



Tennessee Valley Authority
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Vice President
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June 15, 2011

10 CFR 50.90

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Browns Ferry Nuclear Plant, Units 1, 2, and 3
Facility Operation License Nos. DPR-33, DPR-52, and DPR-68
NRC Docket Nos. 50-259, 50-260, and 50-296

**Subject: Revision to Response to NRC Request for Additional Information
Regarding Extending Completion Times for Technical
Specification 3.8.1, TS-468, (TAC Nos. ME5036, ME5037, and
ME5038)**

- References:**
1. TVA Letter to NRC, "Revised License Amendment Request TS-468," dated November 12, 2010
 2. NRC Letter to TVA, "Request for Additional Information Regarding Extending Completion Times for Technical Specification 3.8.1," dated January 19, 2011
 3. TVA Letter to NRC, "Response to NRC Request for Additional Information Regarding Extending Completion Times for Technical Specification 3.8.1," dated February 8, 2011

The Tennessee Valley Authority (TVA) submitted a Revised License Amendment Request TS-468 in Reference 1. The NRC requested additional information (RAI) in Reference 2. TVA submitted a response to the NRC RAI in Reference 3.

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Based on NRC review of the response to Fire Protection Question 6 in Reference 3, TVA has revised the response to Question 6 to include the necessary supplemental information.

The Enclosure to this letter provides the revised response. There are no new regulatory commitments in this letter. Please direct any questions concerning this matter to Tom Matthews at (423) 751-2687.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on the 15th day of June 2011.

Respectfully,

A handwritten signature in black ink, appearing to read 'R. M. Krich', is written over the printed name.

R. M. Krich

Enclosure: Revision of the February 8, 2011 TVA Answer to NRC Request for Additional Information, Fire Protection NRC Question 6, dated January 19, 2011

cc (Enclosure):
NRC Regional Administrator – Region II
NRC Senior Resident Inspector – Browns Ferry Nuclear Plant
Alabama State Department of Public Health

ENCLOSURE

Tennessee Valley Authority

**Browns Ferry Nuclear Plant
Units 1, 2, and 3**

**TS-468 - Request for Extension to Completion Time for Technical Specification 3.8.1
Required Action A.3, B.2, and B.5**

**Revision of the February 8, 2011 TVA Answer to NRC Request for Additional Information,
Fire Protection NRC Question 6, dated January 19, 2011**

Fire Protection NRC Question 6

In 10 CFR 50.48(a), licensees are required to have a fire protection program that satisfies General Design Criterion 3. Normally this is demonstrated, as specified in our guidance, by complying with NRC guidance and NFPA code requirements. The licensee's analysis did not specify location of the TDGs with their fuel oil tanks or the location of the oil filled transformer. Provide a technical analysis to specify what fire protection features will be provided to comply with NRC guidance and NFPA code fire protection requirements for the additional hazard. The evaluation should also consider the impact of smoke, either fire or exhaust smoke from the TDGs, on normal or emergency plant operations. This would include control room and other plant air intakes.

TVA Response

[The additional clarification is *italicized* below.]

Location of the Temporary Diesel Generators (TDGs): Please review the location of the TDGs in the sketch provided in the *February 8, 2011* response to NRC Electrical Question 2.a.

The yard and exterior areas are not designated as fire areas for Browns Ferry Nuclear Plant (BFN). They are unbounded areas open to the atmosphere and adjacent to the plant buildings, and may be separated by non-rated exterior walls/barriers. Equipment in the yard and exterior areas includes nitrogen tanks, the condensate storage system, transformers and switchgear, hydrogen storage, fuel oil tanks, chillers, several trailers, and small buildings (e.g., pipe storage shed).

The TDGs and transformers are to be located in the yard area next to Manhole "E" that contains the feeder cables from the transformers to the 4 kV Bus Tie Board in the Unit 3, Bus Tie Board Room, Fire Area 24. They will be approximately 75 feet from non-safety structures (Auxiliary Decay Heat Removal Cooling Towers and temporary trailers) and over 150 feet away from any safety-related structure (Reactor Building and Intake Structure).

The TDGs' internal fuel tanks and the associated electrical control panels on the generators are Underwriters Laboratories listed. The fuel tanks meet the UL 142 Standard for "Steel Aboveground Tanks for Flammable and Combustible Liquids," and are intended for installation in accordance with the Flammable and Combustible Liquids Code NFPA 30; the Standard for Installation of Oil Burning Equipment, NFPA 31; and the Automotive and Marine Service Station Code, NFPA 30A.

Each TDG has an internal fuel oil storage tank capacity of 1,000 gallons of diesel fuel oil and an associated transformer that contains 700 gallons of oil. Each TDG also has a metal containment enclosure that is sufficient to hold the full contents of its diesel fuel and lubrication oil tanks.

Each TDG transformer will be surrounded by a rigid containment barrier (made of earth, steel, concrete, or solid masonry) with sufficient capacity to contain the entire oil contents of the transformer.

The minimum of 5 feet separation distances among the TDG fuel tanks, the TDG transformers, and the rigid containment barrier will be in accordance with the guidelines of NFPA 30.

Based on the quantity of oil and postulated spill, the transformers and TDGs are adequately separated from adjacent structures, thus limiting the damage and potential spread of fire from a transformer or a TDG tank failure.

A fire truck and the BFN fire department are onsite to respond to any fire associated with the TDGs and transformers. The nearest fire hydrant is located approximately 60 feet from the TDGs and transformers.

Ventilation Issue:

The TDGs and transformers are to be located in the yard area at the 565 feet elevation on the south part of the yard area, and over 150 feet from the Reactor Building which is the closest safety-related structure.

The Updated Final Safety Analysis Report, Section 10.12.5, describes the ventilation systems for the Reactor Control Building, Turbine Building, and EDG Buildings. For the Turbine Building, outside air is supplied at the air intakes at elevation 638 feet and enters the building through the fan room roof hoods on the Turbine Building roof.

For the Control Building, outside air for the normal ventilation system and Control Room Emergency Ventilation System is drawn from both the main outside air intake ducts at elevation 635 feet supplying the ventilation towers.

For the EDG Buildings, the Units 1 and 2 EDG Building is located on the west side of the Unit 1 Reactor and Unit 3 EDG Building is located at east side of the Unit 3 Reactor, and each has separate ventilation systems located on the top of the buildings.

For the Reactor Building, the outside air for normal ventilation is taken from grade level on the south side of the Reactor Building.

Based on the physical separation of the TDGs and transformers from the air intakes for the safety-related structures, there will be no impact from any normal operation of the TDGs. There will be no adverse impact from smoke, either fire or exhaust smoke from the TDGs, on normal or emergency plant operations including control room and other plant air intakes.