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AUG 06 2007

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Mr. John P. Martell, Manager  
Radioactive Air Emissions Section  
State of Washington  
Department of Health  
Office of Radiation Protection  
Post Office Box 47827  
Olympia, Washington 98504-7827

Dear Mr. Martell:

TRANSMITTAL OF THE PLUTONIUM FINISHING PLANT (PFP) FILTER ROOM 310  
REPLACEMENT PLAN

This letter transmits a copy of HNF-34087, *PFP Filter Room 310 Replacement Plan*. The plan is provided to the State of Washington, Department of Health (WDOH) for review and acceptance regarding the planned replacement-in-kind supporting maintenance of the required abatement filtration. The submitted plan reflects discussion between our staff in meetings held on May 14 and June 28, 2007. As agreed in the meetings, the actions detailed in the plan will adequately address the requirement in the facility permit/license conditions, and limitations specified by AIR-06-1020, for Emission Unit #393 associated with maintaining the availability of multiple filter banks.

If you have any questions, please contact me, or your staff may contact Doug S. Shoop, Assistant Manager for Safety and Engineering, on (509) 376-0108.

Sincerely,

  
David A. Brockman  
Manager

SED:MFJ

Enclosure

cc: See page 2

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EDMC

Mr. John P. Martell  
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Administrative Record (file: PFP Facility filter Room 310)

Environmental Portal, A3-95 T-2-9

# PFP Filter Room 310 Replacement Plan

Prepared for the U.S. Department of Energy  
Assistant Secretary for Environmental Management

Project Hanford Management Contractor for the  
U.S. Department of Energy under Contract DE-AC08-86RL13200

**FLUOR,**  
P.O. Box 1000  
Richland, Washington

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# PFP Filter Room 310 Replacement Plan

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R. W. Bloom  
Fluor Hanford, Inc.

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Assistant Secretary for Environmental Management

Project Hanford Management Contractor for the  
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**CONTENTS**

1.0 BACKGROUND ..... 1  
2.0 SCOPE ..... 1  
3.0 CONTINGENCY PLANNING ..... 1

**FIGURES**

Figure 1. 234-5Z Filter Arrangement..... 3  
Figure 2. Plan View of Filter Room 309 (typ. of FR-310). ..... 4

**TABLE**

Table 1. 234-5Z E-4 System Status. .... 5

## 1.0 BACKGROUND

The Plutonium Finishing Plant (PFP) is in the process of deactivation in preparation for final demolition in Fiscal Year 2016. Current operations are focused on removal of source material from gloveboxes and hoods, and packaging for disposal. The general access area exterior to the gloveboxes in 234-5Z is ventilated by a system of seven filter rooms installed in parallel, four of which are in operation at any one time. The portion of the 234-5Z ventilation system that provides ventilation of the glovebox systems and final radioactive air filtration is comprised of two filter rooms, FR-309 or FR-310 located in parallel, with one operating at any given time. Additional filtration exists between the gloveboxes and the filter rooms but is not credited in the license as providing tested HEPA abatement (Figure 1).

## 2.0 SCOPE

Based on results of aerosol penetration testing performed in February 2007, excessive penetration was indicated for filter room 310 and planning for replacement of the filters in that room has been initiated. FR-309 and FR-310 are made up of a continuous bank of 128 filter elements in a zipper like (serpentine) arrangement (Figure 2). Replacement of the filters is complicated by radiological contamination conditions associated with FR-310 and the potential of beryllium contamination in the system. Based on preliminary non-destructive analysis of the filter room, it is anticipated that the spent filters will likely require handling, packaging and disposal as transuranic waste.

Planning for the replacement of the FR-310 filters has been incorporated into the overall project planning for deactivation activities, to be performed in Fiscal Year 2009. This will coincide with an expected increase in deactivation activities, where continuous availability of either FR-309 or FR-310 is essential to the planned activity.

The final filtration for this portion of the system will continue to be provided by FR-309. It is anticipated that FR-309 will be able to reliably continue to provide the abatement function necessary to maintain particulate emissions from PFP as low as reasonably achievable until FR-310 maintenance is completed. In the unlikely event problems were to develop with FR-309 in the interim, a pre-approved plan of action will be implemented. This pre-approved plan has been developed and will be implemented in consultation with the clean air regulatory agencies.

## 3.0 CONTINGENCY PLANNING

The ability of FR-309 to provide the required level of abatement over the proposed replacement period is not in question, but since essential deactivation activities are planned prior to the scheduled replacement of FR-310 in FY-09, it is prudent to assure there are minimal impacts.

- The work package for the replacement of the filters in FR-310 has been prepared subject to pre-release review. It is anticipated that the replacement of the filters can be accomplished over a 3 month period or less. Adequate spare filters dedicated to PFP are maintained in stock on site to support the change out of any one filter room (FR-309, FR-310, FR-311 through FR-316 or FR-318). Coordination of filter stock withdrawals supporting other filter room replacements will be necessary to assure timely restocking.
- In response to a nuclear safety concern, PFP has been evaluating the filter rooms using computer modeling. The results of this review indicate that improvement to the test aerosol penetration testing

methods will be implemented. A retest of FR-310 at an adjusted flow rate is anticipated to be performed under this revised test protocol in the first part of FY-08, prior to the scheduled annual retest of FR-309 in February 2008.

The initial response to an issue (i.e. unexplained emission increase or penetration testing result) with adequacy of FR-309 filtration during the FR-310 replacement period would be suspension of deactivation in areas reliant on FR-309 for abatement. A timely notification to the appropriate regulatory agency (Washington State Department of Health or Washington State Department of Ecology) would be made and a recovery plan initiated, and would include immediate initiation of the filter replacement in a timely manner, commensurate with conditions, to restore the required FR filtration.

Dependant on conditions at the time of failure and on regulatory concurrence, it is anticipated that agreement could be reached to allow activities to resume during the FR filter replacement, so long as the resumed activities were located upstream of secondary filters that were successfully penetration tested within the previous year. Activities in areas upstream of inadequate secondary filters would be restricted to essential activities only.

Planned deactivation activities within the area ventilated by FR-309 prior to the completion of scheduled FR-310 replacement efforts are anticipated to be focused in the specific areas of the facility. These areas are serviced by secondary testable HEPA filters FB-14, FB-20, FB-21 and FB-22. Three of these filter boxes successfully passed aerosol penetration testing in March of 2007 and the fourth will be tested this summer. A status of secondary filter testing (see Table 1) will be updated on a monthly basis to facilitate activity planning.



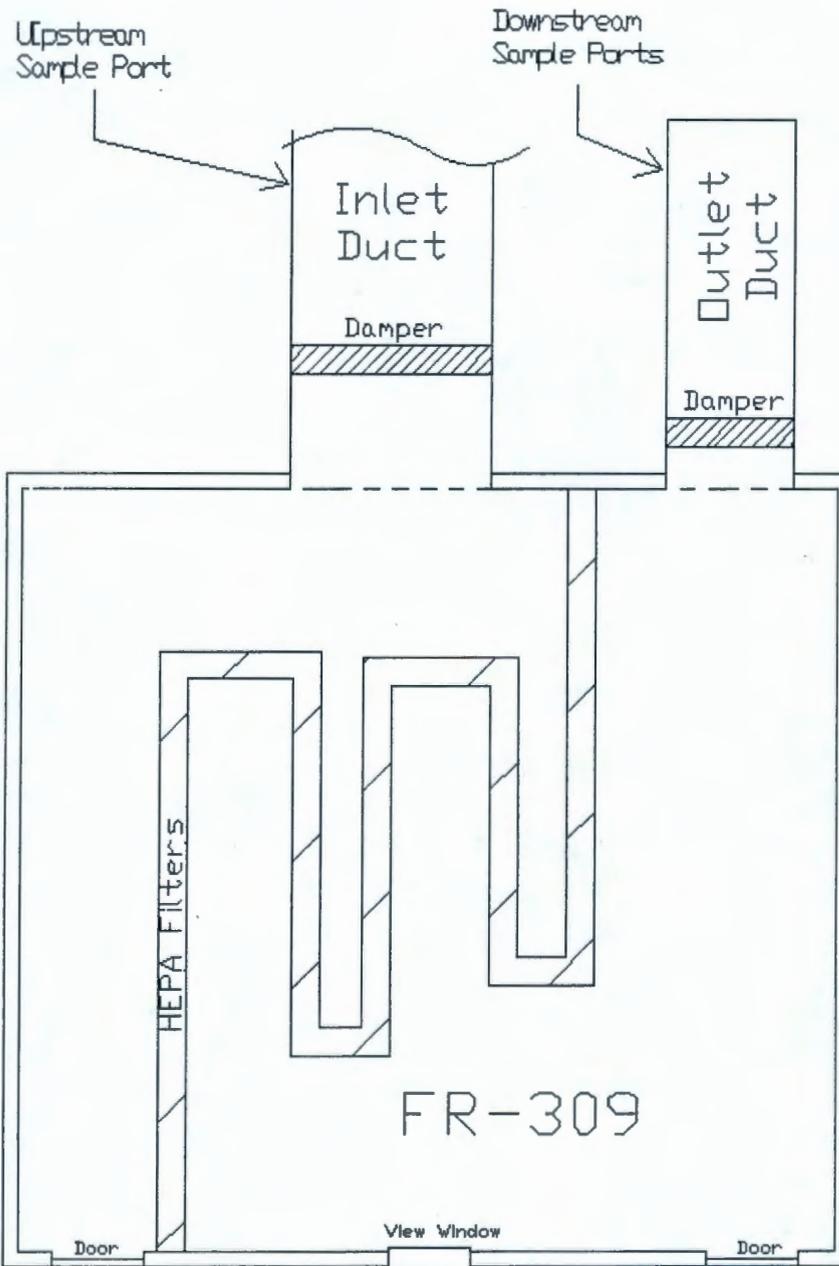


Figure 2. Plan View of Filter Room 309 (typ. of FR-310).

Table 1. 234-5Z E-4 System Status.

FILTER	LAST TEST	FREQ	FLOW (CFM)	PEN (%)	99.95 %	99.9 %	99%	COMMENTS
Room 309	02/25/07	Annual	34574	0.002	Yes	Yes	Yes	
Room 310	02/06/07	Annual	34223	0.066	No	Yes	Yes	Passed previous test in 2006 with 0.006 %
EF-C5	03/01/07	Biennial*	1236	0.006	Yes	Yes	Yes	
EF-C6	03/01/07	Biennial*	273	0.040	Yes	Yes	Yes	
EF-D7	03/01/07	Biennial*	145	0.14	No	No	Yes	E-3 Area
EF-D8	03/01/07	Biennial*	2197	0.010	Yes	Yes	Yes	
EF-E5	03/01/07	Biennial*	1706	0.008	Yes	Yes	Yes	
EF-E6	03/01/07	Biennial*	224	0.004	Yes	Yes	Yes	
FB-1-N	06/01/04	Suspended	~1459	0.002	-	-	-	Deactivated Hoods
FB-1-S	07/31/06	Biennial*	1417	0.002	Yes	Yes	Yes	
FB-2	03/19/07	Biennial*	914	0.002	Yes	Yes	Yes	
FB-3	01/19/06	Biennial*	2022	0.002	Yes	Yes	Yes	
FB-4	07/06/05	Biennial*	954	0.002	Yes	Yes	Yes	
FB-5	03/30/06	Biennial*	2621	0.028	Yes	Yes	Yes	
FB-6	10/28/05	Biennial*	169	0.002	Yes	Yes	Yes	
FB-7	10/28/05	Biennial*	2196	0.002	Yes	Yes	Yes	
FB-8	10/28/05	Biennial*	376	0.002	Yes	Yes	Yes	
FB-9	04/12/07	Biennial*	167	0.004	Yes	Yes	Yes	
FB-10	03/23/06	Biennial*	1121	0.002	Yes	Yes	Yes	
FB-11	04/24/06	Biennial*	592	0.054	No	Yes	Yes	
FB-12	04/26/06	Biennial*	570	0.002	Yes	Yes	Yes	
FB-13-25A	04/26/06	Biennial*	1100	0.002	Yes	Yes	Yes	
FB-14	03/13/07	Biennial*	934	0.002	Yes	Yes	Yes	RMA/RMC
FB-15	04/23/07	Biennial*	1453	0.002	Yes	Yes	Yes	
FB-16-E	04/13/06	Biennial*	444	0.002	Yes	Yes	Yes	
FB-16-W	04/13/06	Biennial*	1312	0.008	Yes	Yes	Yes	
FB-17	12/22/06	Biennial*	1700	0.002	Yes	Yes	Yes	
FB-18	07/31/06	Biennial*	1276	0.002	Yes	Yes	Yes	
FB-19	08/03/05	Biennial*	1458	0.002	Yes	Yes	Yes	
FB-20	03/12/07	Biennial*	1551	0.002	Yes	Yes	Yes	RMA/RMC
FB-21	08/03/05	Biennial*	659	0.002	Yes	Yes	Yes	RMA/RMC
FB-22	03/13/07	Biennial*	386	0.008	Yes	Yes	Yes	RMA/RMC
FB-26	04/23/07	Biennial*	401	0.002	Yes	Yes	Yes	
FB-242-Z	04/01/05	Biennial*	528	0.002	Yes	Yes	Yes	
26" vacuum passive filters – FB – F1, F2, F3, F4 Last tested 7/03 – 3/04 passed.					-	-	-	2 stage passive vent

\* Biennial = every two years