

May 20, 2003

Mr. R. T. Ridenoure
Division Manager - Nuclear Operations
Omaha Public Power District
Fort Calhoun Station FC-2-4 Adm.
P.O. Box 550
Fort Calhoun, NE 68023-0550

SUBJECT: FORT CALHOUN STATION – RELAP5/MOD3.3 PREDICTION AND MODEL
SIMULATION (TAC NO. MB6468)

Dear Mr. Ridenoure:

By letter dated October 8, 2002, Omaha Public Power District (OPPD), requested approval of the revised low-temperature overpressure protection (LTOP) analysis for the Fort Calhoun Station, Unit 1 (FCS). On April 23, 2003, the NRC staff and OPPD held a conference call to discuss the revised LTOP methodology. The staff stated that it would be useful if OPPD could validate its LTOP models. The staff agreed to provide OPPD several references which would assist in this effort. Enclosed are: (1) a MIT Thesis, "Insurge Pressure Response and Heat Transfer for PWR Pressurizer," (2) a short description of the RELAP5/MOD3.3 prediction and model simulation from the RELAP5 Developmental Report, and (3) a listing of the RELAP5 input model for the Test ST4. The thesis contains relevant data to allow OPPD to validate the LTOP models. Note that the RELAP5 prediction of ST4 underpredicts the pressure data due to the lack on nodalization detail in the RELAP5 model. The surge tank was modeled with 10 cells which was determined to be insufficient.

If you have any questions, please contact me at (301) 415-1445.

Sincerely,

/RA/

Alan B. Wang, Project Manager, Section 2
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-285

Enclosures: 1. MIT Thesis
2. Description/Model Simulation
3. Listing

cc: See next page

May 20, 2003

Mr. R. T. Ridenoure
Division Manager - Nuclear Operations
Omaha Public Power District
Fort Calhoun Station FC-2-4 Adm.
P.O. Box 550
Fort Calhoun, NE 68023-0550

SUBJECT: FORT CALHOUN STATION – RELAP5/MOD3.3 PREDICTION AND MODEL
SIMULATION (TAC NO. MB6468)

Dear Mr. Ridenoure:

By letter dated October 8, 2002, Omaha Public Power District (OPPD), requested approval of the revised low-temperature overpressure protection (LTOP) analysis for the Fort Calhoun Station, Unit 1 (FCS). On April 23, 2003, the NRC staff and OPPD held a conference call to discuss the revised LTOP methodology. The staff stated that it would be useful if OPPD could validate its LTOP models. The staff agreed to provide OPPD several references which would assist in this effort. Enclosed are: (1) a MIT Thesis, "Insurge Pressure Response and Heat Transfer for PWR Pressurizer," (2) a short description of the RELAP5/MOD3.3 prediction and model simulation from the RELAP5 Developmental Report, and (3) a listing of the RELAP5 input model for the Test ST4. The thesis contains relevant data to allow OPPD to validate the LTOP models. Note that the RELAP5 prediction of ST4 underpredicts the pressure data due to the lack on nodalization detail in the RELAP5 model. The surge tank was modeled with 10 cells which was determined to be insufficient.

If you have any questions, please contact me at (301) 415-1445.

Sincerely,

/RA/

Alan B. Wang, Project Manager, Section 2
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-285

Enclosures: 1. MIT Thesis
2. Description/Model Simulation
3. Listing

cc: See next page

DISTRIBUTION: (w/o enclosures)
PUBLIC (w/enclosures)
PDIV-2 Reading
RidsNrrDlpmLpdiv (HBerkow)
RidsNrrPMAWang
RidsNrrLAEPeyton
JWermiel (NRR/DSSA/SRXB)
RidsOgcRp
RidsAcraAcnwMailCenter
RidsRgn4MailCenter (AHowell)

Package No.: ML031400602

MIT Thesis No.: ML031410212

Description/Model Simulation No.: ML031410096

Listing No.: ML031410107

ADAMS Accession No.: ML031400506

NRR-106

NRR-106

NRR-106

NRR-088

| | | | |
|--------|-----------|-----------|-----------|
| OFFICE | PDIV-2/PM | PDIV-2/LA | PDIV-2/SC |
| NAME | AWang | EPeyton | SDembek |
| DATE | 5/13/03 | 5/13/03 | 5/13/03 |

DOCUMENT NAME: G:\PDIV-2\FortCalhoun\mb6468ltoprai.wpd

OFFICIAL RECORD COPY

Ft. Calhoun Station, Unit 1

cc:

Winston & Strawn
ATTN: James R. Curtiss, Esq.
1400 L Street, N.W.
Washington, DC 20005-3502

Chairman
Washington County Board of Supervisors
P.O. Box 466
Blair, NE 68008

Mr. John Kramer, Resident Inspector
U.S. Nuclear Regulatory Commission
P.O. Box 310
Fort Calhoun, NE 68023

Regional Administrator, Region IV
U.S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011-4005

Ms. Sue Semerera, Section Administrator
Nebraska Health and Human Services
Systems
Division of Public Health Assurance
Consumer Services Section
301 Centennial Mall, South
P.O. Box 95007
Lincoln, NE 68509-5007

Mr. David J. Bannister, Manager
Fort Calhoun Station
Omaha Public Power District
Fort Calhoun Station FC-1-1 Plant
P.O. Box 550
Fort Calhoun, NE 68023-0550

Mr. John B. Herman
Manager - Nuclear Licensing
Omaha Public Power District
Fort Calhoun Station FC-2-4 Adm.
P.O. Box 550
Fort Calhoun, NE 68023-0550

Mr. Daniel K. McGhee
Bureau of Radiological Health
Iowa Department of Public Health
401 SW 7th Street, Suite D
Des Moines, IA 50309

Mr. Richard P. Clemens
Division Manager - Nuclear Assessments
Omaha Public Power District
Fort Calhoun Station
P.O. Box 550
Fort Calhoun, NE 68023-0550