

APRIL 28, 2011

ATTACHED ARE THE SLIDES FROM THE “NRC SMR LICENSING WORKSHOP” PRESENTATIONS, WHICH WERE GIVEN AT THE APRIL 20, 2011 PUBLIC MEETING BETWEEN NEI, NGNP, AND THE NRC (MEETING NOTICE ML110970057)

THESE SLIDES WERE PROVIDED ON THE DATE OF THIS COVER SHEET.

Status of Generic Issues Related to SMR Licensing

NRC SMR Licensing Workshop

April 20, 2011



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Overview

- **NEI SMR Licensing Task Force engaged in effort to develop position papers on multiple generic licensing issues**
 - Four industry position papers submitted since November 2010
 - Another industry position paper forthcoming in near future
 - Three industry position papers slated for completion by mid-2011
- **Newly-formed SMR Working Group and SMR Oversight Committee giving guidance on position paper development**

Completed Position Papers

- **NRC Annual Fees (November 2010)**
- **Decommissioning Funding (November 2010)**
- **License Structure for Multi-Module Facilities (December 2010)**
- **Pre-Application Engagement (January 2011)**

Near-Term Position Papers

- **Price-Anderson Liability Insurance**
 - Evaluates implications and interpretation of current statute and NRC regulations
 - Includes input from insurers, vendors, and utilities
 - Preliminary conclusions to be discussed later today
 - Anticipated completion of paper by mid-May

Position Papers Under Development for Mid-2011 Submittal

- **Security design and staffing**
- **Control room staffing**
- **Modularity and source terms**

Security Design and Staffing

- **Team is actively evaluating current requirements**
 - Application of advanced technology
 - Cyber security
 - Aircraft impact
 - Staffing
 - Footprint/DBT considerations
 - Integrated approaches
- **Will evaluate potential approaches to crediting advanced technology to meet current requirements**
- **Intend to functionally satisfy current requirements**

Control Room Staffing

- **Identified as high priority per direction from SMR Working Group and SMR Oversight Committee**
- **Will evaluate approaches to determining appropriate control room staffing levels for SMRs**
- **Plan to engage with NRC staff as SECY on staffing is developed**

Modularity and Source Terms

- **Focus of paper will be generic**
- **Intent is to provide high-level approach applicable to**
 - **iPWRs**
 - **Non-LWRs**
- **Appropriate consideration of**
 - **Design specific features**
 - **Delayed and reduced releases**
 - **SMR-specific accident scenario considerations**

Summary

- **Four position papers submitted to date**
- **One more near-term submittals scheduled**
- **New NEI SMR Working Group and SMR Oversight Committee are providing executive input on direction of activities**
- **NEI SMR Licensing Task Force planning additional papers to be completed by mid-2011**
- **Industry looks forward to NRC feedback on all position papers**

PRA Lessons Learned

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Overview

- **Guiding principles**
- **Scope of evaluation**
- **Schedule considerations**
- **Useful tools and processes**
- **Best practices**
- **Key lessons learned**

Guiding Principles

- **Consider high-level Commission policy**
 - **Policy statements**
 - **Safety goal policy statement**
 - **PRA policy statement**
 - **Severe accident policy statement**
 - **Quantitative Health Objectives**
- **Maintain perspective on projected uses of risk information**
 - **Licensing**
 - **Operations**
 - **Applications (e.g. RG 1.174)**
 - **Reactor Oversight Process**

Scope of Evaluation

- **Important to define and document early on**
- **Review potential issues with current framework**
 - **Recognize evolving use of risk-informed processes**
 - **Consideration of risk metrics**
 - **Review possible gaps in current processes**
- **Clearly define which initiators and modes are within scope**
- **Stay within defined scope**

Schedule Considerations

- **Anticipated Commission involvement**
- **PRA technical adequacy expectations**
 - **Clear description of expectations**
 - **Scope**
 - **Level of detail**
 - **Projected standards development schedule**
 - **Availability of methods**
 - **Implementation**
- **Need for information in decision-making processes**
 - **Licensing**
 - **Applications**
 - **Standard Review Plan and other major document updates**

Useful Tools and Processes

- **Interim Staff Guidance documents can be used to describe staff positions early on**
- **Thorough reviews of Regulatory Guide update schedules**
- **Description of clear options can help guide discussion**
- **Tabletop exercises can demonstrate real impact of proposed options**

Best Practices

- **Begin evaluation process early on**
- **Develop clear options**
 - **Facilitate productive discussions with stakeholders**
 - **Propose path forward**
- **Regular engagement with stakeholders is key**

Key Lessons Learned

- **Consider interface between different decisions being sought**
- **Closely evaluate real impact on programs and processes**
- **Conduct tabletop pilots early on**
- **Maintain perspective on all components of risk informed decision making process**

SMR Nuclear Insurance Position Paper Update

**NRC SMR Licensing Public
Workshop
April 20, 2011**



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SMR Financial Protection: Terminology

- **Price-Anderson Act describes financial protection requirements for NRC “licensees” and NRC licensed reactor “facilities”**
- **Statute uses rated electrical capacity as a descriptor**
- **Statute and NRC regulations address areas relevant to SMRs**
 - **Combination of 2 or more facilities located at a single site**
 - **Each having a rated capacity between 100 and 300 MWe**
 - **Combined rated capacity of no more than 1300 MWe**
 - **Also addresses reactors with rated capacities of less than 100 MWe**

SMR Financial Protection: Issue Description

- **SMR industry initial position**
 - **Unique design features may lower the potential liabilities associated with SMRs**
 - **Some statutory and regulatory requirements for nuclear power reactors – such as financial protection and insurance provisions – may not appropriately reflect this difference**
 - **The current legal and regulatory framework for SMR financial protection may result in unwarranted financial burdens and “over-insurance” of SMRs**

SMR Financial Protection: Position Paper Approach

- **SECY-10-0034: SMR financial insurance issues may warrant Commission consideration**
- **An NEI-led industry group (subset of NEI SMR Licensing Task Force) evaluated financial protection provisions in Price-Anderson Act and NRC regulations relating to SMRs**
- **Working group on financial protection requirements includes NEI staff, SMR vendors, potential utility users and nuclear insurance providers**

Industry Involvement in Evaluation

- Ensures that diverse needs in this area will be addressed by paper
- SMR Vendors
 - B&W
 - GE-Hitachi
 - Hyperion
 - NuScale
 - Westinghouse
- Utilities
 - Duke
 - Southern
 - SCE
 - TVA
- Nuclear Insurers
 - ANI

SMR Financial Protection: Position Paper Approach

- **3Q 2010: Industry working group summarized current financial protection provisions, including those applicable to SMRs, in the Price-Anderson Act and NRC regulations (10 CFR Part 140)**
 - Liability insurance protection
 - Property insurance
 - Provisions relevant to SMRs
 - Basis for current requirements includes large LWRs, small reactors, research/test reactors

SMR Financial Protection: Position Paper Approach

- **1Q 2011: Industry working group compared current financial protection requirements for SMRs and evaluated range of potential changes**
 - NEI-led effort with appreciable SMR community participation
 - Industry and NRC expertise on the Price-Anderson Act and NRC financial protection requirements was obtained to further inform industry's proposals
 - Current reactor licensees offered perspectives on implementation of requirements for existing fleet
 - Evaluated premium structures as they may apply to envisioned SMR deployment strategies

Questions Addressed by SMR Financial Protection Position Paper

- **Changes needed to support SMR deployment, if any**
 - **Statutory (if applicable)**
 - **Regulatory (if applicable)**
 - **Potential use of exemption process**
 - **Guidance development**
- **Treatment of non-electric applications**

SMR Financial Protection: Evaluation

- **Evaluated existing requirements for planned deployment configurations**
 - **Rated capacity thresholds**
 - **Financial protection formula**
 - **Treatment of multi-module licenses and sites**
- **Determined requirements were appropriate, with input from insurers, vendors and utilities**
- **Evaluated impact on vendors and utilities**

SMR Financial Protection: Preliminary Position Paper Conclusions

- **Existing financial protection requirements adequately address SMR-specific considerations**
 - **Sufficiently flexible to accommodate proposed SMR designs**
 - **Statutory thresholds create potential inequalities in requirements for some single-unit deployments**
 - **Based on current information, existing requirements do not pose obstacles to commercialization of SMRs**
- **May need to reassess requirements (e.g., for non-electricity-generating reactors) if vendor interest materializes**