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Pressurized Water Reactor Control Rod Ejection and Boiling Water Reactor Control Rod Drop Accidents

Comment On: NRC-2016-0233-0003

Pressurized Water Reactor Control Rod Ejection and Boiling Water Reactor Control Rod Drop Accidents;
Extension of Comment Period

Document: NRC-2016-0233-DRAFT-0004

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General Comment

Please see attached letter M170067, James F. Harrison (GEH) to Cindy Bladey (NRC), "Comments: Draft Regulatory Guide DG-1327, "Pressurized Water Reactor Control Rod Ejection and Boiling Water Reactor Control Rod Drop Accidents," March 23, 2017.

Attachments

M170067

SUNSI Review Complete
 Template = ADM - 013
 E-RIDS= ADM-03
 Add= P. Clifford (pm c3)
 E. O'Donnell (Exo)



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M170067
March 23, 2017

Via Electronic Submission
Docket: NRC-2016-0233
10 CFR Parts 50 and 52

Cindy Bladey
Office of Administration
Mail Stop: OWFN-12H-08
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Subject: Comments: Draft Regulatory Guide DG-1327, "Pressurized Water Reactor Control Rod Ejection and Boiling Water Reactor Control Rod Drop Accidents"

GE Hitachi Nuclear Energy (GEH), including Global Nuclear Fuel (GNF) representatives, appreciates the opportunity to comment on the subject draft regulatory guide. Specific comments are provided in Enclosure 1.

If you have any questions regarding the enclosed comments, please contact me or Tyler Schweitzer (tyler.schweitzer@ge.com; 910-819-4565).

Sincerely,

James F. Harrison
Vice President, Fuel Licensing
Regulatory Affairs
GE Hitachi Nuclear Energy

Enclosure:

1. GEH Comments on Draft Regulatory Guide DG-1327, "Pressurized Water Reactor Control Rod Ejection and Boiling Water Reactor Control Rod Drop Accidents"

cc: P. Clifford (NRC)
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004N1888 R0

ENCLOSURE 1

M170067

GEH Comments on Draft Regulatory Guide DG-1327, "Pressurized Water Reactor Control Rod Ejection and Boiling Water Reactor Control Rod Drop Accidents"

Non-Proprietary Information – Class I (Public)

GEH/GNF Comments on DG-1327

Comment 1: Section C 1

The DG needs to clarify what is appropriate for BWRs and what is appropriate for PWRs. For example, this DG should only be applicable to RIAs in BWRs up to 5% power.

Comment 2: Section C 1.2

For the CRDA (BWR) and CRE (PWR) events the fuel cladding failure criteria is specified in this DG. Acceptance criteria for other events is extraneous and should be removed from this DG. Remove the sentence: "For all other operating conditions up to full power (i.e., Mode 1), fuel cladding failure is presumed if local heat flux exceeds thermal design limits (e.g., departure from nucleate boiling and critical power ratios)." Note boiling transition is not a presumed failure mechanism for BWR fuel.

Comment 3: Section C 2.1.1

The acceptance criteria are conservative since they are a lower bound on the failure data. The details regarding uncertainties are not applicable. Furthermore, improbable events have historically been licensed using best estimate nominal calculations.

Comment 4: Section C 2.1.3

The failure threshold is a lower bound of data that has a wide range of manufacturing variability. Therefore, use of the conservative acceptance criteria is sufficient to cover any deviation in manufacturing. Evaluations using nominal conditions should be allowed.

Comment 5: Section C 2.2

The guidance is very prescriptive and there could be alternate methodologies which satisfy the criteria that do not include all of these specific elements in this section. See specific comments related to each sub section of 2.2.

Comment 6: Section C 2.2.1

Remove the words "analyses should be performed at." Analyses should consider the full range of cycle operation from BOC to EOC.

Comment 7: Section C 2.2.3

This section should be removed or the DG should state that this is applicable only to PWRs. The phrase "at intermediate power levels up to hot full power (HFP) conditions" is not applicable to BWR CRDA analyses. For BWRs the only applicable conditions are at startup and zero power up to 5%.

Comment 8: Section C 2.2.8

The phrase "conservatively chosen" should be replaced with "demonstrated to encompass the range of interest." The sentence "Range of values should encompass the allowable operating range and monitoring uncertainties" should be deleted.

Comment 9: Section C 2.2.9

Replace the phrase "ensure conservative values are chosen" to "encompass the range of interest."

Comment 10: Section C 2.3.4.1

RG 1.224 does not say that the recommended modern correlation is acceptable, even though the model is included in the RG. Please clarify that the recommended modern correlation is also acceptable.

Comment 11: Section C 2.5.1

This section was written from the perspective of a PWR.

Comment 12: Section C.3.1

Remove the sentence: "For all other operating conditions up to full power (i.e., Mode 1), fuel cladding failure is presumed if local heat flux exceeds thermal design limits (e.g., departure from nucleate boiling and critical power ratios)." Note boiling transition is not a presumed failure mechanism for BWR fuel.

Comment 13: Section C 4

Dose considerations should be removed from DG-1327 and any references to dose should refer directly to RG 1.183 and RG 1.195.

Comment 14: Section C 5

Remove this paragraph and refer to RG 1.183 and RG 1.195 for dose considerations.