

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

during this test. Within 5 minutes after completing this 24-hour test, perform Specification 4.8.1.1.2g.6b);\*

- 8) Verifying that the auto-connected loads to each diesel generator do not exceed ~~the 4 hour rating of 5000 kW~~;  
^ 5750
- 9) Verifying the diesel generator's capability to:
  - a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power,
  - b) Transfer its loads to the offsite power source, and
  - c) Be restored to its standby status.
- 10) Verifying that with the diesel generator operating in a test mode, connected to its bus, a simulated Safety Injection signal overrides the test mode by: (1) returning the diesel generator to standby operation, and (2) automatically energizing the emergency loads with offsite power;
- 11) Verifying that the fuel transfer valve transfers fuel from each fuel storage tank to the day tank of each diesel via the installed cross-connection lines;
- 12) Verifying that the automatic load sequence timer is OPERABLE with the interval between each load block within the tolerances given in Table 4.8-2;
- 13) Verifying that the voltage and diesel speed tolerances for the accelerated sequencer permissives are  $92.5 \pm 1\%$  and  $98 \pm 1\%$ , respectively, with a minimum time delay of  $2 \pm 0.2$  s; and
- 14) Verifying that the following diesel generator lockout features prevent diesel generator starting only when required:
  - a) Turning gear engaged, or
  - b) Maintenance mode.

\*If Specification 4.8.1.1.2g.6b) is not satisfactorily completed, it is not necessary to repeat the preceding 24-hour test. Instead, the diesel generator may be operated at greater than or equal to 5600 kW but less than or equal to 5750 kW for 1 hour or until operating temperature has stabilized.

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SURVEILLANCE REQUIREMENTS (Continued)

3) Performing tank wall thickness measurements. The resulting data shall be evaluated and any abnormal degradation will be justified or corrected. Any abnormal degradation will be documented in a report to the Commission.

- h. At least once per 10 years or after any modifications which could affect diesel generator interdependence by starting both diesel generators simultaneously, during shutdown, and verifying that both diesel generators accelerate to at least 441 rpm in less than or equal to 11 seconds; and
- i. At least once per 10 years by:
  - 1) Draining each fuel oil storage tank, removing the accumulated sediment and cleaning the tank using a sodium hypochlorite solution or its equivalent, and
  - 2) Performing a pressure test of those portions of the diesel fuel oil system designed to Section III, subsection ND of the ASME Code at a test pressure equal to 110% of the system design pressure.

4.8.1.1.3 Reports - All diesel generator failures, valid or non-valid, shall be reported in a Special Report to the Commission pursuant to Specification 6.9.2 within 30 days. Reports of diesel generator failures shall include the information recommended in Regulatory Position C.3.b of Regulatory Guide 1.108, Revision 1, August 1977. If the number of failures in the last 100 valid tests (on a per nuclear unit basis) is greater than or equal to 7, the report shall be supplemented to include the additional information recommended in Regulatory Position C.3.b of Regulatory Guide 1.108, Revision 1, August 1977.

4.8.1.1.4 Diesel Generator Batteries - Each diesel generator 125-volt battery bank and charger shall be demonstrated OPERABLE:

- a. At least once per 7 days by verifying that:
  - 1) The electrolyte level of each battery is at or above the low mark and at or below the high mark,
  - 2) The overall battery voltage is greater than or equal to 125 volts on float charge, and
  - 3) The individual cell voltage is greater than or equal to 1.36 volts on float charge.\*
- b. At least once per 92 days and within 7 days after a battery discharge with battery terminal voltage below 110 volts, or battery overcharge with battery terminal voltage above 150 volts, by verifying that:
  - 1) There is no visible corrosion at either terminals or connectors, and

\*Two different cells shall be tested each month.

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November 21, 1984

Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Attention: Ms. E. G. Adensam, Chief  
Licensing Branch No. 4

Re: Catawba Nuclear Station  
Docket Nos. 50-413 and 50-414

Dear Mr. Denton:

License Condition 20, Internal Corrosion Protection for Fuel Oil Storage Tanks, which is included in the preliminary draft of Facility Operating License NPF-31 for Catawba Unit 1, would require the application of an internal corrosion protection to the fuel oil storage tanks prior to startup following the first refueling outage or the submittal of justification for not coating the tanks. The following discussion summarizes Duke Power Company's position that an internal tank coating is not necessary. Also included is a response to Ms. Elinor G. Adensam's letter of November 7, 1984.

System Description

The diesel fuel oil system at Catawba includes four 45,000 gal. storage tanks per unit or 2 tanks per diesel. The tanks are fabricated from 3/8 inch nominal thickness carbon steel which includes a 1/32 inch corrosion allowance. Each tank is approximately 12 feet in diameter and buried under approximately 5 feet of backfill and a concrete pad. The Unit 1 fuel oil tanks were coated with motor oil following sand blasting and were filled with fuel oil in March 1980.

A recirculation and purification system takes suction from the flush mounted sample connection on the bottom of the tank and discharges the fuel oil at a rate of 25 gpm through a simplex filter (25 micron particle removal rating). The supply lines to the day tank are connected by an outlet raised 6 inches above the bottom of the tank.

No Regulatory Basis for Internal Tank Coating

As discussed in Section 9.5.4.2 of the Catawba SER, the Staff concluded that "Internal corrosion protection for the fuel oil storage tanks, as required by Section 7.5 of ANSI Std N195, is not being provided". Section 7.5 of ANSI N195 states, "Protection against internal and external corrosion shall be provided." On March 24, 1982 Washington Public Power Supply System requested an interpretation of this section by Mr. F. A. Dougherty, Chairman

*Dupe of 84-2030217*

ANS 59.51. By an unanimous vote of the committee, an internal corrosion allowance was deemed to meet the requirements of Section 7.5. Therefore, ANSI N195 was not an appropriate basis for requiring an internal tank coating. It is our opinion that, contrary to Mr. Denton's April 28, 1982 Office Letter No. 2, Revision 2 that stated that "Staff reviewers should not decrease nor go beyond the scope and requirements of any specific SRP section", the Staff's requirement for an internal tank coating went beyond the requirements of the Standard Review Plan (NUREG-0800).

#### No Identified Problem with Uncoated Tanks

The position taken by the Staff in the Catawba SER was based on an unsupported interpretation of ANSI N195, not on plant operating experience. At no time during the review process has the Staff identified any occurrence of a problem with uncoated, buried fuel oil storage tanks. On the contrary, internally coated fuel oil tanks at the Hanford N-Reactor and at Limerick (See INPO SER 2-84) have experienced problems with flaking and peeling of the coating. Therefore License Condition 20 would not enhance plant safety but may instead degrade plant safety.

Duke has had over 40 years experience with uncoated, buried fuel oil tanks at the Company's fossil and nuclear stations. Our experience with these tanks is testimony to the reliability of uncoated tanks. Inspections of buried tanks at the Lee, Cliffside, Allen and Marshall Steam Stations have shown that internal corrosion is not a problem with buried fuel oil tanks. The survey of local industries which was documented in my letter of October 2, 1984 further supports this conclusion.

#### Justification for not Internally Coating Catawba Tanks

As a result of the continuing controversy over License Condition 20, a special inspection was performed on a 27,000 gallon underground fuel oil tank at Duke's Lee Steam Station. Details of this inspection were transmitted by my letter of October 2, 1984. After 34 years of service, minimal deterioration of the tank was noted. An ultrasonic inspection was made of the tank walls. Reductions in the mean tank wall thickness were noted at the top, bottom and sides of the tank of 0.0017, 0.0072, and 0.0002 inches, respectively. Based on the greater reduction noted in the bottom of the tank, a 1/32 inch corrosion allowance would be exceeded in an additional 113 years of service at the present corrosion rate. It should be noted that the Lee fuel oil tank did not have the benefit of design and operating features to minimize corrosion such as:

- 1) Cathodic protection
- 2) Fuel oil sampling to limit amount of water in new fuel
- 3) Tank maintained nearly full
- 4) Periodic (10 year) tank cleaning

The results of the Lee tank inspection provides reasonable assurance that the Catawba fuel oil tanks will perform their intended function without the application of an internal coating. As noted in previous submittals, the Catawba fuel oil tanks have additional design and operating features to further minimize tank corrosion:

Mr. Harold R. Denton, Director

November 21, 1984

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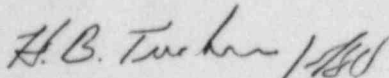
- 1) Cathodic protection (fully operable 6/85 for Unit 1)
- 2) Use of high quality fuel
- 3) Tanks maintained nearly full in accordance with the Technical Specifications
- 4) Periodic (Quarterly) drainage of accumulated water from the bottom of the tank
- 5) Periodic (10 year) tank cleaning

In order to provide further assurance that corrosion of the buried fuel oil storage tanks at Catawba is not progressing at a faster rate than expected, measurements of the tank wall thickness will be performed in conjunction with each 10 year cleaning. The measurement of the tank wall by ultrasonic or other means will include sufficient points to determine a statistical mean thickness. The resulting data will be evaluated and abnormal degradation (corrosion allowance exceeded) would be reported to the NRC pursuant to 10 CFR 50.73. In addition to the inspections during the 10 year cleaning, the Catawba Unit 2 tanks will be inspected prior to fuel load.

Conclusion

Based on the above discussions, it is concluded that License Condition 20 has been satisfied in that an internal tank coating is not necessary and there is reasonable assurance that the uncoated tanks will provide an adequate diesel generator fuel oil supply.

Very truly yours,



Hal B. Tucker

ROS:slb

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