Comments on Draft Guidance Document – Guidance for Nuclear Criticality Safety (GD-327)

Reviewer: AECL Criticality Safety Program
Country/Organization: Canada, AECL

Comment No.	Page/Para/ Line No.	Proposed new text (if applicable)	Reason/Comment
1	Page 1 Section 1.0		There are many mandatory requirements in GD-327, which are not reflected in RD-327. GD-327 is more than guidelines on how to meet the requirements in RD-327. The scope needs to make it clear that the general requirements in RD-327 are explained in further detail, in addition to providing guidance on how to meet the requirements.
2	Page 1 1.1 Purpose 1st para	Add: "This document also includes requirements for alarms, as well as for shielding in areas to minimize the dose from a criticality accident.	This document goes beyond just prevention in that it also includes requirements for alarms, as well as for shielding in areas to minimize the dose from a criticality accident.
3	Page 1 Section 1.2 para 2 and sections 4.0 to 16.0	Delete "shall".	This document should not include "shall" statements or requirements that are not in the regulatory document.
4	Page 2 Section 1.4		Why has ANSI/ANS-8.9 (Nuclear Criticality Safety Guide for Steel-Pipe Intersections Containing Aqueous Solutions of Enriched Uranyl Nitrate) been excluded from this list?
5	Page 5 Section 2.0	Recommend changing numbers to make it easier to align sections with the RD-327 document. If numbers cannot be changed, then at least add a reference to the section from the RD-327 document to which the section in the GD-327 document refers.	Confusing for the user of the document. As is written, it is necessary to check titles instead of section numbers to ensure that both documents align.
6	Page 6 2.3.1 First line	"The operations with fissionable materials shall follow the requirements. Recommendations should or may be followed in this document."	Requirements should be in the requirement document and recommendations should be just recommendations. Note that similar statements

			appear in other places of the document.
7	Page 6 2.3.1.1 First Line		Facility needs to be defined/clarified. The term "Facility" as defined in NSCA is too narrow and does not include all of AECL's nuclear criticality controlled areas.
8	Page 6 2.3.1.2 2a	Add at end: "If combinations of only U-233 and U-235 are possible, then facility is safe with an exemption quantity of less than 500 g in total."	Provides further clarification.
9	Page 8 2.3.2.2 Parag. # 1 and elsewhere 12.8.1 Pge 142/point 2		This is very much beyond the ANSI/ANS standard's requirement. The ANSI standards do not use 10^{-6} per year. They use the double contingency principle. Such a low frequency is hard to demonstrate for a process that is performed manually. The frequency of 10^{-6} does not appear to be risk-based. The consequences of a criticality accident are similar to the consequences of an automobile accident. Frequencies of much greater than 10^{-6} are accepted for automobile accidents. The use of such a low frequency for criticality accidents can lead to improper allocation of safety resources because it is not risk-based. To put it in another perspective, the "core damage frequency" target of a new nuclear power plant is "10^{-5} per reactor year" (Reference: Appendix B of CNSC's document RD-152, "Guidance on the use of Deterministic and Probabilistic Criteria in Decision-making for Class I Nuclear Facilities"). 10^{-6} per year is not justifiable by a risk-based argument and we recommend that it be replaced by the use of the Double Contingency Principle.
10	Page 8 2.3.2.2, 1 b) (ii)	Include other critical parameters.	Need to include parameters other than mass. Mass is not the only parameter that can be controlled to ensure subcriticality.
11	2.3.2.2/2 1st sentce	"conditions"	There is more than one condition.

12	Page 9 2.3.2.3 Paragraph 3		The text should be made consistent with the requirement for credible abnormal conditions. Since Section 2.3.2.2 requires that event sequences with a frequency of occurrence equal to or greater than 10^{-6} per year are subcritical, credible event sequences can involve multiple inadvertent departures from a procedure, rather than a single inadvertent departure. This section quotes double contingency process which contradicts 10^{-6} frequency.
13	2.3.2.6 2nd para	Why is there no requirement for maintaining records on changes to the procedures? Why there is no requirement for change control for changes to procedures, especially since a major cause for criticality events has been improper use of procedures or deviations from procedures? Also, operating procedures for a significant operations barrier for nuclear criticality safety.	Since nuclear criticality safety has a large component based on control of processes, configuration management on the procedures and change control of the procedures is as important as configuration management and change control of the physical facility configuration. Also, since a large part of the nuclear criticality safety analysis is based on analyzing deviations from processes, changes to procedures can negatively impact the criticality safety analysis. Note Section 2.3.2.2 requires determining the entire process will be subcritical before changing an existing operation. Also, Section 2.3.2.3 requires written procedures.
14	Page 10 2.3.3.1	Delete “The influence of variations on these parameters on the k-eff of the system shall be understood.”	If single-parameter limits are used, then there will be very little known about the effect of the controlled parameter on k-eff because k-eff will not be calculated.
15	Page 11 2.3.3.2	Sections 2.3.3.2.2, 2.3.3.2.3, 2.3.3.2.4, 2.3.3.2.5, and 2.3.3.2.6, 2.3.3.4 are not topics that are covered in the RD-327 document.	Should these sections be in the RD document as well?
16	Page 12 2.3.3.2.1	An explanation on the relationship between the double contingency principle and the frequency cut-off of 10^{-6} per year for credible abnormal conditions should be provided.	The definition of “possible” in the double contingency principle should be associated with the frequency cut-off of 10^{-6} per year for credible abnormal conditions. The frequency cut-off of 10^{-6} per year for credible abnormal conditions can lead to considering event sequences with more than two unlikely,

			independent, and concurrent changes in process conditions.
17	Page 12 2.3.3.2.1		It is not clear how the cutoff of 10^{-6} and the double contingency principle relate. If a single event is shown to cause the USL to be exceeded but the event has a frequency of 10^{-8}, should it be included or excluded?
18	Page 12 2.3.3.5	What is the alternative requirement when a bias cannot be established?	Guidance needed when no experimental data available.
19	Page 13 2.3.3.5 Page 15 2.4 Page 19 2.5		Pointer to validation should be 2.3.4
20	Page 13 2.3.3.6	Change text to “Neutron reflection shall be considered as a parameter for criticality control”	Consideration of neutron reflection is mandatory when doing nuclear criticality safety analysis. The derivation of an Upper Subcritical Limit can be negatively impacted by nearby neutron reflectors.
21	Page 15 2.4	Recommend the source of the information, especially the tables, be added to the document in this section.	Give references as shown in Table 4-1. Table 4-1 provides references for fact.
22	Page 16 2.4.1 Table 2.1		There appears to be a typo in the Table 2.1. The reference of $^{235}UO_2F_2$ should be “12”.
23	Page 17 2.4.3 pgh 2	Should be reworded to clarify.	“U-234 is considered to be U-233 or U-235” does not make sense.
24	Page 19 2.5.1 and possibly implications elsewhere		Reference 18 comes up with “maximum safe values”. Ref 18 states, “safe masses and dimensions are calculated to correspond to values of k_{eff} lying 0.02 below the average curves.” This implies an allowance for bias, uncertainty, and administrative margin for criticality of 0.02. This is inconsistent with the value of 0.05 for administrative

			margin to sub criticality given in the regulatory document. While the limits that Reference 18 states may be ok because of long use, there needs to be some guidance as to whether they can be used since they would not be acceptable based on the regulatory document alone and if they can be used there should be some acknowledgement of the inconsistency and justification for the use of these limits. If these are acceptable limits they should appear in the regulatory document not just by reference to the guidance document. Other limits in the guidance document should also be examined to see if they conform to the requirement for a 0.05 administrative margin of sub criticality.
25	Page 21 2.5.4 and Table 2.7		It is not clear why the subcritical mass limits in the text of 0.53, 0.74, and 0.99 are different from the values in Table 2.7 of 0.57, 0.78, and 1.02...
26	Page 23 3.1 Line 6	…provide a means of alerting personnel and a process for their prompt evacuation…	Change “procedure” to “process”
27	Page 23 2.3 2nd parag		
28	Page 23 3.2 Line 4		What is meant by ‘excessive radiation dose to personnel’?
29	Page 23 3.3.1 2nd parag.	… alarm system meeting the requirements of RD-327…	There are no requirements in this document so you can’t “meet the requirements of this document”
30	Page 24 3.3.2.1		Most of the text in the various sections are extracted from the various ANS standards and are assumed to be accurate. However, some of them have been modified substantially with no justification. For

			example, the meaning of 4th point of Section 3.3.2.1 is not clear (and it is something more than Section 4.2.1 of ANS 8.3, "Criticality Accident Alarm Systems".)
31	Page 24 3.3.2.1 Line 2	(containing **any** of these three nuclear substances)	It is not obvious that all three do not have to be present.
32	Page 28 3.4.7	Is 0.2 Gy in one minute at 2 m from the reacting material considered to be the criterion for "excessive radiation dose to personnel"? The criticality alarm trip point should be set to give the alarm before the minimum accident of concern was reached.	It is unclear how ALARA has been taken into consideration.
33	Page 31 Section 4		Consider adding wording to the effect that this only applies to systems where the rschig rings are required to maintain subcriticality. Someone could perhaps decide to add raschig rings for extra safety even though they are not required to maintain subcriticality. Having to comply with this section in this case could be prohibitive and discourage their use as an extra safety measure. Suggest expanding applicability to borated glass beads.
34	Page 39 4.7.4	The initial interval for inspection of rings should appear in RD-327.	A hard requirement belongs in RD-327.
35	Page 46 6.3.2 7th paragraph	Change "shall". Add "unless they have been shown to be subcritical when flooded with water"	"Shall" should not appear in a guidance document unless it is already in the regulatory document. There is no need to prevent accumulation of water if the system is subcritical when flooded, unless flooding is being credited as a contingency under the double contingency principle.
36	Page 47 6.4 2nd paragraph		K-eff of 0.95 appears to be inconsistent with the arbitrary allowance for k-eff of 0.05 required by the regulatory document. This will only be consistent if the bias and uncertainty are assigned values of zero.

37	Page 49 6.4.6 pgh 1		Not sure of intent of “two contiguous vaults”. Please clarify.
38	Page 51 6.5.6 Table 6-1	There could maybe be a footnote indicating that H/U is the atomic ratio (applies to other subsequent tables as well).	
39	Page 63 7.4 2nd paragraph		Justification needs to be provided for 10^{-5}.
40	Page 81 Sec 11	Rename title to “ …ENRICHED REACTOR FUEL …’	Nothing in the section depends on LWR characteristics. Documents should be technology neutral.
41	Page 85 12.3.1 2nd parag.		Please clarify the meaning of this sentence: “Distinction may be made between shielded and unshielded facilities, **with appropriate criticality controls in all cases**.”
42	Page 90 12.8.1 2nd paragraph (in italics)	Remove or provide context	This statement is only applicable if credit is being taken for shielding and/or confinement.
43	Page 93 13.3		Some provision should be made for those that seldom work in the facility to work under the direct supervision of a trained facility staff member.
44	Page 96 13.6.6 1st Line		The word “policy” requires a definition.
45	Page 98 14.4.1 last pgh		Unclear what fissionable material accountability has to do with neutron absorbers – please clarify intent.

46	Page 100 14.4.3 3rd parag.	Possibly “non-destructive”	Undefined character is used in error - please replace
47	Page 105 16.0 General Statement		What is the relationship between Section 16 of GD-327 and G-225, Emergency Planning at Class I Nuclear Facilities and Uranium Mines and Mills? G-225, Emergency Planning at Class I Nuclear Facilities and Uranium Mines and Mills, describes guidelines for emergency planning. It is unclear whether the licensees are required to follow both sets of guidance, and how will any conflicts between the two sets of guidance be resolved.
48	Page 113 App A		Should add: “Addition of organic solvent to aqueous solution (or vice versa) to cause unexpected concentration of fissile components in new solvent” to the list of possible initiating events [cause of at least one historical criticality accident].
49	Page 115 App B.3 Title	“Subcriticality”	“Subcriticaliy”
50	Page 115 B.3 1st sntce		This sentence essentially says that k is less than a margin in k. The sentence should be rewritten.
51	Page 115 App B B.3, B.4		The USL defined in section B.4 is not consistent with that defined in section B.3. If 3σ (corresponding to the confidence level of 99% for statistics error of the calculations) is considered as Δkp then the final formula will be: $kp + 3\sigma \leq kc - \lvert\Delta kc\rvert$, where kc and Δkc depend on the computer code and the benchmark experiments used for the code validation.
52	Page 115 B.3 & B.4		The separation of delta-kp into delta-kp1 and delta-p2, (although never defined, but implied in middle of page 116), is very unusual and not ‘practical’. Codes

			can and will give one the sigma, or delta-kp1. The validation exercise will give the delta-kp2 part; and this is already included in the USL. Then, going from kp + delta-kp <USL to kp +**2** sigma <USL is not explained,. Further, the next step of requiring **kp+3 sigma < 0.95** is not really justified.
53	Page 117 B.4		There needs to be a little more explanation of what ∆kp1 a ∆kp2 are, perhaps with an example.
54	Page 120 App C In general		It should be mentioned that this example is for determining kc and Δkc, not for USL on the k_{eff} because the margin of Δkm is not required in the ANSI/ANS-8. Standards.
55	Page 120 App. C C.3 Fig. C-1		In figure C-1, the note that says "best estimate of k_{eff} computed …(SEE B.3.5)". Should B.3.5 be noted in this document as a reference? Appendix B of ANS 8.1.
56	Page 122 C.3 Last Parag		The second last sentence says "a margin in k_{eff} sufficient to compensate for uncertainty in the bias and to assure sub criticality was judged to be 0.03 in…and 0.05 at….". Is it up to the analyst to judge what the appropriate margin is? This is different from the number stated in p. 116 (50 mk).
57	Page 122 C.3 Last Parag		The last statement says " Any system computed by this method, no greater than 0.9746, ….. is confidently expected to be subcritical". The number 0.9746 appears to have made use of a positive bias (+0.0046 from Table C-5). Is this consistent with the absolute value expressed in the equation (p.115).
58	Page 141 App G In general	USL on a controlled parameter of a fissionable system depends on specific characteristics of the system. Hence, there is not sufficient information (or proof) in an Accident Sequence Assessment to evaluate criticality for a sequence or a system. For example, G.3.3, the columns of "Preventive Safety Parameter", the conclusion of "critical mass exceeded". This column	Criticality should only be evaluated after combining other accident sequences identified as credible. The example of an Accident Sequence Assessment report in this Appendix does not clearly show a list of the credible/incredible abnormal conditions (or credible/incredible accident sequences) identified for the facility and its operations. Therefore, to be

		should evaluate the scale of exceeding the administrative mass limit (such as how many batches that may be exceeded in this accident sequence).	practical, requirements/purposes of an Accident Sequence Assessment Report should be modified.
59	Page 141 G.1 point 2		There is an assumption that the applicable documents and CNSC requirements cover the full range of methods of preventing nuclear criticality. This point is overly restrictive as the applicable document and CNSC requirements do not cover the full range of methods preventing nuclear criticality.
60	Page 146 G.3.3	"identifies"	Accident Identifier/1st sentence "dentifies"
61	Page 155	Delete "applicable to the evaluation of the neutron absorber system"	"Benchmark Experiment" Note that even with this correction, the definition is similar to but not the same as that given on page 115 Section B.2. They should be the same.
62	Page 156 Glossary		"Credible abnormal conditions" Not consistent with what is in the ANSI standards.
63	Page 158 Glossary	Light Water Reactor	Capitalize the term: light water reactor
64	Page 158 Glossary	Delete "/or"	Term "Light Water Reactor" Definition needs to be more restrictive as AECL does not consider ACR a light water reactor.
65	Page 158 Glossary		Redefine fuel unit as existing definition is PWR specific.
66	Page 159 Glossary		The terms: Moderator and Moderator control engineered barrier: Pointers (twice) to typical moderators section should be App F & F.1, not I & I.1, then App F & F.4, not I and I.4. just below
67	Page 160 Glossary	Delete "an undesirable effect" from Nuclear Poison definition.	Nuclear poison is defined as an undesirable effect. This is certainly true for reactor operations, but NOT for criticality safety. In nuclear criticality control it is a desirable effect.
68	Page 160 Glossary	"equal"	Glossary term – Reactivity – use of the word "proportional".

69	Page 161 Glossary	Change “talks”-“tanks”	In definition of Structures, etc. “pumps, talks and valves” should be changed to “pumps, tanks, and valves’.
70	Page 162 Glossary	Change definition to “The maximum allowed value of the calculated *k*-effective or single parameter value established to ensure that under both normal and **credible abnormal conditions**, including allowance for **bias**, uncertainty and a minimum **margin of subcriticality**, that systems assessed to be subcritical will actually be subcritical.”	Definition of Upper Subcritical Limit. Meaning is not clear.
71	Page 162	Replace by definition on page 115 Sect B.2	Glossary term - Validation
72	Page 162	Replace by definition on page 115 Sect B.2	Glossary term - Verification
73	Page 165 References	Possibly the reference is: “E. Turner and Marva K. Gurley, Evaluation of AMPX-KENO benchmark calculations for high density spent fuel storage racks” Nucl. Sci. Eng , 230, 30 (1982)”	The citation of Reference #44 is incomplete and the year appears to be wrong.
Country/Organization: CANADA/ Ontario Power Generation			
1.	Section 2.3.3 Page 11/Bullet 2 /Line 5	*“The measuring devices shall be **of** high integrity...”*	*Typo:* Missing preposition “of” added for clarity.
2.	Section 2.3.3.3/ Page 13/Para 2 /last line		Please clarify what is meant by *“…critically safe configuration”*.
3.	Section 12.8.1 Page 90/2nd last para in section and Section		The 10^{-6} cut-off frequency of the credible criticality accidents would require including some BDBAs as per the RD-310 classification. To demonstrate the upper subcritical limit would not be exceeded for this type of events could be prohibitive from the safety analysis perspective.

	12.8.2 Page 91/Bullet 7		
4.	Section 13.6.2 Page 95/Para 2 on page/line 2	**New text:**" *Applicable alternatives of neutron moderators should be identified.*" **Old text:** "*Several good neutron moderators should be identified.*"	Suggested text is intended to better align with the availability of moderator alternatives for a specific application.
5.	Section 16.6.3 Page 110/Para 2 /lines 2&3)	Should read "…*quantity of absorbers* ***shall be*** *readily available*.", and "…*effect of neutron absorbers under accident conditions* ***shall be*** *evaluated*"	Underlined text is suggested in alignment with the document language and with context intent.
6.	Appendix A, Page 113/Topic 2 "Internal Postulated Events"/Bullet b		In bullet (b), please clarify how can "*Use of electricity or chemicals*" be a postulated event?
7.	Appendix E Page 135, Title	Should Read " *Fuel Unit* ***Handling***"	*Typo.*
8.	Appendix G, Section G.2 page 142 /Bullet #2		Bullet #2: Same concern about the 10^{-6} cut-off frequency at which criticality margin shall be maintained. This limit encompasses BDBAs as per RD-310. There could be a concern of not being able to maintain criticality margin and so the condition may not be applicable for such accidents. Please clarify the expected requirements under such accidents or revise the cut-off frequency limit.
9.	Appendix G Section G.3 Page 143/Para 2 /Line 2	"…the **Nuclear Criticality Safety Evaluation (NCSE)** or the SAR."	Definition/representation of the acronym NCSE should be mentioned at first occurrence. Also these are hard to find in the glossary. Please include more explicitly.

10.	Appendix G Section G.3.3 Page 146/Last Para on page/Line 1	"This column **identifies** the accident sequence…"	Typo: correct spelling.
11.	Glossary		*Editorial:* Some definitions such as that of "*Moderator control engineered barrier*" refer to Appendix I which does not exist in the document. For this definition, it should be Appendix F.
12.	General Section 1.3 Page 2/After Bullet 9	Add a statement from the Nuclear Safety and Control Act (NSCA) or other relevant regulation on storage and disposal of nuclear waste	A specific regulation on storage and disposal of nuclear waste is not provided in Section 1.3
13.	General Section 1.4 Page 2/Last Para	Define the acronym American National Standards (ANS) in paragraph 2 of Section 1.4	The acronym for American National Standards in not defined
14.	General Section 1.4 Page 3/After bullet 16	Add reference to the following two standards: • ANS-8.25, "Development of Nuclear Criticality Safety Related Postings" • ANSI/ANS-8.26: Criticality Safety Engineer Training and Qualification Program	The information from two relevant ANS standards is not included in GD-327.
15.	General Section 2.3.2.4 Page 10/Only Para in 2.3.2.4	Add the word signs in Section 2.3.2.4 "Appropriate labelling, **signs**, and area posting …"	In addition to material labelling and area posting, we suggest including the word "signs"
16.	General Section 2.3.3 Page 11/After bullet 5	Add the following information: "6. Other means"	Section 4.2 from ANSI/ANS-8.1-1998 has the following bullet point, since the list of controls provided is not all-inclusive: "Other means"

17.	General Section 13.6.5 Page 95/After bullet 11	Add the factor: 12. Composition Also, add the factors geometry and homogeneity in the numbered list 10). 2. Geometry/Shape 10. Heterogeneity/ Homogeneity	The 11 factors that are relevant to criticality safety of operations in the facility parameters mentioned do not include composition.
18.	i/Table of Content	Correct page numbers for sections. Section 2.4.2 onward are listed as page 17.	
19.	Section 2.0 Page 5/Para1	May wish to explicitly acknowledge significant influence of IAEA Safety Standard (Ref 1).	Consistency with ANS acknowledgement.
20.	Section 2.3.2.2 Page 8/Para 1	"The justification for using a frequency threshold of 10^{-6}/y is…"	ANS 8.1-1998 (Reaffirmed 2007), which is identified as the source of much of the material in Chapter 2, does not appear to include a frequency threshold. The rationale for this addition would be worthwhile to provide.
21.	Page 51 /Table 6-1	Add a foot note next to H/U: H/U is the atomic ratio of hydrogen to uranium	H/U ratio is not defined in the document
22.	Page 56 /Table 6-7	Add a foot note next to H/Pu: H/Pu is the atomic ratio of hydrogen to plutonium	H/Pu ratio only defined for Table 2-7
23.	Page 68 /Table 8-1	Spell units of volume as 'litre' rather than 'liter'	Standard Canadian spelling
24.	Section 14.4.3 Page 100/Para 3	Remove character appearing as a square	Typo
25.	Section 14.4.3 Page 100/Para 4	Identify a Canadian alternative to the U.S. National Institute of Standards and Technology	Canadian document.
26.	Section 16.5.4 Pg 108/Para 1,2 And General	Use 'h' as the abbreviation for 'hour' not 'hr': Suggested Text "…1 mSv/h (100 mrem/h)…"	Canadian document. Check throughout.

27.	Section D.1 Page 123/Para 2 and General	Spell units of length measurement ‘metre’ rather than ‘meter’	Canadian document. Check throughout.
28.	Section D.3.2 Pg 126/Point 1	Abbreviate units of time as ‘s’ rather than ‘sec’	Canadian document. Check throughout.
29.	Section D.3.3 Pg 130/Point 1 And General	Abbreviate units of volume as ‘L’ rather than ‘l’	Canadian document. Check throughout.
30.	Section F.2 Page 138/4.a)	Define RTV	
31.	Section F.4 Page 140	Replace ‘False ceilings’ with ‘Drop ceilings’	
32.	Page 155/Para 2	Reverse the order of the first two terms defined	‘Accidents’ comes before ‘Active’ in alphabetical order
33.	Pg 158/Para 10	Move the definition for *in situ* up before Inductive Coupled Plasma	‘In’ comes before ‘Inductive’ alphabetically
34.	Pg 161/Para 10 typo	Fix typo. Definition for SSCs should read ‘…pumps, **tanks** and valves.’	Typo, definition for SSCs, last sentence currently reads ‘…pumps, **talks** and valves.’
Organization: Candesco			
1	p.6, section 2.3.1.1, point 2	“more effective than light water (H_2O)”	Clarification of the type of moderator intended to be used as the baseline. This comment also applies to section 2.1.1.2 point 2.c(.i), section 3.1.2.1 point 3. In fact, it would be help to include in the Glossary that “water” is used synonymously with “light water” unless otherwise indicated
2	p.8, section		An administrative subcriticality margin of 20% of critical

	2.3.2.2, point 1b(ii)		mass seems arbitrarily large.
3	p.8, section 2.3.2.2, point 2c (should be point 2a)	"All credible abnormal conditions (events or event sequences) potentially leading to criticality increase and having frequency of occurrence equal to or more than 10^{-6}/year are identified and assessed."	Focus of discussion should only be on credible abnormal conditions which lead to reactivity increases.
4	p.9, section 2.3.2.2, point 4a	"An external event that leads to a criticality accident with frequency of occurrence less than 10^{-6}/year ~~10^{-7}/year~~"	Consistency with definition of credible abnormal events (frequency
5	p.14, section 2.3.4.1 para 2	"~~When no experimental data are available, establishment of the bias for a calculational method is not possible and the requirements of this Subsection cannot be satisfied.Validation of a calculational method by comparing the resultins with those of another calculational method, for example, is unacceptable~~."	This requirement is overly restrictive. Validation against another validated calculational method should be acceptable.