VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

JACK H. FERGUSON
EXECUTIVE VICE PRESIDENT

October 28, 1980
Serial No. 862
NO/WRM:ms
Docket Nos. 50-280
50-281
License Nos. DPR-32
DPR-37

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
Attn: Mr. Steven A. Varga, Chief
Operating Reactors Branch No. 1
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Denton:

AMENDMENT TO OPERATING LICENSES DPR-32 AND DPR-37
SURRY POWER STATION UNITS NO. 1 AND 2
PROPOSED TECHNICAL SPECIFICATION CHANGE

Pursuant to 10 CFR 50.90, the Virginia Electric and Power Company requests an amendment, in the form of changes to the Technical Specifications, to Operating Licenses DPR-32 and DPR-37 for the Surry Power Station, Units 1 and 2. The proposed changes are enclosed.

The proposed changes will add Technical Specifications Sections 3.22 and 4.20 to reflect changes to be made to components of the safety related auxiliary ventilation system in order to provide redundancy necessary to meet single failure criteria. The principal differences in the new design from the former design consist of the reassignment and dedication of the system components to specific functions. Among these differences are that the new QC II filter will reduce the use of the QC I filters during normal station operation, the dedication of the new QC I fans to exhaust air withdrawal through the QC I filters, and the additional assignment to the QC I filters of mitigating the consequences of a refueling accident inside the containment in the same manner as the original design mitigated the consequences of an accident in the fuel building.

The seismic reanalysis of safety related piping systems required for IE Bulletin 79-14 has indicated six new break points which must be incorporated in the High Energy Pipe Break Inspection Program specified in Technical Specification 4.15-A. The proposed changes will revise Specification 4.15-A to indicate that there are 26 welds to be included in the inspection program and will revise TS Figure 4.15 to indicate the location of the six additional break inspection points.

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3/40
w/check:
$4400.00

In our letter of April 22, 1980 (Serial No. 370) to Mr. D. G. Eisenhut, we provided information concerning the failure of a fire pump to meet the acceptance criteria of Specification 4.18.B.1.f(2) for a periodic test designed to demonstrate operability. Further investigation has indicated that the crite-

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ria of 250 feet of head at 2500 gpm in Specification 4.18.B.1.f(2) exceeds both the original design criteria of 244.9 feet at 2500 gpm and the FSAR requirement of 100 psi discharge pressure at 2500 gpm. The proposed change will revise Specification 4.18.B.1.f(2) to require 231 feet (100 psi) Total Dynamic Head at 2500 gpm.

This request has been reviewed and approved by the Station Nuclear Safety and Operating Committee and the System Nuclear Safety and Operating Committee. It has been determined that this request does not involve an unreviewed safety question as defined in 10 CFR 50.90.

We have evaluated this request in accordance with the criteria in 10 CFR 170.22. This request involves issues which the Staff should be able to determine do not pose a significant hazards consideration; therefore, a Class III license amendment fee is required for Unit 1 and a Class I license amendment fee is required for Unit 2. Accordingly, a voucher check in the amount of $4,400.00 is enclosed in payment of the required fees.

It should be noted that issuance of the proposed changes related to the auxiliary ventilation system should be withheld pending completion of the associated design modifications. We will inform you when the modifications are complete.

Very truly yours,

J. H. Ferguson
Executive Vice President
Power

Attachments:
1. Proposed Technical Specification Change
2. Voucher Check No. 42727 for $4,400.00

cc: Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
Region II

3.22 AUXILIARY VENTILATION EXHAUST FILTER TRAINS

Applicability

Applies to the abilities of the safety-related system to remove particulate matter and gaseous iodine following a LOCA or a refueling accident.

Objective

To specify requirements to ensure the proper function of the system.

Specifications

A. During station operation or refueling operations, the following conditions shall be met:

1. System flow rate test in the LOCA mode of operation shall show design flow of 36,000 cfm ± 10 percent.

2. Air distribution test at the face of the prefilter-bank shall show uniformity of air velocity within ± 20 percent of average velocity.

3. In-place cold DOP tests on HEPA filters shall show greater than or equal to 99 percent removal.

4. In-place halogenated hydrocarbon leakage tests on charcoal adsorber banks shall show greater than or equal to 99 percent removal.

5. Laboratory analysis on charcoal samples shall show at least 95 percent methyl iodide removal at 0.125 sec. ± 20 percent residence time, 0.5 to 1.5 mg/in^3 inlet methyl iodide concentration, relative humidity greater than or equal to 80 percent, and air temperature greater than or equal to 125°F.

6. The pressure drop across filter cells and adsorbers shall not exceed 7.0 inches W.G.

B. With one circuit of the filter system inoperable for any reason, return the circuit to operable status within 7 days or initiate reactor shutdown and immediately terminate fuel handling operations.

Basis

The purpose of the filter trains located in the auxiliary building is to provide standby capability for removal of particulate and iodine contaminants from the exhaust air of the charging pump cubicles of the auxiliary building, fuel building, decontamination building, safeguards building adjacent to the containments, and the reactor containment (during shutdown) which discharge through the ventilation vent and could require filtering prior to release. During normal plant operation, the exhaust from any one of these areas can be diverted, if required, through the auxiliary building filter trains remotely from the control room. The safeguards building exhaust and the charging pump cubicle exhaust are automatically diverted through the filter trains in the event of a LOCA (diverted on high-high containment pressure). The fuel building exhaust and purge exhaust are aligned to continuously pass through the filters during spent fuel handling.

High efficiency particulate absolute (HEPA) filters are installed before the charcoal adsorbers to prevent clogging of the iodine adsorbers. The charcoal adsorbers are installed to reduce the potential release of radioiodine to the environment. The in-place test results should indicate a system leak tightness of less than 1 percent bypass leakage for the charcoal adsorbers and a HEPA efficiency of at least 99 percent removal of DOP particulates. The heat release from operating ECCS equipment limits the relative humidity of the exhaust air to less than 80 percent even when outdoor air is assumed to be 100 percent relative humidity and all ECCS leakage evaporates into the exhaust air stream. The laboratory carbon sample tests are required to indicate a radioactive methyl iodide removal efficiency of at least 95 percent at a relative humidity greater than or equal to 80 percent. If the efficiencies of the HEPA filters and charcoal adsorbers are as specified, at flow rates, velocities, and relative humidities which are less than the design values of the filter banks, the resulting doses will be less than 10 CFR 100 guidelines for the accidents analyzed. The offsite dose calculations for LOCA and fuel handling accidents assume only 90 percent and 70 percent, respectively, iodine removal efficiency for the air passing through the charcoal filters. Therefore, the demonstration of 99 percent leakage efficiency and 95 percent methyl iodide removal efficiency will assure the required capability of the filters is met or exceeded.

4.20 AUXILIARY VENTILATION EXHAUST FILTER TRAINS

Applicability

Applies to the testing of safety-related air filtration systems.

Objective

To verify that leakage efficiency and iodine removal efficiency are within acceptable limits.

Specifications

A. Tests and Frequency

1. Auxiliary ventilation system exhaust flow rate through the filters in the LOCA mode of operation shall be determined initially and after any major modification or repair of the system.

2. The system exhaust flow rate through each filter train shall be determined for the LOCA mode of operation by aligning Unit 1 or Unit 2 Safeguards room exhaust and the exhaust from three charging pump cubicles through the filters. The method for determining the system air flow rate shall be in accordance with Section 9 of ACGIH Industrial Ventilation.

3. An air distribution test across the HEPA filter bank shall be performed initially and after any major modification or major repair of the air cleaning system.

4. The air distribution test shall be performed with an anemometer located at the upstream side and at the center of each HEPA filter cell.

5. In-place cold DOP tests for HEPA filter banks shall be performed:
   a. Initially,
   b. At least once per refueling cycle, i.e., approximately eighteen months.
   c. Following significant painting, fire, or chemical release in any ventilation zone communicating with the system,
   d. After each complete or partial replacement of the HEPA filter cells, and
   e. After any structural maintenance on the filter housing.

6. The procedure for in-place cold DOP tests shall be in accordance with ANSI N510-1975, Section 10.5 or 11.4.

7. In-place halogenated hydrocarbon leakage tests for the charcoal adsorber bank shall be performed:
   a. Initially.
   b. At least once per refueling cycle, i.e., approximately eighteen months.
   c. Following significant painting, fire, or chemical release in any ventilation zone communicating with the system,

d. After each complete or partial replacement of charcoal adsorber trays, and

e. After any structual maintenance on the filter housing.

8. The procedure for in-place halogenated hydrocarbon leakage tests shall be in accordance with ANSI-N510-1975, Section 12.5.

9. Laboratory analysis on charcoal samples shall be performed:

a. Initially, whenever a new batch of charcoal is used to fill adsorbers trays,

b. At least once per refueling cycle or after 720 hours of system operation, and

c. Following significant paint, fire, or chemical release in any ventilation zone communicating with the system.

10. The procedure for iodine removal efficiency tests shall follow RDT Standard M-16-1T. Charcoal samples for retest shall be taken from the test canisters.

11. The pressure drop across the HEPA filter and adsorber banks shall be checked:

a. Initially,

b. At least once per refueling cycle thereafter for systems maintained in a standby status or after 720 hours of system operation, and

c. After each complete or partial replacement of filters or adsorbers.

12. Each redundant filter train circuit shall be operated every month if it has not already been in operation.

13. At least once per refueling cycle, the operability of the entire safety-related portion of the auxiliary ventilation system shall be demonstrated.

14. When one circuit of the filter trains system becomes inoperable, the operability of the other train shall be demonstrated immediately and daily thereafter.

B. Acceptance Criteria

1. The exhaust air flow rate determined in Specifications 4.20.A.1 and 4.20.A.2 shall be within the limits specified in Specification 3.22.A.1. The ventilation system shall be adjusted until the specified limits are met.

2. The results of air distribution tests described in Specifications 4.20.A.3 and 4.20.A.4 shall be within the specified limits of Specification 3.22.A.2. The ventilation system shall be adjusted until the specified limits are met.

3. The results of in-place DOP test described in Specifications 4.20.A.5 and 4.20.A.6 shall be within the limits of Specification 3.22.A.3. Leakage sources shall be identified, repaired, and retested. Any HEPA filters found defective shall be replaced.

4. The results of in-place halogenated hydrocarbon leak test described in Specifications 4.20.A.7 and 4.20.A.8 shall be within the limits of Specification 3.22.A.4. Leakage sources shall be identified, repaired, and retested.

5. The results of laboratory analysis of charcoal samples described in Specifications 4.20.A.9 and 4.20.A.10 shall be within the limits of Specification 3.22.A.5. If test results are unacceptable, all adsorbent in the system shall be replaced with new adsorbent.

6. Pressure drop across the HEPA filters and charcoal adsorber banks measured in Specification 4.20.A.11 shall be within the limits of Specification 3.22.A.6. If this condition cannot be met, new filter cells shall be installed.

7. The minimum period of air flow through the filters will be 10 hours per month.

8. System operability test of Specification 4.20.A.13 shall demonstrate automatic start-up, shutdown and flow path alignment.

9. The filter train operability test of Specification 4.20.A.14 shall demonstrate proper equipment start-up and shutdown and flow path alignment.

Basis

Ventilation system filter components are not subject to rapid deterioration, having lifetimes of many years, even under continuous flow conditions. The tests outlined above provide assurance of filter reliability and will ensure timely detection of conditions which could cause filter degradation.

Pressure drop across the combined HEPA filters and charcoal adsorbers of less than 7 inches of water at the system design flow rate will indicate that the filters and adsorbers are not clogged by excessive amounts of foreign matter. Operation of the filtration system for a minimum of 10 hours a month prevents moisture buildup in the filters and adsorbers.

The frequency of tests and sample analysis of the degradable components of the system, i.e., the HEPA filter and charcoal adsorbers, is based on actual hours of operation to ensure that they perform as evaluated. System flow rates and air distribution do not change unless the ventilation system is radically altered. Consequently, less frequent testing has been specified for the system flow rate and air distribution.

If significant painting, fire, or chemical release occurs such that the HEPA filter or charcoal adsorber could become contaminated from the fumes, chemical, or foreign material, the same tests and sample analysis are performed as required for operational use. The determination of "significant" is made by the operator on duty at the time of the incident. Knowledgeable staff members would be consulted prior to making this determination.

SAFETY ANALYSIS

TECHNICAL SPECIFICATION CHANGE REQUEST NO.
SURRY POWER STATION UNITS 1 AND 2

Modifications to the auxiliary ventilation system do not create an "unreviewed safety question" as defined in 10CFR50.59. The modified system adds redundancy to safety-related ventilation components in order to meet single-failure criteria. The design is essentially the same as the original design. The differences in design consist principally in the reassignment and dedication of the system components to specific functions:

1. The new QC II filter will reduce the use of the QC I filters during normal station operation.

2. The new QC I fans are dedicated to exhaust air withdrawal through the QC I filters.

3. The QC I filters are assigned the additional duty of mitigating the consequences of a refueling accident inside the containment in the same manner as the original design mitigated the consequences of an accident in the fuel building.

The modifications do not for the reasons stated above:

a. Increase the probability of occurrence, or the consequences of an accident, or malfunction of equipment important to safety previously evaluated in the Final Safety Analysis Report.

b. Create the possibility for an accident or malfunction of a type different than any evaluated previously in the Final Safety Analysis Report.

c. Reduce the margin of safety as defined in the basis for any technical specification.