

70-1151

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Post-it® Fax Note 7671		Date <b>29 MAY 98</b>	# of pages <b>3</b>
To <b>HARRY FELSHER</b>		From <b>BOB WILLIAMS</b>	
Co./Dept <b>LICENSING, FUEL CYCLE</b>		Co. <b>WESTINGHOUSE</b>	
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5-29-98

Please forward a copy of the attached memo to Harry Felsher at NRC HQ. It is per his request 5/15/98. It is for his review of an FNMC revision, I think. Contact Dan if any questions arise.

D. W. Williams, Senior Engineer *DWW*

cc: Dan  
Norm  
Wilbur

*NIFD411*

May 15, 1998  
RA-DWW-98-013

To: CSA File (Miscellaneous - Laundry)

cc: W. Goodwin  
W. Dougherty  
N. Kent  
W. Newmyer  
T. Shannon

Subject: Criticality Safety Basis for Laundry

This memo provides documentation of the criticality safety basis for laundry at the CFFF.

Criticality is judged to be not credible in dirty laundry for the following reasons:

- a) Protective clothing used at CFFF has no pockets to collect SNM.
- b) Chemical area workers deposit used protective clothing in containers stationed away from substantial quantities of SNM.
- c) Over the period of many years, each bag of laundry has been assayed singly or in groups of two. The levels of SNM are consistently below 1 gram U-235 per bag. [The calculated factor from a test in 1997<sup>1</sup> was 0.02 grams U-235 per kg, which equates to 0.36 grams U-235 per approx. 40 lb bag.]
- d) Laundry is sent out for cleaning 2-3 times per week. Therefore the amount accumulating for shipment does not normally exceed 40-50 bags.
- e) Laundry could be piled/stored in an unlimited fashion and still not present any adverse condition for criticality (see Item 6 below).

Because criticality is not credible, double contingency is not applicable and a fault tree is not required.

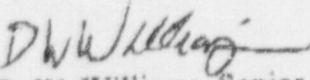
Other items of notes are as follows:

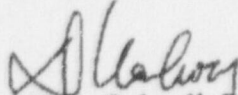
- 1) Dirty laundry is removed from the change rooms each shift by use of an open mesh cart.
- 2) Laundry is collected in the women's change area adjacent to SE Expansion prior to shipping.
- 3) Specifically approved<sup>2</sup> solid vinyl carts are used to move dirty laundry the short distance from the collection point into a trailer at Dock 6 for shipment.

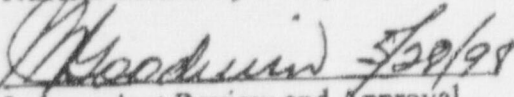
<sup>1</sup> Attachment to Letter NRC -97-059, R. A. Williams to Michael F. Weber, USNRC, Changes to FNMC Plan - Revision 28, December 18, 1997.

<sup>2</sup> Memo RA-DWW-98-008, D. Williams to Config. Control File 96-205, Laundry Carts at dock 6 (CC # 96-205), 3-27-98.

- 4) Laundry is generated at the rate of approx. 20 bags per day.
- 5) Laundry is shipped 2-3 times per week.
- 6) Although 55-gallon drums are not used for dirty laundry, there is an existing basis for drum storage<sup>3</sup> that allows arrays with no spacing required if the drum content is  $\leq 104$  grams U-235. Laundry bag size would allow 2 bags per drum, very far below the limit for unlimited arrays. Therefore there are no criticality limitations for piling/storage of dirty laundry bags.

  
D. W. Williams, Senior Engineer  
Nuclear Criticality Safety

  
D. L. Colwell, Principal Engineer  
Measurement Control

  
Independent Review and Approval  
W. L. Goodwin, Manager, Regulatory Affairs

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<sup>3</sup> Criticality Safety Evaluation of the Storage Structures, 4/30/97.