

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

2. Verifying that the ventilation system satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5c* and C.5.d* of Regulatory Guide 1.52, Revision 1, July 1976, and the system flow rate is $156,680 \text{ cfm} \pm 10\%$.
 3. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 1, July 1976, demonstrates a methyl iodide removal efficiency of $\geq 95\%$.
 4. Verifying a system flow rate of $156,680 \text{ cfm} \pm 10\%$ during system operation when tested in accordance with ANSI N510-1975.
- c. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 1, July, 1976, demonstrates a methyl iodide removal efficiency of $\geq 95\%$.
 - d. At least once per 18 months by verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is < 6 inches Water Gauge while operating the system at a flow rate of $156,680 \text{ cfm} \pm 10\%$.
 - e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove $\geq 99\%$ of the DOP when they are tested in-place in accordance with ANSI N510-1975* while operating the system at a flow rate of $39,170 \text{ cfm} \pm 10\%$.
 - f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove $> 99\%$ of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975* while operating the system at a flow rate of $39,170 \text{ cfm} \pm 10\%$.

Technical Specification Change Request

Replace page 3/4 7-24 with the attached replacement page 3/4 7-24.

Reasons for Proposed Change

The existing technical specification requirement for verifying > 99% methyl iodide removal efficiency for the auxiliary building ventilation exhaust system charcoal filters is unnecessarily restrictive. This will result in excessive charcoal replacement at considerable expense without sufficient benefit to the public or plant employees.

The attached figure shows the results of recent charcoal sample test results. As can be seen, the methyl iodide removal efficiency has dropped from 99.85% to 99.10% in a period of 150 days. The system was operated approximately 120 days during this period. It is anticipated that the efficiency will drop below 99.0% as shown by the next sample test results.

Safety Analysis Justifying Proposed Change

There are two basic reasons why the proposed change is justified:

- 1) The Final Safety Analysis Report for Crystal River Unit No. 3 never assumed methyl iodide removal efficiency greater than 90% for these filters.

Section 14.2.2.3, Fuel Handling Accident, describes the consequences of a fuel handling accident in the auxiliary building. The analyses were performed assuming filtration at a 90% removal efficiency. The resulting calculated total integrated dose at the exclusion distance was .924 Rem, Thyroid, and .575 Rem, whole body. These are well within the 10 CFR 100 guidelines.

The Safety Evaluation Report issued by the U.S. Atomic Energy Commission July 5, 1974, for Crystal River Unit No. 3, in Section 9.4.2 concludes that without taking credit for filtration at all the doses from the fuel handling accident were well below guideline exposures in 10 CFR Part 100.

Table 15.1 of the Safety Evaluation Report summarizes the staff calculations for the fuel handling accident and waste gas decay tank rupture accident. The staff concluded that the resulting doses are well within 10 CFR Part 100 exposure guidelines, even assuming, no filtration for one case. Iodine removal factors of 90% and 70% for the charcoal filter for elemental and organic iodines respectively, were assumed when filtration was taken credit for.

- 2) The Crystal River Unit No. 3 auxiliary building ventilation exhaust system is designed as a continuous flow system. The HEPA and charcoal filters may not be bypassed as is the case for most other plant designs.

The existing standardized technical specifications require charcoal filter testing and sample analyses after 18 months or after 720 hours of operation. In a "bypass" filter design, the charcoal removal efficiency would be verified very infrequently since long calendar times would be required to accumulate 720 hours of filter operation. With an extremely long interval between sample analyses, verification of removal efficiency > 99% would give assurance that the filter performance would not be degraded below 95% removal efficiency prior to the next sample analysis. Ninety-five per cent (95%) removal efficiency seems to be the acceptable value for safeguards application.

For the continuous flow design at Crystal River Unit No. 3, 720 hours of operation is reached rather rapidly (every 30 days when the unit is operating). Therefore, the additional conservatism gained by requiring 99% removal efficiency is not needed. The actual test analyses are available very frequently and the charcoal removal efficiency is known within the test tolerance limits. Within the accuracy of about one month's extrapolation of a curve of removal efficiency versus time, the point in time at which the efficiency would drift below 95% can be reasonably predicted and replacement charcoal obtained and installed.

In summary, based on 1) safety analyses which show that 90% removal efficiency is adequate to protect the public, and 2) a system design which results in better knowledge of actual filter performance capabilities, we respectfully request approval of this proposed Technical Specification change.

QBU:hlc
5/27

AUXILIARY BUILDING EXHAUST VENTILATION SYSTEM CHARCOAL FILTER SAMPLE ANALYSIS RESULTS

CRYSTAL RIVER UNIT NO. 3

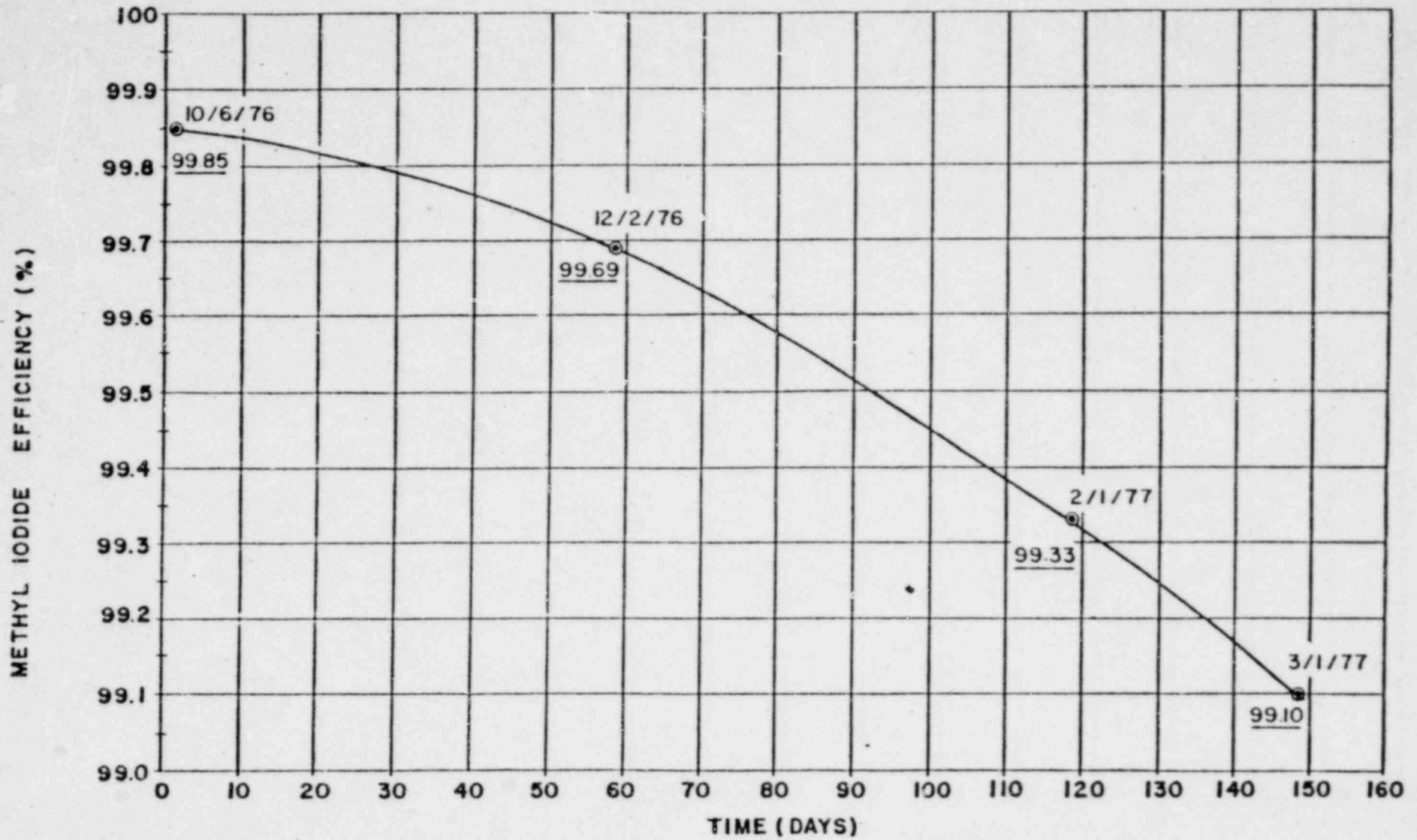


FIG. 1