



Preliminary Discussions Regarding a Potential Pre- Application Review of the Hyperion Reactor Design

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Outline

- Formalities
- High-level Questions That Must be Answered by:
 - The Applicant
 - The NRC
- Pre-application Objectives
- Examples of Possible Pre-application Topics
- Radioactive Material Transport Overview
- Acronyms

Formalities

- Visitor escort policy
- Introductions (around the room)
- Sign-in sheets
- Opportunity for Public Comment / Feedback Forms

High-level Questions for Applicant

- What level of review for pre-application?
 - Informal (white paper submittal)
 - Formal (topical reports, Safety Evaluation Report)
 - Treatment of open items
- What is your schedule for application submittal?
 - Confirmation that a 10CFR52 Manufacturing License is the intended path.
- Will design be formally aligned with a customer?
 - This may affect review priority.

High-level Question for NRC

- What priority does this effort receive, relative to:
 - ALWR Combined License Applications
 - Support for DOE's NGNP and GNEP initiatives
 - Pebble Bed Modular Reactor Pre-application
 - Other potential pre-applications (IRIS, 4S, etc.)

- Availability of technical reviewers is an important constraint.
- Resources for non-LWR efforts expected to decrease in next few years.

Pre-application Objectives

- Familiarize NRC staff with the proposed design
- Provide feedback to applicant on:
 - key design, technology, and licensing issues
 - technology development program plans
- Inform NRC's infrastructure development efforts
- Early identification of any policy issues

Pre-application Topic Examples

- Validation & verification program
- Defense-in-depth approach
- Testing programs
- Designation of SSCs
- Licensing Basis Event selection
- Transportation of radioactive materials
- Source term generation
- Fuel performance
- Probabilistic Risk Assessment
- Nuclear analysis
- Physical protection / security
- Emergency planning

It is the applicant's responsibility / prerogative to identify what topics will be covered.

Transportation

- Regulations for transportation of radioactive material are covered in 10 CFR Part 71
- These regulations apply to:
 - Transport of the reactor containing nuclear fuel to the proposed site
 - Transport of the reactor containing spent nuclear fuel back to the manufacturing facility

Acronyms

- 4S Super Safe, Small & Simple Reactor
- ALWRs Advanced Light Water Reactors
- DOE Department of Energy
- GNEP Global Nuclear Energy Partnership (DOE)
- IRIS International Reactor Innovative and Secure
- LWR Light Water Reactor
- NGNP Next Generation Nuclear Plant (DOE)
- SSCs Systems, Structures, and Components