

March 8, 2000

MEMORANDUM TO: Cynthia A. Carpenter, Chief  
Generic Issues, Environmental, Financial,  
and Rulemaking Branch  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

FROM: James H. Wilson, Senior Project Manager/*RAI*  
Generic Issues, Environmental, Financial,  
and Rulemaking Branch  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF MEETING HELD ON FEBRUARY 17, 2000, WITH DUKE  
AND VEPCO TO DISCUSS SECURITY REQUIREMENTS FOR FRESH  
MOX FUEL (TAC NOS. MA5205, MA5206, MA5422, MA5423, MA5425,  
AND MA5426)

On February 17, 2000, representatives of Duke and VEPCO met with the staff of the Nuclear Regulatory Commission (NRC) at the NRC's offices in Rockville, Maryland. The purpose of the meeting was to discuss the additional security requirements that will need to be implemented in order to provide adequate protection for fresh mixed oxide (MOX) fuel at the six reactors participating in this portion of DOE's fissile material disposition program. Due to the sensitive nature of the material discussed, this meeting was closed to members of the public. Attachment 1 provides a list of attendees at the meeting and their affiliation. Attachment 2 provides the unclassified, non-sensitive presentation materials used by Duke and VEPCO at the meeting.

Duke and VEPCO described the process for protecting fresh MOX fuel during shipping, transporting, receiving, inspecting, storing, and handling from the time it leaves the fuel fabrication facility until it is placed in the reactor at a licensed nuclear power facility. Estimates of the typical time intervals expected for each of these activities were presented, as well as the expected number of assemblies per shipment, total number of shipments and total number of fuel assemblies needed for each facility, and the staffing needed to accomplish each activity. Duke and VEPCO also provided a description of the physical security measures already in place at each facility for the protection against radiological sabotage and the additional provisions that are being considered whenever fresh MOX fuel is onsite.

The staff concluded that there is no technical basis for imposing all of the safeguards provisions, in toto, that apply to Category I fuel fabrication facilities to reactors using MOX fuel. That is, the staff is not opposed to the concept of adding additional provisions to a licensee's existing physical security plan to provide protection against theft or diversion of strategic special nuclear material. A vital area (or portion thereof), with some enhancements (including, but not limited to volumetric intrusion detection alarms, CCTV means of assessment, additional provisions for penetration delay, implementation of the two-man rule in the fuel building, and

additional entrance searches) could conceivably function as a material access area during the period that fresh MOX fuel is stored in the spent fuel pool. However, the Office of the General Counsel will need to be consulted in order to determine whether this approach can be implemented or if exemptions to Parts 11, 25, 73, and 95 will be required.

The staff also informed Duke and VEPCO that based on the current implementation of the access authorization program required by 10 CFR 73.56 for power reactors, additional individual access authorizations required by Part 25 (clearances), beyond those required by DOE for individuals with access to the interior of the transport vehicle, would not be required for the utilization of MOX fuel.

Representatives from Duke stated that an application for a license amendment to support insertion of lead test assemblies in McGuire 2 could be expected in August 2001. Additional, individual applications for authorization of bulk MOX fuel irradiation at each of the six mission reactors would then be expected to be submitted about 30 months later.

Docket Nos. 50-338, 50-339, 50-413, 50-414, 50-369, and 50-370

Attachments: As stated

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LIST OF ATTENDEES AT MEETING WITH DUKE AND VEPCO

HELD IN ROCKVILLE, MARYLAND ON FEBRUARY 17, 2000

DUKE/VEPCO

SECURITY REQUIREMENTS FOR FRESH MOX FUEL

<u>NAME</u>	<u>AFFILIATION</u>
E. Ten Eyck	NRC
L. Silvious	NRC
A. Persinko	NRC
R. Skelton	NRC
M. Warren	NRC
R. Casteneira	NRC
T. Johnson	NRC
E. Bradshaw	NRC
J. H. Wilson	NRC
P. Rhoads	DOE
G. Copp	Duke
T. Keener	Duke
T. Shalaski	VEPCO
D. Dziadosz	VEPCO
K. Reaves	VEPCO
M. Whalen	VEPCO
M. Earle	VEPCO
A. Cottingham	Winston and Strawn

cc:

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

Ms. Lisa F. Vaughn  
Legal Department (PB05E)  
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

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

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

Virgil R. Autry, Director  
Division of Radioactive Waste Management  
Bureau of Land and Waste Management  
Department of Health and Environmental  
Control  
2600 Bull Street  
Columbia, South Carolina 29201-1708

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

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

Mr. Steven P. Shaver  
Senior Sales Engineer  
Westinghouse Electric Company  
5929 Carnegie Blvd.  
Suite 500  
Charlotte, North Carolina 28209

Catawba Nuclear Station

cc:

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

Richard M. Fry, Director  
Division of Radiation Protection  
North Carolina Department of  
Environment, Health, and  
Natural Resources  
3825 Barrett Drive  
Raleigh, North Carolina 27609-7721

Oconee Nuclear Station

cc:

Ms. Lisa F. Vaughn  
Legal Department (PBO5E)  
Duke Energy Corporation  
422 South Church Street  
Charlotte, North Carolina 28201-1006

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

Mr. Rick N. Edwards  
Framatome Technologies  
Suite 525  
1700 Rockville Pike  
Rockville, Maryland 20852-1631

Manager, LIS  
NUS Corporation  
2650 McCormick Drive, 3rd Floor  
Clearwater, Florida 34619-1035

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

Virgil R. Autry, Director  
Division of Radioactive Waste Management  
Bureau of Land and Waste Management  
Department of Health and Environmental  
Control  
2600 Bull Street  
Columbia, South Carolina 29201-1708



Mr. L. E. Nicholson  
Compliance Manager  
Duke Energy Corporation  
Oconee Nuclear Site  
7800 Rochester Highway  
Seneca, South Carolina 29672

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

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

Mr. Richard M. Fry, Director  
Division of Radiation Protection  
North Carolina Department of  
Environment, Health, and  
Natural Resources  
3825 Barrett Drive  
Raleigh, North Carolina 27609-7721

Mr. Steven P. Shaver  
Senior Sales Engineer  
Westinghouse Electric Company  
5929 Carnegie Blvd.  
Suite 500  
Charlotte, North Carolina 28209

McGuire Nuclear Station

cc:

Ms. Lisa F. Vaughn  
Legal Department (PBO5E)  
Duke Energy Corporation  
422 South Church Street  
Charlotte, North Carolina 28201-1006

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

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

Senior Resident Inspector  
c/o 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. Steven P. Shaver  
Senior Sales Engineer  
Westinshouse Electric Company  
5929 Carnegie Blvd.  
Suite 500  
Charlotte, North Carolina 28209

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

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

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

Mr. Richard M. Fry, Director  
Division of Radiation Protection  
North Carolina Department of  
Environment, Health and Natural  
Resources  
3825 Barrett Drive  
Raleigh, North Carolina 27609-7721

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

Virginia Electric & Power Company

Mr. J. Jeffrey Lunsford  
County Administrator,  
Louisa County  
P.O. Box 160  
Louisa, Virginia 23093

Donald P. Irwin, Esq.  
Hunton and Williams  
Riverfront Plaza, East Tower  
951 E. Byrd Street  
Richmond, Virginia 23219

Dr. W. T. Lough  
Virginia State Corporation                      Commission  
Division of Energy Regulation  
P.O. Box 1197  
Richmond, Virginia 23209

Old Dominion Electric  
Cooperative  
4201 Dominion Boulevard  
Glen Allen, Virginia 23060

J. H. McCarthy, Manager  
Nuclear Licensing and Operations              Support  
Virginia Electric and Power Company  
Innsbrook Technical Center  
5000 Dominion Boulevard  
Glen Allen, Virginia 23060

Office of the Attorney General  
Commonwealth of Virginia  
900 East Main Street  
Richmond, Virginia 23219

Senior Resident Inspector  
North Anna Power Station  
U.S. Nuclear Regulatory Commission  
1024 Haley Drive  
Mineral, Virginia 23117

Senior Resident Inspector  
Surry Power Station, US Nuclear              Regulatory Commission  
5850 Hog Island Road  
Surry, Virginia 23883

Robert B. Strobe, M.D., M.P.H.  
State Health Commissioner  
Office of the Commissioner  
Virginia Department of Health  
P.O. Box 2448  
Richmond, Virginia 23218

W. R. Matthews  
Site Vice President  
North Anna Power Station  
Virginia Electric and Power Company  
P.O. Box 402  
Mineral, Virginia 23117

J. P. O'Hanlon  
Senior Vice President - Nuclear  
Virginia Electric and Power Co.  
Innsbrook Technical Center  
5000 Dominion Boulevard  
Glen Allen, Virginia 23060

Mr. Eugene S. Grecheck  
Site Vice President  
Surry Power Station  
Virginia Electric and Power Company  
5570 Hog Island Road  
Surry, Virginia 23883

Chairman  
Board of Supervisors  
of Surry County  
Surry County Courthouse  
Surry, Virginia 23683

# **MOX Fuel Security**

- **Introduction**
- **MOX Fuel Handling & Storage**
- **Security Measures for MOX Fuel**
- **10CFR73 Security Requirements**
- **NRC SSNM Access & Clearance Requirements**
- **Questions/Discussion**

Feb 17, 2000

Attachment 2