



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

AUG 16 1991

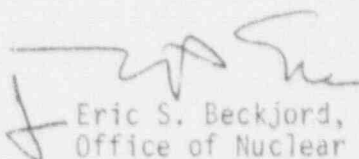
MEMORANDUM FOR: Warren Minners, Director
Division of Safety Issue Resolution
Office of Nuclear Regulatory Research

FROM: Eric S. Beckjord, Director
Office of Nuclear Regulatory Research

SUBJECT: GENERIC ISSUE NO. 38, "POTENTIAL RECIRCULATION SYSTEM FAILURE
AS A CONSEQUENCE OF INGESTION OF CONTAINMENT PAINT FLAKES OR
OTHER FINE DEBRIS"

The prioritization of Generic Issue No. 38, "Potential Recirculation System Failure as a Consequence of Ingestion of Containment Paint Flakes or Other Fine Debris," shows that the safety concerns were addressed in the resolution of USI A-43, "Containment Emergency Sump Performance." Therefore, the issue will be DROPPED from further pursuit.

The enclosed evaluation will be incorporated into NUREG-0933, "A Prioritization of Generic Safety Issues," and is being sent to the regions, other offices, the ACRS, and the PDR, by copy of this memorandum, to allow others the opportunity to comment on the evaluation. All comments should be sent to the Reactor and Plant Safety Issues Branch, DSIR, RES (Mail Stop NL/S-314). Should you have any questions pertaining to the contents of this memorandum, please contact Ronald Emrit (492-3731).


Eric S. Beckjord, Director
Office of Nuclear Regulatory Research

Enclosure:
Prioritization Evaluation

cc: T. Murley, NRR
E. Jordan, AEOD
T. Martin, Reg. I
S. Ehnetter, Reg. II
A. Davis, Reg. III
R. Martin, Reg. IV
J. Martin, Reg. V
ACRS
PDR

DF05 11

ENCLOSURE

PRIORITIZATION EVALUATION

Issue 38: Potential Recirculation System
Failure as a Consequence of
Ingestion of Containment Paint
Flakes or Other Fine Debris

ISSUE 38: POTENTIAL RECIRCULATION SYSTEM FAILURE AS A CONSEQUENCE OF INGESTION OF CONTAINMENT PAINT FLAKES OR OTHER FINE DEBRIS

DESCRIPTION

Historical Background

This issue was identified⁴⁹⁶ when AEL expressed concerns about the use inside containment of a particular polymer coating that could flake off and fail when subjected to DBA conditions. In addition to the concern for paint flakes, AEOD also raised concerns about fibrous insulation and other debris that could pass through sump screens, but could not pass through the more restrictive clearances present in systems that take suction from the containment sump during the recirculation phase of accident mitigation.

Safety Significance

Potential safety concerns stemming from the presence of paint debris in the containment building during a LOCA include the following: (1) blockage of containment emergency sump debris screens; (2) blockage of containment building spray system nozzles and system flow passages associated with residual heat removal/safety injection systems and their equipment; and (3) degradation of ECCS performance by the entrainment of fine particles of paint debris. This issue is applicable to all plants.

Possible Solution

In the resolution of USI A-43, the staff evaluated the performance of the containment emergency sump in providing a clean, reliable source of water during a LOCA and during long-term recirculation following a LOCA. Specifically, the evaluation included analysis of the transport of fine debris.

In its application to operate Comanche Peak Steam Electric Station, Units 1 and 2, Texas Utilities Electric Company (TUEC) performed an analysis in support of its request to amend its FSAR to eliminate the commitment that coatings inside the reactor containment building be qualified. This analysis considered the potential for, and effects of, debris blockage of the containment building emergency sumps. TUEC followed the guidance and methodology developed by the staff in the resolution of USI A-43 and concluded that debris generated by the failure of all coatings inside the containment building under DBA conditions would not unacceptably degrade the performance of post-accident fluid systems. The staff's SER on the TUEC analysis was published in Supplement No. 9 to NUREG-0797.¹³³²

CONCLUSION

The general concerns of sump blockage were addressed in the technical findings reported in NUREG-0897,¹⁰⁵⁷ the revisions to Regulatory Guide 1.82,¹⁰⁵⁸ SRP11 Section 6.2.2, and Generic Letter 85-22.¹⁰⁵⁹ The TUEC analysis provided data¹⁰⁵⁷ on the significance of containment sump blockage caused by paint flakes or other fine debris. Thus, this issue will be DROPPED from further consideration as a new and separate issue.

REFERENCES

11. NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," U.S. Nuclear Regulatory Commission, (1st Edition) November 1975, (2nd Edition) March 1980, (3rd Edition) July 1981.
496. Memorandum for J. Denton from C. Michelson, "Concerns Relating to the Integrity of a Polymer Coating for Surfaces Inside Containment (IE Draft Bulletin No. 80-21)," August 29, 1980.
1057. NUREG-0897, "Containment Emergency Sump Performance," U.S. Nuclear Regulatory Commission, (Revision 1) October 1985.
1058. Regulatory Guide 1.82, "Water Sources for Long-Term Recirculation Cooling Following a Loss-of-Coolant Accident," U.S. Nuclear Regulatory Commission, (Revision 1) November 1985.
1059. NRC Letter to All Licensees of Operating Reactors, Applicants for Operating Licenses, and Holders of Construction Permits, "Potential for Loss of Post-LOCA Recirculation Capability Due to Insulation Debris Blockage (Generic Letter 85-22)," December 3, 1985.
1332. NUREG-0797, "Safety Evaluation Report Related to the Operation of Comanche Peak Steam Electric Station, Units 1 and 2," U.S. Nuclear Regulatory Commission, (Supplement 9) March 1985.