

## DISTRIBUTION SHEET

To Distribution	From Criticality & Radiological Analyses	Page 1 of 1 Date December 13, 1994
Project Title/Work Order CSER 79-002, Addendum 2: Extension of the 150 Gram Fissile Limit Used in Room 187 of PFP		EDT No. 157948 ECN No. N/A

Name	MSIN	Text With All Attach.	Text Only	Attach./ Appendix Only	EDT/ECN Only
SJ Altschuler	R3-01	x			
SL Bhatia	R3-01	x			
JW Daughtry	H4-64		x		
TE Demitruk	L4-74	x			
DE Friar (5 copies)	R3-01	x			
JL Geiger	R3-01	x			
AL Hess	H4-64	x			
EM Miller	H4-64	x			
LT Nirider	T5-53	x			
SE Nunn	S6-70	x			
LH Rodgers	T5-54	x			
CA Rogers	R3-01	x			
EC Vogt	T5-50	x			
Central Files (Orig + 2)	L8-04	x			
OSTI (2 copies)	L8-07	x			

### DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

RECEIVED  
 FEB 15 1995  
 OSTI

# MASTER

## **DISCLAIMER**

**Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.**

5

sta. 4  
JAN 30 1995

ENGINEERING DATA TRANSMITTAL

2. To: (Receiving Organization) Distribution	3. From: (Originating Organization) Criticality & Radiological Analyses	4. Related EDT No.: N/A
5. Proj./Prog./Dept./Div.: PFP	6. Cog. Engr.: D. E. Friar	7. Purchase Order No.: N/A
8. Originator Remarks: CSER 79-002, Addendum 2: Extension of the 150 Gram Fissile Limit Used in Room 187 of PFP		9. Equip./Component No.: N/A
11. Receiver Remarks:		10. System/Bldg./Facility: PFP
		12. Major Assm. Dwg. No.: N/A
		13. Permit/Permit Application No.: N/A
14. Required Response Date:		

15. DATA TRANSMITTED					(F)	(G)	(H)	(I)
(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	Approval Designator	Reason for Transmittal	Originator Disposition	Receiver Disposition
1	WHC-SD-SQA-CSA-20387		0	CSER 79-002, Addendum 2: Extension of the 150 Gram Fissile Limit Used in Room 187 of PFP	S	1,2		

16. KEY					
Approval Designator (F)		Reason for Transmittal (G)		Disposition (H) & (I)	
E, S, Q, D or N/A (see WHC-CM-3-5, Sec.12.7)		1. Approval	4. Review	1. Approved	4. Reviewed no/comment
		2. Release	5. Post-Review	2. Approved w/comment	5. Reviewed w/comment
		3. Information	6. Dist. (Receipt Acknow. Required)	3. Disapproved w/comment	6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION (See Approval Designator for required signatures)											
(G)	(H)	(J) Name	(K) Signature	(L) Date	(M) MSIN	(J) Name	(K) Signature	(L) Date	(M) MSIN	(G)	(H)
1	1	Cog. Eng.	<i>D.E. Friar</i>	12/22/94	R3-01						
1	1	Cog. Mgr.	<i>J.W. Daughtry</i>	12-20-94	H4-64						
		QA									
1	1	Safety	<i>D.S. ...</i>	1/11/95	T4-18						
		Env.									
1		Peer Review	<i>D. ...</i>	1/15/95	R3-01						
1	1	Criticality Safety	<i>L. ...</i>	12-29-94							

18. D. E. Friar <i>D.E. Friar</i> Signature of EDT Originator	19. <i>[Signature]</i> Authorized Representative for Receiving Organization	20. J.W. Daughtry <i>J.W. Daughtry</i> Cognizant Manager	21. DOE APPROVAL (if required) Ctrl. No. <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/comments <input type="checkbox"/> Disapproved w/comments
---	---	--	---

## RELEASE AUTHORIZATION

**Document Number:** WHC-SD-SQA-CSA-20387, REV 0

**Document Title:** Addendum 2 to CSER 79-002: Extension of the 150 Gram Fissile Limit Used in Room 187 of PFP

**Release Date:** 1/30/95

**This document was reviewed following the procedures described in WHC-CM-3-4 and is:**

**APPROVED FOR PUBLIC RELEASE**

**WHC Information Release Administration Specialist:**

  
Kara M. Broz

January 30, 1995

**TRADEMARK DISCLAIMER.** Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors.

This report has been reproduced from the best available copy. Available in paper copy and microfiche. Printed in the United States of America. Available to the U.S. Department of Energy and its contractors from:

U.S. Department of Energy  
Office of Scientific and Technical Information (OSTI)  
P.O. Box 62  
Oak Ridge, TN 37831  
Telephone: (615) 576-8401

Available to the public from:

U.S. Department of Commerce  
National Technical Information Service (NTIS)  
5285 Port Royal Road  
Springfield, VA 22161  
Telephone: (703) 487-4650

**SUPPORTING DOCUMENT**

1. Total Pages 4

2. Title

Addendum 2 to CSER 79-002: Extension of the 150 Gram Fissile Limit Used in Room 187 of PFP

3. Number

WHC-SD-SQA-CSA-20387

4. Rev No.

0

5. Key Words

Fissile Limits, 150 Gram, Glovebox

6. Author

Name: D. E. Friar

*D. E. Friar*  
Signature

Organization/Charge Code 8D150/K6058

7. Abstract

The PFP operating organization requests that the limit set permitting 150 grams fissile be extended to the Hoods 4 and 5 of Room 187. The request for the limit change is explained in the attached request for analysis.

8. RELEASE STAMP

OFFICIAL RELEASE **(5)**  
BY WHC  
DATE **JAN 30 1995**  
*St. 4*

ADDENDUM 2 TO CSER 79-002

Title: EXTENSION OF THE 150 GRAM FISSILE LIMIT USED IN ROOM 187 OF PFP

Prepared by: *D. S. Hiar* Date: 12/15/94  
Engineer, Criticality & Radiological Analysis

Reviewed by: *D. S. Hiar* Date: 12/15/94  
Engineer, Criticality & Radiological Analysis

Approved by: *J. M. Douglas* Date: 12-20-94  
Manager, Criticality & Radiological Analysis

The PFP operating organization requests that the limit set permitting 150 grams fissile be extended to the Hoods 4 and 5 of Room 187. The request for the limit change is explained in the attached request for analysis. This addendum documents that the requested limit set, currently set E in CPS-L-114-0002, Rev. C-1, may be applied to any of the five hood locations in Room 187.

The work locations in Room 187 are a row of three hoods along one wall, and across the room, a row of two hoods. The room also contains a large filter box, the High Gradient Magnetic Filter, in one corner. Room 187 is bounded by two corridors (7 and 10), and by Rooms 188 and 185. The glovebox in Room 188 is located near the center of the room, well away from the wall between Room 188 and the adjoining Hoods 1, 2, and 3 in Room 187. In Room 185 there is one glovebox, and this glovebox is separated from Hoods 4 and 5 of Room 187 by a non-isolating wall. At present, the glovebox in Room 185 contains little or no fissile inventory.

If all three batches permitted in Hoods 1, 2, and 3 (a total of 450 grams fissile) were combined into a single unit, they total less than the ordinary minimum critical mass of Pu-239. A double batch of a single unit, or a combination of the batches permitted in Hoods 4 and 5, would total only 300 grams fissile in either case. Thus the new operational limits meet the double contingency criterion. Transfer and transportation of fissile material is governed by other CPS that include spacing limits.

If operations involving the handling of significant quantities of fissile material are initiated in Glovebox 1 of Room 185, operations should consider instituting a precautionary spacing control on operations in Hoods 4 and 5 of Room 187. Such a control would provide a total of at least 10 inches (about 25 cm) between fissile material in Hoods 4 or 5 and the back wall of Glovebox 1 in Room 185. The control, with a similar control on the Room 185 side,

would greatly decrease the likelihood of a spacing limit nonconformance. A mark or tape on the floor of Hoods 4 and 5 may be a useful reminder of this special situation, as a spacing control is not normally applied to locations limited to 150 grams fissile.

The operating organization is reminded to include in the work station inventory all fissile material, for example, U-235 enriched above 1%, and workstation holdup.

[112] From: Lauren T (Tom) Nirider at ~WHC120 11/30/94 9:45AM (1882 bytes: 1 ln  
)  
To: Gary S (Scott) Barney at ~WHC142, Denelle E Friar at ~WHC83  
cc: Caroline S Sutter at ~WHC167, Susan A Jones at ~WHC168  
Subject: Re: Criticality Limits for Hoods 4 &5, Rm. 187

----- Message Contents -----

Tom:

The Plutonium Process Support Laboratory will need the criticality limits changed for Hoods 4 and 5 in Room 187 of the laboratory. The present limit of 15 grams Pu needs to be changed to 150 grams Pu so that we can handle appropriate volumes of the 10-L solutions for testing. The Uniform Laboratory Specification, Set E allows 150 grams and would be adequate for the planned testing. The limits need to be changed within the next few weeks so that we will be ready for testing when the 10-L solutions are downloaded. Thanks.

Scott

Denelle:

As you recall, you recently approved Limit Set E for Hoods #1,2,and 3 in Room 187. This allows the introduction of up to 150 grams Pu in each Hood. As I understand it, the requirement has changed slightly. There is not a need for a higher gram limit in every hood, only Hood #3, #4, and #5. I can limit the total Pu to less than 150 grams in individual hoods through the posting. Scott does not need 150 grams, about 50 grams would suffice.

This is to request that you take a look again at these limits and approve the Limit Set E for all the hoods in Room 187 if possible. This is to support the 10-L downloading interim action. Thank you. Please phone me if you have any questions.

Tom Nirider  
373-3180