



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

NOV 26 1979

MEMORANDUM FOR: R. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

FROM: G. Lainas, Chief
Plant Systems Branch
Division of Operating Reactors

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION - CONTAINMENT
PURGE SYSTEM - THREE MILE ISLAND NUCLEAR STATION,
UNIT 1 (TAC 10205)

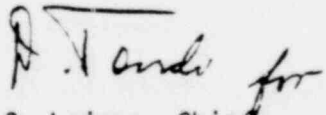
REFERENCES: 1. Letter to R. Reid from J.G. Herbein, "Containment
Purging," dated January 4, 1979.

2. Letter to R. Reid from J.G. Herbein, "Containment
Purging," dated March 16, 1979.

3. Letter to R. Reid from J.G. Herbein, "Containment
Purging," dated August 7, 1979.

Plant Name: Three Mile Island Nuclear Station, Unit 1
Docket No.: 50-289
Project Manager: D. DiIanni
Review Status: Awaiting Information

With regard to the containment purge and vent system at the Three Mile Island Nuclear Station, Unit 1, the licensee plans to justify unlimited purging (Reference 1). The Plant Systems Branch, after having reviewed the documents filed by the licensee (References 1-3), has prepared the enclosed request for additional information.


G. Lainas, Chief
Plant Systems Branch
Division of Operating Reactors

Enclosure:
As stated

1632 345

7 912200139

R. Reid

- 2 -

NOV 26 1979

Contact:

J. Kerrigan, X28129

cc w/enclosure:

D. Eisenhut

W. Gammill

L. Nichols

G. Lainas

D. DiIanni

E. Adensam

E. Reeves

D. Tondi

D. Shum

J. Kerrigan

G. Knighton

V. Noonan

R. Scholl

1632 46

REQUEST FOR ADDITIONAL INFORMATION
FOR CONTAINMENT PURGE AND VENT SYSTEM FOR
THREE MILE ISLAND NUCLEAR STATION, UNIT 1
DOCKET NO. 50-289

1. We understand that your electrical design is similar to Crystal River. Describe the differences between the designs of the TMI-1 and Crystal River Containment Ventilation Isolation Systems.
2. With regard to the containment purge and venting system, provide the following information:
 - a. Discuss the provisions made to ensure that isolation valve closure will not be prevented by debris which could potentially become entrained in the escaping air and steam.
 - b. Discuss the provisions made for testing the availability of the isolation function and the leakage rate of the isolation valves, individually, during reactor operation.
 - c. Provide an analysis to demonstrate the acceptability of the provisions made to protect structures and safety-related equipment, e.g., fans, filters and ductwork, located beyond the purge system isolation valves against loss of function from the environment created by the escaping air and steam.
 - d. For the containment purge isolation valves, specify the differential pressure across the valves at which the maximum leakage rate occurs. Provide test results which support your conclusion (e.g., from vendor tests of leakage rate vs. valve differential pressure).
3. Your response does not adequately address the following areas. Please discuss how your design conforms with each:
 1. The overriding* of one type of safety actuation signal (e.g., radiation) should not cause the blocking of any other type of safety actuation signal (e.g., pressure) to the isolation valves.
 2. Sufficient physical features (e.g., key lock switches) should be provided to facilitate adequate administrative controls.

1632 347

3. The system-level annunciation of the overridden status should be provided for every safety system impacted when an override is active.
 4. Diverse signals should be provided to initiate isolation of the containment ventilation system. Specifically, containment high radiation, safety injection actuation, and containment high pressure should automatically initiate Containment Ventilation Isolation (CVI).
 5. The instrumentation and control systems provided to initiate CVI should be designed and qualified as safety-grade equipment.
 6. The overriding or resetting** of the isolation actuation signal should not cause the automatic reopening of any isolation/purge valve.
4. With regard to your response of January 4, 1979 (GQI 0007), please provide the following additional clarification:
 - a) The response of January 4, 1979 (GQI 0007) indicates that bypassing of the high radiation signals is annunciated in the control room, while bypassing of the high reactor building pressure signals is not. What is your intent on annunciating the bypass of any CVI actuation signal?
 - b) The response states that "bypassing (high radiation actuation signal) does not defeat the LS actuation." Verify that bypass of the LS actuation signal does not bypass high radiation actuation.
 5. Describe the manual control circuits and include the schematic diagrams as necessary, showing how automatic actuation signals defeat manual "open" command, even after removal of the actuation signal.

The following definitions are given for clarity of use in this issue: *Override - the signal is still present, and it is blocked in order to perform a function contrary to the signal; **Reset - the signal has come and gone, and the circuit is being cleared to return it to the normal condition.