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October 12, 1999

CHIEF  
COUNSEL  
ADJUTANT

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	Docket No. 50-400-LA
CAROLINA POWER & LIGHT	)	
COMPANY	)	ASLBP No. 99-762-02-LA
	)	
(Shearon Harris Nuclear Power Plant)	)	
	)	

NRC STAFF'S RESPONSE TO APPLICANT'S FIRST SET OF  
DISCOVERY REQUESTS TO NRC STAFF

The Nuclear Regulatory Commission staff (Staff) hereby responds to the Applicant's First Set of Discovery Requests Directed to the Nuclear Regulatory Commission Staff, filed September 24, 1999.

The Staff notes that 10 C.F.R. §§ 2.744 and 2.790, which govern the production of NRC records and documents, contemplate that most NRC documents will be available for inspection and copying in the public document room, and, if they have been withheld from the public document room pursuant to § 2.790, a request to the Executive Director for Operations for the production of such a document is required by § 2.744, which must state, among other things, why the requested record or document is relevant to the proceeding.

Notwithstanding these regulations, and without waiving any objections or privileges, and except as specified below, the Staff is now voluntarily providing responses to the Applicant's request for production of documents. In doing so, the Staff is not waiving its

right to require full compliance with the Commission's regulations regarding any future discovery requests made by the Applicant in this matter.

### I. GENERAL OBJECTIONS

1. The Staff objects to the Applicant's discovery requests to the extent that they call for disclosure of litigation strategy and other material protected under 10 C.F.R. § 2.740 or other protection provided by law, attorney work product, privileged attorney-client materials, and other privileged materials such as draft agency documents protected by executive privilege.

2. The Staff objects to the Applicant's discovery requests to the extent that they request information or documents relating to licensees and/or entities other than Carolina Power & Light's Shearon Harris Nuclear Plant. Such discovery requests call for information which is irrelevant, immaterial, and not calculated to lead to the discovery of admissible evidence, and are over-broad and unduly burdensome.

3. The Staff objects to the Applicant's discovery requests to the extent that they require identification of the home addresses and telephone numbers of Staff employees or contractors, which are protected from disclosure by the Privacy Act, 5 U.S.C § 552a(b) and 10 C.F.R. § 2.790(a)(6). The disclosure of such information is irrelevant and unnecessary.

4. The Staff objects to the Applicant's discovery requests to the extent that they seek discovery which is beyond the scope of the two contentions admitted by the Board in this proceeding. The Applicant is only permitted to obtain discovery of matters that pertain to the subject matter within the scope of this proceeding.

## II. GENERAL DISCOVERY REQUESTS

### A. GENERAL INTERROGATORIES

Pursuant to agreement between the Staff and the Applicant, these general interrogatories apply to both of the admitted contentions, are in addition to the fifteen interrogatories per contention allowed by the Board's July 29, 1999, Memorandum and Order, and are continuing in accordance with 10 CFR § 2.740(e) through the end of the discovery period, October 31, 1999, as established in the Board's July 29, 1999 Memorandum and Order.

GENERAL INTERROGATORY NO. 1. State the name, business address, and job title of each person who supplied information for responding to these interrogatories, requests for admission, and requests for the production of documents. Specifically note for which interrogatories and requests for admissions each such person supplied information. For requests for production, note for which contention each such person supplied information.

STAFF'S RESPONSE: The following persons supplied information for responding to Orange County's First Discovery requests:

Richard Laufer  
Project Manager, Shearon Harris Nuclear Power Plant  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555  
Document Requests for both contentions

Lawrence Kopp  
Senior Reactor Engineer  
Reactor Systems Branch, Division of Systems Safety Analysis  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555  
Document Request for contention 2

Kenneth C. Heck  
Quality Operations Engineer  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555  
Document request for contention 3

Donald G. Naujock  
Technical Reviewer  
Materials and Chemical Engineering Branch, Division of Engineering  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555  
Document Request for contention 3

James A. Davis  
Technical Reviewer,  
Materials and Chemical Engineering Branch, Division of Engineering  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555  
Document request for contention 3

**GENERAL INTERROGATORY NO. 2.** For each admitted contention, give the name, address, profession, employer, area of professional expertise, and educational and scientific experience of each person whom the NRC Staff expects to provide sworn affidavits and declarations in the written filing for the Subpart K proceeding described in the Board's July 29, 1999, Memorandum and Order and the general subject matter on which each person is expected to provide sworn affidavits and declarations for the written filing. For purposes of answering this interrogatory, the educational and scientific

experience of expected affiants and declarants may be provided by a resume of the person attached to the response.

The Staff has not yet made a final determination regarding who will provide sworn affidavits, but provides the following as persons who are likely to provide a sworn affidavit or declaration in the written filing for the subpart K proceeding:

Richard Laufer  
Project Manager, Shearon Harris Nuclear Power Plant  
General subject matter: The overall project

Lawrence Kopp  
Senior Reactor Engineer  
General subject matter: Contention 2

Kenneth C. Heck  
Quality Operations Engineer  
General subject matter: Contention 3

Donald G. Naujock  
Technical Reviewer  
General subject matter: Contention 3

James A. Davis  
Technical Reviewer  
General subject matter: Contention 3

Anthony Ulses  
Nuclear Engineer  
Reactor Systems Branch, Division of Systems Safety and Analysis  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555  
General subject matter: Contention 2

Christopher Gratton  
Reactor Systems Engineer  
Plant Systems Branch, Division of Systems Safety & Analysis  
Office of Nuclear Reactor Regulation  
General subject matter: Contention 3

A copy of the resume of each person named in this answer is annexed hereto as attachment 1. The Staff reserves the right to amend this answer as discovery continues.

GENERAL INTERROGATORY NO. 3. For each admitted contention, identify each expert on whom the NRC Staff intends to rely on in its written filing for the Subpart K proceeding described in the Board's July 29, 1999 Memorandum and Order, the general subject matter on which each expert is expected to provide sworn affidavits and declarations for the written filing, the qualifications of each expert whom the NRC Staff expects to provide sworn affidavits and declarations for the written filing, a list of all publications authored by the expert within the preceding ten years, and a listing of any other cases in which the expert has testified as an expert at a trial, hearing or by deposition within the preceding four years.

Lawrence Kopp  
List of publications is contained in attached resume  
General subject matter: Contention 2; criticality

Kenneth C. Heck  
General subject matter: Contention 3

Donald G. Naujock  
Publication listed in attached resume.  
General subject matter: Contention 3

James A. Davis  
List of publications attached.  
General subject matter: Contention 3

Christopher Gratton  
General Subject Matter: Reactor Systems: Contention 3

The Staff reserves the right to amend this answer as discovery continues.

**B. GENERAL DOCUMENT REQUESTS**

The Applicant requests the Staff to produce the following documents:

REQUEST NO 1. All documents requested by, and provided to, the Board of Commissioners of Orange County ("BCOC") pursuant to BCOC's September 20, 1999 "First Set of Discovery Requests to the NRC Staff . . ."

STAFF'S RESPONSE: Documents previously provided to BCOC were served on Applicant on October 5, 1999. All other non-objectionable, responsive documents will be provided within 30 days of the date of service of Applicant's Discovery Request.

**IV. SPECIFIC DOCUMENT REQUESTS**

STAFF'S RESPONSE TO SPECIFIC DISCOVERY REQUESTS: Subject to the limitations specified on page 1 of this document, the Staff will respond to the Applicant's specific document requests within 30 days of receipt of the Applicant's First Discovery Requests.

Respectfully submitted,



Susan L. Uttal  
Counsel for NRC staff

Dated at Rockville, Maryland  
this 12<sup>th</sup> day of October 1999

## RESUME

James A. Davis  
Security Clearance: Q (Top Secret)

### Education:

#### High School

Worthington High School, Worthington, Ohio

#### College

B.Met.E., The Ohio State University, 1965, Metallurgical Engineering

M.S., The Ohio State University, 1965, Metallurgical Engineering

Ph.D, The Ohio State University, 1968, Metallurgical Engineering

39/45 Credits towards an MBA, Canisius College, 1972-1976.

### Experience:

11/11/1990 to Present: U.S. Nuclear Regulatory Commission, GG-14-10

Supervisor: E. Sullivan

Mailing Address: U.S. NRC

Mail Stop O7-D4

Washington, D.C. 20555

I am a technical reviewer in the Chemical Engineering and Metallurgy Section of the Division of Engineering, the Office of Nuclear Reactor Regulation. Areas of responsibility include coatings for nuclear power plants, license renewal for Calvert Cliffs and Oconee, all threaded fastener issues (such as stress corrosion cracking, boric acid corrosion, and fatigue), chemical decontamination, Boiling Water Reactor internals cracking, pump and valve internals cracking, pipe integrity issues, and corrosion behavior for dry cask storage, and interaction of coatings with spent fuel water. Currently, I am coordinating the responses to a generic letter on containment coatings for nuclear power plants. I am the NRC representative to ASTM D-33 on coatings for power generation facilities. I am also a member of the Board of Directors for the National Board of Registration for Nuclear Safety Related Coating Engineers & Specialists. I am also a member of ASME B1 on threaded fasteners. I was a member of an Augmented Inspection Team at Palisades on fuel handling problems and Point Beach on the hydrogen burn as a result of interactions between borated water and the inorganic Zinc coating during dry cask loading operations. I was Contract Technical Monitor and Project Officer for numerous contracts at Brookhaven National Labs. I was a technical reviewer for the design of the Navy Seawolf Submarine and on the DOE project to produce tritium in a commercial reactor (Watts Bar). I was acting section chief on numerous occasions, and for several months at a time. I have made numerous presentations to senior NRC management including the Chairman, the Executive Director for Operations, the Committee to Resolve Generic Issues, and the Advisory Committee on Reactor Safety and Safeguards. I testified before Representative Dingle's staff on the safety of fasteners in nuclear power plants as a result of concerns raised by a private



citizen. I convinced his staff that there is no safety issue because of the redundant design of mechanical joints, the fact that the joints will leak before they break, and that the joints are inspected every refueling outage.

8/1981 to 4/1990: Polyken Technologies/Kendall Co., Senior Research Associate

Supervisor: Jordan Kellner  
Address: Polyken Technologies/Kendall Co.  
17 Hartwell Avenue  
Lexington, MA 02173

I was responsible for domestic and international technical marketing for Polyken Pipeline Coatings. As part of my job, I made technical presentations on Polyken Pipeline Coatings in North America, USSR, Egypt, India, Iraq, Japan, Australia, Bolivia, France, England, Germany, Czechoslovakia, Italy, Switzerland, Algeria, Singapore, and Jakarta to ministries and high level government officials. I coordinated joint research between Polyken and the VNIIGAS and VNIIST Technical Institutes in Moscow on the development of high temperature pipeline coatings. I contracted with independent laboratories to certify Polyken products for international customers. I was the Polyken representative to National Association of Corrosion Engineers (NACE) committees on Underground Pipeline Coatings, Arctic Corrosion, and Cathodic Protection. I was appointed by the President of National Association of Corrosion Engineers to the International Relations Committee. Also, I was the company representative to American Society of Testing and Materials and the American Water Works Association technical committees. I was responsible for analyzing competitive coatings using fast Fourier transform infrared spectroscopy, gas chromatography, mass spectroscopy, scanning electron microscopy, differential scanning calorimetry, thermal gravimetric analysis, moisture vapor transmission apparatus, and mechanical test equipment. I conducted slow strain rate stress corrosion cracking tests on line pipe steel to develop inhibitors that could be added to coating primers to control stress corrosion cracking. I conducted slow strain rate tests on various blends of polypropylene to develop blends that are resistant to environmental cracking. I was acting section chief for extended periods of time.

11/1979 to 8/1981: Arthur D. Little, Senior Consultant

Supervisor: William Lee  
Address: Arthur D. Little  
15 Acorn Park  
Cambridge, MA 02138

I was a consultant to DOE on the metallurgical and mechanical condition of defense nuclear waste tanks that were damaged during stress relieving and that were damaged by sulfate reducing bacteria. This included a review of the structural integrity of the waste tanks and a review of DuPont's program to control stress corrosion cracking of the tanks. I was a consultant to DOE on the Savannah River Defense Waste Form program. Twelve contractors were developing defense waste forms including borosilicate glass, high silica glass, synrock, coated borosilicate glass, HIP rock, and stoichiometric concrete. A pilot plant borosilicate glass facility

was constructed at Savannah River. My job was to visit with each contractor twice a year and review their programs. I then reviewed progress reports and prepared an assessment of each contractor's work and recommended that individual programs be expanded, contracted, or canceled. I was also a member of a team that developed models for long term storage of commercial nuclear waste sponsored by Battelle. I consulted to numerous commercial customers on corrosion, fracture mechanics, coating, metallurgical, and plating issues.

11/1978-11/1979: Allied Tube and Conduit Corp., Director of Research

Supervisor: L. Volmuth

Address: Allied Tube and Conduit  
16100 South Lathrop  
Harvey, IL 60426

I was responsible for research and development in the areas of metallurgical tube forming, low frequency electric resistance welding, chemical cleaning of steel, high speed in-line galvanizing, surface treating, and coating of electrical conduit, fence posts, and specialty tubing. I was also responsible for the Quality Control Department and the Process Control Laboratory.

6/1976-11/1978: Allegheny Ludlum Steel Corp., Research Specialist

Supervisor: George Aggen

Address: Allegheny Ludlum Steel Corp.  
Research Center  
Brackenridge, PA 15014

I determined the level of columbium and vanadium stabilizers required to avoid sensitization of ferritic stainless steels. I developed intergranular sensitization tests for low chromium ferritic stainless steels. I used electrochemical and electron-optical including scanning electron microscopy, auger, and transmission electron microscopy techniques for failure analyses. I used sensitive analytical techniques to determine carbon, nitrogen, columbium, and titanium contents of stainless steel. I provided customer service by recommending specific grades of stainless steel for corrosive applications.

11/1970-6/1976: Bell Aerospace: Senior Research Scientist

Supervisor: A. Watts

Address: Bell Aerospace  
Wheatfield, NY

I was program Manager on numerous Navy sponsored programs involving the corrosion of aluminum alloys, stainless steels, and titanium alloys in high velocity sea water for the Navy's high performance ships program. I examined the influence of mean stress intensity and stress intensity amplitude on the corrosion fatigue behavior of aluminum alloys and titanium alloys in sea water using fracture mechanics specimens. I determined the comparability of various materials with cooling fluids for the hypersonic airplane. I examined the comparability of rocket fuels and oxidizers with fuel handling equipment. I

managed the fracture mechanics group. I developed microelectrodes for measuring potential and pH inside of growing stress corrosion cracks of aluminum alloys and alloy steels.

1/1968-11/1970: U.S. Steel Corporation, Senior Research Engineer

Supervisor: Brian Wilde

Address: U.S. Steel Corp  
Jamison Lane  
Monroeville, PA

I developed steel with improved corrosion resistance using linear polarization, anodic polarization, transmission electron microscopy, and scanning electron microscopy. I conducted fundamental studies on the mechanism of pitting, stress corrosion cracking, hydrogen embrittlement, and intergranular corrosion using electrochemical techniques, static and dynamic straining techniques, hydrogen permeation cells, and optical and scanning microscopy techniques. I was the group leader of the electrochemistry group.

**NRC Awards:**

Performance Award - December 21, 1994

Certificate of Appreciation - February 1, 1995 - Seawolf Class Submarine design review

Group Award - December 10, 1996 - AIT Team at Point Beach

Performance Award - January 10, 1997

**NRC Training:**

Power Plant Engineering (2 week course)

Boiling Water Reactors-General Electric Design (1 week course)

Pressurized Water Reactors-Westinghouse Design (1 week course)

Non Destructive Testing (2 week course)

Sexual Harassment Awareness (2 day course)

AIDS Awareness (1 day course)

Allegation Training (4 hours annually)

Procurement Training (1 day)

Ethics Training (4 hours annually)

Security Training for the Seawolf Design Review (4 hours)

Security Training for the DOE tritium Project (4 hours)

NUDOCS (NRC document retrieval system) (1 day)

dBase III (2 days)

Autos LAN Training (4 hours)

Introduction to Netscape

Introduction to Microsoft NT

Introduction to WordPerfect 8.1

**Other Relevant Training**

Public Speaking-Kendall-3 Days, Allegheny Ludlum-5 days

Effective Writing-U.S. Steel(3 days)

## **PUBLICATIONS-PRESENTATIONS**

- 1 J. A. Davis and J. D. Kellner, "Electrochemical Principles Applied to Operating Pipelines," Presented at Corr/89, Underground Corrosion Symposium, New Orleans, Louisiana, April 17-21, 1989**
- 2. F. J. Witt, J. A. Davis and R. A. Hermann; "Second EPRI Balance-of-Plant Heat Exchanger NDE Workshop, The U. S. Nuclear Regulatory Commission Perspective," Second EPRI Balance-of-Plant Heat Exchange NDE Workshop, Key West, Florida, May 26-29, 1992**
- 3. J. A. Davis, "Full Reactor Coolant System Chemical Decontamination, NRC Approval of the Westinghouse Owners Group Topical Report" Fifth EPRI Workshop on Chemical Decontamination, Charlotte, North Carolina, June 8-9, 1993**
- 4. James A. Davis and Richard E. Johnson, "The Regulatory Approach to Fastener Integrity in the Nuclear Industry," Symposium on Structural Integrity of Fasteners, Sept. 8-19, 1993, to be published as a Special Technical Publication.**
- 5. James A. Davis, "Nuclear Power Plant Service Water Systems, NRC Staff Perspective," International Joint Power Generation Conference, ASME Power Division, Heat Exchange Committee, Kansas City, Mo., October 17-21, 1993**
- 6. J. A. Davis, G. P. Hornseth, and R. A. Hermann, "Third EPRI Balance of Plant Heat Exchanges NDE Workshop, A Regulatory Perspective," Third EPRI Balance of Plant Heat Exchange Workshop, Myrtle Beach, SC., June 6-8, 1994**
- 7. R. A. Hermann, M. Banic, and J. A. Davis, "Primary Water Stress Corrosion Cracking of Alloy 600," Specialists Meeting on Cracking in LWR RPV Head Penetrations, International Atomic Energy Agency, Philadelphia, PA, May 2-4, 1995**
- 8. Robert A. Hermann, James A. Davis, and Merrilee J. Banic, "Age Related Degradation in Operating Nuclear Plants," presented at ASME International Vessel and Piping Conference, Honolulu, Hawaii, July, 1995**
- 9. James A. Davis, "A Regulatory Perspective on Service Water Problems," Invited Lead Speaker, Fourth EPRI Balance-of-Plant Heat Exchanger NDE Symposium, June 10-12, 1996, Jackson Hole, Wyoming.**
- 10. James A. Davis, "Nuclear Power Plant Fastener Thread Gaging - NRC Staff Perspective," presented at Eight International Symposium on Environmental Degradation of Materials in Nuclear Power Systems -**

**Water Reactors, August 10-14, 1997, Amelia Island, Florida.**

- 11. James A. Davis, "A Regulatory Perspective on Service Water Problems,"  
Invited Lead Speaker, Fifth EPRI Balance-of-Plant Heat Exchanger NDE  
Symposium, June 15-17, 1998, Lake Tahoe, Nevada.**

**Anthony P. Ulses**

301 415 1194

*apu@nrc.gov*

**Education**

Master's of Science (MS) in Nuclear Engineering  
University of Maryland at College Park, May 1999.

Bachelor's of Science and Engineering (BSE) in Nuclear Engineering, *Cum laude*  
University of Michigan at Ann Arbor, August 1992.

**Experience**

United States Nuclear Regulatory Commission 5/93-present  
Nuclear Engineer, Reactor Systems Branch, Division of Systems Safety and Analysis

United States Nuclear Regulatory Commission 9/92-5/93  
Graduate Fellow, Advanced Reactors Project Directorate

*Computer Code Development*

- Maintained and upgraded legacy physics codes on UNIX workstations
- Developed VIKTORIA code for fuel channel analysis
- Coupled TRAC and NESTLE codes
- Assisted in NEWT development

*Computer Code Analysis*

- SCALE Fuel lattice criticality studies, depletion and collapsed cross section preparation
- MCBEND Reactor pressure vessel fluence studies
- NEWT Fuel power distributions, depletion and collapsed cross sections
- DOORS 3.2 3D Transport Calculations
- TRAC/NESTLE 3D BWR ATWS Studies
- DRAGON 3.2 Fuel power distributions, depletion and collapsed cross sections

*Computer Codes*

- DANTSYS 3.1, MONK

*Computer Languages and Operating Systems*

- UNIX, Fortran 90/95, Fortran 77, C, Windows, DOS, PVM

*Regulatory Experience:*

- License amendment evaluations
- Fuel manufacturer inspections
- Performing Audit Calculations of Licensee Analyses

*General Experience:*

- Managing High Performance Computer Networks
- Digital UNIX System's Administration

Laurence I. Kopp  
Senior Reactor Engineer

Education

Ph.D., Nuclear Engineering, University of Maryland, 1968  
M.S., Physics, Stevens Institute of Technology, 1959  
B.S., Physics, Fairleigh Dickinson College, 1956.

Employment

U.S. Nuclear Regulatory Commission, Senior Reactor Engineer, 1965 - present  
Performs safety evaluations of reactor license applications, technical specifications, core reloads, spent fuel storage facilities, and topical reports. Developed regulatory guides, information notices, generic letters, rulemaking related to reactor physics, safety analysis, and fuel storage. Assisted in development of improved technical specifications in areas of reactivity control, power distribution limits, and fuel storage.

Westinghouse Astronuclear Laboratory, Senior Scientist, 1963-1965  
Evaluated nuclear analytical methods to be used in the design of NERVA rocket reactors. Analyzed experiments performed in the Los Alamos zero power reactor.

Martin-Marietta Nuclear Division, Senior Engineer, 1959-1963  
Performed core physics calculations on fluidized bed and PM-1 reactors. Performed parametric studies of reactors applicable to nuclear rocket applications. Programmed several FORTRAN computer codes.

Federal Electric Corporation, Senior Programmer, 1957-1959

Curtiss-Wright Research Division, Programmer/physicist, 1956-1957

Professional Societies

American Nuclear Society  
ANS-10 Mathematics and Computations Standards Committee  
ANSI N-17 Standards Committee on Research Reactors, Reactor Physics & Radiation Shielding

Publications

"The NRC Activities Concerning Boraflex Use in Spent-Fuel Storage Racks," invited paper, American Nuclear Society Annual Meeting, June 1996.

"Potential Loss of Required Shutdown Margin During Refueling Operations," invited paper, American Nuclear Society Annual Meeting, June 1990.

"Recommended Programming Practices to Facilitate the Portability of Scientific Computer Programs," ANS Proceedings of the Topical Meeting on Computational

Methods in Nuclear Engineering, April 1979.

"The Neutron Resonance Integral of Natural Dysprosium," Ph.D. thesis, University of Maryland, 1968.

"Pool Reactor Experiments with Control Rods," Transactions of the American Nuclear Society, Vol. 10, Pg. 16, 1967 (co-author).

"Procedures for Obtaining Few-Group Constants for Systems Having Rapid Spectral Variation With Position," Transactions of the American Nuclear Society, Vol. 8, pg. 303, 1965 (co-author).

"Improved Nuclear Design Method for NERVA Calculations - NSDM II, WANL-TME-1091, Westinghouse Astronuclear Laboratory, 1965 (co-author).

"Analysis of Experiments Performed in Los Alamos ZEPO Reactor," WANL-TME-273, Westinghouse Astronuclear Laboratory, 1963.



**KENNETH C. HECK**  
**735 University Avenue**  
**Sewanee, Tennessee 37383**

**Tel: (301) 415-2682**  
**email: kch1@nrc.gov**

### **SUMMARY OF SKILLS**

Technical, supervisory, and management experience in the electric power industry and with assignments in engineering, project management, project engineering, plant start-up, plant and program evaluation, quality assurance, and licensing. Proficiencies include design engineering, control systems, electronics, accounting, and computer applications.

### **EXPERIENCE**

#### **Nuclear Regulatory Commission** (May 1997 - Present)

##### **Quality Operations Engineer (Headquarters), Inspection Program Management**

- Review, evaluate, audit quality assurance programs and other administrative control aspects for nuclear power plants.
- Perform program development functions related to all aspects of the agency's quality assurance programs.
- Conduct inspections of vendors who provide products and services to the nuclear industry.

#### **Tennessee Valley Authority**

##### **Lead Auditor, Quality Services** (June 1995-October 1996)

- Provided staff augmentation services in the areas of quality assurance and licensing.
- Developed audit/consultation services for implementing international (ISO-9000) quality standards.

##### **Principal Evaluator, Nuclear Assurance & Licensing** (October 1988-June 1995)

- Conducted independent audits/evaluations of nuclear power programs, processes, and plant events.
- Served as Technical Secretary for the Nuclear Safety Review Board (senior safety oversight body) from shutdown of TVA's nuclear program through recovery of the Sequoyah and Browns Ferry nuclear plants.
- Conducted independent verifications of the effectiveness of completed corrected actions through successful startup of the Watts Bar nuclear plant.

##### **Senior Evaluator, Nuclear Managers Review Group** (March 1987 to October 1988)

- Developed and implemented a review program to assess activities associated with the design, construction and operation of TVA nuclear plants. Findings were reported directly to the Manager, Nuclear Power with recommendations for improvements.

#### **Independent Contractor** (December 1985-March 1987)

##### **Design Engineer/System Engineer, Engineering Department**

- Modified the integrated control system and non-nuclear instrumentation following shutdown of the Davis Besse nuclear plant.
- Developed engineering designs, implemented modifications, and tested control systems at power through successful program recovery.

#### **Babcock & Wilcox** (March 1970-November 1985)

##### **Project Engineer, Plant Services** (September 1984-November 1985)

- Developed and deployed hardware and inspection services for repair and maintenance of steam generators and pressure vessels.
- Managed field installation of fuel handling bridge in Kumatori, Japan.

**Project Manager, International Business (June 1982-September 1984)**

- Developed markets for B&W technology services in Europe and the Pacific Basin in partnership with international companies such as Brown Boveri (Germany), Framatome (France), Sumitomo (Japan) and McDermott International (Hong Kong).

**Principal Engineer, Plant Performance (January 1980-June 1982)**

- Supervised 9 member team developing operator guidelines for anticipated reactor transients.
- Specialized in original control system analysis and design, principal accomplishments including:
  - Developed course on plant control systems,
  - Consulted onsite on steam generator performance problems,
  - Completed operational/accident transient analyses for several nuclear contracts,
  - Performed failure modes and effects analysis for the integrated reactor control system,
  - Extended methods for reactor power determination,
  - Developed original analyses and conceptual control schemes for steam generator overflow, water hammer transients, anticipated transients without reactor scram, two-phase natural circulation cooling, and reactor vessel embrittlement.

**Technical Advisor, Plant Design (January 1976-December 1980)**

- On loan to Brown Boveri, Germany, through licensing of the reactor safety systems for the Muehlheim-Kaerlich nuclear plant, to consult on technical licensing issues and oversee the development of complex, nonproprietary computer codes for reactor safety analyses.

**Senior Engineer, Technical Staff (March 1970-January 1976)**

- Applied internal and industry research to nuclear plant design, provided technical assistance to the engineering department, and developed computer codes licensed for performing transient thermal-hydraulic analyses.
- On loan to Duke Power as test engineer during hot functional testing at Oconee nuclear power station.

**EDUCATION**

Master of Science/Bachelor of Science, Mechanical Engineering; Lehigh University  
Master of Engineering Administration; George Washington University  
Bachelor of Applied Accounting; Tennessee Wesley College  
Associate of Computer Science; Chattanooga State  
Associate of Electronics; U.S. Naval Electronics School

**CERTIFICATIONS**

Registered Professional Engineer (#20668, VA); Certified Quality Systems Auditor, ISO-9000 (#Q05630); Certified Manager (#02929); Toastmasters International (Able Toastmaster)

**PROFESSIONAL ASSOCIATIONS**

American Society of Mechanical Engineers, American Nuclear Society, American Society for Quality Control, Institute of Electrical and Electronic Engineers

## **Richard J. Laufer**

### **Experience:**

2/99 - Present: NRC Project Manger - Shearon Harris Nuclear Power Plant

Serve as the Headquarters Focal Point for Information and Communication on all issues concerning the Shearon Harris Nuclear Power Plant. Maintain nearly daily communication with the licensee, the resident inspectors, and the regional staff. Participate in all significant licensee meetings in the region and on-site. Serve as Back-up Project Manager (PM) for another plant in the Project Directorate (currently H.B. Robinson).

Prepare and coordinate the numerous documents generated to support the licensing activities of the assigned plant. These documents include license amendments and exemptions and their associated environmental assessments and Federal Register Notice, Task Interface Agreement Responses, controlled correspondence, and numerous letters to the licensee associated with closing out Generic Letters, relief requests, and requests for additional information.

Coordinate, participate, and manage meetings and briefings by ensuring that the appropriate NRC contacts are informed, that meeting notices are prepared, and by preparing an accurate and concise meeting summary in a timely manner.

2/98 - 2/99: NRC Project Manager - Duane Arnold Energy Center

7/93 - 2/98: NRC Project Manager - Kewaunee Nuclear Power Plant

2/93 - 7/93: NRC Project Engineer - Division of Reactor Projects

5/89 - 2/93: NRC Operator Licensing Examiner - Operator Licensing Branch

- Certified NRC Operator Licensing Examiner on Westinghouse pressurized water reactors and non-power reactors

3/86 - 5/89: Engineering Division Officer on Navy nuclear submarine USS Vallejo (SSBN 658)  
(Qualified as Engineering Officer of the Watch, Engineering Duty Officer)

### **Training:**

1/90 Completed NRC's Westinghouse Technology Full Series Course

5/84- 3/86: Navy nuclear power training

### **Education:**

5/84: B.S. Degree in Systems Engineering; U. S. Naval Academy, Annapolis, MD

## RESUME

Donald G. Naujock

### College Education:

BS, The University of Wisconsin-Milwaukee, 1971, Material Science Engineering  
MS, The University of Wisconsin-Milwaukee, 1972, Metallurgical

### Experience:

August 1991 to Present: U.S. Nuclear Regulatory Commission, Mail Stop O-7D4, Washington, D.C. 20555

Employed as a technical reviewer for the Materials and Chemical Engineering Branch of the Division of Engineering of the Office of Nuclear Reactor Regulation. My accomplishments are: Assessed the Performance Demonstration Initiative (PDI) program developed by the nuclear utilities for implementing Appendix VIII to Section XI of the American Society of Mechanical Engineers Code. Developed and coordinated the staff's effort to reference Appendix VIII in the final rule that was issued in the *Federal Register* on September 22, 1999. Developed the chemical ranges in Draft Regulatory Guide DG-1070 for verification of product check analysis used in the commercial dedication process of steels. Prepared Information Notice 92-60, "Valve Stem Failure Caused By Embrittlement," August 20, 1992, and Proposed Generic Communication; "Effectiveness of Ultrasonic Testing Systems in Inservice Inspection Programs," *Federal Register*, Volume 61, No. 252, Pages 69120 - 69124. Reviewed over 30 ASME Code cases for endorsement by the NRC; the Code cases covered subjects, such as, nondestructive testing, nondestructive techniques, inservice inspections, welding, and materials. Reviewed over 50 submittals requesting alternatives to the 10 CFR 50.55a paragraphs (c),(d),(e),(f),(g), and (h); the submittals covered subjects, such as, inspections of reactor vessels using performance demonstrated ultrasonic techniques, use of wire penetrameters in radiography, changes in hydrostatic testing, inspection coverage of welds, inspections of control rod drive welds, ultrasonic testing qualification for intergranular stress-corrosion cracking, ultrasonic testing to determine water level in piping, ultrasonic testing in lieu of radiographic testing of dissimilar metal welds, and weld repairs/overlay of non-structural seal welds. Participated in over 10 vendor inspections to examine issues on securing test specimens using electrical discharge machining, ultrasonic testing for cold cracks at cladding-to-basemetal interface, processing forged material, chemical analysis of commercial grade material, demonstration the phase array ultrasonic testing system, manufacture of small diameter fasteners, process and ultrasonic testing of zirconium alloy fuel rod assemblies, and heat treating of commercial dedicated material. Technical monitor of over 7 contracts with national laboratories on participating in the evaluation of ultrasonic techniques, assisting in reviewing public comments and topical reports, and developing specifications for a mobile nondestructive testing facility,

Co-Authored, "U.S. Nuclear Regulatory Commission Perspective on Performance Demonstration of Ultrasonic Testing Systems," Presented at the 22<sup>nd</sup> MPA-Seminar, "Safety and Reliability of Plant Technology," October 10 and 11, 1996, University of Stuttgart, Germany.

December 1988 to June 1991, Tennessee Valley Steel Corporation, Chief Metallurgist

**My accomplishment was establishing a quality control facility and operation to the restoration of an abandon mini-steel mill. Responsible for all company quality control and customer service functions. Maintained steel tonnage records and both chemical and physical testing labs for mini-steel mill. Trained technicians to test cooling water pH and hardness, to operate optical emission spectrometer, to calculate furnace and ladle alloy additions, and to coordinate plant electrical power demand with local utility. Wrote safe operating procedures for equipment, refurbished test preparation equipment, and participated in accident reviews. Resolved slag entrapment, porosity, chemical variations, and off dimensional billets. Solved customer processing and material selection problems and coordinated shipping, testing, and storage of hazardous furnace emission by-products.**

**March 1986 to August 1988, Tennessee Valley Authority, Metallurgical Engineer  
(Contractor from 3/86 to 8/87 and employee from 10/87 to 8/88)**

**My accomplishments are establishing the technical justification for selecting Type 347 modified stainless steel for nuclear piping applications, developing heat treatment and welding techniques for enhancing corrosion resistance and reducing manufacturing costs. Resolved material related employee concerns, fabrication inconsistencies, and intergranular stress corrosion cracking issues. Investigated the use of counterfeit fasteners, interfaced with vendors, and upgraded procurement procedures. Provided guidance in the application of ASME Codes and ASTM Specifications for construction personnel.**

**August 1982 to January 1986, Brush Wellman Inc, Senior Manufacturing Engineer**

**My accomplishments are a 50 % increase in induction melting capacity and a 50% increase in new electric arc furnace uptime. Coordinated \$3.5 million dollar cast shop expansion; justified, selected, debugged, and evaluated performance of new induction furnaces, heat treat furnace, planer mill, band saws, gun drill, and ventilation equipment. Redesigned tap hole configuration, charge material handling bins, and molds for electric arc furnace. Responsible for product quality, productivity, and yield for beryllium-copper alloys processed through electric arc furnaces, induction furnaces, direct chill casting machines, and billet conditioning equipment. Wrote routings, job descriptions, process procedures, operating standards, and equipment specifications. Maintained variances and 5-year expansion plan. Investigated furnace failures and established preventive measures to reduce reoccurrences.**

Christopher Gratton  
Reactor Systems Engineer

Education

M.B.A. University of Maryland, 1992  
B.S., Engineering, University of Maryland, 1980

Employment

U.S. Nuclear Regulatory Commission, Reactor Systems Engineer, 1992 - present  
Performs safety evaluations of reactor license applications, technical specifications, and topical reports for various balance-of-plant systems including wet spent fuel storage facilities. Performed risk assessments and safety evaluations regarding the adequacy of spent fuel storage issues as part of the Spent Fuel Storage Pool Action Plan.

U.S. Nuclear Regulatory Commission, Operator Licensing Examiner, 1987 - 1992  
Qualified operator licensing examiner for boiling water, test and research reactors. Developed and administered licensing examinations to candidates applying for certification. Examinations included written, oral, and performance based tests administered on plant simulators. Topics included physics, reactor system and auxiliary system design and operation, emergency operating and offsite accident response procedures.

Norfolk Naval Shipyard, Assistant Chief Test Engineer, 1980 - 1987  
Responsible for the overall safety of the nuclear power plant aboard submarines undergoing overhaul. Qualified Shift Test Engineer (STE) for reactors designed by Westinghouse and General Electric. Responsible for setting electrical and mechanical isolations, changing plant conditions to support maintenance and testing, and directing post-maintenance tests.

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

OFFICE OF THE  
ADJUTANT GENERAL

In the Matter of	)	
	)	
CAROLINA POWER & LIGHT COMPANY	)	Docket No. 50-400-LA
	)	ASLBP No. 99-762-02-LA
(Shearon Harris Nuclear Power Plant)	)	
	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF'S RESPONSE TO APPLICANT'S FIRST SET OF DISCOVERY REQUESTS TO NRC STAFF" in the above captioned proceeding have been served on the following through deposit in the Nuclear Regulatory Commission's internal mail system or as indicated by an asterisk, by first-class mail and by electronic mail (e-Mail) transmission where indicated this 12th day of October, 1999:

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Frederick J. Shon  
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Staff  
Mail Stop: O 16-C-1  
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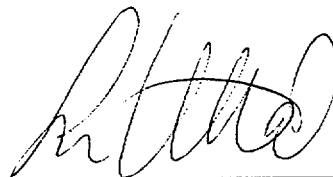
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Counsel for NRC Staff