

January 11, 2012

Dr. Warren D. Reece, Director
Nuclear Science Center
Texas Engineering Experiment Station
1095 Nuclear Science Road
MS 3575
College Station, Texas 77843

SUBJECT: TEXAS A&M SYSTEM, TEXAS ENGINEERING EXPERIMENT STATION –
REQUEST FOR ADDITIONAL INFORMATION REGARDING THE NUCLEAR
SCIENCE CENTER REACTOR LICENSE RENEWAL (TAC NO. ME1584)

Dear Dr. Reece:

The U.S. Nuclear Regulatory Commission (NRC) staff is continuing the review of your application for renewal of Facility Operating License No. R-83, dated February 27, 2003, as supplemented on March 30, 2005, July 22, 2009, August 30, 2010, May 27, June 9, and November 11, 2011. During our review, several questions have arisen for which we need additional information and clarification.

The enclosed request for additional information (RAI) identifies the additional information needed to complete our review. Please provide responses to the enclosed RAI within 10 days of the date of this letter.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.30(b), you must execute your response in a signed original document under oath or affirmation. Your response must be submitted in accordance with 10 CFR 50.4, "Written Communications." Information included in your response that is considered security, sensitive, or proprietary, that you seek to have withheld from the public, must be marked in accordance with 10 CFR 2.390, "Public inspections, exemptions, requests for withholding."

If you have any question, please contact Walter Meyer at (301) 415-0897 or by electronic mail at Walter.Meyer@nrc.gov.

Sincerely,

/RA/

Duane Hardesty, Project Manager
Research and Test Reactors Licensing Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Docket No. 50-128

Enclosure: As stated

Dr. Warren D. Reece, Director
 Nuclear Science Center
 Texas Engineering Experiment Station
 1095 Nuclear Science Road
 MS 3575
 College Station, Texas 77843

SUBJECT: TEXAS A&M SYSTEM, TEXAS ENGINEERING EXPERIMENT STATION –
 REQUEST FOR ADDITIONAL INFORMATION REGARDING THE NUCLEAR
 SCIENCE CENTER REACTOR LICENSE RENEWAL (TAC NO. ME1584)

Dear Dr. Reece:

The U.S. Nuclear Regulatory Commission (NRC) staff is continuing the review of your application for renewal of Facility Operating License No. R-83, dated February 27, 2003, as supplemented on March 30, 2005, July 22, 2009, August 30, 2010, May 27, June 9, and November 11, 2011. During our review, several questions have arisen for which we need additional information and clarification.

The enclosed request for additional information (RAI) identifies the additional information needed to complete our review. Please provide responses to the enclosed RAI within 10 days of the date of this letter.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.30(b), you must execute your response in a signed original document under oath or affirmation. Your response must be submitted in accordance with 10 CFR 50.4, "Written Communications." Information included in your response that is considered security, sensitive, or proprietary, that you seek to have withheld from the public, must be marked in accordance with 10 CFR 2.390, "Public inspections, exemptions, requests for withholding."

If you have any question, please contact Walter Meyer at (301) 415-0897 or by electronic mail at Walter.Meyer@nrc.gov.

Sincerely,

/RA/

Duane Hardesty, Project Manager
 Research and Test Reactors Licensing Branch
 Division of Policy and Rulemaking
 Office of Nuclear Reactor Regulation

Docket No. 50-128

Enclosure: As stated

DISTRIBUTION:

PUBLIC DPR/PRT r/f RidsNrrDpr RidsNrrDprPrta
 NRRRidsNrrDpr GLappert, NRR LTran, NRR DHardesty, NRR WMeyer, NRR
 NRRADAMS Accession No: ML120100513 TEMPLATE # NRR-088

OFFICE	PRLB :PM	PRLB: PM	PRPB: LA	PRLB: ABC	PRLB: PM
NAME	WMeyer	DHardesty	DBaxley for GLappert	JQuichocho	DHardesty
DATE	1/10/2012	1/10/2012	1/10/2012	01/11/2012	01/11/2012

Texas A&M University

Docket No. 50-128

cc:

Mayor, City of College Station
P.O. Box Drawer 9960
College Station, TX 77840-3575

Governor's Budget and
Planning Office
P.O. Box 13561
Austin, TX 78711

Texas A&M University System
ATTN: Jim Remlinger, Associate Director
Nuclear Science Center
Texas Engineering Experiment Station
1095 Nuclear Science Road
MS 3575
College Station, Texas 77843

Radiation Program Officer
Bureau of Radiation Control
Dept. Of State Health Services
Division for Regulatory Services
1100 West 49th Street, MC 2828
Austin, TX 78756-3189

Technical Advisor
Office of Permitting, Remediation & Registration
Texas Commission on Environmental Quality
P.O. Box 13087, MS 122
Austin, TX 78711-3087

Test, Research and Training
Reactor Newsletter
202 Nuclear Sciences Center
University of Florida
Gainesville, FL 32611

OFFICE OF NUCLEAR REACTOR REGULATION
REQUEST FOR ADDITIONAL INFORMATION
TEXAS A&M UNIVERSITY TEXAS ENGINEERING EXPERIMENT STATION
NUCLEAR SCIENCE CENTER REACTOR
FACILITY OPERATING LICENSE NO. R-83
DOCKET NO. 50-128

The U.S. Nuclear Regulatory Commission (NRC) staff is continuing the review of your application for renewal of Facility Operating License No. R-83, dated February 27, 2003, as supplemented on March 30, 2005, July 22, 2009, August 30, 2010, May 27, June 9, and November 11, 2011. During our review, several questions have arisen for which we need additional information and clarification. Please address and provide the requested information to the following:

1. NUREG-1537, Part 1, Section 4.5.3, Operating Limits, states that the applicant should present information about reactor operating limits relating to reactivity, specifically control rod worth, excess reactivity and shutdown margin. The Reactor Startup Report dated April 30, 2007, and submitted to the NRC by letter dated August 30, 2010, provides calculated and measured control rod worth, excess reactivity and shutdown margin for the initial startup of the low-enriched uranium 30/20 core, which may not apply to the current reactor operating limits. The following information is needed to complete our review:
 - a. Please provide the most recent control rod worth data and excess reactivity calculation with the reactor against the thermal column and discuss the changes in excess reactivity due to fuel burn-up and the build-up of samarium-149 since the initial startup.
 - b. Please provide a discussion of the current specification of shutdown margin in Technical Specification 3.1.3, Shutdown Margin, and consider increasing the shutdown margin to be consistent with the reactivity worth of xenon referenced in the definition of reference core condition or provide an explanation why a change to the shutdown margin specification is not necessary.

Enclosure