May 25, 2001

MEMORANDUM TO: Mark A. Cunningham, Chief
Probabilistic Risk Analysis Branch
Division of Risk Analysis & Applications
Office of Nuclear Regulatory Research

THRU: Mary T. Drouin, Section Leader
Probabilistic Risk Analysis Branch
Division of Risk Analysis & Applications
Office of Nuclear Regulatory Research

FROM: Alan S. Kuritzky /RA/
Probabilistic Risk Analysis Branch
Division of Risk Analysis & Applications
Office of Nuclear Regulatory Research

SUBJECT: SUMMARY OF MAY 9, 2001, PUBLIC MEETING WITH INTERESTED STAKEHOLDERS REGARDING RISK-INFORMED CHANGES TO 10 CFR 50.46 AND OTHER LOCA-RELATED REGULATORY REQUIREMENTS

The NRC staff held a public meeting on May 9, 2001, in order to present its plan for proceeding with risk-informed changes to 10 CFR 50.46 and other loss-of-coolant accident (LOCA)-related regulatory requirements, and to obtain feedback on this plan from all interested stakeholders. The Westinghouse Owners Group (WOG) also made a short presentation during the meeting. Attachment 1 contains the list of attendees. The viewgraphs for the staff and stakeholder presentations are available under ADAMS accession number ML011910386.

The NRC staff opened the meeting by providing the status of the staff's efforts to risk-inform 10 CFR 50.46 and other LOCA-related regulatory requirements. The staff presented a summary of the technical requirements of 10 CFR 50.46 and other LOCA-related regulations, associated risk insights, and some possible near-term options for risk-informing these technical requirements. The staff also identified some areas for additional feasibility study, presented some possible policy issues, and provided a partial schedule for the remaining activities associated with this effort. The majority of the discussions at the meeting occurred during the NRC presentation. Some of the principal points brought out during these discussions are as follows:

- The staff reiterated its position that for large-break LOCA (LBLOCA) redefinition (i.e., complete removal of a set of LOCAs from the design basis), the level of rigor required to justify the pipe break frequencies would be much greater than that previously applied for General Design Criterion (GDC)-4 and risk-informed in-service inspection (ISI), and also greater than the level of rigor currently envisioned for possible changes to the LBLOCA requirements regarding simultaneous loss of offsite power (LOOP) and single additional failure. The staff explained that for targeted applications, a less rigorous treatment may

be sufficient since the consequences of the change can be analyzed. However, for an "open-ended" application, such as LBLOCA redefinition, where the potential consequences can never be fully analyzed a-priori, a much more rigorous treatment is necessary (i.e., something similar to the current effort being applied to resolution of the pressurized thermal shock [PTS] issue). The staff indicated that in all cases the methodology would be the same; however, the level of rigor associated with the uncertainty analyses would be a function of the particular application.

- The staff indicated that they are considering recommending to the Commission that wording be added to the risk-informed alternative to 10 CFR 50.46 (and related regulations) to permit redefining the maximum break size for the large break LOCA, subject to NRC approval, if and when there is technical justification to support such a change. This would alleviate the necessity of going to an additional rulemaking if and when the technical justification is developed.

- The staff indicated in its presentation that it is unlikely that there is any unnecessary burden relief to be obtained from risk-informing the embrittlement criteria (i.e., the 2200^{o}F peak clad temperature and the 17% equivalent clad reacted), since there does not appear to be excessive margin associated with these criteria.

- Industry wanted to clarify that their LBLOCA redefinition program did not entail removing LBLOCAs from any further consideration. They believe risk information and pipe break failure frequency information can be used to identify a more realistic limiting LOCA size for the design basis. This more realistic LOCA size would be used for all design basis applications, such as emergency core cooling system (ECCS) performance, containment performance, equipment qualification (EQ), etc. However, the plant would still maintain some mitigative capability for responding to those LOCAs that are removed from the design basis. Industry indicated that the actual extent of this mitigative capability still needs to be worked out (e.g., whether the current ECCS acceptance criteria would still be met for those LOCAs excluded from the design basis, or whether some risk-based acceptance criterion might be used).

  Industry also indicated that while the new, smaller limiting LOCA size would be used for all design basis applications, any actual plant-specific changes that would be proposed would still need to evaluated with their probabilistic risk assessments (PRAs), and then be reviewed and approved by the NRC. Industry envisions that once the appropriate wording changes are made in the regulations to enable LBLOCA redefinition, and once a smaller limiting break size is established, plants or groups of plants would then embark on a methodical process of submitting various applications for NRC review and approval, which would occur over a long-term period (i.e., many years).

- The principal difference between industry's LBLOCA redefinition program and the staff's potential near-term regulatory modifications is that the industry program would fully remove the larger, more unlikely breaks from the design basis, while the staff's proposed changes would retain these breaks in the design basis, but reduce some of the layers of conservatism currently applied to these breaks (e.g., the coincident loss-of-offsite power and additional single failure assumptions). According to the staff's Option 3 framework, removal of a set of LOCAs from the design basis requires demonstrating a cumulative frequency of less than 10^{-6}/yr, while relaxation of the conservative

assumptions associated with a set of LOCAs requires demonstrating a cumulative frequency of less than 10^{-5}/yr.

- Both industry and the staff agreed that it would be very undesirable for a plant to have different limiting break sizes for different applications.

- WOG and Boiling Water Reactor Owners Group (BWROG) representatives indicated that they would like to schedule a separate meeting where the technical people from both the industry and the staff could discuss in a detailed fashion the approach for using probabilistic fracture mechanics (PFM) and leak-before-break (LBB) arguments to derive distributions of break size versus frequency. Industry would like the staff to discuss, in practical terms, what is needed to address the issues raised during the ACRS subcommittee meeting on March 16, 2001.

- Industry indicated that they would like to see a separate, expedited rulemaking to address the changes in the Appendix K decay heat analyses. The staff responded that the time-frame for such a rulemaking would not be much different than the current one for the near-term recommended changes for risk-informing 10 CFR 50.46.

Following the staff's presentation, and associated discussions, the WOG gave a short presentation with respect to its position on the staff's proposed changes and on its position to continue pursuing LBLOCA redefinition. The WOG reiterated that it believes LBLOCA redefinition should be the primary focus of rulemaking recommendations, and indicated that it will consider a petition for rulemaking to enable LBLOCA redefinition.

The meeting concluded with the general agreement that the stakeholders and the staff had developed a better understanding of both the staff's recommendations for risk-informing 10 CFR 50.46 and other LOCA-related regulatory requirements and the WOG's program for redefining the LBLOCA.

Attachments:
1. List of Attendees

DOCUMENT NAME: g:\meeting notices\09May01 mtg sum.wpd
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NAME	*AKuritzky		*MDrouin		*MCunningham					
DATE	05/21/2001		05/25/2001		05/25/2001		07/ /1		07/ /1	

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E. Lois
L. Lancaster
D. Jackson

NRR: G. Holahan
J. Strosnider
D. Matthews
S. Newberry
C. Carpenter
R. Barrett
J. Wermiel
K. Wichman
M. Rubin
F. Akstulewicz
S. West
S. Lee
S. Magruder
M. Mitchell
J. Lazevnick
M. Snodderly
G. Kelly
M. Cheok
R. Elliott
T. Reed
P. Wen
S. Bloom

OPA

Attachment 1

ATTENDANCE SHEET
RISK-INFORMED CHANGES TO 10 CFR 50.46 AND OTHER LOCA-RELATED REGULATORY REQUIREMENTS
MAY 9, 2001, ROCKVILLE, MARYLAND
PUBLIC

Name	Title	Telephone	Organization
Frank Akstulewicz	Section Chief	301-415-1136	NRC/NRR/DSSA/SRXB
Ellen Anderson	Sr. Project Manager	202-739-8117	NEI
Dave Bajumpaa	Senior Engineer	860-447-1791 ext. 2316	Dominion/CEOG
Biff Bradley	Sr. Project Manager	202-739-8083	NEI
Bob Bryan	WOG Chairman	423-751-8201	TVA
Nancy Chapman	SERCH Manager	301-228-6025	SERCH/Bechtel
Mark Cunningham	Branch Chief	301-415-6189	NRC/RES/DRAA/PRAB
Mary Drouin	Section Chief	301-415-6675	NRC/RES/DRAA/PRAB
Bert Dunn	Advisory Engineer	804-832-2427	BWOG/FRA-ANP
Bob Elliott	Rx Systems Engineer	301-415-1397	NRC/NRR/DSSA/SPLB
Farouk Eltawila	Div. Director (Acting)	301-415-7499	NRC/RES/DSARE
Carolyn Fairbanks	Projector Manager/ Materials Engineer	301-415-6719	NRC/RES/DET/MEB
Eric Haskin	Consultant	505-298-7236	ERI Consulting
Adrian Heymer	Program Manager	202-739-8094	NEI
Rick Hill	Project Manager	408-925-5388	GE
Gary Holahan	Division Director	301-415-2884	NRC/NRR/DSSA
Glenn Kelly	Sr. Rel. & Risk Analyst	301-415-1075	NRC/NRR/DSSA/SPSB
Tom King	Division Director	301-415-5790	NRC/RES/DRAA
Alan Kuritzky	Sr. Rel. & Risk Eng.	301-415-6255	NRC/RES/DRAA/PRAB
Norm Lauben	Sr. Nuclear Engineer	301-415-6762	NRC/RES/DSARE/SMSAB
Samuel Lee	Rel. & Risk Analyst	301-415-1061	NRC/NRR/DSSA/SPSB
John Lehner	Group Leader	631-344-3921	Brookhaven National Lab.

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PUBLIC

Name	Title	Telephone	Organization
Erasmia Lois	Project Manager	301-415-6560	NRC/RES/DRAA/PRAB
Stu Magruder	Sr. Project Manager	301-415-3139	NRC/NRR
Michael Markley	Sr. Staff Engineer	301-415-6885	ACRS
Mike Mayfield	Division Director	301-415-5678	NRC/RES/DET
Ralph Meyer	Sr. Technical Advisor	301-415-6789	NRC/RES/DSARE/SMSAB
Scott Newberry	Dep. Division Director	301-415-1163	NRC/NRR/DRIP
Bob Osterrieder	Supervisory Engineer	412-374-5173	Westinghouse/WOG
Terry Pickens	Manager, Regulatory and Strategic Services	715-377-3390	NMC
Tony Pietrangelo	Director, Risk & Perf.-Based Regulation	202-739-8081	NEI
Deann Raleigh	LIS, Client Manager	301-258-2551	LIS, Scientech
Terry Rieck	Senior Manager	630-663-7687	Exelon/BWROG
Craig Sellers	Manager	410-394-1504	ITS Corp.
Mike Snodderly	Rx Systems Engineer	301-415-2047	NRC/NRR/DSSA/SPSB
Lewis Ward	Engineering Manager (WOG-LBLOCA Redef. Chairman)	205-992-7105	Southern Nuclear/WOG