



# Dale Lancaster

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**Dr. Lancaster** is an independent consultant doing business as **NuclearConsultants.com**.

NuclearConsultants.com teams with other independent consultants to perform criticality, shielding, and fuel management for cask and fuel vendors, utilities, and government and research organizations

## EDUCATION

- 1977 -1981 **Ph.D.**, Massachusetts Institute of Technology, Cambridge, Massachusetts  
An Assessment of Internal Blankets for Gas-Cooled Fast Reactors
- 1973 – 1974 **Master of Science**, Nuclear Engineering, Georgia Institute of Technology, Atlanta, Georgia
- 1969 – 1973 **Bachelor of Science**, Chemical Engineering, Cornell University, Ithaca, New York

## EXPERIENCE

- 2019 – continuing **University of Michigan**  
Adjunct Professor
- 2019 – continuing **EPRI**  
Change in Cross Section Uncertainty with increasing enrichment >5% U-235
- 2017 – 2018 **EPRI**  
Analyze the Criticality impact on fuel cycle of increasing enrichment >5% U-235
- 2013 – continuing **NETCO, a Curtiss-Wright Company**, Criticality Analyst  
Criticality Analysis for the Indian Point and Palisades Spent Fuel Pools
- 2014 – 2018 **Dominion Energy**, Criticality Consultant  
Criticality analyses for Millstone and North Anna Spent Fuel Pools
- 2017 – 2017 **Duke Energy**, Criticality Training  
Provided a week on site training on spent fuel pool criticality analysis.
- 2015 & 2017 **MHI (Through PLS)**, Burnup Credit Analyst  
Provide burnup credit training plus report on criticality control for Fukushima.
- 2016 – 2016 **General Electric Corporation, GNF, Wilmington Fuel Fabrication Plant**, Consultant  
Criticality Audit
- 2015 – 2016 **Nextera**, Criticality Consultant  
Provided a Criticality Analysis for the Duane Arnold Spent Fuel Pool
- 2010 – 2015 **Electric Power Research Institute**, Consultant  
Depletion Reactivity Benchmark Project Initiator  
NEI Criticality Guidance Sensitivity Study
- 2015 – 2015 **KHNP**, Criticality Training  
Provided a Criticality Training Program in Daejeon Korea
- 2015 – 2015 **Nextera**, Criticality Training  
Provided a Criticality Training Program on site with emphasis on BWRs
- 2015 – 2015 **CNPE**, Criticality Training  
Provided a Criticality Training Program with CTR in Colorado Springs
- 2006 – 2015 **Korea Nuclear Engineering Services, Seoul, KOREA**, Consultant  
Criticality Analysis for the KORI Unit 3 Spent Fuel Pool  
Shielding and Criticality Design for the KN18 spent fuel shipping cask  
Criticality Analysis, Design, and Licensing for the KONES new fuel shipping cask
- 2014 – 2014 **Entergy Corporation**, Criticality Training  
Provided a Criticality Training Program with CTR in Jackson, MS
- 2014 – 2014 **Exelon Corporation**, Criticality Consultant  
Third Party Review of Dresden Spent Fuel Pool Criticality Analysis

2013 – 2013	<b>CNPE, Beijing, CHINA</b> , Consultant Seminars on failed fuel and absorber verification
2010 – 2012	<b>Florida Power &amp; Light</b> , Consultant Automation of verification of criticality technical specifications following fuel moves Review of Criticality Analysis Results for the Turkey Point Unit 3 Spent Fuel Pool
2010 – 2010	<b>URENCO Group, National Enrichment Facility</b> , Consultant Criticality Audit
2008 – 2010	<b>Westinghouse</b> , Consultant Reload Safety Analysis Checklist Calculations for numerous utilities Criticality Analysis of the Turkey Point Unit 3 Spent Fuel Pool with absorber panels
2007 – 2009	<b>MHI (through ETI)</b> , Consultant Short efforts to supported Criticality Analysis for the US APWR.
2005 – 2006	<b>U. S. Nuclear Regulatory Commission</b> , Consultant Issues in using U-235 enrichments > 5.0% in commercial nuclear power plants
2000 – 2003	<b>Gesellschaft fur Nuklear-Behalter mbH (GNB), Essen, GERMANY</b> , Consultant Shielding and Criticality Design for the KN-12 spent fuel shipping cask Criticality Design for the CASTOR-32 spent fuel shipping cask
2005 – 2005	<b>General Electric Corporation, GNF, Wilmington Fuel Fabrication Plant</b> , Consultant Criticality Audit
2007 & 2011	<b>NAC International</b> , Consultant Criticality Analysis for NAC casks COPAG trainer on Fuel Cycle Backend Issues
2006 – 2007	<b>Holtec International</b> , Consultant Criticality Analysis for Casks and Spent Fuel Pool Racks
2004 – 2005	<b>General Atomics Corporation</b> , Consultant Criticality Analysis for Casks and logistics
1995 – 2000	<b>TRW, Yucca Mountain Prim Contractor</b> , Burnup Credit Manager Developed Actinide-Only Burnup Credit, Evaluated Criticality in Yucca Mountain
1993 – 1994	<b>Pennsylvania State University</b> , Assistant Professor Directed and taught in the Nuclear Engineering extension program for Westinghouse
1988 – 1992	<b>Georgia Institute of Technology</b> , Assistant Professor Taught reactor physics and fuel cycle classes. Research grants on metal fuels core optimization and advanced nodal methods. Won Lilly teaching award.
1982 – 1987	<b>Westinghouse Electric Corporation</b> , Lead Engineer Core design. Lead engineer for the Korean plants.
1981 – 1982	<b>Westinghouse Electric Corporation</b> , Lead Engineer
1974 – 1977	Fast Reactor Core Design including the Clinch River Breeder Reactor

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## PROFESSIONAL ACTIVITIES

### Standards:

- Chairman of the “Burnup Credit” standard (ANSI/ANS-8.27) working group.
- Member of the “Criticality Safety Criteria for the Handling, Storage, and Transportation of LWR Fuel Outside Reactors” standard (ANSI/ANS-8.17) working group.
- Member of the “Calculation and Measurement of the Moderator Temperature Coefficient of Reactivity for Water Moderated Power Reactors” standard (ANSI/ANS-19.11) working group.
- Member of the “Design Requirements for Light Water Reactor Spent Fuel Storage Facilities at Nuclear Power Plants” and “Design Requirements for New Fuel Storage Facilities at Light Water Reactor Plants” standards working groups (ANSI/ANS-57.2 and ANSI/ANS-57.3)

### Nuclear Energy Institute

- Served on the Spent Fuel Criticality Task Force. Author of several sections of the “Guidance for Performing Criticality Analyses of Fuel Storage at Light-Water Reactor Power Plants” NEI-12-16.

### American Nuclear Society Offices

- Elected twice to the (through a national ballot) to the executive committee of the American Nuclear Society's Reactor Physics Division.
- Served on the ANS Professional Engineering Examination Committee, the ANS Technical Journals Committee, and Nuclear Technology Editorial Advisory Board

IAEA

Part of the US delegation at international meetings of the Burnup Credit Advisory Group.

Patent: The Spectral Shift Burnable Absorber. Patent No. 4657726

Registered Professional Engineer, Pennsylvania, PE 036035 E

**Publications:**

Over 80 publications. (not listed here to save paper)