March 6, 2006

LICENSEE: DUKE ENERGY CORPORATION (DUKE)

FACILITY: OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3 (OCONEE)

SUBJECT: SUMMARY OF FEBRUARY 7, 2006, MEETING TO DISCUSS HIGH ENERGY LINE BREAK (HELB) AND TORNADO MITIGATION

On February 7, 2006, the Nuclear Regulatory Commission (NRC) met with Duke (the licensee) to discuss HELB and tornado mitigation at Oconee. Enclosure 1 is a list of the attendees. Enclosure 2 is the handouts provided by the licensee during the meeting.

By letter dated January 31, 2006, the licensee had provided information on planned modifications related to HELB and tornado events. In that letter, the licensee stated, "Following that meeting, absent verbal or written notification from the Staff that this approach is not sufficient, Duke will proceed with the understanding that implementation of the activities described in the Attachment will resolve the NRC staff's concerns regarding Oconee's CLB [current licensing basis] for tornado and HELB events outside containment." The NRC staff stated that it did not have enough specific details to reach a conclusion regarding the CLB for tornado and HELB events. The NRC staff also stated that the licensee should not conclude that the absence of verbal or written notification from the NRC staff constitutes NRC approval of the licensee's approach. The licensee stated that it did not intend for the NRC staff to approve the CLB for tornado and HELB based on the information provided in the January 31, 2006, letter and during this meeting; the licensee was instead asking the NRC staff to identify any problems the NRC staff had with the licensee's general approach thus far.

The NRC staff requested that the licensee provide a listing of systems, components, and structures (SSCs) needed to mitigate tornado and HELB events and to specify for which SSCs protection from these events will be provided and for which SSCs the licensee will provide analyses to demonstrate that these events can be adequately mitigated. The NRC staff also recommended that the licensee provide a failure modes and effect analysis (FMEA) for tornado and HELB events. The licensee agreed to provide the listing of SSCs requested by the NRC staff, and the licensee stated that it would consider providing the FMEA.

The licensee discussed the modifications that it is currently planning to implement to mitigate tornado events. The licensee may propose additional plant modifications after completing its review of risk insights for the remaining SSCs. The planned modifications will be designed to the tornado criteria specified for the Standby Shutdown Facility (SSF) in the Updated Final Safety Analysis Report. The licensee also stated that the upgrade to station auxiliary service water (ASW) will be designed to Quality Assurance I requirements. The licensee stated that when the upgrade to station ASW has been completed, it will provide an alternate means from the SSF for shutting down the plant. For SSCs not covered by these modifications, the licensee intends to provide risk insights, some of which will be based on TORMIS, a computer model for analyzing tornado-induced missiles. In addition, the licensee is reviewing a draft regulatory guide, "Draft Regulatory Guide DG-1143, Design-Basis Tornado and Tornado Missiles for

Nuclear Power Plants," that has recently been made available for public comment. The licensee stated that it will reach a decision by March 1, 2006, regarding possible use of DG-1143.

The licensee stated that it will be using Fiber Reinforced Polymer (FRP) technology for application in strengthening selected masonry walls against the effects of tornado wind and differential pressure loads. The licensee will be submitting a license amendment request (LAR) by June 1, 2006, for use of FRP technology. The NRC staff stated that the use of this technology will be a first-time review for the NRC staff.

The NRC staff also discussed some concerns with tornado mitigation, including the availability of steam generator level control and indication after a tornado.

For HELB events, the licensee agreed that it will confirm by analysis that cold shutdown can be achieved, but that certain repairs may be needed. The licensee has not yet determined what criterion it will use for the time required to reach cold shutdown. The NRC staff agreed with the concept of making repairs to achieve cold shutdown, but stated that it would need more details regarding these repairs and the time needed to make these repairs.

The licensee stated that it intends to incorporate NUREG/CR-2913, "Two-Phase Jet Loads," and Branch Technical Position MEB 3-1 into the Oconee licensing basis for jet impingement from critical cracks. The NRC staff stated that NUREG/CR-2913 was intended for full circular breaks of pipe and that the licensee would have to justify the use of this NUREG for pipe cracks. The NRC staff also stated the licensee should not just address selected items in MEB 3-1, but should address all the items in MEB 3-1.

The licensee provided its schedule for implementing the planned modifications and stated that it would provide additional justification for modifications that are scheduled to be completed later than December 31, 2007. The NRC stated that it was encouraged by the licensee's plans for resolving these issues.

/RA/

Leonard N. Olshan, Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

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

Nuclear Power Plants," that has recently been made available for public comment. The licensee stated that it will reach a decision by March 1, 2006, regarding possible use of DG-1143.

The licensee stated that it will be using Fiber Reinforced Polymer (FRP) technology for application in strengthening selected masonry walls against the effects of tornado wind and differential pressure loads. The licensee will be submitting a license amendment request (LAR) by June 1, 2006, for use of FRP technology. The NRC staff stated that the use of this technology will be a first-time review for the NRC staff.

The NRC staff also discussed some concerns with tornado mitigation, including the availability of steam generator level control and indication after a tornado.

For HELB events, the licensee agreed that it will confirm by analysis that cold shutdown can be achieved, but that certain repairs may be needed. The licensee has not yet determined what criterion it will use for the time required to reach cold shutdown. The NRC staff agreed with the concept of making repairs to achieve cold shutdown, but stated that it would need more details regarding these repairs and the time needed to make these repairs.

The licensee stated that it intends to incorporate NUREG/CR-2913, "Two-Phase Jet Loads," and Branch Technical Position MEB 3-1 into the Oconee licensing basis for jet impingement from critical cracks. The NRC staff stated that NUREG/CR-2913 was intended for full circular breaks of pipe and that the licensee would have to justify the use of this NUREG for pipe cracks. The NRC staff also stated the licensee should not just address selected items in MEB 3-1, but should address all the items in MEB 3-1.

The licensee provided its schedule for implementing the planned modifications and stated that it would provide additional justification for modifications that are scheduled to be completed later than December 31, 2007. The NRC stated that it was encouraged by the licensee's plans for resolving these issues.

/RA/

Leonard N. Olshan, Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

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

Distribution:

Public	BWetzel, Rgn II	CDoutt
LPL2-1 r/f	RidsRgn2MailCenter(MErnstes)	JShea
RidsNrrDorlLplc(EMarinos)	RidsNrrAdro(BBoger)	RCarroll
RidsOgcRp	JTatum	RSchin
RidsAcrsAcnwMailCenter	JFair	MShannon
RidsNrrDorl(CHaney/EHackett)	MTschiltz	RJasinski
RidsNrrPMLOlshan	EImbro	SJones
RidsNrrLAMO'Brien	BHarvey	

Package: ML060580201 Meeting Handouts: ML060580237
Meeting Summary: ML060580176 Meeting Notice: ML060240613 NRC-001

OFFICE	NRR/LPL2-1/PM	NRR/LPL2-1/BC
NAME	LOlshan	EMarinos
DATE	3/6/06	3/6/06

OFFICIAL RECORD COPY

LIST OF ATTENDEES

MEETING TO DISCUSS OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3
HIGH ENERGY LINE BREAK AND TORNADO MITIGATION

FEBRUARY 7, 2006

NRC

B. Boger
C. Haney
E. Hackett
E. Marinos
J. Tatum
L. Olshan
J. Fair
M. Tschiltz
E. Imbro
B. Harvey
S. Jones
C. Doutt
M. Ernstes*
J. Shea*
R. Carroll*
R. Schin*
M. Shannon*

DUKE

R. Jones
B. Hamilton
M. Glover
G. Davenport
J. Fuller
G. McAninch
L. Kanipe
J. Robertson
L. Nicholson
J. Fisicaro
R. Freudenberger

OTHER

T. Bacon, Areva

*By phone

Oconee Nuclear Station, Units 1, 2, and 3

cc:

Ms. Lisa F. Vaughn
Duke Energy Corporation
526 South Church Street
P. O. Box 1006
Mail Code = EC07H
Charlotte, North Carolina 28201-1006

Manager, LIS
NUS Corporation
2650 McCormick Dr., 3rd Floor
Clearwater, FL 34619-1035

Senior Resident Inspector
U.S. Nuclear Regulatory Commission
7812B Rochester Highway
Seneca, SC 29672

Mr. Henry Porter, Director
Division of Radioactive Waste Management
Bureau of Land and Waste Management
Dept. of Health and Env. Control
2600 Bull St.
Columbia, SC 29201-1708

Mr. Michael A. Schoppman
Framatome ANP
1911 North Ft. Myer Dr.
Suite 705
Rosslyn, VA 22209

Mr. B. G. Davenport
Regulatory Compliance Manager
Oconee Nuclear Site
Duke Energy Corporation
ON03RC
7800 Rochester Highway
Seneca, SC 29672

Ms. Karen E. Long
Assistant Attorney General
NC Department of Justice
P.O. Box 629
Raleigh, NC 27602

Mr. R. L. Gill, Jr.
Manager - Nuclear Regulatory
Issues and Industry Affairs
Duke Energy Corporation
526 S. Church St.
Mail Stop EC05P
Charlotte, NC 28202

Division of Radiation Protection
NC Dept of Environment, Health, & Natural
Resources
3825 Barrett Dr.
Raleigh, NC 27609-7721

Mr. Peter R. Harden, IV
VP-Customer Relations and Sales
Westinghouse Electric Company
6000 Fairview Road
12th Floor
Charlotte, NC 28210

Mr. Henry Barron
Group Vice President, Nuclear Generation
and Chief Nuclear Officer
P.O. Box 1006-EC07H
Charlotte, NC 28201-1006

Mr. Bruce H. Hamilton
Vice President, Oconee Site
Duke Energy Corporation
7800 Rochester Highway
Seneca, SC 29672