



**U.S.NRC**

UNITED STATES NUCLEAR REGULATORY COMMISSION

*Protecting People and the Environment*

## **PUBLIC MEETING**

**NRO TRANSFORMATIVE ACTIVITIES: ENHANCING  
FOCUS ON SAFETY,  
SECURITY, RISK AND/OR ENVIRONMENTAL  
SIGNIFICANCE IN REVIEWS**

**Office of New Reactors**

**August 9, 2018**

**1:00PM - 4:00 PM**

**Commissioner's Hearing Room, HQ**



## **NRO's Transformative Activities: Enhancing Focus on Safety, Security, Risk, and/or Environmental Significance in Reviews**

### **Public Meeting – Category 3**

**PURPOSE:** Broad engagement with stakeholders on recent and potential future transformative activities of the Office of New Reactors (NRO)

Agenda and slides:

<https://www.nrc.gov/pmns/mtg?do=details&Code=20180761>

Webinar: Please join from your computer, tablet or smartphone here:

<https://global.gotomeeting.com/join/137286533>

Phone: 877-917-1550, passcode 3718645#

Barbara Hayes; Barbara.Hayes@nrc.gov ; 301-415-7442



# AGENDA

## **Opening Remarks** (*10 minutes*)

F. Brown, NRO

## **Session 1** (*75 minutes*)

- Enhancing Licensing Tools and Processes:  
Requests for Additional Information, Audits, and the SRP
- Advanced Reactors: Enabling the Safe and Secure Use of Nuclear Materials
- Rulemaking for Part 50/52 Alignment & Lessons Learned

R. Taylor, NRO

J. Monninger, NRO

A. Bradford, NRO

## **Break** (*15 minutes*)

## **Session 2** (*up to 70 minutes*)

### Registered Stakeholder Remarks (*up to 5 minutes each plus Q&A*)

- Policy Issues
- NEI perspective on Part 50/52 rulemaking
- Example approach to streamlining certification review for passive safety features on an advanced reactor

Ed Lyman, Union for Concerned Scientists

Russ Bell, Nuclear Energy Institute  
Mike Keller, Hybrid Power Technologies, LLC

### Additional Stakeholder Remarks (*up to 20 minutes*)

## **Next steps and Closure** (*10 minutes*)

F. Brown, NRO

**NRO's Transformative Activities: Enhancing Focus on Safety, Security, Risk, and/or Environmental Significance in Reviews**

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Enhancing Licensing Tools and Processes: Requests for Additional Information, Audits, and the Standard Review Plan

**Robert M. Taylor**

Director, Division of Licensing, Siting, and Environmental Analysis



## Enhancing Licensing Tools and Processes: Requests for Additional Information, Audits, and the SRP

### Requests for Additional Information

**October 2016:** NRO revised its internal process for preparing, reviewing, approving and issuing RAIs. An existing internal “RAI Job Aid” was updated to reflect lessons learned in previous reviews. (See ML16278A574).

**2018:** NRO started an internal audit of RAIs

- Focused short term assessment of the quality of RAIs issued
- Only RAIs issued after October 2016 process changes

**May 2018:** Based on the audit’s results, the audit team determined that revision of the RAI Office Instruction and Job Aid could be implemented immediately for near-term benefits.

**July/August 2018:** RAI procedures revised to reflect results of audit.



## Enhancing Licensing Tools and Processes: Requests for Additional Information, Audits, and the SRP

**RAI Audit Methodology:** A sample of 32 RAIs issued since October 2016 were independently rated by audit team members based on 6 attributes of “high quality RAIs”:

<b>Necessity</b>	Is this RAI necessary (i.e., requested information is not located in the application, in other docketed material or could not be reasonably inferred by the staff without the licensee’s response)?
<b>Technical Relevance</b>	Is the requested information technically relevant to the safety evaluation for a reasonable assurance finding (i.e., information is not just “nice to know” information)?
<b>Regulatory Basis</b>	Is the regulatory basis and underlying guidance clearly stated in the body of the RAI?
<b>Clarity</b>	Does the RAI clearly state what information is required or what information has been omitted or has been presented in an unclear fashion?
<b>Conciseness</b>	Is the RAI written in a concise manner (i.e., does not contain unnecessary detail)?
<b>Comprehensiveness</b>	Does the RAI ask the “entire” question or are there other subject matter for the same topic that should be considered, described and asked when formulating the question?



## Enhancing Licensing Tools and Processes: Requests for Additional Information, Audits, and the SRP

### RAI Audit: Results and Actions

**Results:** The RAIs sampled since the 2016 changes were of good quality based on the 6 attributes but some deficiencies were noted.

**Finding:** More consistent focus on 6 attributes of high quality RAIs via process changes can result in more consistent high quality RAIs

**Resulting actions:** NRO processes have been changed as follows:

- Revised internal approvals needed before an RAI is issued
- Review of each RAI against the 6 attributes as part of approvals
- Emphasis on ensuring RAIs clearly communicate the safety, security, risk and/or environmental significance.
- Emphasis on using other tools to ascertain needed information before issuing RAI (e.g. teleconferences, audits, etc.)
- NRO's Office Instruction and NRO's Job Aid are currently being updated to reflect revised internal approvals and new requirements for review against the 6 attributes



## Enhancing Licensing Tools and Processes: Requests for Additional Information, Audits, and the SRP

# Regulatory Audits

- FY 2016 efforts included another initiative focused on audits.
- October 2016: An “Audit Job Aid” was developed and distributed to staff (See ML16278A574).
- 2018: NRO will be assessing best practices and lessons learned from the Clinch River ESP review
  - The overall review will be broken out by activities (pre-app, acceptance review, safety review, and environmental review phases)
  - The review will include quantitative and qualitative analysis
  - Applicability to other license review processes (DC, COL) to be considered
  - Completion envisioned in the fall of 2018 with subsequent communications and implementation of any resulting recommendations



## Enhancing Licensing Tools and Processes: Requests for Additional Information, Audits, and the SRP

### Revisions to the Standard Review Plan

- Revisions to SRP sections underway provide opportunities to reinforce focus on reasonable assurance of adequate protection.
- Key opportunity to focus guidance consistent with Commission policy on risk-informed, performance based regulation.
- Current work on updating SRP 2.4 sections will serve as an example.
- Staff looking to see how to apply concepts used in SRP 2.4 example to refocus other sections of the SRP.



## Enhancing Licensing Tools and Processes: Requests for Additional Information, Audits, and the SRP

### SRP Section 2.4, “Hydrology”

#### Concept

- Apply risk-informed, performance-based regulatory philosophy to SRP Update
- Results in shorter SER focused on principle factors contributing to risk at a given site and more efficient and effective NRC review

#### Example

- 50.54(f) hydrology reviews focused on consequential flood-causing mechanisms
- SRP Update focuses the reviews on consequential flood-causing mechanisms
- Abridged review and documentation for mechanisms that do not contribute to risk

#### Timeline

- FRN Notice soliciting public comments – September 2018
- Public Meeting – Fall 2018 to request comments on new approach

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Advanced Reactors: Enabling the Safe and Secure Use of Nuclear Materials

John Monninger

Director, Division of Safety Systems, Risk Assessment, and Advanced Reactors

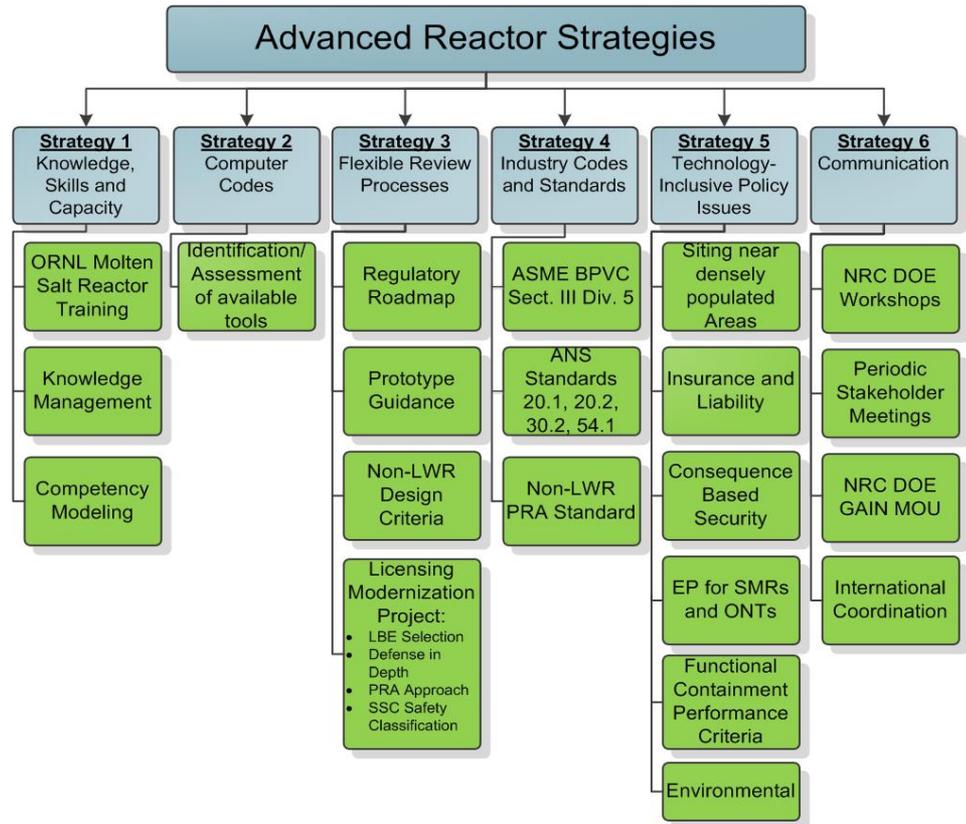
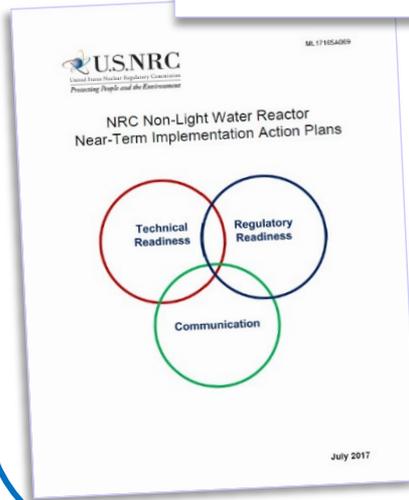


## Advanced Reactors: Risk-Informed and Performance-Based

- SECY-18-0060: Achieving Modern Risk-Informed Regulation
  - “An overarching theme that emerged from internal and external stakeholder outreach is the need for systematic and expanded use of risk and safety insights in decisionmaking. Out of this theme, the Team identified the need to appropriately scale the scope of review and level of detail needed from an applicant to enable the staff to make licensing decisions, consistent with the standard of reasonable assurance of adequate protection of public health and safety.”
- Industry recommendation on the safety focus of new plant reviews
- NRC Principles of Good Regulation



# Advanced Reactors: Regulatory Planning Framework





## Advanced Reactors: How are we going to get there?

- Paradigm shift
  - Current regulations and guidance are LWR-centric
  - Technology-inclusive, risk-informed, and performance based licensing approach
  - Licensing modernization project
  - Consideration of inherent safety characteristics, source term, safety margins
  - Build from the enhanced safety focused review approach
  - Integrated reviews using multi-disciplinary core review team
  - Flexible review approaches and regulatory engagement plans



## Advanced Reactors: Evaluating Potential Policy Issues

- Consequence based security
- Emergency preparedness
- Containment functional performance
- Siting
- Licensing modernization project
- Part 53 rulemaking

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Rulemaking for Part 50/52 Alignment &  
Lessons Learned

Anna Bradford

Deputy Director, Division of Licensing, Siting, and  
Environmental Analysis

## **Rulemaking for Part 50/52 Alignment & Lessons Learned**

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SECY 15-002 (January 2015) outlined the staff's proposals and justifications for the Parts 50/52 Alignment & Lessons Learned Rulemaking.

- Improving Alignment Between New Reactor Licensing Processes
- New Reactor Licensing Lessons Learned
- Rulemaking Is the Best Approach to align New Reactor Licensing Process

## Rulemaking for Part 50/52 Alignment & Lessons Learned

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### Examples of issues expected to be in rulemaking

- Improving Alignment Between New Reactor Licensing Processes
  - 10 CFR Part 52 Three Mile Island Requirements
- New Reactor Licensing Process Lessons Learned Review
  - Clarify the requirements for application, review, and approval for renewal of a DC.

### Examples of issues to be considered in rulemaking

- COL issuance delays when a DC with errors is referenced
- Clarifying 10 CFR 50.59 or similar regulations to better define scope and threshold for prior NRC approval
- Incorporation of Petition for Rulemaking regarding flexibility for COL holders to utilize 50.69

## Rulemaking for Part 50/52 Alignment & Lessons Learned

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### Where Do We Go from Here with the Parts 50/52 Alignment & Lessons Learned Rulemaking?

- Incorporation of information developed to date
- Review of other petitions for rulemaking or policies that could be incorporated into the Part 50/52 rulemaking
- In FY19, staff develops the Rulemaking Plan and associated schedule
- Public engagement

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# Registered Stakeholder Remarks

- **Policy Issues** **Ed Lyman, Union of Concerned Scientists**
- **NEI perspective on Part 50/52 rulemaking Institute** **Russ Bell, Nuclear Energy**
- **Example approach to streamline in licensing certification for passive safety features on advanced reactors** **Mike Keller, Hybrid Power Technologies, LLC**

# Information for External Oral Comments by M. Keller of Hybrid Power Technologies LLC

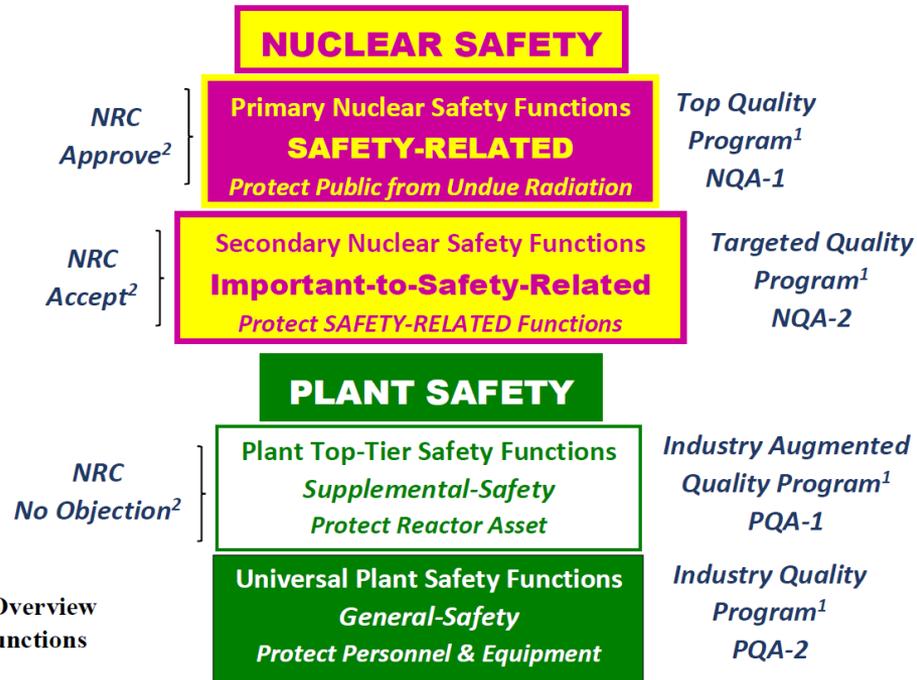
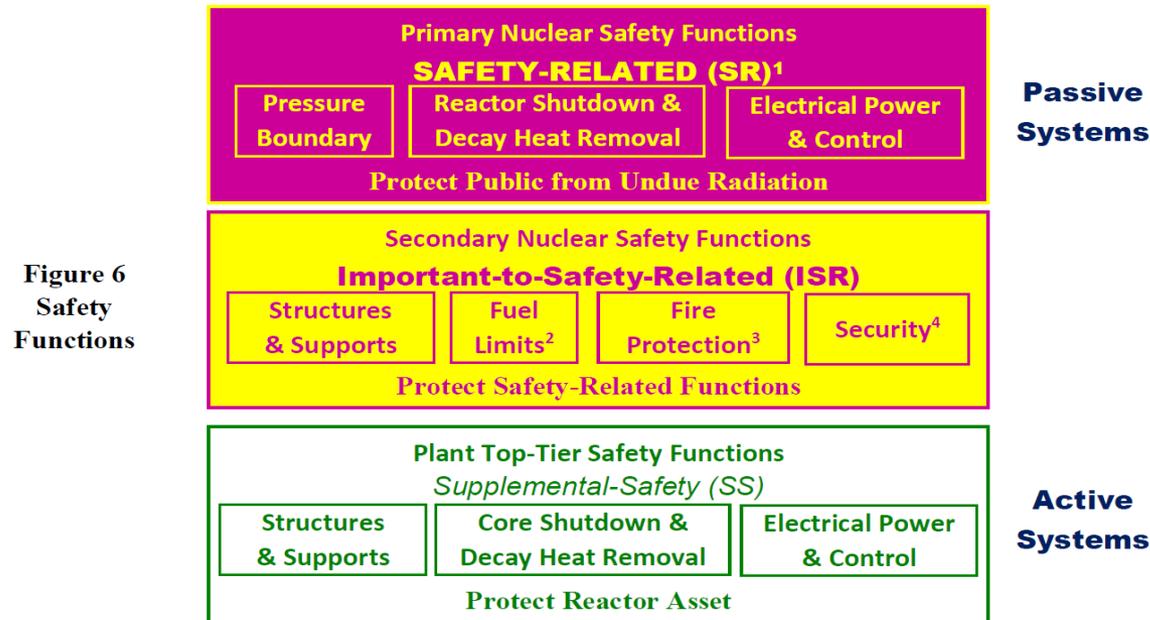


Figure 5 Overview  
Safety Functions

# Information for External Oral Comments by M. Keller of Hybrid Power Technologies LLC



**Notes:** (1) As defined in Part 50.2 of the Code of Federal Regulations. (2) Fuel temperature ceiling during limiting abnormal plant operations. (3) Reactor Block only, includes fire detection, mitigation & suppression systems. (4) Reactor Block only.

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Additional Stakeholder Remarks

## **NRO's Transformative Activities: Enhancing Focus on Safety, Security, Risk, and/or Environmental Significance in Reviews**

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**Thank you!**