

ATTACHMENT 1

PEACH BOTTOM ATOMIC POWER STATION
UNITS 2 AND 3

Docket Nos. 50-277
50-278

License Nos. DPR-44
DPR-56

TECHNICAL SPECIFICATION CHANGE REQUEST
NO. 88-18

"Addition of the High-High Radiation Trip Signal per
Item II.E.4.2(7) of NUREG-0737"

Supporting Information for Changes - 15 pages

Philadelphia Electric Company, Licensee under Facility Operating Licenses DPR-44 and DPR-56 for the Peach Bottom Atomic Power Station (PBAPS) Unit Nos. 2 and 3, requests that the Technical Specifications contained in Appendix A of the Operating Licenses be amended.

Proposed changes to the Technical Specifications are indicated by vertical bar in the margin of the pages contained in Attachment 2 and listed here: 75, 84, 93, 97, 182, 183 and 200.

Licensee proposes to revise the Technical Specifications to reflect a modification to the primary containment isolation system (PCIS) at the Peach Bottom Atomic Power Station Units 2 and 3 which adds a high-high radiation trip signal from the main stack radiation monitors to the control circuit of the containment vent and purge isolation valves. This modification is being implemented to meet the requirement of item II.E.4.2(7) of NUREG-0737, "Clarification of TMI Action Plan Requirements", dated October 31, 1980.

The modification has been completed on Units 2 and 3.

Item II.E.4.2(7) of NUREG-0737 provides a requirement that containment vent and purge isolation valves must close on a high-high radiation signal. Additionally, guidance was provided to this requirement by the NRC to the BWR Owner's Group in a

letter dated May 7, 1986, which stated that lines of 2" diameter or smaller need not be isolated on a radiation signal.

Implementation of this requirement involved adding a signal from the main stack radiation monitors to the control circuit for the containment vent and purge isolation valves greater than 2" diameter. This Amendment Application identifies the proposed changes which result from the implementation of this requirement at the Peach Bottom Atomic Power Station Units 2 and 3.

Licensee requests that the proposed changes be effective upon date of amendment issuance for Unit 2 and Unit 3.

Description of Changes:

Licensee proposes the following changes to the Technical Specifications:

- (1) Add the main stack radiation monitoring trip function to Table 3.2.D (Pg. 75, "Radiation Monitoring Systems that Initiate and/or Isolate Systems"). This addition to Table 3.2.D will include the trip function ("Main Stack Monitor"), the trip level setting ("Upscale, $\leq 10^6$ cps"), the number of instrument channels provided by design ("2 Inst. Channels"), and the minimum number of operable instrument channels ("1").

As a result of adding the new trip function which is composed of two instrument channels, it is necessary to revise Note 1 of Table 3.2.D by deleting the words: "there shall be two operable or tripped instrument channels per trip system." Licensee proposes to replace these words with: "the specified number of instrument channels shall be operable or placed in the tripped condition."

As an administrative change which will improve the clarity of this table, reference to Note 1 has been added to the heading of Table 3.2.D, "Minimum No. of Operable Instrument Channels".

Additionally, for this new trip function, action statement C is included if the minimum number of operable instrument channels can not be met. The action for this condition is to: "Cease purging of primary containment, and close vent and purge valves greater than 2 inches in diameter."

- 2) The main stack trip function is required to be operable only when the containment is purging through the SGTS and containment integrity is required. Therefore, a Note (3) will be added to Table 3.2.D (p. 75), which will correspond to the new trip function ("Main Stack Monitor"), that will state: "This trip function is required to be operable only

when the containment is purging through the SGTS and containment integrity is required. If both radiation monitors are out of service, action shall be taken as indicated in Note 2, (C)."

- 3) The Section 3.2 Bases (p. 93) of the Technical Specifications concern protective instrumentation. As a result of the addition of the new trip function, a paragraph will be added which states: "Two channels of nonsafety-related radiation monitors are provided in the main stack. Trip signals from these monitors are required only when purging the containment through the SGTS and containment integrity is required. The trip signals isolate primary containment vent and purge valves greater than 2 inches in diameter to prevent accidental releases of radioactivity offsite when the valves are open. This signal is added to fulfill the requirements of item II.E.4.2(7) of NUREG-0737."

- (4) Add the main stack radiation monitoring trip function to Table 4.2.D (P. 84, "Minimum Test & Calibration Frequency for Radiation Monitoring Systems"). This addition will specify the calibration and testing frequency for this new trip function. This proposed addition will provide the instrument channels ("Main Stack Monitor"), the instrument functional test frequency ("once/3 months"), the calibration frequency

("once/12 months as described in 4.8.C.4.a") and an instrument check frequency ("once/day").

- 5) The Section 4.2 Bases (P. 97) of the Technical Specifications concern protective instrumentation. As a result of the addition of the new trip function, a paragraph will be added which states: "Radiation monitors in the main stack which initiate containment isolation are not safety-related and are required only during containment purging through the SGTS and when containment integrity is required, an activity which occurs infrequently. Therefore, a twelve (12) month calibration interval is appropriate."
- 6) Add to the "NOTES FOR TABLE No. 3.7.1" (P. 183) the main stack radiation monitoring trip function. This note will be added to the Group 3 isolation signals and will state: "Main stack high-high radiation during containment purging through SGTS (vent and purge valves greater than two inches in diameter only)".

Administrative changes to pages 182 and 183 are being requested to improve format. These changes are relocating "GROUP 3: The valves in Group 3 are actuated by any one of the following conditions:" from the bottom of page 182 to the

top of page 183 and adding the heading "NOTES FOR TABLE NO. 3.7.1 (Cont'd)" to the top of page 183.

- 7) Add to the Section 3.7.D & 4.7.D Bases (p. 200) a statement which identifies that the new isolation signal will isolate the containment vent and purge isolation valves. Therefore, the Bases will be modified to state: "These valves are isolated on reactor low water level (538"), high drywell pressure, reactor building ventilation high radiation which would indicate a possible accident and necessitate primary containment isolation, or refueling floor ventilation high radiation which would indicate a possible refueling accident or main stack high-high radiation (a nonsafety-related signal) during containment purging through SGTS in accordance with Section 3.8.C.8a."

Additionally, as noted in the "Safety Assessment", the main stack high-high radiation signal will only be activated upon the positioning of certain valves and there is flow through the standby gas treatment system. Therefore, the Section 3.7.D & 4.7.D Bases, which describes the Group 3 isolation signal, will also be modified to state: "The group 3 isolation signals, with the exception of main stack high-high radiation, also "isolate" the reactor building and start the Standby Gas Treatment System".

- 8) Add to the Group 3 isolation signal description in the Section 3.7.D & 4.7.D Bases (p. 200) a description of the new main stack radiation monitoring trip function. This description will state: "The main stack high-high radiation signal (which is nonsafety-related in accordance with NUREG-0737) will isolate only those vent and purge valves which are greater than two inches in diameter during containment purging."

Safety Assessment

Plant Modification 664 modifies the primary containment isolation system (PCIS) at Peach Bottom Atomic Power Station Units 2 and 3 by adding a high-high radiation isolation signal from the main stack radiation monitors to the control circuit for the containment vent and purge isolation valves. This change is required by item II.E.4.2(7) of NUREG-0737, "Clarification of TMI Action Plan Requirements." This isolation signal is redundant to the isolation signal derived from the reactor vessel low water level and high drywell pressure signals.

This high-high radiation isolation signal is activated only when valves AO 2506 and 2507* or valves 2511 and 2512* are open and there is flow through the standby gas treatment system. This ensures that the trip signal affects only the unit which is

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purging through the standby gas treatment system and containment integrity is required.

In a letter to the BWR Owner's Group dated May 7, 1986, the NRC clarified that lines of 2" diameter or smaller need not be isolated on a radiation signal provided that an analysis be performed to show that the operators, within 30 minutes, assess and isolate leakages that would not cause other isolation signals. This analysis has been completed and shows that the operators can make this assessment within the required time. The following valves (greater than 2" diameter) close whenever the main stack radiation level exceeds the high-high trip point:

<u>Valve Number*</u>	<u>Description</u>
AO 2505	Drywell Air Purge Inlet
AO 2519	Drywell and Torus Inlet Nitrogen Purge
AO 2520	Drywell Air and Nitrogen Purge
AO 2521A	Torus Air Purge Outboard
AO 2521B	Torus Air and Nitrogen Purge Inboard
AO 2506	Drywell Inboard 18" Vent
AO 2507	Drywell Outboard 18" Vent
AO 2511	Torus Inboard 18" Vent
AO 2512	Torus Outboard 18" Vent

*Unit 2 valve numbers are given. Valve numbers in Unit 3 have a 3 in the first digit in place of the 2.

Previous to modification 664, a common circuit (Group 3 isolation) was used for isolation of the above valves, isolation of the reactor building, and starting the standby gas treatment system (SGTS). The circuit has been divided so that the logic for isolation of the reactor building and starting the standby gas treatment system remains unchanged.

In accordance with the criteria established by the Nuclear Regulatory Commission in NUREG-0737, the radiation monitors are nonsafety-related. The SGTS flow switch is also nonsafety-related. This flow switch is used to determine flow through the SGTS. The interface between the nonsafety-related radiation monitors, the nonsafety-related SGTS flow switch and the safety-related PCIS circuitry is through the use of safety related relays located in the Panels 2OC12 and OOC14. The valve limit switch signals are obtained from safety-related relays in Panel 2OC03 (3OC03). The valve limit switch determines the position of the valves. The above features ensure that the PCIS circuitry is isolated from all credible failures of the radiation monitors that could have an adverse affect on the operation of the PCIS.

The high-high radiation setpoint maintains the offsite radiation dose below the 10 CFR 100 limits as required by the Nuclear Regulatory Commission.

Since the two main stack radiation monitors are common to both units, the output of one radiation monitor is used in the logic for the inboard isolation valves in both units and the output of the other radiation monitor is used in the logic for the outboard isolation valves in both units.

This modification also adds two keylocked bypass switches on panel 20C05A (Unit 2) and 30C05A (Unit 3), one in each of the two PCIS logic channels. These switches bypass all PCIS isolation signals to the drywell or torus exhaust valves to permit venting as a means of preventing overpressurization of containment during severe accidents. The bypass switch is interlocked with the individual valve control switch so that both switches require deliberate operator action before the isolation signal is bypassed and the valves opened to complete one vent path. Containment Control Procedure T-102 states that if drywell pressure reaches 60 psig, the containment should be vented per procedure T-200. In order to vent through the exhaust valves, it is necessary to bypass the containment isolation signal. This action can be completed by use of the bypass switches. The bypass switches are safety-related and are seismically qualified

and environmentally qualified for a mild environment. The switches are keylocked for administrative control and alarmed when in the bypass mode.

Information Supporting a Finding of
No Significant Hazards Consideration

The Commission has provided guidance concerning the application of the standards for determining whether license amendments involve significant hazards considerations by providing certain examples (51 FR 7751). One of the examples of amendments that are considered not likely to involve significant hazards consideration is "(ii) A change that constitutes an additional limitation, restriction, or control not presently included in the technical specifications, e.g., a more stringent surveillance requirement." The proposed changes to the Technical Specifications impose additional control not presently included in the Technical Specifications.

The proposed changes to the Peach Bottom operating licenses do not constitute a significant hazards consideration in that they do not:

- i) Involve a significant increase in the probability or consequences of an accident previously evaluated.

The modification associated with the proposed Technical Specification changes provide additional means of mitigating the consequences of an accident by adding an isolation signal not previously part of the plant design. The addition of this isolation signal enhances plant safety by adding an additional means of isolating containment. Implementation of this isolation signal is the result of Item II.E.4.2(7) of NUREG-0737 which requires that containment vent and purge isolation valves must close on a high-high radiation signal. The new nonsafety-related isolation signal is isolated from the safety-related portions of the circuits by qualified relays. Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident as previously evaluated in Chapter 14 of the PBAPS Updated Final Safety Analysis Report.

- ii) Create the possibility of a new or different kind of accident from any accident previously evaluated.

The modification associated with the proposed Technical Specification changes provided additional means of mitigating the consequences of a plant event by adding

an isolation signal not previously part of the plant design. Adding a redundant isolation trip feature does not create a new accident precursor. Therefore, the proposed changes would not create the possibility of a new or different kind of accident from any previously evaluated.

iii) Involve a significant reduction in a margin of safety.

The modification associated with the proposed Technical Specification changes provided additional assurance that the primary containment is isolated during a radiological event. Consequently, the potential for an offsite radiation release is reduced, resulting in an increased margin of safety.

Information Supporting an Environmental Impact Assessment

An environmental impact assessment is not required for the changes proposed by this Application because the changes conform to the criteria for "actions eligible for categorical exclusion" as specified in 10 CFR 51.22(c)(9). The Application involves no significant hazards consideration as demonstrated in the preceding section. The Application involves no significant change in the types or significant increase in the amounts of any

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effluents that may be released offsite, and there is no significant increase in individual or cumulative occupational radiation exposure.

Conclusion

The Plant Operations Review Committee and the Nuclear Review Board have reviewed these proposed changes to the Technical Specifications and have concluded that they do not involve unreviewed safety questions or involve Significant Hazards Considerations, and will not endanger the health and safety of the public.