



Sylvia Galvan

Nuclear Fuel Engineer

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STRENGTHS

- ⚙️ **Reload Analysis**
Turned operating constraints and core inputs into traceable reload packages. Reviewers gained a clear path from assumptions to conclusions.
- 💬 **Customer Communication**
Explained simulator results, limits, and follow up actions in utility briefings. Technical discussions became easier to act on.
- ✅ **Quality Discipline**
Applied NRC expectations and quality procedures across calculations and records. Senior engineers trusted documentation during final review.
- 🔧 **Workflow Improvement**
Built Python checks for repetitive data tasks. Colleagues gained cleaner inputs and more consistent review preparation.
- 👥 **Matrix Coordination**
Connected reactor physics, fuel design, project management, and utility teams. Early issue sharing kept reload work moving.

SKILLS

- BWR Technology
- Fuel Reload Licensing
- Cycle Management Core Analysis
- Core Design Core Simulators
- Neutron Kinetics Reactor Physics
- NRC Regulations
- Nuclear Quality Assurance

SUMMARY

Nuclear fuel and reactor core engineer with five years of experience supporting Boiling Water Reactor fuel reload analysis, **cycle management**, **core design calculations**, licensing deliverables, and utility customer technical work. Holds a Master of Science in Nuclear Engineering with practical experience using BWR core simulators, **three dimensional neutron kinetics** methods, Python, and C sharp for engineering analysis and workflow support. Produces traceable technical data and documentation under NRC rules, customer commitments, and **nuclear quality assurance** procedures. Coordinates reload engineering activities across matrixed teams, manages analysis inputs and review cycles, and communicates technical results through reports, presentations, and training. Combines reactor physics knowledge with schedule awareness, accountable engineering judgment, peer review, and clear communication to support safe, reliable operating core decisions.

EXPERIENCE

Nuclear Fuel Engineer

Carolina Reactor Analytics 📅 October 2024 to Present 📍 Charlotte, NC

- Leads BWR reload and **cycle management** analysis for utility facing projects, coordinating reactor physics, fuel design, project management, and customer inputs through controlled calculation packages and licensing deliverables.
- Integrated **BWR** core design inputs with operating constraints and approved engineering methods for reload packages.
 - Executed core simulator and **three dimensional neutron kinetics** studies, documenting conclusions for licensing and design reviews.
 - Developed **Python** utilities for input checks and simulator result organization, improving repeatable engineering review workflows.
 - Coordinated **reactor physics**, fuel design, project management, and utility interfaces before data dependencies affected reload milestones.
 - Presented assumptions, results, limitations, and follow up actions through technical reports and utility engineering briefings.
 - Tracked reload deliverables against schedule and cost expectations, closing quality reviews before controlled release.

Reactor Core Engineer

Blue Ridge Nuclear Engineering 📅 October 2022 to September 2024 📍 Greensboro, NC

- Supported operating BWR core analysis and reload planning within matrixed engineering teams, producing design calculations, simulator studies, customer data packages, and controlled records for senior review.
- Prepared **BWR** design calculations and evaluated core performance for operating core analysis and reload planning.
 - Applied **reactor physics** and neutron kinetics methods to simulator cases, documenting rationale for senior technical review.
 - Created **C sharp** and Python scripts for structured data processing, calculation checks, and independent engineering verification.
 - Translated detailed analysis into customer data packages and presentations for utility technical personnel and project stakeholders.
 - Applied NRC requirements, customer procedures, and quality assurance controls across calculations, records, and review responses.
 - Managed concurrent analysis assignments, communicating technical and schedule risks early enough for project leads to adjust priorities.

Nuclear Engineering Analyst

Coastal Energy Technical Services 📅 October 2021 to September 2022 📍 Wilmington, NC

Technical Documentation

Customer Presentations

Project Coordination Python C#

LANGUAGES

English Native

Spanish Proficient

MY CAREER

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MONTHS

Performed supervised reactor engineering analysis for operating core studies and fuel cycle assignments, building disciplined practices in simulator preparation, data verification, calculation documentation, and regulated delivery.

- Performed supervised reactor engineering analyses for operating core studies and fuel cycle assignments with documented calculations.
- Prepared simulator inputs and reviewed output datasets for completeness before formal engineering evaluation and peer review.
- Used Python for engineering data organization and verification, creating reproducible scripts for input and result checks.
- Drafted calculation notes, technical summaries, and presentation graphics for senior engineers and customer teams.
- Applied nuclear quality expectations to document control, calculation records, and review responses during regulated deliverables.
- Built working knowledge of **BWR** technology, reload workflows, **customer requirements**, and cross functional coordination.

PROJECTS

BWR Reload Licensing Analysis 📅 2024

Supported controlled reload calculations by integrating core inputs, operating limits, simulator results, technical reviews, and customer deliverables.

Neutron Kinetics Workflow Support 📅 2023

Built repeatable Python and C sharp checks for simulator datasets, calculation inputs, review preparation, and traceable engineering documentation.

LEADERSHIP & AWARDS

- Graduate Research Recognition, North Carolina State University, 2021
- Technical Delivery Recognition, Carolina Reactor Analytics, 2025
- Peer Review Leadership Recognition, Blue Ridge Nuclear Engineering, 2024

EDUCATION

Master of Science in Nuclear Engineering

North Carolina State University 🎓 GPA: 4.0 📅 2021 📍 Raleigh, NC

Coursework: Reactor Physics, Nuclear Reactor Analysis, Neutron Transport, Nuclear Fuel Design

Bachelor of Science in Nuclear Engineering

University of Tennessee, Knoxville 🎓 GPA: 4.0 📅 2019 📍 Knoxville, TN

Coursework: Reactor Physics, Nuclear Materials, Nuclear Systems, Engineering Computation

CERTIFICATIONS

- Nuclear Quality Assurance Fundamentals 📅 2022
- Nuclear Engineering Graduate Training 📅 2021

TECHNICAL SKILLS

- **Reactor Analysis:** BWR core analysis, reactor physics, core design calculations
- **Fuel Engineering:** Fuel reload licensing, cycle management, operating core studies
- **Simulation Systems:** BWR core simulators, three dimensional neutron kinetics, simulator studies
- **Programming Languages:** Python, C sharp, engineering scripting
- **Nuclear Regulation:** NRC rules, NRC regulations, customer requirements
- **Quality Assurance:** Nuclear quality assurance, calculation control, document control
- **Technical Deliverables:** Calculation packages, technical reports, licensing deliverables
- **Data Analysis:** Technical data checks, simulator output review, structured data processing
- **Project Controls:** Reload schedules, cost baselines, milestone tracking
- **Communication Tools:** Technical presentations, utility briefings, engineering training

- **Engineering Methods:** Analytical methods, design calculations, technical procedures
- **Team Delivery:** Matrixed teams, peer review, customer technical coordination

PROFESSIONAL AFFILIATIONS

- American Nuclear Society, Nuclear Engineering Member
- Women in Nuclear, Professional Member
- North Carolina State University Nuclear Engineering Alumni Network

ADDITIONAL INFORMATION

Work Status : Authorized to work in United States. No sponsorship required.

REFERENCES

AVAILABLE ON REQUEST