



2020 Dow Center  
June 1, 2000

40-17  
The Dow Chemical Company  
Midland, Michigan 48674

Mr. Larry Camper, Chief  
Decommissioning Branch  
U.S. Nuclear Regulatory Commission  
One White Flint North  
11555 Rockville Pike  
Rockville, MD 28052

Dear Mr. Camper,

This letter serves as a request to amend The Dow Chemical Company License STB-527, Condition 11, to change the designated Radiation Safety Officer (RSO) from Kenneth Baker to Ricardo Burke. Mr. Burke's resume is provided in Enclosure 1. Mr. Burke has extensive experience in radiation safety and ALARA, including supervisory roles. His experience includes radiological environments involving greater risk and more complex RP programs than is required for the low-level thorium activity at the Bay City site. We believe that his qualifications fully satisfy the requirements for RSO at this site.

A revised organization chart is provided in Enclosure 2. In addition to requesting the organization chart, NRC's December 7, 1999, letter contained several comments that were related to organizational and responsibilities. These comments will be addressed in Dow's revision to the Radiological Health and Safety Plan that will be submitted for NRC review.

Mr. Burke, will be supported by two CHP's that will provide technical assistance as needed. Mr. Bruce Mann will assist in the oversight of the onsite gamma spectroscopy laboratory to ensure continued high quality operation. Mr. David Fauver will provide input in the areas of subsurface soil sampling, free-release, final survey, and decommissioning planning. Their resumes are provided in Enclosure 3.

Ms. Maria Sandow will continue as the assistant RSO and the Health and Safety Officer for the site.

Sincerely,

Ben Baker  
Project Manager  
The Dow Chemical Company  
2020 Dow Center  
Midland, MI 48674  
(517) 636-0787

Enclosures (3)

NMS501Rblc

cc Sam Nalluswami, NRC Rockville  
Ed Kulzer, NRC Region III  
Dave Fauver, RSI  
Gerard Sgro, Radian  
Ricardo Burke, RSI

**ENCLOSURE 1**

**Ricardo V. Burke**

**W- ((517) 638-1101**

**EDUCATION:**

Northeast High School (Philadelphia, Pa.) - graduated June 1980

Philadelphia Electric Company - General Physics Fundamentals  
Training; May 1987 - August 1990

Commonwealth Edison - Initial Radioactive Material Shipping  
Certification; November 1998

Hamilton University (Jackson, Wyoming) - BS Environmental Science;  
graduated February 1999

**EXPERIENCE:**

**05/03/99  
Present**

**Reactor Services - Commonwealth Edison  
ALARA Manager**

**03/08/99-  
04/30/99**

**LaSalle Nuclear Power Station  
ALARA Manager**

Provided supervisory oversight to contractor ALARA personnel for maintenance/major modifications to support the Restart of Unit 2 activities. Generated person-Rem estimates, ALARA plans and reports as required for implementation and assessment of exposure reduction techniques. Participate in and/or perform assessments to determine the root cause of radiological incidents, inadequate personnel performance, or other identified deficiencies. Provide radiological input at and attend major modifications project meetings. Prepared and approved maintenance work packages through work control.

**10/17/97-  
03/8/99**

**Dresden Nuclear Power Station-Unit 1 (Decommissioning Project)  
ALARA Manager**

Provided supervisory oversight to contractor/station ALARA personnel for maintenance/major modifications for Unit 1 Safe Storage/ Dry Cask Storage Project activities. Generated Person-Rem estimates, ALARA plans and reports as required for implementation and assessment of exposure reduction techniques. Participate in and/or perform assessments to determine the root cause of radiological incidents, inadequate personnel performance, or other identified deficiencies. Provide radiological input at and attend major modifications project meetings. Prepared and approved maintenance work packages through work control.

**11/11/96-  
10/17/97**

***Dresden Nuclear Power Station-Unit 1 (Decommissioning Project)  
Lead Radiation Protection Supervisor***

Reported directly to the Station Radiation Protection Manager. Responsible for implementation of the radiological control program for all the Unit 1 Safe Storage/ Dry Cask Storage Project activities. Providing supervision and direction to the project RP Supervisors, ALARA Engineers, Lead RP Technicians and all other contracted radiation protection personnel. Develop and maintain personnel schedules, budgets and other project management tracking mechanisms. Participate in and/or perform assessments to determine the root cause of radiological incidents, inadequate personnel performance, or other identified deficiencies. Provide radiological input at and attend major modifications project meetings. Conduct performance evaluations of RP Supervisors as required to ensure optimum performance.

**3/2/96-  
11/1/96**

***Dresden Nuclear Power Station-Unit 1 (Decommissioning Project)  
ALARA Engineer/R.P. Supervisor***

Providing supervisory oversight to contractor/station Radiation Protection Technicians during the scheduled Unit 1 Safe Storage/ Dry Cask Storage Project. Providing Person-Rem estimates ALARA plans and reports, as required.

**5/8/95-  
3/1/96**

***Dresden Nuclear Power Station  
ALARA Engineer/R.P. Work Analyst***

Provided supervisory oversight to contractor/station ALARA personnel for maintenance/major modifications for a scheduled refueling outage. Generated Person-Rem estimates, ALARA plans and reports as required for implementation and assessment of exposure reduction techniques. Specifically responsible for all Refuel Floor personnel and activities, all valve repairs / replacements, bottom head drain replacement, and all major activities outside the Drywell. Prepared and approved maintenance work packages through work control.

**3/20/95-  
4/29/95**

***Pilgrim Nuclear Power Station  
Senior Health Physics Technician***

Provided radiological support at the Drywell during a scheduled refuel outage; provided support for various activities including ISI, valve cutouts and replacements, and various shielding operations.

**1/20/95-  
3/19/95**

***Maine Yankee Atomic Power Station  
Senior Health Physics Technician***

Provided radiological support for steam generator eddy current and sludge lancing evolutions.

**9/4/94-  
10/21/94**

***Pilgrim Nuclear Power Station  
Senior Health Physics Technician***

Provided radiological support at the Drywell during a scheduled refuel outage; provided support for various activities including ISI, valve cutouts and replacements, and various shielding operations

**6/13/94-  
7/2/94**

***Seabrook Nuclear Power Station  
Senior Health Physics Technician***

Provided radiological support for the removal and reinstallation of four reactor coolant pumps.

**3/28/94-  
5/27/94**

***Seabrook Nuclear Power Station  
Senior Health Physics Technician***

Provided radiological support for steam generator eddy current and sludge lancing evolutions.

**3/29/93-  
5/28/93**

***Pilgrim Nuclear Power Station  
Senior Health Physics Technician***

Provided radiological support at the Drywell during a scheduled refuel outage; provided support for various activities including ISI, valve cutouts and replacements, and various shielding operations.

**12/14/92-  
3/27/93**

***Dresden Nuclear Power Station  
Lead Health Physics Technician***

Assigned to maintenance department to coordinate all health physics activities during a scheduled refueling outage. Supervised all contract health physics personnel assigned to the department for support of CRD removal/installation, major valve/pump repairs.

**10/12/92-  
11/21/92**

***Pilgrim Nuclear Power Station  
Senior Health Physics Technician***

Provided radiological support at the Drywell during a scheduled refuel outage; provided support for various activities including ISI, valve cutouts and replacements, and various shielding operations.

**8/24/92-  
10/10/92**

***Seabrook Nuclear Power Station  
Senior Health Physics Technician***

Provided coverage for the removal of the reactor coolant resistance temperature detector (RTD).

**3/30/92-  
7/3/92**

***Calvert Cliffs Nuclear Power Plant  
Senior Health Physics Technician***

Providing coverage for containment/auxiliary building control points performing job specific surveys as needed.

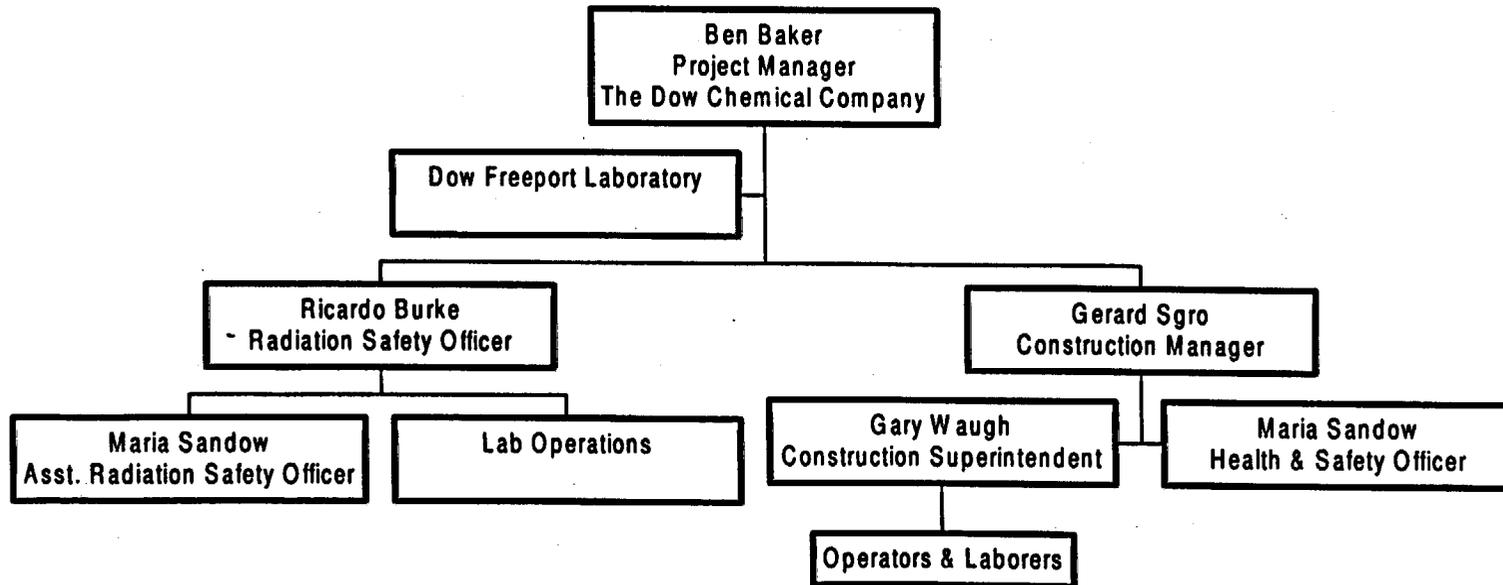
**5/7/87-  
3/27/92**

***Limerick Generating Station  
Senior Health Physics Technician***

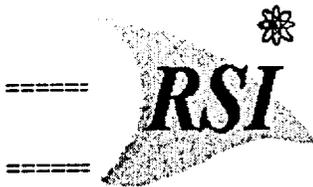
Received training for all health physics activities to include chemical and physical properties of matter, instrumentation and calibration, radiological fundamentals, radioactive material shipping, emergency planning and preparedness, first aid, industrial hygiene, and other related material. Provided health physics coverage for all maintenance activities performed during scheduled outages to include CRD Removal/replacement, valve/pump repairs, reactor disassembly, vessel inspections, and other routine activities. Monitored areas for radiation, contamination and airborne surveys as required. Provided instruction and supervision to Health Physics Technicians during scheduled refueling outages, analyzed survey data and prepared RWPs in accordance with established procedures and guidelines. Responsible for writing, reviewing and implementing all health physics operation and instrumentation procedures and guidelines.

**ENCLOSURE 2**

# Dow Chemical Thorad Project Organization



**ENCLOSURE 3**



## **RADIOLOGICAL SERVICES, INC.**

**David N. Fauver, CHP**  
**Principal Radiological Engineer**

**Education:** 1983 - University of Florida  
Master of Engineering, Health Physics

1982 - University of Florida  
B.S. Environmental Engineering

**Certification:** American Board of Health Physics (Comprehensive)

**Experience:**

01/99 - Radiological Services, Inc.  
Present Vice President of Decommissioning and Technical Services  
Provide guidance and technical expertise to various client projects in regards to decommissioning planning, dose assessment, characterization, final status survey, and regulatory compliance. Serves as corporate Health Physicist.

04/91 - U.S. Nuclear Regulatory Commission  
12/98 Senior Project Manager/Health Physicist  
Duties: Program Manager for NRC's Site Decommissioning Management Plan (SDMP). Provided technical and policy direction to NRC staff responsible for the decommissioning of over 50 contaminated sites. Identify issues impeding decommissioning progress at SDMP sites and develop new decommissioning guidance approaches. Advised senior NRC management on strategies for improving regulatory oversight, implications of emerging technical policy, and solutions to site-specific decommissioning problems. Interfaced with licensees and industry groups, i.e., the Nuclear Energy Institute and the Fuel Cycle Facilities Forum, to ascertain the current challenges facing the decommissioning industry. Respond to Congressional inquiries related to SDMP sites, GAO reports, and the Committee hearings. Prepared annual reports and brief Commission on SDMP status and site-specific progress.

Senior Health Physicist for decommissioning. Reviewed and approved health and safety plans, characterization reports, dose assessments, radioanalytical data, and onsite disposal plans for materials and power reactor sites. Reviewed decommissioning plans and issued approving license amendments. Developed Safety Evaluation Reports and Environmental Assessments to meet NEPA requirements. Health physics advisor to senior management and decommissioning staff at NRC Headquarters and Regional Offices.

Developed technical positions to solve generic health physics problems affecting decommissioning sites, examples include: 1) method for averaging subsurface contamination to demonstrate compliance with soil remediation criteria, 2) justification for increasing surface contamination limits for H-3 and Fe-55 at the Shoreham and Fort St. Vrain reactors, and 3) risk-based hazard analysis to justify no action at formerly licensed facilities containing minimal contamination above NRC's limits. Provided detailed analyses of site-specific health physics issues at decommissioning sites and negotiate acceptable solutions with licensees. Reviewed international, national, and state standards from ICRP, IAEA, ANSI-HPS, NCRP and CRCPD, as well as guidance documents from EPA and DOE.

NRC lead on technical and policy issues related to final site surveys. Reviewed and approved final survey plans and reports for over 30 materials sites. Developed NRC guidance on the content of final survey plans and the inspection of licensee survey programs. Member of the committee to develop Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM). Expert on MARSSIM method and prepared to develop cost-effective survey plans based on the method.

Technical Manager for NRC oversight of the Pathfinder, Shoreham, and Fort St. Vrain Final Survey projects. Reviewed and approved final survey plans and reports for the three reactor sites that were each unique to NRC and industry. Technical lead on field inspections of the licensee's survey programs. Developed confirmatory survey plans, for use by NRC's contractor and inspectors, to verify the accuracy and precision of the licensee's results. Developed and implemented a streamlined inspection process, increasing emphasis on licensee's QA program, that resulted in a cost reduction of over \$500K in NRC fees to Fort St. Vrain, as compared to Shoreham.

Lead multi-disciplinary team from the Office of Nuclear Material Safety and Safeguards (NMSS) to review NRC's draft guidance on the recently published rule, "Radiological Criteria for License Termination," (July 21, 1997). Responsible for ensuring that the guidance was technically acceptable, consistent with NRC decommissioning policy, and could be effectively implemented by licensees. The guidance addresses dose assessment, final surveys, ALARA, and restricted use/institutional controls. Served as technical leader for a team of over 15 staff to develop the baseline criteria for compliance with the Radiological Criteria rule. Evaluated and integrated the output of several technical workgroups. Advised senior management on team progress and the acceptability of alternate proposals. Member of interagency Steering Committee on Radiation Standards (ISCORS), Cleanup Subcommittee. ISCORS coordinates regulatory issues on radiation standards and is comprised of staff from EPA, DOE, NRC, and other Federal Agencies.

NRC representative to the Advisory Committee on CRCPD Suggested State Regulation for the licensing of naturally occurring radioactive materials (NORM).

02/88 -  
04/91

Gulf States Utilities (GSU) Co., River Bend Station  
Radiological Health Supervisor

Duties: Directed the personnel dosimetry department at the GSU River Bend Nuclear Power Station (1000 Mwe BWR). Provided technical oversight of external dosimetry, internal dosimetry, and respiratory protection programs. Managed health physicists, technicians, and support staff to accomplish department goals. Revised and restructured operating procedures for TLD readers, whole body counters, and records management database to improve efficiency and accuracy. Developed dose assessment algorithm for four element TLD's to discriminate between gamma, beta, x-ray, and neutron radiation, meeting NVLAP requirements. Performed internal dose calculations from inhalation of activation products. Developed procedure to calculate skin dose from hot particles. Served as acting plant Radiation Protection Manager. Designated as radiation protection advisor for the GSU Emergency Planning Organization.

03/84 -  
12/87

Reynold Electrical and Engineering Company, Inc.  
Health Physicist III/Supervisor

Duties: Managed the Effluent and Environmental Monitoring program at the Department of Energy Nevada Test Site (NTS). Supervised technicians in the sampling of over 350 NTS monitoring stations, effluent waste streams from nuclear weapons testing, and decontamination facilities. Coordinated sample analyses with the NTS radioanalytical laboratory and reviewed measurement results. Assessed annual NTS boundary exposure and potential for radionuclide migration offsite. Developed and implemented comprehensive quality assurance plan for radioanalytical laboratory. Prepared annual reports to DOE. Developed program, and performed measurements, to determine radon daughter concentrations in Ranier Mesa Tunnels. Evaluated radioactive and mixed hazardous waste sites for DOE Nevada Operations Office CERCLA response to DOE Headquarters. Conducted site-wide ALARA investigations and audits. Manager of External Dosimetry Program for nuclear weapons testing operations. Responsible for processing and evaluating TLD's for over 14,000 personnel. Converted NTS dosimetry program from film to TLD's, including installation and testing of new equipment and development of records management databases. Developed and implemented new operating procedures. Supervised and trained technicians and data processing staff.

06/82 -  
01/84

University of Florida under contract with Florida Power Corporation (FPC)  
Project Manager/Graduate Assistant

Duties: Managed the environmental monitoring program for the Crystal River Nuclear Power Plant. Responsible for sampling and analysis to meet FPC's Technical Specifications. Trained new assistants in radioanalytical techniques. Reviewed analytical results and prepared annual reports. Collected monthly, quarterly, and annual samples of air, water, and sediment, as well as biological, and vegetation samples. Performed analyses using gamma spectroscopy, surface barrier detectors, and liquid scintillation counters. Developed quality assurance plan for laboratory.

**Publications:**

"Dose Modeling for the License Termination Rule," U.S. Nuclear Regulatory Commission, Washington, DC, NUREG/CP-0163, 1998.

"Radiological Surveys to Demonstrate Compliance with Decommissioning Limits," Proceedings of the Second Workshop on Residual Radioactivity and Recycling Criteria, Japan Atomic Energy Research Institute, Tokai-mura, Japan, JAERI-Conf 95-015, 1995.

"Site Decommissioning Management Plan," U.S. Nuclear Regulatory Commission, Washington D.C., NUREG-1444, Supplement 1, 1995.

"Site Decommissioning Management Plan," U.S. Nuclear Regulatory Commission, Washington D.C., NUREG-1444, 1993.

**Presentations:**

"NRC Final Rule on Radiological Criteria for Decommissioning," NRC Public Workshop on Demonstrating Compliance with NRC's Radiological Criteria for License Termination, Washington, DC, 1998.

"The NRC Site Decommissioning Management Plan - Recent Activities," U.S. NRC Regulatory Information Conference, Washington, DC, 1997.

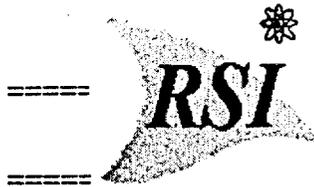
"Major Differences Between Final Survey Guidance in NUREG/CR-5849 and MARSSIM," Presentation at 42nd Annual Health Physics Society Meeting, San Antonio, TX, 1997.

"Classification of Areas by Contamination Potential and Identification of Survey Units," Oak Ridge Institute for Science and Education Training Course on MARSSIM, Oak Ridge, TN, 1997.

"The U.S. NRC Decommissioning Program - Regulations and Guidance," American Nuclear Society Annual Meeting, New Orleans, LA, 1994.

"The NRC Decommissioning Program," ASTM Workshop on Radiological Decontamination and Decommissioning, Atlanta, GA, 1994.

"NRC Termination Survey Requirements - Compliance Using Draft NUREG/CR5849," Waste Management '93, Tucson, AZ, 1993.



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## **RADIOLOGICAL SERVICES, INC.**

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### **Bruce J. Mann, CHP Senior Radiological Engineer**

**Education:** 1960 - Ashland College  
B.S. Degree in Mathematics  
1964 - University of California  
M.S. Degree in Bio-Radiology  
1972 - University of California  
M.S. Degree in Nuclear Engineering

#### **Certifications:**

1969 - American Board of Health Physics  
Certified Health Physicist  
1976 - Registered Professional Engineer  
California, Nuclear

#### **Qualification Summary**

Mr. Mann has thirty five years of experience in Health Physics and Environmental Engineering with 20 years in nuclear industry projects. He served as a full time consultant from 1980 to 1997 for Government and Nuclear Industry organizations. During this period, he played a key role in establishing and managing support organizations for several large nuclear outage and decommissioning projects. He has considerable experience in decommissioning characterization and final status surveys. He was employed in Federal Agencies (US Public Health Service and USEPA) for 11 years, working in environmental radiological monitoring and evaluation. Earlier in his career, he worked at nuclear research facilities for three years as a health physicist and held reactor operators licenses at two research reactors. He joined Commonwealth Edison in November 1997 as a program manager in their corporate decommissioning services organization.

Mr. Mann is a Certified Health Physicist and a registered professional engineer in Nuclear Engineering. He has participated in a number of studies of nuclear technology and has authored or co-authored over 40 technical publications and presented papers at numerous symposia and technical meetings. He has also performed audits and operational reviews at a number of nuclear facilities.

**Experience:**

- 1999 - Radiological Services, Inc.  
Senior Radiological Consultant  
Since joining RSI in August of 1999, Mr. Mann has been working on several site cleanup and decommissioning projects. These include implementing the decommissioning plan for a former metals production facility with extensive source material contamination and review of power reactor characterization and license termination plans. He also performed an independent assessment of a nuclear plant decommissioning project off-site materials recovery program.
- 1997 - Commonwealth Edison Corporation  
1999 Decommissioning Program Manager  
Joined the Decommissioning Services Organization in Nov. 1997 as Characterization Program Manager. Designed and supervised site-soil characterization study for Dresden Unit 1 Dry Cask Storage Facility. Was active in development of industry positions on emerging guidance for 10CFR20 Subpart E Decommissioning Radiological Criteria. Assisted with Zion Station Historical Site Assessment. In July 1998, assumed position in the corporate Chemistry Organization as Decommissioning and Environmental Technical Specialist after the Decommissioning Organization was disbanded. In this assignment he was responsible for development of a corporate environmental organization for the ComEd Nuclear Generation Group which supports six nuclear generation sites.
- 1997 - Trojan Nuclear Power Station  
Senior Decommissioning Consultant  
Provided assistance with Trojan Decommissioning Project - final radiological survey schedule planning, technical development and regulatory issue evaluation.
- 1997 - Electric Power Research Institute  
Senior Radiological Consultant  
Consultant to EPRI. Tasks included: preparation of a report which summarizes industry experience with radiological surveys for nuclear power decommissioning, assistance with development of users guides on radiological aspects of decommissioning and participation in an EPRI Support Team for assessment of a power reactor decommissioning project.
- 1997 - Connecticut Yankee Atomic Power Station  
Senior Radiological Consultant  
Consultant to Radiological Services Inc. Provided assistance to CY staff for site characterization. Performed review of plans and activities and provided recommendations.

- 1997 - Yankee Rowe Atomic Power Station  
Senior Radiological Consultant  
Consultant to TTX Associates Inc. Assisted with appraisal of final survey plan for Yankee Rowe Decommissioning and with technical basis development for survey methods.
- 05/95 - Public Service of Colorado, Ft. St. Vrain Nuclear Station  
01/97 Project/QA Engineer. Site Survey Program.  
Consultant to PSCo in support of the Final Site Survey (NUREG/CR-5849) for the Fort St. Vrain decommissioning project. Responsibilities included Quality Assurance and technical oversight of Final Site Survey activities and technical support for license and regulatory issue resolution. Currently assisting PSCo with lessons learned evaluation of decommissioning project.
- 11/91 - Long Island Power Authority, Shoreham Nuclear Power Station  
03/95 Project Engineer, Decommissioning, Radiological Controls Division  
Responsible for design and implementation of final radiation survey for Shoreham decommissioning performed under NUREG/CR 5849.
- 1991 - Scientific Ecology Group, Inc.  
Consultant  
Provided technical assistance to QA Department for audit of Ft. St. Vrain pre-decommissioning radiological characterization program.
- 1991 - Brookhaven National Laboratory  
1992 Consultant  
Assisted in DOE sponsored study of radiological engineering practices in DOE new facility designs. Assisted in review of radioactive waste processing facility designs at the Hanford Reservation
- 1993 - TLG Inc.  
Consultant  
Represented TLG as member of a two person team which advised Portland General Electric Company on radiological characterization for decommissioning of the Trojan Nuclear Power Station.
- 05/90 - Long Island Lighting Co., Shoreham Nuclear Power Station  
10/91 Staff Engineer Nuclear Engineering Dept.  
Consultant to ABB Impell Inc. Lead Engineer for preparation of Environmental Report Supplement for decommissioning of Shoreham Station. Maintained data base for controlled chemicals and performed reviews of chemicals for station chemical control program. Assisted in design of radiation surveys and evaluation of data for plant radioactivity characterization in preparation for decommissioning.

- 06/90 - Duane Arnold Nuclear Power Station  
 Consultant to Westinghouse/SEG  
 Member of team assembled to appraise the radiological protection program at the Duane Arnold Station. Evaluated management effectiveness.
- 10/89 - UC Berkeley TRIGA Research Reactor Decommissioning  
 04/90 Health Physicist and assistant to Executive Engineer.  
 Consultant to Biscraft NE Inc. Member of two-man team which provided contract management and safety oversight for the University during reactor disassembly and demolition activities. Helped design and implement termination radiation survey of facility.
- 09/11/89 - St. Lucie Nuclear Power Plant, Florida Power and Light  
 09/25/89 Consultant  
 Provided technical assistance to St. Lucie QA Department during audit of radiation protection program. Performed appraisal of HP technician training and HP operations.
- 05/89 - S. Cohen and Associates, Inc.  
 09/89 Associate  
 Assisted with support of US EPA rulemaking for high-level radioactive waste disposal. Helped prepare descriptions of geologic waste repository long-term release performance scenarios. This was to help determine if the DOE WIPP facility could meet the proposed EPA HLW standard. Assisted with evaluation of mining materials separation-processing techniques for treatment of Radium contaminated soils. Prepared waste management plan for 20 ton per hour processing plant design.
- 12/88 - Fort Calhoun Nuclear Power Station, Westinghouse Radiological Services, Inc.  
 05/89 Health Physics Consultant  
 Assisted with development of upgraded radiation protection program. Developed program description - radiation protection plan and performed technical review of new program procedures.
- 09/87 - Peach Bottom Atomic Power Station Unit 3  
 09/88 Health Physics Consultant - Re-circulation-RHR Pipe Replacement.  
 Provided technical assistance for collective dose estimates, hot particle assessment, radio-nuclide characterization and other special projects. Prepared reports of radiation protection activities for Project. Directed preparation of all Project final radiation protection reports.

- 01/87 - Peach Bottom Atomic Power Station Unit 3  
09/87 Radiation Protection Manager, - Recirc./RHR Pipe Replacement  
Responsible for technical direction and management of large temporary radiation protection organization established for the pipe replacement project (pre-outage phase).
- 09/86 - Peach Bottom Atomic Power Station, Unit 3  
01/87 Consultant, Recirc/RHR Pipe Replacement  
Technical Lead for planning radiation protection program and organization for the pipe replacement project.
- 06/85 - General Electric Nuclear Energy Business Operation, San Jose, CA  
09/86 Consulting Engineer  
Developed and helped present ALARA training to customer utility personnel. Assisted with ALARA planning study for Oyster Creek pipe replacement.
- 09/85 - S. Cohen & Associates (concurrent with above)  
07/86 Associate  
Lead technical consultant for Atomic Industrial Forum NESP Project. Developed standard method for preparing collective dose estimates in plant modification design stage. Prepared report distributed to AIF members (See Publication List).
- 06/84 - Peach Bottom Atomic Power Station - Unit 2 Pipe Replacement  
06/85 ALARA Engineer / ALARA Coordinator  
Represented utility Project Engineering Organization in ALARA evaluations. Coordinated conduct of multi-contractor ALARA program. Assisted with preparation of final ALARA report.
- 03/84 - Pilgrim Nuclear Power Station, Pipe Replacement Project  
06/84 ALARA Engineer  
Served as ALARA engineer in construction organization. Performed all ALARA activities associated with a large outage modification project.
- 07/83 - University of California, Berkeley  
02/84 Visiting Research Engineer, Nuclear Engineering Department  
Assisted several faculty members in presentation of seminars and lectures and helped develop research proposals.
- 02/82 - Teknekron Research, Inc., Bethesda, MD & Berkeley, CA.  
02/84 Consultant  
Assisted in development of technical assessment methods for NRC review of license applications for geologic high level radioactive waste disposal facilities. Co-author of several NUREG/CR reports (See Publication List).

- 09/81 - National Academy of Sciences Committee on High Level Waste Management  
07/83 Staff Consultant  
Assisted with two-year study of geologic isolation of high level radioactive waste from nuclear power plants.
- 10/81 - Chemrad Corporation, Houston, TX.  
06/82 Consultant  
Developed and presented (with assistance) initial - comprehensive ALARA training program for Rancho Seco Station.
- 04/80 - U. S. Senate Subcommittee on Nuclear Regulation, Washington, DC  
09/80 Consultant  
Assisted with study of US nuclear industry response to the accident at Three Mile Island. Interviewed utility and industry organization management personnel and helped prepare report to the Senate.
- 09/80 - Allied Nuclear, Inc.  
03/81 Consultant  
Assisted with development of technical-business proposals to potential utility and nuclear industry organizations for health physics services.
- 10/78 - California Energy and Resources Development & Conservation Commission  
04/80 Energy Project Specialist,  
Assisted with development of a program to monitor compliance with Commission siting permit requirements for energy facilities. Also evaluated potential Rancho Seco containment leak paths to determine their similarity to those during the accident at Three Mile Island. Prepared written and presented verbal testimony to a special NRC Atomic Safety and Licensing Board hearing.
- 05/79 - Presidents Commission on the Accident at Three Mile Island.  
12/79 Staff Member  
Assisted in several phases of the investigation of the accident. Assisted with preparation of technical reports of the Commission.
- 03/73 - US Environmental Protection Agency Radiation Programs, Las Vegas Facility  
10/78 Branch Chief  
Supervised a group of up to eight health physics professionals. Directed studies and evaluations of environmental radiological impacts of nuclear fuel cycle facilities. These included uranium mining and milling, power plants, waste burial sites, ocean dump sites and others. Performed as radiation monitor for Nevada test site weapons tests. Member of special Federal Energy Technology Review Panel in 1973.

- 06/72 - Teknekron Research, Inc. Berkeley, CA  
02/73 Research Assistant  
Assisted in comprehensive study of material throughputs and environmental residuals for major nuclear energy fuel cycle options. Resulted in a major report to the US Environmental Protection Agency.
- 09/69 - University of California, Berkeley, CA  
06/72 Graduate Student & Research Assistant  
Completed M.S. degree in Nuclear Engineering. Prepared amendment to the reactor safety evaluation report - evaluation of loss of cooling water accident. Licensed Operator, UC Berkeley Triga Reactor.
- 09/67 - University of California, Los Angeles, Research Reactor Facility  
09/69 Health Physicist  
Performed radiation monitoring and evaluated research experiments performed at the facility. Facilities included 500 kw reactor, neutron generator, x-ray diffraction units and radioisotope sources. Licensed Operator, UCLA Argonaut Reactor.
- 06/67 - Sandia Laboratories, Albuquerque, NM  
09/67 Health Physicist  
Assisted in monitoring diverse range of facilities associated with major weapons research and testing laboratory.
- 09/66 - Physics Department, University of New Mexico, Albuquerque, NM  
06/67 Graduate Student
- 06/64 - Robert A. Taft Sanitary Engineering Center, US Public Health Service,  
Cincinnati  
09/66 - Training Instructor  
Prepared training manual text, organized and helped deliver two-week training courses on environmental radiation monitoring topics.
- 09/63 - Biophysics Department, University of California, Berkeley, CA  
06/64 - Graduate Student  
Performed research in detection of internally deposited Sr-90 through detection of xray and bremsstrahlung radiation.
- 09/61 - Minnesota Department of Health, Minneapolis, MN  
09/63 - Radiation Specialist  
Performed inspections of medical x-ray and industrial radiography facilities. Assisted in conduct of environmental monitoring for atmospheric weapons fallout and the Elk River demonstration power reactor.

## **Recent Reports and Publications**

Mann, B. J., et. al, "Shoreham Decommissioning Project Termination Survey Final Report", Long Island Power Authority, September 1993.

Mann, B. J., et. al., "Shoreham Decommissioning Project Termination Survey Plan", Long Island Power Authority, October, 1992, revised April, 1993

Lim, T. H., Mann, B. J. and Patenaude, R. S., "Termination Radiation Survey for UC Berkeley TRIGA Research Reactor Facility", Abstract, Health Physics Society Annual Meeting, Washington, D. C., July, 1991.

Mann, B. J., et.al., "Shoreham Nuclear Power Station, Supplement to Applicant's Environmental Report Post Operating License Stage - Decommissioning", Docket No. 50-322, September, 1990.

Mann, B. J., University of California at Berkeley Research Reactor Decommissioning Project, "Termination Radiation Survey- Data Processing., Biscraft NE Inc., prepared for the University of California, April, 1990.

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