



Entergy Operations, Inc.  
1448 S.R. 333  
Russellville, AR 72802  
Tel 501 858 5000

OCAN070503

July 28, 2005

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555-0001

Subject: Response to Request for Additional Information  
for Generic Letter 2004-02  
Arkansas Nuclear One – Units 1 and 2  
Docket Nos. 50-313 and 50-368  
License Nos. DPR-51 and NPF-6

Dear Sir or Madam:

By letter dated June 2, 2005 (OCNA060505), the NRC requested additional information on the 90-day response to Generic Letter (GL) 2004-02, *Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized-Water Reactors*, for Arkansas Nuclear One. The Staff requested Entergy to provide the plans and schedule for evaluating the chemical and long-term downstream effects and include plans for performing testing to support the evaluation of these effects.

Entergy provided a 90-day response to GL 2004-02 based on information available at that time. Subsequent to submitting the 90-day response, additional information has become available pertaining to chemical effects and evaluation of long-term downstream effects.

Recent cooperative NRC/Electric Power Institute (EPRI) chemical testing indicates that precipitants could be formed during post-loss-of-coolant accident (LOCA) recirculation operation. The effects of chemical precipitants on sump screen strainer head loss have not been quantified nor has a methodology been formulated for determining this component of the total head loss. However, Entergy has initiated the chemical effects evaluation to address sump screen head loss during post-LOCA recirculation. As a part of the evaluation, Entergy plans to determine whether the NRC/EPRI tests bound site-specific post-LOCA parameters and reconcile the differences. Sufficient margin will be included in the new sump strainer design to accommodate chemical effects and will be validated either analytically or via testing. The design margins include margins associated with minimum sump water level, emergency core cooling system flow rate, maximum and minimum temperatures at recirculation actuation signal, and the excess screen area provided over the minimum area required. Entergy will summarize the results of the chemical effects evaluation in the September 1, 2005, response. It is Entergy's understanding that the sump screen strainer vendors are currently developing plans and schedules to quantify the head

A116

loss associated with chemical effects. Once the results of the vendor tests are published, Entergy plans to evaluate the adequacy of the sump screen strainer design for the chemical precipitant effects.

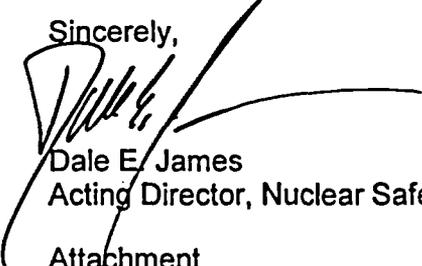
The guidance document for the evaluation of downstream effects, WCAP-16406, "Evaluation of Containment Sump Debris Effects in Support of GSI-191," was published on June 30, 2005. The evaluation for long-term downstream effects is currently being performed to support the September 1, 2005, response utilizing the WCAP-16406 methodology. Entergy plans to evaluate the effects of time-dependent circulating debris on the downstream components (i.e., valves, containment spray nozzles, orifices, downstream instrumentation, pumps, reactor vessel internals, and the fuel). Due to the late publication of WCAP-16406, a preliminary long-term downstream effects evaluation indicating susceptible components should be available in time for the September 1, 2005, response. Entergy will provide a summary of the long-term downstream effects evaluations that have been completed and a schedule for completion of the remaining evaluations in the September 1, 2005, response.

At this time, there are no plans to perform site-specific testing in support of the long-term downstream effects or chemical effects evaluations.

The new commitments contained in this submittal are summarized in the attachment. Should you have any questions concerning this submittal, please contact Ms. Natalie Mosher at (479) 858-4635.

I declare under penalty of perjury that the foregoing is true and correct. Executed on July 28, 2005.

Sincerely,



Dale E. James  
Acting Director, Nuclear Safety Assurance

Attachment

DEJ/nbm

cc: Dr. Bruce S. Mallett  
Regional Administrator  
U. S. Nuclear Regulatory Commission  
Region IV  
611 Ryan Plaza Drive, Suite 400  
Arlington, TX 76011-8064

NRC Senior Resident Inspector  
Arkansas Nuclear One  
P.O. Box 310  
London, AR 72847

U. S. Nuclear Regulatory Commission  
Attn: Mr. Mohan Thadani  
Mail Stop 0-7 D1  
Washington, DC 20555-0001

U. S. Nuclear Regulatory Commission  
Attn: Mr. Drew Holland  
Mail Stop 0-7 D1  
Washington, DC 20555-0001

**Attachment to**

**OCAN070503**

**List of Regulatory Commitments**

List of Regulatory Commitments

The following table identifies those actions committed to by Entergy in this document. Any other statements in this submittal are provided for information purposes and are not considered to be regulatory commitments.

COMMITMENT	TYPE (Check One)		SCHEDULED COMPLETION DATE (If Required)
	ONE- TIME ACTION	CONTINUING COMPLIANCE	
Sufficient margin will be included in the new sump strainer design to accommodate chemical effects and will be validated either analytically or via testing.	X		
Entergy will summarize the results of the chemical effects evaluation in the September 1, 2005, response.	X		September 1, 2005
Once the results of the vendor tests are published, Entergy plans to evaluate the adequacy of the sump screen strainer design for the chemical precipitant effects.	X		
Entergy will provide a summary of the long-term downstream effects evaluations that have been completed and a schedule for completion of the remaining evaluations in the September 1, 2005, response.	X		September 1, 2005