

LICENSEE: Entergy Nuclear Operations, Inc.

FACILITY: Vermont Yankee Nuclear Power Station

SUBJECT: SUMMARY OF MEETING HELD ON JANUARY 8, 2008, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION STAFF AND ENTERGY NUCLEAR OPERATIONS, INC. REPRESENTATIVES TO DISCUSS THE RESPONSE TO A REQUEST FOR ADDITIONAL INFORMATION PERTAINING TO THE VERMONT YANKEE NUCLEAR POWER STATION LICENSE RENEWAL APPLICATION

On January 8, 2008, the Nuclear Regulatory Commission staff (the staff) met with members of Entergy Nuclear Operations, Inc. (the applicant) in a public meeting to discuss the response to a request for additional information (RAI) made by the staff pertaining to the Vermont Yankee Nuclear Power Station (VYNPS) license renewal application. The applicant had an opportunity to comment on this summary.

A list of attendees is provided in Enclosure 1. The meeting agenda is provided in Enclosure 2. Comments made by the public during the meeting are provided in Enclosure 3. A copy of the slides presented by the applicant is provided as Enclosure 4. A summary of the discussion follows:

Background

In a letter dated November 27, 2007, the staff issued RAI 4.3.3-2 to the applicant. The purpose of the request was to gather additional information on the calculations used at VYNPS to reanalyze their time-limited aging analysis (TLAA) that addresses environmentally-assisted fatigue. In a letter dated December 11, 2007, the applicant provided its response to RAI 4.3.3-2 to the staff. The staff reviewed the response and further questioned the methodology described in the submittal and statements made that shear stresses are negligible during a conference call with the applicant on December 18, 2007. During the call, the applicant requested a face-to-face meeting to ensure that its position pertaining to this highly technical issue was properly and effectively communicated.

Discussion

During the meeting, the applicant made a slide presentation of the reactor vessel nozzle environmental fatigue analyses for license renewal at VYNPS. The applicant reviewed the terminology used in the response to RAI 4.3.3-2. The applicant reviewed the analyzed vessel nozzle configurations to identify where the shear stresses in the nozzles were negligible, where they were not, and the effects on the fatigue analysis at the locations where shear stresses were not negligible.

DOCKETED
USNRC

August 12, 2008 (11:00am)

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

NEC072277

U.S. NUCLEAR REGULATORY COMMISSION

In the Matter of Entergy Nuclear Vermont Yankee, LLC
Docket No. 50-271 Official Exhibit No. NEC-JH-22
OFFERED by: Applicant/Licensee Intervenor NRC
NRC Staff
IDENTIFIED on 7/21/08 by Hopmfield
Action Taken ADMITTED REJECTED WITHDRAWN
Reported/Clerk PAC

Template sheet-028

DS-03

The applicant explained that nozzle corner, blend radius, and inner radius are interchangeable terms for locations with geometrical discontinuities; that is, locations where stresses are maximum. The applicant explained that the methodology employed incorporates the use of axisymmetric modeling rather than an exact configuration 3-Dimensional (3-D) or 2-Dimensional (2-D) modeling. They explained that axisymmetric modeling is a 3-D model except that it models the nozzle/vessel interface as a sphere with a multiplier to account for pressure stress effects, rather than a pipe joined to a cylinder. With the aid of colored graphs, the applicant demonstrated specific nozzles where shear stresses are negligible. The applicant also discussed the various conservatisms used in their analysis.

Conclusion

1. Based on the analyses performed, the applicant presented its conclusion that the effects of shear stresses were negligible or were separately addressed for all nozzles analyzed.
2. Based on its interaction with the NRR staff during the meeting, the applicant agreed to perform additional confirmatory work and submit results to the staff for review and acceptance. This work effort will include:
 - 1) Performing benchmarking calculations on the feedwater nozzle, which is the most limiting component, using the axisymmetric finite element model, taking fully into account all stress components on the nozzle and using the ANSYS FEM computer code to model all defined transients;
 - 2) Demonstrating that the Vermont Yankee specific benchmarking calculations bound the results for the Core Spray and Recirculation outlet nozzles.
 - 3) Calculating fatigue usage factors (CUFs) using NRC approved ASME Section III NB-3200 methods; and
 - 4) Comparing the resulting CUFs to the previous environmental assisted fatigue calculations to establish whether the previous calculations are adequate.

Jonathan G. Rowley, Project Manager
Projects Branch 2
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-271

NEC072278

Enclosures:

1. Attendance List
2. Agenda
3. Public Comments
4. Presentation slides

cc w/encls: See next page

Jonathan G. Rowley, Project Manager
Projects Branch 2
Division of License Renewal
Office of Nuclear Reactor Regulation

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NAME		JRowley	RFranovich	KChang
DATE	/ /	/ /	/ /	/ /

OFFICIAL RECORD COPY

MEETING BETWEEN THE NRC STAFF AND ENTERGY NUCLEAR OPERATIONS, INC.
VERMONT YANKEE NUCLEAR POWER STATION
LICENSE RENEWAL APPLICATION

6003 EXECUTIVE BOULEVARD
ROOM EBB1B15
ROCKVILLE, MARYLAND

MEETING ATTENDANCE LIST
JANUARY 8, 2008

PARTICIPANTS

AFFILIATIONS

Jonathan Rowley	U.S. Nuclear Regulatory Commission (NRC)
Samson Lee	NRC
John Fair	NRC
Kenneth Chang	NRC
PT Kuo	NRC
Rani Franovich	NRC
Robert Sun	NRC
Qi Gan	NRC
Kaihwa Hsu	NRC
Ricardo Rodriguez	NRC
Mary Baty	NRC
Perry Buckberg	NRC
Evelyn Gettys	NRC
Yeon-Ki Chung	NRC
Peter Wen	NRC
On Yee	NRC
Gary Hammer	NRC
David Mannai	Entergy Nuclear Operations, Inc. (Entergy)
John McCann	Entergy
Jay Thayer	Entergy
Matias Travieso-Diaz	Entergy
Michael Metell	Entergy
Garry Young	Entergy
Norm Rademacher	Entergy

Enclosure 1

Alan Cox

Entergy

PARTICIPANTS

James Fitzpatrick

Scott Goodwin

John Dreyfuss

Gary L. Stevens

Terry J. Herrmann

Joe Hopenfeld

David Lochbaum

THE FOLLOWING PARTICAPATED

AFFILIATIONS

Entergy

Entergy

Entergy

Structural Integrity Associates

Structural Integrity Associates

New England Coalition (NEC)

Union of concerned Scientist

VIA TELEPHONE BRIDGELINE

Sarah Hoffman

John Sipos

Paul Eddy

Joan Leary Matthews

Blaise Constantakes

Rudolf Hausler

Raymond Shadis

Claire Chang

Ulrich Witte

Ed Anthes

Rich Schaller

Chalmer Myer

Bob Audette

Susan Smallheer

Sally Shaw

Fred Mogolesko

Vermont Department of Public Service

New York Office of the Attorney General

New York Office of the Attorney General

New York Office of the Attorney General

New York Office of the Attorney General

New York Office of the Attorney General

NEC

NEC

NEC

Nuclear Free Vermont

Strategic Teaming and Resource Sharing

Southern Nuclear Operating Company

The Brattleboro Reformer

The Rutland Herald

Entergy

MEETING BETWEEN THE NRC STAFF AND ENTERGY NUCLEAR OPERATIONS, INC.
VERMONT YANKEE NUCLEAR POWER STATION
LICENSE RENEWAL APPLICATION

6003 EXECUTIVE BOULEVARD
ROOM EBB1B15
ROCKVILLE, MARYLAND

AGENDA

JANUARY 8, 2008

- | | | |
|------|---|------------|
| I. | Introduction and opening remarks | 10 minutes |
| II. | Discussion of Response to Request for Additional Information
(Response to RAI 4.3.3-2) | 80 minutes |
| III. | Public Comments | 30 minutes |
| IV. | Adjourn | |

Enclosure 2

MEETING BETWEEN THE NRC STAFF AND ENTERGY NUCLEAR OPERATIONS, INC.
VERMONT YANKEE NUCLEAR POWER STATION
LICENSE RENEWAL APPLICATION
ROCKVILLE, MARYLAND
ROOM EBB1B15

MEETING MINUTES
JANUARY 8, 2008

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Enclosure 3

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Enclosure 3