

April 16, 2014

Mr. Scott Head, Manager
Regulatory Affairs
South Texas Project Units 3 and 4
Nuclear Innovation North America, LLC
122 West Way, Suite 405
Lake Jackson, TX 77566

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION RE: SOUTH TEXAS
PROJECT NUCLEAR OPERATING COMPANY TOPICAL REPORT WCAP-
17275-P, "WESTINGHOUSE BWR CONTROL ROD LICENSING REPORT
SUPPLEMENT 1 – USE OF CR 82 M-1 AND CR 99 IN ABWR (N-LATTICE)
PLANTS"

Dear Mr. Head:

By letter dated June 30, 2010 (Agencywide Documents Access and Management System Accession No. ML101830269), the South Texas Project (STP) Units 3 and 4, submitted for U.S. Nuclear Regulatory Commission (NRC) staff review Topical Report WCAP-17275-P, "Westinghouse BWR Control Rod Licensing Report Supplement 1 – Use of CR 82 M-1 and CR 99 in ABWR (N-Lattice) Plants."

The NRC staff has identified that additional information is needed to continue portions of the review. The staff's RAIs are contained in the enclosure to this letter. The STP staff has requested the following response times for these RAIs to be 60 days from date of receipt.

S. Head

-2-

If you have any questions or comments concerning this matter, I can be reached at 301-415-8484 or by e-mail at Tom.Tai@nrc.gov.

Sincerely,

/RA/

Tom Tai, Senior Project Manager
LB3 Projects Branch
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. PROJ0772

Enclosure:
Request for Additional Information

S. Head

-2-

If you have any questions or comments concerning this matter, I can be reached at 301-415-8484 or by e-mail at Tom.Tai@nrc.gov

Sincerely,

/RA/

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LB3 Projects Branch
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Docket Nos. PROJ0772

Enclosure:
Requests for Additional Information

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ADAMS Accession No. ML14105A327

***via e-mail**

NRO-002

OFFICE	DNRL/LB3/PM	DNRL/LB3/LA	NRO/SRSB/TR	NRO/SRSB/TR	NRO/SRSB/BC
NAME	TTai	SGreen	FForsaty	JBudzynski	IFrankl
DATE	4/15/14	4/15/14	4/16/14	4/16/14	4/16/14

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RAI 4.05-1

Justify the mechanical design bases of WCAP-17275 or revise the design bases to meet the expectations of the standard review plan (NUREG-0800 Section 4.2). Address the following concerns:

- (1) The SRP expects the applicant to define stress, strain, or loading criteria that limit the fuel system components to a certain acceptable level of damage. WCAP-17275 proposes stress limits that exceed ASME code NB-3000 but does not offer any justification for the new limits. Justification is required.
- (2) The design requirements in section 4.1 of WCAP-17275 state that the design will meet applicable sections of the ASME code. NB-3000 is the established section of the code that is applicable to Westinghouse control blades, but confirmatory analyses have determined the design exceeds the NB-3000 stress limits. Revise the design requirements to accurately describe the degree to which the design adheres to ASME code.
- (3) The design bases of WCAP-17275 does not match the tier 1 design requirements defined in the ABWR DCD. The DCD describes a different definition for the threshold of acceptable damage that is inconsistent with the mechanical evaluation of WCAP-17275. As an example of the inconsistency, the DCD states stresses will be evaluated to not exceed the material ultimate strength, but WCAP-17275 does not evaluate stresses under seismic loads. The confirmatory analyses predict that stresses can potentially be much higher than the material ultimate strength under safe shutdown earthquake loads, potentially violating the damage limit imposed by the ABWR DCD. This inconsistency contradicts the stated purpose of WCAP-17275, which is to attain approval for use in ABWR plants and to present conformance to ABWR Design Stress Limits. Explain how the design bases of WCAP-17275 meets the purposes it states in Section 1 or revise the design bases to be compatible with the ABWR DCD design requirements.

RAI 4.05-2

The stainless steel strength values reported in WCAP-17275 are higher than the strengths reported in WCAP-16182 Rev 1 for the same material. Explain why the strength values listed in Table 6-1 are higher. Clarify the significance of the strength values listed in Table 6-1. Are they minimum required material strengths?

RAI 4.05-3

Provide the control rod velocity that was used in the stress analysis with a failed buffer. Include the parameters used to determine the velocity such as accumulator pressure, reactor pressure, and etc. Also, provide a description of model of this event and the results.

Enclosure

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(Revised 12/17/2013)

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