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TO-247

JAN 31 1974

D. J. Skovholt, Assistant Director for Operating Reactors, L Original Signed by
THRU: J. M. Hendrie, Deputy Director for Technical Review, L J. M. Hendrie

RESPONSE TO TAR 767 - INDIAN POINT FILTER TECHNICAL SPECIFICATIONS

As requested, we have reviewed the Indian Point 2 filter Technical Specification proposal. As detailed in the enclosure, the reasons presented do not justify a change to the Technical Specifications. We have also found that the present Technical Specifications are inadequate. The generalized Technical Specifications presented in the January 17, 1974, memo of H. Denton to D. Skovholt (entitled "Response to TAR 736 - Technical Specifications for Installed Filter Systems") for in-containment filter systems should be applied to the Indian Point 2 case.

There is one additional problem with the IP-2 filter units. The adsorber section is designed for 8000 cfm; the filter unit has a total flow of 65,000 cfm. Fifty-seven thousand cfm of flow is bypassed around the adsorber cells by means of perforated plates, which are designed to create a pressure drop such that 8000 cfm goes to the adsorber and 57,000 cfm is bypassed. The problem with this concept is the fact that the pressure drop across the adsorber increases substantially as moisture builds up on the activated carbon. As the pressure drop across the adsorber increases, the flow decreases. Hence, during the course of an accident, the adsorbers would not see the design flow. One possible fix to this problem is to replace all the perforated plates with carbon cells. The mounting frames for the perforated plates are actually designed for carbon cells and the fan requirements should be the same, because, by design, the perforated plates should have the same flow resistance as an adsorber cell.

Our assistance will be available when it is time to explain the details of Technical Specifications to the applicant. Dr. Roger Zavadoski of the Accident Analysis Branch performed this review.

Original signed by
H. R. Denton

Harold R. Denton, Assistant Director
for Site Safety
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Form AEC-318 (Rev. 9-53) AECM 0240 GPO C45 10 8146D-1 445-878

SPECIFIC RESPONSE TO POINTS RAISED IN
R. E. ADAMS ARTICLE ENTITLED,
"MONITORING OF DEGRADATION OF IMPREGNATED
ACTIVATED CARBON IN STANDBY AIR FILTRATION SYSTEMS
OF PWR CONTAINMENTS"

1. It appears implicit in the discussion that qualification tests need only be performed once for a particular type of activated carbon. Significant variations in methyl iodine removal efficiency have been observed for activated carbons of a specific type (as BC-727 MSA-85851, etc.). In addition, some manufacturers have changed their process since the ORNL tests were performed. Therefore, Regulatory Guide 1.52 recommends and current technical specifications require that qualification tests be performed on each lot of activated carbon purchased.

2. Figure 1, described in the section entitled "Laboratory Testing of Exposed Carbon Samples," is at best, a misinterpretation of the existing data. If all the applicable data are plotted on such a graph (see the Proceedings of the 12th AEC Air Cleaning Conference, "Correlation of Radioiodine Efficiencies Resulting from a Standardized Test Program for Activated Carbons," by Rivers et al). No clear correlation can be made. Adams selectively plots a few points which support his thesis.

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3. Adams suggests that high temperature - high relative humidity test rigs are not presently available in the U. S.. At least two companies presently perform such tests on a routine commercial basis.

4. Adams contends that preheating of exposed activated carbon for testing purposes enhances the methyl iodine removal efficiency. DP-1213, Figure 2, p. 10, shows that a relatively small fraction of methane and ethylene are released at temperatures near 130°C. Figure XII from p. 518, of the Proceedings of the Eleventh AEC Air Cleaning Conference, shows the difference between iodine-retention efficiency obtained at 30°C and 50% RH and 100°C, 100% RH for activated carbon which had seen continuous service. In all cases, the high temperature tests yielded lower iodine retention efficiency. Twenty-five degrees C and 70% RH is a test peculiar to ORNL and does not conform to ASTM D-28 testsconditions.