

September 6, 2006

Dr. Graham B. Wallis, Chairman
Advisory Committee on Reactor Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

SUBJECT: GENERIC SAFETY ISSUE 191 - ASSESSMENT OF (EFFECT OF) DEBRIS
 ACCUMULATION ON PRESSURIZED-WATER REACTOR SUMP
 PERFORMANCE

Dear Dr. Wallis:

The U.S. Nuclear Regulatory Commission (NRC) staff appreciates the insights the Advisory Committee on Reactor Safeguards (ACRS or the Committee) provided in its letter of August 1, 2006, regarding assessment of debris accumulation on pressurized-water reactor (PWR) sump performance. In response to your letter, we would like to offer some thoughts on the subject for the Committee's consideration.

The Committee's principal recommendation is that confirmatory research on Generic Safety Issue -191 (GSI-191) should continue. As discussed during the June ACRS meeting, the NRC staff has concluded the previously funded research in this area, with several NUREG documents currently under review to capture the results of this work. However, the staff has not ruled out additional confirmatory research. As you are aware, the NRC staff is reviewing several PWR Owners Group topical reports related to GSI-191, including one specific to chemical effects. In support of this review, the staff is pursuing limited additional confirmatory research of chemical surrogate behavior, though this research is not intended to develop predictive analytical tools.

Licensees are pursuing plant-specific modifications to address sump clogging (possibly including replacement of containment pH buffers and/or removal of problematic materials from containment). The staff does not believe that the most efficient and achievable path forward is to undertake the level of research effort that ACRS seems to favor. Rather, we believe it best in the near term to continue interacting with industry as they develop the technical bases to support their Generic Letter (GL) 2004-02 submittals. Based on the ongoing review of industry topical reports, vendor strainer tests, and GL 2004-02 supplemental responses, we expect to be able to determine whether additional research is warranted, either by the industry to better verify their tests or by the staff to confirm industry results. The staff believes that this will also be the appropriate time to determine if we have sufficient understanding of the technical issues associated with GSI-191 to reach correct regulatory conclusions. The staff has high confidence that ongoing modification activities on sumps and associated safety-related systems will substantially reduce the risk-significance of GSI-191. Therefore, any consideration of additional research activities will include the perspective of the risk-significance of the issue at that time.

Additional research could also be initiated based on other factors. For example, the NRC staff plans to develop review guidance in areas where such guidance is currently lacking. If we find

that additional testing is needed to support our review and closure of the GSI, either the nuclear industry will undertake a focused effort to address the remaining technical issues or NRC will perform additional confirmatory analysis.

We agree with your conclusion that integral experiments such as those planned by the industry have limitations because they cannot practically represent system behavior over all input conditions. However, the staff expects that the licensees' supplements to GL 2004-02 will demonstrate that debris effects on systems at the respective plants have been bounded. Should this not be the case, the staff will take appropriate action, which might include additional research and/or additional work by licensees or the industry as a whole.

As recent letters and discussions have demonstrated, the staff and the Committee have the same goal of achieving an adequate understanding of the issues related to sump clogging to support closure of GSI-191. We differ somewhat on the role and timing of additional research, but we agree that current efforts to install modified sump strainers are appropriate. We understand and have carefully considered your concerns regarding research needs and have concluded that our present path forward makes the best use of Agency resources and is consistent with making substantial near-term progress in issue resolution. The staff will continue to update the Committee on the status of its review efforts regarding GSI-191, including any conclusions regarding the need for additional research.

Sincerely,

/RA/

Luis A. Reyes
Executive Director
for Operations

cc: Chairman Klein
Commissioner McGaffigan
Commissioner Merrifield
Commissioner Jaczko
Commissioner Lyons
SECY

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