

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



March 22, 2006

SECRETARY

COMMISSION VOTING RECORD

DECISION ITEM: SECY-06-0007

TITLE: STAFF PLAN TO MAKE A RISK-INFORMED AND  
PERFORMANCE-BASED REVISION TO 10 CFR PART 50

The Commission (with Chairman Diaz and Commissioners Merrifield and Lyons agreeing) approved the subject paper as recorded in the Staff Requirements Memorandum (SRM) of March 22, 2006. Commissioners McGaffigan and Lyons disapproved the paper.

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 cursive script, appearing to read "A. Vietti-Cook".

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Annette L. Vietti-Cook  
Secretary of the Commission

Attachments:

1. Voting Summary
2. Commissioner Vote Sheets

cc: Chairman Diaz  
Commissioner McGaffigan  
Commissioner Merrifield  
Commissioner Jaczko  
Commissioner Lyons  
OGC  
EDO  
PDR

VOTING SUMMARY - SECY-06-0007

RECORDED VOTES

|                  | APRVD | DISAPRVD | ABSTAIN | NOT PARTICIP | COMMENTS | DATE    |
|------------------|-------|----------|---------|--------------|----------|---------|
| CHRM. DIAZ       | X     |          |         |              | X        | 2/1/06  |
| COMR. McGAFFIGAN |       | X        |         |              | X        | 3/1/06  |
| COMR. MERRIFIELD | X     |          |         |              | X        | 2/7/06  |
| COMR. JACZKO     |       | X        |         |              | X        | 2/28/06 |
| COMR. LYONS      | X     |          |         |              | X        | 2/24/06 |

COMMENT RESOLUTION

In their vote sheets, Chairman Diaz and Commissioners Merrifield and Lyons approved the subject paper. Commissioners McGaffigan and Jaczko disapproved the paper. Subsequently, the comments of a majority of the Commission were incorporated into the guidance to staff as reflected in the SRM issued on March 22, 2006.

NOTATION VOTE  
RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary  
FROM: CHAIRMAN DIAZ  
SUBJECT: **SECY-06-0007 - STAFF PLAN TO MAKE A RISK-  
INFORMED AND PERFORMANCE-BASED REVISION  
TO 10 CFR PART 50**

Approved  <sup>w/comments and edits</sup> Disapproved \_\_\_\_\_ Abstain \_\_\_\_\_  
Not Participating \_\_\_\_\_

COMMENTS:

See attached.

  
\_\_\_\_\_  
SIGNATURE  
  
2.1.06  
\_\_\_\_\_  
DATE

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

Chairman Diaz's Comments on SECY-06-0007

I approve the staff's recommendation in SECY 06-0007 to issue the ANPR on approaches for making technical requirements for power reactors risk-informed, performance-based, and technology neutral, subject to the comments below and edits attached. I also approve the staff's recommendation to supplement the ANPR with new information as needed. The staff should provide advance notice to the Commission offices of any significant changes to the ANPR.

I believe the ANPR provides a good mechanism for obtaining early stakeholder participation in this task. To facilitate stakeholder participation, the staff should hold public meetings and workshops starting soon after the ANPR is issued. In addition, the staff should keep stakeholders informed of progress throughout the public comment period. At the end of the ANPR stage, the staff should provide, with its recommendation, a detailed summary of any differing stakeholder views to ensure that the Commission has the benefit of these views when deliberating on the recommendation.

I disagree with the staff's proposal to keep the public comment period for the ANPR open until December 2007. The staff should complete the ANPR stage by December 2006 and provide its recommendation on whether and, if so, how to proceed with rulemaking by March 2007. Efforts related to developing a technology neutral framework have been ongoing since at least 2002 and those for making regulations risk-informed and performance-based have been ongoing since the Commission's PRA Policy Statement was issued in 1995.

I am disappointed that the staff has not included in the ANPR any specific questions to solicit stakeholder views on the technology neutral framework. The staff should ensure that an appropriate list of questions is included in the section on the technology neutral framework prior to publication of the ANPR in the Federal Register. In addition, the staff should place the latest working draft of the technology neutral framework on the RuleForum website no later than the date of publication of the ANPR. The staff should keep the Commission informed of significant developments.



DRAFT

[7590-01-P]

**NUCLEAR REGULATORY COMMISSION**

**10 CFR Parts 50 and 53**

**RIN 3150-AH81**

**Approaches to Risk-Inform and Performance-Base  
Requirements for Nuclear Power Reactors**

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Advance notice of proposed rulemaking (ANPR).

**SUMMARY:** The Nuclear Regulatory Commission (NRC) is considering modifying its approach to develop risk-informed and performance-based requirements applicable to nuclear power reactors. The NRC is considering an approach that, in addition to the ongoing effort to revise some specific regulations to ~~be~~ <sup>Make them</sup> risk-informed and performance-based, would establish a comprehensive set of risk-informed and performance-based requirements applicable for all nuclear power reactor technologies as an alternative to current requirements. This new rule would take advantage of operating experience, lessons learned from the current rulemaking activities, advances in the use of risk-informed technology, and would focus NRC and industry resources on the most risk-significant aspects of plant operations to better ensure public health and safety. The set of new alternative requirements would be intended primarily for new power reactors although they would be available to existing reactor licensees.

At the conclusion of this ANPR phase and taking into consideration public comment, the NRC will determine how to proceed regarding making the requirements for nuclear power plants risk-informed and performance-based.

**DATES:** The comment period expires December <sup>29, 2006.</sup> ~~31, 2007~~. This time period allows public comment on the proposals in this ANPR.

Comments on the general proposals in this ANPR would be most beneficial to the NRC if submitted within 90 days of issuance of the ANPR. Comments on any periodic updates will be most beneficial if submitted within 90 days of their respective issuance. Periodic updates that are issued will be placed on the NRC's interactive rulemaking website, Ruleforum, (<http://ruleforum.llnl.gov>), for information or comment. Supplements to this ANPR are anticipated to be issued and will request additional public comments.

Comments received after the above date will be considered if it is practical to do so, but the Commission is able to assure consideration only for comments received on or before the above date.

**ADDRESSES:** You may submit comments by any one of the following methods. Please include the following number RIN 3150-AH81 in the subject line of your comments. Comments on this ANPR submitted in writing or in electronic form will be made available for public inspection. Because your comments will not be edited to remove any identifying or contact information, the NRC cautions you against including information such as social security numbers and birth dates in your submission.

**FOR FURTHER INFORMATION CONTACT:** Joseph Birmingham, Office of Nuclear Reactor Regulation (NRR), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone (301) 415-2829, email: jlb4@nrc.gov; or Mary Drouin, Office of Nuclear Regulatory Research (RES), U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone: (301) 415-6675, e-mail: mxd@nrc.gov.

**SUPPLEMENTARY INFORMATION:**

The NRC is considering developing a comprehensive set of risk-informed, performance-based, and technology neutral requirements for licensing nuclear power reactors. Background: These requirements would be included in NRC regulations as a new 10CFR Part 53 and could be used as an alternative to the existing requirements in 10CFR Part 50.

The Commission directed the NRC staff to (1) develop an ANPR, (2) incorporate in the ANPR a formal program plan <sup>for</sup> <sup>ing</sup> to risk-inform 10 CFR Part 50, as well as other related risk-informed efforts, and (3) integrate safety, security, and preparedness throughout the effort (ADAMS Accession Numbers ML051290351 and ML052570437). The Commission also directed the staff to include the effort to develop risk-informed and performance-based alternatives to the single failure criterion <sup>and (3)</sup> (ADAMS Accession Number <sup>and</sup> ML052640492).

The NRC has conducted public meetings and workshops to engage interested stakeholders in dialogue on the merits of various approaches to risk-inform and performance-base the requirements for nuclear power reactors. In particular, the NRC conducted (1) a workshop on March 14-16, 2005, to discuss the staff's work in development of technology-neutral framework in support of a regulatory structure for new plant licensing, and (2) a public meeting on August 25, 2005, to discuss plans for a risk-informed and performance-based revision to 10 CFR Part 50. Meeting minutes were taken and are available to the public

5  
To facilitate early stakeholder participation in this effort. The Commission also directed the NRC staff to:

(ADAMS Accession Numbers ML050900045 and ML052500385, respectively). At the above workshop and meeting, the NRC discussed the desirability of various approaches for risk-informing the requirements for nuclear power reactors and particularly for new reactors of diverse types. The NRC discussed approaches such as (1) developing an integrated set of risk-informed requirements using a technology-neutral framework as a basis for regulation, and (2) continuing to risk-inform 10 CFR 50 on an issue-by-issue basis.

The NRC also plans to continue the ongoing efforts to revise specific regulations in 10 CFR Part 50 as described in SECY-98-300, "Options for Risk-Informed Revisions to 10 CFR Part 50 - Domestic Licensing of Productions and Utilization Facilities" (ML992870048). The Commission proposes to focus resources in the near-term on completion and subsequent implementation of the ongoing risk-informed rulemaking efforts for current operating reactors and not to initiate new efforts to risk-inform and performance-base other regulations at this time, unless specific regulations or guidance documents are identified that could enhance the efficiency and effectiveness of NRC reviews of near-term applications.

However, the NRC is requesting public comment in the ANPR on whether there are additional regulations in 10 CFR Part 50 that should be risk-informed. Based on public comments received, the Commission will decide whether to move forward regarding initiating any new revisions to the regulations in 10 CFR Part 50.

Although the NRC conducted the meetings discussed above to get a sense of stakeholder interest and to ascertain the desired path forward, the NRC is issuing this ANPR to obtain additional comment on the proposed approaches, to ensure that the Commission's intent is known to all stakeholders, and to allow the NRC to proceed to risk-inform the requirements for power reactors in an open, integrated, and transparent manner.

## Proposed Plan

The NRC has developed a proposed plan to develop an integrated risk-informed and performance-based ~~revision~~ <sup>alternative</sup> to 10 CFR Part 50 that would cover power reactor applications including non-LWR reactor designs. To accomplish this goal safety, security, and preparedness will be integrated into <sup>this effort to provide</sup> one cohesive structure. This structure will ensure that the reactor regulations, and staff processes and programs are built on a unified safety concept and are properly integrated so that they complement one another. Based on the above, the overall objectives of a risk-informed and performance-based ~~revision~~ <sup>alternative</sup> to 10 CFR Part 50 are to: (1) enhance safety and security by focusing NRC and licensee resources in areas commensurate with their importance to <sup>public</sup> health and safety, (2) provide NRC with <sup>a</sup> ~~the~~ framework <sup>that uses</sup> risk information in an integrated manner ~~to take action in reactor regulatory matters~~, (3) use risk information to provide flexibility in plant design and operation, <sup>while maintaining</sup> ~~which can result in burden~~ <sup>of enhancing</sup> reduction ~~without compromising~~ safety and security, (4) ensure that risk-informed activities are coherently and properly integrated such that they complement one another and continue to meet the 1995 Commission's PRA Policy Statement, and (5) allow for different reactor technologies in a manner that will promote stability and predictability in the long term.

The approach addresses risk-informed power reactor activities and the associated guidance documents. Risk-informed activities addressing non-power reactors, nuclear materials and waste are not addressed.

The NRC's proposed approach to develop a risk-informed and performance-based revision to 10 CFR Part 50 is to create an entire new Part in 10 CFR (referred to as "10 CFR Part 53") that can be applied to any reactor technology and that is an alternative to 10 CFR Part

50. Two major tasks are proposed: (1) develop the technical basis for rulemaking for 10 CFR Part 53, and (2) develop the regulations and associated guidance for 10 CFR Part 53.

### Task 1: Development of Technical Basis

The objective of this task is to develop the technical basis for a risk-informed and performance-based 10 CFR Part 53. The technical basis provides the criteria and guidelines for development and implementation of the regulations to be included in Part 53. Current activities associated with developing the technical basis are described in SECY-05-006 (ADAMS accession number ML043560093).

SECY-05-006

X

As the technical basis is developed and completed, it is anticipated that additional issues will be identified for which stakeholder input is desired. Therefore, it is envisioned that supplemental issues will be added to this ANPR over time. Consequently, the time period for this ANPR is envisioned to be open until the technical basis for Part 53 is complete.

At the end of the ANPR phase, the Commission will decide whether to proceed to formal rulemaking.

If upon completion of the technical basis the Commission directs the NRC staff to proceed to rulemaking.

### Task 2: Rule Development

The objective of this task is to develop and issue the actual regulations for Part 53. The NRC will follow its normal rule development process upon completion of the technical basis. The Commission will direct the staff to develop proposed rule text, interact with stakeholders in an appropriate forum (e.g., posting on web, workshops), and provide a proposed rule package to the Commission for consideration, if rulemaking is undertaken.

X

In development of the rulemaking, the necessary guidance documents to meet the regulations in 10 CFR Part 53 will also be developed.

### Specific Considerations

Before determining whether to develop a proposed rule, the NRC is seeking comments on this matter from all interested persons. Specific areas on which the Commission is requesting comments are discussed in the following sections. Comments, accompanied by supporting reasons, are particularly requested on the questions contained in each section.

#### A. Plan

The NRC is seeking comments on the <sup>Proposed</sup> plan described above: X

1. Is the proposed plan to make a risk-informed and performance-based <sup>alternative</sup> ~~revision~~ to 10 CFR Part 50 reasonable? That is, is there a better approach than to create an entire new Part 53 to achieve a risk-informed and performance-based <sup>Regulatory Framework for Nuclear Power Reactors</sup> ~~10 CFR Part 50~~? If yes, <sup>Please describe the better approach.</sup> ~~what is a better and different way?~~

2. Are the objectives, as articulated <sup>above in the proposed plan section</sup> understandable and achievable? If not, why not? Should there be additional objectives? If so, ~~why and what are they?~~ <sup>Please describe the additional objectives and explain the reasons for including them.</sup>

3. ~~Does~~ <sup>Would</sup> the approach described <sup>above in the proposed plan section</sup> accomplish the objectives? If not, why not? and what changes to the approach would allow for accomplishing the objectives?
4. Would existing licensees be interested in using risk-informed and performance-based alternative regulations to 10 CFR Part 50 as their licensing basis? If not, why not? If so, please discuss the main reasons for doing so.
5. Should the alternative regulations be technology-neutral (i.e., applicable to all reactor technologies, e.g., light water reactor or gas cooled reactor), or be technology-specific? Please discuss the reasons for your answer. If technology-specific, which technologies?
6. When would alternative regulations and supporting documents need to be in place to be of most benefit? Could supporting guidance be developed later than the alternative regulations, e.g. phased in during plant licensing and construction?

7. ~~If industry wishes to participate in the development of an alternative process, the NRC envisions the process could involve the following: proposed supporting documents, and standards, and guidance, could be developed by industry, and provided in writing to NRC staff for consideration.~~ <sup>The NRC encourages active stakeholder participation through</sup> ~~If industry wishes to participate in the development of an alternative process, the NRC envisions the process could involve the following: proposed supporting documents, and standards, and guidance, could be developed by industry, and provided in writing to NRC staff for consideration.~~ <sup>In such a process,</sup>

<sup>Submitted to and</sup> reviewed by NRC staff, and the NRC staff could endorse them, if appropriate. To the extent that any documents, standards, or guidance developed by the industry requires further information or explanation, NRC staff could invite industry representatives to a meeting for the purpose of having industry representatives provide additional information and to present their individual views on the subject. ~~What~~ specific documents and standards ~~would industry be willing to take~~ the lead to develop?

OR  
 Guidance you are interested in taking

10 Is there any interest by stakeholders to develop proposed supporting documents, standards, or guidance? If so, please identify your

**B. Integration of Safety, Security and Emergency Preparedness**

The Commission believes that safety, security, and emergency preparedness should be integrated in developing a risk-informed and performance-based set of requirements for nuclear power reactors (i.e., in this context, Part 53). The NRC has proposed to establish security performance standards for new reactors (see SECY-05-0120, ADAMS Accession Number ML051100233). Under the proposed approach, nuclear plant designers would analyze and establish, at an earlier stage of design, security design aspects such that there would be a more robust and effective security posture and less reliance on operational (extrinsic) security programs (guns, guards and gates). This approach takes advantage of making plants more secure by design rather than security components being added on after design.

As part of this approach, the NRC is seeking comment on the following issues:

- 8. In developing the requirements for this alternative <sup>Regulatory Framework</sup> ~~licensing~~ basis, how should safety, security, and emergency preparedness be integrated?
- 9. What specific principles, concepts, features or performance standards for security would best achieve an integrated safety and security approach?

- 10. The NRC is considering rulemaking to require that safety and security be <sup>better</sup> integrated so ~~that~~ changes in one area would <sup>have on</sup> ~~not adversely affect~~ the other. How can

as to allow  
an easier and  
more thorough  
understanding  
of the effects that

and to  
ensure that  
changes with  
unacceptable impacts  
are not implemented.

the safety-security interface be better integrated in design and operational requirements?

- 11. Should security requirements be risk-informed? Why or why not? IF so, what specific security requirements or
  - 17. If safety and security requirements are made risk-informed, how should emergency
  - 12. preparedness requirements be modified to be better integrated with safety and security?
- analysis type*  
*most*  
*benefit*  
*From the use of PRA and how?*

**C. Level of Safety**

The staff, in SECY-05-0130 (ADAMS Accession Number ML051670388), proposed ~~options for specifying a minimum level of safety from the standpoint of risk which would implement the Commission's expectation of enhanced safety for new plants (as expressed in~~ *establishing a regulatory standard that would be applied during licensing to* ~~the Commission's policy statement for Regulation of Advanced Nuclear Power Plants~~ *consistent with* Four options were evaluated which included: (1) perform a case-by-case review, (2) use the Quantitative Health Objectives (QHOs) in the Commission's policy statement on "Safety Goals for the Operation of Nuclear Power Plants" (ADAMS Accession Number ML051580401), (3) develop other risk objectives, and (4) develop new QHOs. The NRC is soliciting stakeholder views on these options.

~~With regard to specifying the minimum level of safety from the standpoint of risk,~~ *to implement the Commission's expectation* subsidiary risk objectives could also be developed. Such subsidiary risk objectives could be a *regarding enhanced safety for new plants* useful way to:

- focus more on plant design,
- provide quantitative criteria for accident prevention and mitigation, and

- provide top level goals to assist in establishing system and hardware reliability and availability targets.

Currently, subsidiary risk objectives of  $10^{-5}$ /plant year and  $10^{-6}$ /plant year that could be applicable to all reactor designs are being considered for accident prevention and accident mitigation, respectively, where:

- accident prevention refers to preventing major fuel damage, and
- accident mitigation refers to preventing releases of radioactive material offsite sufficient to cause one or more early fatalities.

Feedback is sought specifically on the following:

- 13<sup>12</sup>. Which of the options in SECY-05-0130 with respect to level of safety should be pursued and why? Are there alternative options? *IF SO, PLEASE DISCUSS THE ALTERNATIVE OPTIONS AND THEIR BENEFITS.*
- 14<sup>13</sup>. *Should the staff pursue developing subsidiary risk objectives?*  
~~Are subsidiary risk objectives useful, and~~ Are there other uses of ~~the~~ subsidiary risk objectives that are not specified above? *IF SO, WHAT ARE THEY?* *Why or why not?*
- 15<sup>14</sup>. Are the subsidiary risk objectives specified above reasonable surrogates for the QHOs for all reactor designs? ~~Specifically, should a 'preventive' goal be associated with the latent fatality QHO, i.e.,~~ Should the latent fatality QHO be met by preventive measures alone without credit for mitigative measures, or is this too restrictive? Are there other subsidiary risk objectives applicable to all reactor designs that should be considered?
- 17<sup>15</sup>. *are they and what*  
 What would be their basis?

18 ~~15~~. Should a mitigation goal be associated with the early fatality QHO or should it be set without credit for preventive measures (i.e. assuming major fuel damage has occurred)?

19 16. Should other factors be considered in accident mitigation besides early fatalities, such as latent fatalities, late containment failure, land contamination, and property damage? If so, what should be the acceptance criteria and its ~~basis~~ <sup>why</sup>?

20 17. Would a level 3 Probabilistic Risk Assessment (PRA) analysis still be needed if subsidiary risk objectives can be developed? For a specific technology, can practical subsidiary risk objectives be developed without the insights provided by level 3 PRAs?

#### D. Integrated Risk

For new plant licensing, ~~some licensees~~ <sup>Potential applicants</sup> have indicated ~~their~~ <sup>new and</sup> interest in locating new plants at existing sites, ~~or~~ <sup>In addition, potential applicants have indicated interest in</sup> multiple (or modular) reactor units at new sites. The NRC is ~~evaluating~~ <sup>locating</sup> the issue of integrated risk. The staff, in SECY-05-0130, evaluated three options which included: (1) no consideration of integrated risk; (2) quantification of integrated risk at the site <sup>only</sup> from new reactors; and (3) quantification of integrated site risk <sup>(new and existing)</sup> for all reactors at that site. Another aspect of this issue is the level of safety associated with the integrated risk. The NRC is presently considering whether the integrated risk <sup>should be restricted to the same</sup> from the new plants ~~should meet the level of~~ <sup>level that would be applied to a single reactor.</sup> safety that the NRC has proposed for new plants. If this ~~new~~ <sup>new</sup> approach were adopted, for an entity who proposed to add multiple reactors to an existing site, the integrated risk ~~of these new~~ <sup>of these new</sup>

(i.e., the integrated risk would not consider existing reactors)

~~plants should not~~ <sup>would not be allowed to</sup> exceed the level of safety expressed by the QHOs in the Commission's Safety Goal Policy Statement. The NRC is soliciting stakeholder views on these or other options.

Feedback is sought specifically on the following:

21. ~~18.~~ Which of the options in SECY-05-0130 with respect to integrated risk should be pursued and why? Are there alternative options? *If so, what are they?*

22. ~~19.~~ Should the integrated risk from multiple reactors be considered, ~~and if so,~~ <sup>Why or why not?</sup> should the risk meet a minimum threshold specified in the regulations? ~~If not, why not? Or should~~

23. ~~the risk be considered on a per-reactor basis and meet a minimum threshold specified in the regulations? If yes, why?~~

*Why or why not*

*IF integrated risk should be considered,*

**E. ACRS Views on Level of Safety and Integrated Risk**

In a letter dated September 21, 2005, the Advisory Committee on Reactor Safeguards (ACRS) raised a number of questions related to new plant licensing. The ACRS discussed issues <sup>related to requiring</sup> ~~of requiring new plants to meet a minimum level of~~ enhanced safety and how the risk from multiple reactors at a single site should be accounted for. The details of the ACRS discussion are in the September 21, 2005 letter which is attached to this ANPR. The Commission, in a September 14, 2005 SRM, directed the staff to consider ACRS comments in developing a subsequent notation vote paper addressing these policy issues.

Feedback is sought specifically on the following:

20. What are the merits of the questions and views raised by various members of the Committee?

24 ~~21~~. ~~How~~ <sup>in the ACRS letter and</sup> should the views raised by various members of the Committee be factored into the resolution of the issues of level of safety and integrated risk? *why or why not?*

#### F. Containment Functional Performance Standards

The Commission has ~~asked~~ <sup>directed</sup> the staff to develop options for containment functional performance requirements and criteria which take into account such features as core, fuel, and cooling system design. In developing these options, the NRC is seeking stakeholder views on the following aspects:

25 ~~22~~. How should containment be defined and what are its safety functions? Are the safety functions different for different designs? If so, how?

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Page

27 ~~23~~. What approach should be taken to develop technology-neutral containment performance standards that would be applicable to all reactor designs and technologies? Should containment performance be defined in terms of the integrated performance capability of all mechanistic barriers to radiological release or in terms of

the performance capability of a means of limiting or controlling radiological releases separate from the fuel and reactor pressure boundary barriers? Should the functional

performance standards be design and technology-specific? If so, how?

↑  
Containment

Why or why not?

Move up  
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separate  
question  
# 26.

28

24. What plant physical security functions should be associated with containment and what should be the related functional performance standards?

25.

With respect to fission product retention, how should the functional performance requirement and criterion for containment take into account such features as the fuel, core, and cooling system design?

29

25. How should PRA information and insights be combined with traditional deterministic approaches <sup>and</sup> defense in depth in establishing the proposed containment functional performance requirements and criteria for controlling radiological releases?

30

27. How should events in the range  $10^{-4}$  to  $10^{-7}$  be considered in developing the containment functional performance requirements and criteria? Should events below  $10^{-7}$  be considered in developing the containment functional performance requirements and criteria? Should postulated bounding events be considered in design conditions for establishing containment functional performance requirements and criteria?

28. Should public confidence in nuclear plant safety play a role in evaluating options for containment performance requirements and criteria?

### G. Technology-Neutral Framework

In support of determining the requirements for these alternative regulations, the NRC is developing a technology-neutral framework. This framework provides one approach in the form of criteria and guidelines that could serve as the technical basis for Part 53 that is technology-neutral, risk-informed and performance-based. A working draft of this framework was issued for public review and comment in SECY-05-0006, dated January 7, 2005 (ML043560093). The framework provides the criteria and guidelines for the following:

- Safety, security, and emergency preparedness expectations
- Defense-in-depth and treatment of uncertainties
- Licensing basis events identification and selection
- Safety classification of structures, systems, and components
- PRA technical acceptability

The latest working draft of the framework will be placed on the Ruleforum website (April 2006) for information and to solicit public comment. The NRC will identify specific questions for stakeholder comment at that time. As the technical basis is further developed, this ANPR will be supplemented to request additional stakeholder comment.

The NRC is seeking stakeholder views of the following aspects:

Staff should include specific questions on this area.

## H. Defense-in-Depth

In SECY-03-0047 (ML030160002), the staff recommended that the Commission approve the development of a policy statement or description (e.g., white paper) on defense-in-depth for nuclear power plants to describe: the objectives of defense-in-depth (philosophy); the scope of defense-in-depth (design, operation, etc.); and the elements of defense-in-depth (high level principles and guidelines). The policy statement or description would be technology-neutral and risk-informed and would be useful in providing consistency in other regulatory programs (e.g., Regulatory Analysis Guidelines). In the SRM <sup>on</sup> SECY-03-0047, the Commission directed the staff to consider whether it can accomplish the same goals in a more efficient and effective manner by updating the Commission Policy Statement on Use of Probabilistic Risk Assessment Methods in Nuclear Regulatory Activities to include a more explicit discussion of defense-in-depth, risk-informed regulation, and performance-based regulation. The NRC is interested in stakeholder comment on a policy statement on defense-in-depth. X

31 28. <sup>better description of</sup> Would development of a ~~policy statement~~ on defense-in-depth for incorporation into the Commission's Policy Statement on PRA ~~as described above~~, be of any benefit? Why or why not? ~~IF so, please discuss~~ <sup>any specific benefits.</sup>

32. ~~IF the NRC undertakes developing a better description of defense-in-depth, would it be more effective and efficient to incorporate it into the~~ <sup>or should it be provided</sup> ~~Would a policy statement providing a Commission definition on defense-in-depth be~~ <sup>in a separate</sup> ~~beneficial to current operating plants, as input to near-term designs, or future designs?~~ <sup>Policy</sup> ~~What would be the nature of the benefit?~~ <sup>statement?</sup> <sup>why?</sup>

27. ~~Does it make more sense to modify Regulatory Guide (RG) 1.174? If so, what section in RG 1.174 with regard to defense-in-depth needs to be revised?~~

33 32. RG 1.174 assumes that adequate defense-in-depth exists and provides guidance for ensuring it is not significantly degraded by a change to the licensing basis. ~~RG 1.174~~

~~was to be revised.~~ <sup>Should</sup> ~~How should defense-in-depth be addressed for new plants where~~ <sup>to include a better description of defense-in-depth? Why or why not? IF so, what</sup> ~~defense-in-depth is being incorporated into the design?~~ <sup>a change to RG 1.17 be sufficient instead of a Policy Statement? Why or why not?</sup>

340

35 33. For both near-term and long-term new reactor designs, is revising the PRA Policy Statement the best path forward or development of a new policy statement? ~~is it~~

<sup>Should</sup> ~~reasonable to link~~ <sup>better description of</sup> ~~development of a policy statement on~~ <sup>defense-in-depth (whether as a</sup> ~~new statement, or a revision to the PRA policy statement) to the development of Part~~ <sup>Policy</sup> ~~58?~~ <sup>be completed on the same schedule as Part 53?</sup> ~~Why or why not? That is, if it is desirable to develop a policy statement on~~ ~~defense-in-depth, when would it be most effective to develop the policy statement?~~

or as an update to RG 1.174

### I. Single Failure Criterion

In SECY-05-0138 (ML051950619), the staff forwarded to the Commission a draft report entitled "Technical Report to Support Evaluation of a Broader Change to the Single Failure Criterion" and recommended to the Commission that any followup activities to risk-inform the Single Failure Criterion (SFC) should be included in the activities to risk-inform the requirements of 10 CFR Part 50. The Commission directed the staff to seek additional

stakeholder involvement. The report provides <sup>the following options</sup> alternatives to the SFC: (1) maintain the SFC as is, (2) risk-inform the SFC for design bases analyses, (3) risk-inform SFC based on safety significance, and (4) replace SFC with risk and safety function reliability guidelines. The NRC is soliciting stakeholder feedback with regard to the proposed alternatives.

- 36 ~~34~~. Are the proposed <sup>options</sup> alternatives reasonable? If not, why not?
37. Are there other options for risk-informing the SFC? If so, please discuss these options.
- 38 ~~35~~. Which <sup>option</sup> alternative, if any, should be considered? ~~That is,~~ Should any changes to the SFC in 10 CFR Part 50 be pursued, <sup>Separate from or as a part of the efforts to</sup> or should it be considered in the context of ~~creating~~ <sup>create</sup> a new Part 53? Why or why not?

#### J. Continue Individual Rulemakings to Risk-Inform 10 CFR Part 50

~~Currently, 10 CFR Part 50 has a mix of prescriptive and risk-informed requirements.~~

The NRC has for some time been revising certain provisions of 10 CFR Part 50 to make them more risk-informed and performance-based. Examples are: (1) a revision to 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants;" (2) a revision of 10 CFR 50.48 to allow licensees to voluntarily adopt National Fire Protection Association (NFPA) Standard 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants, 2001 Edition," (NFPA 805); and (3) issuance of 10 CFR 50.69, "Risk-Informed Categorization and Treatment of Structures, Systems, and Components for Nuclear Power Reactors," as a voluntary alternative set of requirements.

These actions have been effective but required extensive NRC and industry efforts to develop and implement.

The NRC plans to continue the current risk-informed rulemaking actions, e.g., 10 CFR 50.61 on pressurized thermal shock and 10 CFR 50.46 on redefinition of the emergency core cooling system break size, that are ongoing, and would undertake new risk-informed rulemaking only on an as-needed basis. In the longer term, the NRC could evaluate 10 CFR Part 50 in its entirety and conduct rulemaking for those areas that most readily add flexibility to 10 CFR Part 50 requirements.

The NRC is seeking comment on the following issues:

40. Should the NRC ~~only~~ continue with the ongoing current rulemaking efforts and not undertake any effort to risk-inform other regulations in 10 CFR Part 50, or ~~only~~ should <sup>the NRC</sup> undertake new risk-informed rulemaking on a case-by-case priority basis? <sup>Why?</sup> Which regulations would be the most beneficial to revise? What would be the anticipated safety benefits?
41. IF the NRC were to undertake new risk-informed rulemaking?
42. In addition to revising specific regulations, are there any particular regulations that do not need to be revised, but <sup>whose</sup> ~~their~~ associated regulatory guidance documents, could be revised to be more risk-informed and performance-based? What are the safety benefits associated with revising these guides? Which ones in particular are stakeholders interested in having revised ~~and~~ <sup>and why?</sup>

- 43 38. If additional regulations <sup>and/or</sup> ~~and~~ associated regulatory guidance documents were to be revised, when <sup>Should the NRC</sup> ~~does it make sense~~ to initiate these efforts, e.g., immediately or after having started implementation of current risk-informed 10 CFR Part 50 regulations?

At the end of the ANPR phase, the NRC will assess whether to adjust its approach to risk-inform the requirements for nuclear power reactors including existing and new plants.

#### List of Subjects

##### 10 CFR Part 50

Classified information, Criminal penalties, Fire protection, Intergovernmental relations, Nuclear power plants and reactors, Radiation protection, Reactor siting criteria, Reporting and recordkeeping requirements .

The authority citation for this document is 42 U.S.C. 2201.

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary  
FROM: COMMISSIONER MCGAFFIGAN  
SUBJECT: **SECY-06-0007 - STAFF PLAN TO MAKE A RISK-  
INFORMED AND PERFORMANCE-BASED REVISION  
TO 10 CFR PART 50**

Approved \_\_\_\_\_ Disapproved <sup>w/comments</sup> X Abstain \_\_\_\_\_  
Not Participating \_\_\_\_\_

COMMENTS:

See attached comments.

  
\_\_\_\_\_  
SIGNATURE

March 1, 2006  
\_\_\_\_\_  
DATE

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

Commissioner McGaffigan's Comments on SECY-06-0007

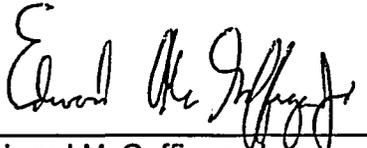
I disapprove the issuance of the proposed Advance Notice of Proposed Rulemaking.

NRC's search for a risk-informed performance-based technology-neutral framework for power reactors has similarities to the faithful's search for the Holy Grail or physicists' search for the grand unified theory of all forces in nature. I do not dispute that we today do not have an adequate regulatory framework for designs other than light water reactors (LWRs) and that one of these days, perhaps soon, we might need one. Even a design as close to current designs as Canada's heavy water ACR-700 poses problems for our framework. Certainly, gas-cooled reactors such as the pebble bed modular reactor or the next generation nuclear plant or the possible research reactor at the University of Texas Permian Basin need their own detailed regulatory framework. The same is true for liquid metal cooled reactors, such as TOSHIBA's 4S reactor or DOE's proposed burner reactor under the global nuclear energy partnership. Historically, we have done miserably at regulating non-light water power reactors (non-LWRs).

The way to get technology-specific frameworks in place is to work on them, define the design basis accidents for each, define the general design criteria for each, etc. I start from the premise that these frameworks are going to be about as detailed as the current Part 50 for LWRs, and they are going to need as much back-up guidance, standard review plans, etc., as exist for LWRs if non-LWRs are going to be deployed in large numbers at some point in the future. We are not going to get where we need to be through fuzzy discussions of broad ambiguous concepts, which the technology-neutral framework encourages. The analogy is to an early twentieth century physicist knowledgeable about Einstein's theory of gravitation trying to formulate a grand unified theory without the knowledge of the electromagnetic, weak and strong interactions developed later in the century.

In my view we need, within resource constraints (and on a schedule consistent with their likely presentation to us for licensing), to develop detailed frameworks for each of the non-LWR technologies. Once we truly understand how to license these technologies, NRC can then go back to an attempt to develop a technology-neutral framework that covers the spectrum of reactors. Or even then our successors long in the future might decide to forego that attempt.

This project currently consumes resources (7 FTE and \$525,000 in contractor support in FY 2006, scaling up to 10 FTE and \$625,000 in FY 2008) that can be better spent on other advanced reactor priorities. If a majority of the Commission decides to approve the ANPR, I would suggest additional questions for public comment along the lines of: "Is this effort premature? Should the NRC instead be focusing on developing technology-specific frameworks for non-LWRs? If so, what should be the priority for various non-LWR technologies?"

 3/1/06  
Edward McGaffigan, Jr. (Date)

NOTATION VOTE

RESPONSE SHEET

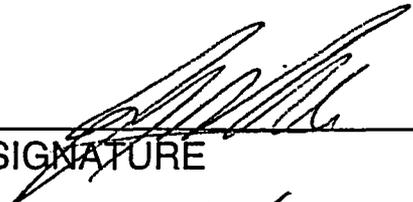
TO: Annette Vietti-Cook, Secretary  
FROM: COMMISSIONER MERRIFIELD  
SUBJECT: **SECY-06-0007 - STAFF PLAN TO MAKE A RISK-  
INFORMED AND PERFORMANCE-BASED REVISION  
TO 10 CFR PART 50**

Approved  Disapproved  Abstain

Not Participating

COMMENTS:

*See attached comments & edits.*

  
\_\_\_\_\_  
SIGNATURE

*2/7/06*  
\_\_\_\_\_  
DATE

Entered on "STARS" Yes  No

Commissioner Merrifield's Comments on SECY-06-0007

I approve the staff recommendations to 1) issue the ANPR on a risk-informed and performance-based revision to 10 CFR Part 50, subject to the edits attached, and 2) to supplement the ANPR as needed when additional stakeholder input is sought.

Although I appreciate the fact that this task is a complicated one with many issues to be deliberated, I support Chairman Diaz's comment on moving the ANPR comment expiration date to December 2006. The staff should then provide a recommendation to the Commission on whether the NRC should proceed with rulemaking, and if applicable, the schedule for this rulemaking effort. The staff should inform the Commission on the additional resources needed to accelerate the schedule in the above manner.

**FOR FURTHER INFORMATION CONTACT:** Joseph Birmingham, Office of Nuclear Reactor Regulation (NRR), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone (301) 415-2829, email: jlb4@nrc.gov; or Mary Drouin, Office of Nuclear Regulatory Research (RES), U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone: (301) 415-6675, e-mail: mxd@nrc.gov.

**SUPPLEMENTARY INFORMATION:**

**Background**

The Commission directed the NRC staff to: (1) develop an ANPR, (2) incorporate in the ANPR a formal program plan to risk-inform 10 CFR Part 50, as well as other related risk-informed efforts, and (3) integrate safety, security, and preparedness throughout the effort (ADAMS Accession Numbers ML051290351 and ML052570437). The Commission also directed the staff to include the effort to develop risk-informed and performance-based alternatives to the single failure criterion (ADAMS Accession Number ML052640492).

The NRC has conducted public meetings and workshops to engage interested stakeholders in dialogue on the merits of various approaches to risk-inform and performance-base the requirements for nuclear power reactors. In particular, the NRC conducted (1) a workshop on March 14-16, 2005, to discuss the staff's work in development of <sup>a</sup>technology-neutral framework in support of a regulatory structure for new plant licensing, and (2) a public meeting on August 25, 2005, to discuss plans for a risk-informed and performance-based revision to 10 CFR Part 50. Meeting minutes were taken and are available to the public

50. Two major tasks are proposed: (1) develop the technical basis for rulemaking for 10 CFR Part 53, and (2) develop the regulations and associated guidance for 10 CFR Part 53.

#### Task 1: Development of Technical Basis

The objective of this task is to develop the technical basis for a risk-informed and performance-based 10 CFR Part 53. The technical basis provides the criteria and guidelines for development and implementation of the regulations to be included in Part 53. Current activities associated with developing the technical basis are described in SECY-05-006 (ADAMS accession number ML043560093).

As the technical basis is <sup>being</sup> developed ~~and completed~~, it is anticipated that additional issues will be identified for which stakeholder input is desired. Therefore, it is envisioned that supplemental issues will be added to this ANPR over time. Consequently, the time period for this ANPR is envisioned to be open until the technical basis for Part 53 is complete. X

At the end of the ANPR phase, the Commission will decide whether to proceed to formal rulemaking.

#### Task 2: Rule Development

The objective of this task is to develop and issue the actual regulations for Part 53. The NRC will follow its normal rule development process upon completion of the technical basis. X  
The Commission will direct the staff to develop proposed rule text, interact with stakeholders in an appropriate forum (e.g., posting on web, workshops), and send a proposed rule package to the Commission for consideration, if rulemaking is undertaken.

the safety-security interface be better integrated in design and operational requirements?

11. ~~If safety and security requirements are made risk-informed, how should emergency preparedness requirements be modified to be better integrated with safety and security?~~

risk-informed? why or why not?  
How should emergency preparedness requirements be

### C. Level of Safety

The staff, in SECY-05-0130 (ADAMS Accession Number ML051670388), proposed options for specifying a minimum level of safety from the standpoint of risk which would implement the Commission's expectation of enhanced safety for new plants (as expressed in the Commission's policy statement for Regulation of Advanced Nuclear Power Plants). Four options were evaluated which included: (1) perform a case-by-case review, (2) use the Quantitative Health Objectives (QHOs) in the Commission's policy statement on "Safety Goals for the Operation of Nuclear Power Plants" (ADAMS Accession Number ML051580401), (3) develop other risk objectives <sup>for the minimum level of safety</sup>, and (4) develop new QHOs. The NRC is soliciting stakeholder views on these options.

With regard to specifying the minimum level of safety from the standpoint of risk, subsidiary risk objectives could also be developed. Such subsidiary risk objectives could be a useful way to:

- focus more on plant design,
- provide quantitative criteria for accident prevention and mitigation, and

- provide <sup>high</sup> ~~top~~ level goals to assist in establishing <sup>plant</sup> system and <sup>equipment</sup> hardware reliability and availability targets.

Currently, subsidiary risk objectives of  $10^{-5}$ /plant year and  $10^{-6}$ /plant year that could be applicable to all reactor designs are being considered for accident prevention and accident mitigation, respectively, where:

- accident prevention refers to preventing major fuel damage, and
- accident mitigation refers to preventing releases of radioactive material offsite sufficient to cause one or more early fatalities.

Feedback is sought specifically on the following:

12. Which of the options in SECY-05-0130 with respect to level of safety should be pursued and why? Are there alternative options?
13. Are subsidiary risk objectives useful, and are there other uses of the subsidiary risk objectives that are not specified above?
14. Are the subsidiary risk objectives specified above reasonable surrogates for the QHOs for all reactor designs? Specifically, should a 'preventive' goal be associated with the latent fatality QHO, i.e., should the latent fatality QHO be met by preventive measures alone without credit for mitigative measures, or is this too restrictive? Are there other subsidiary risk objectives applicable to all reactor designs that should be considered? What would be their basis?

15. Should a mitigation goal be associated with the early fatality QHO or should it be set without credit for preventive measures (i.e. assuming major fuel damage has occurred)?

16. Should other factors be considered in accident mitigation besides early fatalities, such as latent fatalities, late containment failure, land contamination, and property damage?  
If so, what should be the acceptance criteria and its basis?

17. Would a level 3 Probabilistic Risk Assessment (PRA) analysis still be needed if subsidiary risk objectives can be developed? For a specific technology, can practical subsidiary risk objectives be developed without the insights provided by level 3 PRAs?  
*(ie., one that includes calculation of offsite health and economic effects)*

#### D. Integrated Risk

For new plant licensing, some licensees have indicated their interest in locating new plants at existing sites or multiple (or modular) reactor units at new sites. The NRC is evaluating the issue of integrated risk. The staff, in SECY-05-0130, evaluated three options which included: (1) no consideration of integrated risk, (2) quantification of integrated risk at the site from new reactors, and (3) quantification of integrated site risk (for all reactors at that site). Another aspect of this issue is the level of safety associated with the integrated risk. The NRC is presently considering whether the integrated risk from the new plants should meet the level of safety that the NRC has proposed for new plants. If this new approach were adopted, for an entity who proposed to add multiple reactors to an existing site, the integrated risk of these new

the performance capability of a means of limiting or controlling radiological releases separate from the fuel and reactor pressure boundary barriers? Should the functional performance standards be design and technology-specific? If so how?

24. What plant physical security functions should be associated with containment and what should be the related functional performance standards?

25. With respect to fission product retention, how should the functional performance requirement and criterion for containment take into account such features as the fuel, core, and cooling system design?

26. How should PRA information and insights be combined with traditional deterministic approaches to defense in depth in establishing the proposed containment functional performance requirements and criteria for controlling radiological releases?

27. How should <sup>the "rare"</sup> events <sup>with occurrence frequencies</sup> in the range  $10^{-4}$  to  $10^{-7}$  <sup>per year</sup> be considered in developing the containment functional performance requirements and criteria? Should events <sup>less than</sup> below  $10^{-7}$  <sup>per year</sup> <sup>in frequency</sup> be considered in developing the containment functional performance requirements and criteria? ~~Should postulated bounding events be considered in design conditions for establishing containment functional performance requirements and criteria?~~

NOTATION VOTE  
RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary  
FROM: **COMMISSIONER JACZKO**  
SUBJECT: **SECY-06-0007 - STAFF PLAN TO MAKE A RISK-  
INFORMED AND PERFORMANCE-BASED REVISION  
TO 10 CFR PART 50**

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

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

COMMENTS: **See attached comments.**

  
\_\_\_\_\_  
SIGNATURE  
2 / 25 / 06  
\_\_\_\_\_  
DATE

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

**Commissioner Jaczko Comments on SECY-06-0007**

**"Staff Plan to Make a Risk-Informed and Performance-Based Revision to 10CFR Part 50"**

I disapprove of the staff's recommendation because it will unnecessarily consume resources and detract from the agency's significant near term challenges at this time.

The landscape for new reactor licensing has changed substantially since I became a Commissioner. When I first arrived, the agency was preparing to process one or two applications. At the April 2005 semiannual update on the status of new reactors, there were three or four Combined Licenses (COLs) on the horizon. Subsequent to the August 8 Energy Policy Act of 2005, interest increased such that at the November semiannual update there were nine COLs on the horizon. To date, there are now at least eleven COLs anticipated in the near term.

Clearly these applications will be processed under the existing framework using Part 52, which the agency is also revising. Allocating substantial resources and agency focus to create a parallel framework, which will not be ready in time to support the current proposed fleet of new power reactors, will only drain resources from more critical safety and security actions.

If, as part of the administration's Global Nuclear Energy Partnership (GNEP), the NRC needs to license non-light water technology, then a separate, focused, rulemaking can be undertaken for each technology type to address the particular needs of those technologies.

This initiative contains a good deal of attributes that I embrace, notably the proposed integration of safety, security, and emergency preparedness and revising the Commission's Probabilistic Risk Assessment Policy statement in an open, deliberative manner. The opportunity to develop any meaningful changes for the coming generation of power reactors, however, is behind us.

 2/28/06  
\_\_\_\_\_  
Gregory B. Jaczko      Date

NOTATION VOTE  
RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary  
FROM: COMMISSIONER LYONS  
SUBJECT: **SECY-06-0007 - STAFF PLAN TO MAKE A RISK-  
INFORMED AND PERFORMANCE-BASED REVISION  
TO 10 CFR PART 50**

Approved   x   Disapproved        Abstain         
Not Participating       

COMMENTS:

Approved with comments and edits.

Peter B. Lyons   
\_\_\_\_\_  
SIGNATURE  
  
2/24 /06  
\_\_\_\_\_  
DATE

Entered on "STARS" Yes  No

Commissioner Lyons' Comments on SECY-06-0007

**Staff Plan to Make a Risk-Informed and Performance-Based Revision  
to 10 CFR Part 50**

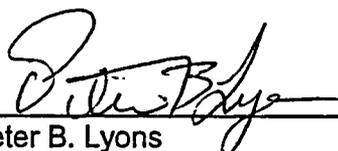
I approve the staff's recommendation to issue the ANPR, and if needed to also allow supplements to the ANPR to fully identify and solicit stakeholder input on additional issues.

I believe this ANPR will facilitate obtaining very useful stakeholder views on several fundamental policy issues such as the use of Quantitative Health Objectives (QHOs) and the appropriate regulatory treatment of integrated risk from multiple reactors. In addition, I will particularly value stakeholder views on whether a new technology-neutral regulatory framework can be conceived that would provide a consistent and coherent regulatory safety foundation across the full spectrum of nuclear-related technologies of emerging interest as well as those currently employed. For example, our increasing national interest in technologies for the transmutation of nuclear wastes in fast reactors and for efficient hydrogen generation by advanced reactors gives added imperative to our consideration of a Part 53 technology-neutral regulatory framework and the possible safety and regulatory benefits. Therefore, I strongly support identifying specific questions on the technology-neutral framework for Section G, and I join with the Chairman in asking that these important questions be made part of the initial ANPR. Stakeholder responses to these questions would be particularly valuable to me in understanding how a new Part 53 could best achieve the NRC safety mission.

Furthermore, I suggest soliciting stakeholder input on the definition of a "unified safety concept," which suggests a potential unification of the separate but complementary strengths of both the deterministic and probabilistic frameworks for evaluating reactor safety. This ANPR may be an appropriate vehicle for soliciting views on how a technology-neutral approach could be related to a unified safety concept. At some point in the future, such a definition should be completed to explain the coupling between these two complementary Commission approaches, but if inclusion of this concept would significantly delay completion of a new Part 53, the task could be deferred until later opportunities. In any case, stakeholder input now on this issue might better enable staff to consider further refinements for incorporation in a revised Part 53 at a later date.

I join the Chairman and Commissioner Merrifield in supporting a schedule that completes the ANPR stage by December 2006 with staff recommendations to the Commission by March 2007, although I recognize the extraordinarily complex and interrelated policy issues that must be addressed. Thus, the staff's recommendations may need to consider a broader range of options than just whether to proceed to rulemaking.

I support the edits suggested by the Chairman and Commissioner Merrifield and have included additional edits (attached).

  
\_\_\_\_\_  
Peter B. Lyons

  
\_\_\_\_\_  
Date

50. Two major tasks are proposed: (1) develop the technical basis for rulemaking for 10 CFR Part 53, and (2) develop the regulations and associated guidance for 10 CFR Part 53.

**Task 1: Development of Technical Basis**

The objective of this task is to develop the technical basis for a risk-informed and performance-based 10 CFR Part 53. The technical basis provides the criteria and guidelines for development and implementation of the regulations to be included in Part 53. Current activities associated with developing the technical basis are described in SECY-05-006 (ADAMS accession number ML043560093).

As the technical basis is developed and completed, it is anticipated that additional issues will be identified for which stakeholder input is desired. Therefore, it is envisioned that supplemental issues will be added to this ANPR over time. ~~Consequently, the time period for this ANPR is envisioned to be open until the technical basis for Part 53 is complete.~~ } ←

At the end of the ANPR phase, the Commission will decide whether to proceed to formal rulemaking.

**Task 2: Rule Development**

The objective of this task is to develop and issue the actual regulations for Part 53. The NRC will follow its normal rule development process upon completion of the technical basis. The Commission will direct the staff to develop proposed rule text, interact with stakeholders in an appropriate forum (e.g., posting on web, workshops), and send a proposed rule package to the Commission for consideration, if rulemaking is undertaken.

## B. Integration of Safety, Security and Emergency Preparedness

The Commission believes that safety, security and emergency preparedness should be integrated in developing a risk-informed and performance-based set of requirements for nuclear power reactors (i.e., in this context, Part 53). The NRC has proposed to establish security performance standards for new reactors (see SECY-05-0120, ADAMS Accession Number ML051100233). Under the proposed approach, nuclear plant designers would analyze and establish, at an earlier stage of design, security design aspects such that there would be a more robust and effective <sup>(intrinsic)</sup> security posture and less reliance on operational (extrinsic) security programs (guns, guards and gates). This approach takes advantage of making plants more secure by design rather than security components being added on after design.

As part of this approach, the NRC is seeking comment on the following issues:

8. In developing the requirements for this alternative licensing basis, how should safety, security, and emergency preparedness be integrated?
9. What specific principles, concepts, features or performance standards for security would best achieve an integrated safety and security approach?
10. The NRC is considering rulemaking to require that safety and security be better integrated so that changes in one area would not adversely affect the other. How can

- provide top level goals to assist in establishing system and hardware reliability and availability targets.

Currently, subsidiary risk objectives of  $10^{-5}$ /plant year and  $10^{-8}$ /plant year that could be applicable to all reactor designs are being considered for accident prevention and accident mitigation, respectively, where:

- accident prevention refers to preventing major fuel damage, and
- accident mitigation refers to preventing releases of radioactive material *such that no* offsite ~~sufficient to cause one or more~~ early fatalities *occur (i.e. from acute radiation doses)*

Feedback is sought specifically on the following:

12. Which of the options in SECY-05-0130 with respect to level of safety should be pursued and why? Are there alternative options?
13. Are subsidiary risk objectives useful, and are there other uses of the subsidiary risk objectives that are not specified above?
14. Are the subsidiary risk objectives specified above reasonable surrogates for the QHOs for all reactor designs? Specifically, should a 'preventive' goal be associated with the latent fatality QHO, i.e., should the latent fatality QHO be met by preventive measures alone without credit for mitigative measures, or is this too restrictive? Are there other subsidiary risk objectives applicable to all reactor designs that should be considered? What would be their basis?