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SUBJECT: Comments on Draft Regulatory Guides DG-1114, *Control Room Habitability at Nuclear Power Reactors*, and DG-1115, *Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors* (67 *Fed. Reg.* 14992)

PROJECT NUMBER: 689

On behalf of the commercial nuclear industry, the Nuclear Energy Institute[1] submits the enclosed comments on Draft Regulatory Guides DG-1114, *Control Room Habitability at Nuclear Power Reactors*, and DG-1115, *Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors.*

The NRC staff has prepared four related draft regulatory guides to address management of control room habitability. DG-1114 and 1115 are the third and forth of these to be issued for public comment. NEI has previously submitted comments to the NRC on DG-1111, *Atmospheric Relative Concentrations for Control Room Habitability Assessments at Nuclear Power Plants* and DG-1113 *Methods and Assumptions for Evaluating Radiological Consequences of Design Basis Accidents at Light-Water Nuclear Power Reactors.* In addition, NEI will be submitting comments on the draft generic letter issued by the NRC for public comment (67 *Fed. Reg.* 31385).

Our detailed comments are provided in Enclosures 1 and 2. We believe there are several significant issues that should have close NRC management consideration prior to the issuance of the final regulatory guides. These involve the following:

- Expansion of regulatory requirements and existing licensing bases
- Characterization of the component test method
- Recognition of limitations of the ASTM E741 standard
- Justification of selection of 24-month retest periodicity

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[1] NEI is the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include all utilities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel fabrication facilities, materials licensees, and other organizations and individuals involved in the nuclear energy industry

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- Technical Specification change recommendation and development process

EXPANSION OF REGULATORY REQUIREMENTS AND EXISTING LICENSING BASES

Both DG-1114 and 1115 use the term "control room envelope" as the basis for regulatory guidance. This term is not found in the regulations cited in the draft regulatory guides. The only applicable term in the cited regulations is "control room." As used, the term "control room envelope" is not clearly defined and appears to encompass components beyond the "control room." The draft regulatory guides would impose additional criteria beyond the existing regulations and licensing bases and as such are inappropriate.

If a licensee were to implement DG-1114 as written, it would require submittal of license amendments to the NRC. License amendments would be necessary for one or more of the following: to revise the plant's Technical Specifications, or to review new design basis accidents not in the existing plant license, or to include assumptions in design basis accidents different from those in the existing plant license, or to address issues associated with the definition of "control room envelope" or to adopt the new revision of RG 1.78. Submittal of multiple license amendments from all licensees is contrary to one of the NRC staff's stated purpose for preparing the DGs; that is, to reduce resources necessary to address control room habitability issues. These submittals would not be necessary if the draft guides' purpose was limited to maintaining the existing plant license bases.

In addition, Section D of DG-1114 states:

> "Except in those cases in which an applicant or licensee proposes an acceptable alternative method for complying with specified portions of the NRC's regulations, the methods to be described in the final version of this guide reflecting public comments will be used by the NRC staff in the evaluation of CRH ... after the issue date of this guide and plants for which the licensees voluntarily commit to all of the provisions of this guide."

This statement exceeds the guidance presented on the cover of other regulatory guides issued by the NRC, which states that regulatory guides are issued to describe one method acceptable to the NRC staff of implementing specific parts of the Commission's regulations. In effect, the Section D statement makes the regulatory guide the metric to which all alternative methods are compared. This effectively defines DG-1114 and its associated regulatory guides as regulatory requirements without following the Commission's rulemaking procedures. DG-1114, masks this with its Section C.1.2 statement that the regulatory guide is voluntary an as such "is not protected by backfit as defined by 10 CFR 50.109." This positioning of the draft regulatory guides is troublesome. Therefore, DG-1114 and its associated regulatory guides should be subject to the provisions of the 10 CFR 50.109 backfitting rule.

In addition, DG-1114 and 1115 do not address plants current licensing bases. Many licenses were granted prior to the issuance of the General Design Criteria (GDC) listed in Appendix A of 10 CFR Part 50. The draft regulatory guides are not explicit about how they apply to plants that are not licensed to the GDC criteria. It is not clear how these DGs

would be applied to a significant percentage of plants licensed prior to issuance of the GDCs, since the DGs are written to provide an acceptable method of satisfying the GDCs. We are concerned that future reviewers will mistakenly interpret that these draft regulatory guides apply to plants that are not licensed to the GDC criteria.

CHARACTERIZATION OF THE COMPONENT TEST METHOD

Section C.1.1 of DG-1115, states that the component test method is not acceptable for use as a baseline control room inleakage test methodology because it is an extension of the "traditional ΔP surveillance test," which has not always been able to demonstrate that the control room is at positive pressure relative to all adjacent areas. The "traditional ΔP surveillance test" is not the same pressurization test used with the componet test methodology. The "traditional ΔP surveillance test" may have only required a single point test; whereas, the component test methodology requires an extensive set of measurements to demonstrate that the pressure inside the control room is at positive pressure to all adjacent areas. Disallowing use of the component test methodology for establishing a baseline inleakage value is not justified.

In addition, the Strategic Teaming and Resource Sharing (STARS) group has validated the component testing methodology using the tracer gas methodology. STARS has submitted details of its evaluations to the NRC on several occasions and made numerous presentations. The latest submittal was provided to the NRC in a letter dated June 7, 2002. This validation activity builds a strong basis for licensee use of the component test methodology for both baseline and periodic tests without the 20 percent extra margins imposed by DG-1115.

RECOGNITION OF LIMITATIONS OF THE ASTM E741 STANDARD

ASTM E741, *Standard Test Method for Determining Air Change in a Single Zone by Means of a Tracer Gas Dilution*, is one method to indirectly determining total control room inleakage. However, the purpose of the test for control room inleakage is to determine the values of filtered and unfiltered inleakage, which are subsequently used in various analyses. ASTM E741 does not provide guidance on partitioning the total inleakage into its filtered and unfiltered components. As a result, licensees do this on a plant-specific basis. In addition, licensees must make plant specific determinations for estimating the amount of filtered and unfiltered inleakage uncertainty and how the analyses will treat these uncertainties.

Licensees have been successful in justifying to the NRC staff the division of total inleakage into the filtered and unfiltered inleakage components and in the considerations of uncertainties in analyses. We believe that licensees should be permitted to justify the partitioning inleakage and treatment of uncertainties on a plant-specific basis. Currently, the draft regulatory guides are silent on this issue. We are concerned that this could be an area of future disagreement between licensees and the NRC staff. Therefore, DG-1114 should be revised to state that it is the responsibility of the licensees to determine the appropriate balance between filtered and unfiltered inleakage and how the test uncertainty will be used in analyses.

JUSTIFICATION FOR SELECTION OF THE 24-MONTH RETEST PERIODICITY

DG-1115 proposes a retest interval of 24 months. Using this guidance, licensees would test each control room each refueling outage. This suggests that the implementation of DG-1115 will result in a research program to gather data with the hope that an alternative test interval can be developed in the future. The relatively low safety benefit and high cost of such a program does not justify the proposed retest interval. The DG provides no basis for this proposed interval. Furthermore, the DG identifies no process for modification of the test interval.

NEI 99-03 provides guidance for licensees to reassess their plant condition and as appropriate retest to determine inleakage values. We propose that the NRC adopt the NEI 99-03 guidance.

TECHNICAL SPECIFICATION CHANGE RECOMMENDATION AND DEVELOPMENT PROCESS

Section C.2.7.1 of DG-1114, introduces a proposed technical specification. The draft regulatory guide does not provide a regulatory analysis demonstrating that a new technical specification should be implemented for either pressurized or non-pressurized control rooms. Furthermore, it is our understanding that if a technical specification change is warranted that it should be implemented through revision of the standardized technical specification NUREGs. The NRC and industry have agreed to a protocol for revision of the standardized technical specifications, this involves working with the NEI Technical Specifications Task Force (TSTF). The proposed technical specification was not developed using this protocol. Our assessment indicates that it is sufficient for licensees to manage control room habitability using a licensee-controlled program that satisfies the provisions of Appendix B of 10 CFR Part 50. We recommend that the proposed technical specification be deleted from DG-1114 and that the NRC staff involve the TSTF in any future technical specifications development efforts.

SUMMARY

NEI is concerned that the draft regulatory guides introduce criteria that are not necessary to demonstrate compliance with the regulations and which should be deleted from the draft guides. Alternatively, we recommend that the NRC adopt NEI 99-03, which provides appropriate guidance for licensees to assure that the plant's licensing basis is maintained.

Implementation of the proposed regulatory guides as written would require significant analysis and possibly significant plant modifications that are not necessary to comply with the current regulations and are not consistent with the safety and risk significance of this issue. As such, the proposed regulatory guides do not provide sufficient safety benefit for many licensees to voluntarily implement them. Rather we envision them being used by the NRC reviewers to leverage licensees to modify plant design and licensing bases.

Lastly, the NRC staff proposed guidance for managing the control room habitability issue is very convoluted and much more complicated than necessary. The 230 pages of NRC guidance relies on at least six regulatory guides (DG-1111, DG-1113, DG-1114, DG-1115,

guidance relies on at least six regulatory guides (DG-1111, DG-1113, DG-1114, DG-1115, RG 1.78, and RG 1.183), plus 177 pages of NEI 99-03 to define one approach that is acceptable to the NRC staff. This is not consistent with Regulatory Analysis of DG-1114, which states that, "Regulatory efficiently would be improved ...." It is highly likely that the volume of NRC guidance will result in great confusion and conflict. We therefore recommend that the NRC withdraw the draft regulatory guides and endorse the guidance proposed in NEI 99-03.

If you have questions, please contact me at 202-739-8080, am@nei.org or Kurt Cozens at 202-739-8085, koc@nei.org.

Sincerely,

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KOC/maa
Enclosures

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Enclosure 1

NEI COMMENTS ON DG – 1114

COMMENT NUMBER	PAGE	SECTION/ PARA	COMMENT	PROPOSED REVISION
1.	2	B	The first paragraph states that: "The CRE encompasses the control room and may encompass the alternate shutdown panel and other rooms and areas to which personnel access may be necessary to accomplish plant control functions in the event of an accident." The thought that the CRE may encompass the alternative shutdown panel (ASP) is not applicable to all licensees. GDC 19 defines radiological dose exposures for the control room. However, the GDC does not provide any guidance on the environment of the ASP nor the duration of residency that an operator would be required to have at the ASP. This paragraph should be revised to delete the thought that ASP is part of the CRE.	Revise the sentence to read: "The CRE encompasses the control room, other rooms areas within the confines of the control room boundary. The control room boundary is the physical surfaces (e.g., ducts, dampers, floors, ceilings, walls, doors) that separate the CRE from other plant areas."
2.	3	B	Last sentence in the first paragraph of Section B states: "In the majority of the CRHS designs, isolation of the CRE atmosphere from that of adjacent areas is fundamental to ensuring a habitable control room." The statement is inaccurate. In many cases, the normal supply and exhaust are indeed isolated; however, a large percentage of control rooms are pressurized, and the filtered emergency supply prevents inleakage from adjacent areas through the CRE boundary surfaces.	Revise the sentence to read, "In the majority of CR designs, isolation of the normal supply and exhaust flow paths and pressurization of the CRE relative to adjacent areas is fundamental to ensuring a habitable control room."
3.	3	B 3rd para	Last sentence of third paragraph states: "The primary design function of CRHSs is to protect the public and the control room operator." This statement is incorrect. The guide addresses protection of the control room operator only. This statement exceeds the scope of the existing regulations. Delete this sentence or revise the regulatory guide to make it agree with the existing regulations.	Delete this sentence. Or rewrite the sentence to read: "The primary design function of CRHS is to protect the control room operator."

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4.	3	B 3rd para	The DG does not substantiate that "It is important for the operators to be confident of their safety in the control room to minimize errors of omission and commission." The DG does not provide a basis for this statement. As such this statement is presented as an opinion. Industry is unaware of any research that demonstrates instances where an operator's perception of his safety based on CRH would affect his confidence in his ability to perform his duties. Statements of opinion should not be included in any regulatory guide.	Delete the sentence. "It is important for the operators to be confident of their safety in the control room to minimize errors of omission and commission."
5.	3	B 4th para	The last paragraph in Section B states that: "Only the sections of NEI 99-03 that are specifically stated in the Regulatory Position should be considered to be endorsed by the staff." It is difficult for the reader to easily identify those sections of NEI 99-03 that are endorsed and those that are not endorsed. It appears that the DG fully endorses the following NEI 99-03 sections and appendices: • Section 4.3, "Licensing Basis Sources" • Section 5, "Comparing Existing Plant Configuration and Operations with Licensing Bases for CRH" • Section 6.3, "Smoke Infiltration" • Section 9.3.1, "System Material Condition" • Section 9.4.2, "Procedure Control" • Section 9.4.3, "Toxic Chemical Control" • Section 9.4.4, "Design Change Control" • Section 9.4.5, "Safety Analyses Control" • Appendix B, "Control Room Habitability Regulatory Information" • Appendix E, "Smoke Infiltration Impact on Safe Shutdown" • Appendix G, "Toxic Gas Assessments"	Revise Section B to list all sections of NEI 99-03 that are specifically endorsed by each of the four draft regulatory guides, including any exceptions. The list should explicitly include those sections identified in this comment. Consider incorporating Attachment A into DG-1114.

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			• Appendix H, "System Assessment", Table H-1, "Determination of Vulnerability Susceptibility" It appears that the DG has partially endorsed the following NEI 99-03 sections and appendices: • Section 8.4, "Methods Available to Address Degraded or Nonconforming Conditions" • Section 9.4.1, "CRE Boundary/Breach Control" • Section 9.5, "Training" • Appendix F, "Compensatory Measures Allowable on an Interim Basis" Additionally, it appears that the DG does not endorse the following NEI 99-03 appendices: • Appendix C, "CRH Dose Analysis: Regulatory Enhancements" • Appendix D, "Atmospheric Dispersion" • Appendix K, "Control Room Envelope Boundary Control Program" Attachment A provides a table summarizing the sections of NEI 99-03 that the draft regulatory guides (1111, 1113, 1114, and 1115) have endorsed either fully or partially. Incorporation of information similar to this table into DG-1114 would ease the effort necessary to move between the various documents referenced the regulatory guide.	
6.	3	C.1.1 1st para	Section 1.1 states that: "In demonstrating that a facility's CRE conforms to the GDCs, ..." The GDCs do not address CRE, but are limited to the control room. This sentence should reflect the control room only.	Revise the sentence to read: "In demonstrating that a facility's CR design conforms to the GDCs,"
7.	4	C.1.1 Action statements	Section 1.1 states that: "The process of demonstrating the above three aspects includes the following actions: 1. Identification of the licensing bases for the (a) CRHS, (b) areas adjacent to the CRE, and (c) ventilation systems that	Rewrite the actions as follows: "1. Identification of (a) the licensing basis for the CRHS, (b) areas adjacent to the CRE, and (c) ventilation systems that serve or traverse the CRE and those adjacent to the CRE.

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			serve or traverse the CRE and those adjacent to the CRE. 2. Determinations of whether the design, configuration, and operation of the systems and areas identified in action 1 are consistent with the licensing basis. 3. Determination of the performance characteristics for operating modes associated with radiological and hazardous chemical accidents. 4. Calculation of the radiological dose consequences. 5. Calculation of the hazardous chemical release consequences." ..." In action 1, it is not necessary to identify the licensing basis for item (b) and (c). The basis for installing and operating other plant ventilation systems and configuring other plant areas are not relevant to CRH. What is relevant are the effects these systems may have on CRH. In action 3, the performance characteristics should be associated with the CRHS. The wording of actions 4 and 5 is an over-statement of the actions that should be performed. All licensees perform an analysis to assess the radiological dose to control room operators. Some licensees, if they are determined to be a toxic gas plant in accordance with RG 1.78, perform an analysis to determine the hazardous chemical release consequences to control room operators. Based on the above, these actions should be revised.	"2. Determinations of whether the design, configuration, and operation of the systems and areas identified in action 1 are consistent with the licensing bases for the CRHS. "3. Determination of CRHS performance characteristics for operating modes associated with radiological and hazardous chemical accidents." "4. Calculation of the radiological dose consequences to control room operators. 5. Calculation, if required, of the hazardous chemical release consequences to control room operators"
8.	4	C.1.2 1st para	Section 1.2 states: "1.2 Applicability of Prior Licensing Basis[3] The application of this regulatory guide may involve a licensee-initiated voluntary change to the licensing basis of the facility. To issue a license amendment on the basis of this guide, the NRC staff must make a current finding of	Revise Section 1.2 to read: "1.2 Applicability of Prior Licensing Basis[3] The application of this regulatory guide may require a submittal of a license amendment to accommodate changes requested in this regulatory guide. Licensees are not required

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			compliance with regulations applicable to the amendment. The staff may find that new or unreviewed issues are created by a particular site-specific application of this guide, warranting review of past staff positions on a particular licensing basis. A licensee who voluntarily seeks to modify its licensing basis through a license amendment is not protected by the backfit as defined by 10 CFR 50.109, "Backfitting." Backfitting occurs only when the NRC imposes a new or changed position on a licensee, which is not the case when a licensee voluntarily seeks an amendment. Plants were licensed with various trade-offs of conservatisms compensating for non-conservatisms in radiological dose analyses. The trade-offs for each plant were different. The NRC staff has integrated the accumulated technical knowledge to the year 2001 in this regulatory guide and has offered a package of more realistic analysis methods and limits along with reduced conservatism and appropriate reconciliation of nonconservatisms. The staff believes that only by implementing the integrated package as presented within the Regulatory Positions will the design bases be preserved." To our knowledge this text is unique to all other regulatory guides issued by the NRC. It established a new NRC policy not previously adopted by the Commission and as a formal change to existing NRC practices should be assessed in accordance with the provisions of 10 CFR 50.109. The purpose of a regulatory guide is to provide one acceptable method for a licensee to satisfy existing regulations. The statement that it may be necessary for a licensee to modify its licensee to implement this regulatory guide is inconsistent with the existing purpose of a regulatory guide. Establishing a regulatory guide that requires licensees to change its licensing basis suggests that the NRC believes that licensees are not currently in compliance with the regulations. If so, the use of the technical specification basis document to establish compliance is an inappropriate vehicle. By the very nature of the first sentence indicating that use of this regulatory guide may require a license amendment and the	to implement this regulatory guide since a plant's existing licensing basis has been determined to be acceptable to the NRC."

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			realization that this regulatory guide proposes numerous new regulatory criteria that to our knowledge no licensee has implemented, and it raises the question if licensees will voluntarily adopt this regulatory guide rather than choose to retain their current licensing basis or to propose an alternative other than this guide. The concepts identified in Section 1.2 diminish the benefits of DG-1114. In addition, everything discussed in Section 1.2, after the first sentence, is superfluous and does not need to be mentioned in the regulatory guide. The criteria for license amendments and their relationship to the backfitting rule are discussed elsewhere in other regulatory documents. The draft regulatory guide does not define any new criteria. Therefore, this section should either be silent on this issue or reference the existing documents that cite the criteria for license amendments and implementation of a regulatory guide. Furthermore, the second paragraph does not substantiate the conclusions reached. Neither is it believed that control room analyses are the only evaluations that required appropriate balancing of conservatisms. To our knowledge, no other regulatory guide has as its purpose an action to change past NRC decisions by unilaterally redefining a uniform set of licensing criteria to correct perceive shortcomings. If the NRC believes this is necessary, the proper regulatory vehicle is a rulemaking.	
9.	5	C.2.1	Section 2.1 makes minimal reference to Section 4 of NEI 99-03. During the NEI CRH TF and NRC meetings, the staff indicated that they generally agreed with Section 4 of NEI 99-03. Therefore, it is surprising that this section does not just endorse Section 4 of NEI 99-03. Furthermore, the draft DG is not consistent with the ACRS guidance recommending that the NRC staff make liberal use of NEI 99-03 in the development of the regulatory guides. Section 2.1.1 of the DG may be deleted if the DG endorses Section 4 of NEI 99-03. It may be appropriate to retain the last 3 paragraphs of Section 2.1.2 of the DG since they are additional guidance beyond that found in Section 4 of NEI 99-03. To be consistent with Comment 1, change CRE in the title to	Delete section 2.1.1 and the first paragraph of 2.1.2. The remaining text of 2.1.2 now becomes 2.1. Add the following sentence to the beginning of Section 2.1: "Section 4 and Appendix B of NEI 99-03 (Ref. 2) provides an acceptable method for determining the licensing basis of the CRHS. The following information is provided in amplification of this guidance." Change words "are likely to" in last paragraph to "will". Change CRE in the title to CRHS.

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			CRHS	
10.	6	C.2.2.2	Section 2.2.2 lacks clarity. As written it is not clear as to which systems are discussed. • The "CRE" is the space within the boundary, which separates the air within the control room (the air that the CR operators breathe) from the air that is outside of the control (the potentially contaminated air). The different air volumes interact across the CRE boundary. A more accurate phrasing is to use "CRHS" in lieu of the CRE as shown in the proposed revision. • As stated in the fourth sentence of section B on page 2, the "CRHSs include the CRE." Since the CRE is a subset of the CRHS, referring to both in the first sentence of paragraph 2.2.2 is redundant. • The term "CRE" is misused with respect to "the transfer of contaminants." A more accurate term is "control room" as shown in the proposed revision. • The last sentence is technically incorrect. Ductwork cannot "traverse the CRE." If there exists a non-control room HVAC duct that is routed thru the control room, that duct is part of the CRE. It is the division between "control room air" and "non-control room air." The proposed revision clarifies the intent of the sentence. The paragraph should be rewritten.	Revise Section 2.2.2 to read: "2.2.2 Interactions Between the CRHS and Adjacent Areas The conditions that exist in the areas adjacent to the CRE influence the performance of the CRHS. Although systems in adjacent areas might not be expected to operate during an emergency, during a loss of offsite power, or with a single failure, inleakage may be increased if they do operate. Potential interactions between the CRHS and adjacent areas that may increase the transfer of contaminants into the control room should be identified. These interactions may be caused by ventilation systems that supply or exhaust air from areas adjacent to the control room, are located in areas adjacent to the control room, or have ductwork that traverses the control room or areas adjacent to the control room."
11.	6	C.2.3.1	Section 2.3.1 states: "2.3.1 Performance of the CRE and CRH Ventilation Systems The licensee should determine the performance characteristics of the CRE, its ventilation systems, and systems that serve or traverse areas within or adjacent to the CRE. Performance characteristics are needed to:" The term "performance characteristics", while a term that has relevance to engineering analysis is not a term defined in the regulations. The regulations address the terms "licensing basis", "design basis" and implies the concept of "design inputs". Since	Change Section 2.3.1 to read "Comparing the Existing Plant Configuration and Operations with the CRHS Licensing Basis". Then add the following: "The staff endorses NEI 99-03, Section 5 and Appendix H of as an appropriate method for comparing the existing plant configuration and operations with the CRHS licensing basis." The remainder of the information in section 2.3.1

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			it is the purpose of a regulatory guide to provide one acceptable method to implement the regulatory requirements, the introduction of the new term "performance characteristics" as a basis for compliance with existing regulations is inappropriate, particularly as a metric of actions that the NRC deems appropriate to comply with the regulations. The regulatory guide should not use the term "performance characteristics" as a basis to comply with the existing regulations unless it is added to the regulations by rulemaking. In addition, Section 2.3.1, does not acknowledge the existing licensing basis that the NRC staff has approved. Specifically, the reference to RG 1.52, does not recognize that this RG is not part of the existing licensing basis at some plants. The sentence should be modified to recognize the adequacy of the existing licensing basis. Footnote 4 that applies to this criterion states that RG 1.3 will be superceded by DG-1113. Again this proposed provision does not acknowledge the existing licensing basis and infers unilaterally that the NRC plans to supersede the existing licensing basis. The footnote, which states that DG-1113 will supercede RG-1.3, should be deleted. Finally, this regulatory position section makes no reference to NEI 99-03. During the NEI CRH TF and NRC meetings, the staff indicated that they generally agreed with Sections 4, 5 and 6 of NEI 99-03. Since the ACRS encouraged the staff to make liberal use of NEI 99-03 in the development of their regulatory guides, endorsement of Section 5 and 6 in the DG is appropriate. A comparison of Sections 4.3, 5 & 6.2 of NEI 99-03 indicated that the information in Section 2.3 of the DG is covered with the exception of the testing discussion on page 7 of DG-1114.	can be deleted since it is redundant. Under section 2.3.2 of the DG, delete the information and add the following words, "The staff endorses Section 6.2 of NEI 99-03 as an appropriate method for identifying the limiting condition." A new section of the staff's position on testing should be created with reference to DG-1115..
12.	7	Footnote 4	Footnote 4 states that the ESF atmospheric clean up system guidance being developed in DG-1113 will supersede the guidance in RG 1.3, 1.4, and 1.25. This is not necessarily true. Per DG-1113 Section B, the guidance being developed in DG-1113 will only supersede the guidance in RGs 1.3, 1.4, and 1.25	Per Comment on C.2.3.1, delete this footnote.

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			when used in conjunction with the guidance in this DG-1114. Per DG-1113 Section B, RGs 1.3, 1.4, and 1.25 (and 1.5 and 1.77) will not be withdrawn as they may still be used at the option of licensees.	
13.	7	C 2.3.2	Section C.2.3.2 is open-ended about which accidents need to be considered. Furthermore it does not acknowledge the existence of the current licensing basis that defines which design basis accidents apply to a given plant. The last sentence of the second paragraph states: "Therefore, licensees should perform an analysis of the consequences of each potential radiological accident to ensure that they have identified the limiting event." This statement directs licensees to perform an analysis of the consequences of each potential radiological accident to ensure that the limiting accident has been identified. Many plants currently do not have certain accidents in their licensing basis, or have the accident identified but do not have control room doses reported. This is usually the result of valid qualitative assessment using sound engineering judgment based on comparison with calculated offsite doses. This assessment process has been previously accepted in NRC Staff reviews of licensee submittals. This approach also does not consider the probability or risk significance of any of these accidents in the proposed revision of plant licensing bases. It is inconsistent with the approved and accepted NRC policy of including an assessment risk consequences of any proposed NRC generic guidance or criteria, such as that presented in this Draft Guide. The regulatory guide should be revised to define the list of design basis accidents as prescribed by those identified in the plant's licensing basis and to permit a simplified assessment to determine which accident(s) should be evaluated in detail.	Revise last sentence to read: "The NRC endorses Section 6.2 of NEI 99-03 as an appropriate method for identifying the limiting condition." In addition, the list of design basis accidents should be limited to those identified in the plant's licensing basis and permit the licensee to perform a screening assessment to determine which accident(s) should be evaluated in detail. In addition, a criterion or condition should be added to determine those accidents that need be considered on the basis of risk impact. For example, if the probability of the occurrence of a previously unanalyzed design basis accident for the facility is less that 1E-6 per year, it does not need to be analyzed even if the event could present consequences greater than that of the currently limiting accident.
14.		C.2.3	DG - 1114 should have a subsection for testing because it allows comparing the configuration/operation to the licensing basis.	Add the following to the recommended revision to section C.2.3: "Licensees should ensure that their assumed

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				control room inleakage input value into their accident dose calculation is validated by a supported by a test measurement. Refer to DG - 1115 for demonstrating control room envelope integrity".
15.	8	C 2.5	The section directs licensees to adopt Revision 1 of RG 1.78. This regulatory guide was recently revised and includes many new criteria not currently implemented at plants. The DG has not provided a justification for directing licensees to change the plants' licensing basis. In addition, the section directs plants to implement a survey of the location, types, and quantities of the mobile and stationary hazardous chemical sources at least once every 3 years, or more frequently as applicable, without any rationale on why 3 years is the appropriate time period. RG 1.78 encourages licensees to conduct periodic surveys of stationary and mobile sources in the vicinity of the plant without imposing a set time period. Most nuclear plants are located in remote areas and the guidance in NEI 99-03 Section 9.3.4 sets forth guidelines for making a determination on how often the survey needs to be performed. The text should adopt the NEI 99-03 guidance and thus provide the necessary flexibility for sites located in remote areas to set their frequency based on conditions at their plant location.	In section 2.5 replace the last two sentences with the following: "NEI 99-03 Appendix G provides guidance on performing an assessment of a hazardous chemical challenge to control room habitability. In Section 9.3.4 of NEI 99-03 there is guidance on determining the frequency of these assessments."
16.	8	C 2.6	The first sentence of C.2.6 includes the alternate shutdown panel (ASP) room in the scope of the criterion. This is inappropriate and should be deleted from the document. If the ASP is inside the CRE, it will be addressed as part of the control room (without need of specific identification). If the ASP is outside the CRE, it is outside the scope of this document. Including the ASP in this DG implies additional habitability requirements for the ASP location, which do not currently exist.	Delete all references to the "alternate shutdown panel" and/or "alternate shutdown panel room."

COMMENT NUMBER	PAGE	SECTION/ PARA	COMMENT	PROPOSED REVISION
17.	9	C 2.6	The section states: "The staff believes the guidance in NEI 99-03 concerning smoke is prudent and should be adopted until further guidance becomes available." This regulatory guide should provide specific guidance without an open-ended possibility for future changes. If the NRC decides to revise the issued regulatory guide, this change could be incorporated.	Revise the sentence to read: "The staff endorses Section 6.3 of NEI 99-03 as an appropriate method to mange external smoke entrance into the control room."
18.	9	C.2.6	The paragraph states: "The specific acceptance criteria for radiological events are provided in 10 CFR 50.67, "Accident Source Term," and guidance being developed in Regulatory Position 4.5 of Draft Regulatory Guide DG-1113 (Ref. 5)." For consistency, the references should both be to CFR or both to regulatory guides.	Revise sentence to read: "The specific control room acceptance criteria for radiological events are summarized in Regulatory Guide 1.183 for plants employing alternate source term methodology, and Regulatory Position 4.5 of Draft Regulatory Guide DG-1113 (Ref. 5) for plants employing TID-14844 source term methodology."
19.	9	C.2.7.1, 2nd para	The ACRS stated in its December 14, 2000, letter: "It is important that the specific limit for inleakage be made a part of the licensing basis. Rather than specifying the allowed inleakage as a technical specification, however, NEI 99-03 proposes committing to a Control Room Habitability Program based on inspection, sealing, and maintenance with periodic component testing. As long as this commitment provides appropriate regulatory control, we do not believe a technical specification commitment is necessary." We agree with the ACRS. The inleakage value is already in the licensing basis, since it is used in safety analyses that are submitted to the NRC. The ACRS also implies that use of NEI 99-03 is sufficient to maintain operator safety, and that a new TS is not necessary. The NRC staff's decision to incorporate a proposed technical specification in DG -1114 is inappropriate. This decision not only ignores the ACRS recommendation without justification, it fails to follow the industry/NRC staff agreed to protocol to use the Technical Specification Task Force process to modify the standardized technical specification NUREGs.	Delete Appendix A. Section 2.7.1 should be rewritten as follows: "2.7.1 Periodic Evaluations and Maintenance Periodic evaluations should demonstrate that the CRHSs meet their functional criteria. These evaluations include system material condition, changes in inleakage, and toxic gas. CRHS programs should evaluate the system and material conditions as described in Section 9.3.1, "System Material Condition," of NEI 99-03 (Ref. 2). Section 9 "Long-Term CRE Integrity Program" of NEI 99-03 also defines a control room envelope integrity program that includes periodic inleakage assessments and testing as required. NEI 99-03 (Ref. 2) Appendix G describes an acceptable process for performing a toxic gas evaluation and Section 9.3.3 of NEI 99-03 provides guidance on the frequency of this assessment.

COMMENT NUMBER	PAGE	SECTION/ PARA	COMMENT	PROPOSED REVISION
				A maintenance program should be established for the CRHSs and the areas adjacent to the control room. Table H-1 of NEI 99-03 (Ref. 2) should be used as guidance for developing a maintenance program. These periodic evaluations and maintenance requirements should be incorporated into a Control Room Habitability Program. The attributes of such a program are described in Section 9.2 of NEI 99-03. A regulatory commitment to establish and follow this type of program may be in various forms. Some examples are a licensee regulatory commitment letter, a TRM section with the program attributes identified, an Administrative Technical Specification Program, a Technical Specification surveillance requirement for testing of the Control Room Boundary with corresponding program commitments, or a combination of these." A commitment to a CRH Program will suffice.
20.	10	C 2.7.2	The draft RG does not endorse Appendix K of 99-03, but does provide criteria in TS 3.7.10. The criteria cited in the TS do not constitute a breach control program. As such the proposed regulatory guide lacks sufficient guidance to be useful. DG-1114 should be revised to endorse Appendix K of NEI 99-03.	Revise the paragraph to endorse Appendix K of NEI 99-03 as an acceptable breach control program.
21.	10	C 2.7.3	The first bullet places additional conditions on the training of operators for SCBA use. DG-1114 does not provide a technical justification for these additional conditions. These requirements add minimal value to the effectiveness of these compensatory measures. Training program development and delivery will create substantial additional burden to the Operations staff training requirements. Given the low likelihood of use of protective equipment, this training has low or negative value. It should not detract from training resources for accident prevention and mitigation strategies, procedures, or practice. Deleting these requirements and replacing them with the guidance provided in NEI 99-03 to provide procedures for just-in-	Delete these additional requirements. Endorse Appendix F of NEI 99-03.

COMMENT NUMBER	PAGE	SECTION/ PARA	COMMENT	PROPOSED REVISION
			time implementation of protective equipment provisions will be effective if necessary while not reducing overall plant safety.	
22.	Page 10	C 2.7.3	Section 2.7.3 states: "The staff endorses the use of the guidance in Appendix F of NEI 99-03 on an interim basis while corrective actions are being taken to resolve CRHSs that do not meet their licensing bases..." It is unclear what is endorsed on the "interim basis"; the use of Appendix F guidance, or the endorsement of Appendix F. All regulations and regulatory guidance have the potential of being revised in the future. It is unnecessary to state the potential for the obvious.	Endorse Appendix F of NEI 99-03 without the qualifier of "on an interim basis."
23.	Pages 10&11	C 2.7.3	The DG states that for some licensees implementation of TMI Action Item III.D.3.4 was allowed to remain open until AST rulemaking and regulatory guidance were published. Since these regulatory actions have been completed, all affected licensees should take the appropriate actions defined in this guide to close these outstanding commitments. This seems to be a "requirement" that should be handled through another mechanism, not this regulatory guide.	Remove this statement.
24.	11	D	The second sentence of the second paragraph reads: "Except in those cases in which an applicant or licensee proposes an acceptable alternative method for complying with specified portions of the NRC's regulations, the methods to be described in the final version of this guide reflecting public comments will be used by the NRC staff in the evaluation of CRH for nuclear power plants for which the construction permit or license application is docketed after the issue date of this guide and plants for which the licensees voluntarily commit to all of the provisions of this guide." This statement exceeds the guidance presented on the cover of other regulatory guides issued by the NRC staff. The standard statement is: "Regulatory Guides are issued to describe and make available to the public methods acceptable to the NRC staff	Replace this sentence with: "Regulatory Guides are issued to describe and make available to the public methods acceptable to the NRC staff of implementing specific parts of the Commission's regulations, to delineate techniques used by the staff in evaluating specific problems or postulated accidents, or to provide guidance to applicants. Regulatory Guides are not substitutions for regulations, and compliance with them is not required. Methods and solutions different from those set out in the guides will be acceptable if they provide a basis for the findings requisite to the issuance or continuance of a permit or license by the Commission."

COMMENT NUMBER	PAGE	SECTION/ PARA	COMMENT	PROPOSED REVISION
			of implementing specific parts of the Commission's regulations, to delineate techniques used by the staff in evaluating specific problems or postulated accidents, or to provide guidance to applicants. Regulatory Guides are not substitutions for regulations, and compliance with them is not required. Methods and solutions different from those set out in the guides will be acceptable if they provide a basis for the findings requisite to the issuance or continuance of a permit or license by the Commission." Since regulatory guides are not substitutions for regulations, and compliance with them is not required, Section D should be revised to reflect the official text placed on the cover of each NRC staff issued regulatory guide.	
25.	A	Appendix A	Since the comment on C.2.7.1 recommends deletion of Appendix A, there is no need to address individual comments on the proposed TS contained in Appendix A to DG - 1114. Nevertheless, we note that the proposed TS contain several technical discrepancies.	Delete Appendix A. The inclusion of a proposed TS in a regulatory guide is inappropriate. If a regulatory analysis demonstrates that a new or modified TS is needed, the TS should be created using the TSTF process in accordance with the protocol agreed to between the industry and the NRC.
26.	Page A-5	Appendix A	SR 3.7.10.4 requires a tracer gas test every 24 months. The TS does not provide an analysis why this interval was chosen. Furthermore, this test interval is not practical considering the limited industry/vendor resources availability to perform qualified tracer gas tests.	Revise SR to be performance based or at some a 5/10 year interval that is commensurate with the safety significance.
27.	RA-1	I. 3rd para	First sentence states that the primary function of the CRHS is protection of the CR operators. This statement is not accurate. Protection of the public is assured by the multiple fission product barriers, periodic testing of these systems to ensure automatic operation, and conservatisms in the design and safety analyses.	Delete this paragraph.
28.	RA-6	V. 1st para	Next to last sentence in the paragraph at top of page, states that for plants that voluntarily commit to this new regulatory guide, changes to existing technical specification surveillance requirements would be necessary. This is untrue. The DG lists the TS as one acceptable method of testing. It is not the only method. As written, this paragraph imposes a requirement that is not required by the RG.	Delete this sentence.

Editorial Comments

Comment	Page #	Section/Para	Editorial Comment	Proposed Revision
1.	1	A	The last sentence in the first paragraph has an unnecessary "in."	Delete the word "In".
2.	2	A	A blank line is missing between the paragraphs addressing GDC 4 and GDC 5.	Add a blank line between the paragraphs addressing GDC 4 and GDC 5.
3.	2	A 5th para, last sentence	Used 0MB vs. OMB, editorial	Change the zero to an "O"
4.	2	B, 1st para	1) 2nd Sentence: Editorial- Spell CRE. 2) 4th Sentence: Editorial- consistent with DG-1115	1) Add, "The Control Room Envelope (CRE)....accident." 2) Add, "CRHSs typically.....under normal and maintain in a safe condition during accident conditions.
5.	3	B 2nd para	The second CRH would read better as CRHS.	Change the following sentence: Examples of changes that may impact the existing CRH assessments and may result in a reanalysis of the licensee's CRH CRHS are:
6.	3	B, 3rd para	Editorial	Read as, "The primary design function of CRHS is to.....operator."
7.	7	3	The word "fix" is informal. Also, wording is awkward.	Revise the first sentence to read: "...repair any deficiencies prior to performing CRE integrity testing."
8.	8	C 2.4	The first sentence states: "...accidents identified in Regulatory Position 1.2..." However, there are no accidents identified in this Regulatory Position. It appears that the reference should be to Position 2.1.2.	Revise "1.2" to "2.1.2"
9.	9, 10	C.2.7.1	Last Paragraph on page 9 and First Paragraph on page 10. The current wording implies that ESF and normal atmospheric cleanup systems are addressed in both Regulatory Guide 1.52 and in Regulatory Guide 1.140. As written, this statement could be misinterpreted. RG 1.52 addresses only ESF atmospheric cleanup systems.	Rewrite the end of the sentence as: "... (Ref. 16), respectively."

			RG 1.140 addresses only normal atmospheric cleanup systems.	
10.	5	C. 2.1.2 3rd para	First Sentence. A CRE is not habitable. A control room is habitable	Correct the sentence.
11.	10	C.2.7.3	The self-contained breathing apparatus acronym is SCBA, not SCUBA.	Change “SCUBA” to “SCBA”.
12.	RA-5	V.	The second bullet’s third sentence uses an incorrect word, “existence.”	Change "existence" to "existing".

ATTACHMENT A

DRAFT REGULATORY GUIDE ENDORSEMENT OF NEI 99-03 BY SECTION

NEI 99-03 Section Number	Nei 99-03 Section	Endorsement Status	Draft Guide Section	Exceptions/Remarks
1	Introduction	----------	---------- -	----------
1.1	Purpose And Scope	Not addressed	N/A	N/A
1.2	History	Not addressed	N/A	N/A
1.3	Document Organization	Not addressed	N/A	N/A
2	Regulatory Requirements And Guidance	----------	---------- -	----------
2.1	Purpose And Scope	Not addressed	N/A	N/A
2.2	Regulatory Requirement – General Design Criterion	Not addressed	N/A	N/A
2.3	Regulatory Guidance	----------	---------- -	----------
2.3.1	Regulatory Guides	Not addressed	N/A	N/A
2.3.2	NUREGs	Not addressed	N/A	N/A
2.3.3	Information Notices	Not addressed	N/A	N/A
2.4	Generic Issues	Not addressed	N/A	N/A
3	Industry Issues Associated With Control Room Habitability	----------	---------- -	----------
3.1	Purpose And Scope	Not addressed	N/A	N/A
3.2	Licensing Basis Different From As-Built Plant	Not addressed	N/A	N/A
3.3	Analyses Different From As-Built Or As-Operated Plant	Not addressed	N/A	N/A
3.4	DBA Analyzed Not Most Limiting	Not addressed	N/A	N/A
3.4.1	Adjacent Unit Accident (A Special Case)	Not addressed	N/A	N/A
3.5	Smoke Infiltration	Not addressed	N/A	N/A
3.6	Toxic Gas Evaluation	Not addressed	N/A	N/A
3.7	Control Room Air In-Leakage Greater Than Assumed	----------	---------- -	----------
3.7.1	Radiological Considerations	Not addressed	N/A	N/A
3.7.2	Toxic Gas Considerations	Not addressed	N/A	N/A
4	Determining CRH Licensing Basis	----------	---------- -	----------
4.1	Purpose And Scope	Not addressed	N/A	N/A
4.2	Understanding The Concept Of Licensing	Not addressed	N/A	N/A

	Basis			
4.2.1	Design Basis	Not addressed	N/A	N/A
4.2.2	Supporting Design Information	Not addressed	N/A	N/A
4.2.3	Licensing Basis	Not addressed	N/A	N/A
4.3	Licensing Basis Sources	Full endorsement	DG-1114, C.2.1.2	N/A
4.4	Performing The Licensing Basis Review	Not addressed	N/A	N/A
4.5	Assembling The CRH Analysis	Not addressed	N/A	N/A
4.6	Documentation Of The Existing Plant CRH Licensing And Design Basis	Not addressed	N/A	N/A
5	Comparing Existing Plant Configuration And Operations With Licensing Bases For CRH	Full endorsement	DG-1114, C.2.2.1	----------
5.1	Purpose And Scope	Full endorsement	DG-1114, C.2.2.1	N/A
5.2	Review The As Built Control Room Envelope And Control Room Ventilation Systems	Full endorsement	DG-1114, C.2.2.1	N/A
5.3	Review The Normal And Emergency Operating Procedures Affecting The Control Room Ventilation Systems	Full endorsement	DG-1114, C.2.2.1	N/A
5.4	Review The Testing Procedures Affecting Control Room Ventilation Systems And The Associated Envelope	Full endorsement	DG-1114, C.2.2.1	N/A
5.5	Review The Maintenance Practices And Procedures For Effect On CRH Requirements	Full endorsement	DG-1114, C.2.2.1	N/A
5.6	Review The Plant Modification Procedures For Consideration Of The CRH Requirements	Full endorsement	DG-1114, C.2.2.1	N/A
5.7	Review The CRH Analyses	Full endorsement	DG-1114, C.2.2.1	N/A
5.8	Identified Inconsistencies	Full endorsement	DG-1114, C.2.2.1	N/A
6	Assessing Industry Issue Applicability	----------	---------- -	----------
6.1	Purpose And Scope	Not addressed	N/A	N/A
6.2	Limiting DBA	Not addressed	N/A	N/A
6.2.1	Recommended Actions To Evaluate Limiting DBA	Not addressed	N/A	N/A
6.2.2	Adjacent Unit Accidents	Not addressed	N/A	N/A
6.3	Smoke Infiltration	Full endorsement	DG-1114, C.2.6	The NRC staff identifies that it believes the guidance in NE 99-03 concerning smoke is prudent and should be adopted

				until further guidance becomes available.
6.3.1	Recommended Licensee Action To Address Smoke Infiltration	Full endorsement	DG-1114, C.2.6	N/A
6.4	Toxic Gas Evaluation	Not addressed	N/A	N/A
6.4.1	Recommended Licensee Action To Address Toxic Gas Evaluation	Not addressed	N/A	N/A
7	Measuring Air In-Leakage (Baseline Test)	----------	---------- -	----------
7.1	Purpose And Scope	Not addressed	N/A	N/A
7.2	Preparation For Testing	Not addressed	N/A	N/A
7.3	Test Performance	Not addressed	N/A	N/A
7.4	Resolution Of Identified Issues	Not addressed	N/A	N/A
8	Dispositioning And Managing Discrepancies	----------	---------- -	----------
8.1	Purpose And Scope	Not addressed	N/A	N/A
8.2	Generic Letter 91-18	Not addressed	N/A	N/A
8.3	Determining Operability And Reportability	Not addressed	N/A	N/A
8.4	Methods Available To Address Degraded Or Nonconforming Conditions	Partial endorsement	DG-1114, C.2.7.3	Appendices C and D are not endorsed. Appendix F exceptions relate to: • Training and qualification of control room operators for SCBA • The impact of a loss of offsite power or airborne contamination at the refill compressor stations
8.4.1	Compensatory Measures	Partial endorsement	DG-1114, C.2.7.3	N/A
8.4.2	Dose Analysis Revision Option	Partial endorsement	DG-1114, C.2.7.3	N/A
8.4.3	Repairing Or Modifying The Plant	Partial endorsement	DG-1114, C.2.7.3	N/A
8.4.4	Technical Specification Changes	Partial endorsement	DG-1114, C.2.7.3	N/A
9	Long-Term CRE Integrity Program	----------	---------- -	----------
9.1	Purpose And Scope	Not addressed	N/A	N/A
9.2	CRE Integrity Program	Not addressed	N/A	N/A
9.3	Periodic Evaluations	Not addressed	N/A	N/A
9.3.1	System Material Condition	Full endorsement	DG-1114, C.2.7.1	N/A
9.3.2	Post-Maintenance Activities	Not addressed	N/A	N/A
9.3.3	In-Leakage Assessments	Not addressed	N/A	N/A
9.3.3.1	Assessment Scope	Not addressed	N/A	N/A
9.3.3.2	Assessment Frequency	Not addressed	N/A	N/A
9.3.3.3	Determine Need To Test	Not addressed	N/A	N/A

9.3.4	Toxic Gas Evaluation	Not addressed	N/A	N/A
9.4	Configuration Control	----------	----------	----------
9.4.1	CRE Boundary / Breach Control	Partial endorsement	DG-1114, C.2.7.2	The NRC staff does not endorse Appendix K.
9.4.2	Procedure Control	Full endorsement	DG-1114, C.2.7.2	N/A
9.4.3	Toxic Chemical Control	Full endorsement	DG-1114, C.2.7.2	N/A
9.4.4	Design Change Control	Full endorsement	DG-1114, C.2.7.2	N/A
9.4.5	Safety Analyses Control	Full endorsement	DG-1114, C.2.7.2	N/A
9.5	Training	Partial endorsement	DG-1114, C.2.7.2	The NRC staff endorses training using only the sections of NEI 99-03 that the staff has endorsed.
9.6	Testing	Not addressed	N/A	N/A
10	References	----------	----------	----------
Appendix A	Licensing Basis History	Not addressed	N/A	N/A
Appendix B	Control Room Habitability Regulatory Information	Not addressed	N/A	N/A
Appendix C	CRH Dose Analysis: Regulatory Enhancements	Not endorsed	DG-1114, C.2.7.3	The NRC staff refers to DG-1113.
Appendix D	Atmospheric Dispersion	Not endorsed	DG-1114, C.2.7.3	The NRC staff refers to DG-1111.
Appendix E	Smoke Infiltration Impact On Safe Shutdown	Full endorsement	DG-1114, C.2.6	The NRC staff identifies that it believes the guidance in NE 99-03 concerning smoke is prudent and should be adopted until further guidance becomes available.
Appendix F	Compensatory Measures Allowable On An Interim Basis	Partial endorsement	DG-1114, C.2.7.3	Appendix F exceptions relate to: • Training and qualification of control room operators for SCBA • The impact of a loss of offsite power or airborne contamination at the refill compressor stations
Appendix G	Toxic Gas Assessments	Not addressed	N/A	N/A
Appendix H	System Assessment	Partial endorsement	DG-1114, C.2.7.1 DG-1115, C.1.1	The NRC staff identifies that Table H-1 should be used as guidance for developing a maintenance program. The NRC staff states that the selection of components to be tested based on the guidance provided in Appendix H is subjective.
Appendix I	Testing Program	Partial endorsement	DG-1115, C.1.1	• The NRC staff cannot make a determination of the acceptability of an alternative test method. • The NRC staff states that a component test performed

			DG-1115, C.1.2 DG-1115, C.2.2 DG-1115, C.2.5 DG-1115, C.2.6	as described in Section 5.4.2 (of Appendix I) would only quantify the inleakage through those components that were selected for testing. The NRC staff identifies three additional conditions to be met for component testing to be acceptable. The NRC staff identifies that alignments other than accident-mode alignments should be considered. The NRC staff identifies submittal requirements for alternative test methods. The NRC staff refers to DG-1114 on the use of personal respiratory protection devices and the use of potassium iodide (KI) on an interim basis.
Appendix J	Control Room Envelope Sealing Program	Not addressed	N/A	N/A
Appendix K	Control Room Envelope Boundary Control Program	Not endorsed	DG-1114, C.2.7.2	The NRC staff identifies that an acceptable breach control method is incorporated in the example provided in Appendix A of the draft guide.
Appendix L	Glossary Of Terms	Not addressed	N/A	N/A

NEI COMMENTS ON DG-1115

COMMENT #	PAGE	SECTION/ PARA.	COMMENT	PROPOSED REVISION
1.	2	B 1st para	The first paragraph states that: "The CRE encompasses the control room and may encompass the alternate shutdown panel and other rooms and areas to which personnel access may be necessary to accomplish plant control functions in the event of an accident". It is incorrect to state, as general guidance, that the CRE may encompass the alternative shutdown panel (ASP), since it is not applicable to all plants. Furthermore, GDC 19 only defines radiological dose exposures for the control room; it does not provide criteria for the ASP environment nor the permitted operator ASP residency. In addition, the last sentence states: "...isolation of the CRE atmosphere from that of adjacent areas is fundamental". This statement does not appropriately reflect the operating conditions at many plants. A large percentage of control rooms are pressurized, and the filtered emergency supply prevents inleakage from adjacent areas through the CRE boundary surfaces. The DG should be revised to correct this.	Revise the sentence to read: "The CRE encompasses the control room, other rooms and areas within the confines of the control room boundary. The control room boundary is the physical surfaces (e.g., ducts, dampers, floors, ceilings, walls, doors) that separate the CRE from other plant areas." **NOTE:** The above definition for control room CRE and CR boundary should be consistently applied throughout the draft regulatory guide. Revise the last sentence to read: "In the majority of CR designs, isolation of the normal supply and exhaust flow paths and pressurization of the CRE relative to adjacent areas is fundamental to ...."
2.	2	B 2nd para	The term "positive CRE" is introduced with no definition and does not exist in the current regulatory requirements. However, the term "control room" is used in GDC-19. The term "positive CRE" should revised be "positive pressure control room." This is consistent with the existing regulatory requirements.	Change the sentence to read: "Plants with a CRE design based on isolation and pressurization (i.e., positive pressure in the control room relative to adjacent areas) have generally implemented testing programs that verify that the control room is at a positive differential pressure (DP) relative to adjacent areas."
3.	3	B 3rd para	Section B states: "The ΔP surveillance test has two inherent deficiencies. First, it is not a direct measurement of CRE inleakage. An inference is made from the ΔP measurement that contamination will be unable to enter the CRE if it is at a higher pressure than adjacent areas. Second, since this test only ascertains the ΔP achieved, it cannot assess whether there may be unrecognized sources of pressurization that, in an emergency, could introduce contaminants into the CRE."	After the third sentence, delete the remainder of the paragraph. or Rewrite the statement to make it technically correct.

COMMENT #	PAGE	SECTION/ PARA.	COMMENT	PROPOSED REVISION
			This statement is technically incorrect for the following reasons: • First, the ΔP surveillance test is a direct measurement of inleakage in that a positive pressure with respect to the outside of adjacent areas equates to zero inleakage. The ΔP measurement is an important part of the Component Test Method. This measurement provides assurance that any leakage through boundary walls, floors, ceilings/roofs will be out-leakage. • Second, DG-1115 equates that the ΔP surveillance test used traditionally by licensees is equivalent to the first part of the component test used to demonstrate that the control room envelope is at positive pressure to all adjacent spaces. The traditional ΔP surveillance test any have only tested the pressure differential at one location. The pressure differential test used as the first step of the component test method is a significantly more rigorous test process that will demonstrate the positive pressure relations ship and many locations. In addition, this information is redundant to Section C.1.1	
4.	3	B 2nd full para.	This paragraph states: "The CRE integrity results discussed above were performed using the standard test methods described in American Society for Testing and Materials (ASTM) consensus standard E741-95, "Standard Test Method for Determining Air Change in a Single Zone by Means of a Tracer Gas Dilution." (Ref. 3). The standard test method is a direct measurement of the total CRE inleakage from all sources and is well suited for assessing integrity of positive or neutral CREs. Basically, the method involves homogeneously dispersing a nontoxic tracer gas throughout the CRE envelope and measuring the dilution of the tracer gas caused by inleakage." The paragraph contains several misleading statements about ASTM E-741, and omits other pertinent concerns. • First, the method does not directly measure inleakage. All three techniques defined in ASTM E741 require the measurement of tracer gas injection and sampling, along with a key assumption that	Delete the second sentence of this paragraph.

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			the gas can be perfectly mixed in the CR envelope, and remain so during the entire test duration. Also, in two of the three techniques, a value of net CRE volume is normally needed. The uncertainty in volume affects the calculated inleakage directly. • Second, the characterization of the test as "well-suited" for any CR is unsubstantiated. For pressurized, low-leakage CRs, the uncertainty in the test, even under the best conditions, could easily be a significant percentage of the allowable inleakage, due to the typical uncertainty in pressurizing flow measurement. Also, in CREs where the various levels are served by different and unconnected ventilation systems, adequate mixing of the gas may not be possible, even with portable fans. • Paragraph 3.1.7.1 of ASTM E 741-95, states, "Multizone buildings are difficult to treat as single zones and meet the uniformity of tracer gas concentration required in this test method." Opening normally closed internal doors, removing ceiling tiles, and using portable fans to assist mixing can also affect operating ventilation systems and CRE leakage characteristics. Therefore, accurately quantifying these effects is difficult and the DG statement is inappropriate.	
5.	3	B 4th para	The paragraph refers to: "Smoke and other byproducts from fires within the CRE and in adjacent areas can have an adverse impact on control room habitability." As described in the first paragraph of section B page 2 and second paragraph of the regulatory analysis page 12, this guide is only concerned with radiological and toxic gas events external to the control room. CRHSs do not necessarily counter or mitigate internal events. Smoke and other byproducts from fires within the CRE are addressed in 10CFR50 Appendix R evaluations. Inclusion of this sentence in DG-1115 does not add to the understanding of the CRE testing methodology. In addition, the final sentence could imply the beyond design basis scenario of radiological "contamination" coincident with a fire.	Rewrite this sentence to read: "Smoke and other byproducts from fires in areas adjacent to the CR can have an adverse impact on control room habitability." Rewrite the last sentence to read: "Refer to guidance being developed in Draft Regulatory Guide DG-1114, "Control Room Habitability at Nuclear Power Reactors" (Ref.4), for qualitative evaluations to ensure that the control room and the alternate shutdown capability are not likely to be simultaneously rendered uninhabitable by a fire external to the CRE."

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6.	4	B 1st para	The paragraph states that preventive and corrective maintenance programs (PMs and CMs) and testing provide: "...a level of assurance of adequate CRE performance." The scope of PMs, CMs and inspections should cover the entire range of equipment important to CRH (including fans, dampers, etc.). All of these items could have significant impact to CRH. Last sentence states: "Periodic inleakage testing provides a measure of the effectiveness of these maintenance programs." However, periodic inleakage testing is not always necessary. Following the completion of baseline testing, periodic assessments should prove adequate for providing a measure of CRE boundary effectiveness. Guidance on the need/frequency for periodic testing is provided in Section 9.3 of NEI 99-03.	Change the third to last sentence to read: "Preventive and corrective maintenance programs, in conjunction with periodic assessments and/or testing, provide a level of assurance of adequate CRHS performance." and, Delete the last sentence of this paragraph.
7.	4	C.1.1	The industry and NEI have several very significant concerns with this section (Baseline Testing). These are as follow: • **NRC insists that an integrated test in accordance with ASTM E741 is the only means of demonstrating CRE integrity.** The DG states that staff find the component test method to be an extension of the traditional ΔP test surveillance test discussed in Section B, "Discussion," of this guide. However, the component test method is much more than the traditional ΔP test surveillance test. The component test is a rigorous test for pressure differential between the control room and all adjacent spaces. It includes a methodical assessment of al the vulnerabilities, and tests those vulnerabilities after one has identified the positive pressure across a boundary. The positive test across a boundary demonstrates outleakage, rather than inleakage. In addition, C.1.1 ignores the proven capability of the NEI 99-03	Revise the DG to permit use of the component test method per Appendix I, Section 5.3.2 of NEI 99-03 for control rooms that have a positive pressure and a small number of vulnerabilities. Editorial: Change ASME to ASTM

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			assessment and test processes in accurately and comprehensively quantifying unfiltered inleakage, and the limitations of the E-741 methods (Reference Letter STARS-02008 from STARS to NRC, dated June 7, 2002). The staff's primary reason for rejecting a component test or alternate test is the fear that inleakage locations will be missed during the assessment process, and therefore, not be tested and included in the total. During the development of NEI 99-03, the staff frequently cited occasions where plant staffs in fact did not account for leakage paths. The difference is that those omissions would not have occurred if the NEI 99-03 assessment process and guidance had been available and followed. The assessment process is based on broad engineering knowledge, considerable industry experience, and numerous discussions with the staff. Moreover, since CRs differ widely in design and operation, leakage paths may be missed even when using a E-741 test if the limiting scenario or alignment is not identified correctly. At some point in either test method, the competence and knowledge of the plant staff must be assumed. In a December 2000 letter, the ACRS agreed that the component test process should be acceptable following successful demonstration at several plants. Accordingly, comparison tests were performed at Palo Verde and Comanche Peak, and confirmed that the NEI 99-03 assessment process and Component Test method provide acceptable, if not superior, results relative to the E-741 test (Reference Letter STARS-02008 from STARS to NRC, dated June 7, 2002). The option to use the component test should therefore be retained. The guidance in NEI 99-03 clearly points out that the component test is best suited for low-leakage CR designs with most HVAC ducting and equipment within the CRE, and is therefore not a viable option for all plants. • **Unacceptability of ΔP test for demonstrating CRE integrity.** The industry and NEI agree with the staff that limited ΔP readings ALONE are not necessarily sufficient to assure CRE integrity. However, positive ΔP readings across pressure	

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			boundary components (walls, floors, dampers, doors, etc.), in fact, are a direct indication of no inleakage, and this has always been recognized by accepted codes and standards (e.g., ANSI N510, ASME AG-1) as proof of integrity. As discussed in NEI 99-03, verification of positive ΔP readings to ALL adjacent areas is required to demonstrate the integrity of the particular barriers, but this is only one part of the assessment and testing process. It is the responsibility of the licensee to measure the inleakage in equipment or components not tested by the ΔP readings. The instances cited by the staff where the "ΔP test" failed to accurately measure inleakage are not related to the adequacy of the ΔP measurement, but of the effort of the plant staff in performing a thorough assessment. These "failures" occurred prior to issuance of NEI 99-03 and the associated industry workshop. As demonstrated by the successful Palo Verde and Comanche Peak comparison tests, assessments and testing performed in accordance with the NEI 99-03 guidelines resulted in an accurate measurement of total unfiltered inleakage. The ΔP measurements were an integral part of these successful tests. • **ASTM E-741 Uncertainty and Effectiveness:** The expected uncertainty of an E-741 test under nominal conditions can be ± 10%, and is dependent on several assumptions. A key assumption is perfect mixing of the tracer gas within the entire CRE. Depending on the type and design of a particular CR, including the ventilation systems, assuring adequate mixing may be difficult, even with portable fans and other means. Satisfactory distribution is typically checked by monitoring uniformity of concentration values throughout the CRE. The number and location of the tracer release and sample points, and the ventilation systems operating, will affect the measured concentration. If the constant injection technique is used, an accurate CRE net volume is needed. In addition, the proposed regulatory guide has not provided a	

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			technical justification, why the ASTM E741 methodology is acceptable for the determination of control room unfiltered inleakage. This is a concern because E741 does not provide guidance as to how the total inleakage is to be partitioned into filtered and unfiltered components.	
8.	5	C 1.1 First bullet	"Component testing" is disallowed due to the subjective evaluations required and the inability of the test to recognize sources of inleakage. However, the same processes would be used to determine the limiting conditions for tracer gas testing (*i.e.*, subjective evaluations of the variables outlined in C. 2.3) and a test, which cannot detect incorrect evaluations (e.g., an inappropriate HVAC lineup). The consequence of this finding is that a valuable tool available to improve testing of the CRE is arbitrarily excluded from use. Component testing is an acceptable testing method for quantifying local inleakage.	Revise the DG to permit use of the component test method per Appendix I, Section 5.3.2 of NEI 99-03 for control rooms that have a positive pressure and a small number of vulnerabilities.
9.	5	C.1.1 Last Para	The discussion on periodic testing is not appropriate for inclusion in Section C.1.1 "Baseline Testing."	Delete this paragraph discussing periodic testing from C.1.1.
10.	5, 6	C 1.2 General	In C.1.2, first paragraph, the staff considers the CRE design characteristics provided in Section 5.3.2 of Appendix I of NEI 99-03 as prerequisites to be met for a component test to be found acceptable. The DG misinterprets the intent of the cited section of NEI 99-03. The design characteristics discussed in Section 5.3.2 support the selection of component testing as a preferred method for determining CRE inleakage. The DG should be revised to provide justification for the cited design characteristics or the design criteria should be deleted. At the Palo Verde plant the majority of the control room HVAC equipment is located outside the CRE. The validation test demonstrated that there were no vulnerable inleakage paths from this system into the CRE. The DG states that an integrated inleakage test, as discussed in Sections 5.3.1 and 5.4.1 and Appendix I of NEI 99-03, must be performed to determine the total boundary leakage. This condition will disallow the use of component testing except when tracer gas testing has been performed on the facility. The STARS report (Reference Letter STARS-02008 from STARS to NRC, dated June 7, 2002)	Revise the DG to endorse Sections 5.3 and 5.4, and Appendix I of NEI 99-03, without exception. Delete Section C.1.2.

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			demonstrates that the Component Test method stands on its own merit when the NEI 99-03 guidance for applicability and testing methodology is followed. The DG stated that component testing must account for no less than 95 percent of the total boundary leakage. If component testing is performed in accordance with NEI 99-03 guidance, the licensee should reasonably conclude that total boundary leakage has been determined. Comparison leak rate testing has been conducted at two STARS facilities to demonstrate that component testing can determine total boundary leakage. The 95 percent criterion assumes that the Integrated Tracer Gas Method has established the total boundary leakage for making a comparison. These tests demonstrate that it was difficult to quantitatively compare the results from these two test methods, each with different testing uncertainty that is derived from fundamental differences in testing and analysis methods. For example, the Palo Verde measured unfiltered inleakage using the integrated tracer gas testing was 0 +/- 52 scfm with the Train-A ventilation system in the emergency mode, where the uncertainty is dominated by the uncertainty in measurement of the pressurizing make-up flow. The Component Test measured –2 scfm (out-leakage) with a measurement uncertainty of +/- 8 scfm. While both tests conclude that unfiltered inleakage is 0 scfm, the testing uncertainties do not permit any quantitative comparison to demonstrate the proposed 95percent criterion. The DG stated that approximately 20 percent margin must exist between the radiation doses or hazardous chemical concentrations calculated using the measured total boundary leakage and the corresponding acceptance criterion, and that the 20 percent margin compensates for the uncertainties involved with the companion differential pressure testing and the identification of vulnerable components. The application of the 20 percent margin is arbitrary and unnecessary. The current practice is to use the nominal value of the testing results in radiological or hazardous chemical analyses. Restricting the allowable margin on calculated dose or chemical concentration resulting from the analysis is inappropriate because these results are a function of numerous inputs other than unfiltered inleakage. Conservative margins that are routinely applied to other input parameters in these analyses, for example in the determination of χ/Q values for radiological and toxic gas control room habitability analyses, are judged to address the staff's	

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			issues of concern regarding component testing accuracy.	
11.	6	C 2.1 1st para	Section C.2.1 is a duplicate of information in DG-1114 section C.2.1. Since DG-1114 is an umbrella guide that provides as overview of "Control Room Habitability", the licensing/design bases should more appropriately reside in that document. The following are specific reasons supporting the elimination of Section C.2.1 from DG-1115: • DG-1115's primary purpose is control room envelope inleakage testing. The discussion of licensing/design basis more appropriately fits in DG-1114. • Including a significant discussion in multiple Reg Guides increases the possibility that conflicting information may be presented. It also increases the possibility that licensees may inadvertently overlook important information. If the information is contained in one document, then consistency is assured and confusion is eliminated. • Section C.2.1 is part of "Section 2, Clarifications." It is not clear what licensing basis issues are being clarified. As stated above, the identification of the licensing basis should be discussed in DG-1114 and any clarifications should be included in that document. A plant's licensing basis is more importantly used to perform the associated control room habitability analyses (DG-1113). Once the analyses are completed (established), then the control room envelope can be tested to verify that the actual inleakage supports the analyses.	Delete from the DG Section C.2.1, "Licensing Bases".
12.	6	C.1.2 last para	No technical basis was given for rejection of the 0.05 inch-wg ΔP. Obviously, a larger ΔP will offer more protection against inleakage. However, based on current engineering practice in the cleanroom and healthcare industry, a 0.05 inch-wg for adjacent areas within buildings is sufficient. In the April 2001, revision of Guidelines for Construction of Hospital and Health-Care Facilities, the American Institute of Architects recommends a minimum of 0.01" wg ΔP (negative) for airborne infection isolation rooms, and a minimum of 0.01 inch-wg ΔP (positive) for critical care areas such as intensive care and surgical rooms.	Delete paragraph C.1.2.

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			In Chapter 15 of the ASHRAE HVAC Applications Handbook, 0.05 inch-wg is noted as a widely used standard for semiconductor cleanrooms, and pharmaceutical and biomanufacturing clean spaces. These industries must deal with contamination on a daily basis, not just as a potential outcome of an unlikely event. Any testing should be conducted with the ΔP within the licensing basis limits.	
13.	6	C 1.2 Note 4	Footnote 4 states that filtered air intake and adjustments for ingress and egress are not considered in the radiological analysis. This is incorrect. They are inputs to the radiological analysis.	Footnote 4 should be revised to read: "Filtered air intake for the purpose of intentional CRE pressurization is not considered in the total boundary leakage when comparing with the results of component testing. Adjustments for projected ingress and egress are not included when comparing with the results of component testing."
14.	7	C 2.2 C.2.3 C.2.4	Sections C.2.2, C.2.3, and C.2.4 deal with "CRHS Alignment and Operation", "Limiting Conditions", and "Acceptance Criteria." The three sections are fundamentally the same and should be combined into one concise Section. The following comments details the basis for this recommendation: • The following sections have inconsistencies between each other and with the other draft guides: ➢ Section C.2.2 third sentence states: "The NRC staff recommends that periodic surveillance tests that assess the performance of these systems be scheduled prior to conducting the integrity test." ➢ Section C.2.3, paragraph three states: "Pre-conditioning of the CRE boundary and seal replacement or adjustment, ventilation re-balancing, or other similar maintenance actions should not be performed closely prior to a scheduled integrity test." ➢ DG-1114, Section C.2.3.1 paragraph 3 states: "Licensees should establish the performance characteristics of ventilation systems and fix any deficiencies before testing..." Since DG-1114 adequately addresses the issue and is the recommended course of action. this information should be	Delete Sections C.2.2, C.2.3 and C.2.4 as written. Replace with the following: 2.2 Inleakage Test Acceptance Criteria The acceptance criteria for control room habitability inleakage testing is that inleakage which corresponds to the configuration that results in the maximum consequences to the operator as described in section C.2.3.2 of DG-1114. This inleakage value may or may not be the maximum possible inleakage for the CRHS. The CRHS alignment for testing should be the same as that evaluated in the CRH analyses described in section C.2.4 and C.2.5 of DG-1114. If it is not possible to establish this alignment, an alternative line up may be used provided that it is conservative and documented. Since some plants have different alignments for radiological and toxic gas challenges, licensees may desire to perform multiple inleakage tests (i.e. one for a toxic gas event and one for a radiological event). The acceptance criteria for each test should correspond to the inleakage that results in the maximum consequence to the operator for the particular

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			recommended course of action, this information should be eliminated from DG-1115. By including it in multiple locations, variations in wording can be misleading and confuse the issue. • The three sections discuss ➢ "...the accident mode alignment as discussed in the licensing bases." (C.2.2), "... ➢ CRE integrity test should be performed for the limiting condition..." (C.2.3), and ➢ "...maximum allowable inleakage for any CRHS operating mode..." (C.2.4) The three sections paint a confusing picture with regard to the test line up. The proposed replacement paragraph is consistent with DG-1114 paragraph C.2.3.2 which states, "The limiting condition for CRH is the configuration that results in the maximum consequences" and clearly defines exceptions due to normal operating limitations. • The consideration of "Loss of Offsite Power" and equipment failure modes is critical to the analyses discussed in sections C.2.3.2, C.2.4, & C.2.5 of DG-1114. Guidance concerning this type of information should be incorporated into DG-1114 section C.2.3.2. DG-1115 section C.2.2 states "...accident alignments may need to be modified... to properly simulate conditions such as loss of offsite power and single failures." Section C.2.3 also states in bullet form that "...variables include...limiting single failure...availability of offsite power..." The information contained in these sections is more appropriate for DG-1114 to ensure that the accident analyses are performed for the most limiting condition. Inleakage testing should then verify that the inputs to the analyses are valid. • The alignments discussed in section C.2.2 and C.2.3 are not practical and are not recommended. It is not believed to be possible to create the desired conditions throughout the control room for the duration of the test and, furthermore, they probably cannot be created/maintained in a safe manner. Section C.2.2 states "...ventilation systems may need to be placed in abnormal alignments in order to develop the pressure	event being tested. Due to inherent errors associated with inleakage testing (i.e. the application of +/- 10% variance in pressurization flow, ASTM E741 application limitations) and since there is significant conservatism incorporated into the analyses, the nominal measured inleakage value may be used when comparing the measured inleakage flow to the acceptance criteria. Inleakage during ingress and egress should be included. The staff considers 10 cfm as a reasonable projection. If a licensee uses a value of less than 10 cfm, the basis for exception should be justified and documented.

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			differentials across the CRE..." Considering the number of CRHS components and the potential number of adjacent ventilation units, the possible number of combinations for testing could be infinite. Section C.2.3 recognizes this and states that "Given the number of variables, it may not always be possible to identify the limiting condition for a CRE integrity test..." • There is insufficient guidance for performing the "sensitivity evaluation" of section C.2.2 and "engineering evaluation" discussed in section C.2.3. • The section C.2.3 definition of "limiting condition with regard to CRE integrity testing" is not consistent with section C.2.4 of this DG or with section C.2.3.2 of DG-1114. The description in DG-1114 section C.2.3.2 is accurate and should be used. It reads as follows: "The limiting condition for CRH is the configuration that results in the maximum consequences. Sometimes the limiting condition will arise from the configuration that produces the greatest inleakage and sometimes it will not." It is recommended that a simple reference to DG-1114 be made in this section of DG-1115 and keep the detailed discussion in section C.2.3.2 of DG-1114. Since the limiting condition for control room habitability is obtained from the analyses described in section C.2.4 and 2.5 of DG-1114, it is more appropriate to place this information in that DG. • Section C.2.4 refers to GDC-19 as the basis for CRH inleakage acceptance criteria. This information is more appropriate for DG-1114 section C.2.1.1 in which the licensing basis for CRH is identified. Additionally, not all licensees are committed to GDC-19. When performing a CRH assessment as described in DG-1114, the licensing basis should be established long before performing an inleakage test. The proposed revision does not discuss the licensing basis. • The discussion and reference in section C.2.4 to RG 1.78 & 1.183 is inappropriate. These RGs provide guidance on performing analyses and are better suited for DG-1113 and 1114. Their presence in this section adds no value to the	

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			guidance being provided on CRH inleakage testing. • The errors associated with the various integrated test methods (i.e. ASTM E741) can potentially have large error bands. Paragraph 17.1 of ASTM E741 discusses a 10 percent accuracy but also discusses variables that can effect this value such as "wind, temperature, and zonal operation regimes." Paragraph 1.5 states that, "The results from this test method pertain only to those conditions of weather and zonal operation that prevailed during the measurement. The use of the results from this test to predict air change under other conditions is beyond the scope of this test method." It is recommended that the nominal value of the inleakage test be compared to the acceptance criteria established by the analyses. This is considered acceptable because there is sufficient conservatism in the analyses to offset the accuracy of the inleakage test.	
15.	8 & 9	C 2.5	This DG should not require staff review/approval before a licensee can use an "Alternative" test method. This requirement is counter to one of the main purposes of regulatory guides; that of streamline the process and conserving NRC and industry resources.	Delete the Section 2.5 requirement for submittal (this precedes the bullets). Revise the sentence to read: "The following information should be considered:"
16.	9	C 2.5 4thbullet	The fourth bullet on page 9 is unclear as to whether the actual test procedure needs to be submitted, or just a description of the test.	Revise the fourth bullet on page 9 to indicate that submittal of a description of the test procedure is acceptable.
17.	9	C 2.5 Last bullet	The last bullet on page 9 states that test results are "...obtained from at least two other application of the test method on CREs of similar design, configuration, operation, and performance." This requirement is unnecessarily over-restrictive and effectively eliminates all other methods of testing. The diversity of design and construction of the various nuclear power plants limits the ability to obtain three separate tests at three separate but similar facilities. A one-for-one benchmark of an alternate test method at a single facility, which has already performed an ASTM (erroneously called ASME in the DG) E-741 test, should be sufficient to validate the accuracy and usefulness of the alternate method.	Revise the last bullet to read: "Results benchmarked to some other acceptable test method." Editorial Change: ASME to ASTM

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			Additionally, design, configuration, operation, and performance of the system being tested do not limit the use of ASTM E-741. There is no basis for requiring multiple benchmarks.	
18.	9	C 3.0 General	Section C.3.0 specifies periodic testing on 24-month intervals, without any technical or risk justification. NEI 99-03 Section 9.3.3.2 delineates specific performance factors that are considered as part of the periodic assessment, which establishes the timetable for the next assessment. The assessment may determine a need for testing. The lack of industry resources to support tests every 24 months is a large concern. The current number of vendors to implement a 24-month interval may be insufficient to support amount of testing necessary to support this. The second paragraph lists procedures along with SSC's. Just changing a procedure should not require a CRE test. Also changes to SSCs should not require a test unless the change could affect the results of an inleakage test. The regulatory analysis mistakenly concludes that this draft guide is a burden reduction. In fact, the burden is increased.	Rewrite the first paragraph to read: "All CREs should be tested prior to initial reactor startup. Facilities that have not tested their CREs for integrity should perform a baseline test. A licensee-controlled program should be established to ensure long-term CRE integrity. Periodic assessments should be performed in accordance with Section 9 of NEI 99-03. The results of these assessments may determine that additional inleakage testing is required to verify control room boundary integrity. The staff finds the program outlines in Section 9 of NEI 99-03 as an acceptable method for ensuring long-term CRE integrity." Delete the second paragraph, as the comment resolution is addressed in the above rewrite.
19.	9,10	D	The second sentence of the second paragraph reads: "Except when an applicant or licensee proposes an acceptable alternative method for complying with specified portions of the NRC's regulations, the methods to be described in the active guide reflecting public comments will be used by the NRC staff for evaluating the adequacy of CRE integrity testing for plants for which the construction permit or license application (but not for license renewal if the current licensing basis is maintained) is docketed after the issue date of this guide and plants for which the licensee voluntarily commits to the provisions of this guide." This statement exceeds the guidance presented on the cover of other regulatory guide issued by the NRC staff. The standard statement is: "Regulatory Guides are issued to describe and make available to the public methods acceptable to the NRC staff of implementing specific parts of the Commission's regulations, to delineate	Replace this sentence with: "Regulatory Guides are issued to describe and make available to the public methods acceptable to the NRC staff of implementing specific parts of the Commission's regulations, to delineate techniques used by the staff in evaluating specific problems or postulated accidents, or to provide guidance to applicants. Regulatory Guides are not substitutions for regulations, and compliance with them is not required. Methods and solutions different from those set out in the guides will be acceptable if they provide a basis for the findings requisite to the issuance or continuance of a permit or license by the Commission."

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			techniques used by the staff in evaluating specific problems or postulated accidents, or to provide guidance to applicants. Regulatory Guides are not substitutions for regulations, and compliance with them is not required. Methods and solutions different from those set out in the guides will be acceptable if they provide a basis for the findings requisite to the issuance or continuance of a permit or license by the Commission." Since regulatory guides are not substitutions for regulations, and compliance with them is not required, Section D should be revised to reflect the official text placed on the cover of each NRC staff issued regulatory guide.	
20.	14	RA Para III	First sentence states: "... into the control room and associated rooms and areas at nuclear power reactors." This is too broad a definition that is inconsistent with the plant's licensing basis. The sentence should address only the control room envelope.	Modify the sentence to read: "...into the control room envelope."
21.	17	RA Para IV 1st para on page	The paragraph states: "For plants that voluntarily commit to the new regulatory guide, changes to existing technical specification surveillance requirements would be necessary." The relationship to a revised technical specification has no connection to the scope of DG-1115. Therefore, this sentence should be deleted from the draft regulatory guide.	Delete the sentence.

EDITORIAL COMMENTS

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1.	2	B, 1st para, 4th sentence	Revise the sentence to be consistent with DG-1114.	Read as, "Control room ..... monitoring, and **the necessary sustenance and sanitation to ensure**.....situations,"
2.	2	4	Second to last sentence discusses "maintaining CRE habitability." The CRE is the boundary and has no habitability.	Revise the sentence to read: "The personnel protection features incorporated into the design of a particular plant's CRHS depend on the nature and scope of the plant-specific challenges to maintaining control room habitability (CRH)."
3.	2	4	Last sentence discusses "CRE atmosphere." The CRE should be used primarily when discussing the boundary. The "control room atmosphere" is more appropriate.	Change "CRE atmosphere" to "control room atmosphere." Or Revise the sentence to read: "In the majority of the CRHS designs, isolation of the control room from adjacent areas is fundamental to ensuring a habitable control room."
4.	2	5	The first sentence discusses the "...design of the CRE and the CRHSs..." The CRE is a subset of the CRHS as described in DG-1114, page 2, Section B. Referring to both is redundant. The design of the CRHS by definition includes the design of the CRE.	Revise the sentence to read: "During the design of a nuclear power plant, analyses are performed to demonstrate that the design of the CRHSs will provide a habitable environment for postulated design basis events."

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5.	3	1	The term "neutral CRE" should be "neutral pressure control room." The CRE is the boundary and as such is neither positive, negative nor neutral. This comment also applies to Footnote 2.	Change phrase to "neutral pressure control room." Revise the footnote to read "...the pressure of the control room relative to adjacent areas..." Or Revise the sentence to read: "Plants with a CRE design based on isolation without intentional pressurization (i.e., neutral [2] control room) typically do not have an integrity testing program." Revise Footnote 2 to read: "The term *neutral* is used here. With no intentional pressurization, the pressure of the control room relative to adjacent areas may be either negative or positive."
6.	3	3	The paragraph refers to "positive or neutral CREs" and is incorrect as discussed in the previous editorial comments.	Replace "CRE" with "control room." Or Revise the sentence to read: "The standard test method is a direct measurement of the total control room inleakage from all sources and is well suited for assessing integrity of positive pressure or neutral control rooms.
7.	3	4	The term "CRE habitability" is used. The CRE cannot be habitable, only the control room.	Revise the sentence to read: "Although the focus of many CRE integrity testing programs is on radiological concerns, inleakage of other contaminants can often have a greater impact on control room habitability."

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8.	3	5	The first sentence discusses "The performance of the CRE and the CRHSs..." and the "...maintenance on the CRE boundary or the CRHS..." The CRE is a subset of the CRHS. This is redundant.	Delete "the CRE and". Delete "the CRE boundary or". Or Revise the sentence to read: "The performance of the CRHS (including the CRE) can be affected by gradual degradation in associated equipment such as seals, floor drain traps, fans, ductwork and other components; drift in throttled dampers; maintenance on the CRHS (including the CRE); changes in ..."
9.	4	1	The paragraph discusses "...pressure differentials between the CRE and external areas." The CRE is the boundary; the differential pressures exist between the control room and adjacent areas (see comment 4 & 5 above).	Replace "CRE" with "control room".
10.	4	1	The sentence "...changes in ambient pressures in these areas..." is misleading. Ambient generally refers to the outside environment.	Delete the word "ambient" or replace it with the word "air". Or Revise the sentence to read: "Since inleakage is a function of pressure differentials between the control room and external areas, changes in air pressures in these areas can impact control room inleakage."
11.	4	1	The paragraph states that PM's and testing provide "...a level of assurance of adequate CRE performance." This statement should be more global. The scope of PM's and inspections should cover the entire range of equipment important to CRH which includes fans, dampers, etc. All these items could have significant impact to CRH.	Revise the sentence to read: "Preventive and corrective maintenance programs, in conjunction with periodic integrity testing, provide a level of assurance of adequate CRHS performance.
12.	5	First bullet	Statement is made that tracer gas testing performed "to date" indicates unexpectedly high inleakage results. This is not a balanced statement of industry experience. More recently, industry testing has found no unexpected inleakage or a small amount of inleakage.	Statement should be more balanced. Revise "to date" to "in a number of cases"

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13.	6	4	Section 2.1 Third sentence discusses "...the licensing basis for the CRE and CRHS..." As stated in comments 3, the CRE is a subset of the CRHS. If the licensing basis for the CRHS is determined, by definition, the licensing bases for the CRE is determined. This is redundant.	Delete "CRE and." Or Revise the sentence to read: "Guidance on establishing the licensing bases for the CRHS (including the CRE) is being developed in Draft Regulatory Guide DG-1114 (Ref. 4)."
14.	7	2.2	The term "neutral CRE" is slang.	Revise the sentence to read: "For neutral control rooms, ventilation systems may need to be placed in abnormal alignments in order to develop the pressure differential across the CRE boundary needed to accomplish the test."
15.	8	2.4	The first sentence refers to "CRE habitability." The CRE cannot be habitable.	Revise the sentence to read: "The acceptance criteria for control room habitability are provided in GDC-19, with additional guidance provided in Regulatory Position 3.1 of Regulatory Guide 1.78, ..."
16.	14	IV.2 2nd sentence	Typo, editorial	Read to read, " As discussed above, **NEI**....
17.	General		Whenever citing a NEI 99-03 paragraph, the citation should explicitly cite "NEI 99-03" and any applicable Appendix.	Revise throughout the DG.
18.	10	Ref.	Reference 5 is dated 2000, not 2002.	Change date of Reference 5 from 2002 to 2000.