



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20535

August 25, 1989

NOTE TO: Ashok C. Thadani, Assistant Director
for Systems
Division of Engineering & Systems Technology

FROM: Robert C. Jones, Acting Chief
Reactor Systems Branch
Division of Engineering & Systems Technology

SUBJECT: DPV CONCERNING CONTAINMENT ISOLATION VALVES AT ZION

I have reviewed Robert Licciardo's August 22, 1989 memorandum to Frank Miraglia wherein he questioned the adequacy of Norm Lauben's analysis transmitted to you by M. W. Hodges note of August 10, 1989 (subsequently revised by note of August 23, 1989). The specific concern was that Norm's analysis failed to consider the consequences of a LOCA using low burnup, low pressure fuel and which have high linear heat generation rates (LHGR) than analyzed by Norm.

I have further evaluated this issue, with the assistance of Norm Lauben, in response to the memorandum. We have arrived at the following conclusions:

- (1) The specific case of low burnup, low pressure fuel is already analyzed in the LOCA analysis. The possibility for fuel pin rupture is continuously examined during the calculation and rupture is not calculated to occur during the early blowdown period of the LOCA.
- (2) As burnup increases to 40,000 MWD/MTU, average fuel temperatures decreases while fuel pin pressures slowly increase. We judge that this combination of temperatures and pressures would prevent an early rupture during blowdown.
- (3) Above 40,000 MWD/MTU, the earlier analysis sufficiently demonstrates that no earlier ruptures occur.

Therefore, the earlier conclusion that early rupture of fuel pins during the blowdown transient is not credible remains valid.

A handwritten signature in cursive script, appearing to read "Robert C. Jones".

Robert C. Jones, Acting Chief
Reactor Systems Branch
Division of Engineering & Systems Technology

cc: N. Lauben (NLN-353)

B909050148-XA

List of Memoranda

1. Memorandum to T. Murley from R. Licciardo dated May 11, 1989, subj: "Differing Professional View Concerning a) Issuance of SER to Zion 1/2 allowing full power operation with open 42" containment isolation valves. b) Methodology used for calculating related offsite doses."
2. Memorandum to R. Licciardo from T. Murley dated May 18, 1989, subj: "Differing Professional View Concerning (a) Zion 1/2 Containment Isolation Valves, and (b) Methodology Used for Calculating Related Offsite Doses."
3. Memorandum to T. Murley from R. Licciardo dated May 25, 1989, subj: "Different Professional View (DPV) Concerning Zion. Persons Proposed as Third Member of Standing Review Panel."
4. Memorandum to F. Miraglia, C. E. Rossi, F. Congel from T. Murley dated May 26, 1989, subj: "Differing Professional View of Robert B.A. Licciardo Concerning Containment Isolation Valves at Zion."
5. Memorandum to R. Licciardo from F. Miraglia dated June 2, 1989, subj: "Differing Professional View (DPV) Concerning Containment Isolation Valves at Zion."
6. Memorandum to R. Licciardo from F. Miraglia dated June 23, 1989, subj: "Differing Professional View (DPV) Concerning Containment Isolation Valves at Zion."
7. Memorandum to F. Miraglia from R. Licciardo dated June 30, 1989, subj: "Differing Professional View (DPV) Concerning Containment Isolation Valves at Zion."
8. Memorandum to F. Miraglia from R. Licciardo dated July 14, 1989, subj: "Differing Professional View (DPV) Concerning Containment Isolation Valves at Zion."
9. Memorandum to F. Miraglia from R. Licciardo dated July 14, 1989, subj: "Differing Professional View (DPV) Concerning Containment Isolation Valves at Zion." (Note: This memorandum corrected the date given in No. 7.)
10. Memorandum to R. Licciardo from F. Miraglia dated July 21, 1989, subj: "DPV Concerning Containment Isolation Valves at Zion (TAC 73427) - Status Information."