RAS 1629

April 10, 2000
DOCKETED 4/11/00

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
Northeast Nuclear Energy Company	)	
	)	Docket No. 50-423-LA-3
(Millstone Nuclear Power Station, Unit No. 3)	)	
	)	

NRC STAFF'S RESPONSE TO CONNECTICUT COALITION AGAINST MILLSTONE AND LONG ISLAND COALITION AGAINST MILLSTONE'S FIRST SET OF INTERROGATORIES AND REQUESTS FOR PRODUCTION DIRECTED TO U.S. NUCLEAR REGULATORY COMMISSION

The Nuclear Regulatory Commission staff (Staff) hereby responds to Connecticut Coalition Against Millstone (CCAM) and Long Island Coalition Against Millstone's (CAM) (collectively, Intervenors) First Set of Interrogatories and Request for Production Directed to U.S. Nuclear Regulatory Commission, filed March 22, 2000.

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 at the NRC Web site, *http://www.nrc.gov,* and/or at the NRC Public Document Room and, if they have been withheld from the public document room pursuant to § 2.790, § 2.744 requires a request to the Executive Director for Operations for the production of such a document, which must state, among other things, why the requested record or document is relevant to the proceeding.

Notwithstanding these regulations, without waiving any objections or privileges, and except as specified below, the Staff is now voluntarily providing responses to Intervenors' interrogatories.

In doing so, the Staff is not waiving its right to require compliance with the Commission's regulations regarding any future discovery requests made by Intervenors in this matter.

Subject to the above limitations, the Staff will address Intervenors' document requests within 30 days of receipt of CCAM and CAM's First Set of Interrogatories and Requests for Production Directed to the U.S. Nuclear Regulatory Commission.

I. GENERAL OBJECTIONS

1. The Staff objects to Intervenors' 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 Intervenors' discovery requests to the extent that they request information or documents relating to licensees and/or entities other than Northeast Nuclear Energy Company's Millstone Nuclear Power Station, Unit 3. Such discovery requests call for information that is irrelevant, immaterial, and not calculated to lead to the discovery of admissible evidence, and are overbroad and unduly burdensome.

3. The Staff objects to Intervenors' 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 Intervenors' discovery requests to the extent that they seek discovery that is beyond the scope of the three contentions admitted by the Board in this proceeding. Intervenors are only permitted to obtain discovery of matters that pertain to the subject matter within the scope of this proceeding.

5. The Staff objects to Intervenors' discovery requests to the extent that they are unreasonably cumulative, and seek information obtainable from other source that is more convenient, less burdensome, or less expensive. Pleadings, briefs, orders, and other legal documents available in the public docket are not being produced under this response.

6. The Staff objects to Intervenors' discovery requests to the extent that they call for documents not within the possession, custody, or control of the NRC staff, which reports to the Executive Director for Operations.

II. GENERAL INTERROGATORIES

> GENERAL INTERROGATORY G-1. Identify each person who supplied information for responding to these interrogatories and requests for the production of documents. Specifically note the interrogatories for which each such person supplied information. For requests for production, note the contention for which each such person supplied information.

STAFF'S RESPONSE: The following persons supplied information for responding to Intervenors' First Set of Interrogatories:

> Laurence Kopp
> Senior Reactor Engineer
> Reactor Systems Branch, Division of Systems Safety Analysis
> Office of Nuclear Reactor Regulation
> U.S. Nuclear Regulatory Commission
> Washington, DC 20555
> Interrogatories and Request for Production for all contentions
>
> Anthony Attard
> Reactor Physicist
> Reactor Systems Branch, Division of Systems Safety Analysis
> Office of Nuclear Reactor Regulation
> U.S. Nuclear Regulatory Commission
> Washington, DC 20555
> Interrogatories and Request for Production for all contentions
>
> Victor Nerses
> Senior Project Manager, Millstone Nuclear Power Station, Unit 3
> Project Directorate I
> Division of Licensing and Project Management

Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555
Interrogatories 4-1, E-4, I-1.

The staff reserves the right to amend this answer.

> GENERAL INTERROGATORY G-2. For each admitted contention, identify each person whom NRC expects to provide sworn affidavits and declarations for the written filing for the Subpart K proceeding and each person who would testify in any subsequent evidentiary hearing. For each person identified, describe that person's professional affiliation, address, area of professional expertise, qualifications, and subject matter on which each person is expected to provide sworn affidavits or testimony in the proceeding.

STAFF'S 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:

Laurence Kopp
Senior Reactor Engineer
General subject matter: All contentions

Anthony Attard
Reactor Physicist
General subject matter: All contentions

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.

> GENERAL INTERROGATORY G-3. For each person identified under Interrogatory G-2, provide a list of all publications authored by the expert within the preceding 10 years, and a listing of any other cases in which the expert has testified as an expert at a trial or hearing, or by deposition within the preceding four years.

STAFF RESPONSE: A list of all publications authored by each person named in Interrogatory G-2 is annexed hereto as part of attachment 1.

Anthony Attard
Testimony within 4 years: none

Laurence Kopp

Testimony within 4 years: Carolina Power & Light Co. (Shearon Harris Nuclear Power Plant); NRC Docket No. 50-400-LA (1999).

The Staff reserves the right to amend this answer.

III. SPECIFIC INTERROGATORIES

A. Contention 4: "Undue and Unnecessary Risk to Worker and Public Health and Safety"

INTERROGATORY 4-1. Please identify any and all documents on which NRC intends to rely in support of its position on Contention 4.

STAFF RESPONSE: The Staff cannot fully respond to this request until it has had an opportunity to review Intervenors' Reply to NRC Staff's First Set of Interrogatories, dated April 7, 2000, and received by NRC April 10, 2000, to assure that it is fully responsive to NRC's outstanding requests for discovery from Intervenors. Notwithstanding, the Staff is voluntarily providing the following information: the license issued for operation of Millstone Unit 3; licensee's amendment request, NRC accession nos. 9903300232, 9903300234, 9903300240 and 9903300243, dated March 19, 1999; documents related to previously issued amendments, NRC accession nos. 9705140334 and 9705140339, dated May 5, 1997; 9711180181 dated November 11, 1997; 9804150013, 9804150028, and 9804150030, dated April 9, 1998. Pursuant to 10 C.F.R. § 2.720(h)((2)(ii), the Staff is not producing these documents because they are "reasonably obtainable from [another] source." These documents may be found in the Public Document Room (PDR) or on the NRC external website, http://www.nrc.gov. The Staff reserves the right to amend this answer.

INTERROGATORY 4-2. Please identify any and all actual events, at Millstone Station or elsewhere, on which NRC intends to rely in support of its position regarding Contention 4.

STAFF RESPONSE: The Staff objects to this request as overly broad and unduly burdensome. Furthermore, the Staff does not understand what the Intervenors mean by "actual events," and thus cannot provide a response to this interrogatory.

B. Contention 5: "Significant Increase in Probability of Criticality Accidents"

> Interrogatory 5-1. Please identify any and all documents on which NRC intends to rely in support of its position regarding Contention 5.

STAFF RESPONSE: The Staff cannot fully respond to this request until it has had an opportunity to review Intervenors' Reply to NRC Staff's First Set of Interrogatories, dated April 7, 2000, and received by NRC April 10, 2000, to assure that it is fully responsive to NRC's outstanding requests for discovery from Intervenors. Notwithstanding, the Staff is voluntarily providing the following information: Northeast Nuclear Energy Company (NNECO) chemistry procedures; TS 3.4.9 requirements. The Staff reserves the right to amend this answer.

> Interrogatory 5-2. Please identify any and all actual events, at Millstone Station or elsewhere, on which NRC intends to rely in support of its position regarding Contention 5.

STAFF RESPONSE: The Staff objects to this request as overly broad and unduly burdensome. Furthermore, the Staff does not understand what the Intervenors mean by "actual events," and thus cannot provide a response to this interrogatory. The Staff cannot fully respond to this request until it has had an opportunity to review Intervenors' Reply to NRC Staff's First Set of Interrogatories, dated April 7, 2000, and received by NRC April 10, 2000, to assure that it is fully responsive to NRC's outstanding requests for discovery from Intervenors. However, the Staff is not aware of any reported instances of criticality in U.S. spent fuel pools. The Staff reserves the right to amend this answer.

C. Contention 6: "Proposed Criticality Control Measures Would Violate Nuclear Regulatory Commission Regulations"

> Interrogatory 6-1. Please identify any and all documents or citations to documents on which NRC intends to rely in support of its position regarding Contention 6.

STAFF RESPONSE: The Staff cannot fully respond to this request until it has had an opportunity to review Intervenors' Reply to NRC Staff's First Set of Interrogatories, dated April 7,

2000, and received by NRC April 10, 2000, to assure that it is fully responsive to NRC's outstanding requests for discovery from Intervenors. However, the Staff is voluntarily providing the following information: In its Response to CCAM and CAM's First Set of Interrogatories, dated April 4, 2000, NNECO provided information in response to Interrogatory 6-1. The information provided by NNECO to Intervenors in that response includes NRC documents on which the Staff will generally rely. The Staff reserves the right to amend this answer.

> Interrogatory 6-2. Please identify any and all actual events, at Millstone Station or elsewhere, on which NRC intends to rely in support of its position regarding Contention 6.

STAFF RESPONSE: The Staff objects to this request as overly broad and unduly burdensome. Furthermore, the Staff does not understand what the Intervenors mean by "actual events," and thus cannot provide a response to this interrogatory.

D. FSAR

> Interrogatory D-1. Please identify the complete table of contents of the Final Safety Analysis Report (FSAR) for the Millstone Station.

STAFF RESPONSE: This information is reasonably available from other sources. 10 C.F.R. § 2.720(h)((2)(ii). The Staff notes that NNECO provided this document to Intervenors in its Response to CCAM and CAM's First Set of Interrogatories, dated April 4, 2000. The Staff reserves the right to amend this answer.

E. Systems and Procedures

> Interrogatory E-1. Please identify the systems and procedures used at Millstone for planning, implementing and overseeing the management, movement and placement of fresh and spent fuel.

STAFF RESPONSE: This information is reasonably available from other sources. 10 C.F.R. § 2.720(h)((2)(ii). The Staff notes that NNECO identified this information in its Response

to CCAM and CAM's First Set of Interrogatories, dated April 4, 2000. The Staff reserves the right to amend this answer.

> Interrogatory E-2. Please identify the systems and procedures used at Millstone for planning, implementing and overseeing control of concentrations of soluble boron in fuel pool water.

STAFF RESPONSE: This information is reasonably available from other sources. 10 C.F.R. § 2.720(h)(2)(ii). The Staff notes that NNECO identified this information in its Response to CCAM and CAM's First Set of Interrogatories, dated April 4, 2000. The Staff reserves the right to amend this answer.

> Interrogatory E-3. Please identify all documents pertaining to Interrogatories E-1 and E-2.

STAFF RESPONSE: Please see answers to Interrogatories E-1 and E-2. The Staff reserves the right to amend this answer.

> Interrogatory E-4. Please identify the names of NRC personnel responsible for inspecting and overseeing Northeast Nuclear Energy Company ("NNECO") personnel responsible for the systems and procedures, and their planning, implementing and overseeing, regarding fresh and spent fuel.

STAFF RESPONSE: The Staff objects to this request as overly broad, unduly burdensome and beyond the scope of the proceeding in that it requests documents relating to facilities other than Millstone Nuclear Power Station, Unit 3. As this request relates to Millstone, Unit 3:

Antone Cerne
Senior Resident Inspector
Millstone Nuclear Power Station, Unit 3

Beth Sienel
Resident Inspector
Millstone Nuclear Power Station, Unit 3

Paul Cataldo
Resident Inspector
Millstone Nuclear Power Station

The Staff reserves the right to amend this answer.

F. Errors

> Interrogatory F-1. Please identify all instances of errors (at Millstone and other nuclear plants) in managing, moving, placing or tracking fresh or spent fuel and all documents pertinent thereto.

STAFF RESPONSE: The Staff objects to this request as overly broad, unduly burdensome and beyond the scope of this proceeding in that it requests documents relating to facilities other than Millstone Nuclear Power Station, Unit 3. Documents related to Millstone Unit 3 are reasonably available from other sources. 10 C.F.R. § 2.720(h)((2)(ii). The Staff notes that NNECO provided this information to Intervenors in its Response to CCAM and CAM's First Set of Interrogatories, dated April 4, 2000. The Staff reserves the right to amend this answer.

> Interrogatory F-2. Please identify all instances of errors (at Millstone and other nuclear plants) in managing the concentration of soluble boron in fuel pool water and all documents pertaining thereto.

STAFF RESPONSE: The Staff objects to this request as overly broad, unduly burdensome, and beyond the scope of this proceeding in that it requests documents relating to facilities other than Millstone Nuclear Power Station, Unit 3. To the Staff's knowledge, there have been no "errors" responsive to this request relating to Millstone Unit 3. The Staff reserves the right to amend this answer.

> Interrogatory F-3. Please identify all instances of errors (at Millstone and other nuclear plants) in criticality calculations and all documents pertinent thereto.

STAFF RESPONSE:The Staff objects to this request as overly broad, unduly burdensome, and beyond the scope of this proceeding in that it requests documents relating to facilities other than Millstone Nuclear Power Station, Unit 3. Notwithstanding, the Staff is voluntarily providing the following information: Information Notices 91-26, 91-66, 92-21, 92-21, Supplement 1. The Staff reserves the right to amend this answer.

> Interrogatory F-4. Please identify all instances of unplanned leakage from spent fuel pools at Millstone and other nuclear plants and all documents pertinent thereto.

STAFF RESPONSE: The Staff objects to this request as overly broad, unduly burdensome, and beyond the scope of this proceeding in that it requests documents relating to facilities other than Millstone Nuclear Power Station, Unit 3. The Staff is not aware of any instances of unplanned leakage from spent fuel pools at Millstone Unit 3. The Staff reserves the right to amend this answer.

> Interrogatory F-5. Please identify all instances of unplanned deposits of debris in spent fuel pools at Millstone and other nuclear plans and all documents pertinent thereto.

STAFF RESPONSE: The Staff objects to this request as overly broad, irrelevant to the proceeding, beyond the scope of the contentions admitted to this proceeding, and not designed to lead to discoverable information.

G. Probabilities and Consequences of Accidents.

> Interrogatory G-1. Please identify all analyses related to the probabilities and consequences of potential criticality incidents and accidents in fuel pools.

STAFF RESPONSE: None, to the Staff's knowledge. Probability analyses are not part of the spent fuel criticality review process.

H. Regulatory Requirements

> Interrogatory H-1. Please identify all documents related to regulatory requirements for pool storage of fuel, including the requirements imposed by GDC 62.

STAFF RESPONSE: The Staff objects to this request as overly broad and burdensome to the extent that it seeks discovery which is beyond the scope of the contentions admitted by the Licensing Board in this proceeding. As regards requirements concerning the prevention of criticality, the Staff voluntarily provides the following information: Standard Review Plan 9.1.2.; 10

C.F.R. § 50.68; Memorandum from Laurence Kopp to Timothy Collins, Re: "Guidance on the Regulatory Requirements for Criticality Analysis of Fuel Storage at Light Water Reactor Power Plants," dated August 19, 1998; Letter from Brian K. Grimes, NRC, to All Power Reactor Licensees, Re: "NRC Guidance on Spent Fuel Modifications," dated April 14, 1978; Standard Technical Specifications; Regulatory Guide 1.13, "Spent Fuel Storage Facility Design Basis," Rev. 2, Draft 1 (Dec. 1981). The Staff reserves the right to amend this answer.

I. Criticality Calculations

> Interrogatory I-1. Please identify all available spent fuel pool calculations for Millstone, including calculations of K under different conditions and assumptions.

STAFF RESPONSE: The Staff objects to this request as overly broad and unduly burdensome. The following are documents, of which the Staff is aware, that are responsive to this interrogatory: Documents submitted to the Staff by the licensee in support of the present license amendment request; prior licensee requests for amendments and related documents, NRC accession nos. 9705140334, 9705140339, dated May 5, 1997; 9711180181, 9711180182, dated November 11, 1997; 9804150013, 9804150028, 9804150030, dated April 4, 1998; 9901280014, 9901280015, 9901280016, dated January 18, 1999; 9904130293, 9904130294, dated April 5, 1999. The Staff reserves the right to amend this answer.

J. Potential Events Involving Soluble Boron Dilution

> Interrogatory J-1. Please identify all analyses of potential events involving dilution of soluble boron at Millstone and all documents pertinent thereto.

STAFF RESPONSE: Please see answer to Interrogatory I-1.

IV. DOCUMENT PRODUCTION REQUESTS

Subject to the limitations specified on pages 2 and 3 of this document, the Staff will respond to Intervenors' document requests within 30 days of receipt of CCAM and CAM's First Set of

Interrogatories and Requests for Production Directed to the U.S. Nuclear Regulatory Commission.

Respectfully submitted,

/RA/

Ann P. Hodgdon
Counsel for NRC Staff

/RA/

Brooke D. Poole
Counsel for NRC Staff

Dated at Rockville, Maryland
this 10th day of April 2000

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 (Chairman 1986-1988)

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.

Anthony C. Attard Ph.D.

EXPERIENCE

REACTOR PHYSICIST 1990 to Present

U. S. Nuclear Regulatory Commission, Rockville, MD.

- Twenty five years in the Nuclear Industry. This includes conducting safety assessments (conformance with NRC rules, regulations, and guidelines), at the Vendor or licensee's main office or nuclear facility.
- Lead Engineer, responsible for the review of the neutronics and thermal-hydraulic analyses of existing reactors and advanced reactors, such as, the Westinghouse AP600 (Advanced Passive) reactor, and the ABB-CE System 80+ reactor. Experienced in analyzing and participating in thermal-hydraulic testing of existing fuels and advanced reactor fuels at various Vendor sites in the U.S. and abroad. These tests were designed to arrive at a more efficient nuclear fuel, contributing to a safer fuel while enhancing the performance and economics of operation of the nuclear plant.
- Lead Engineer, responsible for the review of the neutronics and thermal-hydraulic of the Tritium Production Core (TPC), in conjunction with the Department of Energy.
- Member of the NRC team overseeing the DOE usage of weapon grade material (Plutonium) in commercial reactors.
- Consultant to the Office of International Program in fuel management, reload and safety analysis, shutdown margin, neutronics and thermal-hydraulic methodologies.
- Frequently requested to brief foreign personnel from nuclear facilities around the world, regarding: control rod misalignment, mixed fuel reloads, and computer codes.

- Recognized as the in-house expert in safety reviews of Vendor's new fuel "Critical Heat Flux (CHF) Correlation development. This includes review of analytics, and pertinent computer codes, such as VIPRE, CASMO, SIMULATE, COBRA, etc.
- Recognized in-house expert in transient safety analysis of the Small Break Loss of Coolant Accident (SBLOCA), boron dilution event.
- Currently, tasked with assuming lead responsibilities regarding reviews of on-site storage and surface storage of commercial spent fuel at nuclear facilities.
- Performed end-of-cycle fission products (Isotopic) inventory studies.
- Performed evaluations and inspections of complex technical issues, regulations and guidelines as well as prepare Safety Evaluation Reports (SER) and inspection reports.
- Prepared technical position papers and evaluations, provide requested information, make presentations to NRC management, the advisory committee on reactor safe guards (ACRS), the Chairman, and the Commission in support of any "high priority" technical issue that may come up.
- Served as member of various committees including working groups, and subcommittee task forces regarding neutronics and thermal-hydraulic issues.
- Identified and evaluated necessary confirmatory research to be performed by the office of Nuclear Regulatory Research, in areas of steady-state, transient neutronics and thermal-hydraulics safety issues.
- Keep appropriate levels of management aware of key issues and decisions made.
- Drafted correspondence and reports in response to inquiries received from the Commission, members of Congress, other Federal Agencies, state and local governments and the general public.
- Technical Assistant to the Division of System Safety and Analysis (DSSA), responsible for providing technical input to the decision making process, as well as assuming responsibility for administering the division contract budget.

Significant Accomplishments:

- As lead investigator at a Vendor safety inspection, uncovered unaccounted biases built into the safety limit calculation, significantly effecting the margin of safety associated with the operating limit. Immediate response by the Vendor resulted in a successful resolution of the problem.
- In reviewing a technical submittal, discovered that the authors of the submittal had made a serious mathematical mistake that could have lead to a reactor operating at a power level much higher than it was licensed allowed. The problem was corrected, leading to an acceptable resolution of the problem.
- Recognized for making significant contributions to the Office of International Program byway of presenting technical briefings to foreign representatives in a timely, clear, and concise manner.
- Independently propose staff positions and responses to safety concerns that consistently result in a positive action.
- Reviewed, recommended and implemented changes to codes and standards, Regulatory Guides, NRC regulations and policies.
- Participated in and led numerous research review groups and recommended research or changes in research programs.
- Represented the NRC in technical meetings with industry and academia. Recommended directions that resulted in a successful resolution and closure.
- Recognized with a special award by the division Director for preparation of the division's budget of $8M/year.

ADJUNCT PROFESSOR 1990 to Present

University of Maryland

- Responsible for teaching required undergraduate and graduate levels courses (Reactor Kinetics, Fuel Management, Reactor Safety Analysis, Radiation Theory and Dosimetry, Reactor Systems, Thermal-

Hydraulics, Fluids Mechanics, and Nuclear Engineering) within the Office of Professional Development (OPD).

- Consultant to the OPD in course development, course review, program structure and marketing of the nuclear program to government laboratories, nuclear facilities and the private sector. Research advisor to graduate students.
- Committee member responsible for formulating and establishing the Health Physics degree program at the University of Maryland, within the Office of Special Programs.
- Consultant to OPD regarding the establishment of the distance learning program in Nuclear Engineering.
- Responsible for formulating and implementing computerized nuclear engineering courses as part of the nuclear program at the University of Maryland.
- Subject matter expert in such fields as Nuclear Physics, Nuclear Engineering, Thermal-Hydraulics, and Fluid Dynamics.
- Travel extensively on behalf of the University of Maryland to off campus locations, either to teach required degree courses or consult at the site. This is part of the computer distance learning program.

Significant Accomplishments:

- Successfully implemented the Nuclear Engineering Program via distance learning.
- Evaluated and updated all the mid-to-upper level courses in the Nuclear Engineering Program.
- Contributed significantly to the Hazardous Waste Management Degree Program.
- Chairman of the Health Physics Committee since 1997.
- Successfully promoted the Health Physics and the Nuclear Degree Program at various institutions and locations.

SENIOR SCIENTIST 1986 to 1990

B-K Dynamics, Rockville, MD

- Defense Contractor to DOD, DOE, NAVSEA, and National Laboratories.
- Responsible for soliciting and working my own contracts in such areas as the Strategic Defense Initiative (SDI), SP-100 space based reactor program.
- Coordinated the efforts of major corporations Raytheon, General Dynamics, and Motorola, in the nuclear hardening of the Navy's STANDARD Missile (SM-2).
- Generated the initiative with NAVSEA to extend the hardening program to include High Power Microwave (HPM) hardening.
- Compiled extensive lists of emerging and maturing technologies for the Air Force and U.S. Department of Research and Engineering (USDR&E).

Significant Accomplishments:

- Resolved key technical issues while maintaining open channels of communications between the participating agencies, laboratories and companies.
- Evaluated and compiled a list of Allied Technologies pertinent to the Strategic Defense Initiative (SDI) as Lead Scientist working on the SP-100 program.

NUCLEAR SCIENTIST/ ENGINEER 1981 to 1986

Westinghouse-Bettis, Pittsburgh, PA

- Coordinated and managed the steady-state and transient neutronic and thermal-hydraulic re-analysis program for the Nimitz Class Reactors.
- Lectured in nuclear physics and mathematics at the Westinghouse-Bettis Nuclear Engineering School.
- Participated in numerous special and emergency task forces.

Significant Accomplishments:

- Successfully completed the re-analyses of the Nimitz class nuclear reactors.
- Received numerous accolades regarding my teaching techniques at the Westinghouse- Bettis Nuclear Engineering School.

NUCLEAR SCIENTIST/ENGINEER 1979 to 1981

B-K Dynamics, Rockville, MD

- Defense Contractor--Responsible for the design, computer simulation, and building of a new electron gun (Gyrotron).
- Team member responsible for designing and simulating the building of a free electron laser (FEL) gun at the Naval Research Laboratory in Washington D.C.

Significant Accomplishments:

- The FEL research effort resulted in breakthroughs in electron beam intensity development.

MECHANICAL DESIGN ENGINEER 1969 - 1971

McLaren Motor Racing, Collinbrook, England

- Actively participated in the design, development and production of Grand Prix, CAN-AM and Indianapolis 500 cars.

Significant Accomplishments:

- Five CAN-AM Championships.
- Three Formula One (F1) Grand Prix Championships.

EDUCATION

CARNEGIE-MELLON

Ph.D., Nuclear Physics & Engineering, 1985

INDIANA UNIVERSITY

MS Nuclear Physics, 1979

UNIVERSITY OF MICHIGAN

BS, Physics and Mathematics, 1976

SECURITY CLEARANCE

Q Clearance(Active); Top secret and SBI , (In-active).

LIST OF PUBLICATIONS FOR

ANTHONY C. ATTARD

Boron Dilution Reactivity Transients, An Overview of Past and Present Events. Published in NUREG/IA, December 1996.

Standard Missile-2 Block IV - Nuclear Hardening Status, TR-9-34, 17 November 1989, UNCLASSIFIED.

The Nuclear Survivability Working Group (NSWG) Yearly Summary Report, TR-8-18, 31 December 1988, UNCLASSIFIED.

Nuclear Driven X-Ray Laser (U), BKD-9978-C-88, 28 April 1988, CONFIDENTIAL.

High Power Microwave (HPM) Susceptibilities/Vulnerabilities Considerations (U), BKD-9927-S-88, 18 February 1988, SECRET.

1987 OSD High Priority Militarily Critical Technologies List (MCTL), TR-8-05, November 1987, UNCLASSIFIED.

WSS Effectiveness Analysis: Threat Scenarios, September 1987, UNCLASSIFIED.

Users Guide to the Militarily Critical Technologies List (MCTL) and Supporting Documentation, TR-7-30, August 1987, UNCLASSIFIED.

DoD-Wide Signal Processing Overview, TR-7-23, 8 July 1987, UNCLASSIFIED.

IBM SCIMS, TR-7-08, February 1987, UNCLASSIFIED.

Master List of Militarily Significant Emerging Technologies,
TR-7-05, 12 January 1987, UNCLASSIFIED.

Linkage of the Militarily Critical Technologies List (MCTL) to Generic Weapons Systems, TR-6-845, November 1986, UNCLASSIFIED.

Record of International Armaments Cooperation Meetings to Develop a Short-Range Anti-Radiation Missile (SRARM), TR-6-835, 31 October 1986, UNCLASSIFIED.

Plan for FORECAST II: International Cooperation, TR-6-815, September 1986, UNCLASSIFIED.

Identification of the Air Force Emerging Technologies and Militarily Significant Emerging Technologies, TR-6-810, 19 August 1986, UNCLASSIFIED.

DoD-Wide Technology Base Study Program Supporting Sensors and Signal Processing, Volume II - Sensor/Signal Processing Susceptibility and Hardening (U), BKD-9126-SNF-86, August 1986, SECRET NOFORN.

Use of High Power Microwaves as Tactical Directed Energy Weapons (U), BKD-9076-S-86, 21 July 1986, SECRET.

System/Technology Linkage, Air-to-Ground Missiles/Guided Bombs, TR-6-804, 16 July 1986, UNCLASSIFIED.

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April 10, 2000

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
Northeast Nuclear Energy Company	)	
	)	Docket No. 50-423-LA-3
(Millstone Nuclear Power Station,	)	
Unit No. 3)	)	
	)	ASLBP No. 771-01-LA

AFFIDAVIT OF LAURENCE I. KOPP

Laurence I. Kopp, being duly sworn, does hereby state as follows:

1. I am providing this affidavit pursuant to 10 C.F.R. § 2.740b(b).

2. I have been employed by the U.S. Nuclear Regulatory Commission (NRC), and its predecessor, the Atomic Energy Commission (AEC), since 1965. My current position is Senior Reactor Engineer in the Reactor Systems Branch, Division of Systems Safety and Analysis, Office of Nuclear Reactor Regulation (NRR). My responsibilities include review and evaluation of the criticality aspects of on-site fuel storage at commercial nuclear power reactors. I have a Ph.D. degree in Nuclear Engineering from the University of Maryland, a Master of Science degree in Physics from Stevens Institute of Technology, and a Bachelor of Science degree in Physics from Fairleigh Dickinson University. I have 42 years experience in the nuclear power industry, including 5 years at the Martin-Marrietta Nuclear Division and 2 years at the Westinghouse Astronuclear Division.

3. I have supplied information in response to the following interrogatories, as specified in the Connecticut Coalition Against Millstone and the Long Island Coalition Against Millstone's "First Set of Interrogatories and Requests for Production," dated March 22, 2000, in the above-captioned proceeding: Interrogatory Nos. 4-1, 4-2, 5-1, 5-2, 6-1, 6-2, F-1, F-2, F-3, F-4, F-5, G-1, H-1, I-1, J-1.

4. I hereby certify that the foregoing is true and correct to the best of my knowledge, information and belief.

_____

Laurence I. Kopp

Subscribed and sworn to before me
this day of

_____

Notary Public

My commission expires:_____

April 10, 2000

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
Northeast Nuclear Energy Company	)	
	)	Docket No. 50-423-LA-3
(Millstone Nuclear Power Station, Unit No. 3)	)	
	)	
	)	ASLBP No. 771-01-LA

AFFIDAVIT OF ANTHONY C. ATTARD

Anthony C. Attard, being duly sworn, does hereby state as follows:

1. I am providing this affidavit pursuant to 10 C.F.R § 2.740b(b).

2. I have been employed by the U.S. Nuclear Regulatory Commission (NRC) since 1990. My current position is Reactor Physicist, Reactor Systems Branch, Division of Systems Safety Analysis, Office of Nuclear Reactor Regulation (NRR). My responsibilities include conducting safety assessments, reload analyses, and review of spent fuel pool analyses. I also conduct onsite vendor documentation of new fuel performance. I have a Ph.D. degree in Nuclear Physics and Engineering from Carnegie-Mellon University, a Master of Science degree in Nuclear Physics from Indiana University, and a Bachelor of Science degree in Physics and Mathematics from the University of Michigan. I have 25 years experience in the nuclear power industry, including six years at B-K Dynamics, and five years at Westinghouse-Bettis.

3. I have supplied information in response to the following interrogatories, as

specified in the Connecticut Coalition Against Millstone and the Long Island Coalition Against Millstone's "First Set of Interrogatories and Requests for Production," dated March 22, 2000, in the above-captioned proceeding: Interrogatory Nos. 4-1, 6-1, D-1, E-1, E-2, E-3, F-4, F-5, G-1, I-1, J-1.

4. I hereby certify that the foregoing is true and correct to the best of my knowledge, information and belief.

_____

Anthony C. Attard

Subscribed and sworn to before me
this day of

_____

Notary Public

My commission expires:_____

April 10, 2000

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
Northeast Nuclear Energy Company	)	
	)	Docket No. 50-423-LA-3
(Millstone Nuclear Power Station, Unit No. 3)	)	
	)	
	)	ASLBP No. 771-01-LA

AFFIDAVIT OF VICTOR NERSES

Victor Nerses, being duly sworn, does hereby state as follows:

1. I am providing this affidavit pursuant to 10 C.F.R. § 2.740b(b).

2. I have been employed by the U.S. Nuclear Regulatory Commission (NRC), and its predecessor, the Atomic Energy Commission (AEC), since 1967. My current position is Senior Project Manager for Millstone Nuclear Power Station, Unit 3 (Millstone 3), Project Directorate I, Division of Licensing and Project Management, Office of Nuclear Reactor Regulation (NRR). My responsibilities include management of the environmental and safety review of amendment applications for the Millstone 3 license. I have a Master of Science degree in Physics from Rensselaer Polytechnic Institute, and a Bachelor of Science degree in Physics from the University of Rhode Island. I have 33 years experience in the nuclear power industry.

3. I have supplied information in response to the following interrogatories, as specified in the Connecticut Coalition Against Millstone and the Long Island Coalition Against Millstone's "First Set of Interrogatories and Requests for Production," dated March 22, 2000, in the above-captioned proceeding: Interrogatory Nos. 4-1, E-4, I-1.

4. I hereby certify that the foregoing is true and correct to the best of my knowledge, information and belief.

_____
Victor Nerses

Subscribed and sworn to before me
this day of

_____
Notary Public

My commission expires:_____

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
NORTHEAST NUCLEAR ENERGY COMPANY	)	Docket No.50-423-LA3
	)	
(Millstone Nuclear Power Station, Unit No. 3)	)	
	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF'S RESPONSE TO CONNECTICUT COALITION AGAINST MILLSTONE AND LONG ISLAND COALITION AGAINST MILLSTONE'S FIRST SET OF INTERROGATORIES AND REQUESTS FOR PRODUCTION DIRECTED TO U.S. NUCLEAR REGULATORY COMMISSION", AFFIDAVIT OF LAURENCE I. KOPP", "AFFIDAVIT OF ANTHONY C. ATTARD", and "AFFIDAVIT OF VICTOR NERSES" in the above captioned proceeding have been served on the following through deposit in the Nuclear Regulatory Commission's internal mail system; or by deposit in the Nuclear Regulatory Commission's internal mail system with copies by electronic mail, as indicated by an asterisk; or by E-mail as indicated by a double asterisk, followed by a conforming copy via first-class mail this 10TH day of April, 2000:

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Administrative Judge
Atomic Safety and Licensing Board
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_____
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