PR 50 and 53
(71FR26267)

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From: Robert A Hermann <rhermannr@bellsouth.net>
To: <opa@nrc.gov>
Date: Wed, Jun 13, 2007 10:24 PM
Subject: Risk Based Rulemaking

Below is the result of your feedback form. It was submitted by

Robert A Hermann (rhermannr@bellsouth.net) on Wednesday, June 13, 2007 at 22:24:02
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comments: Please forward these comments on the subject rulemaking to the Commission for their consideration. I understand the comment period has closed.

Comments on

"Approaches to Risk-Inform and Performance-Base Requirements for Nuclear Power Reactors (RIN 3150-AH81)" dated 5/4/06

I should like to preface my comments with some information on my background and attitude toward nuclear power generation. I am a licensed professional engineer with over 30 years experience in nuclear power and over 40 years in materials engineering. The NRC employed me for 25 years where I served as the Senior Level Advisor for Material Science in NRR. I am a member of various ASME Boiler and Pressure Vessel Code Committees developing requirements for the continued safe operation of nuclear power plants. I am a proponent of the safe use of nuclear power for generation of electricity to help address the need for economical power generation while still reducing the impact of it on the world's environmental problems.

I am confused about the efficacy of the proposed rulemaking. I understand the purpose for incorporating risk in the design of new power plants. I also understand the establishment of performance criteria as a measure of success. However defining performance goals with rather broad criteria such as maintaining a barrier seems rather confusing. Further I am rather surprised that maintaining one barrier is considered adequate for moderate frequency events. To my understanding maintaining reactor vessel integrity along with containment integrity was certainly considered as a part of defense in depth. I also believe that failure of the reactor vessel is an unanalyzed condition.

Further I believe that it part of the NRC's responsibility to help develop and approve appropriate codes and standards for use in the design, fabrication, examination and testing of new power plants and in the examination, repair and testing of operating reactors. After reading the proposed regulation, I cannot understand if any such requirements will be maintained. I understand it is desirable to attempt to develop a regulation where "one size fits all" reactors. However, I do not think it is prudent for the NRC to relinquish its role in establishing what standards are appropriate for the design, fabrication and examination of new power plants. The NRC has a large investment in developing standards in the ASME consensus process as well as in developing Regulatory Guides, NUREGS and other Appendices incorporated in 10CFR50 such as those addressing reactor vessel embrittlement. Further there are deterministic rules incorporated in ASME Section XI that are needed to asse!
ss degraded components for continued service. I believe that is necessary to have approved design standards for future reactors. If an Owner or Designer is free to establish what is an appropriate code for design, fabrication and examination of new reactors, it will make it extremely difficult to evaluate and repair degraded components during operation. In the deterministic world known true and tested safety margins are required for the initial design and for plants that are operating. Materials used in the design are approved as a part of the Code process. Welding materials, personnel and procedures as well as examination methods, personnel and procedures are also included.

We understand that in order to expedite the review process for other type of reactors other than LWRs, flexibility in establishing design requirements is desired. However, perhaps there is a lesson to be learned

from history. The hot gas reactor at Ft. St. Vrain was designed without a well thought out adequate design, fabrication and examination code. Principles for the reactor were sound. However engineering and implementation was less than desired. The helium gas circulating system was poorly designed and engineered. Moisture leaks were a problem. In fact the passive shut down system using boron carbide balls became inoperable because "whiskers" of boron carbide grew preventing the balls from falling from their container. It is my believe that this failure of this shut down system would not have been include in an event or fault tree as being credible.

We believe that using NRC approved consensus standards is also needed for new reactor designs. Risk is important in determining what is important from a safety perspective. However the use of consensus standards that have been demonstrated as adequate and safe for the design, fabrication and examination of current reactors as well as for the inservice examination of operating reactors should not be abandoned in the name of risk and performance. Hard deterministic requirements are needed to design, fabricate and exam hardware components and systems that are part of a nuclear power plants. The use of risk and performance in concert with the deterministic codes and standards is needed for the next generation of nuclear technology. Elimination of mandatory deterministic requirements for systems and structure important to safety in my view is not a good path for improved reactor safety. I believe that selection of systems important to safety is something that is improved us!
ing risk analysis. I also believe that improvements to workmanship standards using structural integrity considerations could help reduce cost by eliminating unnecessary repairs that are expensive and also detrimental to overall component safety. It was my understanding that new regulation was to be risk informed but not risk based. From my reading of what is being proposed in the rule, this action is clearly risk based and it intends to remove as much deterministic proven requirements from the Code of Federal Regulations as possible. This appears to me as going in a direction without a proven track record.

Sincerely,

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From: Scott Burnell
To: SECY
Date: Thu, Jun 14, 2007 8:41 AM
Subject: Fwd: Risk Based Rulemaking (RIN 3150-AH81)

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Subject:	Fwd: Risk Based Rulemaking (RIN 3150-AH81)
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Subject:	Risk Based Rulemaking
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