

BEFORE THE
UNITED STATES NUCLEAR REGULATORY COMMISSION

In the Matter of :
PHILADELPHIA ELECTRIC COMPANY : Docket Nos. 50-277
50-278

APPLICATION FOR AMENDMENT
OF
FACILITY OPERATING LICENSES
DPR-44 & DPR-56

NUMBER 88-15

Philadelphia Electric Company, Licensee under Facility Operating Licenses DPR-44 and DPR-56 for the Peach Bottom Atomic Power Station Unit No. 2 and Unit No. 3, respectively, hereby requests that the Technical Specifications contained in Appendix A of the Operating Licenses be amended by revising pages 217, 219 and 222 as shown by a vertical bar in the margins of the attached pages. The revisions requested by this Application are a result of the installation of an additional transformer to supply off-site power to the station. This Application for Amendment is to eliminate uncertainty as to whether the new transformer is a permissible off-site source, to achieve more consistency with Standard Technical Specifications for GE Boiling Water Reactors

(NUREG-0123 Rev. 3) and to specifically include the additional transformer in the Bases.

The new transformer was installed in accordance with 10 CFR 50.59 in 1985 to serve as an alternate for an existing transformer that had been exhibiting evidence of possible degradation. The existing transformer, in fact, failed on April 13, 1986 (resulting in LER 2-86-10 dated May 13, 1986) and because the new transformer was available, the Licensee was able to promptly restore the affected off-site power source. The body of this Application provides further details concerning the new transformer and the reasons for the Amendment.

System Discussion

The station electrical power system is designed to provide a diversity of dependable power sources which are physically isolated so that any failure affecting one source of supply does not propagate to alternate sources. The auxiliary electrical power systems are designed to provide electrical and physical independence, and to supply the necessary power for startup, operation, shutdown, and other station requirements.

The station receives power from two separate off-site sources; one source on the Unit 2 side of the station and one source on the Unit 3 side of the station. Figure 1 attached to this Application is provided to illustrate these power sources. The Unit 2 source is the 13.2 kV startup transformer switchgear No. 2 which receives power from a tap on the 220 kV Nottingham -

Gracetown line (at the South Substation) through startup and emergency auxiliary transformer No. 2 (No. 2 startup transformer). The Unit 3 source is the 13.2 kV startup regulating transformer switchgear No. 3 which, since installing an additional startup transformer (see "clouded" portion of Figure 1), can receive power from either of two sources. The original source is from the tertiary winding on the 500-200-13.2 kV auto transformer (at the North Substation) through the startup and emergency auxiliary regulating transformer No. 3 (No. 3 startup transformer). The second source is the new 220-13.2 kV No. 343 startup transformer that was installed during the Unit 3 reload 6 refueling outage (July 14, 1985 to March 4, 1986). The No. 343 startup transformer connects the 220 kV Newlinville line to the startup regulating transformer switchgear No. 3.

The No. 343 startup transformer supplies voltage comparable to the No. 2 and No. 3 startup transformers. The transformer was installed with its own load tap changer and can supply proper voltages for any required startup or shutdown conditions. It is connected to 220 kV line number 220-34 through a new circuit switcher. An outdoor circuit breaker was installed on the 13 kV side of the transformer. The breaker is connected through a new disconnect switch to the existing startup regulating transformer switchgear No. 3 supply cables. The No. 343 transformer is now the normal power supply for the No. 3 startup regulating transformer switchgear.

During normal power operation, the main generators supply power to all auxiliary system buses except the 4 kV emergency buses and cooling tower equipment.

Each off-site source can be used to supply the unit auxiliary buses for plant startup and shutdown. In addition, each source is stepped down from 13 kV to 4 kV through an emergency auxiliary transformer, and is connected through interlocked circuit breakers to every 4 kV emergency switchgear bus. Every 4 kV emergency switchgear bus is energized from one of these two sources at all times during normal operation. Two of the four 4 kV emergency switchgear buses on each unit are supplied power from the Unit 2 off-site source. The other two on each unit are supplied power from the Unit 3 off-site source. Upon loss of power, automatic transfer is made to the other source.

If neither off-site source is available, the 4 kV emergency switchgear buses are supplied from the emergency diesel generators. The 4 kV emergency switchgear buses supply all power required for safe shutdown of the plant. There are four diesel generators common to Units 2 and 3.

The Peach Bottom Station Single Line Diagram (E-1) is enclosed with this Application as Figure 2 for reference.

Description of Proposed Technical Specification Changes

Licensee proposes changes to three auxiliary electrical system Technical Specifications and the associated

bases to achieve more consistency with Standard Technical Specifications while eliminating uncertainty as to whether the No. 343 transformer is a permissible off-site power source by removing references in the Limiting Conditions For Operation to specific pieces of equipment. Each proposed change is discussed in detail below.

a) Technical Specification 3.9.A.1

Licensee proposes that this Specification be reworded to be more consistent with Standard Technical Specification 3.8.1.1.a. Currently, this Peach Bottom Specification states: "Both off-site sources and the startup transformers and emergency transformers are available and capable of automatically supplying power to the 4 kV emergency buses." Licensee proposes that this Specification be revised to state: "Two physically independent circuits between the off-site transmission network and the on-site Class 1E distribution system are operable."

This revision does not change the intent of the Specification; it merely removes the specific references to pieces of equipment. This provides the flexibility to use either the No. 3 startup transformer or the No. 343 startup transformer to establish one of the two required independent off-site power circuits. To satisfy the revised

Specification, the No. 2 startup transformer will still be required to be available to establish the other independent circuit.

b) Technical Specification 3.9.B.1

Licensee proposes that this Specification be reworded to be more consistent with Standard Technical Specification 3.8.1.1, Action a. Currently, this Peach Bottom Specification states: "From and after the date incoming power is not available from one startup or emergency transformer, ..." Licensee proposes that this Specification be revised to state: "With one of the two independent off-site circuits required by Specification 3.9.A.1 inoperable, ..."

The intent of the Specification is to ensure that at least one off-site source is available to support the emergency loads for seven days following the loss of one of the two sources. This revision does not alter that intent. The proposed revision to Specification 3.9.A.1 and this proposed revision, by eliminating the specific references to pieces of equipment, will allow one of the 13.2 kV No. 3 startup switchgear's sources (via the No. 3 or No. 343 transformer) to be inoperable without entering this Limiting Condition for Operation. This is

acceptable because a circuit can be established to the Class 1E distribution system using either the No. 3 or No. 343 transformer.

c) Technical Specification 3.9.B.2

Licensee proposes that this Specification be reworded to be more consistent with Standard Technical Specification 3.8.1.1, Action c. Currently, this Peach Bottom Specification states: "From and after the date that incoming power is not available from both start-up or emergency transformers, ..." Licensee proposes that this Specification be revised to state: "With two independent off-site circuits required by Specification 3.9.A.1 inoperable, ..."

The intent of this Specification is to ensure that if both off-site sources are not capable of supporting the emergency loads, reactor power level is reduced to 25% of the design rating. The proposed revision does not alter the intent of the Specification; it merely replaces the references to pieces of equipment that are in the off-site circuits with the words "off-site circuits required by Specification 3.9.A.1".

Safety Assessment:

The No. 343 startup transformer supplies voltage at least equivalent to the original startup transformers and is, thus, a qualified alternate for the No. 3 startup transformer. The redundancy in off-site power supply offered by the additional transformer could increase availability of off-site power to the engineered safeguards equipment. The revised Technical Specifications merely achieve more consistency with Standard Technical Specifications and provide the flexibility to use the additional transformer as it was designed to be used without changing the intent of any of the Technical Specifications.

An updated Peach Bottom voltage regulation study conducted in 1988 addresses use of the No. 343 transformer and confirms that it will provide acceptable voltages to the plant.

The plant is designed to respond safely to loss of auxiliary power and loss of all off-site power as discussed in Section 14.5.4.4 of the Updated Final Safety Analysis Report. Furthermore, as described in the Updated Final Safety Analysis Report, Section 8.5, the station is designed such that, with no off-site power available, the diesel generators will provide sufficient power to handle a design basis accident on one unit and to safely shutdown the other unit. Further, the No. 343 startup transformer design and installation were in accordance with Peach Bottom licensing design criteria to ensure that its use would not increase the probability of an off-site power source trip or adverse in-plant power transient. Therefore, use

of the No. 343 startup transformer in accordance with the proposed Technical Specifications will not adversely impact safety.

Significant Hazards Consideration Determination:

It has been determined that the proposed revisions do not involve a significant hazards consideration based on the following:

- i) The proposed revisions do not involve a significant increase in the probability or consequences of an accident previously evaluated.

Having two Unit 3 startup transformers available could increase the availability of off-site power to support the required loads of the engineered safeguards equipment by decreasing the duration of a No. 3 startup source outage in the event of a failure or scheduled maintenance. The No. 343 startup transformer provides acceptable voltages to the plant as confirmed by calculations. Therefore, use of the No. 343 transformer and the proposed Technical Specification revisions do not increase the probability of an off-site power source trip or transient and, in turn, do not increase the probability of an accident. The consequences of an accident are not affected because the No. 343 transformer supplies sufficient power to mitigate the

consequences of design basis events in accordance with General Design Criterion 17. Furthermore, without any off-site power available the diesel generators supply sufficient power to mitigate the consequences of an accident.

- ii) The proposed revisions do not create the possibility of a new or different kind of accident from any accident previously evaluated.

The No. 343 transformer design and installation were in accordance with Peach Bottom licensing design criteria which ensure that its operation does not introduce any new unacceptable voltage conditions and that no new failure modes were created. Furthermore, loss of all off-site power (all grid connections) has been evaluated and is within the plant's safety design basis (see UFSAR Sections 14.5.4.4 and 14.6.3.1). The diesel generators provide sufficient power to support engineered safeguards equipment for one unit and the safe shutdown of the other unit, assuming loss of all off-site power and failure of one diesel generator. In addition, each off-site source alone is sufficient for safe shutdown by supplying each of the 4kV emergency buses.

- iii) The proposed revisions do not involve a significant reduction in a margin of safety.

The No. 343 startup transformer is a qualified alternate for the No. 3 startup transformer, and provides additional redundancy in off-site power supply for the engineered safeguards systems. Consequently, the availability of the No. 3 off-site power source could be increased. The proposed Technical Specification revisions do not alter the intent of those Specifications and the revisions do not reduce any safety margins as defined in the Technical Specification Bases.

Environmental Impact:

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 proposed changes do not involve any systems that have a direct relationship with the environment. The changes involve the availability of off-site power from an alternate source which will have no effect on systems controlling effluent releases. 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 effluents that may be released off-site, and there

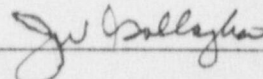
will be no significant increase in individual or cumulative occupational radiation exposure.

Conclusions:

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 an unreviewed safety question or a significant hazards consideration and will not endanger the health and safety of the public.

Respectfully submitted,
PHILADELPHIA ELECTRIC COMPANY

By



Vice President