs), including severe accidents." The concept of "No reference to DECs" should be included with beyond design basis accidents for consistency with other regulatory documents Figure 1 should include "design extension conditions" Definition for "design extension conditions" should be included in the Glossary</p> <p>Suggested change: "... beyond-design-basis accidents (BDBAs), including design extension conditions (DECs) (DECs could include severe accident conditions)." Add definition: design extension conditions A subset of beyond-design-basis accidents that are considered in the design process of the facility in accordance with best-estimate methodology to keep releases of radioactive material within acceptable limits. Design extension conditions could include severe accident conditions. Revise Figure 1 to show relationship between design extension conditions, BDBA and severe accidents.</p> <p>Consistency in the relationship between "design extension conditions", beyond design basis accidents and severe accidents is needed for emergency preparedness and consistency with other regulatory documents.</p>	<p>The REGDOC was modified as a result of comments provided.</p> <p>The following definition of DEC was added to the Glossary:</p> <p>A subset of beyond-design-basis accidents that are considered in the design process of the facility in accordance with best-estimate methodology to keep releases of radioactive material within acceptable limits. Design extension conditions could include severe accident conditions.</p> <p>DEC was also be added to the List of Acronyms.</p> <p>In Section 1.2 – Scope, the following paragraph was revised to include DEC:</p> <p style="padding-left: 40px;">"The document specifies IAMP requirements and guidance that are to be used to develop and validate necessary items such as emergency operating procedures (EOPs), severe accident management guidelines (SAMGs), and to demonstrate the licensees' capabilities to manage the anticipated operational occurrences (AOOs), design basis accidents (DBAs) and beyond-design-basis accidents (BDBAs), including design extension conditions (DECs) and severe accidents."</p> <p>DEC was not added in Figure 1 or Figure 2 as DECs are a subset of BDBAs.</p>

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17.	1.2	OPG, AECL	<p>The last paragraph in this section states as follows: "This document focuses on the accident management aspects and thus does not include requirements and guidance for emergency preparedness and response....."</p> <p>Suggested change: "This document focuses on the accident control and management aspects and thus does not include requirements and guidance for emergency preparedness and response....."</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>
18.	2.0	OPG, AECL	<p>The title of this section is "Accident Management and its Links with Emergency Preparedness and the Principle of Defence-In-Depth".</p> <p>Suggested revision: "Accident Control and Management and its Links with Emergency Preparedness and the Principle of Defence-In- Depth".</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>
19.	2.0	OPG	<p>The first paragraph in this section currently states as follows: "The fundamental premise underlying accident management is that the organization operating a nuclear reactor must be able to respond to any credible accident in order to:"</p> <p>Suggested change: "The fundamental premise underlying accident control and management is that the organization operating a nuclear reactor must be able to respond to any credible accident in order to:"</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>

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			The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.	
20.	2.0	OPG, AECL	<p>The second bullet of the second paragraph currently states as follows: "the personnel with responsibilities for accident management are adequately prepared to utilize the available resources, procedures....."</p> <p>Suggested change: "the personnel with responsibilities for accident control and management are adequately prepared to utilize the available resources, procedures....."</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>
21.	2.0	OPG, AECL	<p>The third paragraph currently states as follows: "Thus, accident management provides capability to respond to an accident within the reactor facility. It is important to recognize that accident management interfaces closely but is distinct from emergency preparedness...."</p> <p>Suggested change: "Thus, accident control and management provides capability to respond to an accident within the reactor facility. It is important to recognize that accident control and management interfaces closely but is distinct from emergency preparedness...."</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>
22.	2.0	OPG, AECL	The forth paragraph currently states as follows: "Both accident management and emergency preparedness form	While the input was noted, no change was made to the document as a result of the comment.

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			<p>part of the defence-in-depth provisions. In particular, accident management contributes to the levels 3 and 4 of defense-in-depth, while emergency preparedness corresponds to level 5 of defence-in-depth. Defense-in-depth level 3 is associated with the control of an accident and rule based procedures are, in general, used. Level 4 of defense-in-depth refers to BDBAs including severe accidents where efforts are focused on managing the accident and operators may need to move beyond the use of rules based procedures to symptoms based guidelines/procedures with considerable judgment required."</p> <p>Suggested change: "Both accident control and management and emergency preparedness form part of the defence-in-depth provisions. In particular, accident control contributes to the level 3 and accident management to the Level 4 of defence-in-depth, while emergency preparedness corresponds to level 5 of defence-in-depth. Defense-in-depth level 3 is associated with the control of an accident and rule based procedures are, in general, used. Level 4 of defense-indepth refers to BDBAs including severe accidents where efforts are focused on managing the accident and operators may need to move beyond the use of rules based procedures to symptoms based guidelines/procedures with considerable judgment required."</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	<p>See the response to comments 2 and 4.</p>
23.	2.0	OPG, AECL	<p>The first sentence of the fifth paragraph currently states as follows: "Figure 1 illustrates links between the accident management, emergency preparedness and defence-in-depth."</p> <p>Suggested change: "Figure 1 illustrates links between the</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comments 2 and 4.</p>

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			<p>accident control and management, emergency preparedness and defence-in-depth."</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	
24.	3.0	OPG, AECL	<p>The first sentence of the first paragraph currently states as follows: "This section specifies the requirements for an IAMP. The first subsection sets the goals of accident management."</p> <p>Suggested change: ""This section specifies the requirements for an accident control and management. The first subsection sets the goals of accident control and management."</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>
25.	3.1	OPG, AECL	<p>The title of this section is currently: "Goals of accident management"</p> <p>Suggested change: "Goals of accident control and management""</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>
26.	3.2	OPG, AECL	<p>Bullet #8 in this section currently states: "make accident management provisions, including: a. developing criteria for use in determining what procedures to use b. demonstrating the capability to take actions to protect and inform personnel at the scene c. identifying the roles and responsibilities of the personnel responsible for accident management d. identifying and evaluating reactor systems</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>

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			<p>and features suitable for use during accident management e. providing adequate training to personnel involved in managing an accident”.</p> <p>Suggested change: “make accident control and management provisions, including: a. developing criteria for use in determining what procedures to use b. demonstrating the capability to take actions to protect and inform personnel at the scene c. identifying the roles and responsibilities of the personnel responsible for accident control and management d. identifying and evaluating reactor systems and features suitable for use during accident control and management e. providing adequate training to personnel involved in managing an accident”</p> <p>The IAEA definition and scope of “Accident Management” is different than the intended definition and scope of “Accident Management” in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	
27.	3.3	OPG, AECL	<p>Bullet #2 in this section currently states: “address the information needs for accident management, by providing adequate instrumentation that is capable of supporting the need to: a. diagnose that an accident, including a severe accident, is occurring or has occurred.” b. obtain information on key parameters, such as neutron flux, temperatures, pressures, flows, combustible gas concentrations, and radiation levels, to assess accident conditions and progression c. address continuously the state of essential safety functions, including reactor core monitoring, reactivity control, fuel cooling, hydrogen control, and containment d. confirm the effectiveness of the accident management actions”</p> <p>Suggested change: “address the information needs for accident control and management, by providing adequate instrumentation that is capable of supporting the need to: a. diagnose that an accident, including a severe accident, is occurring or has occurred b. obtain information on key</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>

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			<p>parameters, such as neutron flux, temperatures, pressures, flows, combustible gas concentrations, and radiation levels, to assess accident conditions and progression c. address continuously the state of essential safety functions, including reactor core monitoring, reactivity control, fuel cooling, hydrogen control, and containment d. confirm the effectiveness of the accident control and management actions"</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	
28.	3.3	OPG, AECL, Bruce	<p>Requirement #1 currently states as follows: "Licensees shall: 1. provide adequate design capabilities to preserve the physical barriers for release of radioactivity and to ensure that means are available to: a. control challenges posed by DBAs within appropriate limits b. mitigate consequences of BDBAs c. reduce radiation risks from possible releases of radioactive materials by carrying out accident management actions."</p> <p>While it is appropriate to use the term "design capabilities" when referring to DBAs as in requirement (a) above, it is not appropriate to use this term when referring to BDBA as in item (b) above. The term "additional safety features" should be used when referring to capabilities for BDBAs.</p> <p>Suggested change : "Licensees shall: 1. preserve the physical barriers for release of radioactivity and ensure that means are available to: a. control challenges posed by DBAs within appropriate limits by providing adequate design capabilities b. mitigate consequences of BDBAs by providing additional safety features if required c. reduce radiation risks from possible releases of radioactive materials by carrying out accident response."</p> <p>The revision is required to prevent unintended imposing of</p>	<p>The REGDOC was modified as a result of comments provided.</p> <p>The term "design" was removed from requirement 1.</p>

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			design requirements for BDBAs; design requirements apply to the design basis.	
29.	3.4	OPG, AECL	<p>Bullet #1 in this section currently states: "develop, verify and validate accident management procedures and guidelines, including EOPs and SAMGs"</p> <p>Suggested change: "develop, verify and validate accident control and management procedures and guidelines, including EOPs and SAMGs".</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>
30.	3.4	Bruce	<p>Bullet 1: There needs to be some guidance provided on the level of verification and validation required/expected.</p> <p>Provide guidance on verification and validation. The level of guidance contained in 5.2 is not sufficient as it does not specify CNSC expectations on the method of verification/validation or the level of detail required.</p> <p>The level of validation needs to be consummate with the nature of risk related to the procedures and guidelines for example; minor risks should only require low level desktop validation whereas major risks could require a full HF validation following guidance in G-278.</p>	<p>The REGDOC was modified as a result of comments provided.</p> <p>See the response to comment 9.</p>
31.	3.4	OPG, AECL	<p>Bullet #7 in this section currently states: "provide for transition from the accident management activities to accident recovery"</p> <p>Bullet #7 in this section currently states: "provide for transition from the accident control and management activities to accident recovery"</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>

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			"Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.	
32.	3.5	OPG, AECL, Bruce	<p>The phrase "ensure that the IAMP contains provisions for the setup of a technical support centre to support SAM" is not consistent with REGDOC-2.5.2 Section 8.10.3</p> <p>Suggested change: 4. "ensure that the accident management and control requirements contain provisions for the setup of emergency support facilities, consisting of a technical support centre and an onsite emergency support centre. The technical support centre and the emergency support centre can be located in one place or separated."</p> <p>This is consistent with REGDOC-2.5.2 Section 8.10.3</p>	<p>The REGDOC was modified as a result of comments provided.</p> <p>Wording was modified as follows:</p> <p>"ensure that the IAMP contains provisions for the setup of emergency support facilities, consisting of a technical support centre and an onsite emergency support centre. The technical support centre and the emergency support centre can be located in one place or separated"</p>
33.	3.5	OPG, AECL, Bruce, NB Power	<p>Bullet 6: Habitability of facilities should also include an option to relocate to designated alternate facilities.</p> <p>Suggest Change: adding the following wording to the end of 3.5 sub bullet #6: "... or provide alternate habitable facilities."</p>	<p>The REGDOC was modified as a result of comments provided.</p> <p>The text was modified as suggested.</p>
34.	3.5	OPG	<p>Bullet #3 in this section currently states: "clearly define the roles, responsibilities and authorities for the personnel involved in accident management and ensure coordination among different organizations"</p> <p>Suggested change: "clearly define the roles, responsibilities and authorities for the personnel involved in accident control and management and ensure coordination among different organizations"</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>

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35.	4.1	NB Power	Diagram in Appendix A is confusing. It would imply that Level 4&5 belong to EP program and would not fall under IAMP. Attached is a revised version of Fig 2 clarifying the relationships.	<p>The REGDOC was modified as a result of comments provided.</p> <p>Figure 2 was modified to ensure that IAMP applies to both Level 4 and Level 5 defence-in-depth.</p> <p>Some of suggested changes in Figure 2 were incorporated. They are:</p> <ul style="list-style-type: none"> • “control of core damage to avoid severe accident” changed to “management to avoid severe core damage” • “operation manual” changed to “Operating manual” • “Emergency mitigating equipment guidelines” were added under “procedures” • “Containment & design features” changed to “Containment & complementary design features”
36.	4.1	OPG, AECL	<p>The first paragraph in this section currently states as follows: “A structured top-down approach (as illustrated in Appendix A) should be used for developing an IAMP. At the top level, the objectives of accident management should be defined according to the level of defence and associated goals that are given in section 3. Challenges to safety functions and physical barriers, together with the associated damage mechanisms and conditions, should be identified, which is referred to as identification of challenges. For each of the identified challenges, suitable and effective measures or provisions should be derived, described, and referenced or documented in procedures or guidelines, and used for training the personnel responsible for executing the measures for managing such an accident, should it occur.”</p> <p>Suggested change: “A structured top-down approach (as illustrated in Appendix A) should be used for addressing Accident and Control requirements. At the top level, the objectives of accident control and management should be defined according to the level of defense and associated</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>

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			<p>goals that are given in section 3. Challenges to safety functions and physical barriers, together with the associated damage mechanisms and conditions, should be identified, which is referred to as identification of challenges. For each of the identified challenges, suitable and effective measures or provisions should be derived, described, and referenced or documented in procedures or guidelines, and used for training the personnel responsible for executing the measures for controlling and/or managing such an accident, should it occur."</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	
37.	4.1	OPG	<p>The second paragraph in this section currently states: "The staff responsible for developing the IAMP should have a sufficient level of training and experience regarding accident management in a nuclear facility."</p> <p>Suggested change: "The staff responsible for developing the ACM requirements should have a sufficient level of training and experience regarding accident control and management in a nuclear facility."</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>
38.	4.2.1	OPG, AECL	<p>The last sentence in the forth paragraph currently states: "The updated knowledge and data should be used to evaluate the reactor ability to cope with accidents and to deduce suitable accident management strategies, provisions, procedures, and guidelines."</p> <p>Suggested change: "The updated knowledge and data should be used to evaluate the reactor ability to cope with accidents and to deduce suitable accident control and</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>

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			<p>management strategies, provisions, procedures, and guidelines.</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	
39.	4.2.1	OPG, AECL	<p>The sixth paragraph in this section currently states: "Accident management should consider that some beyond-design-basis initiating events may result in similar challenges to all units on the site."</p> <p>No change. The term "accident management" is used correctly in this context, i.e. in reference to BDBA. As such the statement is correct as is.</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	<p>Comment was acknowledged, however, there were no specific suggestions as to document modifications.</p> <p>See the response to comment 2.</p>
40.	4.2.1	OPG, AECL, Bruce	<p>Item (c) in Requirement #4 of Section 3.4 states as follows: "actions to be taken to counter the damage mechanisms that would potentially challenge the integrity of the containment, irrespective of predicted frequencies of occurrence for those damage mechanisms". SAM is symptom based, irrespective of events that caused them. Therefore the highlighted phrase above should be deleted.</p> <p>Suggested Change: Delete "irrespective of predicted frequencies of occurrence for those damage mechanisms".in item (c) in Requirement #4 of Section 3.4</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>The phrase "irrespective of predicted frequencies of occurrence for those damage mechanisms" refers to the occurrence of the containment damage mechanisms such as hydrogen burn or explosion in containment, melt-through of the containment basemat due to molten core-concrete interaction (MCCI). Here, it does not refer to accident "events that caused them" It is important to consider all containment damage mechanisms regardless of PSA arguments such as that the likelihood of a MCCI is small and thus no adequate mitigation is provided.</p> <p>This approach is consistent with IAEA NS-G-2.15:</p> <p>"MAIN PRINCIPLES 2.12. In view of the uncertainties involved in severe accidents, severe accident management guidance should be developed</p>

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				<i>for all physically identifiable challenge mechanisms for which the development of severe accident management guidance is feasible; severe accident management guidance should be developed irrespective of predicted frequencies of occurrence of the challenge."</i>
41.	4.2.3	OPG, AECL	<p>The first paragraph in this section currently states "To ensure that the accident management objectives are achieved, a set of strategies for severe accident prevention and accident mitigation should be developed on the basis of the understanding of accident phenomena and reactor-specific accidents, as well as the considerations of the identified reactor challenges and capabilities."</p> <p>No change. The term "accident management" is used correctly in this context, i.e. in reference to BDBA (severe accident prevention and mitigation). As such the statement is correct as is.</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	<p>Comment was acknowledged, however, there were no specific suggestions as to document modifications.</p> <p>See the response to comment 2.</p>
42.	4.2.3	OPG, AECL	<p>The third paragraph in this section currently states: "Reactor damage states, such as damaged fuel, core uncovered and damaged, core debris uncovered leading to failure of the reactor vessel, and movement of the core debris outside the reactor vessel, should be identified based on the reactor parameters monitored and considered in the development of accident management strategies."</p> <p>No change. The term "accident management" is used correctly in this context, i.e. in reference to BDBA (severe accident prevention and mitigation). As such the statement is correct as is.</p> <p>The IAEA definition and scope of "Accident Management"</p>	<p>Comment was acknowledged, however, there were no specific suggestions as to document modifications.</p> <p>See the response to comment 2.</p>

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			is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry	
43.	4.2.3	OPG, AECL	<p>The sixth paragraph in this section currently states: "The licensee should identify practical preventive and mitigation actions to achieve the accident management objectives. Generally, accident management actions should include: Bullets</p> <p>To increase the reactor coping capability against beyond-design- basis initiating events, suitable strategies should be established; for example, use of the installed SSCs for the initial accident management phase, dedicated systems or supplementary equipment stored onsite or offsite for the transition phase during which the installed SSCs are incapacitated, and offsite equipment and resources to maintain or restore fuel and containment cooling functions indefinitely."</p> <p>No change. The term "accident management" is used correctly in this context, i.e. in reference to BDBA (severe accident prevention and mitigation). As such the statement is correct as is.</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	<p>Comment was acknowledged, however, there were no specific suggestions as to document modifications.</p> <p>See the response to comment 2.</p>
44.	4.2.4	OPG, AECL	<p>The first paragraph in this section currently states: "Safety analysis to support an IAMP can be largely based on the existing analysis (e.g., documented in safety reports or probabilistic safety assessment [PSA] documents). Additional analysis, if required, should be performed specifically to address accident management issues."</p> <p>Suggested change: "Safety analysis to support ACM requirements can be largely based on the existing analysis (e.g., documented in safety reports or</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>

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			<p>probabilistic safety assessment [PSA] documents). Additional analysis, if required, should be performed specifically to address accident control and management issues."</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	
45.	4.2.4	OPG, AECL	<p>The forth paragraph in this section currently states: "Necessary computational aids should be identified and developed to assist in the overall success of accident management activities performed by the response organization prior to an actual event. These computational aids are typically obtained using simplified assumptions and are often presented graphically</p> <p>No change. The term "accident management" is used correctly in this context, i.e. in reference to BDBA (severe accident prevention and mitigation). As such the statement is correct as is.</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	<p>Comment was acknowledged, however, there were no specific suggestions as to document modifications.</p> <p>See the response to comment 2.</p>
46.	4.2.4	OPG, AECL, Bruce	<p>p.12: - on what "extended station blackout conditions" would be helpful in the following statement: "Verify that SAM would be effective for representative severe accident sequences, including multi-unit events, events triggered by natural and human-induced external hazards, and extended station blackout conditions."</p> <p>Suggested Change: Replace "extended station blackout conditions" with "events involving an extended loss of all AC power." This was previously requested in the comments submitted on September 28, 2012 (N-CORR-00531-05872), but not implemented.</p>	<p>The REGDOC was modified as a result of comments provided.</p> <p>Text was modified as suggested.</p>

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47.	4.2.5	OPG, AECL	<p>The first sentence of the first paragraph in this section currently states: "Procedures and guidelines to implement the strategies and measures for accident management should be developed and described in documents such as EOPs and SAMGs, or equivalent documents (see the requirements specified in section 3.4)."</p> <p>Suggested change: "Procedures and guidelines to implement the strategies and measures for accident control and management should be developed and described in documents such as EOPs and SAMGs, or equivalent documents (see the requirements specified in section 3.4)."</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>
48.	4.3.1	OPG, AECL, Bruce	<p>[(also applies to): Glossary. Section 4.2.1, App. A, Fig 2]: Rather than using the term "complementary design features", to be consistent with the latest terminology from the IAEA (based on Canadian feedback) it is suggested that the words "additional safety features" be used.</p> <p>Throughout the document, Replace "complementary design features" With "additional safety features." Update Fig 2 to use the term "additional safety features". This is consistent with the industry comments provided on REGDOC-2.4.1, Deterministic Safety Analysis.</p> <p>Removing the word "design" avoids the potential of associating design requirements with BDBA; design requirements are only associated with design basis accidents.</p>	<p>The REGDOC was modified as a result of comments provided. The definition of complementary design features was modified to reflect the definition provided in 2.5.2. The definition states that the terms "complementary design features" may also be referred to as "additional safety features."</p>
49.	4.3.1	OPG, AECL	<p>The second paragraph in this section currently states: "Suitable analysis tools and methods should be used, in conjunction with the existing risk (e.g., based on the identified reactor challenges and capabilities), to aid in</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>

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			<p>decision-making regarding equipment and instrumentation provisions or upgrades for accident management.”</p> <p>Suggested change: “Suitable analysis tools and methods should be used, in conjunction with the existing risk (e.g., based on the identified reactor challenges and capabilities), to aid in decision-making regarding equipment and instrumentation provisions or upgrades for accident control and management.”</p> <p>The IAEA definition and scope of “Accident Management” is different than the intended definition and scope of “Accident Management” in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	
50.	4.3.1	OPG, AECL	<p>The fifth and sixth paragraphs in this section currently state:</p> <p>“Survivability of the equipment that could be used in SAM should be evaluated through a systematic review and assessment of equipment functions and conditions based on the available knowledge and data, such as from equipment environmental qualification for DBA, severe accident testing and analysis, and engineering judgment. The following steps should be taken: identification of accident management actions used to mitigate severe accidents definition of fuel and core damage stage and time period for each accident management action identification of equipment used to perform each of the actions determination of the bounding environmental conditions to the equipment within each time period demonstration that the equipment will survive to perform its function”</p> <p>No change. The term “accident management” is used correctly in this context, i.e. in reference to BDBA (severe accident prevention and mitigation). As such the statement is correct as is.</p> <p>The IAEA definition and scope of “Accident Management”</p>	Comment was acknowledged, however, there were no specific suggestions as to document modifications.

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			is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.	
51.	4.3.1	OPG, AECL	<p>The sixth paragraph in this section currently states: "The habitability of the facilities used in accident management (such as the main control room, the secondary control room, and the emergency support facilities, including an onsite technical support centre and on onsite emergency support centre) should be assessed and assured, taking into account the environmental conditions (e.g., radiological conditions and other conditions related to lighting, ventilation, temperature and communication) within and surrounding the facilities during an accident."</p> <p>Suggested change: "The habitability of the facilities used in accident control and management (such as the main control room, the secondary control room, and the emergency support facilities, including an onsite technical support centre and on onsite emergency support centre) should be assessed and assured, taking into account the environmental conditions (e.g., radiological conditions and other conditions related to lighting, ventilation, temperature and communication) within and surrounding the facilities during an accident."</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>
52.	4.3.2	OPG, AECL	<p>The first sentence in the first paragraph of this section currently states: "Adequate instrumentation should be available at each stage of an accident for the monitoring and diagnosis of reactor conditions and for assisting in accident evaluation, accident management decision-making, and action execution."</p> <p>Suggested change: "Adequate instrumentation should be</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>No textual change was suggested.</p>

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			<p>available at each stage of an accident for the monitoring and diagnosis of reactor conditions and for assisting in accident evaluation, accident management decision making, and action execution."</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	
53.	4.3.2	OPG, AECL	<p>The first sentence in the second paragraph in this section currently states: "The reactor parameters used in each stage of accident management should be checked and evaluated for their reliability."</p> <p>Suggested change: "The reactor parameters used in each stage of accident control and management should be checked and evaluated for their reliability."</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>
54.	4.3.2	OPG, AECL	<p>The second sentence in the third paragraph of this section currently states: "Reasonable assurance should be provided that the instrumentation used to monitor severe accident progression and facilitate accident management actions is available."</p> <p>No change. The term "accident management" is used correctly in this context, i.e. in reference to BDBA (severe accident prevention and mitigation). As such the statement is correct as is.</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	<p>Comment was acknowledged, however, there were no specific suggestions as to document modifications.</p>

Comments received during first round / Commentaires reçus lors de la première période :

	Section	Organization	Comment	CNSC Response
55.	4.3.2	OPG, AECL	<p>The forth paragraph in this section currently states: "Given that during a severe accident the total information flow may be overwhelming and that some of the indications may be contradictory due to failed equipment and instrumentation, the licensee should consider using diagnostic and support tools to help with decision-making for accident management (e.g., computational aids as discussed in section 4.2.4)."</p> <p>No change. The term "accident management" is used correctly in this context, i.e. in reference to BDBA (severe accident prevention and mitigation). As such the statement is correct as is.</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	<p>Comment was acknowledged, however, there were no specific suggestions as to document modifications.</p>
56.	4.3.3	NB Power	<p>PLGS uses the Incident Command System (ICS) as a result our Emergency Response Organization (ERO) has positions that are roughly equivalent to those listed as requiring clear roles and responsibilities: Emergency response manager = Incident Commander Nuclear Safety Manager = Planning section senior tech specialist Technical advisory team = Planning section</p> <p>Perhaps a note that role titles may not be identical at each licensee.</p>	<p>The REGDOC was modified as a result of comments provided.</p> <p>The following text was added after the list of positions to clarify that position titles may vary by station:</p> <p>The above listed roles and positions may vary by station, however, if titles vary, the functions should be equivalent.</p>
57.	4.3.3	OPG, AECL	<p>The fifth paragraph in this section currently states: "Lines of authority should be clearly defined at each stage of the accident. Where evaluation responsibilities and decision-making authority are transferred from the control room staff to the technical support centre and a higher level of authority, the transition should be made at some specific point in time that poses no additional risk to accident management."</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>

Comments received during first round / Commentaires reçus lors de la première période :

	Section	Organization	Comment	CNSC Response
			<p>Suggested change: "Lines of authority should be clearly defined at each stage of the accident. Where evaluation responsibilities and decision-making authority are transferred from the control room staff to the technical support centre and a higher level of authority, the transition should be made at some specific point in time that poses no additional risk to accident control and management."</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	
58.	4.3.3	OPG, AECL	<p>The last sentence in the last paragraph of this section currently states: "Suitable backups should be pre-defined for key roles in the accident management organization, including potentially the possibility to transfer authority in whole or in part."</p> <p>No change. The term "accident management" is used correctly in this context, i.e. in reference to BDBA (severe accident prevention and mitigation). As such the statement is correct as is.</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	Comment was acknowledged, however, there were no specific suggestions as to document modifications.
59.	4.3.4	OPG, AECL, Bruce	<p>This section does not appear to specify additional requirements with respect to communication in accident management.</p> <p>Suggest Change: Delete this section as communication is addressed in REGDOC 2.10.1.</p>	<p>The REGDOC was modified as a result of comments provided.</p> <p>The middle two paragraphs were removed from the text as sufficient details concerning the communication interfaces are provided in <i>REGDOC-2.10.1, Nuclear Emergency Preparedness and Response</i>. The remaining text reiterates the importance of communication interfaces in severe accident and beyond design basis accident situations. All of sections from 4 onwards provide guidance and do not identify requirements</p>

Comments received during first round / Commentaires reçus lors de la première période :

	Section	Organization	Comment	CNSC Response
60.	5.0	OPG, AECL	<p>The second paragraph in this section currently states: "Implementation of an IAMP should consider, but not be limited to: integration of procedures, guidelines, and arrangements to ensure that interfacing issues are addressed and that all IAMP components are put in place to meet the goals of accident management verification of the procedures and guidelines to ensure that they work as intended consideration of human factors and human-machine interface issues to ensure that the required accident management actions can be implemented as intended and in a timely manner"</p> <p>Suggested change: "Implementation of ACM requirements should consider, but not be limited to: integration of procedures, guidelines, and arrangements to ensure that interfacing issues are addressed and that all ACM components are put in place to meet the goals of accident control and management verification of the procedures and guidelines to ensure that they work as intended consideration of human factors and human-machine interface issues to ensure that the required accident control and management actions can be implemented as intended and in a timely manner"</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>
61.	5.1	OPG, AECL	<p>The first sentence in the third paragraph of this section currently states: "The onsite and offsite emergency response plans and procedures should be reviewed with respect to the accident management actions, to ensure that conflicts do not exist."</p> <p>Suggested change: "The onsite and offsite emergency response plans and procedures should be reviewed with respect to the accident control and management actions, to ensure that conflicts do not exist."</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>

Comments received during first round / Commentaires reçus lors de la première période :

	Section	Organization	Comment	CNSC Response
			The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry	
62.	5.2	OPG, AECL	<p>The second paragraph of this section currently states: "Sufficient verification and validation of all aspects of human and organizational performance, including EOPs and SAMGs, to execute all the identified accident management actions should be conducted to clearly demonstrate that they can be carried out by reactor personnel under all types of conditions covered by the IAMP."</p> <p>Suggested change: "Sufficient verification and validation of all aspects of human and organizational performance, including EOPs and SAMGs, to execute all the identified accident control and management actions should be conducted to clearly demonstrate that they can be carried out by reactor personnel under all types of conditions covered by ACM requirements."</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>
63.	5.2	Bruce	<p>There needs to be some guidance provided on the level of verification and validation required/expected.</p> <p>Provide guidance on verification and validation. The level of guidance contained in 5.2 is not sufficient as it does not specify CNSC expectations on the method of verification/validation or the level of detail required.</p> <p>The level of validation needs to be commensurate with the nature of risk related to the procedures and guidelines for example; minor risks should only require low level desktop validation whereas major risks could require a full HF</p>	<p>The REGDOC was modified as a result of comments provided.</p> <p>See the response to comment 9.</p>

Comments received during first round / Commentaires reçus lors de la première période :

	Section	Organization	Comment	CNSC Response
			validation following guidance in G-278.	
64.	5.3	Bruce	<p>There needs to be some guidance provided on the level of verification and validation required/expected.</p> <p>Provide guidance on verification and validation. The level of guidance contained in 5.2 is not sufficient as it does not specify CNSC expectations on the method of verification/validation or the level of detail required.</p> <p>The level of validation needs to be consummate with the nature of risk related to the procedures and guidelines for example; minor risks should only require low level desktop validation whereas major risks could require a full HF validation following guidance in G-278.</p>	<p>The REGDOC was modified as a result of comments provided.</p> <p>See the response to comment 9.</p>
65.	5.3	OPG, AECL	<p>The seventh paragraph in this section currently states: "Consideration should be given to the fact that reactor staff may be concerned about family and friends following a beyond-design-basis initiating event and may be under extremely high stress while executing accident management actions."</p> <p>No change. The term "accident management" is used correctly in this context, i.e. in reference to BDBA (severe accident prevention and mitigation). As such the statement is correct as is.</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry</p>	<p>Comment was acknowledged, however, there were no specific suggestions as to document modifications.</p>
66.	5.4	OPG, AECL	<p>The second paragraph in this section currently states: "The training programs should be commensurate with personnel's respective roles in accident management....."</p> <p>Suggested change: "The training programs should be commensurate with personnel's respective roles in accident control and management....."</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>

Comments received during first round / Commentaires reçus lors de la première période :

	Section	Organization	Comment	CNSC Response
			The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry	
67.	5.4	OPG, AECL	<p>The third paragraph in this section currently states: "The licensee should establish qualification, training, deployment, and staffing numbers for the various organizational groups involved in accident management."</p> <p>Suggested change: "The licensee should establish qualification, training, deployment, and staffing numbers for the various organizational groups involved in accident control and management."</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>
68.	5.4	OPG	<p>REGDOC 2.2.2 has not been issued and industry has major issues with the current draft. The section does not lose any meaning by dropping the reference.</p> <p>Suggested Change: Reword the second sentence of 5.4 to: "Training should be commensurate with personnel's respective roles in accident, enabling them to:"</p> <p>REGDOC 2.2.2 has not been issued and its reference does not add anything to this REGDOC.</p>	<p>The REGDOC was modified as a result of comments provided.</p> <p>Text was modified as suggested.</p>
69.	5.4	OPG, AECL, Bruce	<p>"To the extent practicable, the licensee should use simulator training, because it provides a realistic and interactive environment and is an efficient method for enhancing human response in complex situations. The practical use of simulator training for Accident Management scenarios, i.e. BDBA/SAMG, is severely limited, particularly due to limitations of models. Each type of training to be conducted is dealt with by a Systematic-Approach-to-Training (SAT).</p>	<p>The REGDOC was modified as a result of comments provided.</p> <p>In addition, most accidents begin as DBAs and progress into BDBAs.</p> <p>The following text was added:</p> <p>While there are potential limitations to the use of simulators for BDBA, to the extent practicable...</p>

Comments received during first round / Commentaires reçus lors de la première période :

	Section	Organization	Comment	CNSC Response
			<p>Remove the last sentence of Section 5.4</p> <p>Simulator modeling is not amenable to supporting the running of SAMG and EME drills for BDBA scenarios.</p>	<p>The use of simulators should still be considered as insights can still be provided into operator behaviour and reactions to accident situations.</p>
70.	6.1	OPG, AECL, Bruce	<p>The use of "verification" in the first bullet should be rephrased to reflect the anticipated review activity.</p> <p>Suggested Change: Revise first bullet: "verification review that the selection and scope of the IAMP meet requirements"</p>	<p>The REGDOC was modified as a result of comments provided.</p> <p>The text was modified as suggested.</p>
71.	6.1	Bruce	<p>There needs to be some guidance provided on the level of verification and validation required/expected.</p> <p>Provide guidance on verification and validation. The level of guidance contained in 5.2 is not sufficient as it does not specify CNSC expectations on the method of verification/validation or the level of detail required.</p> <p>The level of validation needs to be consummate with the nature of risk related to the procedures and guidelines for example; minor risks should only require low level desktop validation whereas major risks could require a full HF validation following guidance in G-278.</p>	<p>The REGDOC was modified as a result of comments provided.</p> <p>See the response to comment 9.</p>
72.	6.2	OPG, AECL	<p>The first paragraph in this section currently states: "Reactor design capabilities for accident management, such as containment venting, hydrogen mitigation, and coolant make-up provisions should be identified and their effectiveness should be evaluated."</p> <p>Suggested change: "Reactor design capabilities for accident control, such as containment venting, hydrogen mitigation, and coolant make-up provisions should be identified and their effectiveness should be evaluated."</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>

Comments received during first round / Commentaires reçus lors de la première période :

	Section	Organization	Comment	CNSC Response
			is leading to confusion within the industry.	
73.	6.2	OPG, AECL, Bruce	<p>The third paragraph states that: "essential reactor monitoring features and instrumentation for diagnosing reactor state should be identified and verified for severe accident conditions". This should be rephrased to reflect the requirement to assess for reasonable assurance.</p> <p>Suggested Change: It is recommended that this bullet be rephrased to "reasonable assurance that ... will function" rather than "verified to function". Revise: "Essential reactor monitoring features and instrumentation for diagnosing reactor state should be identified and verified for severe accident conditions, so that they function reliably and provide meaningful data." To: "Essential reactor monitoring features and instrumentation for diagnosing reactor state should be identified for severe accident conditions and reasonable assurance is provided that they will function reliably and provide meaningful data." This was previously requested in the comments submitted on September 28, 2012 (N-CORR- 00531-05872), but not implemented.</p>	<p>The REGDOC was modified as a result of comments provided.</p> <p>The text was modified as suggested.</p>
74.	6.3	OPG, AECL	<p>The first paragraph in this section states as follows: "The licensee should perform an assessment to determine the availability of coolant, energy, and other materiel resources that may be required for the effective completion of accident management actions."</p> <p>Suggested change: "The licensee should perform an assessment to determine the availability of coolant, energy, and other materiel resources that may be required for the effective completion of accident control actions."</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>

Comments received during first round / Commentaires reçus lors de la première période :

	Section	Organization	Comment	CNSC Response
			is leading to confusion within the industry.	
75.	7.0	OPG, AECL	<p>The forth bullet in the third paragraph in this section currently states: "performance capabilities for the systems and equipment that are used in support of accident management procedures and actions"</p> <p>Suggested change: "performance capabilities for the systems and equipment that are used in support of accident control and management procedures and actions"</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>
76.	7.0	OPG	<p>The second bullet in the forth paragraph in this section currently states: distinct stages of an accident progression if no accident management actions are credited"</p> <p>Suggested change: "distinct stages of an accident progression if no accident control and management actions are credited"</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>
77.	8 Glossary	OPG, AECL	<p>The following entry is contained in the glossary: "accident management The taking of a set of actions during the evolution of an accident to prevent the escalation of the accident, to mitigate the consequences of the accident, and to achieve a long-term safe stable state after the accident."</p> <p>Suggested change: "accident control and management The taking of a set of actions during the evolution of an accident to prevent the escalation of the accident, to</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the responses to comments 2 and 4.</p>

Comments received during first round / Commentaires reçus lors de la première période :

	Section	Organization	Comment	CNSC Response
			<p>mitigate the consequences of the accident, and to achieve a long-term safe stable state after the accident. In specific accident control applies to DBA under level 3 of the defence-in-depth approach and accident management applies to BDBA including severe accidents under the level 4 of the defence-in-depth approach."</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	
78.	8 Glossary	OPG, AECL	<p>The following entry is contained in the glossary: "offsite The facilities and organizations outside the juridical consideration of the licensed facility, including the various federal, provincial and municipal organizations that are required to communicate with and respond to a facility accident in accordance with the facility accident management procedures."</p> <p>Suggested change: "offsite The facilities and organizations outside the juridical consideration of the licensed facility, including the various federal, provincial and municipal organizations that are required to communicate with and respond to a facility accident in accordance with the facility accident control and management procedures."</p> <p>The IAEA definition and scope of "Accident Management" is different than the intended definition and scope of "Accident Management" in REGDOC - 2.3.2 and as such is leading to confusion within the industry.</p>	<p>While the input was noted, no change was made to the document as a result of the comment.</p> <p>See the response to comment 2.</p>
79.	8 Glossary	OPG, AECL, Bruce	<p>"severe accident": Accident conditions more severe than a design basis accident and involving significant core degradation." The definition differs from the corresponding definition in REGDOC-2.5.2</p> <p>Suggested change: "severe accident" - "An accident more severe than a design-basis accident and involving severe fuel degradation in the reactor core or spent fuel pool."</p>	<p>The REGDOC was modified as a result of comments provided.</p> <p>The text was modified to make consistent with 2.5.2:</p> <p>severe accident An accident more severe than a design-basis accident and involving severe fuel degradation in the reactor core or spent fuel pool</p>

Comments received during first round / Commentaires reçus lors de la première période :

	Section	Organization	Comment	CNSC Response
			Consistency in use of terminology is needed.	
80.	9 – Appendix A	OPG, AECL	<p>Figure 2 in Appendix A is confusing. It implies that Level 4&5 belongs to the EP program and does not fall under accident management. Suggested changes in definition in comments 2 and 3, plus suggested changes in comments 9, 12 and 13 impact on the current figure 2.</p> <p>Suggested change: Attached is a revised version of Fig 2 clarifying the relationships. This includes suggested changes to align the definitions in comments 2, 3, 9, 12 and 13.</p> <p>Consistency in the relationship between “design extension conditions”, beyond design basis accidents and severe accidents is needed for emergency preparedness and consistency with other regulatory documents. Alignment of definitions with suggested changes.</p>	<p>The REGDOC was modified as a result of comments provided.</p> <p>See the response to comment 35 for modification of Figure 2</p> <p>See the response to comments 2 and 4 for definition.</p> <p>See the response to comment 16 for DEC’s.</p>
81.	9 – Appendix A	OPG, AECL, Bruce	<p>Figure 2: The provisions “complementary design features” and “containment and design feature” are both mentioned under the “mitigation” portion for “beyond design basis accidents”. Are these two provisions meant to be the same?</p> <p>If the meaning “complementary design features” and “containment and design feature” is meant to be one and the same, consider replacing both terms with “additional safety features”.</p> <p>“containment and design feature” is not a clearly understood term and therefore that could lead to confusion.</p>	<p>The REGDOC was modified as a result of comments provided.</p> <p>See the response to comment 35 for modification of Figure 2.</p>
82.	9 – Appendix A	Bruce	<p>Figure 2 in Appendix A is confusing. It implies that Level 4&5 belongs to the EP program and does not fall under accident management. Suggested changes in definition in comments 2 and 3, plus suggested changes in comments 9, 12 and 13 impact on the current figure 2.</p>	<p>The REGDOC was modified as a result of comments provided.</p> <p>See the response to comment 35 for modification of Figure 2</p> <p>See the response to comments 2 and 4 for definition.</p>

Comments received during first round / Commentaires reçus lors de la première période :

	Section	Organization	Comment	CNSC Response
			<p>Suggested change: Attached is a revised version of Fig 2 clarifying the relationships. This includes suggested changes to align the definitions in comments 2, 3, 9, 12 and 13.</p> <p>Major Consistency in the relationship between “design extension conditions”, beyond design basis accidents and severe accidents is needed for emergency preparedness and consistency with other regulatory documents. Alignment of definitions with suggested changes.</p>	<p>See the response to comment 16 for DECs.</p>

Additional comments received from industry July 2014				
83	General	AECL, OPG, Bruce Power, NB Power	<p>Consultation should continue with CSA regarding alignment with planned CSA standards related to beyond design basis accident management</p> <p>If a CSA standard is issued to cover this subject, a REGDOC may not be required.</p> <p>It is important for direction to be aligned. CSA standards, developed with CNSC participation is recognized in licenses, etc. It is not efficient to have requirements covering the same area in different documents.</p>	<p>While the comment was noted the text was not changed as a result of this comment.</p> <p>In developing REGDOCs CNSC staff remains cognizant of any and all applicable standards including those produced by the CSA Group and work to ensure minimal duplication of information. As well, the CNSC's active role in the development of CSA standards militates against duplication and overlap.</p> <p>The scope and objective of the CSA standard are to provide a holistic overview of requirements for BDBAs. It cannot, and is not intended to, provide detailed requirements in all the topic areas touched by BDBAs.</p> <p>REGDOC-2.3.2 is a dedicated regulatory document on accident management for all classes of accidents. It sets out regulatory requirements and guidance for licensees to develop, implement and validate integrated accident management programs. This allows the transitions from emergency operating procedures to emergency mitigating equipment guidelines to severe accident management guidelines to be treated in a way that does not depend on arbitrary accident classes but on the measured plant condition.</p> <p>In addition, the publication of REGDOC 2.3.2 will help ensure that future CSA standards concerning beyond design basis accident management issues are aligned with established regulatory requirements.</p>
84	Section 2 Figure 1	AECL, OPG, Bruce Power, NB Power	<p>CNSC have acknowledged the role of Emergency Mitigating Equipment Guidelines and included these in the document but they are not included in the discussion in Section 2 and in Figure 1.</p> <p>In the Defence in Depth Level 4 it is recommended that CNSC includes the EMEG role in parallel with EOPs. This can be included in Figure 1.</p>	<p>The suggested change was made as it improves clarity without affecting regulatory intent.</p> <p>Emergency Mitigating Equipment Guidelines (EMEGs) is now included in Figure 1.</p>

Comments received during first round / Commentaires reçus lors de la première période :

85	Section 4.2.4	AECL, OPG, Bruce Power, NB Power	<p>It is important to clarify the activity that SAM would be “assessed to be effective” for representative severe accident sequences rather than “verified to be effective”.</p> <p>It is recommended that “verify that SAM actions would be effective to counter challenges to protective barriers” be reworded to: “assess that SAM actions would be effective to counter challenges to protective barriers”.</p> <p>Owing to the uncertainties in beyond design basis and severe accident conditions, it may not be possible to meet the rigors associated with verification.</p>	<p>The suggested change was made as it improves clarity without affecting regulatory intent.</p> <p>The document is changed as suggested, namely, replacing “verify” with “assess”.</p>
86	Section 4.3.1 last paragraph	AECL, OPG, Bruce Power, NB Power	<p>Habitability of facilities should also include an option to relocate to designated alternate facilities.</p> <p>Add to the end of the last paragraph “or provide alternate habitable facilities.”</p>	<p>The suggested change was made as it improves clarity without affecting regulatory intent.</p> <p>The following sentence is added at the end of the last paragraph: “Where necessary, alternate habitable facilities should be provided.”</p>
87	Section 4.3.1	AECL, OPG, Bruce Power, NB Power	<p>It is important to maintain consistency with the CNSC use of the term “complementary design features” throughout this document.</p> <p>In the first paragraph it is suggested to replace “Dedicated systems and design features...” with “Dedicated systems and complementary design features...”.</p>	<p>The suggested change was made as it improves clarity without affecting regulatory intent.</p> <p>The document is changed as suggested, namely, using “complementary design features”.</p>
88	Section 4.3.2	AECL, OPG, Bruce Power, NB Power	<p>It is important to clarify that the application of verification to SAM is onerous.</p> <p>It is recommended that “Any key instrumentation reading from a non-qualified instrument that is used to diagnose reactor conditions for SAM should have an alternate method, (possibly including computational aids) to verify the reading.” be reworded to “Any key instrumentation reading from a non-qualified instrument that is used to diagnose reactor conditions for SAM should have an alternate method, (possibly including computational aids) to compare the reading.”</p>	<p>The suggested change was made as it improves clarity without affecting regulatory intent.</p> <p>The document is changed as suggested, namely, using “to compare the reading”.</p>

Comments received during first round / Commentaires reçus lors de la première période :

			Owing to the uncertainties in beyond design basis and severe accident conditions, it may not be possible to meet the rigors associated with verification. Methods such as computational aids provide a means of comparison. In severe accident, trends and trend rate may serve as a reasonable alternate to an absolute reading.	
89	Section 5.2	AECL, OPG, Bruce Power, NB Power	<p>For beyond design basis scenarios it may not be possible to “confirm all specified actions are possible”. The guidelines used provide a range of options and alternatives that may be used depending on the specific event progression.</p> <p>It is suggested to replace “confirm all specified actions are possible” with “confirm all the specified actions are reasonable”.</p>	<p>The suggested change was made as it improves clarity without affecting regulatory intent.</p> <p>The document is changed as suggested, namely, using “confirm all the specified actions are reasonable”.</p>
90	Section 5.2	AECL, OPG, Bruce Power, NB Power	<p>This REGDOC covers AOOs, DBAs and BDBAs .This document should recognize that a graded approach should be applied to verification and validation.</p> <p>Add the statement after the first sentence in section 5.2 to state “A graded approach should be applied.”</p> <p>Consistent with industry practice of using a graded approach depending on the accident category and also consistent with existing regulatory documents such as REGDOC 2.4.1.</p> <p>This comment reflects a common theme with a number of our other comments.</p>	<p>In response to the comment the following sentence was added after the first sentence of section 2.5.2:</p> <p>“The level of documentation required will depend upon the complexity of issues addressed and the potential impact on safety.”</p>
91	Section 5.4	AECL, OPG, Bruce Power, NB Power	<p>Industry had noted the concern regarding the use of simulator training for BDB and SAMG response in its comments on the earlier version of this document. The practical use of simulator training for BDBA/SAMG is limited due to limitations of the models. It is also recognized that the training requirements for BDBA response will be distinct from the DBA response training. Industry has recognized this important distinction in developing its training programs. Industry feels that the use of simulator training “to the extent practicable” is not in keeping with this philosophy.</p>	<p>The suggested change was made as it improves clarity without affecting regulatory intent.</p> <p>The document is changed as suggested, namely, using: “While there are potential limitations to the use of simulators for BDBA, the licensee should use simulator training, as appropriate, because it provides a realistic and interactive environment, and is an efficient method for enhancing human response in complex situations. Where simulator training is not used, other means to address the human response / human and organizational performance aspects should be implemented.”</p>

Comments received during first round / Commentaires reçus lors de la première période :

			<p>It is suggested to replace “While there are potential limitations to the use of simulators for BDBA, the licensee should use simulator training, to the extent practicable, because it provides a realistic and interactive environment, and is an efficient method for enhancing human response in complex situations.” with “While there are potential limitations to the use of simulators for BDBA, the licensee should use simulator training, as appropriate, because it provides a realistic and interactive environment, and is an efficient method for enhancing human response in complex situations. Where simulator training is not used, other means to address the human response / human and organizational performance aspects should be implemented.”</p> <p>It is important to give training organizations the flexibility to use simulators as appropriate for BDBA rather than to the extent practicable. Other more effective means can be used to provide BDB training to staff.</p>	
92	Section 6.2	AECL, OPG, Bruce Power, NB Power	<p>It is important to clarify that the application of verification to SAM is onerous.</p> <p>It is recommended that “Essential reactor monitoring features and instrumentation for diagnosing reactor state should be identified and verified for severe accident conditions, and reasonable assurance must be provided that they will function reliably and provide meaningful data.” be reworded to “Essential reactor monitoring features and instrumentation for diagnosing reactor state should be identified and assessed for severe accident conditions, and reasonable assurance should be provided that they will function reliably and provide meaningful data.”</p> <p>Instrumentation and equipment are assessed for survivability under severe accident conditions. Application of the rigors of verification for severe accident conditions is too onerous given the degree of uncertainties. As noted in the above comments, alternate methods to instrument</p>	<p>The suggested change was made as it improves clarity without affecting regulatory intent.</p> <p>The document is changed as suggested, namely, using: “Essential reactor monitoring features and instrumentation for diagnosing reactor state should be identified and assessed for severe accident conditions, and reasonable assurance should be provided that they will function reliably and provide meaningful data.”</p>

Comments received during first round / Commentaires reçus lors de la première période :

			readings may be used.	
93	Figure 2	AECL, OPG, Bruce Power, NB Power	<p>Off-site emergency support may be invoked for Design Basis Accidents as well.</p> <p>Suggest extending the off-site emergency support bar into the DBA area. Industry had made this suggestion as part of its original comment set.</p>	<p>The suggested change was made as it improves clarity without affecting regulatory intent.</p> <p>The Off-site emergency support box in the diagram was extended to partially cover the DBA area. While for most DBAs there should not be a need for off-site support, however, there are times when during a specific DBA event it may be prudent to invoke off-site support.</p>