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Rulemaking and Directives Branch  
Division of Administrative Services  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

10/14/09  
74 FR 52822

3

**Response to Request for Comment on DG-1199 (Docket ID NRC-2009-0453)**

Ref. 1: Draft Regulatory Guide, DG-1199, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors," (Docket ID NRC-2009-0453), 74 Federal Register 52,822, 55,272.

Ref. 2: Letter, Ralph Anderson (NEI) to Rulemaking and Directives Branch Division of Administrative Services (NRC), "Nuclear Energy Institute Comments on U.S. Nuclear Regulatory Commission Draft Regulatory Guide DG-1199, 'Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors' (*Federal Register* of October 14, 2009, 74 FR 52822)," January 20, 2010.

Ref 3: Letter, Douglas W. Coleman (BWROG) to Rulemaking, Directives, and Editing Branch Office of Administration (NRC), "Draft Regulatory Guide, DG-1199 – BWR Owners' Group Request for Supporting Documentation and Comment Period Extension," (Docket ID NRC-2009-0453), January 6, 2010.

AREVA NP Inc. (AREVA NP) has reviewed the NRC's Draft Regulatory Guide DG-1199. Based on our review of the Draft Regulatory Guide, AREVA NP would like to submit comments regarding the proposed revision.

AREVA NP also endorses NEI's comments in Reference 2 and the BWROG's comments and request for comment period extension in Reference 3. Attachment 1 to this letter contains AREVA NP's detailed comments on the Draft Regulatory Guide.

If you have any questions related to this letter, please contact Mr. Alan B. Meginnis, Product Licensing Manager at 509-375-8266 or by e-mail at [alan.meginnis@areva.com](mailto:alan.meginnis@areva.com).

Sincerely,

Ronnie L. Gardner, Manager  
Corporate Regulatory Affairs  
AREVA NP Inc.

Enclosure

cc: H. D. Cruz  
Project 728

*Swist Review Complete*

*FRDS = ADM-03*

*Call = R. Carpenter (rec 1)*

**AREVA NP INC.**

An AREVA and Siemens company

*Template = ADM-013*

*M. Blumberg (wmb1)*

## Attachment 1

### Comment on DG-1199 (Docket ID NRC-2009-0453)

The power versus exposure curves presented in Figure 1 of DG-1199 do not envelope reactor operations currently supported by AREVA. Since the NRC/PNNL claim the release fractions presented are conservative the curves should be removed and only a footnote should be included within the guide indicating that the presented gap release fractions are bounding to peak fuel rod average exposures up to 62 GWd/MTU. An important point to make is that the Reg Guide should be written in a way as to NOT preclude the possibility for fuel rod average exposures beyond 62 GWd/MTU in the future. A path and/or acceptable method for calculating approved source terms at higher burnup should be included in the Reg Guide. (i.e. the AST Reg Guide should not dictate the industry's maximum allowable fuel exposure)

The need for activity concentration adjustment factors (see Appendix A, Section A-5.1 of DG-1199) to account for higher activity concentration in the steam dome (as compared to the drywell) when calculating the dose contribution from MSIV leakage should be reevaluated. The reevaluation needs to take into account the potential for stratification and suppressed mixing between the steam dome and the steam lines from the reactor vessel to the inboard MSIVs. The recommendation that drywell sprays not be credited should be reevaluated, as well.

Based on the data presented in Reference [A1] for steam dome temperature, it does not appear that the temperature of the steam dome would be sufficiently low relative to that of the steam lines to produce a steam-hydrogen-fission gas mixture with a density greater than that of the steam in the lines. Accordingly, mixing between the steam dome and the steam lines may not be very efficient. The absence of efficient mixing (in concert with activity deposition along the leak path) may produce a large fission product concentration difference between the steam dome and the portion of the steam lines adjacent to the inboard MSIVs. Given this condition, considering the drywell as the source (even with credit for drywell sprays but without credit for steam line deposition up to the inboard MSIVs) may produce a more conservative dose result than using the actual steam dome/steam line pathway. If this is the case, then the requirement for activity concentration adjustment factors and the recommendation against credit for drywell sprays should be deleted from the draft regulatory guidance.

Ref. A1: "Analysis of Main Steam Isolation Valve Leakage in Design Basis Accidents Using MELCOR 1.8.6 and RADTRAD," Sandia Letter Report, SAND2008-6601, October 2008 (ADAMS Accession No. ML083180196)