



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

SECRETARY

September 10, 2007

COMMISSION VOTING RECORD

DECISION ITEM: SECY-07-0101

TITLE: STAFF RECOMMENDATIONS REGARDING A  
RISK-INFORMED AND PERFORMANCE-BASED REVISION  
TO 10 CFR PART 50 (RIN 3150-AH81)

The Commission (with all Commissioners agreeing) approved the subject paper as recorded in the Staff Requirements Memorandum (SRM) of September 10, 2007.

This Record contains a summary of voting on this matter together with the individual vote sheets, views and comments of the Commission.

A handwritten signature in black ink, appearing to read "Annette L. Vietti-Cook", written over a horizontal line.

Annette L. Vietti-Cook  
Secretary of the Commission

Attachments:

1. Voting Summary
2. Commissioner Vote Sheets

cc: Chairman Klein  
Commissioner Jaczko  
Commissioner Lyons  
OGC  
EDO  
PDR

VOTING SUMMARY - SECY-07-0101

RECORDED VOTES

|              | APRVD | DISAPRVD | ABSTAIN | NOT<br>PARTICIP | COMMENTS | DATE    |
|--------------|-------|----------|---------|-----------------|----------|---------|
| CHRM. KLEIN  | X     |          |         |                 | X        | 8/9/07  |
| COMR. JACZKO | X     |          |         |                 | X        | 8/13/07 |
| COMR. LYONS  | X     |          |         |                 | X        | 8/17/07 |

COMMENT RESOLUTION

In their vote sheets, all Commissioners approved the staff's recommendation and provided some additional comments. Subsequently, the comments of the Commission were incorporated into the guidance to staff as reflected in the SRM issued on September 10, 2007.

## Commissioner Comments on SECY-07-0101

### Chairman Klein

I approve the staff's recommendation to defer rulemaking for risk-informed and performance-based 10 CFR Part 50 reactor requirements for advanced reactors until after the development of the licensing strategy for the Next Generation Nuclear Plant (NGNP), or receipt of an application for a Pebble Bed Modulator Reactor (PBMR) design certification or combined license. Although I favor the concept of developing risk-informed performance-based requirements for future reactors, I agree with the staff that until there is a demonstrable need for conducting rulemaking to support licensing of non-light water advanced reactors, the decision to do so would be premature. All near-term combined license applications are expected to reference light water reactors and they can be licensed using the recently revised Part 52 rule. Nonetheless, the insights that would be gained through the evaluation of the various options being considered in the licensing strategy for the NGNP and the PBMR pre-application review should help determine if and when the Part 50 rulemaking should proceed.

The staff's work on the technology neutral framework as an approach for developing a risk-informed performance-based technical basis for licensing advanced reactors, including a risk-informed approach to address single failure criterion, is one such option. The framework's concept is appealing, but I agree with the recommendation by the Advisory Committee on Reactor Safeguards that this concept should be tested on an actual design. The PBMR design certification review would be a logical choice to test this approach. Since the PBMR probabilistic risk assessment is expected to be available during the licensing process, the staff should take the opportunity to use the framework concepts to review the PBMR design.

With respect to consideration for rulemaking to risk-inform individual Part 50 requirements, I agree that the staff should not undertake a new revision effort until specific rules are identified as needed. This includes any effort to risk-inform the single failure criterion in Part 50. This will allow the staff and the industry to focus resources on maintaining the safety of existing reactors and on the licensing of new reactors on the horizon to existing requirements. The staff, however, should maintain its focus in completing the current effort to risk-inform specific rules such as §50.46, "Acceptance Criteria for Emergency Core Cooling Systems for Light-Water Nuclear Power Reactors," and §50.61, "Fracture Toughness Requirements for Protection Against Pressurized Thermal Shock Events."

For the policy issues that need to be resolved to develop a licensing strategy for advanced reactors, I acknowledge that there are wide-ranging opinions among the various stakeholders on the issues of integrating safety, security, and emergency preparedness, establishing a minimum level of safety for new plants, integrating risk for a site with multiple reactors, and establishing containment performance standards. I agree with the staff that there is no compelling reason to seek generic resolution of these policy issues at this time since all near-term combined license applications will be for light water reactors and these can be licensed using the existing regulations. For non-light water reactors, the insights that would be gained through the evaluation of the various options being considered in the licensing strategy for the NGNP and the PBMR pre-application review should help reconcile the diverse stakeholder opinions for generically resolving this policy issue.

Lastly, I agree that a Commission policy statement that defines defense-in-depth is needed for

future plants. A technology-neutral defense-in-depth statement that recognizes the role of inherent safety and passive approaches, in addition to the traditional use of redundant and diverse active systems, would be helpful in advance of developing new licensing requirements. Therefore, I approve staff's recommendation to develop a draft policy statement on defense-in-depth for future plants in a timely fashion so that it could be evaluated using the insights gained through the development of the NGNP licensing strategy and completion of the PBMR pre-application review.

The use of the Advanced Notice of Proposed Rulemaking has yielded valuable feedback from the stakeholders in shaping the staff's vision for developing a licensing strategy for future reactors. I strongly support the staff's continued interaction with the ACRS and external stakeholders in this important pioneering work.

#### Commissioner Jaczko

I approve the staff recommendation to defer work on the rulemaking for risk-informed and performance-based 10 CFT Part 50 reactor requirements for advanced reactors until after the development of the licensing strategy for the Next Generation Nuclear Plant. As I indicated in my vote disapproving the staff recommendation in SECY-06-0007, the paper from which the Commission decided to issue the advanced notice of proposed rulemaking, the efforts to develop a technology neutral reactor rulemaking would not be the most efficient use of agency resources and would not likely be of use to any of the technologies likely to be used by a utility to seek a license in the near future. As the staff recommends in the current paper, the agency should develop the licensing strategy for a particular technology chosen for the NGNP project and then consider the need for a technology neutral, risk-informed, performance-based rulemaking. I fully support focusing the staff resources in this manner at this time.

I am particularly pleased with the staff and stakeholder comments regarding the importance of developing a policy statement on the defense-in-depth policy separate from the development of technology neutral reactor regulations. I encourage the staff to engage many members of the public, the Congress, the industry and other stakeholders as they prepare this important document.

#### Commissioner Lyons

I approve the staff's recommendation to defer rulemaking for risk-informed and performance-based 10 CFR Part 50 reactor requirements for advanced reactors until after the development of the licensing strategy for the Next Generation Nuclear Plant (NGNP). The staff should provide a recommendation regarding rulemaking to the Commission 6 months after the NGNP licensing strategy is finalized. While this remains a valuable initiative, I agree with the Chairman and the staff that until there is a demonstrable need for conducting rulemaking to support licensing of non-light water advanced reactors, the decision to do so would be premature. This does not alter my commitment to supporting non-light water reactor research activities, which should continue.

I believe the ANPR has been very useful in soliciting stakeholder views on a number of issues. In some areas, such as use of the Quantitative Health Objectives to establish the minimum level of safety for new plants, there was a strong consensus. In other areas, there were more

divergent views. Further development of the rule should await the benefit of the licensing strategy for the NGNP as well as staff engagement on licensing of the pebble bed modular reactor (PBMR). I also join the Chairman and the ACRS in supporting the testing of the Framework concept on an actual design. Finally, I continue to strongly believe that safety, security, and emergency preparedness should be integrated in developing a risk-informed/performance-based set of requirements. Stakeholders have raised legitimate concerns and challenges with this approach, however, as this effort moves forward, it is important that the NRC seek to develop a holistic approach to safety.

In the interim, the staff should publish the Framework and initiate efforts to develop a policy statement on defense-in-depth.

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: CHAIRMAN KLEIN

SUBJECT: SECY-07-0101 - STAFF RECOMMENDATIONS  
REGARDING A RISK-INFORMED AND  
PERFORMANCE-BASED REVISION TO 10 CFR PART  
50 (RIN 3150-AH81)

Approved  Disapproved  Abstain

Not Participating

COMMENTS: Below  Attached  None

See attached comments.

  
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SIGNATURE

8/9/07  
\_\_\_\_\_  
DATE

## **Chairman Klein's Comments on SECY-07-0101**

I approve the staff's recommendation to defer rulemaking for risk-informed and performance-based 10 CFR Part 50 reactor requirements for advanced reactors until after the development of the licensing strategy for the Next Generation Nuclear Plant (NGNP), or receipt of an application for a Pebble Bed Modulator Reactor (PBMR) design certification or combined license. Although I favor the concept of developing risk-informed performance-based requirements for future reactors, I agree with the staff that until there is a demonstrable need for conducting rulemaking to support licensing of non-light water advanced reactors, the decision to do so would be premature. All near-term combined license applications are expected to reference light water reactors and they can be licensed using the recently revised Part 52 rule. Nonetheless, the insights that would be gained through the evaluation of the various options being considered in the licensing strategy for the NGNP and the PBMR pre-application review should help determine if and when the Part 50 rulemaking should proceed.

The staff's work on the technology neutral framework as an approach for developing a risk-informed performance-based technical basis for licensing advanced reactors, including a risk-informed approach to address single failure criterion, is one such option. The framework's concept is appealing, but I agree with the recommendation by the Advisory Committee on Reactor Safeguards that this concept should be tested on an actual design. The PBMR design certification review would be a logical choice to test this approach. Since the PBMR probabilistic risk assessment is expected to be available during the licensing process, the staff should take the opportunity to use the framework concepts to review the PBMR design.

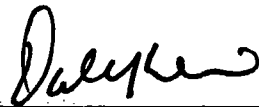
With respect to consideration for rulemaking to risk-inform individual Part 50 requirements, I agree that the staff should not undertake a new revision effort until specific rules are identified as needed. This includes any effort to risk-inform the single failure criterion in Part 50. This will allow the staff and the industry to focus resources on maintaining the safety of existing reactors and on the licensing of new reactors on the horizon to existing requirements. The staff, however, should maintain its focus in completing the current effort to risk-inform specific rules such as §50.46, "Acceptance Criteria for Emergency Core Cooling Systems for Light-Water Nuclear Power Reactors," and §50.61, "Fracture Toughness Requirements for Protection Against Pressurized Thermal Shock Events."

For the policy issues that need to be resolved to develop a licensing strategy for advanced reactors, I acknowledge that there are wide-ranging opinions among the various stakeholders on the issues of integrating safety, security, and emergency preparedness, establishing a minimum level of safety for new plants, integrating risk for a site with multiple reactors, and establishing containment performance standards. I agree with the staff that there is no compelling reason to seek generic resolution of these policy issues at this time since all near-term combined license applications will be for light water reactors and these can be licensed using the existing regulations. For non-light water reactors, the insights that would be gained through the evaluation of the various options being considered in the licensing strategy for the NGNP and the PBMR pre-application review should help reconcile the diverse stakeholder opinions for generically resolving this policy issue.

Lastly, I agree that a Commission policy statement that defines defense-in-depth is needed for future plants. A technology-neutral defense-in-depth statement that recognizes the role of inherent safety and passive approaches, in addition to the traditional use of redundant and

diverse active systems, would be helpful in advance of developing new licensing requirements. Therefore, I approve staff's recommendation to develop a draft policy statement on defense-in-depth for future plants in a timely fashion so that it could be evaluated using the insights gained through the development of the NNGP licensing strategy and completion of the PBMR pre-application review.

The use of the Advanced Notice of Proposed Rulemaking has yielded valuable feedback from the stakeholders in shaping the staff's vision for developing a licensing strategy for future reactors. I strongly support the staff's continued interaction with the ACRS and external stakeholders in this important pioneering work.

 8/9/07  
Dale E. Klein Date



**NOTATION VOTE**

**RESPONSE SHEET**

**TO:** Annette Vietti-Cook, Secretary

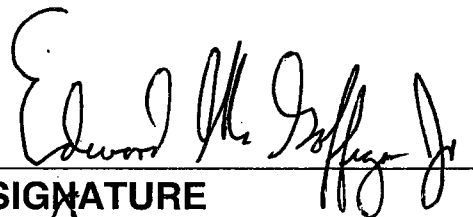
**FROM:** COMMISSIONER MCGAFFIGAN

**SUBJECT:** SECY-07-0101 - STAFF RECOMMENDATIONS  
REGARDING A RISK-INFORMED AND  
PERFORMANCE-BASED REVISION TO 10 CFR PART  
50 (RIN 3150-AH81)

Approved  X  Disapproved \_\_\_\_\_ Abstain \_\_\_\_\_

Not Participating \_\_\_\_\_

COMMENTS: Below \_\_\_\_\_ Attached  X  None \_\_\_\_\_



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August 22, 2007

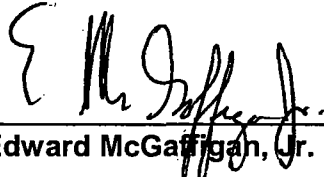
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**Commissioner McGaffigan's Comments on SECY-07-0101**

I have long been a skeptic of this effort to come up with criteria that might be applicable to all types of advanced reactors (light water reactors, heavy water reactors, high-temperature gas-cooled reactors, liquid metal cooled burner or breeder reactors, etc.). I have advocated instead coming up with regulatory frameworks for each type of reactor as its potential for real use by real utilities (or by DOE in a demonstration plant designed to lead to commercial use) approaches. The staff can work on the equivalent of the physicists' quest for unified field theories after developing specific frameworks for each type of advanced reactor. Thus, I am happy to see the staff and ACRS recommendation to first develop a specific framework for the Next Generation Nuclear Plant (NGNP).

I join with my colleagues in approving the staff's recommendation to defer expending resources on rulemaking for risk-informed and performance-based 10 CFR Part 50 reactor requirements for advanced reactors until after the development of the licensing strategy for the NGNP, or receipt of an application for a design certification or combined license of a gas-cooled high temperature design. I agree that the focus of the initial effort should be on a high-temperature gas-cooled reactor framework because, as discussed with ACRS on June 7, 2007, such a reactor will have significant safety margins compared to light water reactors (LWRs). As also discussed with ACRS, the opposite will be true for consolidated GNEP facilities (liquid metal cooled burner reactor, reprocessing facility, and fuel fabrication facility) and some of the sites currently being considered by DOE may not be capable of meeting the Commission's safety goal policy statement if the risks of the facilities are aggregated.

As I said in my vote on SECY-06-0007, I do not dispute that we today do not have an adequate regulatory framework for designs other than LWRs and that one of these days, perhaps soon, we might need one. I also stated that what the NRC needed, within resource constraints (and on a schedule consistent with their likely presentation to us for licensing), was to develop detailed frameworks for each of the non-LWR technologies. Thus, I join with Commissioner Jaczko in fully supporting the staff proposal to develop first the licensing strategy for a particular technology chosen for the NGNP project and, with that step completed and lessons learned, to consider the need for a technology neutral (generic), risk-informed, performance-based rulemaking. Even then, long after all current Commissioners will have departed NRC, the more pressing need is likely to be a specific framework for another reactor type, such as liquid metal cooled reactors.

  
Edward McGaffigan, Jr.      8/22/07  
\_\_\_\_\_  
(Date)

NOTATION VOTE  
RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary  
FROM: COMMISSIONER JACZKO  
SUBJECT: SECY-07-0101 - STAFF RECOMMENDATIONS  
REGARDING A RISK-INFORMED AND  
PERFORMANCE-BASED REVISION TO 10 CFR PART  
50 (RIN 3150-AH81)

Approved  Disapproved  Abstain

Not Participating

COMMENTS: Below  Attached  None

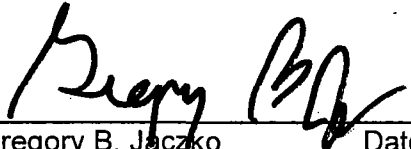
  
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8/13/07  
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DATE

**Commissioner Jaczko's comments on SECY-07-0101  
Staff Recommendations Regarding Risk-informed and Performance-based  
revision to 10 CFR Part 50**

I approve the staff recommendation to defer work on the rulemaking for risk-informed and performance-based 10 CFT Part 50 reactor requirements for advanced reactors until after the development of the licensing strategy for the Next Generation Nuclear Plant. As I indicated in my vote disapproving the staff recommendation in SECY-06-0007, the paper from which the Commission decided to issue the advanced notice of proposed rulemaking, the efforts to develop a technology neutral reactor rulemaking would not be the most efficient use of agency resources and would not likely be of use to any of the technologies likely to be used by a utility to seek a license in the near future. As the staff recommends in the current paper, the agency should develop the licensing strategy for a particular technology chosen for the NNGP project and then consider the need for a technology neutral, risk-informed, performance-based rulemaking. I fully support focusing the staff resources in this manner at this time.

I am particularly pleased with the staff and stakeholder comments regarding the importance of developing a policy statement on the defense-in-depth policy separate from the development of technology neutral reactor regulations. I encourage the staff to engage many members of the public, the Congress, the industry and other stakeholders as they prepare this important document.

  
\_\_\_\_\_  
Gregory B. Jaczko                      Date                      8/13/07

NOTATION VOTE

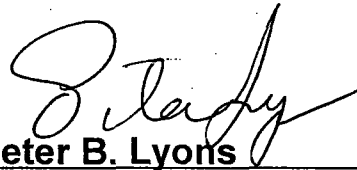
RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary  
FROM: COMMISSIONER LYONS  
SUBJECT: SECY-07-0101 - STAFF RECOMMENDATIONS  
REGARDING A RISK-INFORMED AND  
PERFORMANCE-BASED REVISION TO 10 CFR PART  
50 (RIN 3150-AH81)

Approved  X  Disapproved \_\_\_\_\_ Abstain \_\_\_\_\_

Not Participating \_\_\_\_\_

COMMENTS: Below \_\_\_\_\_ Attached  X  None \_\_\_\_\_



Peter B. Lyons

SIGNATURE

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DATE

Entered on "STARS" Yes  X  No \_\_\_\_\_

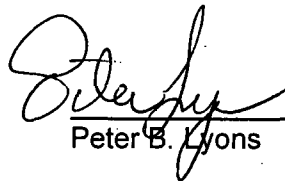
**Commissioner Lyons' Comments on SECY-07-0101**

**Staff Recommendations Regarding a Risk-Informed and Performance-Based Revision to  
10 CFR PART 50**

I approve the staff's recommendation to defer rulemaking for risk-informed and performance-based 10 CFR Part 50 reactor requirements for advanced reactors until after the development of the licensing strategy for the Next Generation Nuclear Plant (NGNP). The staff should provide a recommendation regarding rulemaking to the Commission 6 months after the NGNP licensing strategy is finalized. While this remains a valuable initiative, I agree with the Chairman and the staff that until there is a demonstrable need for conducting rulemaking to support licensing of non-light water advanced reactors, the decision to do so would be premature. This does not alter my commitment to supporting non-light water reactor research activities, which should continue.

I believe the ANPR has been very useful in soliciting stakeholder views on a number of issues. In some areas, such as use of the Quantitative Health Objectives to establish the minimum level of safety for new plants, there was a strong consensus. In other areas, there were more divergent views. Further development of the rule should await the benefit of the licensing strategy for the NGNP as well as staff engagement on licensing of the pebble bed modular reactor (PBMR). I also join the Chairman and the ACRS in supporting the testing of the Framework concept on an actual design. Finally, I continue to strongly believe that safety, security, and emergency preparedness should be integrated in developing a risk-informed/performance-based set of requirements. Stakeholders have raised legitimate concerns and challenges with this approach, however, as this effort moves forward, it is important that the NRC seek to develop a holistic approach to safety.

In the interim, the staff should publish the Framework and initiate efforts to develop a policy statement on defense-in-depth.

  
Peter B. Lyons      8/17/07  
Date