

December 14, 1999

Mr. Anthony Brooks  
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Mr. Brooks:

The purpose of this letter is to transmit the summary of two meetings with the Risk-Informed Technical Specifications Task Force. The first meeting was held at the San Onofre Nuclear Generating Station on October 6-7, 1999. The second meeting was held at the U.S. Nuclear Regulatory Commission (NRC) Headquarters offices in Rockville, Maryland, on November 10, 1999.

Sincerely,

Original signed by:

William D. Beckner, Chief  
Technical Specifications Branch  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

Enclosures: 1. Meeting Summary  
2. Attendance List  
3. October Meeting Presentations  
4. November Meeting Presentations

cc: See attached list

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NRC/INDUSTRY MEETING OF THE  
RISK-INFORMED TECHNICAL SPECIFICATION TASK FORCE

Meeting Summaries  
October 6-7 and November 10, 1999

Two meetings between the NRC staff and industry representatives comprising the Risk-Informed Technical Specifications Task Force (RITSTF) were held on October 6-7 and November 10, 1999. The attendees are listed in Enclosure 2. The meetings were a continuation of earlier meetings where the NRC staff and the industry discussed ongoing risk-informed technical specification initiatives and the creation of a fully risk-informed set of standard technical specifications (STS).

The main purpose of the October 6-7 meeting was to have a more detailed discussion of the probabilistic risk analysis (PRA) work done to support the current technical specification (TS) initiatives being prepared for submittal to the staff. There was limited RITSTF representation at this meeting. Southern California Edison has volunteered San Onofre Nuclear Generating Station (SONGS) to be the industry's lead plant for the majority of the seven initiatives currently being pursued by the RITSTF. These include:

1. Define preferred end states for TS actions (e.g., hot shutdown vs. cold shutdown)
2. Increase the time allowed to delay entering required actions when a surveillance is missed
3. Modify existing mode restraint logic to allow use risk assessments for entry into limiting conditions for operation (LCOs) with inoperable equipment based on low risk
4. Develop a risk-informed extension of current allowed outage times based on a configuration risk management program (CRMP)
5. Optimize surveillance requirements (SRs)
6. Modify LCO 3.0.3 actions and timing by extending minimum time to begin LCO 3.0.3 shutdown from 1 hour to 24 hours and allowing for a risk-informed evaluation to determine whether it is better to shut down or continue to operate
7. Define actions to be taken when equipment is not operable but is still functional

The staff and the industry discussed the meaning of the term "risk-informed" as it relates to regulatory applications. The industry stated that it was their general philosophy to use qualitative risk assessments where they believed the benefits of a proposed change were obvious, and to use quantitative assessments where the outcome was not as obvious. The industry also stated that they take into account other aspects such as defense in depth and safety margins when considering a proposed change. The industry believed such an approach was consistent with the guidance in Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," to use PRA to improve decision making and regulatory effectiveness. The staff reserved judgement of such an approach noting that benefits that are obvious to one person or group might not be obvious to another.

SONGS representatives then presented some details regarding their PRA work in support of some of the RITSTF initiatives. The San Onofre presentations are contained in Enclosure 3. The SONGS representatives presented information regarding their living PRA and Safety Monitor, including the full power, transition, and low power and shutdown risk models. The SONGS representatives stated that they had their own transition model development document

that would likely be referenced or included in the SONGS plant-specific submittal for Initiative #1.

The staff and the RITSTF discussed some specific submittal and implementation and technical issues related to a few of the initiatives. With regard to Initiative #1 related to safe end states, the RITSTF indicated that the Combustion Engineering Owners Group (CEOG) was preparing a draft report to support this initiative and that the report would accompany an industry request for a generic change to the STS. The RITSTF indicated that changes to the TS end states would be proposed for the vast majority of LCOs in the STS. The RITSTF indicated that uncertainties and sensitivities of PRA results will be investigated. The group discussed that additional known shutdown issues which may impact the results (e.g., external events and boron dilution) should be addressed.

Representatives from the Boiling Water Reactor Owners Group (BWROG) stated that they are still considering this initiative and that the risk of operating in hot shutdown and in cold shutdown is relatively the same, whereas for the pressurized water reactors there appears to be a clear risk benefit to operating in hot shutdown in most cases. They indicated that they would be more interested in changing the current TS to allow them to use PRA in deciding whether to stay at power or shut the reactor down. They also indicated that they may be interested in extending the time requirements for going to cold shutdown. This would allow them to operate longer in hot shutdown conditions. The BWROG is considering a pilot plant for this issue.

The RITSTF and the staff discussed how the SONGS assessment results for Initiative #1 could be applied to other plants. The Westinghouse Owners Group (WOG) indicated that they would attempt to show how the SONGS results apply using qualitative assessments and comparisons, and that they did not plan to perform any further plant-specific analyses. The Babcock and Wilcox Owners Group indicated that they intended to pursue a similar approach. The group indicated that they could use the SONGS model to help develop sensitivity studies to address some of the design differences between the plants. The staff stated that they could not make any definitive decisions on what type of submittals they would find acceptable and that the burden of proof of similarity to the CEOG work would rest with the other owners groups.

With regard to Initiative #2 related to missed SRs, the group discussed the PRA aspects of that initiative. In order to assess the increase in risk it is necessary to make an assumption about the frequency of the various expected missed surveillances. This requires an understanding of the reasons, the nature and circumstances under which surveillances are missed. The RITSTF pointed out that even if the failure rate of a component is doubled, due to the missed surveillance on that component, the plant risk would not be affected significantly. The staff agreed that most likely the risk increase would not be significant unless some licensees abuse the proposed flexibility. The development and implementation of an appropriate regulatory oversight process could address this issue. The industry and the staff agreed that the staff's review of this issue would involve more of a policy decision than a technical decision.

With regard to Initiative #3 related to mode restraints, SONGS has been studying this issue by comparing the relative importance of functions and associated systems at various modes of operation. The proposed change would allow a licensee to use a CRMP to decide whether to enter into a mode or other specified condition within the applicability with inoperable equipment. The staff agreed that the study of conditions and risks associated with various likely transitions could help focus the issue and identify an appropriate regulatory oversight mechanism.

With regard to Initiative #6 related to changes to LCO 3.0.3, the RITSTF stated that this initiative is very closely tied to the maintenance rule as it addresses what actions to take for a loss of safety function. The industry indicated that the frequency of plant conditions for which this TS change is applicable is low. The staff mentioned that the identification and study of examples of plant specific LCO 3.0.3 entries and conditions that would drive the plant to shutdown, including associated risks, could help focus the issue.

The group discussed the process for plants to adopt approved changes to the STS. The staff briefly discussed processes being considered to make adoption of such approved changes more efficient.

Finally, the group discussed submittal schedules for some of the initiatives. The RITSTF stated that they expected to submit Initiatives #2 and #3 to the staff around October 30, 1999, and that they might be able to submit some of their PRA assessment for Initiative #1 by December 31, 1999. The RITSTF stated that Initiatives #4 and #6 would come sometime in 2000.

The November 10, 1999 meeting was a meeting of the full RITSTF to discuss high-level objectives and the status of the current initiatives. All presentations for the meeting are contained in Enclosure 4. The staff opened the meeting with a general discussion of the status of risk-informed regulatory activities at the NRC. The staff pointed out that there was a high level of interest in the RITSTF activities and that we needed to understand how broad the interest in the industry was. The staff presented several thoughts on a long-term vision for risk-informed TS and acknowledged that structure and resource issues will need to be worked out. The staff also pointed out that it will need to address the four strategic performance goals identified in the Commission's Nuclear Reactor Safety Strategic Plan. Those performance goals are: (1) Maintain safety; (2) Increase public confidence; (3) Reduce unnecessary regulatory burden; and (4) Make NRC activities and decisions more effective, efficient, and realistic.

The RITSTF presented some of its thoughts on a long-term vision for risk-informed TS. Much of the discussion focused on a slide which presented the Westinghouse Owners Group (WOG) five year risk-informed TS strategy. The group discussed at what point rulemaking might be needed to accommodate all of the envisioned changes to TS. The group also discussed the issue of PRA quality and the fact that the ASME PRA standard currently being developed did not address configuration risk management tools like those envisioned as necessary to implement many of the TS changes under development.

Representatives from the South Texas Project presented a concept of a fully risk-informed set of TS that essentially relies on a CRMP as the backbone of the TS. They likened the proposed risk limits in their concept to radiation protection limits (i.e., ALARA limits). The NRC regulates ALARA limits at a high level and licensees control these limits at a lower level administratively. The group also discussed whether there was a need for an instantaneous risk cap for TS. The RITSTF stated that the major question is the cost benefit of going to this extreme. For example, if plant PRAs essentially become the TS, then licensees would have to control changes to the PRA model to the same degree as TS changes are currently controlled.

The RITSTF presented a status of the seven initiatives currently under development. The group discussed Initiative #1 related to safe end states. The RITSTF stated that the expected results were confirmed by the PRA work done by SONGS. The group again discussed what work the other owners groups planned to do to justify the changes for their plant types by taking

advantage of the SONGS and CEOG work.

Updated schedules for the various initiatives were discussed. The RITSTF stated that they expected to submit Initiative #1 in February or March 2000. Initiatives #2 and #3 were expected to be submitted in the very near future. Initiative #4 was planned for submittal in late 2000. Initiatives 5, 6, and 7 were also expected in mid to late 2000.

The group briefly discussed the staff's planned process for reviewing and adopting these initiatives as changes to the STS. The group also discussed support for the December 16, 1999 meeting with the Advisory Committee for Reactor Safeguards Reliability and PRA Subcommittee and agreed to a possible future meeting in late February 2000.



**Meeting Attendees  
October 6-7, 1999**

<u>Name</u>	<u>Affiliation</u>
Dennis Henneke	Southern California Edison
Sharon Mahler	Southern California Edison
Gary Chung	Southern California Edison
Brian Woods	Southern California Edison
Thomas Hook	Southern California Edison
Ed Scherer	Southern California Edison
Don McCamy	Tennessee Valley Authority
Kent Sulton	Nebraska Public Power District
S. Visweswaran	General Electric
Thomas Sihko	Vermont Yankee
Jerry André	Westinghouse
Mike Kitlan	Duke Power
Rick Wachowiak	Nebraska Public Power District
Frank Rahn	Electric Power Research Institute
Nicholas Saltos	NRC/NRR/SPSB
Millard Wohl	NRC/NRR/SPSB
Nanette Gilles	NRC/NRR/RTSB

**Meeting Attendees  
November 10, 1999**

<u>Name</u>	<u>Affiliation</u>
Ray Schneider	ABB-Combustion Engineering Nuclear Fuel Company
Alan Hackerott	Omaha Public Power District
Dennis Henneke	Southern California Edison
Sharon Mahler	Southern California Edison
Biff Bradley	Nuclear Energy Institute
Noel Clarkson	Duke Power
Wayne Harrison	South Texas Project
Rick Grantom	South Texas Project
Donald Hoffman	EXCEL Services
Jerry André	Westinghouse
Jim Andrachek	Westinghouse
Jack Stringfellow	Southern Nuclear
Don McCamy	Tennessee Valley Authority
E. D. Ingram	Southern Nuclear
Glenn Warren	BWR Owners Group
David Stellfox	McGraw Hill
John Fehringier	INEEL
J. E. Rhoads	Energy Northwest
Richard Harris	Entergy
Mike Kitlan	Duke Power
Rodney Johnson	Detroit Edison
Bert Morris	Tennessee Valley Authority
Gregory Norris	Entergy
Rick Wachowiak	Nebraska Public Power District
Scott Newberry	NRC/NRR/DRIP
Rich Barrett	NRC/NRR/SPSB
Mark Reinhart	NRC/NRR/SPSB
Mark Rubin	NRC/NRR/SPSB
Millard Wohl	NRC/NRR/SPSB
Nick Saltos	NRC/NRR/SPSB
William Beckner	NRC/NRR/RTSB
Bob Dennig	NRC/NRR/RTSB
Jack Foster	NRC/NRR/RTSB
Nanette Gilles	NRC/NRR/RTSB

ENCLOSURE 3  
OCTOBER 6-7, 1999 MEETING PRESENTATIONS

ENCLOSURE 4  
NOVEMBER 10, 1999 MEETING PRESENTATIONS