

Omaha Public Power District
1623 Harney Omaha, Nebraska 68102-2247
402/536-4000

October 30, 1989
LIC-89-1005

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station P1-137
Washington, DC 20555

References: 1. Docket No. 50-285
2. Letter OPPD (K. J. Morris) to NRC (Document Control Desk)
dated September 8, 1989 (LIC-89-850)

Gentlemen:

SUBJECT: Clarification of Design Aspects of New Control Room Charcoal
Filters

The following information is provided to clarify issues discussed in a telephone conversation on October 18, 1989 between OPPD and the NRC regarding design of new control room charcoal filters.

1. Each filter unit is designed for 2000 cfm total flow; 1000 cfm from outside to maintain control room pressurization and 1000 cfm recirculated from the control room envelope. Each filter unit has two banks of carbon in series with each bank made up of four carbon cells with two-inch deep beds. There are a total of eight carbon cells per filter unit that are each designed for 1000 cfm at 0.125 seconds residence time. This equates to 500 cfm at 0.25 seconds residence time for each cell, or 2000 cfm at 0.25 seconds residence time for each bank of carbon. The two banks in series combine to provide a four-inch total bed depth.
2. An in line electric heater is included in each filter unit to provide humidity control. The heaters are designed to reduce the relative humidity of the incoming air to less than 70%.
3. Regulatory Guide (R.G.) 1.52 was used as guidance in designing the new control room air treatment system. In particular, the laboratory testing criteria for activated carbon were obtained from this document, i.e., per test 5b Table 5-1 of ANSI N509-1976 at a relative humidity of 70% for a methyl iodide penetration of less than 0.175%. However, since NUREG-0737 requires review of the system in accordance with SRP 6.5.1 (via SRP 6.4), ANSI-N509-1980 qualification test

8911070114 891030
PDR ADOCK 05000285
P PDC

A001
11

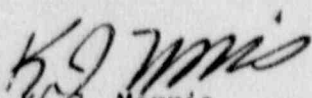
requirements were used. This, in turn, requires testing to be performed in accordance with ASTM D3803-1979. The carbon testing requirements submitted in Reference 2 conform to the currently published standards (R.G. 1.52, ANSI N509-1980, and ASTM D3803-1979, Method B).

After technical review of Reference 2, NRC requested OPPD to evaluate testing in accordance with the protocol established in EGG-CS-7653 as suggested by Interpretation 87-1 of ASME/ANSI AG-1a-1989. This protocol, however, is specifically applicable to ASTM D3803-1979 Method A which is based on normal containment operating conditions, whereas OPPD's testing criteria is based on Method B which is based on postulated post-accident conditions faced by a standby gas treatment system. There is no discussion in the EGG-CS-7653 report of the temperature to be used during the testing of carbon for different applications. In addition, the recommendations in the report for the values to be used for relative humidity and allowable penetration do not agree with the values indicated by R.G. 1.52.

The Reference 2 test temperature of 80°C was selected for conformance with published standards. Therefore, OPPD considers it appropriate to maintain the current testing criteria.

If you have any questions regarding the information provided, please contact me.

Sincerely,


K. J. Morris
Division Manager
Nuclear Operations

KJM/pjc

c: LeBoeuf, Lamb, Leiby & MacRae
R. D. Martin, NRC Regional Administrator
A. Bournia, NRC Project Manager
P. H. Harrell, NRC Senior Resident Inspector