

April 12, 2003

LICENSEE: Omaha Public Power District  
FACILITY: Fort Calhoun Station, Unit 1  
SUBJECT: SUMMARY OF TELECOMMUNICATION WITH OMAHA PUBLIC POWER DISTRICT (OPPD) TO DISCUSS DRAFT REQUESTS FOR ADDITIONAL INFORMATION (RAIs) FOR THE RENEWAL OF THE OPERATING LICENSE FOR FORT CALHOUN STATION, UNIT 1 (FCS)

On September 19, 2002, the NRC staff (the staff) and representatives from OPPD held a telecommunication (telecon) to discuss draft RAIs resulting from the staff's review of license renewal application (LRA) Sections 4.7.1 and 4.7.2. A list of telecon participants are enclosed. OPPD has had an opportunity to review and comment on this summary.

4.7.1 Reactor Coolant Pump Flywheel Fatigue

4.7.1-D1 Two crack growth analyses are referenced in Sections 4.7.1.1 and 4.7.1.2. One is described as Reference 4.7-1 and the other is described as an analysis performed by ABB. Sections 54.21(c)(i) and (ii) of 10 CFR discuss analyses required as part of the time-limited aging analysis (TLAA). In order to confirm that the applicant has satisfied the regulatory requirements, the staff needs to review these analyses. Please provide the analyses and provide any references that indicate that they have been previously reviewed by the NRC.

**Telecon Discussion:**

The staff wanted OPPD to submit the reactor coolant pump (RCP) flywheel analyses for review. OPPD noted that the subject analyses are proprietary and would prefer not to submit them. OPPD pointed-out that the RCP analyses are summarized in the Updated Safety Analysis Report (USAR). The staff reviewed the USAR information regarding the GE RCP and determined that it was sufficient to perform its review of the GE RCP flywheel. However, the USAR information for the ABB RCP does not provide sufficient information to allow the staff to perform its review. OPPD noted that the ABB RCP was installed per a 50.59 evaluation. The staff suggested that, perhaps the 50.59 evaluation can be reviewed during the aging management review (AMR) inspection. However, a subsequent discussion with staff management resulted in this option not being feasible. Therefore, the staff will need to have the proprietary information submitted.

4.7.2 Leak-Before-Break (LBB)

4.7.2-D1 As a result of the V.C. Summer event, in which primary water stress corrosion cracking (PWSCC) was identified in an Inconel 82/182 main coolant loop-to-reactor pressure vessel weld, the NRC staff is concerned about the impact of PWSCC on licensee LBB evaluations. NUREG-1061, Volume 3, "Report of the U.S. Nuclear Regulatory Commission Piping Review Committee, Evaluation of Potential for Pipe Breaks," which addresses the general methodology accepted by the NRC staff for demonstrating LBB behavior, stipulates that no active degradation mechanism (more specifically, none which would undermine the assumptions made elsewhere in the LBB analysis) may be present in a line which is under consideration for LBB. Draft Standard Review Plan 3.6.3, "Leak-Before-Break Evaluation Procedures," suggests that lines with potentially active degradation mechanisms may be considered for LBB approval, provided that two mitigating action/programs are in place to address the potential active degradation mechanism. Given this background:

- (a) Identify all welds in reactor coolant pressure boundary piping approved for LBB containing Inconel 82/182 material, which is exposed to the reactor coolant system environment.
- (b) Evaluate the impact of the V.C. Summer PWSCC issue on your LBB assessment for lines which contain welds manufactured from Inconel 82/182 material.
- (c) Identify what actions you will take in the period of extended operation to ensure that the potential for PWSCC in Inconel 82/182 lines does not undermine the assumptions of your LBB analyses.

**Telecon Discussion:**

The staff clarified that the RAI would be revised to reflect current staff views with regard to LBB. Subsequently, the staff revised the RAI to read as follows:

As a result of the V.C. Summer event in which primary water stress corrosion cracking (PWSCC) was identified in an Inconel 82/182 main coolant loop-to-reactor pressure vessel weld, the NRC staff has become concerned about the impact of PWSCC on licensee LBB evaluations. NUREG-1061, Volume 3, "Report of the U.S. Nuclear Regulatory Commission Piping Review Committee, Evaluation of Potential for Pipe

Breaks," which addresses the general methodology accepted by the NRC staff for demonstrating LBB behavior, stipulates that no active degradation mechanism may be present in a line which is under consideration for LBB. Draft Standard Review Plan 3.6.3. "Leak-Before-Break Evaluation Procedures," suggests that lines with potentially active degradation mechanisms may be considered for LBB approval, provided that two mitigating actions/programs are in place to address the potential active degradation mechanism.

The NRC considers the resolution of the impact of PWSCC on existing LBB evaluations to be a 10 CFR Part 50, operating reactor issue. The NRC staff has previously addressed this issue with the industry's PWR Materials Reliability Project (MRP) and received an interim report from the MRP, "PWR Materials Reliability Project, Interim Alloy 600 Safety Assessment for U.S. PWR Plants (MRP-44), Part 1: Alloy 82/182 Pipe Butt Welds," dated April 2001, which attempted to provide a technical basis for addressing this issue. The NRC expects to receive a final version of the MRP-44, Part 1 report from the MRP. Based on the information in the final MRP report and any additional, relevant information available to the NRC staff, the NRC will evaluate what actions or analyses, if any, may be required to confirm the continued applicability of existing licensee LBB evaluations.

Regarding the Ft. Calhoun License Renewal Application (LRA), the NRC staff requests that Omaha Public Power District (OPPD) provide a licensee commitment which states that for the extended period of operation of Ft. Calhoun, OPPD will implement actions or perform analyses, as deemed to be necessary by the NRC, to confirm

continued applicability of existing Ft. Calhoun LBB evaluations. These actions or analyses will be consistent with those required to address the impact of PWSCC on existing LBB evaluations under 10 CFR Part 50 considerations.

***/RA/***

William F. Burton, Project Manager  
License Renewal Section  
License Renewal and Environmental Impacts Program  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

Docket No.: 50-285

Enclosure: As stated

cc w/encl: See next page

continued applicability of existing Ft. Calhoun LBB evaluations. These actions or analyses will be consistent with those required to address the impact of PWSCC on existing LBB evaluations under 10 CFR Part 50 considerations.

***/RA/***

William F. Burton, Project Manager  
License Renewal Section  
License Renewal and Environmental Impacts Program  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

Docket No.: 50-285

Enclosure: As stated

cc w/encl: See next page

Distribution: See next page

C:\ORPCheckout\FileNET\ML031050266.wpd

OFFICE	PM:RLEP:DRIP	LA:RLEP:DRIP	SC:RLEP:DRIP
NAME	WBurton	YEdmonds	SLee
DATE	4/ 11/03	4/10 /03	4/12 /03

OFFICIAL RECORD COPY

DISTRIBUTION: September 19, 2002,Telecon with Fort Calhoun, Dated: April 12, 2003

**HARD COPY**

RLEP RF

W. Burton

**E-MAIL:**

PUBLIC

J. Johnson

W. Borchardt

D. Matthews

F. Gillespie

RidsNrrDe

R. Barrett

E. Imbro

G. Bagchi

K. Manoly

W. Bateman

J. Calvo

C. Holden

P. Shemanski

H. Nieh

G. Holahan

H. Walker

S. Black

B. Boger

D. Thatcher

G. Galletti

C. Li

J. Moore

R. Weisman

M. Mayfield

A. Murphy

W. McDowell

S. Smith (srs3)

T. Kobetz

C. Munson

RLEP Staff

-----

T. Mensah

A. Wang

K. Kennedy (RIV)

LIST OF ATTENDEES  
OMAHA PUBLIC POWER DISTRICT(OPPD)  
FORT CALHOUN STATION, UNIT 1  
SEPTEMBER 19, 2002

TELECON

**Attendees**

**Affiliation**

Butch Burton  
Jim Medoff  
Matt Mitchell  
Don Findlay  
Tom Matthews  
Bernie Van San

NRC  
NRC  
NRC  
OPPD  
OPPD  
OPPD

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  
Post Office Box 310  
Fort Calhoun, NE 68023

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

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, Nebraska 68509-5007

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

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

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

Mr. John Fassell, LLRW Program Manager  
Health and Human Services  
Regulation and Licensure  
Consumer Health Services  
301 Centennial Mall, South  
P. O. Box 95007  
Lincoln, Nebraska 68509-5007

W. Dale Clark Library  
Attn: Margaret Blackstone  
215 South 15th Street  
Omaha, NE 68102

Blair Public Library  
Attn: Ruth Peterson  
210 South 17th Street  
Blair, NE 68008-2055

Mr. Alan P. Nelson  
Nuclear Energy Institute  
1776 I Street, N.W., Suite 400  
Washington, DC 20006-3708  
APN@NEI.ORG