Amrit D. Patel

Nuclear Engineer

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My goal is collaboration with a team solving interesting problems in the field of nuclear engineering, especially applying particle transport methods for reactor and fuel design modeling, simulation, and uncertainty quantification.

Skills

Modeling and Simulation

- Computer code simulation, data analysis, process automation.

Languages

- R, Perl, Python, Fortran.

Leadership

- Principal contributor for topical report, license amendment request, and guidance development safety review teams, presenting information to mid-size audiences, mentorship of peers, explaining technical material to non-technical audiences (members of the public) and management, oversight of interns.

Experience

U.S. NRC *Rockville, MD*

Nuclear Engineer *March 2009 - June 2019*

- Planned/Conducted complex technical reviews in core nuclear engineering areas for the Offices of New Reactors and Nuclear Reactor Regulation (e.g., criticality, shielding, nuclear fuels, and method verication/validation) coordinating with project managers and technical staff in cross-cutting disciplines for several large projects (e.g., new reactor licensing, license renewal).
- Planned/Conducted research for the Office of Research: FAVOR/DAKOTA coupling for uncertainty quantification studies; SCALE-MAVRIC/DAKOTA coupling for uncertainty quantification studies to assess safety margins of degraded PWR bioshield concrete; facilitated INL MOOSE-based Grizzly code installation and training for modeling of engineering fracture assessments of reactor pressure vessels on shared internal cloud-hosted Linux systems.
- Proficient in safety evaluation reporting and confirmatory analysis including: Use of computer codes to perform simulations (e.g., SCALE code suite, MCNP, DAKOTA); complex data analysis using statistical software packages; use of various programming/scripting languages for software development, input/output processing, database management, and creating dynamic figures/reports/presentations.
- Communication and reporting skills: Development and presentation of original research in support of NRC guidance development for various audiences (e.g., senior level management, ACRS, national/international conferences).
- Collaboratively developed new guidance documents (e.g., spent fuel pool criticality safety and neutron fluence regulatory guides); NRC representative on ANS 19.10 standard committee.
- Developed and provided training (mostly one-on-one mentoring). An example can be provided upon request.
- Collaborated with international cohorts via participation in OECD/NEA Working Party on Nuclear Criticality Safety and associated expert groups including contributions to calculational benchmark reports.

Southern Nuclear Operating Company *Birmingham, AL*

Intern *June 2007 - August 2007*

- Worked with BWR core analysis engineers supporting Plant Hatch, Units 1 and 2.
- Gained experience with CASMO-3/SIMULATE-3 via model implementation of a proposed control blade design; performed a study on the effect of the design on existing core.
- Gained experience with GEH lattice physics codes working with bundle designs and control rod blade pattern development.

Education

University of Florida *Gainesville, FL*

MS, Nuclear Engineering *2006 - 2009*

- Research Assistant for radiation transport theory course
- Master's thesis: Detailed Neutron Flux Characterization of the Experimental Shield Tank Facility at the UFTR
- Received EIT certification

University of Florida *Gainesville, FL*

BS, Nuclear Engineering *2002 - 2006*

- Inducted into Alpha Nu Sigma Honor Society
- Member of American Nuclear Society (UF Chapter)