

April 18, 2008

MEMORANDUM TO: Michael L. Scott, Chief
Safety Issues Resolution Branch
Division of Safety Systems
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 MARCH 13, 2008, PHONE CALL WITH LICENSEES
CONCERNING SUMP STRAINER HEAD LOSS TESTING

On March 13, 2008, a phone call was held with licensees concerning outstanding issues related to head loss testing of their modified sump strainers. The calls involved certain licensees who are clients of Control Components, Inc. (CCI). This vendor is performing mockup head loss testing of their clients' containment sump strainers. The purpose of the call was to discuss issues with CCI's test procedures that were raised by NRC technical staff members. Mr. William Ruland, Director, Division of Safety Systems (DSS), Office of Nuclear Reactor Regulation, led the call. Several other staff members were present and also participated in the call. Phone call participants are listed in Enclosure 2 to this memorandum.

The DSS Division Director initiated the call with talking points that included an introduction, background, key technical issues, and conclusion. These appear as Enclosure 1 to this memorandum. After this discussion, the participants discussed several head loss testing issues. A participant from industry stated that the CCI "pocket design" strainer is resistant to forming a uniform thin bed. An individual representing D. C. Cook inquired if, in light of the staff's concerns with the CCI test protocol, previous testing is therefore called into question. The DSS Division Director stated that it is the responsibility of the licensees to decide whether to retest. An individual representing Calvert Cliffs Nuclear Generating station inquired whether a cross section of vendors and resulting requests for additional information from current staff reviews of licensee supplemental responses to Generic Letter 2004-02 would be made public so that other licensees may benefit from the knowledge gained. The NRC Chief, Safety Issues Resolution Branch, indicated that this will be done to facilitate issue resolution on an industry-wide basis.

Enclosure 1: NRC Talking Points for CCI Phone Call
Enclosure 2: List of Participants for CCI Phone Call

CONTACT: Joe Golla, NRR/DPR/PGCB
301-415-1002

April 18, 2008

MEMORANDUM TO: Michael L. Scott, Chief
Safety Issues Resolution Branch
Division of Safety Systems
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 MARCH 13, 2008, PHONE CALL WITH LICENSEES
CONCERNING SUMP STRAINER HEAD LOSS TESTING

On March 13, 2008, a phone call was held with licensees concerning outstanding issues related to head loss testing of their modified sump strainers. The calls involved certain licensees who are clients of Control Components, Inc. (CCI). This vendor is performing mockup head loss testing of their clients' containment sump strainers. The purpose of the call was to discuss issues with CCI's test procedures that were raised by NRC technical staff members. Mr. William Ruland, Director, Division of Safety Systems (DSS), Office of Nuclear Reactor Regulation, led the call. Several other staff members were present and also participated in the call. Phone call participants are listed in Enclosure 2 to this memorandum.

The DSS Division Director initiated the call with talking points that included an introduction, background, key technical issues, and conclusion. These appear as Enclosure 1 to this memorandum. After this discussion, the participants discussed several head loss testing issues. A participant from industry stated that the CCI "pocket design" strainer is resistant to forming a uniform thin bed. An individual representing D. C. Cook inquired if, in light of the staff's concerns with the CCI test protocol, previous testing is therefore called into question. The DSS Division Director stated that it is the responsibility of the licensees to decide whether to retest. An individual representing Calvert Cliffs Nuclear Generating station inquired whether a cross section of vendors and resulting requests for additional information from current staff reviews of licensee supplemental responses to Generic Letter 2004-02 would be made public so that other licensees may benefit from the knowledge gained. The NRC Chief, Safety Issues Resolution Branch, indicated that this will be done to facilitate issue resolution on an industry-wide basis.

Enclosure 1: NRC Talking Points for CCI Phone Call
Enclosure 2: List of Participants for CCI Phone Call

CONTACT: Joe Golla, NRR/DPR/PGCB
301-415-1002

DISTRIBUTION: See next page

ADAMS Accession Number: ML080920058

NRR-106

OFFICE	NRR/DPR/PGCB: PM	NRR/DPR/PGCB: BC	NRR/DCI/CSGB: BC	NRR/DSS/SSIB: BC
NAME	JGolla JAG	MMurphy MCM	AHiser ALH	MScott MLS w/cmnt.
DATE	04/01/2008	04/14/2008	04/08/2008	04/18/2008

OFFICIAL RECORD COPY

Talking Points for CCI Phone Call 3/13/08

Introduction

- CCI testing for Salem has been delayed several times for a total of approximately five months past the originally scheduled date in October, 2007, when the staff planned to observe this testing
- Staff is concerned that test delays may impact Salem's schedule for completing GSI-191 corrective actions in a timely manner (currently, extensions for both units are approved through 6/30/08)
- Previous delays in the test schedule for Salem resulted partly from unresolved technical issues associated with the CCI test protocol
- Further delay to test schedule may be incurred to re-perform testing based on recent experience from another vendor showing unexpectedly large head loss sensitivity to debris sequencing
 - Staff updating draft head loss review guidance to account for this new information
- Not clear whether technical issues similar to those experienced by Salem are applicable to other licensees' tests at CCI
- Not clear whether testing for other CCI plants is also experiencing extensive delays

Background

- Original test series for Salem performed in late 2006 / early 2007
- Significant debris settling was observed during the test
- Based in part on comments from staff and ACRS concerning the prototypicality of the flow velocity in the test flume during this testing, Salem decided to perform additional head loss testing
- Staff understands new testing is intended to model strainer near-field geometry and water velocities in a prototypical or conservative manner with intent to credit any settling observed

Key Technical Issues with Testing Protocol

- Significant staff questions regarding whether CCI process for generating chemical surrogate provides representative or conservative results
 - Concerns on CCI approach for generating precipitate in the test flume documented in a trip report for CCI testing observed in September 2006
 - Additional discussion and staff clarification of issues with CCI chemical approach occurred during subsequent review of generic CCI test procedures and discussions during and following Salem audit
 - Since questions concerning chemical injection were not resolved, NRC sponsored confirmatory tests at Argonne National Lab. These tests showed that precipitate formation and precipitate properties from chemical injection are sensitive to the injection technique (injection rate, static versus flowing conditions, etc). Therefore, the NRC staff is looking for confirmation that the CCI chemical process is adequately understood and controlled.
 - Staff understands that our questions about the CCI process for generating surrogate precipitates may be addressed for Salem by use of WCAP method to generate precipitate

- Unclear how issues are being addressed for other licensees relying on CCI's original approach
- Additional non-chemical questions concerning adequate preparation of fine fibrous debris and prototypicality of velocities in the test flume
 - Staff understands that CCI is attempting to address these staff concerns
 - However, testing at other vendors has demonstrated that unexpectedly high head losses can result for tests where only fine debris is expected to reach the strainers. Vendor documentation shows that essentially all fiber reaching the strainer is fine. Testing must be conservative or prototypical.

Conclusion

- Expedient resolution of remaining issues associated with CCI's head loss testing protocol is needed to support the timely closure of GSI-191 for Salem
- Other CCI customers should be cognizant of the technical issues raised by the NRC staff and verify that these issues have been adequately addressed for their plants

List of Participants on Phone Call with CCI Licensee-Clients

Paul Leonard	AEP (Cook)
Dan Brush	Exelon
Brian Davenport	Exelon
Mike Strait	Exelon
Bob Peterson	Sargent & Lundy
Helmut Kopke	Sargent & Lundy
Dewey Rochester	Duke Energy (Oconee)
Matthew Branham	Duke Energy (Oconee)
Greg Saxon	Duke Energy (Oconee)
Bob Meixell	Duke Energy (Oconee)
Thomas Engbring	Palo Verde
Brad Junas	Palo Verde
Kiran Mathur	PSE&G (Salem)
Robert Diaz	PSE&G (Salem)
William Ruland	NRC
John Lehning	NRC
Steve Smith	NRC
Joe Golla	NRC
Mike Scott	NRC
Paul Klein	NRC
Allen Hiser	NRC

Memorandum to Michael L. Scott from Joseph A. Golla

SUBJECT: SUMMARY OF FEBRUARY 13, 2008, PHONE CALLS WITH LICENSEES
CONCERNING SUMP STRAINER HEAD LOSS TESTING

DISTRIBUTION

PUBLIC

MScott (MLS3)
WRuland (WHR)
RArchitzel (REA)
MMurphy (MCM2)
JWermiel (JSW1)
PKlein (PAK)
JLehning (JXL4)
JGolla (JAG2)
LWhitney (LEW1)
EGeiger (EXG)
MYoder (MGY)
AHiser (ALH1)
SSmith (SJS2)
REnnis (RXE)
RidsNrrDss
RidsNrrDci
RidsNrrDpr
RidsNrrPgcb