

Fellowship Profile

IAEA PROGRAMS
AT ARGONNE NATIONAL LABORATORY

Governmental and regulatory infrastructure
for nuclear installations safety

TRAINING SUMMARY

I participated in a fellowship at the U.S. Nuclear Regulatory Commission focused on neutronics methodologies and regulatory reactor physics analysis for light-water reactors, with particular emphasis on the AP1000 technology. Under the supervision of Hossein Esmaili and mentorship of Nathanael Hudson, I gained experience with NRC-used computational tools including SCALE (with emphasis on Polaris), PARCS and GenPMAXS.

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WHATS NEXT?

Upon returning to the National Atomic Energy Agency of Poland, I will use the acquired skills to support the regulatory review of the AP1000 reactor application expected in Poland. This includes preparing fuel assemblies cross-section calculations in Polaris, performing PARCS full core simulations, reviewing core physics aspects of Safety Analysis Reports, and contributing to the national regulatory evaluation process in line with international standards.



"This fellowship gave me invaluable hands-on insight into regulatory reactor physics and strengthened my ability to support Poland's nuclear licensing process."

Anna Luczak- Poland

July 14th to November 7th 2025

Hosted by: US Nuclear Regulatory Commission