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

SECRETARY

December 6, 2012

RELEASED TO THE PUBLIC
DATE INITIALS

COMMISSION VOTING RECORD

DECISION ITEM: SECY-12-0092

TITLE: STATE-OF-THE-ART REACTOR CONSEQUENCE ANALYSES - RECOMMENDATION FOR LIMITED ADDITIONAL ANALYSIS

The Commission (with all Commissioners agreeing) approved the subject paper as recorded in the Staff Requirements Memorandum (SRM) of December 6, 2012.

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 Macfarlane
Commissioner Svinicki
Commissioner Apostolakis
Commissioner Magwood
Commissioner Ostendorff
OGC
EDO
PDR

VOTING SUMMARY - SECY-12-0092

RECORDED VOTES

	APRVD	DISAPRVD	ABSTAIN	NOT PARTICIP	COMMENTS	DATE
CHRM. MACFARLANE	X				X	10/10/12
COMR. SVINICKI	X				X	11/26/12
COMR. APOSTOLAKIS	X				X	10/11/12
COMR. MAGWOOD	X				X	11/27/12
COMR. OSTENDORFF	X				X	11/16/12

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: Chairman Allison M. Macfarlane

SUBJECT: SECY-12-0092 – STATE-OF-THE-ART REACTOR CONSEQUENC ANALYSES –RECOMMENDATION FOR LIMITED ADDITIONAL ANALYSIS

Approved __X___ Disapproved _____ Abstain ____

Not Participating _____

COMMENTS: Below ___ Attached _X__ None ___

SIGNATURE

10/10/12

DATE

Entered on "STARS" Yes _X__ No ___

Chairman Macfarlane's Comments
SECY-12-0092, "State-of-the-Art Reactor Consequences Analyses – Recommendation for Limited Additional Analysis

I commend the staff for their efforts in the State-of-the-Art Reactor Consequences Analysis (SOARCA). SOARCA represents a significant advancement in our knowledge in the areas of severe accident progression, mitigation, and consequences. The staff's recommendation for additional studies is a modest and well-considered set of studies that will provide valuable insights to be applied to the ongoing efforts to address the recommendations of the Fukushima Near-Term Task Force in the areas of reliable hardened vents for non-BWR designs and hydrogen control and mitigation.

Mindful of the limitations of the SOARCA study, there remains a need to address multi-unit events and events including spent fuel pool involvement in an integrated study of site risk. The Level 3 Probabilistic Risk Analysis (PRA) study is expected to further expand our understanding of the integrated risks associated with nuclear power plant operation. The ongoing SOARCA studies should be conducted in a way that complements and supports the Level 3 PRA study.

Allison M. Macfarlane Date 10/10/12

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: COMMISSIONER SVINICKI

SUBJECT: SECY-12-0092 – STATE-OF-THE-ART REACTOR CONSEQUENCE ANALYSES – RECOMMENDATION FOR LIMITED ADDITIONAL ANALYSIS

Approved __XX__ Disapproved _____ Abstain _____

Not Participating _____

COMMENTS: Below __XX__ Attached _____ None ___

I approve the NRC staff's recommendation for the limited continuation of the SOARCA project for the purposes of (1) conducting a severe accident consequence analysis of a station blackout event at a pressurized water reactor with an ice condenser containment (Sequoyah) based on the insights from the Peach Bottom and Surry analyses and (2) conducting an uncertainty analysis for a severe accident scenario at Surry. SOARCA results have improved our understanding of severe accident progression at light water reactors, including the value of successful implementation of mitigation measures in preventing core damage or in delaying and reducing offsite releases of radioactive material. The additional analyses will further enhance this understanding.

While I acknowledge the concern of my colleagues that Level 3 Probabilistic Risk Assessment studies may compete for resources with this additional SOARCA work, I am informed that the NRC staff is obtaining additional expertise to minimize this potential. Consequently, I do not support deferring this additional SOARCA analysis. It should begin upon Commission approval, so that corporate knowledge and project momentum are not lost.

SIGNATURE

11/26/12

DATE

Entered on "STARS" Yes ✓ No ___

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

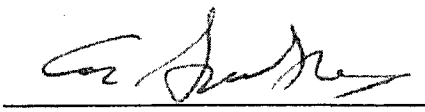
FROM: COMMISSIONER APOSTOLAKIS

SUBJECT: SECY-12-0092 – STATE-OF-THE-ART REACTOR CONSEQUENCE ANALYSES – RECOMMENDATION FOR LIMITED ADDITIONAL ANALYSIS

Approved __X__ Disapproved _____ Abstain _____

Not Participating _____

COMMENTS: Below ___ Attached _X_ None ___



SIGNATURE

10/11/12

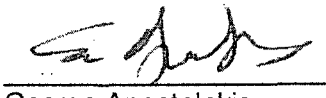
DATE

Entered on "STARS" Yes _x__ No ___

Commissioner Apostolakis' Comments on SECY-12-0092
State-of-the-Art Reactor Consequence Analyses –
Recommendation for Limited Additional Analysis

I approve the staff's recommendation to perform limited additional SOARCA analysis of a station blackout scenario at a PWR with an ice condenser containment (Sequoyah). However, the staff should not begin this work until it has completed the Level 3 PRA project. I am very concerned that the additional SOARCA work would compete with the Level 3 PRA project for limited resources. Resources for the Level 3 project will be required to develop a comprehensive risk profile that would include models for multi-unit sites and for spent fuel storage facilities, as well as external events. I agree with the ACRS that analysis of severe accident progression in a plant with an ice condenser containment should have a lower priority than completion of the ongoing Level 3 PRA study.

I approve the staff's recommendation to perform an uncertainty analysis for a severe accident scenario for Surry. Although the staff has stated that it considers the ice condenser plant analysis higher priority than the Surry uncertainty analysis, I agree with the ACRS recommendation that priority for future SOARCA work should be put on the performance of an uncertainty analysis for Surry. As the staff pointed out in SECY-12-0092, the Peach Bottom uncertainty analysis has revealed many important insights about accident progressions in a BWR with a Mark I containment. An uncertainty analysis for a Surry scenario would be expected to reveal similar insights for a PWR which would directly support the Level 3 PRA project involving Vogtle Units 1 and 2.



George Apostolakis
10/11/12

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: COMMISSIONER MAGWOOD

SUBJECT: SECY-12-0092 – STATE-OF-THE-ART REACTOR CONSEQUENCE ANALYSES – RECOMMENDATION FOR LIMITED ADDITIONAL ANALYSIS

Approved X Disapproved _____ Abstain _____

Not Participating _____

COMMENTS: Below ___ Attached X None ___

SIGNATURE

27 November 2012
DATE

Entered on "STARS" Yes X No ___

Commissioner Magwood's Comments on SECY-12-0092,
"State of the Art Reactor Consequences Analyses –
Recommendation for Limited Additional Analyses"

The SOARCA project has provided great insights into the progression of severe accidents in light water reactors. This work has already proven to be a success that has been well worth the investment in resources the agency has committed to it over the years. However, as staff has outlined in SECY-12-0092, there is little additional benefit to pursuing the original plan for SOARCA – to perform this analysis for all operating plants. Instead, staff suggests a far more limited approach, which I find reasonable. I therefore approve staff's recommendations contingent on the following comments.

First, I note that while staff is making some progress on designing the approach for the Level 3 PRA at the Vogtle1 and 2 plants (as discussed in SECY-12-0123), it is not clear that this project is receiving the management attention or resources it requires. As Commissioner Apostolakis noted in his vote on SECY-12-0092, continuing the development of this Level 3 PRA will support the development a comprehensive risk profile that would include models for multi-unit sites and for spent fuel storage facilities, as well as external events. I support Commissioner Apostolakis' condition that the recommended additional SOARCA analyses should be deferred until staff has completed the Level 3 PRA project. I look forward to a clearer understanding of the schedule and resources required to complete this work as the updates required by SRM SECY-11-0089 are provided to the Commission.

Further, when the additional SOARCA effort begins, I agree with the ACRS that priority for future SOARCA work should be placed on the performance of an uncertainty analysis for Surry.

Finally, in SECY-12-0092, staff concludes that development of a tool that could support rapid decision-making in the event of a severe accident is not needed due to the experience of applying MELCOR, MACCS2, and RASCAL during the Fukushima response. I question this conclusion. In the very early hours and days of the Fukushima accident, the agency was forced to rely on an existing Operations Center code (RASCAL) that used conservative assumptions and was of limited use up to 50 miles and 48 hours post-accident. Moreover, it provided very conservative inputs for the determination of protective measures which added to confusion and heightened public concern in Japan. I suggest that an information paper be prepared for the Commission that provides staff's complete review of its lessons learned and analyses with regard to use of codes during the Fukushima event and explain in detail how this performance obviates the need for the rapid analysis tool described in SECY-05-0233.

11/27/12

William D. Magwood, IV **Date**

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: COMMISSIONER OSTENDORFF

SUBJECT: SECY-12-0092 – STATE-OF-THE-ART REACTOR CONSEQUENCE ANALYSES – RECOMMENDATION FOR LIMITED ADDITIONAL ANALYSIS

Approved __X__ Disapproved _____ Abstain _____

Not Participating _____

COMMENTS: Below ___ Attached _X__ None ___

_____
SIGNATURE

11/16/12
DATE

Entered on "STARS" Yes _X__ No ___

Commissioner Ostendorff's Comments on SECY-12-0092,
"State-of-the-Art Reactor Consequence Analyses –
Recommendation for Limited Additional Analysis"

The State-of-the-Art Reactor Consequences Analyses (SOARCA) project represents a significant federal study of the radiological health consequences for potential severe reactor accidents. The SOARCA results provide additional validation that the U.S. Nuclear Regulatory Commission's evolving regulatory safety requirements for nuclear power plants have ensured adequate protection of public health and safety. The potential benefits of this study have yet to be fully appreciated and realized for our reactor regulatory programs, but have already provided pragmatic support for post-Fukushima actions. For example, the staff has applied SOARCA tools and analytical approaches to the forthcoming BWR containment filtered vent policy issue.

Given the SOARCA project accomplishments to date, I approve the NRC staff's recommendation for limited continuation of the SOARCA project with the completion of two additional analyses. Specifically, the limited continuation is for (1) a severe accident consequence analysis of a station blackout at a reactor with an ice condenser containment (Sequoyah), and (2) an uncertainty analysis for a severe accident scenario at the Surry plant. The NRC staff's proposal to capitalize on the existing SOARCA work to address plants with an ice condenser type of containment building is a logical progression for the next phase of this project.

With respect to SOARCA project management, I commend the staff for managing ongoing SOARCA efforts to support high interest Commission items. My understanding is that the staff plans to pursue additional SOARCA work that would not jeopardize timely completion of higher priority agency work. I support Commissioner Apostolakis' view that the Level 3 PRA study is a higher priority research project. From a SOARCA project direction standpoint, I agree with Chairman Macfarlane's comment that the additional SOARCA work should be conducted to complement and support the Level 3 PRA study. I would add that this direction should also apply to post-Fukushima activities including Tier 3 items. Because ongoing SOARCA work intersects with post-Fukushima actions and the Level 3 PRA project, the staff should seek Commission direction if SOARCA project resource conflicts emerge that negatively affects the higher priority post-Fukushima actions or the Level 3 PRA project.