

**MEETING AGENDA  
OU-1 PHASE III RI REPORT EPA AND CDH COMMENTS  
9 00 AM 26 FEB 93  
LARGE CONFERENCE ROOM BLDG 080**

- 9 00 AM Bring meeting to order  
Circulate attendance list  
Brief introduction**
- 9 10 AM Review agenda, state purpose and goals of meeting  
+ Review Action and Decision list from last meeting  
+ Resolve previously presented issues and comments  
IHSS 102 HRR impact and Hot Spots  
+ Present and resolve new issues and comments  
+ Set tentative bounding schedule for comment response**
- 9 30 AM Review Action and Decision List from meeting on  
17 Feb 93**
- 10 00 AM Break**
- 10 15 AM Present, discuss, and resolve previously presented  
issues**
- 10 15 AM IHSS 102**
- 10 00 Break**
- 10 45 AM HRR Impact**
- 11 15 AM Hot Spots**
- 11 45 PM Review Actions and Decisions**
- 12 00 Lunch**
- 1 00 PM Reconvene meeting**
- 1 05 PM Present, discuss, and resolve new issues and  
comments**
- 1 10 PM EE issue**

**1 50 PM Review Actions and Decisions**

**2 00 PM Break**

**2 15 PM Collated comment and issue list**

**2 50 PM Review Actions and Decisions**

**3 00 PM Break**

**3 15 PM Bounding schedule for comment response**

**4 00 PM BREAK**

**4 50 PM Review Actions and Decisions**

**5 00 Meeting adjourned**

**Circulate new Action and Decision List when available**

**ACTION AND DECISION LIST  
OU-1 PHASE III COMMENTS MEETING 26-FEB-93**

<u>ACTION ITEM</u>	<u>LEAD</u>	<u>DUE</u>
1 0 EE ISSUE 1 REFERENCE AREAS	EG&G	To
1 1 The comparison for terrestrial biota between Rock Creek and OUs will be presented along with rationale supporting the use of Rock Creek as the reference area	C Gee Harrington	EPA 3/12
A What are the parameters to be compared?		
B. What data were collected?		
C. What is the result of the comparability analysis?		
1 2 Prepare the following for aquatic systems	Same as Above	
A What comparative analyses will be used? Are these from Rock Creek upper reached of Woman Creek or other OUs? What data were collected? What is the result of the comparability analysis?		
B What alternative end points are chosen for analysis for parameters which comparatives are not appropriate and/or applicable? What data were collected? What analysis will be presented?	Same as Above	
2 0 EE ISSUE 2 CONCEPTUAL MODEL Prepare a discussion of the Fordham/Reagan Model with reference to applicability suitability and alternative approaches	EG&G C Gee Harrington	To EPA 3/18
3 0 EE ISSUE 3 EXPOSURE ASSESSMENT		
3 1 Review OU 5 Tech Memo 1	EG&G C Gee Harrington	3/15
3 2 CDH EPA and DOE to provide examples of Environmental Assessment documents	DOE Singh	To EG&G 3/15

4 0	CONTAMINANTS OF CONCERN (COCs)	EG&G	To
4 1	Add newly found contaminants thru process (Field Sampling Plan Nov 1991 Page 43 and following) Progress report	Harrington	EPA 3/18
4 2	Redo analysis to identify COCs (remove second screen of 2X 10X or 1000X background)	Same as Above	
4 3	Re examine whether target taxa are appropriate (dependent on EE framework)	Same as Above	
5 0	IHSS 102 ISSUE	EG&G	ASAP
5 1	Review Phase II soil/gas survey if no data to support IHSS 102 location described in HRR present evidence to support IHSS 102 location described in Work Plan	Gee	
5 2	Present discussion of the existing characterization of IHSS 102 in light of site disruption caused by installation of French Drain	Same as above	
6 0	Pu/Am HOT SPOTS ISSUE	EG&G	ASAP
6 1	Define Hot Spot concentration minimum levels	Gee	
6 2	Transmit Radiological Operating Instructions for FIDLER and Radiological Energy Procedure Gamma Spec to EPA for information	Gee	ASAP
6 3	Develop Radiological Survey Field Procedure action plan and submit to EPA and CDH for concurrence	Gee	3/12
6 4	EPA and CDH Toxicologist review of usage of Level II and III data after submittal (April 2) of OU 13 Tech Memo on Site Radiological Characterization	DOE Singh	ASAP After 4/2

**DECISIONS**

- 1 **Meet at EG&G on IHSS 102 Pu/Am Hot Spots collated comments and bounding schedule at 9 00 AM Thursday March 4 1993**
  
- 2 **Meeting at EPA on EE Issues at 8 30 AM Thursday March 18 1993**  
**Major topics**  
**Concurrence on terrestrial comparison**  
**Concurrence on aquatic comparison and/or alternatives**  
**Present progress report on COC issues**  
**Exposure Assessment COC Selection Criteria**  
**Develop schedule for COC resolution**
  
- 3 **Meet at EG&G on Conceptual Modeling 9 00 AM March 25 1993**  
**Major topics**  
**Discussion of applicability of Fordham/Reagan Model and alternatives**

**ATTENDEE LIST**  
**OU-1 PHASE III COMMENTS MEETING 26 FEB 93**

<u>NAME</u>	<u>ORGANIZATION</u>	<u>PHONE</u>
Tye De Mass	EG&G	X8760
Paul Singh	DOE/RFO	X4651
Dennis Smith	EG&G	X8636
Cindy Gee	EG&G	X8550
Gary Kleeman	EPA	294 1071
Bonnie Lavelle	EPA	692 3511
Beverly Ramsey	DOE/SMS	(301)353 0072
R Zeke Houk	EG&G	X8714
B J Beurt	EG&G	X8514
E A Harrington	EG&G	X8744

When inhomogeneous release criteria are used Equation 3 12 must be satisfied for every area of inhomogeneous contamination and in addition Equation 3 3 must be satisfied for any region within the homogeneous portion of the contaminated zone

### 3 3 2 Hot Spot Criteria for Field Application

Hot spots are small areas that have levels of residual radioactive material that are considerably above the levels in the surrounding area The derivation of remedial action criteria generally assumes homogeneous contamination of large areas (several hundred square meters or more), and the derived concentration guide is stated in terms of concentrations averaged over an area of 100 m<sup>2</sup> Because of this averaging process, within these 100-m<sup>2</sup> areas hot spots can exist that contain concentrations of radionuclides that are significantly higher than the authorized limit Therefore, the presence of hot spots could potentially pose a greater risk of exposure to individuals using the site than the risk associated with homogeneous contamination In order to ensure that individuals are adequately protected and to ensure that the ALARA process is satisfied, the following hot spot criteria must be applied along with the general criterion for homogeneous contamination The hot spot criterion for field application is

$$M^{**} \equiv \sum_1 S_1^* / G_1^{**} \leq 1 \quad (3 15)$$

where

$M^{**}$  = hot spot mixture sum for field use (dimensionless),

$S_1^*$  = measured concentration of the 1<sup>th</sup> principal radionuclide in the hot spot (pCi/g) and

$G_1^{**}$  = single-radionuclide soil guideline for the 1<sup>th</sup> principal radionuclide in the hot spot (pCi/g)

The measured hot spot concentrations  $S_1^*$  are the peak concentrations if the hot spot area is 1 m<sup>2</sup> or less or the average concentrations if the hot spot area is larger than 1 m<sup>2</sup>

The formula for single-radionuclide, hot spot soil guidelines is

$$G_1^{**} = G_1(\tau_m) \times (100/A)^{1/2} \quad (3.16)$$

where

$G_1(\tau_m)$  = as defined for Equation 3.4,

$A$  = area of hot spot (m<sup>2</sup>), and

$(100/A)^{1/2}$  = hot spot multiplication factor

Equations 3.15 and 3.16 apply to hot spots with areas of 25 m<sup>2</sup> or less. For larger hot spot areas, the homogeneous release criterion is sufficient. An area of  $A = 1$  m<sup>2</sup> is used in Equation 3.15 if the actual hot spot area is less than 1 m<sup>2</sup>. The average radionuclide concentrations for any 100-m<sup>2</sup> area must always comply with the homogeneous release criterion, irrespective of hot spot criteria.

For general field applications, it is recommended that the ranges of hot spot multiplication factors provided in Table 3.2 be used. The hot spot guideline for radionuclide 1 is calculated for each specific site by Equation 3.16. The term  $G_1(\tau_m)$  in Equation 3.16 can be substituted by  $G_1$ , the authorized limit at a specific site for the 1<sup>th</sup> principal radionuclide.

TABLE 3 2 Ranges for Hot Spot  
Multiplication Factors

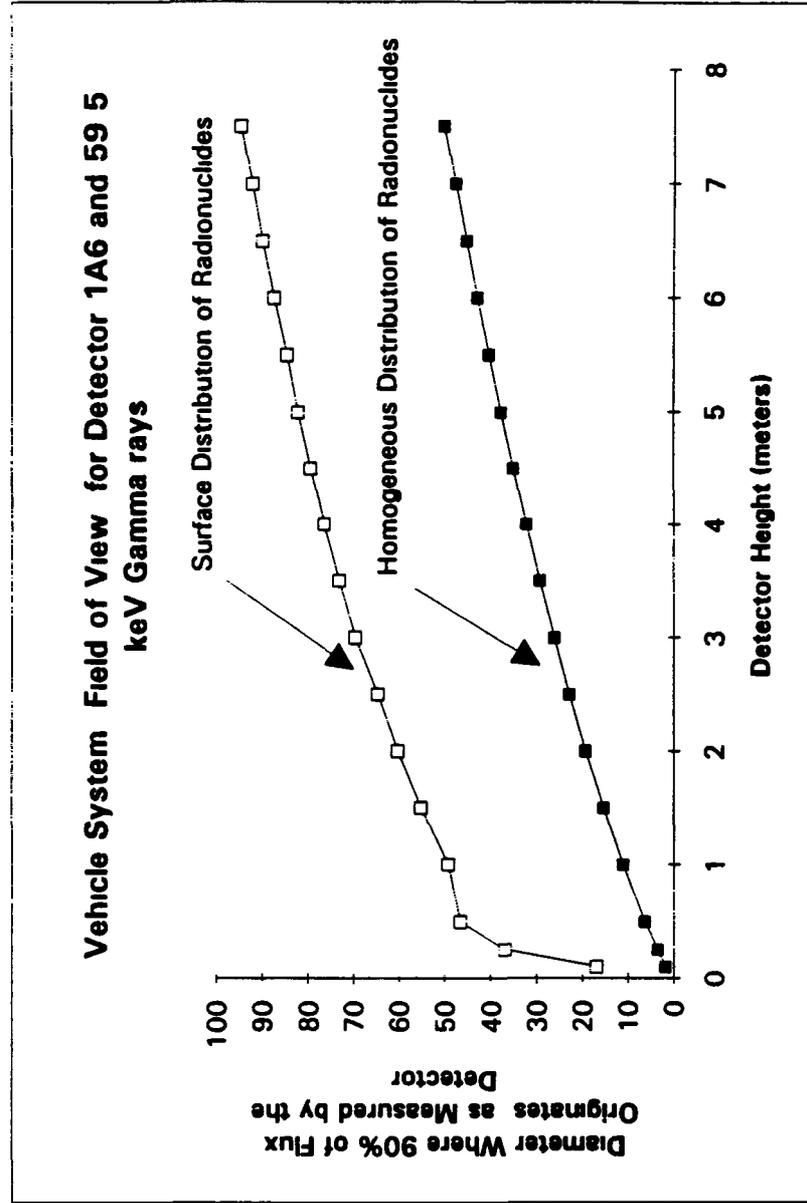
Range	Factor (multiple of authorized limit)
<1 m <sup>2</sup>	10 <sup>a</sup>
1 - <3 m <sup>2</sup>	6
3 - <10 m <sup>2</sup>	3
10 - 25 m <sup>2</sup>	2

<sup>a</sup>Areas less than 1 m<sup>2</sup> are to be averaged over a 1 m<sup>2</sup> area, and that average shall not exceed 10 times the authorized limit

The authorized limit is considered adequate to protect the public for areas larger than 25 m<sup>2</sup> hence no special hot spot limits are required for areas larger than 25 m<sup>2</sup> Averaging of hot spots less than or equal to 25 m<sup>2</sup> shall be done only over the local hot spot area

Every reasonable effort shall be made to identify and remove any source that has a radionuclide concentration exceeding 30 times the authorized limit, irrespective of area

Detector Height (m)	Diameter Field of View (meters)	
	Homogeneous	Surface
0.1	1.8	16.9
0.25	3.6	36.8
0.5	6.3	46.6
1	11.1	49.3
1.5	15.3	55.2
2	19.2	60.3
2.5	22.7	64.6
3	26	69.5
3.5	29.2	73
4	32.2	76.4
4.5	35	79.4
5	37.7	82.2
5.5	40.3	84.6
6	42.8	87.4
6.5	45.3	89.9
7	47.7	92.1
7.5	50.1	94.5



## Distributed Source Minimum Detectable Activity

