

**From:** "Robert L Gill Jr" <rlgill@duke-energy.com>  
**To:** "Rani Franovich" <RLF2@nrc.gov>  
**Date:** 6/19/02 11:24AM  
**Subject:** Re: Electrical Conference Call Summary

We have no comments on this summary. Bob

"Rani  
Franovich" To: <rlgill@duke-energy.com>  
<RLF2@nrc.gov cc:  
> bcc:  
Subject: Electrical Conference Call Summary  
06/18/2002  
04:23 PM

Bob,  
Please review the attached (share it with Paul) and provide comments this week, if possible.  
Thanks,  
Rani

(See attached file: Conference Call Summary May 29 02 - Electrical Open Items.wpd)

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LICENSEE : Duke Energy Corporation

FACILITIES: McGuire, Units 1 and 2, and Catawba, Units 1 and 2

SUBJECT: TELECOMMUNICATION WITH DUKE ENERGY CORPORATION TO DISCUSS  
THE RESPONSE TO A REQUEST FOR ADDITIONAL INFORMATION PERTAINING  
TO SECTIONS 3.6 AND B.3.19 OF THE LICENSE RENEWAL APPLICATION

On January 17, 2002, the NRC staff (hereafter referred to as "the staff") issued a request for additional information (RAI) pertaining to Section 3.6.1, Aging Effects Caused by Heat and Radiation, and Section B.3.19, Inaccessible Non-EQ Medium-voltage Cables Aging Management Program, of the license renewal application (LRA). Duke Energy Corporation (hereafter referred to as "the applicant") responded to this request by letters dated March 8, 2002, and April 15, 2002. On May 29, 2002, a conference call was conducted between the NRC and Duke Energy Corporation to discuss information that was provided to the NRC in response to RAIs 3.6.1-1 and B.3.19-2. Participants of the May 29, 2002, conference call are provided in an attachment.

#### RAI 3.6.1-1

The applicant reiterated its response to RAI 3.6.1-1, indicating that Duke is very confident that the visual inspections outlined in Section B.3.23, Non-EQ Insulated Cables and Connections Aging Management Program, will enable early detection of aging degradation of insulation of all types of cables and connections, including low signal level cables used in sensitive instrumentation applications.

The staff indicated, however, that visual inspection alone would not necessarily detect reduced insulation resistance (IR) levels in cable insulation before the intended function is lost. Exposure of electrical cables to adverse localized environments caused by heat or radiation can result in reduced IR. A reduction in IR will cause an increase in leakage currents between conductors and from individual conductors to ground, and is a concern for circuits with sensitive, low level signals such as radiation and nuclear instrumentation since it may contribute to inaccuracies in the instrument loop. Because low level signal instrumentation circuits may operate with signals that are normally in the low milliamp range or less, they can be affected by extremely low levels of leakage current. The staff also indicated that it is not convinced that aging of these cables will initially occur on the outer casing resulting in sufficient damage such that visual inspection will be effective in detecting the degradation before IR losses lead to a loss in intended function, particularly if the cables are also subject to moisture. For this reason, the staff described aging management program XI.E2, Electrical Cables Not Subject to 10 CFR 50.49 Environmental

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Qualification Requirements Used in Instrumentation Circuits, in the Generic Aging Lessons Learned (GALL) report. This GALL report program treats low signal level cables as a special group of cables that warrant more rigorous monitoring to ensure aging is being adequately monitored. Since the applicant proposes to perform visual inspections to detect aging degradation of insulation of all types of cables and connections, including low signal level cables used in sensitive instrumentation applications, this issue will be identified as an open item in the Safety Evaluation Report to be issued by August 12, 2002.

#### RAI B.3.19-2

The applicant and staff discussed a recent decision by the Nuclear Energy Institute (NEI) to defer to Duke's position pertaining to the definition of "significant moisture." During an April 10, 2002, meeting with the staff (documented by Memorandum dated April 22, 2002, ADAMS Accession Number ML021120407), the NEI Electrical Working Group had accepted an action to evaluate the potential need to clarify the definition of "significant moisture" based upon a review of industry research literature and operating experience. However, the NEI subsequently decided to defer to the position stated in Duke's response to RAI B.3.19-2, which stated that a review of industry literature on the topic of medium-voltage cables being exposed to moisture for long periods revealed no quantifiable data. In its response, Duke further stated that data and discussions in the industry literature, which is referenced in the RAI response, provides the reader with the general conclusion that there should not be a problem with a medium-voltage cable even if it is exposed to moisture for several years. Duke also referenced Program XI.E3, Inaccessible Medium-voltage Cables not Subject to 10 CFR 50.49 Environmental Qualification Requirements, of the GALL report to support their interpretation of "significant moisture." Specifically, program element 4, Detection of Aging Effects, states that testing of in-scope, medium -voltage cables that are exposed to significant moisture and significant voltage every 10 years is adequate to preclude failure of the conductor insulation since experience has shown that aging degradation is a slow process.

The staff acknowledged Duke's response to the RAI and the implied difference between the XI.E3 program description and their current assessment of the program proposed by Duke. As such, the staff will consider the need to modify the GALL report to describe a program that provides adequate assurance that aging of medium-voltage cables that may be exposed to moisture will be adequately monitored or managed during the extended period of operation. The staff indicated that the applicant had not provided sufficient justification in the LRA or in the RAI response for defining "significant moisture" as exposure to long-term (over a period of a few years), continuous (going on or extending without interruption or break) standing water. The staff also indicated that the applicant's program description in the LRA did not provide adequate information about the proposed alternative inspection program in that it did not specify (1) the frequency of inspection; (2) how inspection results will be monitored and trended; (3) if or when operability evaluations for degraded conditions (presence of moisture) would be performed; (4) if or when testing would be performed if moisture is identified; and (5) what corrective actions would be taken in the event that cables exposed to moisture are identified. This issue will be identified as an open item in the Safety Evaluation Report to be issued by August 12, 2002.

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A draft of this telecommunication summary was provided to the applicant to allow them the opportunity to comment prior to the summary being issued.

Rani L. Franovich, Project Manager  
License Renewal and Environmental Impacts Program  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

Docket Nos. 50-369, 50-370, 50-413, and 50-414

Attachment: As stated

cc w/attachment: See next page

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A draft of this telecommunication summary was provided to the applicant to allow them the opportunity to comment prior to the summary being issued.

Rani L. Franovich, Project Manager  
License Renewal and Environmental Impacts Program  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

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Attachment: As stated

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OFFICE	LA:DRIP	TR:IEHB:DE	TR:IEHB:DE	PM:RLEP:DRIP	PM:RLEP:DRIP
NAME	EHylton	DNguyen	JLazevnick	RFranovich	SHoffman
DATE	6/ /02	6/ /02	6/ /02	6/ /02	6/ /02

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RLEP RF

E. Hylton

**E-MAIL:**

PUBLIC

J. Johnson

W. Borchardt

D. Matthews

F. Gillespie

P.T. Kuo

C. Casto

E. Imbro

G. Bagchi

K. Manoly

W. Bateman

J. Calvo

C. Holden

P. Shemanski

H. Nieh

G. Holahan

S. Black

B. Boger

D. Thatcher

G. Galletti

J. Moore

R. Weisman

M. Mayfield

A. Murphy

W. McDowell

S. Droggitis

S. Duraiswamy

RLEP Staff

-----  
R. Architzel

R. Martin

C. Patel

C. Julian (RII)

R. Haag (RII)

S. Uttal (OGC)

M. Khanna

H. Walker

P. Shemanski

D. Nguyen

J. Lazevnick

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Division of Regulatory Improvement Programs  
COVER PAGE

DATE: June 14, 2002

SUBJECT: TELECOMMUNICATION WITH DUKE ENERGY CORPORATION TO DISCUSS  
THE RESPONSE TO A REQUEST FOR ADDITIONAL INFORMATION PERTAINING  
TO SECTIONS 3.6 AND B.3.19 OF THE LICENSE RENEWAL APPLICATION

ORIGINATOR: R. Franovich

SECRETARY: S. Chey

•••DRIP ROUTING LIST•••

	NAME	DATE
1.	EGHylton	/ /02
2.	RLFranovich	/ /02
3.	JLazevnick	/ /02
4.	DNguyen	/ /02
5.	SLee	/ /02

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ADAMS ACCESSION NUMBER: **ML**

DATE ENTERED: / /02

FORM 665 ATTACHED and filled out: **YES NO**

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**McGuire & Catawba Nuclear Stations, Units 1 and 2**

**Mr. Gary Gilbert**  
Regulatory Compliance Manager  
Duke Energy Corporation  
4800 Concord Road  
York, South Carolina 29745

**Mr. Alan Nelson**  
Nuclear Energy Institute  
1776 I Street, N.W., Suite 400  
Washington, DC 20006-3708

**Ms. Lisa F. Vaughn**  
Duke Energy Corporation  
422 South Church Street  
Charlotte, North Carolina 28201-1006

**Anne Cottingham, Esquire**  
Winston and Strawn  
1400 L Street, NW  
Washington, DC 20005

**North Carolina Municipal Power**  
Agency Number 1  
1427 Meadowwood Boulevard  
P. O. Box 29513  
Raleigh, North Carolina 27626

**County Manager of York County**  
York County Courthouse  
York, South Carolina 29745

**Piedmont Municipal Power Agency**  
121 Village Drive  
Greer, South Carolina 29651

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

**Ms. Elaine Wathen, Lead REP Planner**  
Division of Emergency Management  
116 West Jones Street  
Raleigh, North Carolina 27603-1335

**Mr. Robert L. Gill, Jr.**  
Duke Energy Corporation  
Mail Stop EC-12R  
P. O. Box 1006  
Charlotte, North Carolina 28201-1006

8

North Carolina Electric Membership  
Corporation  
P. O. Box 27306  
Raleigh, North Carolina 27611

Senior Resident Inspector  
U.S. Nuclear Regulatory Commission  
4830 Concord Road  
York, South Carolina 29745

Mr. Henry J. Porter, Assistant Director  
Division of Waste Management  
Bureau of Land & Waste Management  
S.C. Dept of Health and Environ. Control  
2600 Bull Street  
Columbia, South Carolina 29201-1708

Mr. C. Jeffrey Thomas  
Manager - Nuclear Regulatory Licensing  
Duke Energy Corporation  
526 South Church Street  
Charlotte, North Carolina 28201-1006

Mr. L. A. Keller  
Duke Energy Corporation  
526 South Church Street  
Charlotte, North Carolina 28201-1006

Saluda River Electric  
P. O. Box 929  
Laurens, South Carolina 29360

Mr. Peter R. Harden, IV  
VP-Customer Relations and Sales  
Westinghouse Electric Company  
6000 Fairview Road - 12<sup>th</sup> Floor  
Charlotte, North Carolina 28210

Mr. T. Richard Puryear  
Owners Group (NCEMC)  
Duke Energy Corporation  
4800 Concord Road  
York, South Carolina 29745

Mr. Richard M. Fry, Director  
North Carolina Dept of Env, Health, and  
Natural Resources  
3825 Barrett Drive  
Raleigh, North Carolina 27609-7721

County Manager of  
Mecklenburg County  
720 East Fourth Street  
Charlotte, North Carolina 28202

Michael T. Cash  
Regulatory Compliance Manager  
Duke Energy Corporation  
McGuire Nuclear Site  
12700 Hagers Ferry Road  
Huntersville, North Carolina 28078

Senior Resident Inspector  
U.S. Nuclear Regulatory Commission  
12700 Hagers Ferry Road  
Huntersville, North Carolina 28078

Dr. John M. Barry  
Mecklenburg County  
Department of Environmental Protection  
700 N. Tryon Street  
Charlotte, North Carolina 28202

Mr. Gregory D. Robison  
Duke Energy Corporation  
Mail Stop EC-12R  
526 S. Church Street  
Charlotte, NC 28201-1006

Mary Olson  
Nuclear Information & Resource Service  
Southeast Office  
P.O. Box 7586  
Asheville, North Carolina 28802

Paul Gunter  
Nuclear Information & Resource Service  
1424 16th Street NW, Suite 404  
Washington, DC 20036

Lou Zeller  
Blue Ridge Environmental Defense League  
P.O. Box 88  
Glendale Springs, North Carolina 28629

Don Moniak  
Blue Ridge Environmental Defense League  
Aiken Office  
P.O. Box 3487  
Aiken, South Carolina 29802-3487

9

Mr. Kevin Cox  
The Huntersville Star  
P.O. Box 2542  
Huntersville, NC 28070

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**TELECOMMUNICATION PARTICIPANTS  
May 29, 2002**

**Staff Participants**

Rani Franovich

Duc Nguyen

James Lazevnick

**Duke Energy Corporation Participants**

Bob Gill

Paul Colaianni

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Attachment