

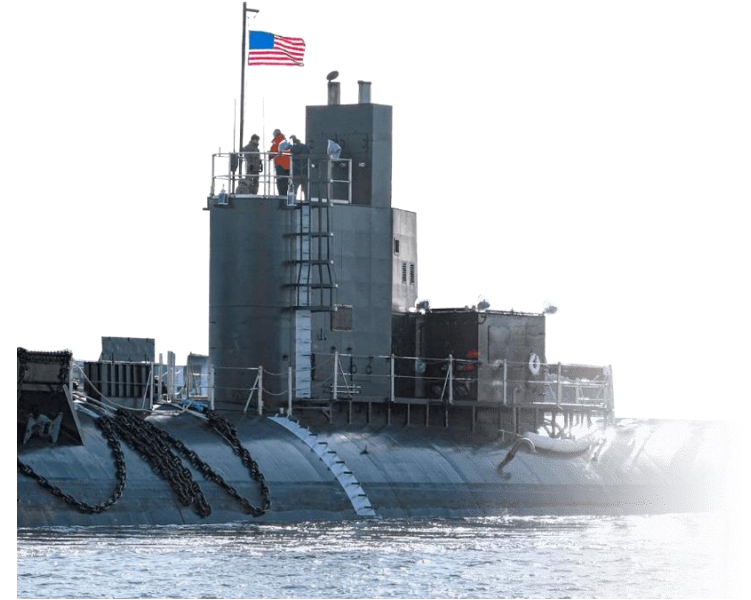
Multi-Generational Projects

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Naval Reactors Headquarters

Naval Reactors Mission:

- Deliver militarily effective nuclear propulsion plants and ensures their safe, reliable and long-lived operation.



Naval Nuclear Laboratory:

- Designs nuclear propulsion systems and provide full lifecycle support
- Delivers breakthrough innovations to enable a dominant Naval force.

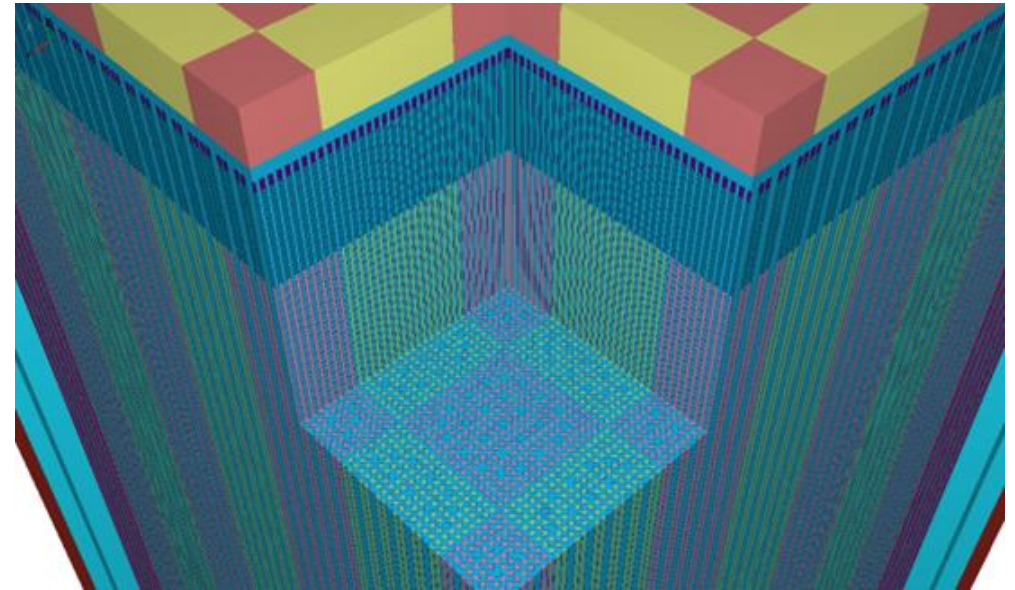
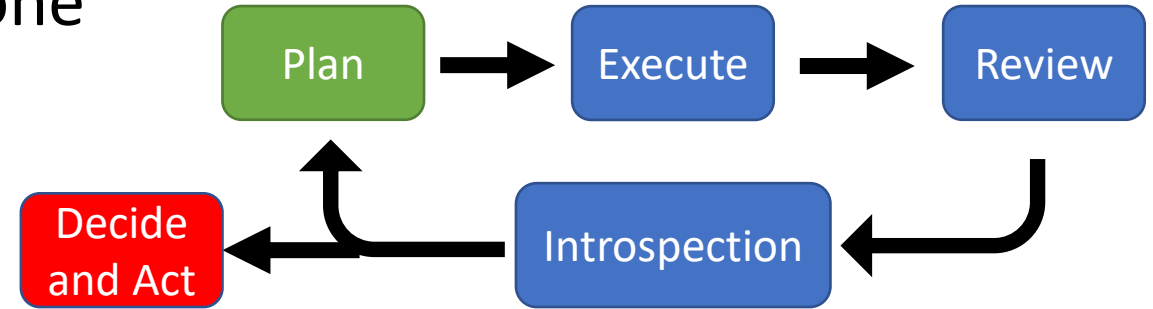
Modern Challenges

A large aircraft carrier is shown from an elevated perspective, sailing on the ocean. The ship's complex superstructure, including radar masts and various antennas, is prominent. The deck is filled with numerous aircraft, and the ship's hull number '7' is visible. The background shows a clear blue sky and the horizon line.

- 50-to-95-year design life cycle
 - Equipment can outlive knowledge
- Competitive and evolve
 - Important changes over time
 - Emergent demands for specialists
- Complex, multi-disciplinary engineering
 - Vast amounts of information
 - Information transfers among specialists
- Long reactor technology development timelines

Some Principles and Practices

- People make decisions and get things done
- Documentation and peer review
 - Necessary for complex projects
 - Involves more people in technical basis for decisions
- Enduring, self-describing information storage
 - Deliverable focus - Information organized by product and decisions
 - Searchable, centralized document database
- Long-term R&D tied to clear Program goals
 - Sustain capability to meet emergent needs



Application to nuclear data

- ENDF/EXFOR are a data preservation standards
- You must stay working and be improving
- GNDS is an improvement – extendable and expandable
- Re-evaluating/re-analyzing historic experimental measurements can be difficult – inconsistent raw data retention and reporting
 - Consider a common way to report and analyze experimental data to improve retention, archiving, and retrieval of information in support of department objectives
- Validating data for application remains essential - NNPP maintains a curated library of Proprietary Critical Benchmarks

Summary

- Document science and engineering work and lessons learned for both present and future needs
- Enduring and self-describing data formats – consider this for raw experimental data
- Centralized and Searchable Database