Bruce Power comments on REGDOC-2.3.2, Accident Management

#	Section	Industry issue	Suggested change(if applicable)	Major Comment/ request for clarification [1]	Impact on industry if major comment
1	General	**Major** - 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.	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.	**Major**	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. Development and management of a separate IAMP document would be an unnecessary administrative burden on the licensees.
2	General	**Major** - The definition of "Accident Management" in this document is not consistent with the IAEA definition.	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."	**Major**	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.

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3	General	**Major** - Accident Control requires to be similarly defined to ensure correct application of the terms in the text:	Suggested definition of "Accident Control": The taking of a 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.	**Major**	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).
4	General	**Major** - Correct application of the terms "Accident Management" and "Accident Control" throughout the document.	Attachment 1 includes all occurrences of the terms and the suggested aligned usages of the terms.	**Major**	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).
5	General	**Major -** 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.	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.	**Major**	EME is an important part of accident management at Canadian NPPs and its positioning within Accident Management needs to be clearly documented.

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#	Section	Industry issue	Suggested change(if applicable)	Major Comment/ request for clarification [1]	Impact on industry if major comment
6	General	**Clarification** - 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 sub-sections with the requirements.	Standard format for REGDOCs	**Clarification**	
7	General Section 3.4 Bullet 1 Section 5.2 Section 5.3 Section 6.1	**Major** - There needs to be some guidance provided on the level of verification and validation required/expected.	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.	Major Comment	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.
8	Section 1.2, Figure 1, Glossary	**Major** - "… beyond-design-basis accidents (BDBAs), including severe accidents." The concept of "design extension conditions" 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	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	**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.

#	Section	Industry issue	Suggested change(if applicable)	Major Comment/ request for clarification [1]	Impact on industry if major comment
			extension conditions, BDBA and severe accidents.		
9	Section 3.3	**Major** - 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."* 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.	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**."*	**Major**	The revision is required to prevent unintended imposing of design requirements for BDBAs; design requirements apply to the design basis.

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#	Section	Industry issue	Suggested change(if applicable)	Major Comment/ request for clarification [1]	Impact on industry if major comment
10	Section 3.5 Bullet 4	**Clarification** - "ensure that the IAMP contains provisions for the setup of a technical support centre to support SAM"	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." **This is consistent with REGDOC-2.5.2 Section 8.10.3**	**Clarification**	
11	Section 3.5 Bullet 6	**Clarification -** Habitability of facilities should also include an option to relocate to designated alternate facilities.	Suggest Change: adding the following wording to the end of 3.5 sub bullet #6: "…. or provide alternate habitable facilities."	**Clarification**	
12	Section 4.2.1	**Clarification** - 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.*	Suggested Change: **Delete "**irrespective of predicted frequencies of occurrence for those damage mechanisms". ….in item (c) in Requirement #4 of Section 3.4	**Clarification**	

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#	Section	Industry issue	Suggested change(if applicable)	Major Comment/ request for clarification [1]	Impact on industry if major comment
13	4.2.4 p. 12	**Clarification** - 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."	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.	**Clarification**	
14	Section 4.3.1 and Glossary. Section 4.2.1 App. A, Fig 2	**Major** - 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.	Suggested Change: 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.	**Major**	Removing the word "design" avoids the potential of associating design requirements with BDBA; design requirements are only associated with design basis accidents.
15	Section 4.3.4	**Clarification** - This section does not appear to specify additional requirements with respect to communication in accident management.	Suggest Change: Delete this section as communication is addressed in REGDOC 2.10.1.	**Clarification**	

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#	Section	Industry issue	Suggested change(if applicable)	Major Comment/ request for clarification [1]	Impact on industry if major comment
16	Section 5.4	**Major** - 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.	Suggested Change: Reword the second sentence of 5.4 to: *"Training should be commensurate with personnel's respective roles in accident, enabling them to:"*	**Major**	REGDOC 2.2.2 has not been issued and its reference does not add anything to this REGDOC.
17	Section 5.4	**Major** - 5.4 states: *"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),	Suggested Change: Remove the last sentence of Section 5.4	**Major**	Simulator modeling is not amenable to supporting the running of SAMG and EME drills for BDBA scenarios.
18	6.1	**Clarification -** The use of "verification" in the first bullet should be rephrased to reflect the anticipated review activity.	Suggested Change: Revise first bullet: "~~verification~~ review that the selection and scope of the IAMP meet requirements"	**Clarification**	

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#	Section	Industry issue	Suggested change(if applicable)	Major Comment/ request for clarification [1]	Impact on industry if major comment
19	6.2	**Clarification** - 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.	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.	**Clarification**	
20	Appendix A, Figure 2	**Major** - 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?	Suggested Change: 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".	**Major**	"containment and design feature" is not a clearly understood term and therefore that could lead to confusion.

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#	Section	Industry issue	Suggested change(if applicable)	Major Comment/ request for clarification [1]	Impact on industry if major comment
21	Appendix A, Figure 2	**Major** - 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.	Suggested change: Attached is a revised version of Fig 2 clarifying the relationships. This includes suggested changes to align the definitions in comments2, 3, 9, 12 and 13.	**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.
22	Glossary	**Major** - "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	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."	**Major**	Consistency in use of terminology is needed.