

June 21, 2007

MEMORANDUM TO: Martin Murphy, Branch Chief
Generic Communications and Power Uprate Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

FROM: Joseph A. Golla, Project Manager */RA/*
Generic Communications and Power Uprate Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF JUNE 6, 2007, PHONE CALL WITH THE BOILING
WATER REACTOR OWNERS' GROUP (BWROG) TO DISCUSS
GENERIC SAFETY ISSUE (GSI)-193, BWR EMERGENCY CORE
COOLING SYSTEM (ECCS) SUCTION CONCERNS

On June 6, 2007, a phone call was held with representatives of the BWROG to discuss the BWROG's search for GSI-193 related information. In a previous phone call on February 21, 2007, the staff inquired if the BWROG had information concerning GSI-193 they would be willing to share that might be helpful in resolving the issue. The BWROG agreed to do a limited review of the GSI-193 issues and stated they would search their database and then communicate to the staff the results of their search. The June 6, 2007, phone call was held to discuss the information the BWROG had to share with the staff. In order to clarify the discussion of the June 6, 2007, phone call, the BWROG on June 7, 2007, electronically submitted written information that was discussed in the phone call. This communique included the "Abstract" portion of two research reports conducted on behalf of the Nordic Regulatory Authority in Europe. These documents may be viewed in the Agencywide Documents Access and Management System at Accession Nos. ML071640273 and ML071640280. Participants in the call are listed in the table below.

The BWROG stated that, from their limited review of the issues in GSI-193, they expect for a large-break loss of coolant accident (LBLOCA), the air from the vents to clear quickly and not impact the pumps unless the pumps are running at the time of the event which is of low probability. The staff inquired how many seconds "quickly" represents. The BWROG representatives stated they didn't know exactly how many seconds the vent clearing took.

The BWROG stated they reviewed a video they had of a LBLOCA blowdown experiment which was run to evaluate hydrodynamic loads for Mark I containments. The following was transmitted in the followup electronic communique from the BWROG concerning the testing:

"...the testing showed the air entering the pool quickly dissipates into the air space above the torus wet well from a large break. That testing was not done to define the amount of air contained in the pool nor its impact on the pumps. However, BWROG EPGs/SAGs guidance states that ECCS pumps can be operated with up to 20% air entrainment, but

pump capacity will be reduced above 3 to 5% air. (Reference BWROG EPGs/SAGs, Appendix B, 17.32 Vortex Limit) In addition, we have discovered testing performed by the Nordic Utilities (report abstracts attached) that may address the issues in GSI-193 from a pump performance perspective. The following is quoted from the subject report abstracts:

During the tests the head and water flow didn't decline when air was blown to the pool.

The internal circulation of air bubbles continued to some degree as long as air was blown to the pool. Air bubbles were detected also inside the strainer. The amount of them was, however, negligible after 30 seconds. The ECCS pump head and water flow rate didn't decline due to the air bubbles drifting inside the pump in any test."

During the call, the staff asked if any of the BWR/Mark I plants had looked into the GSI-193 issue. The BWROG stated that no plant-specific studies have been done. The staff also asked, because the concern is one regarding operability of the pumps if they experience air ingress greater than 20 percent void fraction, if the BWROG has any information about continued operability at high voids even if it is only for a very short duration? The BWROG representatives stated they do not have such information.

The BWROG stated that the above information was provided on a voluntary, non-verified basis and does not plan any additional work on the subject. With this the call was concluded.

List of Telecon Participants June 6, 2007

NAME	ORGANIZATION
Prasad Kadambi	NRC/RES
Martin Murphy	NRC/NRR
Joe Golla	NRC/NRR
Ken Mccall	GE Program Manager for BWROG
Doug Coleman	Energy Northwest (Columbia Generating Station) Vice Chairman, BWROG

pump capacity will be reduced above 3 to 5% air. (Reference BWROG EPGs/SAGs, Appendix B, 17.32 Vortex Limit) In addition, we have discovered testing performed by the Nordic Utilities (report abstracts attached) that may address the issues in GSI-193 from a pump performance perspective. The following is quoted from the subject report abstracts:

During the tests the head and water flow didn't decline when air was blown to the pool.

The internal circulation of air bubbles continued to some degree as long as air was blown to the pool. Air bubbles were detected also inside the strainer. The amount of them was, however, negligible after 30 seconds. The ECCS pump head and water flow rate didn't decline due to the air bubbles drifting inside the pump in any test."

During the call, the staff asked if any of the BWR/Mark I plants had looked into the GSI-193 issue. The BWROG stated that no plant-specific studies have been done. The staff also asked, because the concern is one regarding operability of the pumps if they experience air ingress greater than 20 percent void fraction, if the BWROG has any information about continued operability at high voids even if it is only for a very short duration? The BWROG representatives stated they do not have such information.

The BWROG stated that the above information was provided on a voluntary, non-verified basis and does not plan any additional work on the subject. With this the call was concluded.

List of Telecon Participants June 6, 2007

NAME	ORGANIZATION
Prasad Kadambi	NRC/RES
Martin Murphy	NRC/NRR
Joe Golla	NRC/NRR
Ken Mccall	GE Program Manager for BWROG
Doug Coleman	Energy Northwest (Columbia Generating Station) Vice Chairman, BWROG

DISTRIBUTION:

MMurphy (mcm2) JGolla (jag2)
PKadambi (npk) MHoncharik (mch3)
RidsNrrDprPgcb

ADAMS ACCESSION NUMBER: ML071640257

OFFICE	LA:PGCB:DPR	PM:PGCB:DPR	BC:PGCB:DPR
NAME	CHawes CMH	JGolla	MMurphy
DATE	6/18/2007	06/14/2007	06/21/2007

OFFICIAL RECORD COPY