

November 19, 2004

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSIONDOCKETED  
USNRCBEFORE THE ATOMIC SAFETY AND LICENSING BOARD November 29, 2004 (1:35pm)

In the Matter of:

DUKE ENERGY CORPORATION

(Catawba Nuclear Station,  
Units 1 and 2))  
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)  
)Docket Nos. 50-413-OLA  
50-414-OLAOFFICE OF SECRETARY  
RULEMAKINGS AND  
ADJUDICATIONS STAFFDUKE ENERGY CORPORATION'S SECOND SUPPLEMENTAL RESPONSE  
TO BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE'S FIRST SET  
OF INTERROGATORIES ON BREDL SECURITY CONTENTION 5

Duke Energy Corporation ("Duke") further supplements its July 2, 2004 response and its November 2, 2004 first supplemental response to General Interrogatory Nos. 1, 2 and 3 of the June 19, 2004 "Blue Ridge Environmental Defense League's First Set of Discovery Requests to Duke Energy Corporation Regarding Security Plan Submittal" as follows:

Supplemental Response to General Interrogatory No. 1

The information contained in Duke's Second Supplemental Response was reviewed by Mr. Steven P. Nesbit of Duke. An affidavit to that effect is included as Attachment 1 to this response.

Supplemental Response to General Interrogatory No. 2

Mr. Steven P. Nesbit and Mr. Glenn A. Copp III will testify as additional expert witnesses on behalf of Duke regarding Security Contention 5. Statements of Qualifications for Mr. Nesbit and Mr. Copp are included as Attachments 2 and 3, respectively, to this response. Mr. Michael T. Cash will not testify as a witness for Duke.

Supplemental Response to General Interrogatory No. 3

The designated witnesses for Duke are expected to testify collectively to the facts and opinions outlined in Duke's November 2, 2004 First Supplemental Discovery Response. Additionally, Mr. Nesbit will testify that because of the characteristics of the mixed oxide (MOX) fuel lead assemblies, the plutonium contained therein is intrinsically more resistant to theft or diversion and more difficult to fashion into a nuclear explosive device than strategic special nuclear material present at Category I fuel cycle facilities.

Respectfully submitted,



David A. Repka  
Mark J. Wetterhahn  
Anne W. Cottingham  
WINSTON & STRAWN, LLP  
1400 L Street, NW  
Washington, D.C. 20005-3502

Timika Shafeek-Horton  
DUKE ENERGY CORPORATION  
422 South Church Street  
Mail Code: PB05E  
Charlotte, N.C. 28201-1244

ATTORNEYS FOR DUKE ENERGY  
CORPORATION

Dated in Washington, District of Columbia  
This 19th day of November 2004

November 19, 2004

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of:

DUKE ENERGY CORPORATION

(Catawba Nuclear Station,  
Units 1 and 2)

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Docket Nos. 50-413-OLA  
50-414-OLA

AFFIDAVIT OF STEVEN P. NESBIT

Steven P. Nesbit hereby declares under penalty of perjury that the following statements are true and correct of his own knowledge:

1. I have reviewed the information contained in "Duke Energy Corporation's Second Supplemental Response to Blue Ridge Environmental Defense League's First Set of Discovery Requests to Duke Energy Corporation Regarding Security Plan Submittal," dated November 19, 2004.

2. Such information is true and correct to the best of my knowledge, information and belief.



Steven P. Nesbit

**RESUME**

**Name:** STEVEN P. NESBIT  
**Company:** Duke Power  
**Title/Position:** Manager, Mixed Oxide (MOX) Fuel Project  
**Years with Firm:** 22  
**Years Experience:** 24

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*Mr. Nesbit has extensive nuclear engineering and management experience in the commercial sector and on Department of Energy (DOE) projects. He is the MOX Fuel Project Manager for Duke Power, which is playing a key role in the Department of Energy's (DOE's) program to dispose of surplus weapons plutonium. In addition, he has managed activities for the Managing and Operating Contractor to DOE's Office of Civilian Radioactive Waste Management. He also has expertise in nuclear safety analysis technology. Mr. Nesbit has extensive experience interacting with the Nuclear Regulatory Commission and he has authored numerous topical reports and technical papers.*

**Education/Training:**

ME, Nuclear Engineering, University of Virginia, 1982  
BS, Nuclear Engineering, University of Virginia, 1980  
Graduate course work, Environmental Science

Supervisory Development Program, Duke Power

**Professional Affiliations/Certifications:**

Registered Professional Engineer, North Carolina  
Registered Professional Engineer, South Carolina  
American Nuclear Society  
Member, Special Committee on Nuclear Nonproliferation

**Experience:**

3/99-Present      Engineering Supervisor II – Duke Power

Manages Duke Power's activities as part of the project to dispose of surplus United States weapons plutonium using mixed oxide (MOX) fuel. Directs technical, licensing, and business activities. Serves as a public spokesperson on the MOX fuel project. Served as Expert Witness in July 2004 Atomic Safety and Licensing Board hearing.

09/96-3/99

**Consulting Engineer - Duke Power**

Lead Duke Power's feasibility investigations of using MOX fuel at the company's three nuclear plants to support DOE's surplus weapons plutonium disposition program. Served as a representative on the Nuclear Energy Institute's Working Group on Surplus Weapons Plutonium Disposition. Interacted with external groups (Congress, DOE, and the public) in support of the MOX fuel project.

11/95-09/96

**Engineering Supervisor II - Duke Engineering & Services (DE&S)**

Supervised the Design Basis and Project Integration Section of the DOE Office of Civilian Radioactive Waste Management (OCRWM) Management and Operating Contractor. Developed environmental design criteria and performed design basis accident evaluations for an interim storage facility for spent nuclear fuel.

05/94-11/95

**Manager, Regulatory Interactions Section - DE&S**

Manager of the Las Vegas Regulatory Interactions Section of the Regulatory and Licensing Department of the Management and Operating contractor for the DOE OCRWM. Responsibilities of the seven-person section include interactions with the Nuclear Regulatory Commission (NRC) staff and on-site representatives, the Advisory Committee on Nuclear Waste, and the Nuclear Waste Technical Review Board; development of regulatory positions; regulatory reviews; Site Characterization Analysis comment responses; regulatory commitments; and NRC issue resolution activities.

12/92-04/94

**Engineering Consultant - DE&S**

Licensing Engineer in the Las Vegas Regulatory and Licensing Department of the Management and Operating contractor for the DOE OCRWM. Provided nuclear power plant licensing experience and general support to the DOE Yucca Mountain Site Characterization Office. Assisted with interactions between the DOE, the National Academy of Sciences, the Environmental Protection Agency, and the NRC, related to the development of an environmental standard for the potential repository at Yucca Mountain.

1991-1992

**Utility Engineering Group (UEG) Site Engineer - DE&S**

Site Engineer in Washington, D.C., for the DE&S Utility Engineering Group. Provided utility perspective and experience to the DOE for the New Production Reactor Project. Served on the staff of the Chief Engineer of the project. Provided day-to-day liaison with the various project areas. Served as Project Engineer for the UEG. Managed the DE&S Washington, D.C., office.

1990-1991

**Senior Engineer - Duke Engineering & Services**

Worked in the safety review area of the UEG. Provided utility perspective and experience to the New Product Reactor Project in the area of nuclear reactor safety.

1988-1990

**Design Engineer - Duke Power**

Lead engineer in the area of nuclear safety analysis technology, a work group comprised of five engineers. Worked on developing mass and energy release analysis capability for high energy line breaks at Oconee, McGuire, and Catawba Nuclear Stations. Used the RELAP5/MOD002 transient analysis computer code and wrote in-house analytical codes. Worked to develop reactor building analysis capability for large dry and ice condenser containments, including applications of the FATHOMS (COBRA-NC) and CONTEMPT computer codes. Tested the upgraded Oconee training simulator and evaluated vendor performance. Represented the Babcock and Wilcox Owners Group (B&WOG) on the Project Management Group of the Multi-Loop Integral System Test Facility, a thermal-hydraulic research project sponsored by the B&WOG, the Electric Power Research Institute (EPRI) and the NRC. Served on the Duke Power Crisis Management Team.

1982-1988

**Design Engineer/Assistant Engineer/Junior Engineer - Duke Power**

Lead safety analysis engineer for the Oconee Nuclear Station, a work group of up to five engineers. Served as Duke Power representative on the B&WOG Analysis Committee. Participated in the Technical Advisory Group, a committee comprised of B&WOG, EPRI and NRC representatives, which evaluated the need for thermal hydraulic testing related to once-through steam generators. Helped develop symptom-oriented emergency procedures for Oconee. Performed extensive RETRAN benchmarks of plant transients and helped prepare a safety analysis methods topical report for submission to the NRC. Served as one of 12 auditors for the inaugural Duke Power Self-initiated Technical Audit, patterned after the NRC Safety System Functional Inspections. Participated in fuel loading and start-up physics testing at McGuire Nuclear Station. Participated in zero power physics testing at Oconee. Performed system and containment analyses of the Oconee plant. Prepared technical justifications for emergency Technical Specification changes which prevented unnecessary unit

shutdowns.

1979-1982                      **Reactor Operator/Reactor Operator Trainee - University of Virginia  
Reactor Facility**

Reactor Operator Trainee and licensed Reactor Operator for the 2-MW research reactor in Charlottesville, Va. Duties included shift operation work, training and fuel handling.

**Awards/Honors:**

“Doer of Deeds,” Yucca Mountain Site Characterization Office, February 2, 1994.

Newcomb/Thornton Fellowship, University of Virginia, 1980-1981.

Bachelor of Science with Highest Distinction, University of Virginia, 1980.

**Publications:**

Nesbit, S. P., Scott, M. W., Eller, J. L., Verbos, F. J., and Costello, M. V., "Non-LOCA Safety Analysis for Operation with Weapons Grade MOX Fuel Lead Assemblies," American Nuclear Society Winter Meeting 2003, New Orleans, LA, November 2003.

Nesbit, S. P. and Eller, J. L., "Basis for the Design of Reactor Cores Containing Weapons Grade MOX Fuel," Advances in Nuclear Fuel Management III, Hilton Head, SC, October 2003.

Anderson, S. L., Gilreath, J. D., Nesbit, S. P., and Laubam, T. J., "Mixed Oxide Fuel Effects on the Integrity of the McGuire and Catawba Reactor Vessels," Fifth Topical Meeting on Spent Nuclear Fuel and Fissile Materials Management, Charleston, SC, September 18, 2002.

Buckner, M. R., Bengelsdorf, H. D., and Nesbit, S. P., "American Nuclear Society Nonproliferation Position Statement," Fifth Topical Meeting on Spent Nuclear Fuel and Fissile Materials Management, Charleston, SC, September 18, 2002.

Clark, R. H., Dziadosz, D., and Nesbit, S. P., "MOX Fuel Irradiation Program for Disposition of Surplus United States Plutonium," Fourth Topical Meeting on Department of Energy Spent Nuclear Fuel and Fissile Materials Management, San Diego, SC, June 7, 2000.

Nesbit, S. P. and Bengelsdorf, H. D., "A Comparison of Surplus Weapons Plutonium Disposition Technologies," Third Topical Meeting on Department of Energy Spent Nuclear Fuel and Fissile Materials Management, Charleston, SC, September 9, 1998.

S. P. Nesbit, "A Utility Perspective on Surplus Weapons Plutonium Disposition in Existing United States Light Water Reactors," Advances in Nuclear Fuel Management II, Myrtle Beach, S.C., March 1997.

S. P. Nesbit, S. J. Brocoum, M. A. Lugo, J. A. Duguid, P. M. Krishna, "Regulatory Perspective on NAS Recommendations for Yucca Mountain Standards," 7th Annual International High-Level

Radioactive Waste Management Conference, Las Vegas, NV, May 1, 1996.

J. Carl Stepp, Silvio Pezzopane, Quazi Hossain, Michael Hardy, Steven P. Nesbit, "Criteria for Design of the Yucca Mountain Structures, Systems, and Components for Fault Displacement," FOCUS '95 - Methods of Seismic Hazards Evaluation, Las Vegas, NV, September 20, 1995.

J. Carl Stepp, Michael P. Hardy, Quazi A. Hossain, Steven P. Nesbit, J. Timothy Sullivan, "Seismic Design Methodology for a Geologic Repository at Yucca Mountain," 6th Annual International High-Level Radioactive Waste Management Conference, Las Vegas, NV, May 4, 1995.

D. Stahl, S. P. Nesbit, L. Berkowitz, "Approach to Compliance with the NRC Substantially Complete Containment Requirement at the Potential Repository at Yucca Mountain," 6th Annual International High-Level Radioactive Waste Management Conference, Las Vegas, NV, May 3, 1995.

S. P. Nesbit, S. J. Brocoum, "New Public Health and Safety Standards for Yucca Mountain and Their Impact on the Carbon-14 Issue," Waste Management '95 Conference, Tucson, AZ, February 26, 1995.

S. P. Nesbit, R. J. Gerling, and G. B. Swindlehurst, "Qualification of the Oconee RETRAN Model by Comparison with Plant Transient Data," Nuclear Technology, Volume 83, December 1988.

#### **Topical Reports:**

DPC-NE-1005P, "Duke Power Nuclear Design Methodology Using CASMO-4/SIMULATE-3 MOX," Duke Energy, August 2001.

YMP/TR-003-NP, "Seismic Design Methodology for a Geologic Repository at Yucca Mountain," U. S. Department of Energy, October 1995.

DPC-NE-3003-P, "Mass and Energy Release and Containment Response Methodology," Duke Power Company, August 1993.

BAW-2079, "Technical Advisory Group Investigation of Once-Through Steam Generator Thermal-Hydraulic Data Requirements," Babcock and Wilcox, March 1989.

DPC-NE-3000, "Thermal-Hydraulic Transient Analysis Methodology," Duke Power Company, July 1987.

#### **Security Clearance:**

DOE "L" Clearance (active)

#### **References:**

DOE and commercial references available upon request





## **Glenn A. (Skip) Copp, III**

4700 Carousel Drive

Charlotte, NC 28212

Home Phone (704) 568-3732

### **QUALIFICATIONS**

Worked for Duke Power Company for over 29 years in various non-supervisory, supervisory, and managerial positions, with over 20 years of nuclear licensing-related experience. Five of these 20 years involved licensing activities preparatory to the use of mixed oxide fuel in a Duke Power reactor as part of a Department of Energy project. Served as an officer in the U.S. Navy nuclear program for nine years prior to employment at Duke Power.

### **EDUCATION**

1961-1965 Bachelor of Science in Physics, University of South Carolina  
 1965-1967 U.S. Navy, Nuclear Power Officer Training Program (18 months)  
 1979-1981 Master of Business Administration, University of North Carolina at Charlotte  
 1991-1992 Senior Reactor Operator Certification, Duke Power Company, McGuire Nuclear Station

### **EMPLOYMENT**

*1999-2003 Mixed Oxide Fuel Project, Duke Power Company*  
 Responsible for developing and implementing the regulatory approach for obtaining NRC approval of the use of mixed oxide (MOX) fuel in a Duke Power reactor. This involved preparation and submittal to the NRC of technical (topical) reports, a license amendment request to allow the use of four MOX fuel lead assemblies, and nuclear security plan changes. Also developed a draft license amendment request to allow batch use of MOX fuel assemblies in a Catawba reactor.

Worked with the Department of Energy Office of Transportation Safeguards and Duke engineering, maintenance, security, and operations personnel to identify and resolve nuclear site transportation and security interface issues.

*1997-1999 Regulatory Compliance, Catawba Nuclear Station*  
 Responsible for investigating and writing licensee event reports for submission to the NRC. Also, responsible for performing operability evaluations and resolving station problem reports that involved licensing or regulatory issues.



*1993-1997 Nuclear Regulatory & Industry Affairs, Duke Power Company*  
Managed the General Office nuclear licensing function, which involved supervising up to 14 individuals. Responsible for developing the responses to Nuclear Regulatory Commission (NRC) requests for information involving generic licensing issues. Also, responsible for development of and revisions to various Duke programs and associated manuals including the generic nuclear security and nuclear security contingency plans, emergency plan, and Administrative Policy manual.

*1991-1992 Senior Reactor Operator Trainee, Duke Power Company,*  
Assigned to the Operations group at McGuire Nuclear Station to obtain a Senior Reactor Operator (SRO) license. This involved classroom work, in-plant practical tasks, and simulator training. Successfully completed this training and received SRO license in January 1993.

*1985-1991 Planning Engineer, McGuire Nuclear Station*  
Managed the planning and scheduling of maintenance work at McGuire Nuclear Station as well as the operation of the station warehouses. Directly supervised six individuals and indirectly supervised over 100 as part of this job responsibility.

*1974-1985 Staff Engineer - Licensing, Duke Power Company*  
Primary responsibility involved interfacing with the Nuclear Regulatory Commission staff as part of obtaining the operating license for McGuire Nuclear Station, Units 1 and 2. This involved the development of revisions to the McGuire Final Safety Analysis Report and Technical Specifications, and responding to Nuclear Regulatory Commission issues by coordinating Duke legal, technical, and engineering resources. Supported Duke's legal counsel during the Atomic Safety and Licensing Board hearings held as part of the licensing process. Supervised between two and three individuals as part of this overall licensing effort. Served as the Duke Power representative on the Westinghouse Owners Group (WOG). In addition, served as chairman of the WOG Technical Specification subcommittee.

*1965-1974 Officer, United States Navy*  
Served on five different fast attack and Polaris/Poseidon missile submarines in various division officer and department head positions including Weapons Officer, Operations Officer, Navigator, and Senior Watch Officer. Rank attained at time of discharge, Lieutenant.

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

Docket Nos. 50-413-OLA  
50-414-OLA

## CERTIFICATE OF SERVICE

I hereby certify that copies of "DUKE ENERGY CORPORATION'S SECOND SUPPLEMENTAL RESPONSE TO BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE'S FIRST SET OF INTERROGATORIES ON BREDL SECURITY CONTENTION 5" in the captioned proceeding have been served on the following by deposit in the United States mail, first class, this 19th day of November, 2004. Additional e-mail service, designated by \*, has been made this same day, as shown below.

**Ann Marshall Young, Chairman\***  
**Administrative Judge**  
**Atomic Safety and Licensing Board**  
**U.S. Nuclear Regulatory Commission**  
**Washington, DC 20555-0001**  
**(e-mail: [AMY@nrc.gov](mailto:AMY@nrc.gov))**

**Anthony J. Baratta\***  
**Administrative Judge**  
**Atomic Safety and Licensing Board**  
**U.S. Nuclear Regulatory Commission**  
**Washington, DC 20555-0001**  
**(e-mail: [AJB5@nrc.gov](mailto:AJB5@nrc.gov))**

**Thomas S. Elleman\***  
Administrative Judge  
5207 Creedmoor Road, #101  
Raleigh, NC 27612  
(e-mail: [elleman@eos.ncsu.edu](mailto:elleman@eos.ncsu.edu))

**Office of the Secretary\***  
**U.S. Nuclear Regulatory Commission**  
**Washington, DC 20555**  
**Attn: Rulemakings and Adjudications Staff**  
**(original + two copies)**  
**(e-mail: [HEARINGDOCKET@nrc.gov](mailto:HEARINGDOCKET@nrc.gov))**

**Office of Commission Appellate  
Adjudication  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555**

**Adjudicatory File  
Atomic Safety and Licensing Board Panel  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555**

Susan L. Uttal, Esq.\*  
Antonio Fernandez, Esq.\*  
Shana C. Zipkin, Esq.\*  
Office of the General Counsel  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555  
(e-mail: slu@nrc.gov)  
(e-mail: axf2@nrc.gov)  
(e-mail: scz@nrc.gov)

Diane Curran\*  
Harmon, Curran, Spielberg &  
Eisenberg, LLP  
1726 M Street, N.W.  
Suite 600  
Washington, DC 20036  
(e-mail: dcurran@harmoncurran.com)

A handwritten signature in black ink, appearing to read "Mark J. Wetterhahn", written over a horizontal line.

Mark J. Wetterhahn  
Counsel for Duke Energy Corporation