

POTENTIAL POLICY ISSUES FOR SMALL MODULAR NUCLEAR REACTOR DESIGNS

No.	Policy Issue	Brief Description	Owner Office	Type of SECY Paper	Date to the Commission
1	Annual Fees	If the current flat annual reactor fees are applied to SMRs it may be disproportionate when compared with generating capacity of LWRs. This issue has been resolved, and a memorandum describing the staff's plan to implement a variable fee structure based on licensed thermal output has been provided to the Commission.	OCFO	N/A (Memorandum)	Completed (February 7, 2011)
2	Risk-Informed Licensing	On February 18, 2011, the staff provided the Commission with a response to SRM-COMGBJ-10-0004/COMGEA-10-0001, "Use of risk Insights to Enhance Safety Focus of Small Modular Reactor Reviews," dated August 31, 2011. In this response, the staff also proposed consolidation of the defense-in-depth philosophy, use of probabilistic risk assessment, and key component and system design issues, previously identified in SECY-10-0034 into the plans for the longer term development of a more risk-informed regulatory structure for SMRs.	NRO	Notation Vote	Completed (February 18, 2011)
3	License for Multi-Module Facilities	To inform the Commission of the NRC staff's review of, and planned approach for, the licensing of multi-module facilities composed of small nuclear reactor modules or units. The staff assessed the various alternatives and will discuss the best approach for the licensing of multi-module power reactor facilities in an informational SECY paper.	NRO	Information	May 31, 2011

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4	<p>a. License for Prototype Reactors</p> <p>b. Decommissioning Funding</p> <p>c. Operational Programs</p> <p>d. Installation of Reactor Modules During Operation</p> <p>e. Manufacturing License</p>	<p>a. Reliance on the construction and operation of a licensed prototype reactor for determining whether preventive or mitigative compensatory measures are needed to account for uncertainties in the designer’s analyses or operational capability of the SMR facility. The staff intends to describe this issue in an informational SECY paper.</p> <p>b. Current requirements for decommissioning funding assurance are designed to accommodate the current LWR fleet. When LWRs are compared with SMRs, their smaller site footprint, less reactor fuel and lower thermal output, as well as other design features; SMRs are likely to have different decommissioning requirements. The staff intends to describe this issue in an informational SECY paper.</p> <p>c. The unique technology and design features of SMRs may impact operational programs such as inservice inspection and inservice testing programs for SMRs. The staff intends to describe this issue in an informational SECY paper.</p> <p>d. Potential policy issues may arise concerning the addition of new reactors at a facility designed for operating as a modular site. The staff’s assessment of current regulations has not identified modular installation issues as policy related. Therefore, the staff intends to describe this issue in an informational SECY paper.</p> <p>e. The issue relates to the manufacturing license provisions in 10 CFR Part 52 and whether these provisions could apply to a reduced scope, as compared to the total plant licensed. In response to the staff’s RIS-2011-02, "Licensing Submittal Information and Design Development Activities for Small Modular Reactor Designs," dated February 2, 2011, no firm commitments have been provided regarding a manufacturing license application. The staff intends to describe this issue in an informational SECY paper.</p>	NRO	Information	June 30, 2011

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5	Control Room Staffing	The staff is drafting an information SECY paper that addresses NRO's plans for handling future exemption requests to 10 CFR 50.54(m) for the anticipated NuScale and mPower SMR applications. Upon completion of some of the early licensing reviews, the staff will assess whether changes to our regulations are warranted.	NRO	Information	June 30, 2011
6	Insurance and Liability	SMRs differ in size, facility configurations and end uses (i.e. process heat) as compared to reactors considered in the Price-Anderson Act and related NRC regulations. Existing financial protection requirements may adequately address SMR specific considerations. Industry is evaluating this issue including the potential for legislative changes. The staff intends to describe this issue in an informational SECY paper.	NRO	Information	August 31, 2011
7	Emergency Planning Requirements	Inherent features of SMRs such as smaller source terms, passive designs, and longer transient response times may justify revisions to EP requirements. The staff is drafting an information paper to the Commission that outlines a graded approach to EP requirements for SMRs and an outreach plan for gaining stakeholder input. The staff will submit the SECY information paper by October 2011. Significant stakeholder interest in any potential EP policy updates is anticipated. The staff will provide a notation vote SECY paper proposing EP policy updates with rulemaking implications by December 2012.	NSIR	Information Notation Vote	October 28, 2011 December 14, 2012
8	Mechanistic Source Term	The Commission has previously deliberated (SECY-93-0092 and SECY-03-0047) on the use of design-specific and event-specific mechanistic source terms, provided there was sufficient understanding and assurance of plant and fuel performance and deterministic engineering judgment was used to bound uncertainties. The application of a mechanistic source term in a technology neutral regulatory structure with a proposal to reduce the dose consequence reference values would be a key element in licensing small modular and advanced reactors. The staff is preparing an information SECY paper describing an approach and limitations to implementing a mechanistic source term for iPWRs. The staff is also working with Idaho National Laboratory to develop a risk-informed mechanistic source term for the NGNP and other advanced reactor designs which will be the subject of a future notation vote SECY paper.	NRO	Information Notation Vote	December 30, 2011 TBD

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9	Security Requirements	<p>SMR designs have unique characteristics (located underground, integrated vessels, physical separation, various fuel types/enrichments, etc.) that may affect security and safeguards. The staff is drafting an information SECY paper reviewing the adequacy of and providing a gap analysis of current security and safeguard regulations for SMRs. The paper will provide a detailed analysis of each of the affected portions of the regulations for licensing of special nuclear material, transportation, reactor design and operations, and independent storage of spent nuclear fuel related to SMRs. The paper will also inform the Commission of the staff's ongoing and planned actions to address any regulatory gaps and will identify any possible issues that may require future Commission decisions.</p>	NSIR	Information	December 30, 2011