

LICENSEE: Duke Energy Corporation November 19, 1999
 FACILITY: Oconee Nuclear Station, Units 1, 2, and 3
 SUBJECT: SUMMARY OF THE NOVEMBER 8, 1999, MEETING ON UPDATING THE RELOAD TOPICAL REPORT

On November 8, 1999, the NRC met at the NRC headquarters in Rockville, Maryland, with representatives of the Duke Energy Corporation (DEC) staff to discuss a planned update to the Oconee Nuclear Station, Units 1, 2, and 3, Topical Report (TR) NFS-1001A, "Oconee Nuclear Station Reload Design Methodology." Enclosure 1 is a list of the individuals who attended the meeting and Enclosure 2 is the handout material that was supplied by DEC.

The topics discussed included the objective of the planned TR changes, a review of the history of previous TRs related to reactor core reload design methodology that have been approved by the staff, how these TRs will be consolidated into the new TR, method to be used to process new TRs, a discussion of the planned changes, and the schedule for licensee submittal and staff review of the revised TR.

Original signed by:
 David E. LaBarge, Senior Project Manager, Section 1
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 Division of Licensing Project Management
 Office of Nuclear Reactor Regulation

Docket Nos. 50-269, 50-270, and 50-287

- Enclosures:
 1. Attendance List
 2. DEC Handout

cc w/encls: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

November 19, 1999

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A handwritten signature in black ink, appearing to read "D. LaBarge".

David E. LaBarge, Senior Project Manager, Section 1
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Division of Licensing Project Management
Office of Nuclear Reactor Regulation

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**Updating Topical Report
NFS-1001A
“Oconee Nuclear Station
Reload Design Methodology”**

**Presented to:
U.S. Nuclear Regulatory Commission
Presented by:
Duke Energy Corporation
November 8, 1999**

Enclosure 2

The Objective

- To update NFS-1001A so that it clearly identifies the reload design methodology to both the NRC and Duke.
 - To update NFS-1001A to reflect the impact of other documents and/or methodology changes that the NRC has approved since NFS-1001A was approved (July 21, 1981).
 - To update NFS-1001A to include other minor technical changes.

Historical Perspective

- As approved in 1981, NFS-1001A describes the entire reload design process.
- The vast majority of changes to NFS-1001 were subsequently approved via other documents and/or topical reports.
- Some minor technical changes were also implemented via 10CFR50.59.

Historical Perspective (Cont'd.)

- Other minor technical changes, considered too insignificant to warrant a 10CFR50.59 evaluation were also implemented.
- In recent years the NRC has raised expectations to a higher level of “literal compliance”.
- Duke described a proposed process for revising NRC-approved topical reports via letter to the NRC dated April 14, 1998.

Historical Perspective (Cont'd.)

- The NRC provided a response to Duke indicating that the proposed process was not satisfactory via letter dated March 8, 1999 (this specifically stated that the use of 10CFR50.59 to make revisions is inappropriate).
- Duke is now providing a revision to NFS-1001A for NRC review and approval which will satisfy the guidance given by the NRC.

Implied Changes

- The bulk of the changes being incorporated into NFS-1001A are the result of NRC-approved documents and/or topical reports.
- DPC-NE-1002A provided miscellaneous, specific changes to NFS-1001A and incorporated the CASMO code (and associated reliability factors) into the nuclear design calculations.
- DPC-NE-1004A provided alternative codes (CASMO-3 and SIMULATE-3P) and their associated reliability factors for performing the nuclear design calculations.

Implied Changes (Cont'd.)

- NRC letter of April 18, 1985 approved changes to the Oconee Nuclear Station Startup Physics Test Program.
- DPC-NE-2003P-A provided for the use of the VIPRE code methodology for performing Thermal-Hydraulic analyses.
- DPC-NE-2005P-A provided for the use of the statistical core design methodology.
- DPC-NE-2008P-A provided for the use of the TACO-3 code methodology for performing fuel mechanical analyses.

Implied Changes (Cont'd.)

- DPC-NE-3005P-A updated the analysis methodology for all of the UFSAR Chapter 15 non-LOCA accidents and transients.
- BAW-10186P-A extended the burnup range for Mark-B fuel to 62 GWD/MTU.
- NRC approval letter of license amendments (TAC Nos. M84088, M84089, and M84090) dated January 5, 1993 relocated cycle-dependent limits from the Technical Specifications to the Core Operating Limits Report.

Technical Changes

- Other minor technical changes being incorporated into NFS-1001A are the result of:
 - advances in computer technology
 - updates to be representative of current core designs and operating strategies
 - simplification of unnecessarily detailed descriptions
 - elimination of redundant descriptions provided in other documents (e.g. UFSAR, Tech. Specs.)
 - miscellaneous changes.

Technical Changes (Cont'd.)

- Examples of the minor technical changes being incorporated into NFS-1001A:
 - Current computer technology makes 3-D calculations in the maneuvering analysis a practical approach. Performance of all physics calculations in 3-D eliminates the need to reference “2-D calculations with corrections to account for 3-D effects”.
 - Current core operating strategies eliminate the need to analyze “rods in” operation. Therefore, only “feed and bleed” mode of operation is typically analyzed in the maneuvering analysis.

Technical Changes (Cont'd.)

- Inclusion of the exact temperatures used to calculate the predicted isothermal temperature coefficient is overly prescriptive. Changes to identify these calculations will be performed consistent with the test method eliminates the need to revise NFS-1001 due to changes in the startup testing program.
- Description of the fuel assembly design (i.e. materials, dimensions, etc.) is adequately provided in the UFSAR and Technical Specifications. Reference to these documents eliminates the need to revise NFS-1001 for future fuel design changes.

Technical Changes (Cont'd.)

- Elimination of the description that refueling intervals vary between 6 and 18 months precludes literal compliance concerns for designing 24 month cycles. The methodology remains properly based on the design criteria for fuel performance, accident analyses, analytical code limitations, etc.

Submittal Content

- Revised Topical Report NFS-1001 (including previous RAIs and SER).
- Associated UFSAR markups (provided for information, to be submitted after topical review is completed under 10CFR50.71(e)).
- Associated Technical Specification markups (provided as a license amendment, license amendment could be made separately at NRC discretion).

Submittal Content (Cont'd.)

- Summary of changes to NFS-1001 implied by other approved documents or reports and other technical changes (although not a word for word revision summary).

Review Timeframe

- Not tied to a specific reload. Current approvals provide an “adequate” licensing basis description.
- Timely review requested to simplify licensing basis and reference.
- Timely review requested to avoid revising current submittal for future modifications (e.g. replacement steam generators, CASMO-4, COPERNIC, gadolinium fuel).

Future Revisions

- Required in order to provide a single source document for identifying the licensing basis for future reload designs.
- Revision pages to NFS-1001 (and associated Technical Specification changes) will be provided whenever methodology changes submitted via other topical reports or documents impact the contents of NFS-1001.
- 10CFR50.59 will not be used to revise NFS-1001.