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IE Bulletin No. 80-03

LOSS OF CHARCOAL FROM STANDARD TYPE II, 2 INCH, TRAY ADSORBER CELLS

Description of Circumstances:

During preliminary leak tests of charcoal adsorber cells in certain ventilation systems at Sequoyah Nuclear Plant, it was determined that on certain adsorber cells the spacing between rivets securing the perforated screen to the casing was too great to ensure adequate contact between the casing and the screen, thus allowing charcoal to escape.

The problem was discovered when a visual inspection detected loose charcoal on the floor of the filter housings and on the outside horizontal surfaces of the adsorber cells. Loss of charcoal was also indicated by observation of light penetrating through the cells. Additional inspection revealed that the rivets securing the perforated screens to the cell casing were approximately six inches apart and the screen appeared to be sagging away from the casing between rivets.

The particular adsorber cells being tested at Sequoyah Nuclear Plant were Flanders Type II pre-1974 fabrication.

There is a possibility that design of adsorber cells with wide spacing between screen rivets may pass initial freon leak tests but degrade significantly during operation thus reducing the margin of safety during postulated accidents.

The responses from this Bulletin will be used by the NRC to evaluate need for more frequent inspection/testing.

For all power reactor facilities with an Operating License:

1. Determine if charcoal adsorber cells in use, or proposed for use, have the potential for a loss of charcoal incidental to handling, storage or use (as appropriate). Particular attention should be directed to examination of a) rivet spacing resulting in separation of screen and cell housing and b) adsorber cell or filter housing deformation causing loss of charcoal and/or channeling. Either of these items could result in a degraded filtration system incapable of performing its intended function. The preferred method of this determination is a visual inspection of the filter housing and adsorber cells as described in Section 5 of ANSI N510-1975. If this method is not feasible, state in the report required by Paragraph 4 how the determination was made.
2. For ESF filtration systems, any identified defective cells shall be replaced and the operability of the system (after cell replacement)

demonstrated by leak testing within 7 days. Preferred method of leak testing is as described in Regulatory Guide 1.52 and Section 12 of ANSI N510-1975.

3. For normal ventilation exhaust filtration systems which employ charcoal adsorber cells and for which radioactive removal efficiency has been assumed in determining compliance with the "as low as reasonably achievable" design criteria of 10 CFR 50, Appendix I, any identified defective cells shall be replaced as soon as possible but at least within 30 days. After replacement, the system should be demonstrated operable by leak testing within an additional 30 days. Preferred method of testing is as described in Regulatory Guide 1.140 and Section 12 of ANSI N510-1975.
4. Report in writing within 45 days of the date of this Bulletin the results of the determination required by Paragraph 1. The report shall include the type of cells employed (manufacturer and cell design), system containing the cells, observed cell condition (degradation/sagging) and a discussion of visual inspection procedure and results.

For all Power Reactor Facilities with a Construction Permit:

1. Visual inspection shall be conducted only if the charcoal adsorber cells have been purchased and shipment received. A representative number (approximately 5) of each type of cell design/manufacturer shall be visually inspected for such deficiencies as rivet spacing and screen/casing separation which could lead to loss of charcoal incidental to handling, storage, or use.
2. Report in writing within 45 days of the date of this Bulletin the results of the inspection required by Paragraph 1. The report shall include the type of cells (manufacturer and cell design), observed cell condition (degradation/sagging) and a discussion of the inspection procedure and results.

Reports shall be sent to the Director of the appropriate NRC Regional Office listed in Appendix D of 10 CFR 20 with a copy of the Director, Division of Fuel Facility and Materials Safety Inspection, Office of Inspection and Enforcement, USNRC, Washington, D.C. 20555.

Approved by GAO, B180225(R0072); clearance expires, 7/31/80. Approval was given under a blanket clearance specifically for identified generic problems.

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Enclosure

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79-26	Boron Loss From BWR Control Blades	11/20/79	All BWR power reactor facilities with an OL
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