

Jason Carneal

Senior Data Scientist | AI Implementation | Process Improvement & Automation | Nuclear Licensing

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PROFESSIONAL SUMMARY

Engineer, data scientist and project manager with 20+ years in nuclear regulation and U.S. Navy research, development, test and evaluation (RDT&E). Leads artificial intelligence (AI) implementation, workflow automation and data governance that cut manual effort and cost while maintaining technical and regulatory rigor. Experienced program manager for teams of up to 100 engineers, scientists and technicians, with a record of measurable efficiency gains in engineering and regulatory processes.

KEY RESULTS

- Reduced AP1000 Design Certification Document (DCD) Revision 20 review effort from 4,500 to 1,600 billable hours (64%) with AI-assisted workflows; safety evaluation completed in 4 months.
- Delivered automation tools saving an average of 4,426 staff hours per year, with \$2.33M in total savings across all products in FY26.
- Built and maintained 20 data visualization products and multiple AI tools that replaced recurring manual analysis.
- Directed a multi-year, multi-million-dollar Navy RDT&E program with approximately 100 scientists, engineers and technicians.

CORE COMPETENCIES

Process Improvement | Process Optimization | Workflow Automation | Artificial Intelligence | Generative AI / Large Language Models | Data Governance | Data Analytics | Data Visualization | Project Management | Program Management | Regulatory Compliance | Nuclear Licensing (10 CFR Part 50 and Part 52) | Risk Management | Technical Safety Reviews | Engineering Analysis | Stakeholder Engagement | Budget and Resource Planning | Team Leadership | Cost Reduction

Technical Skills: Python, SQL, JavaScript, HTML/CSS, Power BI, Tableau, Microsoft Azure, Microsoft 365 integration, SharePoint, Claude, ChatGPT Enterprise

PROFESSIONAL EXPERIENCE

U.S. Nuclear Regulatory Commission (NRC), Rockville, MD | 2008 – 2011, 2013 – Present

Senior Data Scientist (Deputy Chief Data Officer)

Mar 2026 – Present

- Lead AI implementation across nuclear reactor licensing and oversight to improve the efficiency of agency processes.
- Manage the AP1000 DCD Revision 20 amendment review; applied AI tools to cut billable hours from 4,500 to 1,600.
- Oversee data governance policies and procedures that ensure data quality, security and compliance.
- Help formulate and execute the agency's data and AI strategies, aligned with business objectives.

Project Manager (Licensing / Data and AI)

Oct 2025 – Mar 2026

- Led advanced and new reactor licensing projects, including microreactors, 10 CFR Part 52 design certifications and combined licenses, and 10 CFR Part 50 construction permits and operating licenses.
- Developed, tested and verified new processes that use AI to expedite licensing reviews.
- Trained and led a data analytics and AI team; consolidated schedule data into visualizations covering all new reactor projects.

Reactor Systems Engineer (Data Scientist)

Apr 2025 – Oct 2025

- Organized and led the Office of Nuclear Reactor Regulation's regulatory and operating experience AI program.
- Provided AI recommendations for the wholesale regulatory review under Executive Order 14300.
- Curated high-value datasets to support AI development, deployment and use across the agency.

Deputy Chief Data Officer (Senior Data Scientist)

Oct 2024 – Mar 2025

- Oversaw data governance, data strategy execution and analytics initiatives that enabled data-driven decisions.
- Coordinated data integration across offices and guided IT staff to align technology with agency goals.

Reactor Systems Engineer (Data Scientist)

2019 – 2024

- Applied Python and Azure data analytics to commercial nuclear operating experience to inform regulatory decisions.
- Built and maintained 20 Power BI and Tableau visualizations with automated back-end data processing.
- Managed an internal hub site of data products for the reactor oversight process; trained staff on analysis tools.

Reactor Systems Engineer (Operating Experience)

2017 – 2019

- Reviewed power reactor operating experience to assess safety significance and determine follow-up actions.
- Updated program guidance (IOEB Handbook, LIC-504 Appendix G) and shared operating experience with the IAEA.

Project Manager (Rulemaking)

2014 – 2017

- Managed complex, publicly controversial rulemakings, including the power reactor decommissioning rule.
- Assembled and led technical, legal and regulatory working groups; wrote SECY papers for the Commission.
- Developed budget, contracting and staffing plans for rulemakings spanning multiple program offices.

Mechanical Engineer

2013 – 2014

- Performed technical safety evaluations of inservice testing for pumps, valves and emergency diesel generators.
- Represented NRC on the ASME OM Code subgroup on air-operated valves; organized the joint NRC/ASME symposium.

Project Manager (New Reactor Licensing)

2008 – 2011

- Managed technical reviews for new reactor design certification and combined license applications, covering reactor and containment design, accident analysis, quality assurance and probabilistic risk assessment.

Naval Surface Warfare Center, Carderock Division (U.S. Navy), Bethesda, MD | 2004 – 2008, 2011 – 2013

Naval Architect / Program Manager (DDG-1000)

2011 – 2013

- Managed a multi-year, multi-million-dollar advanced surface combatant program with RDT&E and SCN funding.
- Directed ~100 scientists, engineers and technicians; planned staffing and funding to meet schedule and budget.
- Analyzed the impact of funding reductions, including sequestration, and applied the DoD Risk Management process.
- Briefed NAVSEA sponsors and Navy leadership, up to and including the Assistant Secretary of the Navy.

Mechanical Engineer

2004 – 2008

- Planned and ran hydrodynamic experiments on ship and submarine models, with data and uncertainty analysis.
- Developed patented optical measurement algorithms; wrote ONR-funded research proposals.

EDUCATION

M.S., Engineering Mechanics, Virginia Tech, 2004

B.S., Engineering Mechanics, Virginia Tech, 2001

Summa Cum Laude; Minor in Mathematics

General Assembly: Data Science (2019), JavaScript (2021)

QUALIFICATIONS & AWARDS

NRC qualifications: Licensing Project Manager, Rulemaking Project Manager, Reactor Technical Reviewer, Operating Experience Engineer

Meritorious Service Award, NRC, 2024

NRC team and individual performance awards, 2008 – 2026

SELECTED PUBLICATIONS & PATENT

- [AP1000 Design Certification Renewal and Amendment to Include DCD Revision 20](#), NRC ADAMS collection, 2025 – 2026.
- [Draft Regulatory Basis for RIN 3150-AJ59](#), Regulatory Improvements for Decommissioning Power Reactors, 2015.
- [NUREG/CP-0152, Volume 9](#), Proceedings of the Twelfth NRC/ASME Symposium on Valves, Pumps, and Inservice Testing for Operating and New Reactors, 2014.
- [U.S. Patent 7,519,502 B1, Surface Profile Measurement Method](#), 2009.