

SEP 28 1984

DMB 0/6

Dockets Nos. 50-277
and 50-278

DISTRIBUTION

Docket File

Gray File
EReeves
MFields

NRC PDR
L PDR
ORB#4 Rdg
DEisenhut
OELD
EJordan
JNGrace
ACRS-10
GGears
RIngram

Mr. Edward G. Bauer, Jr.
Vice President and General Counsel
Philadelphia Electric Company
2301 Market Street
Philadelphia, Pennsylvania 19101

Dear Mr. Bauer:

SUBJECT: UPDATED SAFETY EVALUATION FOR NUREG-0737, ITEM II.E.4.2.7
PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3

We have reviewed your submittal dated January 25, 1984 relating to TMI Action Plan Item II.E.4.2.7, "Primary Containment High Radiation to Close Vent and Purge Valves." At this time, we find that for this NUREG-0737 item, Peach Bottom Atomic Power Station, Units 2 and 3 are in non-compliance with the Commission approved guidance. Our evaluations provided to the BWR Owner's Group in our letters dated October 14, 1981, and May 31, 1983, require clarification relative to which line sizes need isolation for a postulated LOCA.

Therefore, the NRC staff position on the use of radiation signals to isolate containment vent and purge valves in lines that are used during startup, normal operation, and shutdown of the plant is updated. Our intention is that each of the "containment purge and vent isolation valves must be closed on a high radiation signal" (refer to Position (7) on page 3-90 of NUREG-0737).

Our updated Safety Evaluation is enclosed. Your action is requested to achieve compliance as soon as practicable. Your reply is requested within 30 days of receipt of this letter.

Sincerely,

ORIGINAL SIGNED BY
JOHN F. STOLZ

John F. Stolz, Chief
Operating Reactors Branch #4
Division of Licensing

Enclosure:
As Stated

cc w/enclosure:
See next page

ORB#4:DL
GGears;cf
9/21/84

ORB#4:DL
JStolz
9/28/84

ORB#1:DL
EReeves
9/24/84

8410110557 840928
PDR ADOCK 05000277
P PDR

Philadelphia Electric Company

cc w/enclosure(s):

Eugene J. Bradley
Philadelphia Electric Company
Assistant General Counsel
2301 Market Street
Philadelphia, Pennsylvania 19101

Troy B. Conner, Jr.
1747 Pennsylvania Avenue, N.W.
Washington, D. C. 20006

Regional Radiation Representative
EPA Region III
Curtis Building (Sixth Floor)
6th and Walnut Streets
Philadelphia, Pennsylvania 19106

M. J. Cooney, Superintendent
Generation Division - Nuclear
Philadelphia Electric Company
2301 Market Street
Philadelphia, Pennsylvania 19101

Thomas A. Deming, Esq.
Assistant Attorney General
Department of Natural Resources
Annapolis, Maryland 21401

Philadelphia Electric Company
ATTN: Mr. R. Fleishmann
Peach Bottom Atomic
Power Station
Delta, Pennsylvania 17314

Albert R. Steel, Chairman
Board of Supervisors
Peach Bottom Township
R. D. #1
Delta, Pennsylvania 17314

Mr. R. A. Heiss, Coordinator
Pennsylvania State Clearinghouse
Governor's Office of State Planning
and Development
P. O. Box 1323
Harrisburg, Pennsylvania 17120

Allen R. Blough
U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Peach Bottom Atomic Power Station
P. O. Box 399
Delta, Pennsylvania 17314

Thomas M. Gerusky, Director
Bureau of Radiation Protection
Pennsylvania Department of
Environmental Resources
P. O. Box 2063
Harrisburg, Pennsylvania 17120

Mr. Thomas E. Murley, Regional Administrator
U. S. Nuclear Regulatory Commission, Region I
Office of Inspection and Enforcement
631 Park Avenue
King of Prussia, Pennsylvania 19406

CONTAINMENT SYSTEMS BRANCH
UPDATED EVALUATION OF BWR OWNERS GROUP POSITION ON
ITEM II.E.4.2.(7) OF NUREG-0737

In NUREG-0737, Item II.E.4.2.(7), we state that containment purge and vent isolation valves must close on a high radiation signal. The BWR Owners Group has performed an assessment to determine the benefits of providing automatic closure of the containment vent and purge valves on a containment high radiation signal. This assessment, contained in a letter from T. J. Dente to D. G. Eisenhut, dated June 29, 1981, concludes that this automatic closure on a high radiation signal will not appreciably alter the probability for significant releases of radioactivity through these lines. The bases for the BWR Owners Group conclusion relies on the following points:

1. Automatic isolation is already achieved through diverse inputs (high dry-well pressure and low reactor water level);
2. The containment vent and purge valves are normally closed;
3. Several diverse methods exist for detection of primary coolant boundary leakage that could indicate to the operator that a high radiation condition in the containment may exist; and
4. Pipe breaks leading to leakage rates less than the Technical Specification limits that are not immediately isolated by the operator result in offsite doses less than 10 CFR Part 100 dose limits.

It is the staff's position that the above arguments for not having a high radiation isolation signal for the containment vent and purge valves are inadequate. The staff strongly believes that these valves should be isolated on the bases of a direct measurement of the parameter that the containment isolation system is designed to protect the public from, i.e., radiation. This view is based on the potentially greater impact on offsite doses relative to releases through other lines penetrating the containment, since the vent and purge lines provide a direct path from the containment atmosphere to the environs. The staff's view is that having only indirect parameters as isolation signals, such as high drywell pressure or low reactor water level, is insufficient for assuring that these valves will close in a timely manner.

The argument that containment vent and purge valves are normally closed and, therefore, do not require a high radiation isolation signal is insufficient because these valves are normally open during startup and shutdown. Since these are transient conditions, we would expect at least as high a likelihood of a release occurring during these periods as during steady state periods. Moreover, since it is essential for the containment vent and purge valves to receive timely isolation signals under these circumstances, the staff's position is that a high radiation isolation signal is needed to accomplish this function.

Reliance on operator action to close the containment vent and purge valves is not acceptable because of the delays that could occur while the operator is handling matters more directly related to the initiating event.

In response to the argument that leakages less than the Technical Specification limits produce low offsite doses, the staff feels that the purpose of adding a high radiation isolation signal to the containment vent and purge valves is to protect against substantial releases of radiation (10 CFR Part 100 dose limits) for accident conditions while for normal conditions (e.g., leakages less than Technical Specification limits), the purpose of these valves is to close before 10 CFR Part 20 dose limits are exceeded.

In summary, it is the staff's position that all containment vent and purge valves in lines that are used during startup, normal operation, and shutdown of the plant be provided with a high radiation isolation signal. The range and sensitivity of the radiation monitors used for this purpose shall be sufficient to assure timely closure of the vent and purge valves under both accident conditions (limiting offsite doses to less than 10 CFR Part 100 guidelines) and normal operating conditions (limiting offsite doses to less than 10 CFR Part 20 limits). The high radiation signal may be either safety grade equipment or non-safety grade equipment. Our aim is to have a high radiation isolation signal operable at the earliest possible time. Technical Specifications are needed consistent with your plant design.