

April 25, 2001

MEMORANDUM TO: William D. Beckner, Acting Chief
Generic Issues, Environmental, Financial &
Rulemaking Branch
Division of Regulatory Improvement Programs, NRR

FROM: Joseph A. Golla, Project Manager/**RA**
Generic Issues, Environmental, Financial &
Rulemaking Branch
Division of Regulatory Improvement Programs, NRR

SUBJECT: SUMMARY OF PUBLIC MEETING WITH BWR OWNERS GROUP
REPRESENTATIVES AND NUCLEAR ENERGY INSTITUTE (NEI) TO
DISCUSS BWR PILOT ACTIVITIES FOR RISK-INFORMING 10CFR50

On April 18, 2001, NRC met with representatives of the BWR Owners Group (BWROG), Exelon and the Nuclear Energy Institute (NEI) to discuss BWR Option 2 pilot activities. Attachment 1 provides a list of participants. Attachment 2 is the slides the BWROG used to present their information.

BWR pilot activities for Option 2 have been initiated at the Quad Cities site in Illinois. The main purpose of these activities is to pilot the NEI Option 2 implementation guidance and use the lessons learned from the effort to improve the guidance and the governing Option 2 regulatory framework. Additionally, the staff and industry are interested in determining whether the Option 2 approach is practical and cost-beneficial. Thus far the BWROG participants are about a fourth of the way through a pilot program schedule which extends to December 2001. Efforts made thus far, include risk-informed categorization, an initial evaluation of special treatment requirements, and documentation of these efforts. Exelon representatives stated that, thus far, they have not been able to conclude that Option 2 would be cost beneficial for Quad Cities. However, they are continuing to assess the cost-benefit.

The BWROG selected systems for "piloting" that are generally applicable to most BWRs. From these candidate systems, systems were chosen that, under Option 2 implementation, would have safety-related components categorized as low safety significant, and also systems that would have nonsafety-related components categorized as safety significant. That is, systems in which components would be expected to be re-categorized from RISC-1 to RISC-3, and from RISC-4 to RISC-2 were chosen for piloting. These are the standby gas treatment system (SBGTS), feedwater system, and core spray system. The BWROG participants are currently in the process of applying the risk-informed categorization process detailed in NEI 00-04, *Option 2 Implementation Guideline*, to these systems at Quad Cities. The staff indicated that there are substantial comments pending resolution on the version of NEI 00-04 that was utilized. The BWROG indicated that once agreement is reached on the NEI 00-04 guidance, they would incorporate changes into the integrated decision-making process to account for the changes in the guidance. They are up through step 2 of the 4 step process developed in NEI 00-04, which utilizes plant risk information assembled in step 1 to compile "risk insights" and "safety significant attributes." This information will be provided to the "Integrated Decision-Making

Panel” (IDP) for final categorization of the SSCs. This next step will require more extensive involvement of plant staff. The BWROG wants to have reasonable agreement on NEI 00-04 before proceeding with the next step.

An interesting aspect of the method the BWROG participants are utilizing is the grouping of components within a system according to function supported. Using this method, a component would be categorized as safety significant if any failure mode for any function the component supports is safety significant. Out of these, SSCs are categorized as highly safety significant based on decision criteria which utilizes two “importance measures” from PRA technology. These are calculated to measure contribution to core damage frequency (CDF) and large early release frequency (LERF). These are the Fussell-Vesely (FV) Importance (measures overall contribution of an event to either CDF or LERF) and Risk Achievement Worth (RAW) (provides indication of the impact on either CDF or LERF if the component fails). As an example, the Reactor Pressure Vessel make up function of the feedwater system was found to be safety significant. Results of the entire process, to be furnished to the pilot IDP, can be viewed on pages 38 and 39 of Attachment 2 to this summary.

The BWROG pilot participants at Quad Cities are in the process of completing their evaluation of Option 2 “special treatment” considerations. Special treatment requirements (STRs) are current requirements imposed on SSCs to provide additional confidence that the equipment is capable of performing its design basis function(s). RIP50 Option 2 is an effort to develop a framework to risk-inform the scope of these STRs and thereby to apply treatment to SSCs that is reflective of their safety significance (as judged through the risk-informed categorization process outlined above). This will result in a reduction in the level of control for non-safety significant SSCs and a continuance or increase, as needed, for SSCs of higher safety significance. The BWROG participants are in the process of defining which STRs will be considered for inclusion in the pilot program. Regulations that affect the implementation of Option 2 for the Quad Cities pilot program can be viewed on page 46 of Attachment 2 to this meeting summary.

The next significant BWROG task is to exercise the IDP process which the staff would like to observe. However, it was decided that before that task can get underway, the staff and industry should be in reasonable agreement on the content of NEI 00-04. The staff is scheduled to meet with NEI to discuss NEI 00-04 on April 25, 2001.

Attachments: As stated

**NRC/BWROG/NEI RIP 50 Option 2 Meeting
BWR Pilot Activities
List of Attendees**

Name	Affiliation	e-mail	Phone
Tim Reed	NRC/NRR/DRIP	TAR@NRC.GOV	301-415-1462
Biff Bradley	NEI	reb@nei.org	202-739-8083
Steve West	NRC/NRR/DRIP	KSW@NRC.GOV	301-415-1220
Goutam Bagchi	NRC/NRR/DE	gxbi@nrc.gov	301-415-3305
John Fair	NRC/NRR/DE	jrf@nrc.gov	301-415-2759
Mike Cheok	NRC/NRR/DSSA	mcc2@nrc.gov	301-415-8380
Deann Raleigh	US Scientech	draleigh@scientech.com	301-258-2551
Joe Golla	NRC/NRR/DRIP	jag2@nrc.gov	301-415-1002
Nancy Chapman	SERCH/Bechtel	ngchapma@bechtel.com	301-228-6025
Eileen Mckenna	NRC/NRR	emm@nrc.gov	301-415-2189
Ron Young	NRC/NRR	rmy@nrc.gov	301-415-2852
Stu Magruder	NRC/NRR	slm1@nrc.gov	301-415-3139
Mohammed Shuaibi	NRC/NRR	mas4@nrc.gov	301-415-2859
Michael Knapik	McGraw-Hill	mknap@mh.com	202-383-2167
Dana Millar	Entergy	dmillar@entergy.com	601-368-5445
Courtney Smyth	PSEG Nuclear	courtney.smyth@pseg.com	856-339-5298
Eric Jebsen	Exelon	eric.jebsen@exeloncorp.com	309-654-2241 ext 3327
Ed Burns	ERIN	etburns@erineng.com	408-559-4514
Asimios Malliakos	NRC/RES	acm1@nrc.gov	301-415-6458
Wallace Colvin	FirstEnergy	wjcolvin@firstenergycorp.com	440-280-5824
Rick Hill	GE	richard.hill@gene.ge.com	418-925-5389
Peter Balmain	NRC/NRR	pab1@nrc.gov	301-415-3697

Panel” (IDP) for final categorization of the SSCs. This next step will require more extensive involvement of plant staff. The BWROG wants to have reasonable agreement on NEI 00-04 before proceeding with the next step.

An interesting aspect of the method the BWROG participants are utilizing is the grouping of components within a system according to function supported. Using this method, a component would be categorized as safety significant if any failure mode for any function the component supports is safety significant. Out of these, SSCs are categorized as highly safety significant based on decision criteria which utilizes two “importance measures” from PRA technology. These are calculated to measure contribution to core damage frequency (CDF) and large early release frequency (LERF). These are the Fussell-Vesely (FV) Importance (measures overall contribution of an event to either CDF or LERF) and Risk Achievement Worth (RAW) (provides indication of the impact on either CDF or LERF if the component fails). As an example, the Reactor Pressure Vessel make up function of the feedwater system was found to be safety significant. Results of the entire process, to be furnished to the pilot IDP, can be viewed on pages 38 and 39 of Attachment 2 to this summary.

The BWROG pilot participants at Quad Cities are in the process of completing their evaluation of Option 2 “special treatment” considerations. Special treatment requirements (STRs) are current requirements imposed on SSCs to provide additional confidence that the equipment is capable of performing its design basis function(s). RIP50 Option 2 is an effort to develop a framework to risk-inform the scope of these STRs and thereby to apply treatment to SSCs that is reflective of their safety significance (as judged through the risk-informed categorization process outlined above). This will result in a reduction in the level of control for non-safety significant SSCs and a continuance or increase, as needed, for SSCs of higher safety significance. The BWROG participants are in the process of defining which STRs will be considered for inclusion in the pilot program. Regulations that affect the implementation of Option 2 for the Quad Cities pilot program can be viewed on page 46 of Attachment 2 to this meeting summary.

The next significant BWROG task is to exercise the IDP process which the staff would like to observe. However, it was decided that before that task can get underway, the staff and industry should be in reasonable agreement on the content of NEI 00-04. The staff is scheduled to meet with NEI to discuss NEI 00-04 on April 25, 2001.

Attachments: As stated

DISTRIBUTION: see list

DOCUMENT NAME: \RGEB\JAG2\Sum 4-18-01 mgt.wpd

OFFICE	RGEB	RGEB	RGEB
NAME	JGolla:nyc	TReed	SWest
DATE	04/24/01	04/25/01	04/25/01

OFFICIAL RECORD COPY

DISTRIBUTION:

PUBLIC

ADAMS

RGEB r/f

OGC

ACRS

SCollins/JJohnson

BSheron

WBorchardt

GHolahan/TCollins

DMatthews/FGillespie

TReed

SWest

E. Mckenna

PShemanski, DE

JCalvo, EEIB

JNakoski

Pbalmain

GBagchi

CHolden

MCheck, DSSA

SMagruder

MShuaibi

JGolla