

December 18, 2006

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 OCTOBER 19, 2006, PUBLIC MEETING WITH THE
NUCLEAR ENERGY INSTITUTE (NEI) AND INDUSTRY TO DISCUSS
GSI-191 CHEMICAL EFFECTS TESTING AND PATH FORWARD FOR
GSI-191

On October 19, 2006, Nuclear Regulatory Commission (NRC) staff met with representatives of NEI, Sump Strainer Vendors, and the Pressurized Water Reactor Owner's Group (PWROG) in a public meeting at NRC headquarters in Rockville, Maryland. The enclosure provides a list of those in attendance at the meeting and an industry representative who participated via teleconference. Information presented by the NRC and industry at the meeting is available in the NRC Agencywide Documents Access and Management System (ADAMS) under Accession No. ML063130118.

At the meeting the PWROG indicated that responses to WCAP-16530, "Evaluation of Post-Accident Chemical Effects in Containment Sump Fluids to Support GSI-191" requests for additional information would be provided to the NRC staff by November 24, 2006.

Representatives of five sump strainer vendors presented briefings on chemical effects testing methodologies and sump strainer head loss results to date from the tests. The purpose of this testing is to determine the increase in debris bed head loss across the sump strainer due to chemical reactions that form precipitates. The five sump strainer vendors who were present and gave briefings were Enercon/Alion, Areva/Performance Contracting, Inc./Alden, Atomic Energy Canada Limited, Control Components, Inc., and General Electric (GE). See the enclosures to this memorandum to view the vendor's presentation materials (ADAMS Accession No. ML063130118). The NRC presented a briefing of chemical effects test results of recent NRC-sponsored testing conducted at Argonne National Laboratory. This briefing material can be viewed by accessing ADAMS Accession No. ML063180090.

After the briefings, discussions were held regarding the path forward for Generic Safety Issue 191 (GSI-191) in light of recent chemical effects test results. NEI proposed for the consideration of the staff and industry several areas whereby additional investigation and/or action would contribute to the resolution of GSI-191. These are chemical source term, fiber source term, and

strainer head loss. For the chemical precipitant source term it was suggested that certain parameters in calculation methodology, input/boundary conditions, and design/operational modification should be evaluated. For fiber source term, calculation methodology and design/operational modification were suggested as areas of further consideration. For strainer head loss, testing protocols and design/operational modifications were proposed as areas for consideration for further investigation or action. See the enclosures to this memorandum (ADAMS Accession No. ML063130118) for the NEI briefing slides on this matter.

NEI emphasized that GSI-191 should be addressed "holistically." The staff agreed in principle but emphasized that licensees are responsible for making an adequate technical basis to support a NRC staff determination of reasonable assurance that long-term core cooling will be maintained in accordance with 10 CFR 50.46.

The NRC then presented for discussion several possible paths forward for resolution of GSI-191. These included: 1) continue on existing path, 2) remove materials from plant containments that are a cause for concern, 3) vendor-specific solutions, 4) revisit testing practices to ensure their efficacy, and 5) revisit one or more analysis areas to reduce excessive conservatism. Several areas where conservatism might be reduced were discussed. The areas included break selection, debris generation and zone of influence, debris characteristics and transport, head loss, coatings generation and transport, downstream effects, and emergency core cooling system and residual heat removal system mission time.

The staff and NEI agreed to have further discussions on how to best address GSI-191. After discussion by the NRC and industry on GSI-191 path forward, questions were taken from the public. The question was asked "How many of the 69 PWR plants in the U.S. fleet are running into problems with chemical effects and what if the over-conservatism in their analyses can't be removed?" Staff replied that chemical effects testing is ongoing with some testing forthcoming and that the extent of the difficulty with regard to how many plants are affected by the phenomena or whether removal of conservatism in the analyses of the affected plants will be required is not yet known.

Another question was posed by the same individual from the public. This question was "Have any plants conducted their analyses according to Section 6 methodology?" [Section 6 here refers to Section 6 of the NEI report titled, "Pressurized Water Reactor Sump Performance Evaluation Methodology," i.e., the "Guidance Report" (proposed document number NEI 04-07), and the NRC Safety Evaluation written to address it. Section 6 of this report describes an alternative evaluation methodology for demonstrating acceptable containment sump performance.] The staff answered that so far no plants have elected to use the alternative evaluation methodology in the Guidance Report. The individual from the public further inquired as to what changes in resolution of GSI-191 would have to be made if a plant were to utilize any of the alternative evaluation methodology. The NRC staff answered that, that would have to be reflected ultimately in that plant's response to Generic Letter 2004-02, "Potential Impact of Debris Blockage On Emergency Recirculation During Design Basis Accidents at Pressurized-Water Reactors."

After the staff answered questions from the public, the public portion of the meeting was adjourned and a closed meeting was convened with GE on the subject of GSI-191.

Enclosure: As Stated

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Enclosure: As Stated

ADAMS ACCESSION NUMBER: ML063180193

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DATE	12/04/2006	12/04/2006	12/14/2006	12/21/2006	12/18/2006

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Memorandum to Michael L. Scott from Joseph A. Golla

SUBJECT: MEETING SUMMARY OF PUBLIC MEETING WITH NEI AND INDUSTRY ON OCTOBER 19, 2006, TO DISCUSS CHEMICAL EFFECTS TESTING

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**List of Attendees for October 19, 2006
Meeting of NEI, Industry and NRC**

NAME	ORGANIZATION
Tom Orlando	Entergy
Roger Waters	Entergy
Vann Stephenson	Progress Energy
Wes McGoun	Progress Energy
Frank Eppler	Duke Energy
Gregg Saxon	Duke Energy
Adi Irani	Entergy
Brian Dunn	FPL
Joe Glazier	GE
Steven Tysoe	GE
Davood Abdollahian	GE
Bill Rinkaes	Westinghouse
Jimmy Cash	SNL
Chuck Feist	TXU Power
Gil Zigler	Alion
Eric Crabtree	Enercon Services
Pete Wilkens	Southern Cal Edison
Marwan Charrouf	MPR Associates
Jim Bleigh	PCI
Ken Greenwood	Areva NP
Gina Strati	Atomic Energy of Canada
Nigel Fisher	AECL
Elizabeth Mistele	OPG
Joe Gasper	OPPD
Rob Choromokos	Alion
Mehrdad Hojati	SCE SONGS

Mike Murdak	Duke Energy
Bob Peterson	Sargent & Lundy
Paul Willoughby	Dominion
Michael Kai	Dominion
Brian Davenport	Exelon
Doug Walker	Exelon
Tom Kendall	NMC
John Broschak	NMC
James Wong	NMC
Mark Coleman	PG&E Diablo Canyon
Dan Brosnan	PG&E Diablo Canyon
Thomas Engbuing	PUNGS/APS
Paul Leonard	AEP/DC Cook
Aaron Smith	Enercon
Saif Khan	Entergy
Tim Andreychek	Westinghouse
Andre Drake	Constellation Energy
Mike Franklin	Progress Energy
Deane Beck	CCI
Tobias Zieger	CCI
Steven Dolley	Platts Nuclear
Ed Kimoto*	SONGS
Dave Cullison	NRC
Tom Martin	NRC
Mike Scott	NRC
Paul Klein	NRC
Ralph Architzel	NRC
Leon Whitney	NRC
Shanlai Lu	NRC
Bill Bateman	NRC

Matt Yoder	NRC
Alan Hiser	NRC
Michele Evans	NRC
Steve Unikewicz	NRC
Walt Jensen	NRC
Ervin Geiger	NRC
Roberto Torres	NRC
Joe Golla	NRC

* Participated via teleconference

Enclosure