



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

March 21, 1996

Mr. Gordon H. Hart, P.E.  
Technical Services Manager  
Performance Contracting Inc.  
4025 Bonner Industrial Drive  
Shawnee, Kansas 66226

SUBJECT: POTENTIAL PLUGGING OF EMERGENCY CORE COOLING SUCTION STRAINERS BY  
DEBRIS IN BOILING WATER REACTORS

Dear Mr. Hart:

Thank you for your letter of January 3, 1996. As you are well aware, the staff has been concerned about plugging of emergency core cooling suction strainers for a number of years. NRC Bulletin 93-02, "Debris Plugging of Emergency Core Cooling Suction Strainers," issued on May 11, 1993, and Supplement 1 issued on February 18, 1994, focused industry attention on clogging of ECCS suction strainers at the Barseback and Perry Nuclear Power Plants. Subsequently, NRC Bulletin 95-02, "Unexpected Clogging of a Residual Heat Removal (RHR) Pump Strainer While Operating in Suppression Pool Cooling Mode," issued on October 17, 1995, focused on a similar event at the Limerick Station. With regard to ongoing activities, the staff issued a Federal Register notice on July 31, 1995, seeking public comments on a new proposed Bulletin. This draft Bulletin is currently undergoing final preparations for issuance and will communicate the staff's final resolution of this issue to the nuclear industry and request that licensees make programmatic and hardware changes to ensure ECCS reliability following a postulated LOCA.

Your letter questions whether post-LOCA ECCS strainer blockage is an insulation problem or a strainer problem. The answer is that it is obviously a strainer problem. Both the Perry and Limerick events demonstrate the deleterious effects of strainer pressure drop caused by the filtering of suppression pool particulates (corrosion products or "sludge") by fibrous materials entrained on the ECCS strainer surfaces. These corrosion products are typically present in varying quantities in domestic BWRs. The sludge is generated during normal operation, and the amount of sludge present in the pool depends on the frequency of pool cleanings/desludging conducted by the licensees.

The staff has noted that much of the effort and discussion on this issue to date has focused on the threat caused by fibrous insulation. The staff recognizes that fibrous insulation represents the largest source of fibrous material in the containment; however, it is important to note that both the Perry and Limerick events involved other sources of fibrous debris. In addition, the focus of this issue is on ensuring the operability of the ECCS regardless of the debris source. This means that licensees should focus on both fibrous and non-fibrous debris sources.

9604090457 960321  
PDR ADOCK 05000352  
P PDR

ADDOCK 05000352  
PDR

RD-8-3 ECCS  
X RD-10-1, BUR  
96-08  
JF03  
110

G. Hart

- 2 -

Staff efforts in the final resolution of this issue will be focused on the issuance of the draft Bulletin and review of licensee responses. We recognize that a number of licensees are currently taking anticipatory actions by replacing fibrous insulation with reflective metallic insulation (RMI). These actions are of their own choosing and economic risk. The options currently included in the draft Bulletin do not recommend removal of fibrous insulation. Further stated, the staff has yet to make any conclusions on whether RMI is a contributor to ECCS suction strainer blockage. No formal submittal has been received by the staff to date providing data or analysis which supports the use of RMI as a potential solution to the strainer clogging issue.

In conclusion, I hope that this letter has been responsive to your concerns. If you have further questions, please do not hesitate to call Robert Elliott of my staff at (301) 415-1397.

Sincerely,

/s/

Carl H. Berlinger, Chief  
 Containment Systems and Severe Accident Branch  
 Division of Systems Safety and Analysis  
 Office of Nuclear Reactor Regulation

Distribution:

Central File  
 PUBLIC  
 PDIII-3 Reading  
 GHolahan  
 JRoe  
 GMarcus  
 RCapra  
 DLynch  
 SCSB r/f (2)

DOCUMENT NAME: G:\CLINTON\STRAINER.LTR

To receive a copy of this document, indicate in the box: "C" = Copy without enclosures "E" = Copy with enclosures "N" = No copy

OFFICE	LA:PDIII-3	PM:PDIII-3	SCSB	BC:SCSB
NAME	DFoster-Curseen	DPickett:bm	RElliott <i>RE</i>	CBerlinger
DATE	03/20/96	03/20/96	03/20/96	03/21/96

OFFICIAL RECORD COPY