January 30, 1986

MEMORANDUM FOR: Barbara Dalrymple
Uranium Fuel Licensing Branch, NMSS

FROM: Leonard I. Cobb, Chief
Safeguards and Materials Programs Branch, IE

SUBJECT: REPLIES TO JANUARY 21, 1986 -
LETTER FROM SENATOR EDWARD MARKEY

Please find enclosed the IE replies to questions 4, 7, 14, and 16 of the subject letter.

Please address any questions related to these replies to Douglas K. Sly of my staff (X24783).

Original Signed By:
Leonard I. Cobb

Leonard I. Cobb, Chief
Safeguards and Materials Programs Branch, IE

Enclosures:
As stated

Distribution
DCS
SMPB reading
DI reading
D. Sly, IE
L. Cobb, IE

SMPB:IE
DKSly
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C:SMPB:IE
LICobb
1/31/86

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Question #4

Five routine inspections and one special inspection of the Sequoyah Fuels facility were performed by qualified NRC fuel facility inspectors from NRC's Region IV office during the 1980 - 1986 period. The purpose of the five routine inspection was to determine if the Sequoyah facility was in compliance with the applicable portions of NRC regulations 10 CFR Parts 19, 20, 30, and 40, as well as other specific conditions required by the license issued to Sequoyah Fuels by the NRC. The special inspection was limited to the areas of waste burial and environmental monitoring. The inspection scope of the five routine inspections were those of the annual overall inspections as required by the NRC Inspection and Enforcement Manual, Chapter 2600. Chapter 2600 specifies the frequency of inspections and lists the procedures required to be completed during each routine inspection.

The NRC has found a total of 12 violations and deviation from its requirements during the 1980 - 1985 inspection period. The NRC judges the significance of violations of regulations and license conditions according to the NRC Enforcement Policy 10 CFR Part 2 Appendix C (1985). This policy classifies the significance of a violation using a numerical scale (1-5).

Category 1 and 2 violations are the most significant and are addressed with enforcement conferences and escalated enforcement action that includes orders or civil monetary penalties. Category 3 violations are addressed with enforcement conferences that may or may not result in orders or civil penalties. Category 4 and 5 violations and deviations are the least significant and are resolved by issuing a notice of violation or deviation that requires corrective action by a certain date. During the period in question, the Sequoyah facility has not been cited for violations that resulted in escalated enforcement action.

Enclosed please find a summary of these inspections, resumes giving the inspectors' qualifications and a copy of the inspection program requirements.

ENCLOSURE I
To Question #4

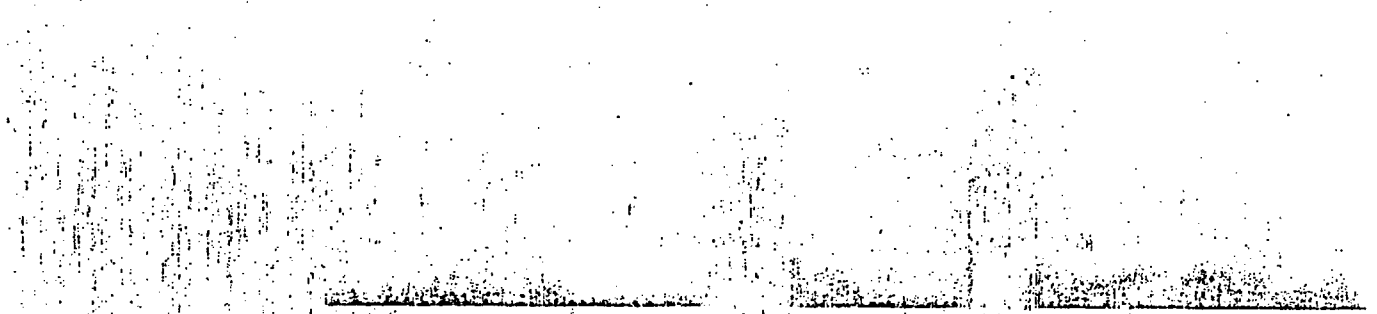

TABLE 1

FUEL CYCLE INSPECTION PROCEDURES		INSPECTION FREQUENCIES[1,6]		
Number	Title	Minimum	Normal	Resident[2]
30703[3]	Management-Entrance/Exit Interviews	Ea. Insp.	Ea. Insp.	
88005	Management Organization & Controls 1. Organizational Structure 2. Procedure Controls 3. Reviews & Audits 4. Safety Committees 5. Quality Assurance Programs	Annual	Semiannual[4]	
88010	Operator Training/Retraining 1. New Employee Indoctrination 2. Ongoing Training 3. Retraining	Annual	Semiannual[4]	
88015	Criticality Safety 1. Facility Modification and Changes 2. Nuclear Criticality Safety Analysis 3. Audits 4. Criticality Calibrations and Monitoring Systems 5. SNM Containers 6. Procedures	Semiannual[4]	Triannual[4]	As Needed
88020	Operations Review 1. Conduct of Operations, Facility Modifications and Changes, Safety Limits/LCOS 2. Housekeeping 3. Fuel Handling and Storage	Semiannual[4]	Triannual[4]	As Needed

See footnotes at end of table.

FUEL CYCLE INSPECTION PROCEDURES		INSPECTION FREQUENCIES[1,6]		
Number	Title	Minimum	Normal	Resident[2]
88025	Maintenance/Surveillance Testing 1. Maintenance 2. Surveillance Testing 3. Calibrations	Annual	Semiannual[4]	
83822	Radiation Protection 1. Radiation Protection Procedures 2. Instruments and Equipment 3. Exposure Controls 4. Posting and Labeling 5. Surveys 6. Notification and Reports	Annual	Semiannual[4]	As Needed
88035	Radioactive Waste Management 1. Liquid Effluents 2. Airborne Effluents 3. Records and Reports 4. Effluent Monitoring Instruments 5. Procedures 6. Radioactive Solid Waste 7. Waste Burial 8. Storage of High Level Liquid Waste	Annual	Semiannual[4]	As Needed
86740	Transportation of Radioactive Materials 1. Routine Maintenance of Re-usable Packages 2. Packaging & Transportation Activities 3. Part 61 Requirements for Waste Generators (Waste Manifest)	Annual	Semiannual[4]	Monthly

See footnotes at end of table

FUEL CYCLE INSPECTION PROCEDURES		INSPECTION FREQUENCIES[1,6]		
Number	Title	Minimum	Normal	Resident[2]
88045	Environmental Protection	Annual	Semiannual[4]	As Needed[5]
	1. Management Controls			
	2. Quality Control/Analytical Measurements			
	3. Program Implementation			
88050	Emergency Preparedness	Annual	Semiannual[4]	As Needed
	1. Off Site Support Agencies			
	2. Emergency Plans, Procedures, Facilities and Equipment			
	3. Tests and Drills			
	4. Fire Protection			
84850	Inspection of Waste Generator Requirements of 10 CFR 20 and 10 CFR 61	Annual	Annual	

See footnotes at end of table

FUEL CYCLE INSPECTION PROCEDURES		INSPECTION FREQUENCIES [1,6]		
Number	Titles	Minimum	Normal	Resident[2]
83890[3]	Closeout Inspection & Survey		As Needed	
83890[3]	Confirmatory Survey of Decommissioning plants		As Needed	
83895[3]	Followup on Expired Licensees		As Needed	
86100[3]	10 CFR 21 Inspections		As Needed	
90712[3]	Inoffice Review of Events		As Needed	
92701[3]	Followup on Inspector ID Problems		As Needed	
92702[3]	Followup on Noncompliance		As Needed	
92703[3]	IE Bulletin/CAL Followup		As Needed	
92704[3]	Followup on HQ Requests		As Needed	
92705[3]	Followup on Regional Requests		As Needed	
92706[3]	Independent Inspection		As Needed	As Needed
92709[3]	Licensee Plans for Coping with Strikes		As Needed	
92710[3]	Licensee's Initial Implementation of Strike Plans		As Needed	As Needed
92711[3]	Continued Implementation of Strike Plans During an Extended Strike		As Needed	As Needed
92712[3]	Resumption of Normal Operations After a Strike		As Needed	As Needed
92715[3]	Review of Part 21 Reports		As Needed	
92716[3]	Followup on Part 21 Reports		As Needed	
93700[3]	Inspector Sent to Site		As Needed	
93710[3]	Followup on Significant Events		As Needed	As Needed

See Footnotes at end of table

FUEL CYCLE INSPECTION PROCEDURES		INSPECTION FREQUENCIES[1,6]		
Number	Title	Minimum	Normal	Resident[2]
94700[3]	Participation in ACRS Meetings		As Needed	
94702[3]	Participation in Licensee Meetings		As Needed	

1. See IE MC 2600-042.
2. Minimum and normal.
3. Generic procedures.
4. For UF-6 processors independent Spent Fuel Storage facilities and uranium mills --annually; criticality safety does not apply for natural uranium facilities.
5. Following significant release.
6. Solution mining, ore buying, byproduct recovery and other small uranium operations may be excluded from these frequencies and assigned frequencies deemed adequate by the region.

COMPLIANCE HISTORY
SEQUOYAH FUELS CORPORATION

INSPECTION DATE(S)	FINDINGS
August 29, 1985	No violations or deviations. (Special inspection of waste burial and environmental monitoring)
March 11 - 15, 1985	Two violations and one deviation were found as follows: 1. Failure to clean up promptly smearable alpha contamination exceeding 2,000 dmp/100 cm^2 as required by a license condition. The NRC inspector found a spot that exceeded 120,000 dpm/100 cm^2. (Severity Level IV) 2. Failure to post an area with a sign stating: CAUTION - RADIATION AREA as required by 10 CFR 20.203(b). The sign is required whenever the radiation level is such that a major portion of the body could receive a dose in excess of 5 millirem in any hour. Contrary to that, the inspector found an area where the radiation level was 15 millirem/hr at gonad height. (Severity Level V) 3. There was inadequate control to ensure that only unused, clean respirators would be available for use by employees. (Deviation)
July 17 - 19, 1984	Three violations were found: 1. Contrary to a license requirement, several gauges containing radioactive material were removed from service, relocated or reinstalled by the licensee rather than the gauge manufacturere or other persons authorized by the NRC. (Severity Level IV) 2. Contrary to a license condition, a gauge was stored in a licensee warehouse without its shutter being locked. (Severity Level IV) 3. Contrary to a license condition, a sealed source was not leak tested for contamination within the required six months. (Severity Level V)

Inspection Requirement: One inspection per year of all topics defined in IE Manual Chapter 2600.

INSPECTION DATE(S)	FINDINGS
February 14 - 18, 1983	Two violations were found: 1. Severity Level IV violation: Failure to perform surveys. 2. Severity Level IV violation: Failure to properly sample HF off gas stack.
February 22 - 25, 1982	Three violations were found: 1. Severity Level IV violation: Inadequate surveys for airborne uranium. 2. Severity Level VI violation: Improper posting of radiation area. 3. Severity Level V violation: Failure to sample main plant stack.
NO INSPECTIONS PERFORMED IN 1981.	
July 23 - 25, 1980	One infraction was found: 1. Straps of half-mask respirators worn over hard hat rather than head.

CHARLES L. CAIN

Organization: Technical Programs Branch
Materials Radiation Protection Section
Region IV

Title: Radiation Specialist (Health Physicist)

Grade: GG-14

Birth Date: Ex.6

Education: B.S. Electrical Engineering, Louisiana Tech University, L Ex6

Experience:

1978-Present Radiation Specialist - Responsible for inspection of primary Commission licensees and performance of investigaticns which involve licensed material or material subject to license.

General Electric Company, Vallecitos Nuclear Center, Pleasanton, CA

1977-1978 Manager, Radiological and Environmental Protection - Responsible for the radiation safety of employees and general public as a result of operations at Vallecitos Nuclear Center and at GE facilities in San Jose, CA. Supervision of up to four health physicists and eleven technicians.

1974-1977 Supervisor, Nuclear Safety Operations - Same responsibilities as above excluding environmental protection. (Vallecitos facilities included large test reactors, mixed oxide fuel fabrication facilities, hot cell radioisotope production facilities, and miscellaneous research facilities.)

1972 - 1974 Quality Assurance Engineer - Responsible for the establishment and maintenance of a QA system for irradiation services associated with the GE Test Reactor.

General Electric Manufacturing Management Program

Program consisted of assignments at various GE locations with special formal training in management and manufacturing techniques.

1971-1972 Vallecitos Nuclear Center, Pleasanton, CA - Responsible for manufacture of BWR start-up neutron sources and quality control of manufacture of mixed oxide, fast flux experiment hardware.

1970-1971 Waynesboro, VA - Various assignments associated with the manufacture of computer peripheral devices.

TRAINING REQUIREMENTS
MATERIALS AND FUEL CYCLE INSPECTORS

NAME: [illegible]

A. REQUIRED REGIONAL TRAINING	DATE	INITIALS
REGIONAL ORIENTATION	[illegible]	[illegible]
CODE OF FEDERAL REGULATIONS	[illegible]	
FINAL SAFETY ANALYSIS REPORTS	[illegible]	
REGULATORY GUIDES	7/75	
NRC/IE MANUAL	[illegible]	
INDUSTRIAL CODES/STDS	N/A	
INSPECTION ACCOMPANIMENTS	[illegible]	

B. REQUIRED TRAINING COURSES (TTC)	DATE	INITIALS
FUNDAMENTALS OF INSPECTION	[illegible]	
COBALT TELETHERAPY	[illegible]	
MEDICAL USES	*	
INDUSTRIAL RADIOGRAPHY	[illegible]	
RESPIRATORY PROTECTION	*	
WHOLE BODY COUNTING	*	

C. SUPPLEMENTAL TRAINING	DATE	INITIALS
BWR TECHNOLOGY	[illegible]	
PWR TECHNOLOGY	[illegible]	
BWR/PWR RAD WASTE	[illegible]	
REACTOR HP		
RADIOLOGICAL EMERGENCY RESPONSE	2/83	
RADIOLOGICAL EMERGENCY PLANNING	[illegible]	
RADIOLOGICAL ACCIDENT ASSESSMENT	[illegible]	[illegible]

D. OTHER TRAINING COMPLETED

[illegible]

[illegible]

* Credited by experience and on-the-job training.

R.J. Everett Chief, NMSS

CURRICULUM VITAE
DAVID BLAIR SPITZBERG

Organization: U.S. Nuclear Regulatory Commission, Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

Title: Radiation Specialist - Health Physicist, Technical Programs

Grade: GS-13

Birth Date: [redacted] Ex6

Education: M.S. Environmental Radiation, University of Texas at Dallas,
B.S. Biology, Southern Methodist University, Dallas, Texas,
A.S. Biology, Eastfield College, Dallas, Texas. Ex6

Experience: 1979-Present
Radiation Specialist/Health Physicist - Inspects Commission licensees who are authorized to use byproduct, source, and special nuclear materials. Observes, evaluates, issues notices, and reports as to the status of compliance with requirements of the Commission and the safety of licensee operations. Initiates enforcement actions against licensees found to be in violation of Federal regulations, or Commission rules. Investigates incidents and assists in the execution of other types of compliance inspections and technical phases of investigations. Serves as a team member for special appraisals and emergency response. Prepares analyses and technical evaluations of proposed regulatory guides, NRC policy, and technical reports. Responds to inquiries from the press and public concerning radiological health issues.

1979-1984
Graduate level research and continuing graduate studies at the University of Texas at Dallas. Studies pursued in environmental issues related to energy production with emphasis on nuclear power generation. Developed physiologic l models to assess the radiological impact of tritium in standa d man following both acute and chronic exposures. Adapted classical economic input-output modelling techniques to simulate kinetics of certain environmental pollutants. Lectured on various topics including health physics, environmental radiation, strategic nuclear defense, and civil defense.

1977-1979
Teaching Assistant/Research Assistant in the Center for Environmental Studies, University of Texas at Dallas - Participated in the development of a methodology based in part upon statistical analyses to measure environmental levels of tritium without enrichment in samples of ground and drinking water using liquid scintillation techniques.

TRAINING REQUIREMENTS
MATERIALS AND FUEL CYCLE INSPECTORS

NAME: B. SPITZBERG

A. REQUIRED REGIONAL TRAINING	DATE	INITIALS
REGIONAL ORIENTATION	1979	DBS
CODE OF FEDERAL REGULATIONS	1979	
FINAL SAFETY ANALYSIS REPORTS	N/A	
REGULATORY GUIDES	1979-PRESENT	
NRC/IE MANUAL	1979	
INDUSTRIAL CODES/STDS	N/A	
INSPECTION ACCOMPANIMENTS	1980	V

B. REQUIRED TRAINING COURSES (TTC)		
FUNDAMENTALS OF INSPECTION	5/80	DBS
COBALT TELETHERAPY	4/80	
MEDICAL USES	*	
INDUSTRIAL RADIOGRAPHY	10/82	
RESPIRATORY PROTECTION	*	
WHOLE BODY COUNTING	*	V
GAS AND OIL WELL LOGGING	11/84	

C. SUPPLEMENTAL TRAINING		
BWR TECHNOLOGY	4/82	DBS
PWR TECHNOLOGY	11/81	
BWR/PWR RAD WASTE	8/80	
REACTOR HP		
RADIOLOGICAL EMERGENCY RESPONSE	3/80	
RADIOLOGICAL EMERGENCY PLANNING		
RADIOLOGICAL ACCIDENT ASSESSMENT	9/83	V

D. OTHER TRAINING COMPLETED		
APPLIED HEALTH PHYSICS	5-6/80	DBS
MONITORING METHODOLOGIES FOR RADON	11/82	
INTERNAL DOSIMETRY	6/84	
RADIOACTIVE MATERIAL TRANSPORTATION	1985	V

* Qualified by experience and in-house training.

J Everett, Chief, NMSS

NOAH MICHAEL SHOPENN

Organization: Technical Programs Branch
Materials Radiation Protection Section
Region IV

Title: Radiation Specialist

Grade: GS-13

Birth Date: Ex. 6

Education: B.S. Forestry, State University of New York, College of Environmental Sciences and Forestry at Syracuse University, January, 1953

Experience:

1980 - Present: Radiation Specialist - Inspect Materials licenses, including uranium mills. Additional duties as Region IV OSH officer and representative for Region IV for the NRC committee on Age Discrimination.

1974-1980 OSHA Compliance Officer and Supervisor (US DOL) - Responsible for conducting inspections of facilities of a complex nature, monitored state programs and supervised and directed personnel in inspection efforts.

1968 - 1974
1963 - 1967 AFSWC, Kirtland AFB and Air Force Weapons Laboratory Health Physicist - Established and directed the health physics program for the base. Prepared the applications of AEC licenses by doing complete revisions for each renewal. Acted as member AFIC, NSSC, assisted during development of special materials, and worked on special classified projects.

1967 - 1968 AEC Compliance Officer Region I - Inspected licensed materials facilities.

1963 Assistant Chief Health Physicist at WPAFB - Nuclear Engineering Test Facility Reactor - Prepared the Health Physics operations procedures and supervised Health Physics operations.

1962 - 1963 Senior Health Physicist at Sandusky NASA Reactor - Controls for Radiation, Inc. Directed environmental and health physics personnel during operations on shift.

1959 - 1963 Health Physicist - Nevada Test Site Lawrence Radiation Laboratory - Health Physicist at the Hot Box Critical Facility; Tory II Tests (construction, test and disassembly); underground tests and special classified projects.

1954 - 1959 Health Physics Technical Assistant, Savannah River Plant, E. I. DuPont de Nemoirs - Started up reactor facilities; separations facilities, laboratories. Member of special group of health physicists during reactor changes.

1946 [redacted] Ex6 Collected specimens and performed health physics surveys after the tests.

QUESTION #7

DOE and DOT had no direct regulatory role in this incident. DOT was notified of the incident because the ruptured container was also used as a shipping container. DOE was notified in the course of routine emergency notification procedures. DOE had standby emergency response capabilities and provided timely availability of their contractor, EG&G, to perform an aerial radiological survey of the site and immediate environs. The EPA role in the incident was to react to the incident by evaluating the effect of the offsite environment. This role was and is generally performed by the State of Oklahoma under agreement with the EPA.

The specific roles of other federal agencies as they related to fuel facilities regulated by NRC is the subject of an ongoing effort for which IE has the lead. On January 22, 1986, NRC representatives met representatives from OSHA and EPA to discuss the roles of the three agencies. Additional meetings are planned. Until further progress is made on this task we are unable to give a definitive description of the roles of other agencies.

The only specific correspondence from OSHA regarding agency jurisdiction at the Sequoyah facility is a letter from OSHA, dated January 16, 1986. A copy is enclosed as Enclosure I. Also enclosed is a copy of a "working agreement" guideline used by NRC for interfacing with OSHA.

ENCLOSURE I
To Question #7

APPENDIX

GENERAL GUIDELINES FOR INTERFACE ACTIVITIES BETWEEN THE NRC REGIONAL OFFICES AND THE OSHA OFFICE OF GENERAL INDUSTRY COMPLIANCE ASSISTANCE

1. The NRC Regional Offices are responsible for assessing radiological health and safety in work areas for NRC-licensed facilities and NRC licensees. This also includes inspection of security and environmental protection matters affecting NRC licensed facilities and activities.

2. OSHA has responsibility for nonradiological health and safety in the work areas of NRC-licensed facilities and NRC licensees, including inspections.

3. OSHA covers employee exposures from all radiation sources not regulated by NRC. Examples include x-ray equipment, accelerators, accelerator-produced materials, electron microscopes, and betatrons, and naturally occurring radioactive materials such as radium.

4. NRC Regional Office personnel will inform the appropriate OSHA Regional Office of matters in the OSHA area of responsibility which come to their attention during the conduct of NRC activities. The following are examples of matters that would be reported to OSHA.

   a. Serious injuries or fatalities of workers.

   b. The existence of safety and health hazards to workers, including radiological hazards from activities not licensed by the NRC.

   NOTE: When such instances occur within OSHA State Plan States' jurisdiction, the OSHA Regional Office will refer the matter to the State for appropriate action.

5. OSHA Regional Offices will inform the appropriate NRC Regional Office of matters which are in the purview of NRC when these come to their attention during federal or State safety and health inspections associated with NRC-licensed activities. The following are examples of matters that would be reported to the NRC:

   a. Lax security control or work practices that would impact on radiological health and safety.

   b. Improper posting of radiation areas.

   c. Allegations by licensee employees of NRC license or regulation violations.

6. The NRC and OSHA will not normally conduct joint inspections at NRC-licensed facilities. However, under certain conditions, such as investigations resulting from reported activities as discussed in

Items 4 and 5 above, it may be mutually agreed that joint inspections are in the public interest.

7. The OSHA Office of General Industry Compliance Assistance which handles enforcement interface relations with other governmental organizations is cognizant of the NRC role. Resolution and establishment of policy matters associated with enforcement interface relations for NRC-licensed activities should be handled between the Office of General Industry Compliance Assistance, OSHA, and the Office of Inspection and Enforcement, NRC.

8. The OSHA contact is Janet Sprickman, Office of General Industry Compliance Assistance. The contact for the Office of Inspection and Enforcement is either the Section Chief, LeMoine J. Cunningham, or Branch Chief of the Operating Reactor Programs Branch.

END

QUESTION #14

(a) * If the NRC determines that Kerr-McGee did not follow its license with respect to this accident, then the NRC could issue a notice of violation or an escalated enforcement action that includes civil penalties or orders to suspend, modify, or revoke the license.

(b) ** The NRC clearly has lead enforcement powers with respect to radiological releases from this type of facility. Questions relating to the lead authority regarding enforcement action involving chemical releases have been raised and are being evaluated by ELD. (Steve Burns will coordinate this reply.)

* Coordinated with E. Flack.
** Coordinated with S. Burns

Question #16

NRC inspectors are chosen for their formal training in the physical sciences and work experience in the nuclear industry. The job description of "health physicist" or "radiation specialist" as used by the NRC, denotes the area in which the individual is specializing and does not necessarily reflect the individual's formal training or experience; that is, a health physicist may be formally trained as a health physicist or may be a chemical, mechanical, or electrical engineer that has specialized in health physics. The latter situation is most common. The resumes of inspectors that frequently inspect fuel facilities is enclosed to illustrate this fact. Many inspectors have significant qualifications in the area of chemistry or chemical engineering.

ENCLOSURE I
To Question #16

JEROME ROTH

Organization: NRC, Region I

Title: Fuel Facilities Project Engineer

Grade: GS-14

Birth Date: [redacted] EX6

Education: B.S. Chemistry, Pennsylvania State University, [redacted] 6

Advanced Courses, Chemistry and Metallurgy, Carnegie-Mellon University, 1959-1967

Experience:

1975-Present — Fuel Facilities Project Engineer - Responsible for inspection and investigation of fuel cycle facilities to determine if construction, test and operations of facilities comply with regulatory requirements to ensure adequate health and safety of public from hazards. Chemical operations examined include, as necessary, but are not limited to, UF_6 cylinder transportation and storage, conversion of UF_6 to UO_2, UO_2 conversion to uranium nitrate, chemical uranium and plutonium scrap recovery, uranium nitrate to UO_2 conversion, and UO_2 pelletizing. From 1982 to present - responsible for examining the operational health physics aspects of fuel cycle plants including the effects of chemical and ceramics operations on personnel and on releases to the environment. (NRC)

1974-1975 — Consultant - Acted as a contract consultant to various firms to resolve problem areas associated with the fabrication of non-radioactive ceramic shapes. (Self-employed)

1967-1974 — Ceramics Development - Various titles and responsibilities in the design of a fuel fabrication facility and development/evaluation of nuclear fuels. The facility design included specification of the equipment required to perform uranium nitrate to oxide conversion, scrap recovery and pelletizing operations. (Combustion Engineering, Inc., Windsor, CT)

1962-1967 — Senior Engineer - Development, evaluation and physical property testing of plutonium and uranium oxide fuel forms. Included evaluation of the effects of chemical processing operations on the physical properties of nuclear fuels. Three years spent as the chairman of the facility safety committee charged with the review and approval of all chemical, physical and ceramics operations conducted at the facility. (Nuclear Materials and Equipment Corp., Leechburg, PA)

1956-1962 — Assistant Chemist - Development, evaluation and physical property testing of plastics. (Koppers Company, Inc., Monroeville, PA)

NAME: John B. Kahle

EDUCATION: M.S. Nuclear Science and Engineering
Health Physics and Nuclear Criticality Safety

WORK EXPERIENCE: Thirty years plus of experience in health physics and nuclear criticality safety, most of which deals with plants that process uranium compounds from the conversion of uranium hexafluoride to commercial nuclear power reactor fuel assemblies.

NAME: Martha Poston-Brown Ex 6

EDUCATION: B.S. Industrial Management - [ ] 2 quarters of general chemistry
M.S. Health Physics - [ ] Ex 6 as a graduate student worked with Tc^{99m} and Cs^{137} in said solutions

WORK EXPERIENCE: US NRC (9/84 - present)
Emergency Preparedness Inspector
Evaluation of dose assessment capabilities and some health physics practices
No other health physics or chemical experience

NAME: Ronald Marston

EDUCATION: B.S. Physics - [ ] Ex 6
4 quarters of college chemistry (general organic and quantitative analysis)
Special Graduate Studies - Meteorology
M.S. Aerospace Engineering - [ ] Ex 6
Graduate Studies - Nuclear Engineering

WORK EXPERIENCE: US NRC (4/81 - present)
Emergency Preparedness Inspector
Evaluation of dose assessment, post accident sampling, radiochemistry, and general health physics practices.

Other experience included a full 10 years in health physics activities. These duties included the following: 1) Quality assurance audits for radiation protection and environmental programs, 2) Nuclear safety evaluations, airborne dispersion modeling, dose predictions, and contamination surveys for the

Air Force Weapons Lab, and 3) Development of techniques and equipment for detection of radioactive materials.

Other experience includes management and administration of nuclear weapon research, command of missile contact crew, and weather forecasting. No particular chemical experience.

NAME: Alphonsa Gooden Ex.6

EDUCATION: B.S. Biology - [ ] minor in chemistry
M.S. Science - [ ] concentration in pharmaceuticals

WORK EXPERIENCE: US NRC (2/85 - present)
Emergency Preparedness Inspector
Evaluation of dose assessment capabilities and some health physics areas

5 years of Health Physics experience includes environmental monitoring, radiochemistry, emergency preparedness and response for the State of Georgia, and radiochemical laboratory work.

7 years of chemical experience primarily included radiochemical analysis and pharamceutical research.

NAME: James Kreh Ex 6

EDUCATION: B.S. Physics - [ ] general chemistry
M.S. Physics - [ ]

WORK EXPERIENCE: US NRC (9/83 - present)
Emergency Preparedness Inspector
Some general work duties as those of above.

Other health physics experience consists of 5 years with the State of Michigan involving emergency response planning and development. Also, he performed and supervised the maintenance, calibration and use of survey equipment.

Other experience consists of teaching basic and advanced electronics, being a Respiratory Therapist and being a Photometric test technician for an automotive company.

No particular chemical experience.

NAME: Andrew Cunningham Ex 6

EDUCATION: B.S. Chemistry/Physics - [redacted] variety of chemistry subjects
Graduate studies included physiology, histology, anatomy and biochemistry

WORK EXPERIENCE: US NRC/AEC (1972 - present)
Emergency Preparedness and Chemistry/Radiological Effluents Inspector
During his time at the NRC he has participated in a wide variety of health physics, chemical, and emergency preparedness appraisals. He has also been involved in the development of safety standards and criteria for licensing nuclear power reactors.

He has a total of 18 years in the chemical/metallurgy/engineering field. Involvement has been from applied research in metal-metal and metal-ceramic systems to fabrication and testing of metals - to synthesis of breeder blanket for liquid metal fuel reactors.

NAME: William Sartor Ex 6

EDUCATION: B.S. Engineering/Science - [redacted] general chemistry
Graduate Studies - Logistics Management
M.S. Nuclear Engineering - [redacted] 6

WORK EXPERIENCE: US NRC (10/84 - present)
Emergency Preparedness Inspector
Same general practices as others above.

Most of his experience has been in the chemical/engineering area. Approximately 10 years with the US Army Nuclear, Biological and Chemical Protection and Defense Group. Duties included technical advisor, senior engineer, and coordinator for logistics support and DARCOM chemical action plan.

He has also be involved in the development and testing of cannon fired nuclear weapons, radiation detection and monitoring programs, and the training and procedural development for the Chemical Decontamination Company - US Army.

NAME: Anne Tabaka Ex6

EDUCATION: B.S. Chemistry - [redacted] laboratory assistant for general chemistry, research in organic chemistry
M.S. Health Physics - [redacted] research in radiochemistry Ex6

WORK EXPERIENCE: US NRC (10/85 - present)
Emergency Preparedness Inspector
Not qualified - only accompaniments, no independent inspections.

No other health physics experience.

Other chemical experience includes industrial hygiene type measurements.

NAME: Thomas Decker

EDUCTION: A.A. Computer Science - [redacted]
B.S. Mathematics - [redacted] Ex. 6
M.S. Nuclear Engineering - [redacted]

WORK EXPERIENCE: US NRC (3/76 - present)
Emergency Preparedness Section Chief
His duties with the NRC have included the following - emergency preparedness team leader for appraisals and exercises, development of commission policies, procedures and criteria for emergency preparedness, provided technical support in the areas of dosimetry and environmental radiation, evaluation and review of reported occurrences, and publication of annual effluent report for commercial power plants.

Other health physics experience includes development of computer codes for dose calculations, development of preoperational and operational radiological surveillance programs, and calculation of impact of routine and accidental radiation releases.

NAME: Thomas R. Collins

EDUCATION: 2 years college (Radiological Health)

WORK EXPERIENCE: 12 years of experience in health physics involving all aspects of the radiation protection program at a commercial nuclear power plant. 4 years experience with the NRC inspecting radiation protection and radioactive waste systems at nuclear power plants and fuel facilities.

NAME: William T. Cooper, Jr.

EDUCATION: B.S. Environmental Health (12 semester hours in chemistry)

WORK EXPERIENCE: 2 years of experience at a nuclear fuel facility as a production operator. 4 years of experience in health physics involving training of personnel, contamination control, area and environmental monitoring, emergency planning, industrial safety and instrument calibration. 1.5 years experience with the NRC inspecting radiation protection programs at nuclear power plants and fuel facilities.

NAME: Gerald L. Troup

EDUCATION: B.S. Mechanical Engineering
M.S. Applied Nuclear Sciences (6 courses in chemistry/chemical engineering)

WORK EXPERIENCE: 8 years of experience in mechanical and nuclear engineering involving design, construction and operation of radioactive waste systems, installation of temporary radiation shielding, design and operation of ventilation systems. 13 years experience with NRC inspecting radiation protection and radioactive waste programs at commercial nuclear power plants and fuel facilities.

NAME: Charles M. Hosey

EDUCATION: B.S. Biology (minor chemistry)
36 hours graduate studies in radiological health (6 courses in chemistry)

WORK EXPERIENCE: 12 years in health physics involving development of radioactive waste disposal methods, temporary shielding design, training, preparation of procedures, all radiation protection aspects of refueling, overhauling and decontaminating naval nuclear propulsion plants, environmental monitoring, dosimetry, instrument calibration and industrial radiography. 8 years experience with the NRC inspecting radiation protection and radioactive waste programs at commercial nuclear power plants and fuel facilities.

NAME: Betty K. Revsin

EDUCATION: B.S. Chemistry
PhD Biochemistry
M.S. Ph Health Physic

WORK EXPERIENCE: 2 years experience in health physics involving environmental monitoring, laboratory analysis of radionuclides, development of radiation protection plans, and evaluation of industry standards. One year experience with the NRC inspecting radiation protection programs at commercial nuclear power plants and fuel facilities.

NAME: Roy E. Weddington

EDUCTIO:. B.S. Mathematics

WORK EXPERIENCE: 10 years of experience in health physics involving special weapons maintenance, naval nuclear propulsion plant operations and research on expanded naval nuclear propulsion fuel. 3 years experience with NRC inspecting radiation protection and radioactive waste programs at commercial nuclear power plants and fuel facilities.

NAME: Thomas D. Lee

EDUCATION: M.S. Operations Research
B.S. Industrial and Systems Engineering
Chemical Engineering Studies (2 years)

WORK EXPERIENCE: 7 years as fuel facilities resident inspector involving review of operations, nuclear criticality safety, radiation protection, environmental protection physical protection, and material control and accountability.

2 years as material control and accountability inspector.

8 years in air pollution control involving design and operation of air monitoring networks, evaluation of control measures, and limited evaluation of industrial hygiene measures.

2 years in [redacted] Ex. 6 and a processing analyst.

NAME: William B. Gloersen

EDUCATION: B.S. Physics, [redacted] Ex. 6
M.S.P.H Radiological Physics, [redacted]
PhD Radiological Physics, [redacted]

WORK EXPERIENCE: 3 years experience in the area of radiological safety. Experience in inspection of emergency preparedness, environmental monitoring and radwaste management program at power reactors and fuel facilities.

NAME: William J. Ross

EDUCATION: B.S. Chemistry, [redacted] Ex. 6
M.S. Chemistry,

WORK EXPERIENCE: 22 two years experience in analytical and radiochemistry. Two years experience as a research lab manager. Ten years experience with US NRC-NRR as an environmental licensing project manager. Three years as an inspector in the area of LWR Chemistry Programs.

NAME: William E. Cline

EDUCATION: B.S. Chemistry and Math
M.S. Nuclear Engineering

WORK EXPERIENCE: Over 17 years experience in the areas of nuclear engineering, health physics, and environmental regulation. Approximately seven years experience with NRC in the area of health physics, radwaste management, emergency preparedness, environmental surveillance programs inspection/evaluation. Over eight years experience in supervision/management of technical programs.

NAME: Susan S. Adamovitz

EDUCATION: B.S. Chemistry

WORK EXPERIENCE: Over three years experience as an analytical chemist to include experience as a laboratory supervisor. Over four years experience as a radiochemist. Over 15 months experience with NRC as a radiochemist and radiation safety inspector.

NAME: Phillip G. Stoddart

EDUCATION: Three years college. No degree
Formal Chemistry Training: Qualitative Analysis
Quantitative Analyses, Organic Chemistry, Physical Chemistry

WORK EXPERIENCE: Four years experience as an instructor in Chemical, Biological and Radiological Defense. Approximately 21 years experience as a health physicist for a research lab. This experience involved career progression from the technician level to supervisor. Approximately ten years experience with NRC as a nuclear engineer and radiation specialist. Areas of speciality includes: waste treatment system, sampling and monitoring systems and equipment, and environmental surveillance programs.

NAME: Jimmy D. Harris

EDUCATION: B.A.
M.S.

WORK EXPERIENCE: Over three years experience in the areas of radiochemistry and analytical chemistry. Over __ months experience with NRC Region II in the areas of environmental program inspection, radwaste management inspection, confirmatory measurements program assistance, and laboratory operations.

QUALIFICATION SUMMARY - L. ROBERT GREGER

Name:

L. Robert Greger
Supervisor - Fuel Facilities Inspections

Education:

B.A. and B.S. Degrees, [ ] Ex 6
University of Minnesota
Major: Mathematics
Minor: Physical Sciences (2 years chemistry)

M.S. Degree, [ ] Ex 6
University of Minnesota
Major: Health Physics

Work Experience:

[ ] Ex 6
Nuclear Engineering - five years

USNRC
Byproducts Materials Inspector - two years
Reactor Health Physics Inspector - seven years
Reactor Health Physics and Fuel
Facilities Supervisor - five years

QUALIFICATION SUMMARY - GEORGE M. FRANCE, III

Name:

George M. France, III
Fuel Facility Inspector 12/83 to Present

Education:

Ex 6

B.S. Degree, [redacted]
West Virginia State College
Major: Chemistry
Minor: Mathematics

Work Experience:

Goodyear Atomic Corporation
Chemistry Laboratory - seven years
(UF6 gravimetric standards preparation, uranium urinalyses, various wet analytical uranium procedures)

National Bureau of Standards
Radiochemist - four years
(Wet and radio-chemistry procedures on variety of radioactive materials including uranium)

Kerr McGee Corporation
Research Chemist - seven years
(Uranium urinalyses, various wet and radio chemistry procedures supporting uranium milling and UF6 processing)

Criticality, Environmental and Licensing Activities - nine years
(Support to uranium mining, milling, UF6 conversion, uranium and plutonium fuel fabrication)

USNRC
Fuel Facility Inspector - two years
(Inspects UF6 conversion, uranium fuel fabrication, uranium fuel R&D, uranium and plutonium fuel fabrication plant decommissioning)

CHARLES L. CAIN

Organization: Technical Programs Branch
Materials Radiation Protection Section
Region IV

Title: Radiation Specialist (Health Physicist)

Grade: GG-14

Birth Date: [redacted] Ex6

Education: B.S. Electrical Engineering, Louisiana Tech University, [redacted] Ex6

Experience:

1978-Present Radiation Specialist - Responsible for inspection of primary Commission licensees and performance of investigations which involve licensed material or material subject to license.

General Electric Company, Vallecitos Nuclear Center, Pleasanton, CA

1977-1978 Manager, Radiological and Environmental Protection - Responsible for the radiation safety of employees and general public as a result of operations at Vallecitos Nuclear Center and at GE facilities in San Jose, CA. Supervision of up to four health physicists and eleven technicians.

1974-1977 Supervisor, Nuclear Safety Operations - Same responsibilities as above excluding environmental protection. (Vallecitos facilities included large test reactors, mixed oxide fuel fabrication facilities, hot cell radioisotope production facilities, and miscellaneous research facilities.)

1972 - 1974 Quality Assurance Engineer - Responsible for the establishment and maintenance of a QA system for irradiation services associated with the GE Test Reactor.

General Electric Manufacturing Management Program

Program consisted of assignments at various GE locations with special formal training in management and manufacturing techniques.

1971-1972 Vallecitos Nuclear Center, Pleasanton, CA - Responsible for manufacture of BWR start-up neutron sources and quality control of manufacture of mixed oxide, fast flux experiment hardware.

1970-1971 Waynesboro, VA - Various assignments associated with the manufacture of computer peripheral devices.

TRAINING REQUIREMENTS
MATERIALS AND FUEL CYCLE INSPECTORS

NAME: [illegible]

A. REQUIRED REGIONAL TRAINING	DATE	INITIALS
REGIONAL ORIENTATION	[illegible]	[illegible]
CODE OF FEDERAL REGULATIONS	[illegible]	
FINAL SAFETY ANALYSIS REPORTS	[illegible]	
REGULATORY GUIDES	7/78	
NRC/IE MANUAL	[illegible]	
INDUSTRIAL CODES/STDS	N/A	
INSPECTION ACCOMPANIMENTS	[illegible]	
B. REQUIRED TRAINING COURSES (TTC)		
FUNDAMENTALS OF INSPECTION	[illegible]	
COBALT TELETHERAPY	[illegible]	
MEDICAL USES	[illegible]	
INDUSTRIAL RADIOGRAPHY	[illegible]	
RESPIRATORY PROTECTION	[illegible]	
WHOLE BODY COUNTING	[illegible]	
C. SUPPLEMENTAL TRAINING		
BWR TECHNOLOGY	[illegible]	
PWR TECHNOLOGY	[illegible]	
BWR/PWR RAD WASTE	[illegible]	
REACTOR HP	[illegible]	
RADIOLOGICAL EMERGENCY RESPONSE	2/83	
RADIOLOGICAL EMERGENCY PLANNING	[illegible]	
RADIOLOGICAL ACCIDENT ASSESSMENT	[illegible]	[illegible]
D. OTHER TRAINING COMPLETED		
Internal Dosimetry	[illegible]	
Materials Licensing	12/33 5/84	

+ Gained by experience and on-the-job training.

R.D. Everett chief, NMSS

CURRICULUM VITAE
DAVID BLAIR SPITZBERG

Organization: U.S. Nuclear Regulatory Commission, Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

Title: Radiation Specialist - Health Physicist, Technical Programs

Grade: GS-13

Birth Date: Ex 6

Education: M.S. Environmental Radiation, University of Texas at Dallas, [redacted] 6
B.S. Biology, Southern Methodist University, Dallas, Texas, [redacted]
A.S. Biology, Eastfield College, Dallas, Texas, [redacted]

Experience: 1979-Present
Radiation Specialist/Health Physicist - Inspects Commission licensees who are authorized to use byproduct, source, and special nuclear materials. Observes, evaluates, issues notices, and reports as to the status of compliance with requirements of the Commission and the safety of licensee operations. Initiates enforcement actions against licensees found to be in violation of Federal regulations, or Commission rules. Investigates incidents and assists in the execution of other types of compliance inspections and technical phases of investigations. Serves as a team member for special appraisals and emergency response. Prepares analyses and technical evaluations of proposed regulatory guides, NRC policy, and technical reports. Responds to inquiries from the press and public concerning radiological health issues.

1979-1984
Graduate level research and continuing graduate studies at the University of Texas at Dallas. Studies pursued in environmental issues related to energy production with emphasis on nuclear power generation. Developed physiological models to assess the radiological impact of tritium in standard man following both acute and chronic exposures. Adapted classical economic input-output modelling techniques to simulate kinetics of certain environmental pollutants. Lectured on various topics including health physics, environmental radiation, strategic nuclear defense, and civil defense.

1977-1979
Teaching Assistant/Research Assistant in the Center for Environmental Studies, University of Texas at Dallas - Participated in the development of a methodology based in part upon statistical analyses to measure environmental levels of tritium without enrichment in samples of ground and drinking water using liquid scintillation techniques.

TRAINING REQUIREMENTS
MATERIALS AND FUEL CYCLE INSPECTORS

NAME: B. SPITZBERG

A. REQUIRED REGIONAL TRAINING	DATE	INITIALS
REGIONAL ORIENTATION	1979	DBS
CODE OF FEDERAL REGULATIONS	1979	
FINAL SAFETY ANALYSIS REPORTS	N/A	
REGULATORY GUIDES	1979-PRESENT	
NRC/IE MANUAL	1979	
INDUSTRIAL CODES/STDS	N/A	
INSPECTION ACCOMPANIMENTS	1980	V

B. REQUIRED TRAINING COURSES (TTC)		
FUNDAMENTALS OF INSPECTION	5/80	DBS
COBALT TELETHERAPY	4/80	
MEDICAL USES	*	
INDUSTRIAL RADIOGRAPHY	10/82	
RESPIRATORY PROTECTION	*	
WHOLE BODY COUNTING	*	V
GAS AND OIL WELL LOGGING	11/84	

C. SUPPLEMENTAL TRAINING		
BWR TECHNOLOGY	4/82	DBS
PWR TECHNOLOGY	11/81	
BWR/PWR RAD WASTE	8/80	
REACTOR HP		
RADIOLOGICAL EMERGENCY RESPONSE	3/80	
RADIOLOGICAL EMERGENCY PLANNING		
RADIOLOGICAL ACCIDENT ASSESSMENT	9/83	V

D. OTHER TRAINING COMPLETED		
APPLIED HEALTH PHYSICS	5-6/80	DBS
MONITORING METHODOLOGIES FOR RADON	11/82	
INTERNAL DOSIMETRY	6/84	
RADIOACTIVE MATERIAL TRANSPORTATION	1985	V

* Qualified by experience and in-house training.

J Everett, Chief, NMSS

NOAH MICHAEL SHOPENN

Organization: Technical Programs Branch
Materials Radiation Protection Section
Region IV

Title: Radiation Specialist

Grade: GS-13

Birth Date: [redacted] Ex 6

Education: B.S. Forestry, State University of New York, College of Environmental Sciences and Forestry at Syracuse University, January, [redacted] Ex 6

Experience:

1980 - Present: Radiation Specialist - Inspect Materials licenses, including uranium mills. Additional duties as Region IV OSH officer and representative for Region IV for the NRC committee on Age Discrimination.

1974-1980 OSHA Compliance Officer and Supervisor (US DOL) - Responsible for conducting inspections of facilities of a complex nature, monitored state programs and supervised and directed personnel in inspection efforts.

1968 - 1974
1963 - 1967 AFSWC, Kirtland AFB and Air Force Weapons Laboratory Health Physicist - Established and directed the health physics program for the base. Prepared the applications of AEC licenses by doing complete revisions for each renewal. Acted as member AFIC, NASSC, assisted during development of special materials, and worked on special classified projects.

1967 - 1968 AEC Compliance Officer Region I - Inspected licensed materials facilities.

1963 Assistant Chief Health Physicist at WPAFB - Nuclear Engineering Test Facility Reactor - Prepared the Health Physics operations procedures and supervised Health Physics operations.

1962 - 1963 Senior Health Physicist at Sandusky NASA Reactor - Controls for Radiation, Inc. Directed environmental and health physics personnel during operations on shift.

1959 - 1963 Health Physicist - Nevada Test Site Lawrence Radiation Laboratory - Health Physicist at the Hot Box Critical Facility; Tory II Tests (construction, test and disassembly); underground tests and special classified projects.

1954 - 1959 Health Physics Technical Assistant, Savannah River Plant, E. I. DuPont de Nemoirs - Started up reactor facilities; separations facilities, laboratories. Member of special group of health physicists during reactor changes.

1946 [redacted] Ex 6
Collected specimens and performed health physics surveys after the tests.

RUSSELL WISE

Organization: Facilities Radiation Protection Section, Technical Programs Branch, Region IV

Title: Radiation Specialist

Grade: GS-12

Birth Date: Ex 6

Education: Three years college, Industrial Engineering Major

Experience:

1982 - Present — Radiation Specialist (Instrumentation) - Perform confirmatory measurement inspections at licensed facilities by collecting and analyzing effluent samples. Develop and implement procedures for inventory, calibration and quality control tests for laboratory and portable radiation survey equipment. Evaluate the performance of states participating in the NRC/State Environmental Monitoring Program to insure compliance with contract requirements.

1981 - 1982 — Radiation Specialist (Health Physicist) - Responsible for specialized radiological and environmental inspections at facilities licensed to possess and use radioactive materials. Observe, evaluate and report the status of compliance with requirements of the Commission and safety of licensee operations.

1979 - 1981 — Supervisor, Radiation Effects Facility - Responsible for radiation safety for all operations within the facility which utilizes multiple kilo-curie cobalt-60 sources in two high level irradiation cells. Responsible for the performance of leak tests, instrument calibration, source inventory, and maintenance of required records and reports. Assisted in the testing and evaluation of reactor surveillance capsules.

1976 - 1979 — Health Physics Technician - Performed visits to shore activities and fleet operating forces providing technical assistance in the establishment, maintenance, and evaluation of radiological safety programs. Recommended corrective actions to comply with Navy and Federal standards; performed shielding design reviews for medical, dental and industrial radiography facilities for compliance with applicable standards.

1975 - 1976 — Operational Health Physicist - Responsible for writing procedures for dismantling components of the PM-3A complex. Other duties included radiation instrument calibration, adminstering personnel dosimetry program, leak testing of sources, source inventory. Assisted in the design and use of soil radiation measurement system for analysis of samples in the Antarctic environment.

CHARLES A. HOOKER

Organization: Materials and Fuel Cycle Radiation Protection Section, Technical Program Branch, Region IV

Title: GS-12

Birth Date: [redacted] Ex6

Education: U.S.A.F.I. (High School G.E.D.), Madison, Wisconsin, [redacted] Ex6

[redacted] Ex6

Experience:

1981 - 1982 Radiation Specialist (Health Physicist) - Responsible for specialized radiological and environmental inspections at facilities licensed to possess, use, and process nuclear materials. Observe, evaluate, and report the status of compliance with requirements of the Commission and the safety of licensee operations.

1976 - 1981 Supervisor, Radiological and Environmental Protection - Responsible for establishing radiation protection procedures and establish practices and guidelines to maintain compliance with state and federal regulatory agencies, training of radiation safety technicians, review of reactor operation and hot cell facility programs, develop and oversee radiological safety for uranium and plutonium production, in charge of in vivo counting. Supervised staff of 8 at Vallecitos Nuclear Center, California (GE).

1975 - 1976 Supervisor, Industrial Sealed Source Manufacturing - Responsible for the production of iridium-192 radiography sources, cesium-137 and cobalt-60 thickness gauge sources, licensing of industrial sources, marketing, radiation safety programs, and training of employees. Supervised 2 employees at General Radioisotope Products, Inc., California.

1963 - 1975 Specialist, Nuclear Safety Operations - Responsible for radiation safety programs for hot cell facilities, isotope production, test reactors, plutonium labs, hot chem labs, assist with environmental programs, in vivo counting and training of employees at Vallecitos Nuclear Center, California (GE).

1957 - 1963 [redacted] Ex6 - Responsible for operating and maintaining mechanical propulsion and auxiliary systems, primary and secondary water chemistry, and radiological safety on nuclear submarines. Qualified A1W and S5W reactor plant operator.

BUDDY L. BROCK, Fuel Facilities Inspector

EX6

EDUCATION: B.S. Chemistry, San Francisco State College, [redacted] (included 30 units in chemistry)

ADDITIONAL TRAINING:

1. Occupational Respiratory Protection, NIOSH, 1984 (one week)
2. Nuclear Criticality Safety, University of New Mexico, 1983 (one week)
3. Nuclear Criticality Safety Course, LASL, 1982 (two days)
4. Independent Measurements, INEL, 1982 (one week)
5. Fundamentals and Program Requirements for Safeguards Inspectors NRC-HQ, 1980 (one week)
6. Fundamentals of Inspection Course, NRC-HQ, 1979 (one week)
7. Management Oversight and Risk Tree Analysis, R-II, 1979 (one week)
8. Advanced Safeguards Chemical Analysis, NBL, 1978 (one week)
9. Fundamentals of NDA of SNM using Portable Instrumentation, LASL, 1973 (one week)
10. Industrial Defense for Privately Owned and Privately Operated Facilities, Fort Gordon, GA, 1973 (one week)
11. Civil Service Commission Executive Seminar - "National Resources Policies and Programs" - UC Berkeley, 1972 (two weeks)
12. Statistical Methods in Nuclear Material Control, ANL, 1971 (one week)
13. Nuclear Material Assay by Passive Radiation Detection, ANL, 1970 (one week)

EXPERIENCE:

NRC 1982 - Present

Fuel Facilities Inspector - Responsible for inspection, investigation and enforcement of licenses issued to process, fabricate, and perform R&D on reactor fuels. Inspections are conducted to ensure criticality, radiological and environmental safety and compliance with applicable rules regulations and conditions of licenses.

AEC/NRC 1972 - 1982

Chemist - Inspected and evaluated by observation, interview and independent testing, various aspects of special nuclear material control program at licensed fuel fabrication facilities and licensed reactor facilities.

12. USNRC, "Transportation of Radioactive Material" (2 days) - June 26-27, 1985

Chief graduate college subjects	Quarter hours
Physics/Astronomy (Studied some aspects of Criticality in Advanced Physics Courses)	54
Chemistry	28
Geology	21
Biology	18
Industrial Hygiene	10

WORK EXPERIENCE:

1973 - Present US NRC, Region V, Walnut Creek, California, Radiation Specialist, specializing in Materials Inspection Program

1970 - 1973 Mare Island Naval Shipyard, Vallejo, California Senior Health Physicist

1964 - 1970 Lawrence Radiation Laboratory, Livermore, California Senior Health Physicist

1956 - 1963 Mt. Clemens Public Schools; Mt. Clemens, Michigan High School Chemistry and Physics Instructor

1954 - 1955 [redacted] E46
Technical Instructor - Electronics

MARE ISLAND
WORK EXPERIENCE: As Senior Health Physicist responsible for the preparation, issuance, and maintenance of the Shipyard's radiological control procedures such as the Nuclear Power Manual, preparation of a Radiation Monitor's Manual and implementing requirements through local special procedures to support the radiation monitoring and refueling branches' responsibilities to the Shipyard.

Wrote Shipyard's first Radiological Control Procedure for discharging radioactive resin from ship to Shipyard facilities.

Gave training to Radiological Control Personnel in preparation for first resin discharge.

Had full responsibility for writing Radiological Control Procedures for particularly hazardous refueling and overhaul operations.

Gave training to technicians in Nuclear Power Plant Secondary Systems.

LRL WORK EXPERIENCE:

Responsible for Health Physics in the Physics and Controller Thermonuclear Reaction (CTR) areas. The Physics area includes shielding and dosimetry calculations and evaluations for a 3 megawatt reactor, 100 MeV, 40 MeV, 35 MeV, Linear Accelerators, 90 inch cyclotron, 10 inch cyclotron, 2 MeV VandGraff and a 10^{11} n/sec. neutron generator. In the CTR area duties include radiation safety responsibilities for the 6MeV astron experiment, the "Alice" experiment, the 2X experiment, the Levitron experiment and numerous isotopic sources.

Taught two courses in Applied Health Physics and two in Accelerator Health Physics for Health Physicists. Developed an 8 hour course in Accelerator Health Physics for accelerator operators.

Supervised planning and equipment purchase or equipment construction for new LRL Calibration Facility. Equipment costs were in excess of $100,000. Supervised three people directly. While in this capacity, participated in some Criticality calculations as an extra project.

Served as a consultant on accelerator shielding and/or dosimetry at the following laboratories: Pantex Corp., Amarillo, Texas - M.I.T., Cambridge, Mass. - ORNL, Oakridge, Tenn. - LASL, Los Alamos, N.M. Prior to these responsibilities, had assignments in Weapons Health Physics, the Biomedical Area, Chemistry and Nondestructive Test areas, resulting in experience in virtually all branches of Health Physics.

NRC, REGION V EXPERIENCE:

Involved in all aspects of routine materials inspection and enforcement effort on virtually every Region V licensee. In addition, involved in many reactive, investigative or emergency inspections. Was responsible for setting up a program in Region V to verify the proper calibration of Co-60 Teletherapy units, and then personally made measurements at the facilities that did not meet the established criteria. Was sent to the North Slope of Alaska during pipeline construction to do a reactive inspection.

Assisted the Fuel Facilities Inspector on at least fifty occasions in inspection effort at various Region V facilities. On two occasions, performed entire inspection unassisted because the former Fuel Facilities Inspector was incapacitated by a prolonged illness. On two other occasions, assisted Fuel Facilities Inspectors from other Regions (performing inspections in Region V).

PUBLICATIONS:

1. Protection of Personnel Monitoring Films from High Humidity, UCRL 12178 (1964)

2. Effects of Humidity & Dose on Latent Image Stability, American Industrial Hygiene Journal (1966)

3. Activated Silver Pulsed Neutron Detector, UCRL 70170 (1969)

4. Accelerator Pulsed Field Dosimetry, UCRL 71731 (1969)

5. Flying Air Sampler, UCRL 50007, (1967)

6. Pulsed Neutron Detection System UCRL 70170 Rev. 1 (1971)

7. A Versatile Overarm Mirror - Grinding Machine, Sky and Telescope, Dec. 1970

Invited to present papers at the following International Conferences:

1. Health Physics Society
Denver, Colorado (1968)

2. 2nd International Conference on Medical Physics
Boston, Mass (1969)

3. 2nd International Conference on Accelerator Dosimetry and Experience
Stanford, California (1969)

4. Health Physics Society
Chicago, Illinois (1970) two papers

Member International Health Physics Society 1964 to present

Member International Health Physics Society Admissions Committee (Chairman 1971 - 1972)