

October 3, 1983

Docket Nos. 50-237/249
LS05-83-10-002

Mr. Dennis L. Farrar
Director of Nuclear Licensing
Commonwealth Edison Company
Post Office Box 767
Chicago, Illinois 60690

Dear Mr. Farrar:

SUBJECT: NUREG-0737, ITEM II.B.1, REACTOR COOLANT SYSTEM VENTS
Dresden Nuclear Power Station, Units 2 and 3

By letters dated October 18, 1979, July 1, 1981, July 8, 1982, April 20, 1982 and September 22, 1982, Commonwealth Edison Company has addressed TMI Action Plan Item II.B.1 by providing information and details relating to the design of the reactor coolant system (RCS) vents for the Dresden Nuclear Power Station, Units 2 and 3. However, the implementation, schedule and requirement for a pre-implementation review have been superseded by the requirements of 10 CFR 50.44(c)(3)(iii). All operating reactors, in order to provide the improved operational capability required by the rule, must have the RCS vents installed, operational, procedures established and personnel trained in accordance with the schedule provided in the rule. An exemption is necessary if the specific design or scheduler requirements of 10 CFR 50.44(c)(3)(iii) cannot be complied with.

The guidance in NUREG-0737, Item II.B.1, provides an acceptable means of meeting the design requirements of the rule for the RCS vents. Prior to promulgation of the rule, we reviewed your responses identified above. The enclosed Safety Evaluation Report (SE) is based on the Technical Evaluation Report (TER) prepared by our consultant, Lawrence Livermore National Laboratory, and additional items which were outside the scope of the TER. The TER is attached to the SE. You will note our evaluation identifies specific items which are being addressed in conjunction with other ongoing NRC actions and areas where deficiencies may exist or confirmation is necessary to assure conformance with the rule.

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Mr. Dennis L. Farrar

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We are providing the results of our review for your information. In addition, we have provided the information to Region III to assist them, as they deem appropriate, in determining your compliance with the requirements of 10 CFR 50.44(c)(3)(iii). If you have any questions relating to the enclosed SE, please contact Dr. Robert A. Gilbert, the NRC Project Manager for your facility.

We consider NUREG-0737, Item II.B.1, actions to be completed based on the requirements and promulgation of 10 CFR 50.44(c)(3)(iii).

Sincerely,

Original signed by

Dennis M. Crutchfield, Chief
Operating Reactors Branch #5
Division of Licensing

Enclosure:
Safety Evaluation
w/attached TER

cc w/enclosure:
See next page

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U. S. Nuclear Regulatory Commission
Resident Inspectors Office
Dresden Station
RR #1
Morris, Illinois 60450

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U. S. Environmental Protection Agency
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Region V Office
ATTN: Regional Radiation Representative
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REACTOR COOLANT SYSTEM VENTS

COMMONWEALTH EDISON COMPANY

DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3

DOCKET NOS. 50-237 AND 50-249

1.0 INTRODUCTION

The requirement for RCS vessel head and high point vents is stated in 10 CFR 50.44 paragraph (c)(3)(iii). Guidance is provided in NUREG-0737 "Clarification of TMI Action Plan Requirements," November 1980, Item II.B.1 Reactor Coolant System Vents and NUREG-0800 "Standard Review Plan," July 1981, Section 5.4.12 Reactor Coolant System High Point Vents. The requirements of 10 CFR 50.44 for RCS high point vents specifically provide that the vent system shall: (1) be designed with a low probability of inadvertent or irreversible operation and a high probability of operating when needed, (2) be remotely operable from the control room, (3) not aggravate either the challenge to containment or alter the course of the accident, and (4) meet the requirements of Appendix A and B of 10 CFR 50.

The licensee has responded to the above requirements by letters dated October 18, 1979, July 1, 1981, July 8, 1982, April 20, 1982 and September 22, 1982. These responses as well as some from the BWR Owners' Group have been evaluated by Lawrence Livermore Laboratory under contract to the Nuclear Regulatory Commission (NRC). The results of this evaluation are presented in the attachment entitled "Reactor Coolant Systems Vents (NUREG-0737, Item II.B.1), Final Technical Evaluation Report for Dresden 2 and 3." This TER was prepared utilizing the detailed guidance documented in the RCS vent review plan (Reference 1). The NRC staff review is based upon the Technical Evaluation Report (TER) and has been extended to items outside the scope of the TER, as specifically identified therein.

2.0 EVALUATION

The staff agrees with the Lawrence Livermore Laboratory Technical Evaluation Report (TER) conditions and conclusion that non condensible gases in the reactor coolant systems for Dresden 2 and 3 can be safely vented to the torus following postulated loss of coolant accidents through any of the five power-operated safety/relief valves on each unit. The capability to vent the isolation condenser under the same conditions remained as an open item in the TER. However, the staff subsequently re-evaluated the accident conditions which require the use of the isolation condenser and has concluded that isolation condenser vents are not required for Dresden 2 and 3 which have a turbine driven high pressure injection system.

The TER also states as a second open item that "the licensee has failed to verify that no other protection systems that are necessary to maintain adequate core cooling following an accident are susceptible to the buildup of a large amount of non-condensable gas that could cause a loss of function of these systems and would therefore require remote venting." It is the staff's position that this is not a problem area. Based on a re-examination of the licensee's submittals, the staff believes that adequate venting capability exists for these protection systems during all situations which could exist during their use.

Based on the above, the staff concludes that the open items in the TER relating to the isolation condenser and the other protection systems are hereby resolved. The isolation condenser vents are not required and the venting capability for the other protection systems is adequate. RCS venting for each unit through any of the five installed safety/relief valves is adequate to satisfy 10 CFR 50.44 paragraph (c)(3)(iii) and TMI Item II.B.1.

Other related aspects of the RCS evaluation are:

Seismic and Environmental Qualification: Seismic and environmental qualification will be audited in conjunction with generic audits of the licensee's Seismic and Environmental Qualification program.

Operating Guidelines and Procedures: NUREG-0737 Item II.B.1 requested procedures and analyses for operator use of the vents including the identification of the information available to the operator for initiating or terminating vent usage. The staff review of NUREG-0737 Item I.C.1 includes vent operating guidelines as an integral part of emergency operating procedures guidelines. Staff judgement is that the owners group emergency operating guidelines as approved by the staff will provide an acceptable basis for the development of plant specific operating procedures. The plant procedures will be subject to NRC audits.

Technical Specifications: The staff intends to issue a generic letter to all licensees regarding the submittal of Proposed Technical Specifications for a number of NUREG-0737 items, including Item II.B.1, which were required to be implemented after December 31, 1981. Technical specification requirements for the RCS vents will be included in this forthcoming licensing action.

Inservice Inspection Program: The vent system is an extension of the reactor coolant pressure boundary and must meet applicable inservice inspection requirements described by 10 CFR 50.55(g). The staff requires that the licensee include the RCS vent system in the inservice inspection program which is subject to the NRC review and audit.

3.0 CONCLUSION

The staff safety evaluation is based on a review of the Technical Evaluation Report (TER) performed by Lawrence Livermore National Laboratory, and the staff reviews of additional items outside the scope of the TER. The staff

finds that the vent systems at Dresden 2 and 3 are acceptable and in conformance with the requirements of 10 CFR 50.44 paragraph (c)(3)(iii) and the guidelines of NUREG-0737 Item II.B.1, and NUREG-0800 Section 5.4.12. Certain items are subject to post implementation NRC audit in conjunction with other ongoing actions/programs. These items are: (1) human factors analysis of control room modifications, (2) identification of construction codes and standards, (3) in-service testing to ASME Section XI, classification of vent valves as category B, (4) seismic and environmental qualification, (5) operating procedures, and (6) the inservice inspection program.

Technical Specifications will be the subject of a separate future licensing action.

4.0 ACKNOWLEDGEMENT

The following staff members have contributed to this evaluation:

W. Hodges
R. Gilbert

Dated: October 3, 1983

Attachment:
Technical Evaluation Report
by Lawrence Livermore
National Laboratory

5.0 REFERENCES

J.T. Held Energy Incorporated, to T.J. Altenback (Lawrence Livermore National Laboratory), January 18, 1983, Subject: "RCS Vent Review Plan, Draft Revision 2," transmitting copy of: Reactor Coolant System Vent Review Plan, January 1983, by Energy Incorporated.