

NRR-PMDAPEm Resource

From: Miller, Ed
Sent: Wednesday, September 24, 2014 11:45 AM
To: 'randy.hart@duke-energy.com'; 'lawrence.rudy@duke-energy.com'
Subject: Draft RAI for DPC-NE-3001-P LAR
Attachments: SNPB_RAI 2.docx

Randy/Larry,

The NRC staff's draft RAI for the subject relief request is attached to this e-mail. The draft RAI is not an official NRC staff request and is being provided to you to facilitate a subsequent conference call to determine: 1) If the questions clearly convey the NRC staff information needs; 2) Whether the regulatory basis for the questions is understood; 3) Whether the information is already available in existing, docketed, correspondence; and 4) To determine an appropriate response time-frame. After you've had a chance to review the draft information request, please contact me to schedule the conference call.

Ed Miller
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Hearing Identifier: NRR_PMDA
Email Number: 1589

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From: Miller, Ed

Created By: Ed.Miller@nrc.gov

Recipients:

"randy.hart@duke-energy.com" <randy.hart@duke-energy.com>

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Options

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DRAFT REQUEST FOR ADDITIONAL INFORMATION

MCGUIRE NUCLEAR STATION, UNITS 1 AND 2

CATAWBA NUCLEAR STATION, UNITS 1 AND 2

LICENSE AMENDMENT REQUEST

METHODOLOGY REPORT DPC-NE-3001-P, REVISION 1

DOCKET NOS. 50-369, 50-370, 50-413, AND 50-414

By letter dated November 14, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13325B142), Duke Energy Carolinas, LLC (Duke, the licensee), submitted a license amendment request for Catawba Nuclear Station, Units 1 and 2, and McGuire Nuclear Station, Units 1 and 2. The proposed amendment requested review and approval to the Methodology Report DPC-NE-3001-P, Revision 1, "Multidimensional Reactor Transients and Safety Analysis Physics Parameters Methodology." By letter dated June 27, 2014 (ML14183B259), Duke provided a response to NRC staff RAIs on the subject amendment request.

The Nuclear Regulatory Commission (NRC) staff is reviewing your submittal and response and has determined that additional information is needed to complete its review.

SNPB-RAI-1) Please submit the following documents, which were referenced as support for the validation and verification of the models in SIMULATE-3K:

- SSP-98/13, Revision 6, "SIMULATE-3K Models & Methodology"
- SSP-04/443, Revision 2, "SIMULATE-3K Models and Assessment"

Please also provide the following document, which was referenced in support of the SIMULATE-3 methodology:

- SOA-95/18, "SIMULATE-3 Methodology, Advanced Three Dimensional Two-Group Reactor Analysis Code"

SNPB-RAI-2) The hot full power (HFP) steam line break (SLB) analysis is initiated from nominal conditions, according to Section 5.3.1, because it uses the statistical core design (SCD) methodology described in DPC-NE-2005P-A. This is appropriate for departure from nucleate boiling ratio (DNBR) analysis, because the uncertainties have been statistically convoluted into the DNBR limit.

Duke appears to use the same analysis to check the fuel centerline temperature against the centerline fuel melt (CFM) limit. If this reading of the methodology is

correct, please justify use of the nominal SCD initial conditions to be appropriate. If this reading is incorrect, please clarify the methodology that will be used to calculate fuel centerline temperature and compare to the limit.

SNPB-RAI-3) In Section B2.2.1, Duke proposed the use of an NRC-approved code to account for thermal conductivity degradation (TCD) impacts. What code has been employed for the purpose described in the section, and how is it used?