



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

June 30, 2006

SECRETARY

COMMISSION VOTING RECORD

DECISION ITEM: SECY-06-0124

TITLE: RULEMAKING PLAN TO AMEND FRACTURE TOUGHNESS REQUIREMENTS FOR PROTECTION AGAINST PRESSURIZED THERMAL SHOCK EVENTS (10 CFR 50.61)

The Commission approved Option 2 of the subject paper as recorded in the Staff Requirements Memorandum (SRM) of June 30, 2006.

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

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-06-0124

### RECORDED VOTES

		APRVD	DISAPRVD	ABSTAIN	PARTICIP	NOT COMMENTS	DATE
CHRM. DIAZ	X					X	6/21/06
COMR. McGAFFIGAN	X					X	6/23/06
COMR. MERRIFIELD	X					X	6/19/06
COMR. JACZKO	X					X	6/27/06
COMR. LYONS	X					X	6/28/06

### COMMENT RESOLUTION

In their vote sheets, Chairman Diaz, Commissioner Merrifield, and Commissioner Lyons approved Option 2; Commissioner McGaffigan and Commissioner Jaczko approved Option 3; and all Commissioners provided some additional comments. Subsequently, the comments of the Commission were incorporated into the guidance to staff as reflected in the SRM issued on June 30, 2006.

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: CHAIRMAN DIAZ

SUBJECT: **SECY-06-0124 - RULEMAKING PLAN TO AMEND FRACTURE TOUGHNESS REQUIREMENTS FOR PROTECTION AGAINST PRESSURIZED THERMAL SHOCK EVENTS (10 CFR 50.61)**

Approved XX Disapproved \_\_\_\_\_ Abstain \_\_\_\_\_  
with attached comments.

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

COMMENTS:

See attached comments.

  
\_\_\_\_\_  
SIGNATURE

6.21.06  
\_\_\_\_\_  
DATE

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

**Chairman Diaz's Comments on SECY-06-0124**

I agree with Commissioner Merrifield that the staff should proceed with this rulemaking plan using Option 2 as described in SECY-06-0124. The rulemaking should allow the use of the updated embrittlement correlation on a voluntary basis. I see no reason to require all licensees to use the updated correlation when the use of the existing correlation is adequate for providing protection against PTS. The staff indicates in SECY-06-0124 that the updated correlation generally, but not uniformly, predicts lower amounts of embrittlement for PWRs than the earlier version of the correlation. The staff should provide a more detailed assessment of the impacts of the updated correlation at the proposed rule stage. This assessment should identify the reactors, if any, for which the use of the updated correlation would predict higher embrittlement and should provide appropriate recommendations regarding whether additional regulatory action is needed in those cases.

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: COMMISSIONER MCGAFFIGAN

SUBJECT: **SECY-06-0124 - RULEMAKING PLAN TO AMEND FRACTURE TOUGHNESS REQUIREMENTS FOR PROTECTION AGAINST PRESSURIZED THERMAL SHOCK EVENTS (10 CFR 50.61)**

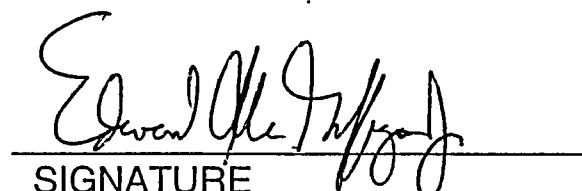
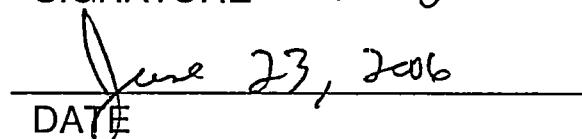
w/ comments

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

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

COMMENTS:

See attached comments.

  
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\_\_\_\_\_  
DATE

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

Commissioner McGaffigan's Comments on SECY-06-0124

I approve the development of a rulemaking plan in accordance with the staff recommendation (Option 3) as described in SECY-06-0124 with the following comments.

I agree with Commissioner Merrifield that the staff should use the guidance promulgated in the SRM associated with COMNJD-06-0004/COMEXM-06-0006, "Streamlining the NRR Rulemaking Process", to seek early interaction with stakeholders on the proposed requirement for all licensees to use the updated embrittlement correlation. However, I feel the improvements that will be gained in the understanding of the material conditions and safety margins of reactor vessels justify utilizing the "defining or redefining the level of adequate protection" exception in Part 50.109(a)(4)(iii), as was done by the Commission in its 1991 precedent. The Option 3 approach also has the merits of providing for regulatory consistency, and I would expect that knowledge gained from reactor vessel performance data as plants operate following license renewal might well necessitate future rulemakings in this area.

Edward McGaffigan. 6/23/06  
Edward McGaffigan, Jr. (Date)

NOTATION VOTE  
RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary  
FROM: COMMISSIONER MERRIFIELD  
SUBJECT: **SECY-06-0124 - RULEMAKING PLAN TO  
AMEND FRACTURE TOUGHNESS  
REQUIREMENTS FOR PROTECTION AGAINST  
PRESSURIZED THERMAL SHOCK EVENTS (10  
CFR 50.61)**

Approved x Disapproved \_\_\_\_\_ Abstain \_\_\_\_\_

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

COMMENTS:

See attached comments.

  
\_\_\_\_\_  
**SIGNATURE**  
\_\_\_\_\_  
06-19-06  
\_\_\_\_\_  
**DATE**

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

**Commissioner Merrifield's Comments on SECY-06-0124: Rulemaking Plan to Amend Fracture Toughness Requirements for Protection Against Pressurized Thermal Shock Events (10 CFR 50.61)**

I approve Option 2 as described in SECY-06-0124 with the following comments. The staff should use guidance promulgated in the recent SRM (COMNJD-06-0004/COMEXM-06-0006 Streamlining the NRR Rulemaking Process), to seek early interaction with stakeholders on the proposed requirement for all licensees to use the updated embrittlement correlation. While I approve proceeding with the rulemaking plan to amend 10 CFR 50.61 to allow licensees to voluntarily implement less restrictive screening limits based on the staff's updated technical basis, the proposed rule should seek specific feedback from stakeholders regarding the potential impacts (e.g., cost/benefit) of requiring all licensees to update their embrittlement correlation as described in the staff recommended Option 3.

NOTATION VOTE  
RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: COMMISSIONER JACZKO

SUBJECT: **SECY-06-0124 - RULEMAKING PLAN TO  
AMEND FRACTURE TOUGHNESS  
REQUIREMENTS FOR PROTECTION AGAINST  
PRESSURIZED THERMAL SHOCK EVENTS (10  
CFR 50.61)**

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

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

COMMENTS:

**See attached comments.**

  
\_\_\_\_\_  
SIGNATURE  
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4/27/06  
DATE

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

**Commissioner Jaczko's Comments on SECY-06-0124**  
**Rulemaking Plan to Amend Fracture Toughness Requirements for Protection Against**  
**Pressurized Thermal Shock Events**

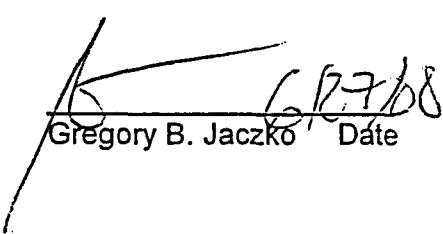
I approve of the staff moving forward with a modified Option 3.

First and foremost, I believe all plants susceptible to pressurized thermal shock should use the best available methodology to calculate their embrittlement correlations. As such, consistent with option 3, I support requiring all pressurized water reactors to update their material embrittlement metric using the updated embrittlement correlation. This would provide a baseline upon which to assess the vulnerability of each potentially affected unit in a consistent manner.

I am opposed, however, at this time to allowing the use of less restrictive screening limits. The staff's technical work has demonstrated that with retaining the existing limits and using the updated technical basis all susceptible plants will likely demonstrate that the risk of vessel damage from pressurized thermal shock is very low. I would propose a rule structure that would require all susceptible plants to assess their plants using the updated embrittlement correlation and then those that exceed the screening criteria would perform a complete reanalysis in accordance with the updated technical basis.

As currently structured, the proposed voluntary options are viewed by the staff as efficient and effective strategies to provide relief to a handful of plants that will not be able to meet what is viewed as an overly restrictive regulation. This certainly has merit, but I question the wisdom of the voluntary relaxation in that it may have unforeseen consequences that would further erode safety margins. For example, the relaxation of the criteria could reasonably lead to facilities to seek operating at higher core power levels, which would lead to reduced safety margins elsewhere.

I would hope that should my fellow Commissioners vote to proceed with Options 2 or 3 that provisions would be made to preclude licensees from using the relaxation in the standards for operational convenience.



Gregory B. Jaczko Date  
6/27/08

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: COMMISSIONER LYONS

SUBJECT: **SECY-06-0124 - RULEMAKING PLAN TO  
AMEND FRACTURE TOUGHNESS  
REQUIREMENTS FOR PROTECTION AGAINST  
PRESSURIZED THERMAL SHOCK EVENTS (10  
CFR 50.61)**

Approved X Disapproved \_\_\_\_\_ Abstain \_\_\_\_\_  
w/comments

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

COMMENTS:

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

6/ 28/06  
\_\_\_\_\_  
DATE

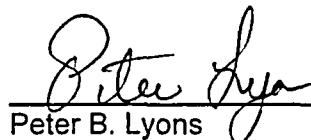
Entered on "STARS" Yes X No \_\_\_\_\_

**Commissioner Lyons' Comments on SECY-06-0124**

I approve Option 2 to allow licensees to voluntarily implement a less restrictive screening limit based on an updated technical basis, without requiring licensees to use the updated embrittlement correlation.

I join the Chairman in requesting staff to identify those reactor vessels, if any, for which the use of the updated correlation could be expected to predict higher embrittlement and to provide appropriate recommendations regarding whether additional regulatory action is needed in those cases. Further, although advances in reactor vessel fabrication methods should nearly eliminate PTS as a concern for future new plants, staff should consider requiring new plants to use the best available embrittlement correlation.

Additionally, in completing the technical basis to implement a less restrictive screening limit, staff should ensure that the probabilistic assumptions (e.g. frequency of PTS initiating events) are consistent with those used in other rulemaking initiatives (e.g. proposed 10 CFR 50.46a) and have reasonably considered plant aging effects over extended plant lifetimes. Staff should specifically seek ACRS comment on all influential probabilistic assumptions.

  
Peter B. Lyons      6/28/06  
\_\_\_\_\_  
Date