



Generic Licensing Topics and Policy Issues for SMRs

Commissioners' Hearing Room

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Environmental IIRP

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Environmental IIRP

Five IIRPs done to date

- Mechanistic Source Term
- Emergency Planning
- Control Room Staffing
- Security
- Cross Organization Issues

Environmental IIRP

Objective

The overall objective of the environmental IIRP (E IIRP) for SMR and its associated working group (WG) is to identify and analyze the NRC regulations, guidance, processes, resources, or schedules that could have a significant or potential impact on the environmental review process for the construction and operations of SMRs.

Environmental IIRP

Process

- Gather input from other NRC offices, other federal agencies, and industry
- Review all appropriate NRC environmental policies, guidance and regulations
- Review current and anticipated environmental review schedules and available resources
- Review SMR designs for potential environmental review process impacts

Environmental IIRP

Outcome

- An in-depth assessment of the environmental review process for SMRs
- Possible SECY paper(s)
- Roadmap for addressing any issues identified by the E IIRP team

Environmental IIRP

E IIRP Team

- Mark Notich – Team Leader
- SES facilitator – Deputy Division Director of FSME
- Expertise in 10 CFR Parts 50, 51, and 52; transportation, fuel cycle, NRO's environmental review process, and environmental impact assessment

Environmental IIRP

Schedule

- Currently planning to issue the final E IIRP report in May 2012

Environmental IIRP

Input

- Other NRC offices – team members from NRO, OGC, FSME, NMSS, and NRR
- Other Federal Agencies – interactions with U.S. EPA, FWS, COE, NMFS, ACHP

Input from Industry

- What does the industry see as potential issues/concerns with the environmental review process for SMRs?
- Any lessons learned from the COL environmental review experience?
- Ideas for potential uses of SMRs other than baseload power?
- Ideas for alternatives analyses?

Environmental IIRP

Current SMR environmental review activities

- Developing two ISGs for use by the staff in performing SMR environmental reviews
- Latest DSEA guidance in ISG format
- SMR-specific guidance related to NUREG-1555



Questions?



Design Specific Review Standard Development

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Design Specific Review Standard Development

Presentation Purpose

- Provide **Overview** of the Design Specific Review Standard for the iPWR Reviews
- Update the **Status** of the Design Specific Review Standard (DSRS) Development
- Discuss **Future Activities**

Design Specific Review Standards - Overview

- Detailed Design Specific Review Plan presentation provided during SMR Licensing Workshop June 15, 2011
- DSRS was a key piece of the Design Specific Review Plans
- DSRS will follow the SRP/NUREG-0800 structure (chapters/sections/subsections) modified as necessary to accommodate the specific design
- Sections will be included as-is /modified/ added/ or deleted as applicable to the design.

Design Specific Review Standards - Overview

- Final draft DSRS document to be completed one year prior to Design Certification Application submission. (November 2012 for mPower's 4th Qtr. CY 2013 DCA submittal)
- SRP update process to be followed once the draft is completed (FRN, public comment period, CRA review, etc.)
- DSRS may change prior to application submittal but applicant may use the draft DSRS to prepare DCA.
- Final DSRS document to be in place approximately the same time that the DC application is submitted.

Design Specific Review Standards - Status

- NRO staff is working on the mPower and NuScale DSRS.
- DOE Labs providing assistance and technical expertise.
- Infrastructure is in place to manage this effort (schedule, PM assignments, tracking tools, etc.)
- Technical meetings with mPower and NuScale aid staff and DOE labs in this effort.
- NRO is using the DSRS to incorporate the risk informed and integrated review approach (SECY11-0024).

Design Specific Review Standards - Status

- Lessons learned from LLWR reviews are being incorporated in DSRS where it makes sense
 - I&C branch is taking the opportunity to rewrite Chapter 7 remove redundancy, and to clearly define requirements for licensing.
 - Balance of Plant branch is incorporating RTNSS into many sections (Chapters 3, 9, and 10).
 - Three new sections are being added to Chapter 19 to address RTNSS for passive designs, loss of large areas due to fires, and adequacy of design for aircraft impact.
 - Parts of Chapters 2 and 3 are to be modified due to the unique structural design aspects of iPWRs.



Design Specific Review Standards - Future Activities

- NRO will publish draft sections (after internal concurrence) on the public website during 2012
- Industry and public will have the opportunity to comment on drafts of individual sections via the website, or in public forums (SMR licensing workshop, etc.)
- Industry and public stakeholders will have another opportunity to comment when the completed draft DSRS is issued (FRN notice).



Response to Interest from Public Groups

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Regulatory Process

10 CFR 50

- **Construction Permit (CP)**
[Authorization to Construct]
 - Preliminary design information
 - Siting Review (including EIS)
 - Mandatory hearing
- **Operating License (OL)**
[Authorization to Operate]
 - Completed design
 - Completed construction
 - Resolution of operational programs
 - Hearing opportunity

10 CFR 52

- **Design Certification (DC)**
 - Sufficient information to determine design safety
 - Rulemaking
- **Early Site Permit (ESP)**
 - Siting Review (including EIS)
 - Mandatory hearing
- **Combined License (COL)**
[Authorization to Construct and Operate]
 - Siting Review (including EIS; “new & significant” if ESP already issued)
 - Resolution of operational programs
 - Mandatory hearing for issuance
 - Hearing opportunity for ITAAC finding

Small Modular Reactor Policy and Technical Issues

- Emergency Planning
- Fees
- Insurance
- Decommissioning
- Physical Security
- Multi-Module Facilities
- Source Term
- Staffing
- Manufacturing Licenses
- Environmental Issues

Pre-Application Activities

- Familiarize staff with technical design
 - No application-specific findings being made
 - If Topical Report submitted, becomes review activity
- Identify NRC infrastructure needs
- Involve stakeholders in guidance development and policy-making
- Site visits, if applicable
- Outreach to local stakeholders

Safety Review Activities

- Formal interactions
 - Review of DCD, PSAR, FSAR
 - Review of Topical Reports
 - Requests for additional information (RAIs)
 - Public meetings on technical issues
 - Documentation of decisions (public ADAMS)

Environmental Review Activities

- Timeline
- Opportunities for Public Involvement
- National Environmental Policy Act (NEPA)
 - Need for power analysis
 - Addressing cumulative impacts
- Environmental Report (ER)
- Environmental Impact Statement (EIS)

References

- NRC Policy Statement on the Regulation of Advanced Reactors
 - Federal Register, Vol. 73, No. 199, 60612, October 14, 2008 [73 FR 60612]
 - Use Federal Digital System (FDsys) at <http://www.gpo.gov/fdsys/>
- Advanced Reactors Public Webpage
 - <http://www.nrc.gov/reactors/advanced.html>

Open Discussion

