UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 56 TO FACILITY OPERATING LICENSE NO. DPR-39

AND AMENDMENT NO. 53 TO FACILITY OPERATING LICENSE NO. DPR-48

COMMONWEALTH EDISON COMPANY

ZION STATION, UNITS 1 AND 2

DOCKET NOS. 50-295 AND 50-304

INTRODUCTION

By letter dated March 21, 1975, supplemented by letters of December 19, 1978 and April 28, 1980, Commonwealth Edison Company (CECO) proposed revising Technical Specifications relating to ventilation filter systems. This was done as a result of NRC generic concerns relating to such filter systems. The proposed revision includes changes to Technical Specifications 3.8.8, 4.8.8, 3.13.2, 4.13.2, 3.17, and 4.17, the existing limiting conditions of operation and surveillance for the hydrogen control purge systems, fuel building exhaust system, control room makeup air charcoal system, drumming station charcoal filter system and the miscellaneous vents charcoal filter system.

EVALUATION

By letters dated January 10, 1975 and February 29, 1980, we provided guidance to the licensee on appropriate ventilation filter technical specifications for engineered safety feature (ESF) ventilation filter systems. This guidance is the staff's model Technical Specifications for these systems for operating nuclear reactors. Our evaluation was based on these model Technical Specifications for ESF ventilation filter systems for operating nuclear reactors and on Positions C.5 (in-place testing criteria) and C.6 (laboratory testing criteria for activated charcoal) of Regulatory Guide 1.52 (Revision 2), "Design, Testing and Maintenance Criteria for Atmospheric Cleanup System Air Filtration and Adsorption Units of Light-Water Cooled Nuclear Power Plants."

We have reviewed and evaluated the proposed changes to Technical Specifications 3.8.8, 4.8.8, 3.13.2, 4.13.2, 3.17, and 4.17 for the Zion Station. CECO has requested that the phrase "in accordance with ASNI N510-1975" be deleted from the model Technical Specifications because the station ventilation filter systems were not designed to be tested in accordance with this standard. ANSI N510-1975 is the industry standard for testing of nuclear air-cleaning systems such as these ventilation filter systems. Because the ventilation filter systems were designed and fabricated years before the standard was written,

there are operational problems when the systems are tested in strict accordance with ANSI N510-1975. CECO meets the intent of the standard when testing the system. The basis of the Zion Station Technical Specifications are being modified following discussions with CECO staff to clearly show CECO's stated intention.

We agree with the licensee that there are operational problems testing the ventilation filter systems in accordance with ANSI N510-1975 since the systems were not designed to be tested in this manner. If the systems are tested in a manner to meet the intent of the standard, this will provide adequate assurance that the above ventilation filter systems will operate as described in the Zion Station FSAR.

The licensee has proposed changes to Sections 3.8.8 and 4.8.8 to upgrade the limiting conditions of operation (LCO) and surveillance requirements on the hydrogen control purge system. This system is the backup to the redundant external recombiners which are the licensing basis for Zion Station for combustible gas control inside containment during a LOCA. The proposed specifications provide assurance that (1) the purge system would be available to control the concentration of hydrogen inside containment following an accident if it was needed and (2) the minimum charcoal filter efficiency should be that assumed by the licensee in the response to question 9.8 in the Zion Station FSAR. Based on these considerations, we conclude that the licensee's proposed Technical Specifications for the hydrogen control purge system are acceptable. The potential consequences of operating the purge system are not included in our Safety Evaluation (SE), dated October 1972 for Zion Station because operation of the redundant, safety grade external recombiners during an accident does not require the use of the purge system.

The proposed changes to Technical Specifications 3.13.2 and 4.13.2 upgrade the LCOs and surveillance requirements on the fuel building exhaust system. This system is used to filter the radioactivity from the damaged fuel during a fuel handling accident to mitigate the offsite potential consequences of such an accident. The potential consequences of the design basis fuel handling accident in the spent fuel pool are given in our SE dated October 1972 and of the fuel handling accident inside containment are given in our SE dated March 1979, for Zion Station.

The proposed specifications provide adequate assurance that the fuel building exhaust system will be available during a fuel handling accident. The licensee has proposed in Table 4.17-1 a maximum allowable system pressure drop of less than 6 inches of water for both the HEPA filter section of the fuel building exhaust system and the charcoal filter section of this system. The maximum allowed pressure drop for both sections together should be a total of less than 6 inches of water. This is to provide assurance that the HEPA filters will not be overburdened prior to an accident. This would limit their lifetime before they would have to be replaced. The licensee has agreed to require the maximum allowable system pressure drop to be for both the HEPA and charcoal filter sections. Table 4.17-1 has been revised accordingly.

The proposed specifications do not provide the adequate assurance that the minimum charcoal filter efficiency of the fuel building exhaust system (FBES) is at least the 90% assumed in the SE dated October 1972 and the SE dated March 1979 for Zion Station. The proposed minimum acceptable efficiency for this filter system in Table 4.17-1 is equal to the efficiency assumed in the Safety Evaluations (i.e., all are 90%). The relative humidity (RH) for the laboratory analysis of the charcoal in Table 4.17-1 is at the expected operating RH for the FBES. This RH is 95% because this filter system does not have a heater to reduce the relative humidity of the airflow through the charcoal. The licensee by telephone conversations has agreed to changing the minimum acceptable charcoal efficiency for this filter system to 95% in Table 4.17-1. With this change, the proposed specifications provide adequate assurance that the FBES will have the minimum charcoal filter efficiency for the fuel handling accidents in our Safety Evaluations dated October 1972 and March 1979.

There is potential confusion in reading and interpretating Specifications 3.13.2.A and 4.13.2.A. The first specification refers to the "fuel building exhaust system" and the second refers to the "auxiliary building ventilation system." Specification 4.13.2.A is the surveillance requirement to implement the LCO (Specification 3.13.2.A). Both specifications should refer to the same ventilation system. After telephone conversations with the licensee, it was agreed that both specifications should refer to the "fuel building exhaust system." This proposed change is an administrative change to prevent confusion in interpretating the Zion Station Technical Specifications and is, therefore, acceptable.

Based on the above considerations, we conclude the proposed changes to Sections 3.13.2 and 4.13.2, as modified, for the fuel building exhaust system are acceptable.

The proposed changes to Technical Specifications 3.17 and 4.17 upgrade the LCOs and surveillance requirements for the control room makeup air charcoal adsorber system, the drumming charcoal filter system and the miscellaneous vents charcoal filter system. These filter systems are described in Section 9.10, Plant Ventilation of the Zion Station FSAR. The proposed specifications provide assurance that (1) the minimum charcoal filter efficiency should be that assumed by the licensee in the response to Question 9.8 in the Zion Station FSAR and (2) the filters system will be available when needed. Based on these considerations, we concluded that the proposed changes are acceptable.

The licensee proposed to delete the existing surveillance requirements in Specifications 4.17.1.1 and 4.17.1.2 on the charcoal filters in the containment charcoal filter (filter bank no. RV032 and RV033). This is based on the fact that these filters are not Engineered Safety Feature (ESF) Ventilation Filter Systems and were not designed to be such systems. Although this is true, these filters systems are involved in the NRC Action Plan for Indian Point and Zion. Based on this, we conclude that no action on the existing surveillance requirements on these non-ESF ventilation filter systems should be taken at this time. Because of the extensive changes to Specification 4.17 discussed above, Specification 4.17.1.E is being added to the Zion Technical Specification. This will keep the existing surveillance requirements for the containment charcoal filter in the Technical Specifications.

Based on our review, we also conclude that the proposed changes, as modified, agree with the requirements of our model technical specifications for engineered safety feature ventilation filter systems for operating reactors and of Positions C.5 (in-place testing criteria) and C.6 (laboratory testing criteria for activated charcoal) of Regulatory Guide 1.52, Revision 2, "Design, Testing and Maintenance Criteria for Atmospheric Cleanup System Air Filtration and Adsorbtion Units of Light-Water-Cooled Nuclear Power Plants." Therefore, we conclude the proposed changes are acceptable.

ENVIRONMENTAL CONSIDERATION

We have determined that the amendments do not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendments involve an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of these amendments.

CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) because the amendments do not involve a significant increase in the probability or consequences of accidents previously considered and do not involve a significant decrease in a safety margin, the amendments do not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Date: August 8, 1980