March 4, 2004

Mr. Lew W. Myers
Chief Operating Officer
FirstEnergy Nuclear Operating Company
Davis-Besse Nuclear Power Station
5501 North State Route 2
Oak Harbor, OH 43449-9760

SUBJECT: DAVIS-BESSE NUCLEAR POWER STATION, UNIT 1 - REQUEST FOR ADDITIONAL INFORMATION RE: ROOT CAUSE ANALYSIS (TAC NO. MC1642)

Dear Mr. Myers:

Recently, concerns were raised regarding the Davis-Besse root cause analysis which FirstEnergy Nuclear Operating Company submitted to the NRC concerning the reactor pressure vessel head degradation. To resolve the concerns, the NRC staff will need additional information. Enclosed is a request for additional information

The enclosed questions were provided to your staff on February 25, 2004, and the questions were discussed with members of your staff on that date. It is our understanding that FirstEnergy Nuclear Operating Company will respond to the questions by May 25, 2005. If our understanding is not correct, please contact me at (301) 415-3027 at the earliest opportunity.

Sincerely,

/RA/

Jon B. Hopkins, Sr. Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-346

Enclosure: Request for Additional Information

cc w/enclosure: See next page

Davis-Besse Nuclear Power Station, Unit 1

cc:

Mary E. O'Reilly
FirstEnergy Corporation
76 South Main St.
Akron, OH 44308

Manager - Regulatory Affairs
FirstEnergy Nuclear Operating Company
Davis-Besse Nuclear Power Station
5501 North State - Route 2
Oak Harbor, OH 43449-9760

Director, Ohio Department of Commerce
Division of Industrial Compliance
Bureau of Operations & Maintenance
6606 Tussing Road
P.O. Box 4009
Reynoldsburg, OH 43068-9009

Regional Administrator
U.S. Nuclear Regulatory Commission
801 Warrenville Road
Lisle, IL 60523-4351

Michael A. Schoppman
Framatome ANP
1911 N. Ft. Myer Drive
Rosslyn, VA 22209

Resident Inspector
U.S. Nuclear Regulatory Commission
5503 North State Route 2
Oak Harbor, OH 43449-9760

Randel J. Fast, Plant Manager
FirstEnergy Nuclear Operating Company
Davis-Besse Nuclear Power Station
5501 North State - Route 2
Oak Harbor, OH 43449-9760

Dennis Clum
Radiological Assistance Section Supervisor
Bureau of Radiation Protection
Ohio Department of Health
P.O. Box 118
Columbus, OH 43266-0118

Carol O'Claire, Chief, Radiological Branch
Ohio Emergency Management Agency
2855 West Dublin Granville Road
Columbus, OH 43235-2206

Zack A. Clayton
DERR
Ohio Environmental Protection Agency
P.O. Box 1049
Columbus, OH 43266-0149

State of Ohio
Public Utilities Commission
180 East Broad Street
Columbus, OH 43266-0573

Attorney General
Department of Attorney General
30 East Broad Street
Columbus, OH 43216

President, Board of County
Commissioners of Ottawa County
Port Clinton, OH 43252

President, Board of County
Commissioners of Lucas County
One Government Center, Suite 800
Toledo, OH 43604-6506

David Lochbaum, Nuclear Safety Engineer
Union of Concerned Scientists
1707 H Street NW, Suite 600
Washington, DC 20006

The Honorable Dennis J. Kucinich
United States House of Representatives
Washington, D.C. 20515

The Honorable Dennis J. Kucinich, Member
United States House of Representatives
14400 Detroit Avenue
Lakewood, OH 44107

Mr. James P. Riccio
Nuclear Policy Analyst
Greenpeace
702 H. Street, NW, Suite 300
Washington, DC 20001

Paul Gunter
Director Nuclear Watchdog Project
Nuclear Information & Resource Service
1424 16th Street NW Suite 401
Washington, DC 20009

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REQUEST FOR ADDITIONAL INFORMATION

DAVIS-BESSE NUCLEAR POWER STATION

ROOT CAUSE ANALYSIS

TAC NO. MC1642

1. The purpose of the vent line that runs from nozzle14 to the steam generator number 2 upper primary hand hole is to vent non-condensible gases from the Davis Besse reactor pressure vessel (RPV) head during a loss of coolant accident. The head vent configuration at Davis Besse is unique from other Babcock and Wilcox (B&W) designs in that reactor coolant flows continuously through it during power operations. Given the proximity of the cracked nozzles in the old RPV head to the vent line nozzle, a phenomenon may exist wherein the continuous flow through the vent line impacts the potential for cracking of nearby nozzles. This same phenomenon, if real, could impact the cracking assumptions for the new RPV head.

   Confirm whether or not you considered this potential phenomenon in the April 2002 root cause analysis that was performed as a result of the degradation of the old RPV head. If an evaluation was performed, provide the results of the technical analysis that would demonstrate that the phenomenon either did or did not impact cracking in adjacent nozzles. If this potential phenomenon was not considered, provide the technical basis for discounting it. If it was not discounted, but it was never considered, provide a technical basis for why it will or will not play a role in the operation of the new RPV head. If your analysis results show that there is a potential impact on the new RPV head penetrations, discuss the actions that would be taken to ensure the integrity of the head penetrations. Consider whether an update to your root cause analysis report is needed.

2. You used 605°F for the time-at-temperature calculations for the old RPV head. This value is apparently an average value of hot leg temperatures. Use of this temperature, given that you have hot leg resistance temperature detectors (RTDs) with higher temperature values, does not appear to result in a conservative effective degradation year (EDY) calculation.

   A. Inform the staff as to which temperature value you will use in determining the EDY of your new RPV head, i.e., the average of hot leg temperatures or the highest hot leg temperature. If you do not plan to use the highest hot leg temperature, then respond to items B and C below.

   B. Provide an explanation for the differences in temperature readings for the RTDs used in determining the average value used in the EDY calculation.

   C. Provide a technical basis for not using the highest hot leg temperature measurement as input to the EDY calculation.

ENCLOSURE