

## APPLICATION FOR MATERIAL LICENSE

3160-0120  
Expires: 6-31-87

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.

## FEDERAL AGENCIES FILE APPLICATIONS WITH:

U.S. NUCLEAR REGULATORY COMMISSION  
DIVISION OF FUEL CYCLE AND MATERIAL SAFETY, NMSS  
WASHINGTON, DC 20555

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS, IF YOU ARE LOCATED IN:

CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, MAINE, MARYLAND, MASSACHUSETTS, NEW JERSEY, NEW YORK, PENNSYLVANIA, RHODE ISLAND, OR VERMONT, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION I  
NUCLEAR MATERIAL SECTION B  
631 PARK AVENUE  
KING OF PRUSSIA, PA 19406

ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA, PUERTO RICO, SOUTH CAROLINA, TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION II  
MATERIAL RADIATION PROTECTION SECTION  
101 MARINETTA STREET, SUITE 2900  
ATLANTA, GA 30323

## IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION III  
MATERIAL LICENSING SECTION  
709 ROOSEVELT ROAD  
GLEN ELLYN, IL 60137

ARKANSAS, COLORADO, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, OR WYOMING, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION IV  
MATERIAL RADIATION PROTECTION SECTION  
611 RYAN PLAZA DRIVE, SUITE 1000  
ARLINGTON, TX 76011

ALASKA, ARIZONA, CALIFORNIA, HAWAII, NEVADA, OREGON, WASHINGTON, AND U.S. TERRITORIES AND POSSESSIONS IN THE PACIFIC, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION V  
MATERIAL RADIATION PROTECTION SECTION  
1450 MARIA LANE, SUITE 210  
WALNUT CREEK, CA 94605

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTION.

## 1. THIS IS AN APPLICATION FOR (Check appropriate item)

☐ A. NEW LICENSE

☐ B. AMENDMENT TO LICENSE NUMBER

☒ C. RENEWAL OF LICENSE NUMBER 39-23004-02

## 2. NAME AND MAILING ADDRESS OF APPLICANT (Include Zip Code)

Chem-Nuclear Systems, Inc.  
220 Stoneridge Dr.  
Columbia, SC 29210

## 3. ADDRESS(ES) WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED.

Packaged wastes containing U-235 to be used anywhere in the United States:  
Packaged wastes containing byproduct and/or source materials to be used anywhere in the United States where the Nuclear Regulatory Commission maintains jurisdiction.

## 4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

William B. House, Radiological Engineer

## TELEPHONE NUMBER

803-256-0450 Ext. 203

SUBMIT ITEMS 5 THROUGH 11 ON 8 1/2 x 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

## 5. RADIOACTIVE MATERIAL

a. Element and mass number, b. chemical and/or physical form, and c. maximum amount which will be possessed at any one time.

## 6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.

## 7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING AND EXPERIENCE.

## 8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.

## 9. FACILITIES AND EQUIPMENT

8512050037 851021  
REG2 LIC30  
39-23004-02 PDR

## 10. RADIATION SAFETY PROGRAM

## 11. WASTE MANAGEMENT.

## 12. LICENSEE FEES (See 10 CFR 170 and Section 170.31)

FEE CATEGORY 4C

AMOUNT  
ENCLOSED \$460.00

## 13. CERTIFICATION. (Must be completed by applicant) THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, AND 40 AND THAT ALL INFORMATION CONTAINED HEREIN, IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.

WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948, 62 STAT. 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

## SIGNATURE—CERTIFYING OFFICER

## TYPED/PRINTED NAME

## TITLE

## DATE

Leslie K. Poppe

Director, Licensing

9/5/85

## 14. VOLUNTARY ECONOMIC DATA

## a. ANNUAL RECEIPTS

☐ <\$250K  
☐ \$250K-\$500K  
☐ \$500K-\$750K  
☐ \$750K-\$1M

## b. NUMBER OF EMPLOYEES (Total for entire facility excluding outside contractors)

☐ \$1M-\$3.5M  
☐ \$3.5M-\$7M  
☐ \$7M-\$10M  
☐ >\$10M

## c. NUMBER OF BEDS

d. WOULD YOU BE WILLING TO FURNISH COST INFORMATION (Dollars and/or staff hours) ON THE ECONOMIC IMPACT OF CURRENT NRC REGULATIONS OR ANY FUTURE PROPOSED NRC REGULATIONS THAT MAY AFFECT YOU? (NRC regulations permit it to protect confidential commercial or financial—proprietary—information furnished to the agency in confidence)

☐ YES

☐ NO

## FOR NRC USE ONLY

## TYPE OF FEE

## FEE LOG

## FEE CATEGORY

## COMMENTS

## APPROVED BY

## AMOUNT RECEIVED

## CHECK NUMBER

## DATE

\$460

762719

9/30/85

ATTACHMENT 1

NRC FORM 313 ITEMS 5 THROUGH 11

Item 5. Radioactive Material

<u>Element Mass Number</u>	<u>Chemical and/or Physical Form</u>	<u>Maximum Radioactivity</u>
A. Any byproduct material	A. Any	A. 50,000 curies
B. Source Material	B. Any	B. 5,000 kilograms
C. Uranium 235	C. Any	C. 4,500 grams

Item 6. Purpose

A. B. and C. For receipt and possession in packaged wastes picked up at customer facilities for transportation to authorized disposal sites.

Item 7. Responsible Individuals

David G. Ebenhack  
Jerry L. Mason  
Leslie K. Poppe  
Leonard D. Toner  
Mark S. Whittaker  
Individuals designated by the CNSI Safety Review Board.

Resumes are enclosed as Attachment 2.

Item 8. Training

The training program for Transportation Division personnel is specified in CNSI Procedure, TR-AD-001, "Training Program for Transportation Personnel Engaged in Shipment of Radioactive Material". Instructions for the pickup and transport of radioactive material are specified in CNSI Procedure, TR-OP-018, "Driver-Technician Instructions for Radioactive Material Shipments". Both procedures are included in Attachment 3.

Item 9. Equipment

One or more of the below listed instruments will be available in the transport vehicles as required for activities authorized by this license. All instruments will be calibrated every six months and following repair, by Eberline Instrument Company, West Columbia, South Carolina.

1. Eberline Model E-120, or equivalent, portable beta-gamma geiger counter with HP-190 or HP-210 probe, detects beta and gamma radiation, sensitivity range 0-50 mR/hr or 0-60,000 cpm.

2. Eberline Model E-520, or equivalent, portable beta-gamma geiger counter with HP-270 probe, detects beta and gamma radiation, sensitivity range 0-2000 mR/hr.
3. Eberline Model PAC-4S, or equivalent, scintillation alpha counter, detects alpha radiation, sensitivity range 0-2 x 10<sup>6</sup> cpm.

Item 10. Radiation Safety Program

The CNSI Transportation Division conducts operations authorized by this license in accordance with procedures approved by the Safety Review Board. The applicable procedures are listed below and included in Attachment 3.

The procedures are current at the time of submittal. Changes may be made during the effective licensing period. Changes which involve significant safety aspects of the activities authorized by the license will be formally submitted. All changes to procedures are approved by the CNSI Safety Review Board before implementation.

CNSI Procedures

- CN-AD-001, Safety Review Board
- CN-AD-019, Chem-Nuclear (CNSI) ALARA Policy
- CN-AD-020, Chem-Nuclear (CNSI) Health Physics Policy Manual
- CN-EM-001, CNSI Emergency Response Plan
- CN-AD-026, Radiation Exposure Records and Procedures
- TR-AD-001, Training Program for Transportation Personnel Engaged in Shipment of Radioactive Materials
- TR-OP-014, Cask/Trailer/Tractor Inspection
- TR-OP-018, Driver-Technician Instructions for Radioactive Material Shipments

Item 11. Waste Management

Packaged wastes shall be transferred only for disposal to authorized disposal facilities.

ATTACHMENT 2

Resumes of Responsible Individuals



RESUME  
DAVID EBENHACK

DEGREES

B.S., Clemson University, Clemson, South Carolina  
Major: Biology, 1968

ADDITIONAL EDUCATION

Health Physics Course, Oak Ridge Associated University  
Oak Ridge, Tennessee

Health Physics Masters Program, University of Lowell  
Lowell, Massachusetts

SHORT COURSES

Basic Radiological Health, EPA, Montgomery, AL  
Medical X-Ray Protection, EPA, Las Vegas, NV  
Licensing and Regulatory Procedures, AEC, Bethesda, MD  
Medical Uses of Radioactive Isotopes, AEC, Houston, TX  
Laser Safety, University of Cincinnati, Cincinnati, OH

EMPLOYMENT

10/78 -  
Present

CHEM-NUCLEAR SYSTEMS, INC.

Vice President, Regulatory Affairs, Columbia, SC  
Responsible for all corporate license, permit, and regulatory submittal activities; quality assurance; and safety matters; environmental and dosimetry programs.

Director, Regulatory Affairs, Bellevue, WA  
Responsible for all corporate nuclear and chemical regulatory matters.

Manager, Health and Safety, Barnwell, SC  
Responsible for all regulatory compliance matters concerning the Barnwell Low-Level Radioactive Waste Disposal Site; interfaced with State and Federal authorities.

5/78 - 9/78

EBERLINE

Health Physicist Consultant, Albuquerque, NM  
Performed environmental assessment and field work in Wyoming for a proposed uranium mining complex; participated in field sampling and analytical efforts for Enewetok Atoll project in the South Pacific.

9/77 - 5/78 EBERLINE S.E. ANALYTICAL LABORATORY  
Laboratory Manager, Columbia, SC  
Supervised environmental and bioassay analytical laboratory.

4/71 - 9/77 SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL  
Health Physicist II, Columbia, SC  
Responsible for registration, inspection, and compliance of electronic products, e.g., x-ray machines, accelerators, electron microscopes; responsible for licensing and compliance of all radioactive material users.

1970 - 1971 SOUTH CAROLINA AIR NATIONAL GUARD  
Staff Sergeant  
Maintained and installed mobile electronic communications equipment.

1968 - 1970 SCHOFIELD HIGH SCHOOL  
Instructor, Aiken, SC  
Instructed biology and physical science.

#### PROFESSIONAL ASSOCIATIONS

American Nuclear Society: member, 1978

Argonne National Laboratory, Peer Review Group for "Handbook of Environmental Monitoring of Low-Level Waste Disposal Sites" (DOE/LLW-13Tg): member, May 1982

The Conservation Foundation, Dialogue Group "Toward a National Policy for Managing Low-Level Radioactive Waste": member, May 1981

Health Physics Society: member, 2/72; Admissions Committee: member, 1981

Keystone Center Evaluation Team, "Evaluating Public Involvement in the National Low-Level Radioactive Waste Management Program" (DOE/LLW-10T): member, September 1983

#### PUBLICATIONS

Ebenhack, D. G., et al, "Low-Level Radioactive Waste Disposal," in Proceedings of the First Annual Hazardous Materials Management Conference. Wheaton, IL: Tower Conference Management Co., 1983, pp. 107-111.

ATTACHMENT 2

Resumes of Responsible Individuals



RESUME OF  
JERRY L. MASON  
GENERAL MANAGER - TRANSPORTATION SERVICES  
MAY 15, 1985

Education

Transportation and Transportation Law, Columbia College, Columbia, South Carolina, 1972-1974.

Rates and Tariffs Course, 1970

Effective Speaking and Human Relationships, Dale Carnegie, Atlanta, Georgia, 1970

Member of the Management Council of the American Trucking Association

Member of Atomic Industrial Forum (AIF) Subcommittee on Transportation

Experience

CHEM-NUCLEAR SYSTEMS, INC., BARNWELL, SOUTH CAROLINA -- GENERAL MANAGER - TRANSPORTATION SERVICES. Held accountable for all Transportation Departments and functions which include Operations, Maintenance, Safety/Training, Finance, Cask Maintenance, Equipment (45 tractors, 90 trailers, 70 licensed casks)/Permits, and Sales. Administers the overall activities of the nuclear Transportation Division maintaining a safe, profitable, and efficient operation. Responsible for the five-year strategic planning which is updated on a yearly basis. Appointed to the CNSI Management Committee in December 1984. The primary responsibility for this committee is to serve as Decision Makers on major policies, various strategies, and major acquisitions for the company. We serve as a mini Board of Directors (quarterly). Also, appointed to a Proposal/Contract Review Committee responsible for reviewing and approving all paperwork sent to customers. This includes equipment, pricing, and philosophy. Asset responsibility exceeds \$8 million and yearly sales also exceed \$8 million; personnel total approximately 90. (1982-Present)

Prior experience includes 15 years in the Transportation industry, 12 of which were in direct management and 6 years in the area of sales management. Other responsibilities included regulatory interface, public relations, and personnel.

J&M TRANSPORTATION, MILLEDGEVILLE, GEORGIA -- DIRECTOR OF OPERATIONS. Responsible for Operations Department, with 10 terminal locations, License and Registration Department, Fuel Department, and Central Dispatch. Direct supervision of 57 people in Milledgeville Office and all terminals, and over 500 drivers. Attained Executive Management Committee, March 1981. Established five major policies which improved cash flow, controlled equipment inventory, decreased overtime, streamlined licensing, and contracted security to outside agencies at a cost and efficiency savings. (1981-1982)



RESUME OF  
JERRY L. MASON  
GENERAL MANAGER - TRANSPORTATION SERVICES  
MAY 15, 1985  
(CONTINUED)

C&H TRANSPORTATION COMPANY, DALLAS, TEXAS -- REGIONAL SALES MANAGER. Area of responsibility for largest heavy hauler in United States (1700 tractors, 3000 trailers, and 2000 drivers) included entire Southeast. Supervised six salesmen and serviced own old accounts. Established complete operating budgets for function and area; attended equipment auctions; helped establish terminal and renovate facility. (2/78-1/81)

-- SALES REPRESENTATIVE. Maintained and established accounts in Mid-Atlantic area. Helped train new Terminal Managers in Operations and Sales. Maintained information on all authority and tariffs within the company and of most of our competitors. (2/75-2/78)

-- TERMINAL MANAGER, WEST COLUMBIA, SOUTH CAROLINA. Completely rebuilt terminal from base of one employee; responsibilities similar to those above. Terminal grew at average 15% per year. Duties included Company checking account and advances (bonded). Responsibility extended throughout Carolinas. Hired drivers and terminal personnel. (8/72-2/75)

-- TERMINAL MANAGER, JACKSONVILLE, FLORIDA. Managed Florida and South Georgia territory. Performed terminal operations, including forecasts, personnel, sales. (3/72-8/72)

HORNE HEAVY HAULING, INC., ATLANTA, GEORGIA -- OPERATIONS MANAGER. Responsibilities included personnel, safety, dispatch, sales, permits, vehicle registration, regulatory compliance, and company authority and operating rights. (1972-1972)

HOME TRANSPORTATION COMPANY, ATLANTA, GEORGIA -- DISPATCHER. (1969-1971)

LOCKHEED-GEORGIA COMPANY, ATLANTA, GEORGIA -- CHEM MILL OPERATOR. (1968-1969)

SUPERIOR TRUCKING COMPANY, ATLANTA, GEORGIA -- SAFETY DEPARTMENT AND OPERATIONS DEPARTMENT. (3/68-9/68)

LOCKHEED-GEORGIA COMPANY, ATLANTA, GEORGIA -- CHEM MILL OPERATOR. (1966-1968)

## RESUME

LESLIE K. POPPE

SEPTEMBER 5, 1985

DIRECTOR OF LICENSING

### EDUCATION

B.S, Engineering/Nuclear Option, Idaho State University, 1975.

### CERTIFICATIONS

Certificate in Health Physics Technology, Awarded by AEC.

### EXPERIENCE SUMMARY

Mr. Poppe has 15 years experience in the nuclear industry ranging from development and implementation of radiological and environmental control programs to the development and management of shipping cask licensing programs. In his present position as Director of Licensing Mr. Poppe is responsible for maintaining the company's radioactive material licenses and cask certificates. In addition, he is responsible for liaison for all company licenses with the NRC and other federal and state agencies.

### WORK HISTORY

1984 - Present - Director Licensing - Chem-Nuclear Systems, Inc. - Responsible for the maintenance of all CNSI Radioactive Material Licenses, radioactive material transportation permits, and certificates of compliance for transportation casks and high integrity containers. Responsible for review, submittal and regulatory interface concerning new and existing licenses, permits, certificates of compliance and topical reports. Manage technical personnel. Responsible for customer compliance for low level waste shipments at the Barnwell Site. Responsible for procedures for the safe transport, handling and disposal of radioactive wastes. Overall responsibility for Chem-Nuclear's compliance with federal, state and local regulations at company sites and for company equipment. Manages the liaison program with federal regulatory agencies.

1981 to 1984 - Present - Corporate Health Physicist - Chem-Nuclear Systems, Inc. - Responsible for the development and implementation of CNSI policies and procedures for the safe transport, handling, and disposal of radioactive material. Overall responsibility for CNSI radiation protection programs. Major tasks include:

- o Chair CNSI ALARA and Emergency Response Committees.
- o Perform HP audits/reviews of all CNSI projects.
- o Preparation/review of CNSI radiation protection procedures.
- o ALARA review of equipment and facility designs.

1978 - 1981 - Manager Radiological Engineering, UNC Nuclear Industries - Hanford - Responsible for the radiological control program for the N-Reactor and DOE-RL. Specific responsibilities included: preparation of the environmental impact statement for decommissioning the Shippingport reactor; developing programs to implement ALARA, contamination control, radiological area surveillance, and computer trend analysis; and developing the MORT-based review checklist system. Responsible for maintaining and updating six company radiation control manuals and for performing internal and external dosimetry. Developed emergency preparedness procedures and radiation detection instruments. Acted as liaison with DOE on matters involving compliance with radiological regulations.

1976 - 1978 - Senior Radiological Health and Safety Engineer, Idaho National Engineering Laboratory - Responsible for implementation of INEL's Safety and Radiological Control Procedures. Specific duties included: writing and reviewing company safety standards; developing ALARA policies; conducting safety training courses; and functioning as Safety Division reviewer for various equipment and facility designs, and operating procedures. Performed radiological analyses for various government projects including Loss of Fluid Test Reactor (LOFT), Power Burst Facility (PBF), Sodium Loop Safety Facilities (SLF), and the Test Reactor Area (TRA) using various computer codes such as ISOSHLD, RSAC, ORIGEN, and PDQ. Calculated airborne radioactive releases to the environment and their resulting dosages to the population. Authored or co-authored various safety analysis documents for the LOFT Irradiated Fuel Storage Facility and the Test Area North Hot Shop.

1972 - 1976 - Health Physicist, University of Arizona - Responsible for implementing and maintaining the radiological control program for the university. Specific duties included setting up and conducting routine contamination and radiation surveys for the main university campus and the University Medical College. Maintained records of all radioactive material transactions including all incoming material and that disposed of through burial or effluent disposal. Calibrated survey instruments for the university. Set-up and conducted the bioassay and radiation monitoring programs.

#### PROFESSIONAL AFFILIATION

Member - Health Physics Society.

Member - American Nuclear Society.



NAME: LEONARD D. TONER

POSITION: ASSISTANT GENERAL MANAGER TRANSPORTATION SERVICES

EDUCATION:

1968 Naval Nuclear Power Program, Theory and Operational Phases

Numerous Naval Nuclear Technician Schools during Tour of Duty

1978 AMA Advanced Management Skills and Techniques for First-Line Supervisors

1978 An Action Workshop for Supervisors: How to Maintain a Non-Union Operation

1982 AMA Management Course

EXPERIENCE SUMMARY:

CHEM-NUCLEAR SYSTEMS, INC., BARNWELL, SOUTH CAROLINA

9/82-Present General Manager Transportation Services

Held accountable for the following Transportation Departments: Maintenance Shop, Safety/Training, and Cask Maintenance. Function as Team Manager for Emergency Response Team. Responsible for writing and updating all Transportation procedures. Provide technical support to Marketing Division. Conduct daily operations of the Transportation Division during the absence of the Director of Transportation.

2/81 to 9/82 Transportation Operations Manager

Responsible for all phases of the Transportation operations; including dispatch, customer requests for equipment, interface with Transportation Maintenance, and Safety/Training. Provide Finance Department with required information for all shipments. Supervise the operations of two Transportation satellite terminals.

3/76 to 2/81 Site Operations Supervisor

Supervise offloading and placement of material in trenches. Supervise equipment operations and operator training, trench activity, excavation, backfilling, maintenance, and site decontamination. Responsible for site maintenance and training of Site Operations personnel. Responsible for the coordination and supervision of all offloading and burial activity in accordance with State and Federal regulations and established company procedures.



NAME: LEONARD D. TUNER

POSITION: ASSISTANT GENERAL MANAGER TRANSPORTATION SERVICES

NL INDUSTRIES, BARNWELL, SOUTH CAROLINA

9/75 - 2/76 Technical Representative

Responsible for proving technical liaison for the loading and shipping of irradiated nuclear fuels from various utility sites to nuclear reprocessing plants. Provided technical liaison to the customer in areas of equipment design and operation. Interfaced with reprocessing plant to unloading of shipping cask. Assisted in developing procedures for securing NRC permits to ship utility fuels and reporting forms for transportation of fuels, also, assisted in training of personnel.

INDUSTRIAL REACTOR LABORATORIES, PLAINSBORO, NEW JERSEY

2/73 - 9/75 Senior Reactor Operator

Responsible for the supervision of the production and maintenance of the reactor facility. Responsible for the safe operation of the reactor and its interdependent systems; co-writer of the Industrial Reactor Laboratories, Inc. Operating Procedures Manual; also, wrote numerous handouts on electronic systems for qualification and re-qualification programs. Held Nuclear Regulatory Commission Reactor Operator License #OP-3358 and Senior Reactor Operator License #SOP-2137.

U.S. NAVY SUBMARINE FORCE

1/66-2/73 POLARIS Submarine, USS John Marshall. Served as 1st Class Electronic Technician; Reactor Operator; Electrical Operator & Engineering Water Supervisor.

## RESUME

MARK S. WHITTAKER

CORPORATE HEALTH PHYSICIST

MAY 8, 1985

### EDUCATION

M.S., University of Michigan, Ann Arbor, Michigan, Major: Health Physics, 1980

B.A., University of Michigan, Ann Arbor, Michigan, Major: Physical Sciences, 1972

"Radioactive Waste Management", Rensselaer Polytechnic Institute, 1981

"Health Physics in Radiation Accidents," REAC/TS, Radiation Emergency Assistance Center/Training Site, Oak Ridge Associated Universities and U.S. Department of Energy, Oak Ridge, Tennessee, 1982

### CERTIFICATION

Certified Radiation Worker, Radiation Worker Training Program, Chem-Nuclear Systems, Inc., Columbia, South Carolina, 1980

Certified CNSI Broker, CNSI Broker Program, Chem-Nuclear Systems, Inc., Columbia, South Carolina, 1980

### EXPERIENCE SUMMARY

Management, radiological and environmental monitoring; emphasis on training and certification, health physics, and emergency response actions. Experience in radiological measurements, project management, radiological and hazardous substances shipment, transportation, and decontamination and decommissioning field operations management. Experience in health physics and science training; text and audiovisual aid evaluation and selection.

### WORK HISTORY

1985 - Present - Corporate Health Physicist - Chem-Nuclear Systems, Inc. - Responsible for the development and implementation of CNSI policies and procedures for the safe transport, handling, and disposal of radioactive material. Overall responsibility for CNSI radiation protection programs. Major tasks include:

- o Chair CNSI ALARA and Emergency Response Committees.
- o Perform HP audits/reviews of all CNSI projects.
- o Preparation/review of CNSI radiation protection procedures.
- o ALARA review of equipment and facility designs.

MARK S. WHITTAKER

1984 - 1985 - Director, Licensing - Chem-Nuclear Systems, Inc. - Direct preparation of license applications for new disposal sites and radioactive material handling and processing facilities. Provide direction to company personnel to ensure compliance with all CNSI licenses for operations outside South Carolina. Major tasks include:

- o Direct preparation of the license renewal application for the Barnwell LLW Site License and the Experimental Testing Laboratory License.
- o Direct preparation of supporting documents for the Nell, Texas SM Site License Application.
- o Assist in preparation of proposal/license application for the California LLW Site.

1983 - 1984 - Manager, Radiological Programs and Vicinity Properties, UMTRA Project Albuquerque Office - Develop and implement plans for assessment of uranium mill tailings contamination at mill sites and at vicinity properties and for radiological control during remedial action at mill sites and vicinity properties.

Major tasks included:

- o Hire, train, and direct field staff performing assessment of contamination and maintaining radiological control during remedial action.
- o Develop the Vicinity Property Plan for the Remedial Action Contractor detailing the assessment and remedial action plans for vicinity property work at all the UMTRA Sites.
- o On-site management of radiological control during start-up of the first mill site remedial action work at the Canonsburg, PA mill site.
- o Development and calibration of an on-site system for the measurement of radium concentration in soil.

1981 - 1983 - Manager, Compliance Assistance and Technical Services (CATS) - Chem-Nuclear Systems, Inc. - Direct and supervise a department which provides technical services primarily in health physics and other areas such as chemical waste management and industrial hygiene. Group assignments include:

- o Gamma ray shielding, design, and testing.
- o Radiation protection program development for reactor facilities, low-level waste sites, and decontamination and decommissioning projects.
- o Health physicist training development and implementation primarily for reactor facilities.
- o Radioactive waste management studies.
- o Decontamination and decommissioning guidance in the areas of techniques, regulations, and release surveys.

1980 - 1981 - Project Engineer, Compliance Assistance and Technical Services (CATS) - Managed CNSI Broker Certification Program, including training and certifying inspectors for radwaste shipments and transportation; performed radwaste packaging and transportation audits, radiological assessments and shielding calculations; prepared health physics and radiation safety procedures and manuals; provided licensing assistance.

MARK S. WHITTAKER

1979 - Assistant Health Physicist - Palisades Nuclear Plant, Covert, Michigan - Performed area surveys, dosimeter testing and calibration respirator fitting; reviewed health physics procedures.

1974 - 1978 - Physical Science Instructor - Flushing Junior High School, Flushing, Michigan - Taught and evaluated 180 students per year; assisted in development of science programs; selection and design of appropriate text and audiovisual materials.

PROFESSIONAL AFFILIATIONS

Member, American Nuclear Society

Member, Health Physics Society

Member, American Association for the Advancement of Science



ATTACHMENT 3

CNSI Procedures