NRC Responses to Comments
Comments on DG-1217 (Draft RG 1.115 Rev. 2) ADAMS document ML103350136

Comments were received from two sources:

Comment numbers	Organization	Date	Address	Representative
1-6	Nuclear Energy Institute	06/03/11	1776 I Street NW, Suite 400 Washington, DC 20006	John C. Butler

Comment and response are tabulated below

Comment #	Section/Page	Text	Comment	NRC Response
General comment in covering letter	All	All	Recommended Changes to Replace "essential SSCs" by "important-to-safety SSCs" throughout the DG	Partially Accepted – The comment pointed out places for improvement in the DG. Since "important to safety" was used in General Design Criterion (GDC) 4 to describe SSCs to be protected from missiles from equipment failures, the staff used it in the DG until "essential" SSCs is defined. Essential SSCs are those SSCs which require protection against turbine missiles. The DG will make the following revision: Page 2 Use "important to safety" in describing high-trajectory and low-trajectory missiles: 1. "high-trajectory" missiles, which are ejected upward through the turbine casing and may cause damage if the falling missile strikes an important to safety SSC, and 2. "low-trajectory" or "direct" missiles, which are ejected from the turbine casing directly toward an important to safety SSC.

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				Page 3 -Avoid using "essential SSCs" in a title before it is defined in the text: **Scope of SSCs Required to be Protected Against Turbine Missiles** -Avoid using "essential SSCs" in a sentence before it is defined in the text: Consideration of turbine missile protection is relevant for SSCs, necessary to ensure the following: -Revise the last sentence of the last paragraph on Page 3: Thus, the SSCs considered for protection from postulated turbine missiles may be limited to those listed in Appendix A of this Regulatory Guide, henceforth referred as "essential SSCs."
1	General Comment on DG-1217	All	Resolve the Differences Between DG-1217 and Standard Review Plan Section 3.5.1.3. A cursory comparison between DG-1217 and the current revision of Standard Review Plan Section 3.5.1.3 (Revision 3) noted a number of differences between these two documents. It is not clear if these differences are intentional or not.	No Change – The differences between these two documents are intentional and will be addressed when revising NUREG-0800, Section 3.5.1.3, "Turbine Missiles."
2	Section A Introduction Page 1	"The NRC issues regulatory guides to describe to the public methods the staff considers	Clarify the potential users of the DG Reg guides provide guidance to licensees and applicants to meet NRC regulations.	No change – The document may be of most value to licensees and applicants, however it is intended to serve all stakeholders. This is boilerplate

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		acceptable for use in implementing…."		language taken from the FRN announcing the regulatory guide series (39FR20628).
3	Section B Discussion Page 2	"The two broad categories of turbine failure failures a usually referred to as "design overspeed" (up to approximately 130 percent of the rated speed) failures and "destructive overspeed" (up to approximately 190 percent of the rated speed) failures."	<u>Definitions of Design and Destructive Overspeeds Are Not Accurate</u> Definitions for these terms vary with turbine manufactures so definitions in the draft document are not accurate for all turbines.	Accepted – The DG will make the following revision: <u>Page 2</u> Modify the definition for destructive overspeed: The two broad categories of turbine failures are usually referred to as "design overspeed" (up to approximately 130 percent of the rated speed) failures and "destructive overspeed" (any speed above the design overspeed) failures. <u>Page 3</u> Avoid mentioning the 190% rated speed pertaining to the old definition of destructive overspeed: Runaway turbine failures that result in turbine destructive overspeed before failure of the turbine wheels or shaft present a more difficult protection problem.
4	Section B Discussion/Scope of Essential SSCs Page 3	"2. the plant's capability to shut down the reactor and maintain it in a cold shutdown condition, or"	<u>Necessity of Maintaining the reactor in Cold Shutdown Condition?</u> Maintenance of a "cold shutdown" state is not required.	Accepted – Consistent with 10 CFR 50.2 and 54.4.
5	Section B	"A recent industry report (Ref. 8) proposed the management	<u>Add and Evaluate Another Reference on the</u>	Partially Accepted – The staff will

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	Discussion Page 6 and References Page 11	of turbine missiles by focusing on their contribution to core damage frequency in lieu of their probability of damaging essential SSCs."	Risk-Informed Approach EPRI 1009665, Guidance for Performing a Simplified Risk-Informed Turbine Missile Analysis, provides an alternative technique for assessing risk of core damage associated with turbine rotor failure. This report is more current than EPRI 1007637 which is currently referenced in the draft document. Evaluate the technique described in EPRI 1009665 for generic application (instead of case by case) to meet regulatory requirements.	reference EPRI 1009665. However, a brief review of the report indicated that this report should be submitted for formal review separately from this effort if a rigorous evaluation of this report is desired. The DG will make the following revision: Page 6 Recent industry reports (Ref. 8 and Ref. 9) proposed the management of turbine missiles by focusing on their contribution to core damage frequency in lieu of their probability of damaging essential SSCs. The NRC provided guidance for risk-informed approaches to licensing issues in Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," (Ref. 10) which specifies consideration of defense-in-depth attributes, safety margins, and uncertainties in addition to risk metrics such as core damage frequency. The NRC staff would consider applications conforming to the guidance of Regulatory Guide 1.174 on a case-by-case basis. Page 6 to Page 10 Reference nos. after Ref. 9 will be increase by 1 to account for one additional reference. Page 11 EPRI 1009665 is added to the reference

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				list as Reference 9.
6	References Page 11	7. NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition," Section 3.5.1.3, "Turbine Missiles," U.S. Nuclear Regulatory Commission, Washington, DC, March 2009.	The Publication Date of the Reference 7 is Wrong The current revision of this section on the NRC website is Revision 3, with a publication date of March 2007.	Accepted – The publication date of Reference 7 will be revised.

Comment numbers	Organization	Date	Address	Representative
	Dominion Resources Services, Inc.	**06/06/11**	**5000 Dominion Boulevard, 2SE, Glen Allen, VA 23060**	**C. L. Funderburk**

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7	Section C Regulatory Position Page 8	1. When barriers are used to protect essential SSCs, dimensioned plan and elevation layout drawings should include information on wall or slab thicknesses and materials of pertinent structures. The protection is considered acceptable if no missile can compromise the final barrier protecting an essential SSC. Steel barriers should be thick enough to prevent perforation. Concrete barriers should be thick enough to prevent backface scabbing.	Prevent Back Scabbing from Turbine Missiles May not be Necessary Why is it rigidly required that concrete barriers be designed to prevent back scabbing from turbine missiles? If it can be shown that the back scabbed concrete would not impair an SSC from performing Its Intended function, why shouldn't the requirement be based on functional sufficiency? The NRC should consider adding functional-based flexibility into this position of the proposed draft Regulatory Guide and permit back scabbing if it can be demonstrated that the associated SSC can continue to perform its intended function.	No Change – back scabbing results in secondary missiles that unnecessarily complicate the evaluation. Applicants are free to propose alternate approaches, but, at the time of construction, design to prevent back scabbing is appropriate for missile barriers.