

**Earl P. Easton**

**SUMMARY OF QUALIFICATIONS**

- Over twenty-five years of progressive professional engineering and supervisory experience.
- Experienced in all aspects of radioactive material transportation and storage including, transportation and storage package design, health and safety issues, domestic and international regulation, environmental and risk studies, and public outreach.

**PROFESSIONAL EXPERIENCE**

Division of Spent Fuel Storage and Transportation

**Sr. Advisor for Transportation of Radioactive Materials**

**2003 - present**

Currently advise Commission on major policies, practices, and regulations involving transportation of radioactive materials. Direct Commission outreach activities for public, and local and State governments, including transportation aspects of the proposed geologic repository at Yucca Mountain, the Waste Isolation pilot plant (WIPP) and Private fuel Storage facility. Previously supervised engineering groups that reviewed and certified RAM transportation packages, and that conducted U.S. RAM transportation risk studies. Major involvement in developing U.S. Transport Regulations.

Spent Fuel Project Office

**U.S. Nuclear Regulatory Commission, Washington, D.C.**

**Section Chief, Technical Review Section A      1998 - 2003**

Responsible for the technical review of spent fuel storage facilities and package/container designs for transporting radioactive material. Supervised a highly technical staff of 12-15 engineers and scientists, including selecting, training and mentoring of personnel, planning work loads, promoting quality and efficiency, and meeting important organizational deadlines. Achieved a superior appraisal for personal performance in 2001 and 2002. Under my leadership, Section A has been highly successful in supporting the licensing of major new spent fuel storage and transportation cask designs, and in resolving outstanding major technical issues involving the storage and transportation of high burnup fuels. Section A also pioneered the use of applying risk-informed concepts to the approval of Transportation cask designs by approving the TN-REG cask to transport West Valley spent fuel, and is taking a leading role in assessing the vulnerability of spent fuel storage and transportation in the aftermath of September 11.

**Section Chief, Transportation and Storage Safety Section 1992 - 1997**

Responsible for the planning, development and implementation of the Commission's policies and practices for the safe transportation and storage of radioactive materials. Supervised a technical staff of 5-6 engineers and scientists. Successfully directed last major revision of the Commission's regulations for the transport of radioactive material (10 CFR Part 71) in 1995. Developed regulatory guidance for implementing revised transport safety regulations, especially in the areas of low specific activity material (LSA) and surface contaminated objects (SCO). Had leading roles in developing/ presenting an international seminar on transportation safety in Kiev, Ukraine under the Lisbon initiative (1995), and in the joint NRC/NEI workshop on LSA and SCO (1996). Served as the lead NRC spokesperson at the International Atomic Energy Agency for revising international regulations for the safe transport of radioactive material. Planned and initiated major risk studies for radioactive material transport (eventually published as NUREG-6672).

**Office of Fuel Cycle Safety and Safeguards**  
**U.S. Nuclear Regulatory Commission, Washington, D.C.**

**Project Manager**, Transportation Safety Branch    **1988 - 1992**

Served as primary project manager for Transportation Safety Branch. Directed multi-disciplined review teams in developing safety evaluations for shipping casks/packages for radioactive material transport. Had responsibility for major package/cask designs, such as the TRUPACT-II, - the Department of Energy's main package for transporting transuranic waste to WIPP (Waste Isolation pilot Plant), the TN-REG and TN-BRP casks for shipping spent fuel from West Valley, and the NAC-LWT cask for returning spent fuel from Taiwan.

**Design Evaluation Engineer, Transportation Safety Branch 1982 - 1987**

Evaluated the thermal and containment aspects of cask/package designs for radioactive material transport. Progressed from simple to complex reviews. Served as transportation expert for NRC emergency operations center.

**U.S. Department of Energy, Germantown, MD 1980 - 1982**

**Project Engineer**, Division of Fossil Fuels

Responsible for overseeing research pilot plants for converting coal to natural gas. Served as project engineer/manager for the HYGAS pilot plant, Chicago, Illinois; and for the planning stages for the ANG Coal gasification plant in Beulah, North Dakota.

**U.S. Department of the Interior, Washington, DC** **1978 - 1980**

**Project Engineer, Office of Water Research and Technology**

Responsible for awarding and overseeing research grants/projects for seawater and brackish water desalination. Served as Department expert on reverse osmosis membrane

technologies. Project manager for Water Factory 21, Orange County, California and proposed Colorado River Desalination Plant (never built).

**Federal Energy Regulatory Commission, Washington, DC  
1975 - 1977**

**Project Engineer**, Bureau of Natural Gas

Conducted safety and environmental reviews for natural gas pipelines, compressor stations and liquified natural gas (LNG) facilities. Conducted LNG plant safety reviews for Cove Point, Maryland, Matagorda Bay, Texas, and Point Conception, California. Served as member of the review team that wrote the environmental impact statement for the Alaskan Natural Gas Pipeline.

**EDUCATION**

**B.S. in Chemical Engineering**, 1974

University of Maryland, College Park

**Graduate Studies in Chemical Engineering**

DOE Fellowship Program, 1978

University of Maryland, College Park, Maryland

**Partial list of Technical Papers**

1. Certification of DOE Transuranic Waste Package - TRUPACT II, A Briefing to the U.S. Nuclear Regulatory Commission, Rockville, Maryland, August 11, 1989.
2. Inadvertent Shipment of a Radiographic Source from Korea to Amersham Corporation, Burlington, Massachusetts, U.S. Nuclear Regulatory Commission (NUREG-1405), May 1990. Willard Brown, John White, Alfred Grella, Earl Easton, Philip Joukoff, David Skov.
3. Emergency Response to a Highway Accident in Springfield, Massachusetts on December 16, 1991, NUREG-1458, June 1992.
4. Safety of Shipments of Plutonium by Sea, (DOE/EM-0103), September 1993. I was a major contributor along with authors from DOE and DOT.
5. The Safe Air Transport of Large Quantities of Radioactive Materials, a working paper on the revision of IAEA Regulations, October 1994.
6. Transport Issues Facing the International Community, C. Haughney, E. Easton, C. Chappell, N. Osgood, R. Cunningham (INVITED), International Journal Of Radioactive Materials Transport, Vol.6, pp 229-233 (1995)
7. The Safe Transport of Radioactive Materials, A Joint U.S. - Ukrainian Workshop under The Lisbon Initiative, October 1995.

8. Reforming International Regulations for the Safe Transport of Radioactive Material, a working paper on the revision of IAEA Regulations, October 1996
9. Development of Guidance on Applications of Regulatory Requirements for Low Specific Activity Materials and Surface Contaminated Objects, R. Pope, E. Easton, S. Shankman, R. Boyle, International Journal Of Radioactive Materials Transport, Vol. 8, pp 299-305(1997)
10. Development of Guidance on Applications of Regulatory Requirements for Regulating Large, Contaminated Equipment and Large Decommissioning and Decomtamination (D&D) Components, R. Pope, E. Easton, J. Cook, R. Boyle, International Journal Of Radioactive Materials Transport, Vol. 8, pp 331-338 (1997)
11. Categorizing and Transporting Low Specific Activity Materials and Surface Contaminated Objects, U. S. Nuclear Regulatory Commission, (NUREG-1608), July 1998, J. Cook, R. Lewis, E. Easton, R. Boyle, R. Pope
12. Joint NRC/NEI Workshop on Implementation of NRC/DOT Final Transportation Rules, March 28 - 29, 1996
13. U.S. Specific Schedules of Requirements for Transport of Specified Types of Radioactive Materials Consignments, U. S. Nuclear Regulatory Commission, (NUREG-1660), November 1998, J. Cook, E. Easton, R. Boyle, R. Pope, B. Dodd, D. Harlan
14. The Advantages of Using Standardized Review Procedures in Certifying Type B Radioactive Material Packages, Earl Easton, U.S. Nuclear Regulatory Commission, Sylvain Faille, Canadian Nuclear Safety Commission, 14th International Symposium on Packaging and Transportation of Radioactive Material (PATRAM 2004), Berlin.
15. Criticality Safety of spent Fuel Casks Considering Water Inleakage, Nancy Osgood, Carl Withee, Earl Easton, U.S. Nuclear Regulatory Commission, 14th International Symposium on Packaging and Transportation of Radioactive Material (PATRAM 2004), Berlin.
16. Bajwa, C., E. Easton, "Effects of Tunnel Fires on the Behavior of Spent Nuclear Fuel Casks," Proceedings, Journal of Radioactive Material Transport, Volume 18, No. 3, October 2007.
17. Bajwa, C., E. Easton, R. Lewis, "Performance of Spent Fuel Transportation Casks in Severe Tunnel Fires," Proceedings, ASME International Mechanical Engineering Congress & Exposition, November 2006.