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2003 APR 28 AM 10:42

Rules and Directives  
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April 25, 2003

3/19/03

68 FR 13338

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Rules and Directives Branch  
Office of Administration  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

Gentlemen:

NUCLEAR REGULATORY COMMISSION (NRC) - COMMENTS ON DRAFT REGULATORY GUIDE (DG) -1107 - VOL. 68 NUMBER 53 *FEDERAL REGISTER* 13338, DATED MARCH 19, 2003

TVA appreciates the opportunity to comment on the proposed Draft Regulatory Guide (DG) -1107. The proposed Revision 3 of Regulatory Guide 1.82, "Water Sources for Long-Term Recirculation Cooling Following a Loss-Of-Coolant Accident," is being revised to describe methods acceptable to the NRC staff for implementing requirements with respect to the sumps and suppression pools performing the functions of water sources for emergency core cooling, containment heat removal, or containment atmosphere clean up. TVA's comments are provided in the enclosure.

If you have any questions, please contact R. M. Brown at (423) 751-7228.

Sincerely,

*Mark J. Burzynski*  
Mark J. Burzynski  
Manager  
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Enclosure  
cc (Enclosure):  
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*Template = ADM-013*

*E-RTDS = ADM-03*

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**ENCLOSURE  
COMMENTS ON PROPOSED DG 1107**

No.	SECTION	COMMENTS
1	C.1.3.1.2 and C.1.3.1.3	The staff specifically notes that certain existing plants cannot meet the regulatory position on containment overpressure. There are a number of other provisions of this draft guide such as C.1.1.1.1 on having multiple sumps that many existing plants do not meet. We believe that a general position statement at the introduction to Section C on the conformance of existing plant designs should be made. Otherwise, each position in Section C needs to provide guidance on alternative positions for current plants.
2	1.3.2, Debris Sources and Generation  General Comment	The positions requiring application of large breaks at essentially all locations in the Reactor Coolant System (RCS) for debris generation based on the requirements of 10 CFR 50.46 is inconsistent with other regulations. The NRC allows the application of leak-before-break (LBB) and the consideration of specific break locations in evaluating the dynamic effects of pipe breaks. The considerations directly affect the design of the Emergency Core Cooling System (ECCS) and, as stated in §50.46(b)(4), the requirements for a coolable geometry. Instruments, valves, smaller RCS pipes, other piping inside containment, and cables needed to ensure ECCS signals, or system functions necessary to ensure ECCS performance after hypothetical Loss of Coolant Accidents (LOCAs) are evaluated based on specific break locations or do not have to be evaluated for pipe whip and jet impingement based on LBB considerations. If the requirement for a break anywhere was imposed for jet impingement and pipe whip for equipment required for ECCS to function, system redesigns would be required or pipe whip restraints, and guard pipes would need to be installed to show conformance with §50.46. Similarly, almost every Pressurized Water Reactor (PWR) in the United States uses LBB as the basis for limiting hydrodynamic loads on the fuel to ensure a coolable core geometry as required by §50.46. Given that debris generation is clearly a dynamic effect of a pipe break and other features of ECCS design do not require double-ended breaks for dynamic effects, the requirements of this section should be revised to allow the same treatment. If this position is retained without modification, it is likely that some utilities will conclude that the addition of guard pipes or pipe restraints will be necessary to reduce the amount of debris generation to a level that can be accommodated even with large sump screens. This is a step backwards in risk and in regulation.
3	C.1.1.1.12	Concerning the size of the opening in a fine screen mesh, clearances in pumps and seals can be very small. For many current plants, the screen hole size is larger than the minimum restriction. It was generally believed that tough, hard particles such as metals would not be transported to the screens. Some hard particles such as paint chips are brittle enough that the pump impeller would chop them up and if they made it to the reactor vessel, then they would drop out in the bottom head. Small soft particles would not damage impellers or seals. Having a screen that has openings smaller than seal or impeller clearances will be on the order of mils. Meshes this fine will have much higher pressure drops than current screens. Sump screen areas may have to be so large that installation is not practical. Also, having very small openings in the fine screens make them more susceptible to plugging than current screen designs. This position should be reconsidered to determine if it can be met given reasonable containment volumes, configurations, and water levels.
4	Section D	TVA agrees with the statement that no backfitting is intended with the issuance of this guide. However, the last sentence of this section indicates that the guide will be used to evaluate licensee compliance with §50.46. Since this guide will be the basis for compliance with §50.46 and it is already known that many current plants do not conform to this guide, then backfitting will result since it will be concluded that plants do not comply with §50.46.