

August 24, 1979

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
Attn: Mr. O. D. Parr, Chief
Light Water Reactors Branch No. 3
Division of Project Management
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Serial No. 675
PSE&C/SNK:adw:mc
Docket Nos. 50-404
50-405

Dear Mr. Denton:

Our letter Serial No. 039 of February 6, 1979 advised you of our intention to inform you continually of company positions which are not in accordance with individual Regulatory Guides. This letter advises you of the Company position on Regulatory Guide 1.52, Revision 2, "Design, Testing, and Maintenance Criteria for Post Accident Engineered-Safety-Feature Atmosphere Cleanup System Air Filtration and Adsorption Units of Light-Water-Cooled Nuclear Power Plants", for the North Anna 3 and 4 Units.

Company Position

The engineered-safety-feature atmosphere cleanup system air filtration and adsorption units for North Anna 3 and 4 are as follows:

- a. Auxiliary Building Common Exhaust Filtration System
- b. Control Room Emergency Filtration System

The North Anna Units 3 and 4 project will comply with the Regulatory Position (paragraph c) of this Guide with the following clarifications or exceptions:

- c.1.c The systems are designed based on air flow rate and resident time.
- c.2.b Vepco complies for the control room emergency filter system. The common exhaust filter system is not protected from missiles generated by natural phenomena. The top floor of Auxiliary Building is not designed for missile protection.

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- c.2.f The volumetric airflow of a single filter train in the Auxiliary Building is 64,000 scfm as compared to the recommended value of 30,000 scfm. The recommended volumetric airflow rate of 30,000 scfm is based on a train assembly of 3 HEPA filters high by 10 HEPA filters wide (1000 scfm per filter). Vepco's array in the Auxiliary Building is 4 HEPA filters high by 16 HEPA filters wide, or 1000 scfm per filter. Vepco's design is not detrimental to the maintenance of the HEPA filter assemblies and will have no effect on the testing of the filters as set forth by ANSI N510 standard.
- c.2.g North Anna 3 and 4 project complies except alarms are not seismic Category I.
- c.2.h The degree of compliance is subject to the regulatory positions on Regulatory Guides 1.32, 1.89, 1.30, 1.100 and 1.118 and IEEE Standards 279 and 334.
- c.2.i North Anna 3 and 4 project complies. The present common exhaust filter system is provided with automatic activation of the safeguard area ventilation and filtration following a LOCA of the affected unit. The control room filtration system is manually activated by the control room operator following the depletion of compressed air, which is approximately one hour after the accident.
- c.2.j The Auxiliary Building common exhaust filtration system cannot be removed as an intact unit because of its length. The enclosed common exhaust filtration system is designed to be removed as a minimum number of segmented sections. Individual filter components will be removed prior to cutting the housing into segmented sections. Cutting the ABCEFS into segmented sections for removal with the individual components intact exposes the local environment and personnel to unnecessary contamination. In order to minimize operator exposure, each component is packed, shielded, and shipped after components are removed and handled individually. Removal of the decontaminated housing is completed by cutting into a minimum number of sections which can be packaged, shielded and shipped, minimizing the exposure.
- c.3.a No demisters are provided.
- c.3.f Some filters are upstream access. Also, refer to c.2.f above.

c.3.g The control room system which is 1,000 cfm is a non-entry unit.

c.3.h Drains are not provided on the control room filters.

c.3.k When conservative calculations show that the maximum decay heat generation from collected radioiodines is insufficient to raise the carbon bed temperature above 250°F with no system airflow, small capacity ESF atmosphere cleanup systems may be designed without an air bleed cooling mechanism.

c.3.l System resistances will be determined in accordance with Section 5.7.1 of ANSI N509-1976 except that fan inlet and outlet losses will not be calculated in accordance with AMCA 201.

Exception is taken to Section 5.7.2 of ANSI N509-1976; copies of fan ratings or test reports are not necessary when certified fan performance curves are furnished.

Exception is taken to balancing techniques defined in Section 5.7.3 of ANSI N509-1976. Displacement criteria following normal industry practice will be used when maximum vibration velocity method imposes unrealistic requirements at certain operating speeds.

Documentation will not be furnished in accordance with Section 5.7.5 where AMCA certification ratings are submitted.

c.3.n Exception is taken to Section 5.10.3.5 of ANSI N509-1976; ductwork, as a structure, will have a resonant frequency above 25 Hz, but this may not be true for the unsupported plate of sheet sections.

c.3.p Exception is taken to the provisions of Section 5.9 of ANSI N509-1976 of designing dampers to ANSI B31.1 and to using butterfly valves. Class B dampers may be designed and tested to meet the verification of strength and leak-tightness necessary for use in a contaminated air stream. (Note: This exception does not pertain to containment penetrations.)

In addition, exceptions are taken to the following:

Class B leakage rates shall be determined for one damper or each type instead of every damper.

Minimum diameter of damper shaft length 24 in. and under shall be $\frac{1}{2}$ in.; and $\frac{3}{4}$ in. for shafts between 25 and 48 in.

- c.4.a The design of atmosphere cleanup systems minimizes the time that personnel are exposed to contaminated components. The guidelines specified in this paragraph are considered to be general guides, and full compliance is not necessary.
- c.4.b The dimensions do not allow 3 feet between banks. Mounting frames in the control room filters are less than three feet apart. All filter assemblies are provided with adequate working space to permit the maintenance personnel to replace the filters.
- c.4.d ESF atmosphere cleanup systems are run a minimum of 10 hr. per month. However, if field data confirms that it is unnecessary to run the trains 10 hr. per month to reduce the amount of moisture present on the filters, this decision will be reconsidered.

This position will be placed on file and will be included in the Final Safety Analysis Report for these units.

We would be pleased to discuss this position with you at your convenience. Should you wish to meet with us to discuss this position, or if you have any questions please contact us.

Very truly yours,

Original Signed by
W. C. SPENCER

Sam C. Brown, Jr.
Senior Vice President-Power
Station Engineering and Construction