

Screen # 07-020

Facility Name: TMI-2 ISFSI Change No.: 318936
Activity Description: SPR-173, "CPP-1774 Efflorescence Sampling (ESP-032-07)", Revision 0 is being issued to document the characterization plan for non-invasive sampling of efflorescence on the exterior surfaces of the HSMs to determine chemical constituency.

Use of this form must be in accordance with MCP-2925. Sufficient activity description, justifications, and documents reviewed must be provided to permit an independent reviewer to reach the same conclusions. The discussions in Appendix A should be used to develop any justifications documented below.

1. License Condition or Technical Specification: (Complete this section for all Part 72 screens.)
- 1a. Does the activity require any change, even editorial, to the license or technical specifications? Yes No
- 1b. Does the activity require an exemption to any NRC regulations? Yes No
- 1c. Is the activity a change to or require a change to FSV SAR Section 7.7, 9.3, or Chapter 11 or TMI-2 SAR Section 7.6, 9.3, or Chapter 11? Yes No

Justification: SPR-173 only characterizes efflorescence sampling. Such sampling is independent of the REMP or any Technical Specification surveillance requirements.

Documents Reviewed: TMI-2 ISFSI license, Technical Specifications, and Safety Analysis Report.

If the answer to 1a or 1b is "Yes" the activity may not be implemented until NRC approval is obtained. If the answer to 1c is "Yes" a **72.44 Evaluation** in accordance with MCP-2925 is required before the activity may be completed.

2. Facility Change: If the activity is a physical change (addition, modification, or removal) within a facility or to any equipment or structure, or to any design document (drawing, calculation, analysis, specification, design input or assumption, etc.), then complete this section. Also complete this section for changes to the SAR. Otherwise indicate **N/A** at the end of this section.
- 2a. Does the activity adversely affect a design function of equipment or structures described in the SAR or TS Bases? Yes No
- 2b. Does the activity adversely affect a method of performing or controlling a design function of equipment or structures described in the SAR or TS Bases? Yes No
- 2c. Does the activity adversely affect an evaluation which demonstrates the design functions of equipment or structures described in the SAR or TS Bases? Yes No
- 2d. Does the activity result in a change to the Technical Specification Bases? Yes No

Justification (include effects **N/A** that are not adverse):

Documents Reviewed: N/A

If any answer in Section 2 is "Yes" then a **72.48 Evaluation** in accordance with MCP-2925 is required before the activity may be completed.

3. Procedure Change: If the activity is a change to facility operation, maintenance, transport, test, or experiment procedures, then complete this section. Also complete this section for changes to the SAR. Otherwise indicate **N/A** at the end of this section.
- Is the activity a modification to, addition to, or removal from any procedure that adversely affects the operation and control of equipment or structures as described in the SAR or TS Bases? Yes No

Justification (include effects SPR-173 only characterizes efflorescence sampling. Such sampling is independent of the REMP or any Technical Specification surveillance requirements.)

Documents Reviewed: TMI-2 ISFSI license, Technical Specifications, and Safety Analysis Report.

If this answer is "Yes" then a **72.48 Evaluation** in accordance with MCP-2925 is required before the activity can be completed.

Conclusion:

If all the questions on this form are answered NO, then the signatures on this form will complete the 10 CFR Part 72 regulatory screen and the activity may proceed.

Assumptions & Limitations:

Any change to the efflorescence sampling technique will require a revision to SPR-173 and subsequent rescreening of the activity.

APPROVALS

R. L. Gardner

Complete By Trained Screener
Print/Type Name

Trained Screener
Signature

Date

G. G. Hall

Independent Review By Qualified 72.48 Screener
Print/Type Name

Qualified Screener
Signature

Date

DOCUMENT MANAGEMENT
Document Revision Form (DRF) Rev. 2

1. Action: Create Revise Cancel Suspend Document: SPR-173 Rev: NEW Change #: 318936
Document Title: CPP-1774 Efflorescence Sampling (ESP-032-07)

S No.:	Requester: Andersen, Travis	Phone: 208 526-	MS:	E-mail:
2.104273	Rex	1665	4110	Travis.Andersen@icp.doe.go

3. Proposed Scope:

Item	Page/Section	Description	Justification
1	New	Create sampling procedure for CPP-1774 efflorescence process.	New sampling job.

4. Is this a minor revision? No Yes (If yes, proceed to block 6, no review is required.)
Include a list of reviewers and review comments and resolutions with this form or have reviewers sign below.

SNumber	Reviewer's Name	Required Review	Discipline	Signature	Date
032302	Arrowood, John R	Y	Esh & Qa	John Arrowood, per RRF	08/02/07
065713	Copeland, Donna F	N	Environmental Services	Donna Copeland - per email	08/02/07
056896	Davis, A Craig	N	Iao Es&H Intec	Craig Davis - per email	08/02/07
103727	French, Fredric J	N	Iao Es&H Intec	Fredric French - per RRF	08/02/07
047694	Gardner, Rick L	N	Isfsi	Rick Gardner - per email	08/02/07
072037	Hall, Gregory G	N	Isfsi	Gregory Hall - per email	08/02/07
049899	Makey, Glenn N Nancy G Jones	N	Environmental, Safety & Health	Glenn Jones - per email	08/02/07
079277	McCollum, Robyn	Y	Environmental And Regulatory Services	Robyn McCollum - per RRF	08/02/07
086992	Porter, Sarah A	Y	Bea/Amwtp/Intec	Sarah Porter - per email	08/02/07
033563	Smith, Nathan B	Y	Engineering Analysis & Modelin	Nathan Smith - per RRF	08/02/07
052450	Stalnaker, James L	Y	Isfsi	Jim Stalnaker - per RRF	08/02/07
035472	Standfield, Larry	Y	Isfsi No Response	U/HIS Discipline covered. TA 08/02/07	08/02/07
054686	Swenson, Kirk B	Y	Quality Assurance	Kirk Swenson - per RRF	08/02/07

5. Is a validation review required? NO YES

6. Unreviewed Safety Questions (USQs): For additional information see the ICP Nuclear Safety Web Site

(Completed forms must be included with the DRF package).

Attach completed USQ Process Applicability Form 431.62A.

Attach, if applicable, completed USQ Proposed Change Form 431.62.

7. Charge Number:	Desired Effective Date:	New Revision:	Project Number:	Periodic Review Frequency
P109782T5	8/02/07	0	ESP-032-07	<input type="checkbox"/> NA <input checked="" type="checkbox"/> 5 years <input checked="" type="checkbox"/> 1 year <input type="checkbox"/> Other

Document Owner Final Approval: **Approval signifies authorization for release in accordance with MCP-135.** (Changes in addition to those identified on the DRF, if applicable, have been approved during the review process. See document's DRF package for the record of changes.) *Bev telecom*

Copeland, Donna Faye

per telecom

Document Owner Printed Name

Document Owner Signature

Date

8.

Drawing Checker & Date

DRSC Location:

9. Comments:

[eMail the DRF](#)
MCP-135

DOCUMENT MANAGEMENT
Document Revision Form (DRF) Rev. 2

[What's New](#) [Print DRF](#) [View/Print DRF Package](#)
[Save & Close](#)

1. Type of action: <input checked="" type="checkbox"/> Create <input type="checkbox"/> Revise <input type="checkbox"/> Cancel <input type="checkbox"/> Suspend		Document ID: SPR-173		Rev.: NEW	Change No.: 318936		
Document Title: CPP-1774 Efflorescence Sampling (ESP-032-07)							
2. S No.: 104273 Requester: Andersen, Travis Rex Phone: 208 526-1665 MS: 4110 E-mail: Travis.Andersen@icp.doe.go							
3. Proposed Scope: <input checked="" type="checkbox"/>							
Item	Page No./Section	Description	Attached File	Justification		Date	Delete
<input checked="" type="checkbox"/> Add Item							
Edit	New	Create sampling procedure for CPP-1774 efflorescence process.		New sampling job.		27-JUL-07	<input checked="" type="checkbox"/> Delete
4. Is this a minor revision? <input checked="" type="checkbox"/> <input type="checkbox"/> No <input type="checkbox"/> Yes (If yes, proceed to block 6, no review is required.)							
4A. List of reviewers. <input checked="" type="checkbox"/> Current Review #: 2 ended on 07/31/2007. <input checked="" type="checkbox"/> New Review							
	Reviewer's Name	RRR	Comments Received	Comments Accepted	Discipline	Signature	Date
<input checked="" type="checkbox"/> Add Reviewer							
	Arrowood, John R	Y	1	1	Esh & Qa		
	Copeland, Donna F	N	1	1	Environmental Services		
	Davis, A Craig	N	1	0	Iao Es&H Intec		
	French, Fredric J	N	1	1	Iao Es&H Intec		
	Gardner, Rick L	N	8	8	lsfsi		
	Hall, Gregory G	N	3	3	lsfsi		
	Makey, Nancy G	N	1	1	Environmental, Safety & Health		
	McCollum, Robyn	Y	1	1	Environmental And Regulatory Services		Required for all major revisions.
	Porter, Sarah A	Y	1	1	Bea/Amwtp/Intec		
	Smith, Nathan B	Y	1	1	Engineering Analysis & Modelin		
	Stalnaker, James L	Y	1	1	lsfsi		
	Standfield, Larry	Y	0	0	lsfsi		
	Swenson, Kirk B	Y	3	2	Quality Assurance		Required for all major revisions.
Self Selected							

Reviewers					
Jones, Glenn H	2	2	Iao Es&H Intec		
4B. Attached Documents to be Reviewed					
Review Draft or Supporting Info.	Description	Date Added	Original File	PDF File	
<input type="button" value="Add Document"/>					
DRAFT		26-JUL-07	/drf/DRAFT_318936_2_2.doc	/drf/xmlin2/DRAFT_318936_2_2.pdf	
4C. List of resolvers.					
Resolver's Name	Discipline				
Enter Resolvers SNumber:	<input type="text"/>	<input type="button" value="Add"/>			
Andersen, Travis R	Regulatory Compliance - Environmental				
<input type="button" value="View Comments and Resolutions"/>					
5. Is a validation review required? <input checked="" type="checkbox"/> <input type="radio"/> NO <input type="radio"/> YES If Yes, <input type="button" value="Complete and attach form"/>					
6. Unreviewed Safety Questions (USQs): For additional information see the ICP Nuclear Safety Web Site					
(Completed forms may be attached below, or included with the DRF package).					
Attached USQ Process Applicability Form 431.62A.: 431_62A_318936_1_0.pdf <input type="button" value="Delete"/>					
Attached USQ Proposed Change Form 431.62.: 431_62_318936_1_0.pdf <input type="button" value="Delete"/>					
7. Add Final Document(s) Date Added Original File					
FINAL 02-AUG-07 /drf/FINAL_318936_2_0.doc <input type="button" value="Delete"/>					
7A. Charge Number:	Desired effective date:	New Revision:	Project Number:	Periodic Review Frequency	
<input type="text" value="P109782T5"/>	<input type="text" value="08/06/2007"/> <input type="button" value="Calendar"/>	<input type="text" value="0"/>	<input type="text" value="ESP-032-07"/>	<input type="radio"/> NA <input type="radio"/> 5 years <input checked="" type="radio"/> 1 year <input type="radio"/> Other <input type="text"/>	
7B. Document Owner Final Approval: Approval signifies authorization for release in accordance with MCP-135. (Changes in addition to those identified on the DRF, if applicable, have been approved during the review process. See document's DRF package for the record of changes.)					
Copeland, Donna Faye			<input type="button" value="Submit to Owner"/>	<input type="button" value="View/Print DRF Package"/>	
Document Owner Printed Name			Document Owner Signature		Date

8.	Pick the appropriate Document and Records Service Center	
Drawing Checker & Date	DRSC Location:	APPROVAL
9. Comments:	edit	

DRF Number : 318936	Review No.	Reviewer	Discipline	Comments
to Create SPR-173 Revision NEW CPP-1774 Efflorescence Sampling (ESP-032-07)	All	All Reviewers	All Disciplines	All Comments

Review number: 1	Review End Date: 07/23/2007	SPR-173 draft review	Original File	PDF File:
Comment 7127-2:	SPR-173 draft review		Section #: General	
page 8 my phone number is 6-4463, Page 18 Do all workers need Aerial and scissor lift operator training.		Submitted by: Neitzel, Eddie Craig representing RADIOLOGICAL PROGRAM SUPPORT on 07/16/2007		
Resolution:	Resolved By:	Acceptance Due by:	Accepted/Rejected:	
Aligned phone numbers to correct contacts in table 2-1.	Andersen, Travis Rex on 07/25/2007	07/26/2007	Past Due	
Comment 7127-3:	SPR-173 draft review		Section #: General	
No comment.	Submitted by: McCollum, Robyn representing ENVIRONMENTAL AND REGULATORY SERVICES on 07/17/2007			
Resolution:	Resolved By:	Acceptance Due by:	Accepted/Rejected:	
NA	Andersen, Travis Rex on 07/19/2007	07/24/2007	ACCEPTED	
Comment 7127-4:	SPR-173 draft review		Section #: General	
No comment.	Submitted by: Gardner, Ricky Lane representing ISFSI on 07/18/2007			
Resolution:	Resolved By:	Acceptance Due by:	Accepted/Rejected:	
NA	Andersen, Travis Rex on 07/19/2007	07/24/2007	ACCEPTED	
Comment 7127-15:	SPR-173 draft review		Section #: General	
No comment.	Submitted by: Stainaker, James Lee representing ISFSI on 07/23/2007			
Resolution:	Resolved By:	Acceptance Due by:	Accepted/Rejected:	
NA			Not Required	

Comment 7127-16:	SPR-173 draft review	Section #: General
The Hazard Screening Checklist identifies pinch points and overhead obstructions as hazards, but these do not seem to be reflected by the JSA. Please add these hazards and their mitigations to the appropriate job steps.		Submitted by: French, Fredric James representing IAO ES%21H INTEC on 07/23/2007
Resolution:	Resolved By:	Acceptance Due by: Accepted/Rejected:
The hazards and their mitigations were added to the JSA.	Andersen, Travis Rex on 07/24/2007	07/25/2007 Past Due
Comment 7127-18: SPR-173 draft review		Section #: General
In at least a couple of places a statement is made that the origin of the concrete is unknown and very little information is known about it. There was an extensive document package put together on the HSMs including the concrete. Certainly that should contain some of the data these statements are talking about.		Submitted by: Swenson, Kirk Barney representing QUALITY ASSURANCE on 07/23/2007
Resolution:	Resolved By:	Acceptance Due by: Accepted/Rejected:
I contacted Nathan Smith about this document package. Will wait for his direction. Per Nathan's response, the makeup of the efflorescence material is still unknown and will need to be characterized. Since the origin of the concrete is known, I will amend these statements from questioning the origin of the concrete to origin of the efflorescence material.	Andersen, Travis Rex on 07/24/2007	07/25/2007 ACCEPTED
Comment 7127-5: SPR-173 draft review		Section #: 1.1
Editorial - Section 1.1 consistent referral to QAPJP, all upper case as used in Section 1.2.		Submitted by: Smith, Nathan Burnette representing ENGINEERING ANALYSIS % 21 MODELIN on 07/18/2007
Resolution:	Resolved By:	Acceptance Due by: Accepted/Rejected:
Deleted lower-case j in the acronym "QAPjP" in Sec. 1.1 and 1.2. Now reads, "QAPP."	Andersen, Travis Rex on 07/19/2007	07/24/2007 ACCEPTED
Comment 7127-9: SPR-173 draft review		Section #: 3.7
to clarify the strategy, please amend 4th sentence to: "Per project direction, efflorescence will be collected from the most accessible HSMs; this approach is defensible because 1) not all HSMs exhibit efflorescence or are not easily accessible and 2) there is no reason to suspect any variation within the entire population - the origin of the concrete		

for all HSMs is the same. It is recommended that a minimum of 10-20% (3-6 sample locations) of the overall population of 30 HSMs be included in the sample composite.

Please correct grammar in last sentence.

Submitted by: Copeland, Donna Faye representing ENVIRONMENTAL SERVICES on 07/19/2007

Resolution:	Resolved By:	Acceptance Due by:	Accepted/Rejected:
Amended the 4th sentence and corrected the grammar in last sentence.	Andersen, Travis Rex on 07/25/2007	07/26/2007	Past Due

Comment 7127-10:	SPR-173 draft review	Section #: 4.1.2
change "that every deposit area present" to "that a minimum of 10-20% of the overall"		Submitted by: Copeland, Donna Faye representing ENVIRONMENTAL SERVICES on 07/19/2007

Resolution:	Resolved By:	Acceptance Due by:	Accepted/Rejected:
Inserted change.	Andersen, Travis Rex on 07/25/2007	07/26/2007	Past Due

Comment 7127-11:	SPR-173 draft review	Section #: 4.1.2
para 3 - delete "in the work order"		
para 4 - delete para.		Submitted by: Copeland, Donna Faye representing ENVIRONMENTAL SERVICES on 07/19/2007

Resolution:	Resolved By:	Acceptance Due by:	Accepted/Rejected:
Made deletions.	Andersen, Travis Rex on 07/25/2007	07/26/2007	Past Due

Comment 7127-6:	SPR-173 draft review	Section #: 4.1.7
Editorial entry 2 - delete period after "logbook"		Submitted by: Smith, Nathan Burnette representing ENGINEERING ANALYSIS %21 MODELIN on 07/18/2007
Deleted period after logbook.		

Comment 7127-7:	SPR-173 draft review	Section #: 4.1.7
item 9 replace "paint" with "material" or equivalent		Submitted by: Smith, Nathan Burnette representing ENGINEERING ANALYSIS %21 MODELIN on 07/18/2007
Resolution:	Resolved By:	Acceptance Due by: Accepted/Rejected:
Replaced the word "paint" with "material."		Andersen, Travis Rex on 07/23/2007 07/24/2007 ACCEPTED
Comment 7127-12:	SPR-173 draft review	Section #: 4.1.7
edit throughout		
lead-in para - change "room" to "reason"		
step 1 - put the hazard review board sentence before the prejob. if applicable, it has to be done before or as part of.		
step 4 - add a 2nd sentence. It is recommended that 10-20% (3 to 6 locations) be collected, if possible. Add to last sentence, "If so, the Project Manager...."		
step 6 - Add to end. Take care not to disturb (include in sample material) the underlying concrete.		
step 7 - add "single" in front of "compositing". Add an "r" to "Ensue".		
step 9 - change "tarred" to "tared". Delete "paint". Add at end of sentence (regular and duplicate/split).		
On the sentence right after step 11, put "if feasible", after "container". I'm not sure that we can really write a sample location on the HSM.		
Step 11- delete 162 reference - it was cancelled.		Submitted by: Copeland, Donna Faye representing ENVIRONMENTAL SERVICES on 07/19/2007
Resolution:	Resolved By:	Acceptance Due by: Accepted/Rejected:
Made changes, completed deletions, and added wording.	Andersen, Travis Rex on 07/25/2007	07/26/2007 Past Due
Comment 7127-8:	SPR-173 draft review	Section #: FOREWORD
check "Conrol" in Foreword		Submitted by: Copeland, Donna Faye representing ENVIRONMENTAL SERVICES on 07/19/2007

Resolution:	Resolved By:	Acceptance Due by:	Accepted/Rejected:
added the letter "t"	Andersen, Travis Rex on 07/25/2007	07/26/2007	Past Due
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Comment 7127-13:	SPR-173 draft review		Section #: JSA
step 3 - check "hard had"	Submitted by: Copeland, Donna Faye representing ENVIRONMENTAL SERVICES on 07/19/2007		
Resolution:	Resolved By:	Acceptance Due by:	Accepted/Rejected:
changed "had" to "hat"	Andersen, Travis Rex on 07/25/2007	07/26/2007	Past Due
<hr/>			
Comment 7127-14:	SPR-173 draft review		Section #: JSA 4E (PG. 18)
This section includes two hazards and two mitigation sets. Split heat stress out and make it consistent with section 1b.	Submitted by: French, Fredric James representing IAO ES%21H INTEC on 07/23/2007		
Resolution:	Resolved By:	Acceptance Due by:	Accepted/Rejected:
Removed heat stress hazard and its mitigation from the JSA under step 4. This hazard was covered under step 1b.	Andersen, Travis Rex on 07/23/2007	07/24/2007	ACCEPTED
<hr/>			
Comment 7127-17:	SPR-173 draft review		Section #: TABLE 2-1
Change my phone number to 526-4482.	Submitted by: Swenson, Kirk Barney representing QUALITY ASSURANCE on 07/23/2007		
Resolution:	Resolved By:	Acceptance Due by:	Accepted/Rejected:
Made change.	Andersen, Travis Rex on 07/23/2007	07/24/2007	ACCEPTED
<hr/>			
Comment 7127-1:	SPR-173 draft review		Appendix #: B
legend at end of form of appendix B is not included.	Submitted by: Smith, Nathan Burnette representing ENGINEERING ANALYSIS %21 MODELIN on 07/16/2007		
Resolution:	Resolved By:	Acceptance Due by:	Accepted/Rejected:

Once SAP table is complete and made available by SAM, it will be included with this plan.	Andersen, Travis Rex on 07/23/2007	07/24/2007	ACCEPTED
<hr/>			
Comment 7127-19: SPR-173 draft review			Appendix #: B
Items 165 and 166 would seem to be applicable and should be marked on the checklist.			
Submitted by: Swenson, Kirk Barney representing QUALITY ASSURANCE on 07/23/2007			
Resolution:	Resolved By:	Acceptance Due by:	Accepted/Rejected:
Items were marked on the checklist. Appropriate hazard description and its mitigations were added to the JSA.	Andersen, Travis Rex on 07/23/2007	07/24/2007	ACCEPTED
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Review number: 2

Review End Date: 07/31/2007

Reviewed Draft

Original File

PDF File:

Comment 7244-1: /icp_d/drft/DRAFT_318936_2_2.doc		Section #: General	
I have already done the preissuance and 1st draft reviews. Travis confirmed comments were incorporated, so no additional review will be performed.	Submitted by: Copeland, Donna Faye representing ENVIRONMENTAL SERVICES on 07/26/2007		
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Resolution:	Resolved By:	Acceptance Due by:	
NA	Andersen, Travis Rex on 07/26/2007	07/31/2007	ACCEPTED
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Comment 7244-2: /icp_d/drft/DRAFT_318936_2_2.doc		Section #: General	
No comment.	Submitted by: French, Fredric James representing IAO ES%21H INTEC on 07/26/2007		
Resolution:	Resolved By:	Acceptance Due by:	
NA			Not Required
<hr/>			
Comment 7244-3: /icp_d/drft/DRAFT_318936_2_2.doc		Section #: General	
No comment.	Submitted by: Porter, Sarah Anne representing BEA/AMWTP/INTEC on 07/26/2007		
Resolution:	Resolved By:	Acceptance Due by:	
NA			Not Required
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Comment 7244-12:	/icp_d/drft/DRAFT_318936_2_2.doc	Section #: General
No comment.		Submitted by: Smith, Nathan Burnette representing ENGINEERING ANALYSIS %21 MODELIN on 07/26/2007
Resolution:	Resolved By:	Acceptance Due by: Accepted/Rejected:
NA		Not Required
Comment 7244-13:	/icp_d/drft/DRAFT_318936_2_2.doc	Section #: General
In section 2 under assignments, the fire protection engineer should be Glenn Jones as he is the fire protection engineer for IAO.		Submitted by: Makey, Nancy Gay representing ENVIRONMENTAL, SAFETY %21 HEALTH on 07/26/2007
Resolution:	Resolved By:	Acceptance Due by: Accepted/Rejected:
Made change	Andersen, Travis Rex on 07/26/2007	07/30/2007 ACCEPTED
Comment 7244-16:	/icp_d/drft/DRAFT_318936_2_2.doc	Section #: General
No comment.		Submitted by: McCollum, Robyn representing ENVIRONMENTAL AND REGULATORY SERVICES on 07/26/2007
Resolution:	Resolved By:	Acceptance Due by: Accepted/Rejected:
NA		Not Required
Comment 7244-17:	/icp_d/drft/DRAFT_318936_2_2.doc	Section #: General
No comment.		Submitted by: Arrowood, John Ross III representing ESH %21 QA on 07/30/2007
Resolution:	Resolved By:	Acceptance Due by: Accepted/Rejected:
NA		Not Required
Comment 7244-18:	/icp_d/drft/DRAFT_318936_2_2.doc	Section #: General
No comment.		Submitted by: Stalnaker, James Lee representing ISFSI on 07/30/2007
Resolution:	Resolved By:	Acceptance Due by: Accepted/Rejected:

NA			Not Required
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Comment 7244-19:	/icp_d/drft/DRAFT_318936_2_2.doc	Section #: General	
Appendix A - Lifting hazard mitigation. Statement as written is incorrect. Look at section 10 for the correct response. It should read 50 lb or 1/3 body weight (which ever is less). In other words a 210 lb man would not be allowed to lift 70 lbs.			
Resolution:	Resolved By:	Acceptance Due by:	Accepted/Rejected:
Added phrase: "(Whichever is less)" to step 2b. of the JSA.	Andersen, Travis Rex on 08/01/2007	08/02/2007	Past Due
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Comment 7244-23:	/icp_d/drft/DRAFT_318936_2_2.doc	Section #: General	
Can a more updated figure be used for figure 1.1-1? One without the terms ICPP, INEL, and INEEL.		Submitted by: Swenson, Kirk Barney representing QUALITY ASSURANCE on 07/31/2007	
Resolution:	Resolved By:	Acceptance Due by:	Accepted/Rejected:
Possibly. I am unaware of any current map of CPP-1774. In all of my EDMS searching, this map was the most detailed in showing where CPP-1774 is located inside the INTEC.	Andersen, Travis Rex on 08/01/2007	08/02/2007	ACCEPTED
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Comment 7244-24:	/icp_d/drft/DRAFT_318936_2_2.doc	Section #: General	
Correct the Table of Contents for everything beyond Appendix B.		Submitted by: Swenson, Kirk Barney representing QUALITY ASSURANCE on 07/31/2007	
Resolution:	Resolved By:	Acceptance Due by:	Accepted/Rejected:
Plan contains sections 1-6. Deleted sections 7,8,9,10,11,12,15 from the TOC. Tech. Editor Cyndi Likes made corrections to the page numbers in TOC and throughout document.	Andersen, Travis Rex on 07/31/2007	07/31/2007	Past Due
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Comment 7244-25:	/icp_d/drft/DRAFT_318936_2_2.doc	Section #: General	
Correct the page numbering from Appendix A through the end of the document.		Submitted by: Swenson, Kirk Barney representing QUALITY ASSURANCE on 07/31/2007	
Resolution:	Resolved By:	Acceptance Due by:	Accepted/Rejected:

Editor Cyndi Likes made corrections to the page numbers in TOC and throughout document.	Andersen, Travis Rex on 08/01/2007	08/02/2007	ACCEPTED
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Comment 7244-4: /icp_d/drif/DRAFT_318936_2_2.doc	Section #: 1.1		
The reference to FSV in the final sentence is outside the scope of this sampling plan. Although the statement that PLN-466 applies to both FSV and TMI-2 is true, this sampling plan does not apply to FfSV.			
Resolution:	Resolved By:	Acceptance Due by:	Accepted/Rejected:
Deleted reference to FSV. Changed sentence to read, "Plan (PLN)-466, "Quality Assurance Program Plan for ISFSI Management" governs work performed by the ISFSI Management department."	Andersen, Travis Rex on 07/26/2007	07/30/2007	ACCEPTED
Please confirm, or tailor the sentence that best describes the ISFSI Management department.			
<hr/>			
Comment 7244-6: /icp_d/drif/DRAFT_318936_2_2.doc	Section #: 1.2		
final paragraph of section, third sentence.			
Delete sentence. The facility is not a radiologically controlled area. The radiologically controlled area is inside the HSM.	Submitted by: Gardner, Ricky Lane representing ISFSI on 07/26/2007		
Resolution:	Resolved By:	Acceptance Due by:	Accepted/Rejected:
Deleted the sentence.	Andersen, Travis Rex on 07/26/2007	07/30/2007	ACCEPTED
<hr/>			
Comment 7244-20: /icp_d/drif/DRAFT_318936_2_2.doc	Section #: 1.2		
In fourth paragraph the third sentence is redundant. Recommend deleting it.			
Resolution:	Resolved By:	Acceptance Due by:	Accepted/Rejected:
Deleted Sentence. See comment 7244-6.	Andersen, Travis Rex on 08/01/2007	08/02/2007	ACCEPTED
<hr/>			
Comment 7244-14: /icp_d/drif/DRAFT_318936_2_2.doc	Section #: 2 TABLE 2-1		

ES&H Representative
Change Fire protection to read Glenn Jones 526-7554.

Submitted by: Jones, Glenn Hewlette representing IAO ES&H INTEC on 07/26/2007

Resolution:	Resolved By:	Acceptance Due by:	Accepted/Rejected:
Made the change	Andersen, Travis Rex on 08/01/2007	08/02/2007	ACCEPTED

Comment 7244-7: [icp_d/drif/DRAFT_318936_2_2.doc]	Section #: 3.5
---	----------------

suggest changing the first "Then" statement to read "further analysis will be performed to determine if damage will occur to HSMs from the efflorescence process."

also change the second "Then" statement to read "damage resulting from the efflorescence process will be discounted."

Delete the final part of the sentence that says "and further use of the HSMs may be assumed". (This sampling analysis will tell us if we should be concerned about the efflorescence...not if we should continue to use the HSM. That would be a whole different analysis.)

Submitted by: Gardner, Ricky Lane representing ISFSI on 07/26/2007

Resolution:	Resolved By:	Acceptance Due by:	Accepted/Rejected:
Made proposed changes to "if and then" statements.	Andersen, Travis Rex on 07/26/2007	07/30/2007	ACCEPTED

Comment 7244-8: [icp_d/drif/DRAFT_318936_2_2.doc]	Section #: 3.6
---	----------------

in the bulleted sentence. Delete further in the second sentence such that the sentence says "Could cause damage to the HSMs."

(At this point we don't have any evidence that there is any damage to the HSM)

If the first sentence is bulleted, should the second also be bulleted. And if you only have one bullet, why the bullet?

Submitted by: Gardner, Ricky Lane representing ISFSI on 07/26/2007

Resolution:	Resolved By:	Acceptance Due by:	Accepted/Rejected:
Deleted the word "further" in the second sentence. I removed the bullet from the first sentence and indented both sentences so they align.	Andersen, Travis Rex on 07/26/2007	07/30/2007	ACCEPTED

Comment 7244-21:	/icp_d/drft/DRAFT_318936_2_2.doc	Section #: 6
Need to add title for PLN-466.		Submitted by: Hall, Gregory Graham representing ISFSI on 07/31/2007
Resolution:	Resolved By:	Acceptance Due by: Accepted/Rejected:
Added title. See comment 7244-11.	Andersen, Travis Rex on 08/01/2007	08/02/2007 ACCEPTED
Comment 7244-22:	/icp_d/drft/DRAFT_318936_2_2.doc	Section #: 6
Need to add title for PRD-317.		Submitted by: Hall, Gregory Graham representing ISFSI on 07/31/2007
Resolution:	Resolved By:	Acceptance Due by: Accepted/Rejected:
Added title. See comment 7244-11.	Andersen, Travis Rex on 08/01/2007	08/02/2007 ACCEPTED
Comment 7244-11:	/icp_d/drft/DRAFT_318936_2_2.doc	Section #: 6.0
Add the titles to PLN-466 and PRD-317.		Submitted by: Gardner, Ricky Lane representing ISFSI on 07/26/2007
Resolution:	Resolved By:	Acceptance Due by: Accepted/Rejected:
Added titles	Andersen, Travis Rex on 07/26/2007	07/30/2007 ACCEPTED
Comment 7244-10:	/icp_d/drft/DRAFT_318936_2_2.doc	Section #: TABLE OF CONTENT
Sections 7,9,10, and 12 through 15 are lined out showing they were deleted in the document. however, the TOC still shows page numbers associated with them. Also sections 8 and 11 are not lined out but are not included int he document.		Submitted by: Gardner, Ricky Lane representing ISFSI on 07/26/2007
Resolution:	Resolved By:	Acceptance Due by: Accepted/Rejected:
Plan contains sections 1-6. Deleted sections 7,8,9,10,11,12,15 from the TOC. Tech. Editor Cyndi Likes will make corrections to the page numbers in TOC.	Andersen, Travis Rex on 07/26/2007	07/31/2007 ACCEPTED
Comment 7244-15:	/icp_d/drft/DRAFT_318936_2_2.doc	Appendix #: A
Change Fire Protection from Nancy Makey to Glenn Jones		Submitted by: Jones, Glenn Hewlette representing IAO ES&H INTEC on 07/26/2007

Resolution:	Resolved By:	Acceptance Due by:	Accepted/Rejected:
Made the change	Andersen, Travis Rex on 08/01/2007	08/02/2007	ACCEPTED
<hr/>			
Comment 7244-9: /icp_d/drft/DRAFT_318936_2_2.doc			Appendix #: C
Shouldn't something be inserted here so the reviewers can review? When will this be inserted.		Submitted by: Gardner, Ricky Lane representing ISFSI on 07/26/2007	
Resolution:	Resolved By:	Acceptance Due by:	Accepted/Rejected:
Once Darwin Grigg (SAM POC) setup TOS with the onsite lab, he will generate the SAP table that will reflect the samples we will collect along with their assigned analyses. It will be posted on the final draftand copies of the SAP table and TOS will be sent to project management personnel.	Andersen, Travis Rex on 07/26/2007	07/31/2007	ACCEPTED
<hr/>			
Comment 7244-5: /icp_d/drft/DRAFT_318936_2_2.doc			Section #:
1.2 Delete the third sentence in the last paragraph. The facility itself is not radiologically controlled, the radiologically controlled area is Inside the HSM. .		Submitted by: Gardner, Ricky Lane representing ISFSI on 07/26/2007	
Resolution:	Resolved By:	Acceptance Due by:	Accepted/Rejected:
See response to comment 7244-6.	Andersen, Travis Rex on 07/26/2007	07/31/2007	ACCEPTED
<hr/>			

Andersen, Travis R

From: Davis, A Craig
Sent: Wednesday, August 01, 2007 4:52 PM
To: Andersen, Travis R
Subject: RE: Final Version of SPR-173 (ESP-032-07)

I concur with this document as written.

From: Andersen, Travis R
Sent: Wednesday, August 01, 2007 12:39 PM
To: Stalnaker, James L; Gardner, Rick L; Smith, Nathan B; Hall, Gregory G; Arrowood, John R; Copeland, Donna F; Davis, A Craig; French, Fredric J; Jones, Glenn H; McCollum, Robyn; Porter, Sarah A; Standfield, Larry; Swenson, Kirk B
Cc: Grigg, Darwin M; Kirchner, Donna R; Langseth, Cindy K
Subject: Final Version of SPR-173 (ESP-032-07)

Thank you for your participation in the draft reviews of SPR-173. I have incorporated your comments and suggested changes into this final draft (see attachment).

Your approvals are needed by tomorrow 08/02 in order for SPR-173 to be posted onto EDMS this week. Please respond to this email with your individual approvals, or you may call me directly with your approval. Again, I will need all approvals from those of you who participated in the draft review of SPR-173 by tomorrow 08/02.

You may again look over the final draft to confirm that your comments were added. Also, I have extended the date till tomorrow 08/02, to accept comments on the DRF system.

Any question, please call.

Thanks,

Travis Andersen
526-1665

Andersen, Travis R

From: Gardner, Rick L
Sent: Wednesday, August 01, 2007 2:39 PM
To: Andersen, Travis R
Subject: RE: Final Version of SPR-173 (ESP-032-07)

Travis,

You have my approval on SPR-173.

Thanks for your help on this
Rick Gardner
TMI-2 ISFSI Manager

From: Andersen, Travis R
Sent: Wednesday, August 01, 2007 12:39 PM
To: Stalnaker, James L; Gardner, Rick L; Smith, Nathan B; Hall, Gregory G; Arrowood, John R; Copeland, Donna F; Davis, A Craig; French, Fredric J; Jones, Glenn H; McCollum, Robyn; Porter, Sarah A; Standfield, Larry; Swenson, Kirk B
Cc: Grigg, Darwin M; Kirchner, Donna R; Langseth, Cindy K
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You may again look over the final draft to confirm that your comments were added. Also, I have extended the date till tomorrow 08/02, to accept comments on the DRF system.

Any question, please call.

Thanks,

Travis Andersen
526-1665

Andersen, Travis R

From: Jones, Glenn H
Sent: Wednesday, August 01, 2007 1:32 PM
To: Andersen, Travis R
Subject: RE: Final Version of SPR-173 (ESP-032-07)

I concur. Glenn

From: Andersen, Travis R
Sent: Wednesday, August 01, 2007 12:39 PM
To: Stalnaker, James L; Gardner, Rick L; Smith, Nathan B; Hall, Gregory G; Arrowood, John R; Copeland, Donna F; Davis, A Craig; French, Fredric J; Jones, Glenn H; McCollum, Robyn; Porter, Sarah A; Standfield, Larry; Swenson, Kirk B
Cc: Grigg, Darwin M; Kirchner, Donna R; Langseth, Cindy K
Subject: Final Version of SPR-173 (ESP-032-07)

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Any question, please call.

Thanks,

Travis Andersen
526-1665

Andersen, Travis R

From: Porter, Sarah A
Sent: Wednesday, August 01, 2007 1:03 PM
To: Andersen, Travis R
Subject: RE: Final Version of SPR-173 (ESP-032-07)

Travis,

You have my approval.

Thank you,
Sarah Porter
6-9960

From: Andersen, Travis R
Sent: Wednesday, August 01, 2007 12:39 PM
To: Stalnaker, James L; Gardner, Rick L; Smith, Nathan B; Hall, Gregory G; Arrowood, John R; Copeland, Donna F; Davis, A Craig; French, Fredric J; Jones, Glenn H; McCollum, Robyn; Porter, Sarah A; Standfield, Larry; Swenson, Kirk B
Cc: Grigg, Darwin M; Kirchner, Donna R; Langseth, Cindy K
Subject: Final Version of SPR-173 (ESP-032-07)

Thank you for your participation in the draft reviews of SPR-173. I have incorporated your comments and suggested changes into this final draft (see attachment).

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You may again look over the final draft to confirm that your comments were added. Also, I have extended the date till tomorrow 08/02, to accept comments on the DRF system.

Any question, please call.

Thanks,

Travis Andersen
526-1665

Andersen, Travis R

From: Copeland, Donna F
Sent: Wednesday, August 01, 2007 2:16 PM
To: Andersen, Travis R
Subject: RE: Final Version of SPR-173 (ESP-032-07)

You may sign for me.

From: Andersen, Travis R
Sent: Wednesday, August 01, 2007 12:39 PM
To: Stalnaker, James L; Gardner, Rick L; Smith, Nathan B; Hall, Gregory G; Arrowood, John R; Copeland, Donna F; Davis, A Craig; French, Fredric J; Jones, Glenn H; McCollum, Robyn; Porter, Sarah A; Standfield, Larry; Swenson, Kirk B
Cc: Grigg, Darwin M; Kirchner, Donna R; Langseth, Cindy K
Subject: Final Version of SPR-173 (ESP-032-07)

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You may again look over the final draft to confirm that your comments were added. Also, I have extended the date till tomorrow 08/02, to accept comments on the DRF system.

Any question, please call.

Thanks,

Travis Andersen
526-1665

Andersen, Travis R

From: Hall, Gregory G
Sent: Wednesday, August 01, 2007 8:16 AM
To: Andersen, Travis R
Subject: DRF 318936, SPR-173

I'm OK with resolutions to my comments, but DRF gods won't let me accept. You may have to extend comment period to allow everyone to accept resolutions. Thanks.

Gregory G. Hall, CHP
Independent Spent Fuel Storage Installations
Idaho Cleanup Project
CH2M-WG Idaho, LLC
Idaho National Laboratory
P. O. Box 1625
Idaho Falls, ID 83415-1620
(208) 533-0380 Office
(208) 521-8612 Mobile

Document ID: SPR-173
Revision ID: 0
Effective Date:

Sampling Procedure

CPP-1774 Efflorescence Sampling (ESP-32-07)

**Idaho
Cleanup
Project**

The Idaho Cleanup Project is operated for the
U.S. Department of Energy by CH2M • WG Idaho, LLC

Idaho Cleanup Project

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Idaho Cleanup Project	Sampling Procedure	For Additional Info: http://EDMS	Effective Date:
<hr/> Change Number:			

FOREWORD

This document was prepared in accordance with Template (TEM)-104, "Model for Preparation of Characterization Plans" and Idaho Cleanup Project (ICP) Management Control Procedure (MCP)-9439, "Environmental Sampling Activities at the INL." This document meets the intent of a "characterization plan" as defined in TEM-104.

Environmental Services work activities for sampling efflorescence are covered in this plan and the attached hazards checklist and job safety analysis (JSA). This plan complies with MCP-3562, "Hazard Conrol, Identification and Analysis of Operational Activities."

Idaho Cleanup Project**CPP-1774 EFFLORESCENCE SAMPLING
ESP-032-07**Identifier: SPR-173
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FIGURES

1-1. Map of the INL Site.....Error! Bookmark not defined.

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2-1. Proposed personnel and job assignments.^aError! Bookmark not defined.

3-1. Allowable levels to oil for energy recovery.....Error! Bookmark not defined.

4-1. Bottle requirements for oil containers.Error! Bookmark not defined.

1. INTRODUCTION

This characterization plan was created for the sampling of efflorescence on the exteriors of Horizontal Storage Modules (HSM) inside CPP-1774. The plan was prepared in response to Service Authorization Form (SAF) 3851 requested by Nathan Smith. The ES tracking number assigned to this characterization project is ESP-032-07, "CPP-1774 Efflorescence Sampling."

This plan identifies the activities for the characterization project, including health and safety requirements, to perform sampling. This plan was prepared according to the requirements outlined in INL Idaho Completion Project (ICP) Management Control Procedure (MCP)-9439, "Environmental Sampling Activities at the INL," Template (TEM)-104, "Model for Preparation of Characterization Plans," and MCP-3562, "Hazard Identification, Analysis and Control of Operational Activities."

This characterization plan establishes the procedures and requirements that will be used to perform field sampling and analysis, as well as minimizing health and safety risks to persons performing sampling of efflorescence on the exteriors of HSMs inside CPP-1774. It contains information about the characterization activity, analytical and quality assurance/quality control (QA/QC) requirements, hazards involved in performing the task(s), and the specific actions and equipment that will be used to protect persons working at the task site.

1.1 Project Objectives

The objective of this activity is to provide representative characterization of efflorescence (salt crystal deposits) presumed to be non hazardous, on the exterior walls of HSMs inside CPP-1774, which originated from water seepage through concrete cracks. Efflorescence is generally some sort of water soluble calcium carbonate salt deposited by evaporation on the exterior surface of concrete. If the concrete contains sulfur, the efflorescence could be a sulfur salt, which is potentially more damaging to the reinforced steel. Sulfur creates an expansion issue in the concrete as it reacts with the steel. The origin of the concrete cannot be ascertained, so characterization is necessary. The data will be used to determine if the integrity of the concrete remains intact.

Plan (PLN)-524, "Quality Assurance Project Plan for Environmental Services Characterization Sampling" (QAPjP) governs Environmental Services (ES) work for characterization sampling performed by INL employees, subcontractors, and employees of other companies or U.S. Department of Energy (DOE) laboratories.

1.2 Site Description

The site description of the Idaho National Laboratory (INL) is provided in the QAPJP referenced in Section 1.1. Descriptions of INTEC and CPP-1774 are provided below.

The INL encompasses 2,305 km² (890 mi²) and is located approximately 55 km (34 mi) west of Idaho Falls, Idaho (see Figure 1-1). The United States Atomic Energy Commission, now the DOE, established the National Reactor Testing Station, now the INL, in 1949 as a site for building and testing nuclear facilities. At present, the INL supports the engineering and operations efforts of DOE and other federal agencies in areas of nuclear safety research, reactor development, reactor operations and training, nuclear defense materials production, waste management and technology development, and energy technology and conservation programs.

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INTEC is located in the south central portion of the INL approximately 13 km (8 mi) north of the southern INL. Operations commenced at INTEC in 1953. INTEC has historically been a uranium reprocessing facility for both defense projects and research while also acting as a storage facility for spent nuclear fuel. While reprocessing activities at INTEC were phased out in the 1990s, the facility continues to receive and store spent nuclear fuel and radioactive wastes for future disposition. CPP-1774 is sited in a two acre dedicated area within the INTEC boundaries. HSMs were constructed inside this area to provide dry storage for the Three Mile Island Unit 2 (TMI-2) core and core handling debris.

Although the facility is radiologically controlled, the material sampled is not expected to be radiologically controlled. There is no reason to suspect polychlorinated biphenyls, dioxins or furans and the material does not carry any listed waste codes. No previous sampling of efflorescence has been performed. No other activities or operations will be performed during sampling.

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Figure 1-1. Map of the INL Site.

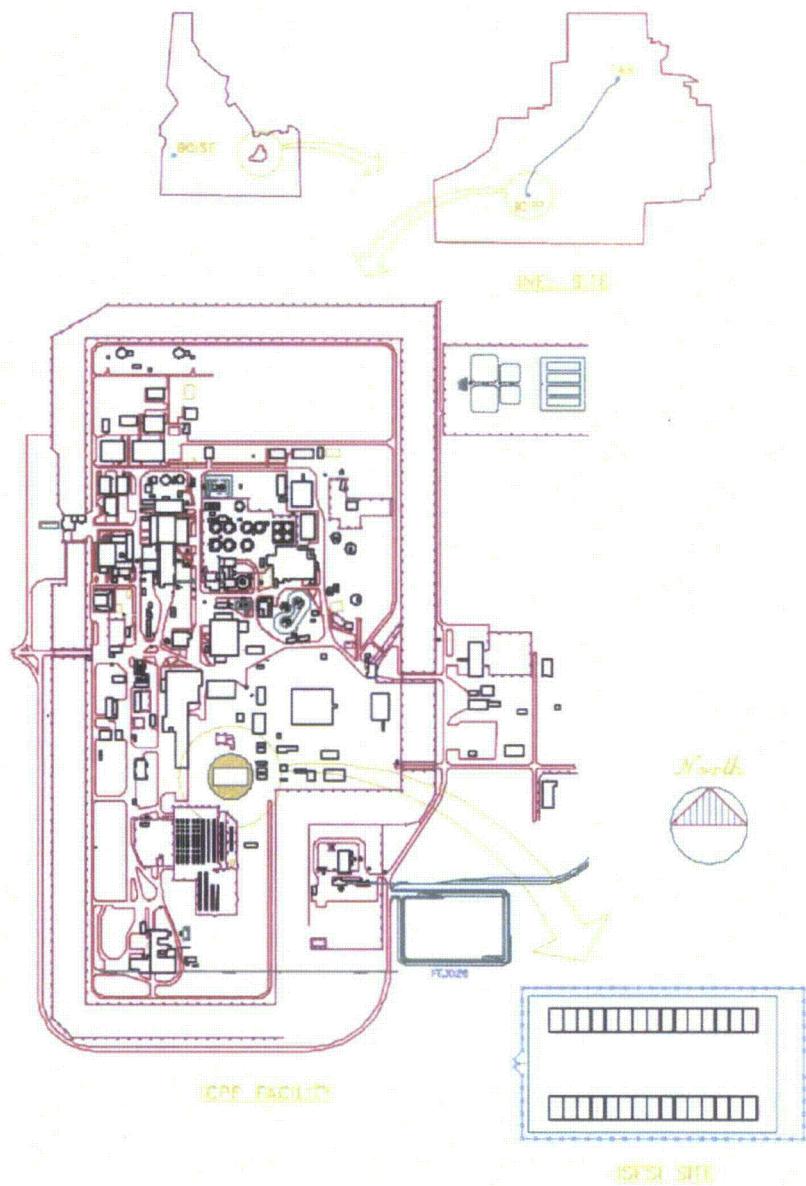


Figure 1.1-1
Location of the INEEL TMI-2 ISFSI

Idaho Cleanup Project**CPP-1774 EFFLORESCENCE SAMPLING
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Page: 8 of 40**2. PROJECT ORGANIZATION AND RESPONSIBILITIES**

MCP-9439 and PLN-524 provide the description of the resources and resource responsibilities associated with environmental sampling activities. Table 2-1 contains specific personnel assignments and contact information not identified in PLN-524.

Table 2-1. Proposed personnel and job assignments.

Assignment	Name	Phone
Environmental, Safety and Health (ES&H) Representative(s) (as applicable)	Industrial Hygienist (IH)—Craig Davis	526-4369 526-1979
	Safety—Fred French	526-4631
	Environmental—Robyn McCollum	526-4463
	RadCon—Craig Neitzel	526-4808
	Fire Protection—Nancy Makey	
Quality Assurance (QA)	Kirk Swenson	526-4897
Project Manager	Rick Gardner	533-0290
Requester	Nathan Smith	526-3873
Cognizant Facility Operations Manager	Rick Gardner	533-0290
Waste Generator Services (WGS) Waste Technical Specialist (WTS)	Sarah Porter	526-9960
Sample and Analysis Management (SAM) Technical Representative	Darwin Grigg	526-9741
Environmental Services Project (ESP) Sampling Coordinator	Donna Copeland	526-7050
Sampling Team Lead	Donna Copeland	526-7050
Plan Author	Travis Andersen	526-1665
Data Storage Administrator and Closure Report Generator	Donna Kirchner	526-9873

3. DATA QUALITY OBJECTIVES

Data quality objectives (DQOs) are qualitative and quantitative statements derived from the first six steps of the Environmental Protection Agency's (EPA) DQO process and are summarized in PLN-524.

3.1 Problem Statement

Problem Statement:

There is a need to identify the chemical composition of the efflorescence, either calcium carbonate or sulfate, which may indicate damage to the concrete of the HSMs.

The planning team and available resources members are identified in Section 2. The decision-maker for the activity is the Project Manager/Requester. The field sampling activity is to be completed by 08/30/2007. Unvalidated data is required by 09/30/2007.

3.2 Decision Statement

The objective(s) of this characterization project is to answer the following questions:

- Does the efflorescence material contain calcium carbonate or sulfur?

The alternate actions (AAs) to be taken depending on the resolution of the principal study question(s) PSQ(s) are as follows:

- If the efflorescence material contains calcium carbonate, then no damage to the concrete from the efflorescence process may be assumed.
- If the efflorescence material contains sulfur, then further study of the concrete and reinforced steel will commence to determine any structural damage.

Combining the PSQ and AAs results in the following decision statement:

- Determine the chemical composition of the efflorescence material, and develop appropriate plans for reuse or structural upgrades to the HSMs.

3.3 Decision Inputs

To resolve the decision statement, concentrations of the constituents of concern, determined using analyses conducted in accordance with approved analytical methods, must be obtained. No specific action limits for either calcium carbonate or sulfur has been communicated. If there is specific trigger concentration, project must communicate such to the performing laboratory and SAM point of contact.

3.4 Study Boundaries

Limitations on data interpretation introduced by sample collection constraints, if applicable, will be discussed in the final closure summary.

3.5 Decision Rule

Decision rules are specified in relation to a parameter that characterizes the population of interest. The parameter of interest is the true composition of the efflorescence material.

IF the true composition of the efflorescence material consists of sulfur,

THEN further analysis will be performed to determine if damaging occurred to HSMs from the efflorescence process and/or plans for structural upgrades will be developed to further the use of HSMs.

IF the true composition of the efflorescence material consists of calcium,

THEN damage resulting from efflorescence process will be discounted and further use of the HSMs may be assumed.

3.6 Decision Error Limits

There are two separate decision errors that may occur:

- Determining that the efflorescence material does not consist of sulfur, when in fact it does. Could cause further damage to the HSMs.

Or

Determining that the efflorescence material does consist of sulfur when, in fact, it does not. Could cause the HSMs to potentially receive unnecessary structural upgrades.

3.7 Design Optimization

Because the origin of the concrete is unknown, process knowledge and/or characterization data are not available for the CPP-1774 efflorescence material. The project has determined that representative samples can be collected from the exterior walls of CPP 1774 HSMs. There are 30 individual HSMs inside CPP-1774. Per project direction, efflorescence will be collected from certain HSMs into a compositing container. It should be recognized that volumes are expected to be extremely limited. In compliance with PLN-524, a minimum of two samples for each analysis are recommended. The laboratory will provide minimum sample volumes necessary to achieve defensible data. The selected design alternative is based on no expected variation between HSMs and the data use. A composite of all location will be collected to represent overall population.

4. SAMPLE COLLECTION, ANALYSIS, AND DATA MANAGEMENT

4.1 Sample Collection

4.1.1 Pre-Sampling Meeting

Before the start of each field sampling project, Environmental Services Project-assigned sampling resources prepare for the sampling activity in accordance with MCP-9228, “Managing Nonhazardous Samples,” or MCP-1394, “Managing Hazardous Samples,” and participate in applicable pre-job briefings conducted in accordance with MCP-3003, “Performing Pre-Job Briefings and Documenting Feedback.”

4.1.2 Sampling and Analysis Requirements

Table 4-1 summarizes the locations to be sampled and the analyses to be performed for this sampling activity. The strategy is based upon the project determination that there should be no chemical variation between locations – it is expected that each identified deposit area will be collected in proportionate amounts to other areas and composited into a pan or equivalent for subsequent mixing and aliquoting to individual sampling containers. Using Equation (1) in PLN-524, and the data found in statistical tables, an appropriate number of samples for characterizing the CPP-1774 HSMs can be derived. In compliance with SW-846, for the purposes of evaluating solid wastes, the probability level

Idaho Cleanup Project

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(confidence interval) of 80% has been chosen. The upper limit of the 80% confidence interval (equivalent to the 90% UCL utilized in section 3.5) is compared to appropriate regulatory levels. Table 2 of PLN-524 illustrates the parameters used to determine the number of samples for this project. The minimum and usual number of samples sets per media type is two, unless there is inadequate volume. Two data sets are needed to establish data comparability. Precision is stated in terms of relative percent difference (RPD) for two measurements. A technique for increasing sampling precision is to maximize the physical size (weight/volume) of the samples. Increasing the number of samples taken from a population also increases sample precision and accuracy. Because it is anticipated that every deposit area present will be collected, this approach is expected to yield high confidence data for the overall population of concern. Minimum volumes for the requested analyses have been provided by the performing laboratory. The completeness goal for waste characterization sampling activities is 90% for noncritical and 100% for critical samples. Any samples for waste characterization are considered critical samples unless otherwise stated.

Table 4-1. Bottle requirements for Efflorescence material inside CPP-1774.

Location	Sample Medium	Analysis Type	Volume/Bottle Construction	Holding Time/Preservation
CPP-1774	Efflorescence Material (Salt Deposits)	To be determined by SAM	10 grams	To be determined by SAM

Maximum sample holding times will be provided by SAM on the field guidance forms and are defined from the date of sample collection to the date of sample preparation or analysis. Samplers will coordinate with the analytical laboratory to ensure that samples arrive at the laboratory in order to meet holding times.

If for some reason a sample is lost, containers are broken, or the sample is in some way unusable, the sample will be retaken. Any changes to number of samples, expected approach, the analytical or QC requirements will be noted in the project-specific lognotes as these types of changes are inherent to sampling activities. So long as there are no changes to scope—increased hazards not already accounted for in the work order or significantly changing the strategy—incidental changes that occur throughout the planning process may be documented in the sample lognotes and do not require a document revision form (DRF). A field DRF can be initiated, as needed, for unexpected conditions encountered in the field. Sampling logbooks will be maintained in accordance with MCP-9227, “Environmental Services Project Logkeeping Practices.” The sampler lead or designee will ensure that any other changes to this document regarding sampling frequency, location, and/or analysis are documented in the sample logbook.

The Project Manager or Designee is responsible to ensure that a Document Revision Form (DRF) is written and approved for any presampling changes to this characterization plan.

Sampling logbook(s) will be maintained in accordance with MCP-9227, “Environmental Services Project Logkeeping Practices.”

4.1.3 Sampling Equipment and Documentation

The following equipment and supplies will be used for sampling at the task site. Additional required equipment used at the task site may be specified in the sampling logbook.

- Sampling logbook
- Scraper/Wire Brush (New or Decontaminated)

- Compositing container
- Laboratory contract
- Address labels
- Final plan
- Chain of custody (COC) form
- Nonphosphate detergent
- Absorbent towels
- Deionized water
- Blue ice
- Cooler(s)
- Scale
- Adhesive tape (clear, duct, and strapping)
- Aluminum foil
- Pens and markers
- Appropriate sample containers per field guidance forms and sample labels
- Custody seals
- Field guidance forms
- Personal protective equipment, as required and included in the job safety analysis (JSA) (Appendix A).

4.1.4 Field Equipment Calibration and Set-Up

The radiological control technician (RCT) is responsible for measurement and evaluation of personnel and material radiological contamination. RCT instrumentation calibrations are performed per procedures in Company Manual 15D.

4.1.5 Sample Designation and Labeling

Each sample bottle will contain a label identifying the unique field sample number. Uniqueness is required for maintaining consistency and preventing the same identification code from being assigned to more than one sample. A systematic character code will be used to uniquely identify all samples. The Sample and Analysis Management (SAM) will generate a sampling table, numbers, and labels that

correlate directly to characterization sampling. Refer to Appendix C. The information on the label and label placement are as provided in MCP-9228 or MCP-1394.

4.1.6 Chain of Custody

All samples collected will be managed via chain of custody in accordance with MCP-9228 or MCP-1394.

4.1.7 Sampling Design and Procedures

Sample collection will involve obtaining a composite of the efflorescence solids on the exterior walls of HSMs inside CPP-1774, most likely using a paint scraper or other equivalent means of representative sampling. As there is no room to suspect any variation between the multiple deposit areas, the solids will be transferred directly into a compositing container for the purpose of compositing the efflorescence material into sample sets representative of the entire population of concern..

1. Attend/perform prejob brief. Confirm with facility if hazard review board is needed, and on POD.
2. Don the required PPE. If project safety representative requires additional PPE, it will be noted in the logbook., JSA Job Step 1.
3. Security personnel will escort sampling personnel into CPP-1774.
4. Visually inspect the impacted areas to determine how many locations are available and the approximate overall volume of material available for sampling. Note in logbook if any variation (color, consistency) is observed. Project Manager may request separate sample set, JSA Job Step 2
5. Maneuver aerial lift, ladder, or scissor lift to sampling location, JSA Job Step 3.
6. Use a new or decontaminated chisel, vise grips, paint nibbler, paint scraper, spackling tool, or equivalent tools to sample efflorescence material from outer surfaces of identified HSMs, JSA Job Step 4.
7. Using agreed upon strategy, place the appropriate amount of material from each designated location into a compositing container. Ensure that adequate volume for regular and split analysis has been obtained (scale), JSA Job Step 4
8. Homogenize the material.
9. Fill tarred sample bottle(s), then weigh to confirm minimum paint sample quantity for each analysis is obtained.
10. Record the gross bottle weight in the field logbook or on the sample bottle.
11. Record a drawing of the area scraped obtained in field logbook.

Note that, if the HSM(s) does not have a unique barcode or other identifier, samplers should assign and record on the container and note in the logbook for sample data traceability.

12. Decontaminate any used materials/tools, as needed, according to GDE-162, "Decontaminating Sample Equipment." No free liquids will be generated. Since all sample locations are being combined together into one composite sample split, decontaminating between locations is not required.
13. Package and transport samples to INTEC lab, unless otherwise designated.

4.1.8 Sample Transport

Samples from CPP-1774 are expected to be sent to the onsite laboratory for analysis. Prepare samples for shipment, and complete the applicable shipping papers. Package samples, and provide packages to Packaging and Transportation (P&T) shipper for transport in accordance with MCP-9228 or MCP-1394.

4.1.9 Waste Management

Wastes generated during the characterization project will include sampling equipment—personal protective equipment, wipes, and compositing container. These articles will be handled, characterized, and disposed of in accordance with the *INEEL Waste Acceptance Criteria*. WGS personnel will coordinate waste disposal activities in accordance with ICP procedures. Waste will be bagged, placed in containers, labeled, and stored in an approved storage area pending disposition. The project manager, with assistance from WGS, will prepare waste determination and disposition forms for determining the disposition routes for all waste generated during sampling and analysis.

The analytical laboratory will dispose of samples submitted to them for analyses or return them to the requester as stated in the applicable task order statement (TOS)(s). Samples returned from the laboratory will be accepted only if the original label is intact and legible. If the samples are returned, the project manager is responsible to properly disposition the samples with the assistance of WGS personnel. All waste must be characterized, and WGS personnel must preapprove disposal.

4.2 Sample Analysis

The SAM will approve the laboratory performing sample analysis. This laboratory will analyze the samples in accordance with project requirements, including:

- ER-SOW-394, "Idaho National Laboratory Sample and Analysis Management Statement of Work for Analytical Services."

Project-specific request for analyses forms or TOS(s) identify additional requirements for laboratory analysis. The following sections identify analysis requirements for the characterization project.

4.2.1 Analytical Methods

To ensure that data of acceptable quality are obtained from the characterization project, standard EPA laboratory methods or technically appropriate methods for analytical determinations will be used to obtain sample data. Analytical methods to be used for this characterization activity are identified in Table 4-2.

Table 4-2. Analytical method and method descriptions.

Analytical Method	Method Description
Sulfur	See TOS
Calcium Carbonate	See TOS

Any deviations from this information will be fully documented, and the laboratory will inform the project manager of the deviations.

4.2.2 Instrument Calibration Procedures

Laboratory instrumentation will be calibrated in accordance with the specific laboratory quality assurance plan. The SAM analytical laboratory authorization processes provide assurance that the analytical laboratories authorized to perform analysis maintain an appropriate laboratory quality assurance plan that addresses instrument calibration.

4.2.3 Laboratory Records

Laboratory records are required to be maintained in accordance with the specific laboratory quality assurance plan. The SAM analytical laboratory authorization processes provide assurance that the analytical laboratories authorized to perform analysis maintain an appropriate laboratory quality assurance plan that addresses laboratory records.

4.3 Data Management and Document Control

4.3.1 Data Reporting

A Level B, 21-day rush deliverable will be required for all data reported for this characterization project. The final data package documentation will conform to the criteria specified in ER-SOW-394. The ER SOW prepared by the SAM organization is the standard means by which analytical data deliverable requirements are defined by ICP projects to laboratories used by ICP. All laboratories used by this project will adhere to the documents used to establish technical and reporting standards.

4.3.2 Data Validation

Analytical data validation is the comparison of analytical results versus the requirements established by the analytical method. Validation involves evaluation of all sample-specific information generated from sample collection to receipt of the final data package. Data validation is used to determine whether analytical data are technically and legally defensible and reliable. The final product of the validation process is the validation report. The validation report communicates the quality and usability of the data to the decision-makers.

Since this is not waste characterization, data validation is irrelevant. It may be employed in the future.

4.3.3 Data Quality Assessment

The project data quality assessment and validation process is used to determine whether the data meet the project DQOs. Additional steps of the data quality assessment process may involve data plotting, testing for outlying data points, and other statistical analysis relative to the characterization project DQOs.

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4.3.4 Closure Report

A closure report will be prepared for this project per applicable program requirements; Donna Kirchner (6-9873) is the Environmental Services point of contact for review of data and issuance of the closure report summarizing the sampling activity and the findings. The closure report will contain a summary of all of the sample data generated during this sampling effort, and reference to the log notes, the pertinent notes to the file, the chain of custody (COC) forms, and the final sampling plan. The closure report will also describe the sample collection effort. A description of the data quality assessment process may also be included. The DQOs will be reviewed and evaluated to determine if the characterization project objectives were met.

4.3.5 Document Control

Refer to MCP-9227, "Environmental Services Project Logkeeping Practices" and MCP-9228, "Managing Nonhazardous Samples," or MCP-1394, "Managing Hazardous Samples." Document control consists of the clear identification of all project-specific documents in an orderly form, secure storage of all project information, and controlled distribution of all project information. Document control ensures controlled documents of all types related to the project will receive appropriate levels of review, comment, and revision as necessary. The project manager is responsible for properly maintaining project documents according to document control requirements. Upon completion of the characterization project, all project documentation and information will be transferred to compliant storage according to project, program, and company requirements. This information may include field logbooks, COC forms, laboratory data reports, engineering calculations and drawings, and final technical reports.

5. HEALTH AND SAFETY REQUIREMENTS

Per the requirements of MCP-3562, "Hazard Identification Analysis and Control of Operational Activities," a hazard screening checklist was completed for this characterization activity to identify all hazards associated with this project. Hazards identified on the checklist along with corresponding mitigation requirements are documented on a JSA form per MCP-3450, "Developing and Using Job Safety Analyses." The JSA is in Appendix A of this plan, and the Hazard Screening Checklist is in Appendix B. The JSA ensures that all hazards associated with sampling are identified and adequately mitigated. Sampling personnel must abide by all the health and safety requirements outlined in Appendix A. The persons identified as the Hazard Evaluation Group (HEG) through completion of this checklist, the project manager, and the facility management representative document will their concurrence with this plan/JSA through approval signatures on DRF 318936.

6. REFERENCES

ER-SOW-394, "Idaho National Laboratory Sample and Analysis Management Statement of Work for Analytical Services."

MCP-9439, "Environmental Sampling Activities at the INL."

MCP-1394, "Managing Hazardous Samples."

MCP-3003, "Performing Pre-Job Briefings and Documenting Feedback."

MCP-3450, "Developing and Using Job Safety Analyses."

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MCP-3562, "Hazard Identification Analysis and Control of Operational Activities."

MCP-9227, "Environmental Services Project Logkeeping Practices."

MCP-9228, "Managing Nonhazardous Samples."

PLN-524, "Quality Assurance Project Plan for Environmental Services Characterization Sampling".

TEM-104, "Model for Preparation of Characterization Plans."

Services Authorization Form 3851

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Job/Title CPP-1774 Efflorescence Sampling (ESP-032-07)	Effective Date <u>07/12/2007</u>
Facility/Project & Location CPP-1774	
SME APPROVAL (A "Yes" response requires a review by SME.)	
No Yes SME	No Yes SME
<input type="checkbox"/> <input checked="" type="checkbox"/> Industrial Safety	Fredric French
<input type="checkbox"/> <input checked="" type="checkbox"/> Industrial Hygiene	Craig Davis
<input type="checkbox"/> <input checked="" type="checkbox"/> Fire Protection	Nancy Makey
<input type="checkbox"/> <input checked="" type="checkbox"/> RCT/RAD Eng.	Craig Netzel
<input type="checkbox"/> <input type="checkbox"/> Other: _____	
<input type="checkbox"/> <input checked="" type="checkbox"/> Env. Protection	
<input type="checkbox"/> <input checked="" type="checkbox"/> Quality Assurance	Kirk Swenson
<input type="checkbox"/> <input checked="" type="checkbox"/> Engineering	Jim Stalnaker
<input type="checkbox"/> <input checked="" type="checkbox"/> Other: WGS Sarah Porter	
<input type="checkbox"/> <input checked="" type="checkbox"/> Other: Facility Manager Rick Gardner	
Briefly Describe The Job and Expected Result Obtain samples of the Efflorescence material on the exterior walls of Horizontal Storage Modules (HSM) inside CPP-1774.	
Required Job Training/Required Personal Protective Equipment 24 Hour Hazwoper training and current refresher -- (QLHAZ24C or QLHAZ24T or QLHAZ40C) Heat/Cold stress (SMTT0005, SMT0010). Medic First (QL000AID) One team member at a minimum. Personal Protective Equipment Training (TRN 288) Ergonomic Training (TRN 1017) or equivalency (TRN 812), or (SMTT0009). Radiological Worker I (QL00RAD) or Radiological Worker II (QL00RADII) Training as required by the applicable Radiological Work Permit if pertinent. Respiratory protection as designated by safety personnel, if required. Substantial footwear (leather upper above the ankle or safety shoes) is required for all persons entering sample area. PPE will be designated by the health and safety professionals covering this activity, or applicable Radiological Work Permit for this area. Respiratory protection may be required. Ladder Training Fall Protection Training Aerial Lift Operator Training Scissor Lift Operator Training Please note: If there is a contradiction between the PPE requirements in this JSA and an applicable RWP, then the RWP requirements take precedence and changes will be	

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logged

Additionally, the health and safety professionals covering this activity have final say in the training and PPE requirements.

Sequence Of Basic Job Steps	Potential Hazards	Hazard Control/PPE
Conduct, attend hazard review board, if required, and pre-job briefing.	a. Sampling activity is being performed inside CPP-1774	a. The job site supervisor is responsible to ensure that this activity is on the plan of the day and for conducting a hazard review board if applicable, and formal pre-job briefing with all employees involved in the job: this includes Safety/Industrial Hygiene, etc. as applicable. (See MCP-3003, Performing Pre-Job Briefing and Documenting Feedback.) Place the Pre-Job Checklist in the project files at the end of this sampling activity.
1. Don PPE.	1a. PPE donned improperly creating a potential hazard from unnecessary chemical and or radiological contact.	1a. PPE will be designated by the supporting safety professionals and likely by the RWP. If applicable, observe PPE donning procedures posted at the entrance of the designated sample area or per RCT direction and comply with RWP as applicable. Donning of PPE will be controlled administratively.
	1b. Heat/Cold stress.	1b. Stay time as required by IH. Ensure buddy system is being utilized. Personnel to monitor each other for signs and symptoms of heat stress. Follow MCP-2704, "Heat and Cold Stress." Donning of PPE will be controlled administratively.
2. Assemble sampling equipment.	2a. Tripping, falling, and slipping.	2a. Address trip, fall, and slip hazards in the pre-job briefing. Stay clear of obstructions and maintain awareness of surroundings and conditions. Keep area cleaned up to avoid slips/trips. Keep tools picked up and stored out of work area if not in use.
	2b. Ergonomic hazards (including lifting).	2b. Use appropriate tools associated with this sampling project. Be cognizant of body positioning. Take rest breaks as necessary. Ensure buddy system is being utilized. Do not lift more than 50 lbs. Or 1/3 body weight.
3. Use of ladders, aerial lifts or scissor-lifts to reach sample locations.	3a. Ladders: <ul style="list-style-type: none">• Fall from elevated locations.• Structural collapse of ladder.• Contacting overhead utilities or obstructions.	3a. Inspect ladder prior to use. Maintain three points of contact when climbing. Use ropes/buckets/etc. to move tools /equipment up and down ladders. Do not carry tools when climbing. Do not lean/work outside the safe boundaries of a ladder. Secure ladder (when feasible). Fall protection competent person evaluates need for fall protection equipment if work is performed from a ladder at heights of 6' or greater. Do not stand or sit on top of ladder. Do not lean step ladder or use as an extension ladder. Do not use stepladder to access higher levels (travel to upper floors). Wear hard hat when overhead hazards exist.

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Sequence Of Basic Job Steps	Potential Hazards	Hazard Control/PPE
	<p>3b. Aerial Lift, including scissor lift:</p> <ul style="list-style-type: none"> • Falls from elevated work platform. • Structural collapse of an elevated platform. • Contacting overhead utilities or obstructions 	3b. Wear travel restriction connected to anchorage inside lift platform.. Adjust lanyard as short as possible. Do not exit aerial lift when elevated. PM is current and pre-operational evaluation is performed. Stable/secure footing required where the aerial lift is trammed/used. Caution: Uneven surfaces. Do not exceed safe load limits. Do not climb on railing. Stand on platform with feet firmly planted when performing work.
4. A scraper and/or wire brush or equivalent will be used to collect efflorescence samples. Sample solids by collecting the material at designated sample locations. See Section 4.1.8 of this SPR. Decon or replace scraper blades as needed.	<p>4a. Tripping, falling, and slipping.</p>	4a. Address trip, fall, and slip hazards in the pre-job briefing. Stay clear of obstructions and maintain awareness of surroundings and conditions. Keep area cleaned up to avoid slips/trips. Keep tools picked up and stored out of work area if not in use.
	4b. Caught in or between objects	Stay clear of obstructions and maintain awareness of surroundings and conditions.
	4c. Exposure to potentially hazardous dusts from chipping/scraping activities.	Per IH direction
	4d. Exposure to chemical and radiation or radiological contamination due to surface chipping/scraping in a radiological controlled area.	4d. Personnel shall have Radiological Worker I or Radiological Worker II training as required in the RWP, if applicable. The safety professionals covering this activity will designate any respiratory equipment and special handling techniques (such as wetting down salt deposits with water) to minimize airborne hazards for both the radiological and chemical contaminants which may be present. The activity must be performed as efficiently as possible to minimize potential for heat stress.. A thorough prejob and discussion of responsibilities and approach will help ensure that occurs.
	4e. Ergonomic hazards – (including lifting). Heat stress may also be a hazard.	4e. Do not lift more than 50 lbs. Or 1/3 body weight. A buddy system will be used and personnel will monitor each other for signs of heat stress. Pay close attention to body positioning. Those sent into the sample area must be well and aware of the necessity for completing activities in as timely a manner as possible while ensuring quality objectives.
5. Record sampling activities in logbook. Complete sample labels (date and time) and Chain of custody forms (COCs).	No hazards.	No hazards.
6. Repeat Steps 2 through 4 until all sample locations are collected.	See individual steps.	See individual steps.

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Sequence Of Basic Job Steps	Potential Hazards	Hazard Control/PPE
7. Bag and label or defer handling of wastes generated during sampling and decon (dipper(s), wipes, pans, etc.) to RC or WGS personnel at their direction.	7a. Exposure to chemical, radiation or radiological contamination due to handling of waste material.	7a. Personnel shall have Radiological Worker I or Radiological Worker II training as required in the RWP if applicable. Contact appropriate Waste Generator Services (WGS) Waste Technical Specialist (WTS) upon waste generation.
8. Remove samples and sample equipment.	8a. Tripping, falling, and slipping.	8a. Address trip, fall, and slip hazards in the pre-job briefing. Stay clear of obstructions and maintain awareness of surroundings and conditions. Keep area cleaned up to avoid slips/trips. Keep tools picked up and stored out of work area if not in use.
	8b. Exposure to chemical, radiation or radiological contamination due to working in a Radiological Area.	8b. Personnel shall have Radiological Worker I or Radiological Worker II training as required in the RWP if applicable. Follow IH instructions for safe handling practices.
9. Exit the sample area and doff PPE.	9a. PPE doffed improperly creating a potential hazard from unnecessary chemical and or radiological contact.	9a. If applicable, observe PPE doffing and personnel survey procedures posted at the exit of the designated sample area or per RCT direction and comply with RWP as applicable.
	9b. Tripping, falling, and slipping.	9b. Address trip, fall, and slip hazards in the pre-job briefing. Stay clear of obstructions and maintain awareness of surroundings and conditions. Keep area clean to avoid slips/trips. Keep tools picked up and out of work area if not being used.
10. Package and ship samples.	10a. Back strain from lifting/lowering of heavy objects.	10a. Single person lifts will not exceed 50 pounds or 1/3 of the body weight involved (whichever is less). Use proper lifting techniques, and have two people lift each object.
11. Documents, lognotes, and other quality records – procurement of goods/services – laboratory; storing of controlled quality items; items requiring handling, storage, packaging and shipment to prevent or minimize deterioration.	11a. Loss of quality.	11a. Quality is a HEG reviewer of this document.

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Appendix B**Hazard Screening Checklist**

SCREEN 2 HAZARD PROFILE ANALYSIS	CHECK BOX IF VALID	SUBJECT MATTER EXPERT SUPPORT (see legend at end of form)							
		OPS	S	IH	RAD	ENV	ENG	FP	Other
1. The activity will involve work on any machinery with mechanical motion.	<input checked="" type="checkbox"/>		X	X			X		
2. The work activity will be performed on a system that stores energy (such as springs, batteries, capacitors, hydraulic accumulators, etc.).	<input type="checkbox"/>		X				X		
3. The work activity will require blocking of hinged or rotating equipment that could pose a pinching problem.	<input checked="" type="checkbox"/>		X				X		
4. The work activity will require the employee to work on or near unguarded operating rotating equipment or with pinch points or sharp edges (near is the distance where an individual or tool could contact the piece of equipment).	<input type="checkbox"/>		X						
5. The worker will be exposed to the danger of striking against, being struck by, or making harmful contact with an object (i.e., overhead obstructions, falling objects).	<input checked="" type="checkbox"/>		X						
6. The worker can be caught in, by, or between objects.	<input checked="" type="checkbox"/>		X						
7. The work activity will include the manual lifting of heavy objects.	<input type="checkbox"/>			X					
8. The work activity will involve hoisting and rigging or material handling.	<input type="checkbox"/>		X						
9. The hoisting and rigging will involve a non-routine critical lift.	<input type="checkbox"/>		X					X	
10. The equipment involved in the work or during transit has the potential to contact an overhead, suspended, or other pathway obstruction (i.e., overhead wires, low clearances, gates, tight turn radius, etc.).	<input checked="" type="checkbox"/>		X						
11. The activity will involve performing work where personnel or equipment can make contact with distribution system equipment or while working or passing within 50 feet of an overhead high voltage transmission line.	<input type="checkbox"/>		X						PWR

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SCREEN 2 HAZARD PROFILE ANALYSIS		CHEC K BOX IF VALID	SUBJECT MATTER EXPERT SUPPORT (see legend at end of form)							
Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other
12.	The work activity will have ergonomic hazards present (e.g., repetitive motion, excessive manual force, awkward or static postures, contact stress on body, vibration, work system not accommodating employee physical shape)	<input checked="" type="checkbox"/>			X			X		
13.	The work activity will create or occur in an area with inadequate lighting.	<input type="checkbox"/>		X						
14.	The work activity will involve an elevated work platform.	<input checked="" type="checkbox"/>		X				X		
15.	Scaffolding is required for this work activity. Work will be performed from a ladder or mobile ladder stand at a height above 6 feet.	<input type="checkbox"/>		X						
16.		<input checked="" type="checkbox"/>		X						
17.	The work is being performed on a roof.	<input type="checkbox"/>		X				X		
18.	The work activity will require access into, or work near pits, excavations, or other negative elevations greater than 6 feet for construction workers, 4 feet for operational or maintenance work.	<input type="checkbox"/>		X						
19.	An aerial lift will be used for this work activity (i.e., boatswain's chair, vehicle-mounted devices, telescopes, or articulating boom).	<input checked="" type="checkbox"/>		X						
Electrical										
20.	The work activity will involve the performance of Nondestructive Examinations (NDE)	<input type="checkbox"/>						X	QA	
21.	The work activity will involve the abandonment of a hazardous energy (electric, hydraulic, pneumatic etc.) without being disconnected (air gapped) from the source.	<input type="checkbox"/>						X		
22.	The work activity will involve electrical zero energy checks or will work be performed on a non-isolated (energized without LO/TO or clearance performed) electric circuit or equipment.	<input type="checkbox"/>		X				X		
23.	The work activity will involve non-contact electrical work (visual inspections / install insulating barriers, etc).	<input type="checkbox"/>		X				X		

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SCREEN 2 HAZARD PROFILE ANALYSIS		CHEC K BOX IF VALID	SUBJECT MATTER EXPERT SUPPORT (see legend at end of form)							
Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other
24.	The work activity involves using extension cords or cause permanent or temporary electrical conductors to be exposed to liquids (opening a liquid line where fluid may run down onto an electrical junction box, water contacting extension cords, etc.).	<input type="checkbox"/>	X							
25.	The work activity will involve replacement or work on batteries to include removing/replacing intercell connections (excluding small appliance/flashlight batteries).	<input type="checkbox"/>	X	X				X		
26.	The work activity will involve breaker and motor starter racking (insertion or removal).	<input type="checkbox"/>	X					X		
27.	The work activity will involve installation, removal, relocation, or repair of overhead lines.	<input type="checkbox"/>	X			X	X			
28.	The work activity will involve disconnecting / connecting grounded conductors or personal protective grounds.	<input type="checkbox"/>	X				X			
Excavation/Surface Penetration										
29.	The work activity will involve a surface penetration (Any digging, drilling, driving, or cutting into walls, floors, ceilings, or other surfaces, regardless of depth, where a potential for damaging underlying cables or piping exists.)	<input type="checkbox"/>	X			X				
30.	The work activity will take place on an abandoned line, system, or equipment.	<input type="checkbox"/>	X	X	X	X	X		CRIT	
31.	The soil will be disturbed to a depth greater than 6" (mechanical excavation) or 12" (hand excavation).	<input type="checkbox"/>	X			X			USQ or MOC	
32.	The work activity will involve excavation in or adjacent to a CERCLA area, an Underground Radioactive Material Area (URMA) or Soil Contamination Area (SCA).	<input type="checkbox"/>	X		X	X	X		USQ or MOC	
33.	The work activity will involve excavations, trenching, drilling, geoprobe sampling, reseeding, or any other disturbances of soil.	<input type="checkbox"/>				X				
34.	The work activity will block a road or access to a facility.	<input type="checkbox"/>	CS			X	X	X	EP	

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SCREEN 2 HAZARD PROFILE ANALYSIS		CHEC K BOX IF VALID	SUBJECT MATTER EXPERT SUPPORT (see legend at end of form)							
Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other
35.	The work activity will involve installing or relocating a temporary facility/structure.	<input type="checkbox"/>		CS	X			X	X	LSS
36.	The work activity will modify fire loading or building structures such as walls, ceiling, aisle space, floors, and doors.	<input type="checkbox"/>		CS				X	X	LSS USQ or MOC
37.	The work activity will affect the structural stability of buildings, walls, ceilings, or piping/equipment support systems.	<input type="checkbox"/>		CS				X	X	
38.	The work activity will create tripping hazards or occur in an area with an unstable surface for personnel to stand or walk on.	<input checked="" type="checkbox"/>		X					X	
39.	The work activity will be performed as fieldwork (work outside of a facility boundary area).	<input type="checkbox"/>		X				X	X	EP
40.	The work activity will be performed in an area contaminated with radiological, chemical, or other hazardous or waste constituents (excluding RCRA regulated areas), or in a CERCLA area of contamination or a Voluntary Consent Order cleanup area.	<input type="checkbox"/>		X	X	X	X	X		ER USQ or MOC
41.	The work activity will involve a heavy industrial vehicle (i.e., fork lifts, heavy vehicles designed to operate within off-highway job sites, scrapers, bulldozers, tractors) or transportation of heavy loads.	<input type="checkbox"/>		X				X	X	USQ
42.	A fossil-fueled powered industrial vehicle/motor will be used inside a facility or within 50 ft. external to an occupied building.	<input type="checkbox"/>			X				X	7. USQ
43.	There is potential to release a hazardous substance to a space in a quantity sufficient to exceed atmosphere IDLH (e.g., O ₂ deficiency, carbon monoxide, CO ₂ , release of toxic gases).	<input type="checkbox"/>			X					
44.	The work activity will involve a suspected confined space or it will potentially create a confined space, to include initially accessing areas closed for long periods.	<input type="checkbox"/>			X					
45.	The work activity will involve entry into a non-permit required confined space.	<input type="checkbox"/>		X	X				X	

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Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other
46. The work activity will involve entry into a permit required confined space.	<input type="checkbox"/>				X					
47. The work activity will involve breaking the boundary to a system operated under pressure or a vacuum.	<input type="checkbox"/>			X				X		
48. The work activity will involve a system containing flammable or combustible liquids or gases at positive pressure.	<input type="checkbox"/>			X	X			X	X	
49. The work activity will involve a system containing nonflammable gases under pressure >30 psig.	<input type="checkbox"/>			X				X	X	
50. The work activity will involve working on a > 15 psig pressurized liquid equipment/system which is capable of being isolated (excluding boilers, nonfired pressure vessels, etc).	<input type="checkbox"/>			X				X		
51. The work activity will involve a liquid system containing piping size and velocity great enough to create a potential flooding hazard if the system has a large leak.	<input type="checkbox"/>			X					X	
52. The work activity will occur in an area with potential drowning hazards.	<input type="checkbox"/>			X						EP
53. The work activity will involve working on a steam system.	<input type="checkbox"/>			X				X	X	
54. The work activity will involve working on coded (ASME, etc.) pressure vessels, systems, or relief devices.	<input type="checkbox"/>			X				X		QA
55. The work activity will involve movement or replacement of a compressed gas cylinder(s).	<input type="checkbox"/>			X	X			X	X	
56. The activity will expose workers to an extreme temperature environment or expose workers to conditions that prevent the body from maintaining proper body temperature (e.g., hot weather, outside work in the winter, wearing of PPE).	<input checked="" type="checkbox"/>	8.		X				X		
57. The work activity will involve working on or near a high temperature system greater than 125 degrees Fahrenheit (near means a potential for contacting surface).	<input type="checkbox"/>			X				X		

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		OPS	S	IH	RAD	ENV	ENG	FP	Other
Hazard Concern or Issue									
58. The work activity involves using cryogenic systems or chemicals exhibiting cryogenic properties.	<input type="checkbox"/>		X	X		X			
59. The work area is posted as a high noise (greater than 85 dB.) area or the work activities will produce high noise levels.	<input type="checkbox"/>			X					
60. The work activity involves surface preparation, including grinding, abrasive blasting, scabbling, or chipping.	<input checked="" type="checkbox"/>		X	X		X	X	X	
61. The work activity is likely to result in an inhalation or dermal exposure to dust, mists, or ashes.	<input type="checkbox"/>			X			X		
62. The work activity will disturb or have the potential to disturb areas contaminated with rodent or pigeon feces or urine, or involve nesting birds.	<input type="checkbox"/>			X			X		
63. The work activity will expose or have the potential to expose workers to bloodborne and/or other potentially infectious materials.	<input type="checkbox"/>			X			X		
64. The work activity will create or disturb a potentially explosive dust.	<input type="checkbox"/>	CS	X					X	USQ or MOC
65. The work activity will involve cutting, welding, flame soldering, grinding, or plasma arc cutting or otherwise produce sparks or flames outside an approved welding area.	<input type="checkbox"/>	CS	X		X	X	X		LSS
66. The work activity involves use of flammable materials near an ignition source, such as static electricity, furnaces, hot plates, sparks, and open flames (excluding welding/cutting).	<input type="checkbox"/>	CS			X	X	X		LSS
67. The work activity will require dispensing or bulk handling of flammable and combustible liquids (excluding fueling vehicles).	<input type="checkbox"/>	CS	X		X		X		LSS USQ or MOC
68. The work activity will involve repair, installing, modifying, or disabling emergency response equipment (i.e., SCBA or vehicle storage area, and emergency information signs).	<input type="checkbox"/>	CS					X	X	EP LSS

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		OPS	S	IH	RAD	ENV	ENG	FP	Other
69. The activity will involve a ventilation system or ducting, fume hood, or dismantling a glove box that may contain residual chemicals, such as perchlorates, or dusts having the potential for explosion, fire, or toxic exposure.	<input type="checkbox"/>		CS	X		X	X	X	LSS USQ or MOC
70. The work activity will modify or affect HEPA filtration.	<input type="checkbox"/>			X		X			USQ or MOC
71. The work activity will modify or affect HVAC or local exhaust systems used to control exposures to hazardous substances.	<input type="checkbox"/>			X		X	X		USQ or MOC
72. The work activity will affect facility HVAC flow paths or velocities in a building containing RBAs or CAs.	<input type="checkbox"/>	X			X	X	X		USQ or MOC
73. The work activity will involve pyrophoric material.	<input type="checkbox"/>			X		X		X	LSS USQ or MOC
74. The work activity will require using explosives (including squibs).	<input type="checkbox"/>		CS			X		X	LSS USQ or MOC
75. The work requires using powder actuated devices or tools.	<input type="checkbox"/>		X				X		
8.1.1 Chemical/Hazardous Materials									
76. The work activity will expose the worker to fumes, vapors, mists, gases, or dust (includes painting or working on or near lead-acid batteries, and motor exhaust in or near buildings beryllium, mercury, cadmium, hexavalent chromium, etc.).	<input checked="" type="checkbox"/>		X	X				X	
77. The work involves uncharacterized or unknown chemical hazards (suspected container mislabeling, abandoned pipes/equipment, accessing long-term closed/sealed drums/vaults/tanks/cells).	<input type="checkbox"/>		CS	X		X		X	USQ or MOC CRIT *

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Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other
78.	The work activity will involve the storage of hazardous materials.	<input type="checkbox"/>		X		X	X	X	USQ or MOC	
79.	The work activity will involve working with beryllium or beryllium contaminated equipment.	<input type="checkbox"/>		X		X				
80.	The work activity will involve the handling or storage of a carcinogen (as identified on the MSDS).	<input type="checkbox"/>		X			X			
81.	The work activity will disturb, break up, dislodge, or block access to asbestos-containing or suspect material (such as thermal insulation; gaskets; valve packing; wall, floor, or ceiling material; roofing; insulated wiring; transite siding; etc.).	<input type="checkbox"/>		X		X	X		AP	
82.	The work activity will involve working with lead, lead products, or lead contaminated equipment that could pose an inhalation, ingestion, or injection hazard.	<input type="checkbox"/>		9.		X	X			
83.	The work activity will involve working with cadmium, cadmium products, or cadmium contaminated equipment that could pose an inhalation, ingestion, or injection hazard.	<input type="checkbox"/>		X		X	X			
84.	The work activity will involve recovery from spills or other releases of PCBs or cleaning up fire-related incidents involving PCBs.	<input type="checkbox"/>		X		X	X			
85.	The work activity will involve maintaining, decontaminating, or excessing equipment containing or potentially contaminated with PCBs, to include fluorescent light ballasts manufactured before 1978.	<input type="checkbox"/>		X		X				
86.	The work activity will involve procuring, applying, or storing pesticides (e.g., herbicides, rodenticide, fungicides, insecticides, and bactericides).	<input type="checkbox"/>		X		X				
87.	The work activity will involve applying fertilizer.	<input type="checkbox"/>		X		X				
88.	The worker's eyes or skin will be exposed to toxic or corrosive chemicals.	<input type="checkbox"/>		X						
89.	The chemicals stored or used near the work activity could reasonably impact the work (or vice versa).	<input type="checkbox"/>		X		X	X	X		

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Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other
90.	The chemicals required by the work activity will exceed the threshold quantities of the facility safety analysis report or emergency preparedness hazard evaluation.	<input type="checkbox"/>	X	X		X	X	X	EP USQ or MOC	
Does the work activity involve the use of a chemical? If "NO," then skip questions 91 through 96.										
91.	The work activity will involve purchase, use, or storage of Chemical Products/Chemicals/Hazardous Agents.	<input type="checkbox"/>			X		X			
92.	The chemical(s) used for the work activity have a health rating greater than 1 using the NFPA 704 Hazard Identification System.	<input type="checkbox"/>			X		X			
93.	The chemical(s) used for the work activity have a flammability rating greater than 1 using the NFPA 704 Hazard Identification System.	<input type="checkbox"/>		CS			X		X USQ or MOC	
94.	The chemical(s) used for the work activity have a reactivity rating greater than zero for any of the identified chemicals.	<input type="checkbox"/>			X		X		X	
95.	The chemical(s) used for the work activity have a special rating for any of the listed chemicals.	<input type="checkbox"/>			X		X	X		
96.	The work activity will involve use of a chemical without an NFPA 704 (Hazard Identification System) description on the MSDS.	<input type="checkbox"/>			X			X		
Environmental										
97.	The work involves the collection or disposition of solid, liquid, or gaseous samples (excludes samples for monitoring equipment performance).	<input checked="" type="checkbox"/>					X		10. Q A W	
98.	The work will be performed within a RCRA Treatment, Storage, and Disposal Facility (Permitted or Interim Status) or any Voluntary Consent Order closure.	<input type="checkbox"/>					X		*	
99.	The work will activity will involve constructing or modifying container storage facilities or tanks (for regulated waste or >55 gal oil).	<input type="checkbox"/>		X			X	X		
Will the work activity involve aboveground or underground tanks? IF "NO", then skip questions 100 through 103.										

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Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other
100.	The work activity will involve constructing, modifying, repairing, maintaining or operating above ground storage tanks and underground storage tanks not regulated by 40 CFR 280.	<input type="checkbox"/>				X	X			
101.	The work activity will involve relocating, removing, or closing aboveground storage tanks and underground storage tanks not regulated by 40 CFR 280 (excluding septic tanks).	<input type="checkbox"/>				X				
102.	The work activity will involve constructing, modifying, or repairing underground storage tank (UST) systems.	<input type="checkbox"/>				X	X		11.	
103.	The work activity will involve use of portable or mobile oil storage tank or facility exceeding an aggregate capacity greater than 1,320 gallons in containers or tanks (sized greater than 55 gallons).	<input type="checkbox"/>				X		X		
Will the work activity involve or generate any type of waste (such as RCRA, PCB-containing, medical or infectious, oily waste or wastewater, or solid sanitary waste)? IF "NO", then skip questions 104 through 107.										
104.	The work activity will involve procuring off-site waste management and recycling services.	<input type="checkbox"/>					X		QA	
105.	The work activity will involve dispositioning excess materials.	<input type="checkbox"/>				X			USQ or MOC	
106.	The work activity will involve using, storing, or shipping off-site product lead (shielding or building material lead - in use, previously used, or stored for reuse; can't be recycled).	<input type="checkbox"/>			X	X	X	X	WGS	
107.	The work activity will involve or generate a waste (with or without an approved disposition path).	<input checked="" type="checkbox"/>					X		WGS	
Will the work activity involve wastewater or sanitary wastes? IF "NO", then skip questions 108 through 115.										
108.	The work activity will alter the path of or contribute to storm water drainage at an INL site facility within the Storm Water Corridor.	<input type="checkbox"/>				X	X			
109.	The work activity will involve discharging, or changing or adding new discharges of wastewater to the City of Idaho Falls sewer system.	<input type="checkbox"/>		X			X		WGS	

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Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other
110.	The work activity will involve constructing or modifying sewage or other wastewater systems.	<input type="checkbox"/>				X	X			
111.	The work activity will involve discharge or discharging wastewaters to a Site system.	<input type="checkbox"/>	X	X		X	X		WGS	
112.	The work activity will involve constructing or modifying septic tank/system.	<input type="checkbox"/>			X	X	X			
113.	The work activity will involve maintaining and repairing septic tanks/systems.	<input type="checkbox"/>			X		X			
114.	The work activity will involve pumping septic tanks or sanitary waste systems.	<input type="checkbox"/>			X		X			
115.	The work activity will involve abandoning or closing septic tanks.	<input type="checkbox"/>			X		X			
Will the work activity involve facilities, equipment, processes, or activities that control, monitor, or emit air pollutants (including fugitive emissions (i.e., fuel, fumes, dust, etc.) open burning, CERCLA releases of air pollutants, radioactivity, or hazardous substances, etc.)? IF "NO", then skip questions 116 through 121.										
116.	The work activity will involve operating, relocating, maintaining, modifying or constructing airborne emission sources (excluding vehicular engines).	<input type="checkbox"/>					X	X		
117.	The work activity will involve performing activities with the potential for fugitive dust or fugitive emissions.	<input type="checkbox"/>					X			
118.	The work activity will involve conducting open burning.	<input type="checkbox"/>					X	X	X	
119.	The work activity will involve maintaining and repairing motor vehicle gasoline station pumps.	<input type="checkbox"/>					X	X	X	
120.	The work activity has the potential or is expected to cause process/equipment air emissions to exceed or approach close to permitted or regulatory limits.	<input type="checkbox"/>	X				X	X		
121.	The work activity will be performed on radiological monitoring equipment.	<input type="checkbox"/>				X		X	12.	
Will the work activity involve ozone depleting substances (ODS, e.g., Halon, refrigerants) or appliances containing ODSs? IF "NO", then skip questions 122 through 126.										

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Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other
122.	The work activity will involve purchasing ODS (i.e., refrigerants, Halon and other ODS) Equipment or Recovery/Recycling Equipment.	<input type="checkbox"/>				X	X		QA*	
123.	The work activity will involve maintaining, servicing or repairing refrigeration and air conditioning equipment.	<input type="checkbox"/>	X		X	X	X			
124.	The work activity will involve recycling refrigerants from motor vehicle air conditioners.	<input type="checkbox"/>			X	X	X			
125.	The work activity will involve distributing, excessing, or disposing of appliances containing refrigerants.	<input type="checkbox"/>				X	X			
126.	The work activity will maintain, test, remove, or dispose Halon systems or Halon-containing equipment.	<input type="checkbox"/>			X	X	X	X	LSS	
Will the work activity involve water, production, injection, or observation wells, well protection, or boreholes? IF "NO", then skip questions 127 through 131.										
127.	The work activity will involve constructing or modifying potable water, production, monitoring, or observation wells.	<input type="checkbox"/>			X		X			
128.	The work activity will involve protecting wellheads.	<input type="checkbox"/>					X	X		
129.	The work activity will involve constructing or modifying injection wells.	<input type="checkbox"/>					X	X		
130.	The work activity will involve discharging to or operating a shallow injection well not requiring a permit.	<input type="checkbox"/>					X	X		
131.	The work activity will involve closing and/or abandoning wells, boreholes, or injection wells.	<input type="checkbox"/>					X	X		
Will the work activity add or modify drinking water systems such as water mains, storage tanks, treatment systems (e.g., liquid sanitary waste), wells, or diversions to a waste line from a well pump? IF "NO", then skip questions 132 and 133.										
132.	The work involves constructing or modifying drinking water systems.	<input type="checkbox"/>			X		X			
133.	The work activity will involve connection to, maintaining, altering, or repairing drinking water systems or removing a drinking water pump.	<input type="checkbox"/>			X		X			

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134.	The work activity will involve structures/buildings that are on the list for eligible facilities and buildings for the National Historic Register (see the Web at http://webfiles/ea/nepa/files/CRTTable.pdf) where the work is not included on the list of exempt activities (see MCP-3480, Appendix C).	<input type="checkbox"/>				X				
135.	The work activity will involve deactivating, decontaminating, dismantling, or closing facilities (including trailers), equipment, or process (non-CERCLA remedial actions).	<input type="checkbox"/>				X			13. L S	
136.	The work activity will involve reactivating buildings or facilities from standby (inactive) status.	<input type="checkbox"/>				X	X	X	LSS 14.	
137.	The work activity will involve exposing employees to non-ionizing radiation (e.g., microwave, radiofrequency emitters, and transmitter antennas), or installation, transfer, or removal of RF emitters.	<input type="checkbox"/>			X			X		
138.	The work involves Class II, III, or IV lasers.	<input type="checkbox"/>			X			X		
139.	The work activity will involve moving, handling, processing, or transporting Special Nuclear Material, TRU, or TRU/M.	<input type="checkbox"/>			X	X		X	SEC USQ CRIT	
Will the work occur in a radiological buffer area, or is the work area bordered by any radiological postings, barriers, signs or labels? If "NO," then skip questions 140 through 152. If "YES and there is NOT a general RWP that encompasses the planned work, then review the following questions, number 139 through 151.										
140.	The work activity will be performed inside of a radiological buffer area.	<input type="checkbox"/>				X		X		
141.	The work activity will be performed inside of a Radiological Material Area, or Radiological Material Area for storage.	<input checked="" type="checkbox"/>				X		X		
142.	The work activity will be performed inside a known or suspected High Contamination Area, Fixed Contamination Area, Contamination Area, or Airborne Radiological Area.	<input type="checkbox"/>				X		X		
143.	The work activity will be performed inside of a Radiation Area.	<input type="checkbox"/>				X		X		

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Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other
144.	The work activity will be performed inside of a known or suspected High Radiation Area or a Very High Radiation Area.	<input type="checkbox"/>			X					
145.	The welding, grinding, cutting, surface preparation, abrasive blasting, scabbling, chipping, or other treatment be performed on or near a surface in a manner that contamination could be uncovered or become airborne.	<input checked="" type="checkbox"/>			X		X	X		
146.	A new process or equipment will be introduced that will be used to contain or transport radioactive materials.	<input type="checkbox"/>	X			X	X	X		
147.	The work activity will involve moving a component, system, or equipment that has the potential for internal contamination.	<input type="checkbox"/>			X	X		X		
148.	The work activity will require handling or use of Radiologically Controlled Materials.	<input type="checkbox"/>				X		X		
149.	The work activity will involve use of radioactive sources or radiation producing devices, or devices that contain radioactive sources (e.g., radiography, x-ray machines).	<input type="checkbox"/>	X			X			QA	
150.	The activity will involve DD&D of a facility containing radiological materials.	<input type="checkbox"/>				X	X	X		
151.	The activity will involve the transfer, pumping, or draining of radioactive or radioactively contaminated liquids (including stormwater).	<input type="checkbox"/>	X		X	X	X	X	USQ or MOC	

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Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other
152.	The work activity will involve working with, recovering, or repackaging radioactive or radioactive mixed wastes.	<input type="checkbox"/>			X	X	X		WGS USQ or MOC	
153.	The work activity will require installation, fabrication, or modification of shielding (lead, steel, liquid, polyethylene, etc.).	<input type="checkbox"/>	X		X		XX		CRIT	
154.	The work activity will involve working with fissile material that may require criticality controls.	<input type="checkbox"/>			X		X		CRIT	
Does the proposed activity affect the operations at a facility identified in LST-268? IF "NO," then skip questions 155 through 159.										
155.	The planned activity will effect a change of fissile material, moderator, or reflector quantities or location within a Criticality Control Area (CCA).	<input type="checkbox"/>				X			CRIT USQ	
156.	The work activity will possibly cause a false criticality evacuation alarm or otherwise require changes to current criticality alarm system operation.	<input type="checkbox"/>	X			X		X	EP USQ CRIT	
157.	The work will affect the capability of a safety structure, system or component (see LST-253) to perform its function and is not an approved condition covered by an operations procedure.	<input type="checkbox"/>				X		X	USQ CRIT *	
158.	The work activity will require shutdown or disabling of a safety Structures, Systems, and Components (see LST-253) that is not allowed by an operations procedure.	<input type="checkbox"/>	X			X		X	EP USQ	
159.	Upon completion of the work, the plant or system within a nuclear facility will be left in a condition or configuration that is not exactly the same as it was prior to starting the activity.	<input type="checkbox"/>	X					X	USQ	
160.	The work activity will alter the consistency of the design requirements, physical configuration, or documentation of the SSC designated for configuration management.	<input type="checkbox"/>	X					X	USQ	
161.	The work activity will modify or disable emergency communications or evacuation systems.	<input type="checkbox"/>	X				X	X	EP WGS LSS	

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Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other
162.	The work activity will repair, modify, or disable the fire protection suppression/ detection systems (i.e., underground fire mains, fire suppression, fire alarms, etc.).	<input type="checkbox"/>							X EP QA LSS	
163.	The work activity will involve repair, installing, modifying, or disabling safety equipment (i.e., eyewashes, emergency showers, etc. not related to nuclear/ radiological safety protection systems).	<input type="checkbox"/>		X X				X		
164.	The work activity will block or obstruct an aisle, entrance, exit, or safety equipment.	<input type="checkbox"/>		CS					X EP	
165.	The work will involve quality significant SSCs (QL-1 or QL-2) identified in the QPP/QAPjP or any of the safety category SSCs: Safety Class, Safety Significant, or which may have the following requirements: QA PRDs, quality activities, design or design change, interfaces, procurement of services or items, updating procedure or drawings, new hazard controls, storing or controlling items, controlling quality processes, quality inspections or verifications, testing, acceptance, or conformance verification, use of measuring and test equipment, or storing records.	<input type="checkbox"/>							X QA	
166.	The work is associated with the Nuclear Material Disposition (NMD) Program and subject to PLN-466 or PLN-533 (check with requester if unsure).	<input type="checkbox"/>	*							QA
167.	The work activity will involve changes to process computer software.	<input type="checkbox"/>						X		
168.	The work activity will involve repair (like-for-like replacement) or modification of a security related system.	<input type="checkbox"/>						X		SEC
169.	The work activity will interrupt or disable a security system.	<input type="checkbox"/>								SEC
170.	The work activity will occur in secured areas with special access requirements or be performed by personnel not security briefed for the area.	<input type="checkbox"/>								SEC
171.	Hazards from the proposed work are reasonably expected to expose employees in adjacent work areas or employees that may enter the area.	<input type="checkbox"/>		X X						EP

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Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other
Will the work activity involve the creation or modification to an operations procedure (TPR, MCP)? IF "NO", then skip questions 172 through 197.										
172.	The work activity will involve performing site studies for new buildings or structures.	<input type="checkbox"/>						X	X	
173.	The work activity will involve reporting water consumption.	<input type="checkbox"/>						X	X	
174.	The work activity will construct or modify facilities, equipment, or processes (including changes to work conditions).	<input type="checkbox"/>		X	X	X	X	X		QA USQ or MOC
175.	The work involves the operating facilities, equipment, or processes within the storm water corridor.	<input type="checkbox"/>						X		
176.	The work involves responding to a regulatory inspection.	<input type="checkbox"/>						X		
177.	The work involves the monitoring of storm water according to the Storm Water Pollution Prevention Plan for Industrial Activities.	<input type="checkbox"/>						X		
178.	The work involves the removing of brake pads.	<input type="checkbox"/>						X		
179.	The work involves the manufacturing of wood furniture and wood furniture components.	<input type="checkbox"/>						X		
180.	The work involves the operating or sampling of drinking water systems or exceeding permitted or regulated drinking water limits.	<input type="checkbox"/>						X		
181.	The work involves the purchasing of diesel fuels.	<input type="checkbox"/>						X		X
182.	The work involves the procurement of off-site waste management and recycling services.	<input type="checkbox"/>				X		X		CRIT QA
183.	The work activity involves procuring goods and services.	<input type="checkbox"/>						X		
184.	The work involves the procuring of external laboratory services for waste characterization.	<input type="checkbox"/>						X		
185.	The work involves the conducting of new or modification of existing research and development (R&D) activities, including indoor bench-scale and small-scale R&D activities, and small-scale projects	<input type="checkbox"/>			X			X	X	USQ or MOC

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SCREEN 2 HAZARD PROFILE ANALYSIS		CHECK BOX IF VALID	SUBJECT MATTER EXPERT SUPPORT (see legend at end of form)							
Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other
186.	The work involves the leasing, renting, or transacting of real property.	<input type="checkbox"/>				<input checked="" type="checkbox"/>				
187.	The work involves the discharging to septic tank/systems.	<input type="checkbox"/>				<input checked="" type="checkbox"/>				
188.	The work involves the operating aboveground storage tanks and non-regulated underground storage tanks.	<input type="checkbox"/>				<input checked="" type="checkbox"/>				
189.	The work involves the operating and maintenance of regulated underground storage tanks (USTs).	<input type="checkbox"/>				<input checked="" type="checkbox"/>				
190.	The work involves the release, leaks, spills, or unusual operating conditions from regulated USTs.	<input type="checkbox"/>				<input checked="" type="checkbox"/>				
191.	The work involves changing the use of or reactivating regulated USTs.	<input type="checkbox"/>				<input checked="" type="checkbox"/>				
192.	The work involves temporarily discontinuing the use of or temporarily closing the regulated USTs.	<input type="checkbox"/>				<input checked="" type="checkbox"/>			USQ or MOC	
193.	The work involves the operating of volatile organic storage tanks.	<input type="checkbox"/>				<input checked="" type="checkbox"/>				
194.	The work involves the construction or modification of facilities, equipment, or processes at Permitted or Interim Status RCRA facilities.	<input type="checkbox"/>				<input checked="" type="checkbox"/>				
195.	The work involves the operating of solid waste management units.	<input type="checkbox"/>				<input checked="" type="checkbox"/>				
196.	The work involves the operating and sampling of permitted injection wells.	<input type="checkbox"/>	<input checked="" type="checkbox"/>						SEC	
197.	The work involves security actions, security vehicles, operations, maneuvers, disabling of alarms, working in secured areas, firearms, security simulations, tactical operations, specialized security equipment, etc...	<input type="checkbox"/>							USQ	

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Appendix C

Sampling and Analysis Plan Table

(Insert completed SAP Table)

Sampling Procedure

CPP-1774 Efflorescence Sampling (ESP-32-07)

**Idaho
Cleanup
Project**

The Idaho Cleanup Project is operated for the
U.S. Department of Energy by CH2M•WG Idaho, LLC

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Sampling Procedure

For Additional Info:
<http://EDMS>

Effective Date:

Change Number:

FOREWORD

This document was prepared in accordance with Template (TEM)-104, "Model for Preparation of Characterization Plans" and Idaho Cleanup Project (ICP) Management Control Procedure (MCP)-9439, "Environmental Sampling Activities at the INL." This document meets the intent of a "characterization plan" as defined in TEM-104.

Environmental Services work activities for sampling efflorescence are covered in this plan and the attached hazards checklist and job safety analysis (JSA). This plan complies with MCP-3562, "Hazard Control, Identification and Analysis of Operational Activities."

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FIGURES

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- 3-1. Allowable levels to oil for energy recovery.....**Error! Bookmark not defined.**
- 4-1. Bottle requirements for oil containers.**Error! Bookmark not defined.**

1. INTRODUCTION

This characterization plan was created for the sampling of efflorescence on the exteriors of Horizontal Storage Modules (HSM) inside CPP-1774. The plan was prepared in response to Service Authorization Form (SAF) 3851 requested by Nathan Smith. The ES tracking number assigned to this characterization project is ESP-032-07, "CPP-1774 Efflorescence Sampling."

This plan identifies the activities for the characterization project, including health and safety requirements, to perform sampling. This plan was prepared according to the requirements outlined in INL Idaho Completion Project (ICP) Management Control Procedure (MCP)-9439, "Environmental Sampling Activities at the INL," Template (TEM)-104, "Model for Preparation of Characterization Plans," and MCP-3562, "Hazard Identification, Analysis and Control of Operational Activities."

This characterization plan establishes the procedures and requirements that will be used to perform field sampling and analysis, as well as minimizing health and safety risks to persons performing sampling of efflorescence on the exteriors of HSMs inside CPP-1774. It contains information about the characterization activity, analytical and quality assurance/quality control (QA/QC) requirements, hazards involved in performing the task(s), and the specific actions and equipment that will be used to protect persons working at the task site.

1.1 Project Objectives

The objective of this activity is to provide representative characterization of efflorescence (salt crystal deposits) presumed to be non hazardous, on the exterior walls of HSMs inside CPP-1774, which originated from water seepage through concrete cracks. Efflorescence is generally some sort of water soluble calcium carbonate salt deposited by evaporation on the exterior surface of concrete. If the concrete contains sulfur, the efflorescence could be a sulfur salt, which is potentially more damaging to the reinforced steel. Sulfur creates an expansion issue in the concrete as it reacts with the steel. The origin of the concrete cannot be ascertained, so characterization is necessary. The data will be used to determine if the concrete may have been damaged.

Plan (PLN)-524, "Quality Assurance Project Plan for Environmental Services Characterization Sampling" (QAPP) governs Environmental Services (ES) work for characterization sampling performed by INL employees, subcontractors, and employees of other companies or U.S. Department of Energy (DOE) laboratories. Plan (PLN)-466, "Quality Assurance Program Plan for ISFSI Management" describes how the FSV QAP and the TMI-2 QAP are implemented by the ISFSI Management department.

1.2 Site Description

The site description of the Idaho National Laboratory (INL) is provided in the QAPP referenced in Section 1.1. Descriptions of INTEC and CPP-1774 are provided below.

The INL encompasses 2,305 km² (890 mi²) and is located approximately 55 km (34 mi) west of Idaho Falls, Idaho (see Figure 1-1). The United States Atomic Energy Commission, now the DOE, established the National Reactor Testing Station, now the INL, in 1949 as a site for building and testing nuclear facilities. At present, the INL supports the engineering and operations efforts of DOE and other federal agencies in areas of nuclear safety research, reactor development, reactor operations and training, nuclear defense materials production, waste management and technology development, and energy technology and conservation programs.

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INTEC is located in the south central portion of the INL approximately 13 km (8 mi) north of the southern INL. Operations commenced at INTEC in 1953. INTEC has historically been a uranium reprocessing facility for both defense projects and research while also acting as a storage facility for spent nuclear fuel. While reprocessing activities at INTEC were phased out in the 1990s, the facility continues to receive and store spent nuclear fuel and radioactive wastes for future disposition. CPP-1774 is sited in a two acre dedicated area within the INTEC boundaries. HSMs were constructed inside this area to provide dry storage for the Three Mile Island Unit 2 (TMI-2) core and core handling debris.

Only the insides of the HSMs are posted as radiologically controlled areas. There will be no work performed inside radiologically controlled areas, and samples collected will not need to be surveyed for radioactive contamination. Although the facility is radiologically controlled, the material sampled is not expected to be radiologically controlled. There is no reason to suspect polychlorinated biphenyls, dioxins or furans and the material does not carry any listed waste codes. No previous sampling of efflorescence has been performed. No other activities or operations will be performed during sampling.

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Figure 1-1. Map of the INL Site.

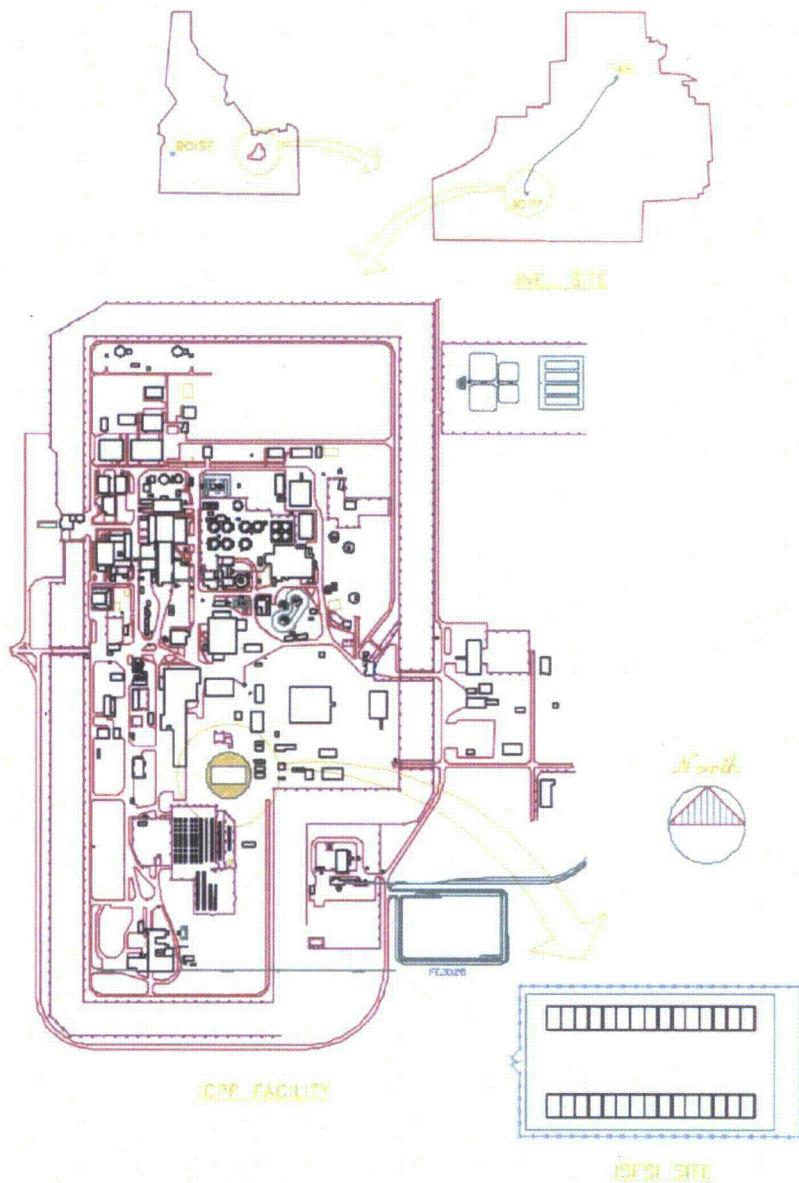


Figure 1.1-1
Location of the INEEL TMI-2 ISFSI

The planning team and available resources members are identified in Section 2. The decision-maker for the activity is the Project Manager/Requester. The field sampling activity is to be completed by 08/30/2007. Unvalidated data is required by 09/30/2007.

3.2 Decision Statement

The objective(s) of this characterization project is to answer the following questions:

- Does the efflorescence material contain calcium carbonate or sulfur?

The alternate actions (AAs) to be taken depending on the resolution of the principal study question(s) PSQ(s) are as follows:

- If the efflorescence material contains calcium carbonate, then no damage to the concrete from the efflorescence process may be assumed.
- If the efflorescence material contains sulfur, then further study of the concrete and reinforced steel will commence to determine any structural damage.

Combining the PSQ and AAs results in the following decision statement:

- Determine the chemical composition of the efflorescence material.

3.3 Decision Inputs

To resolve the decision statement, concentrations of the constituents of concern, determined using analyses conducted in accordance with approved analytical methods, must be obtained. No specific action limits for either calcium carbonate or sulfur has been communicated. If there is specific trigger concentration, project must communicate such to the performing laboratory and SAM point of contact.

3.4 Study Boundaries

Limitations on data interpretation introduced by sample collection constraints, if applicable, will be discussed in the final closure summary.

3.5 Decision Rule

Decision rules are specified in relation to a parameter that characterizes the population of interest. The parameter of interest is the true composition of the efflorescence material.

IF the true composition of the efflorescence material consists of sulfur,

THEN further analysis will be performed to determine if damaging occurred to HSMs from the efflorescence process.

IF the true composition of the efflorescence material consists of calcium,

THEN damage resulting from efflorescence process will be discounted and further use of the HSMs may be assumed.

3.6 Decision Error Limits

There are two separate decision errors that may occur:

- Determining that the efflorescence material does not consist of sulfur, when in fact it does. Could cause further damage to the HSMs.

Or

Determining that the efflorescence material does consist of sulfur when, in fact, it does not. Could cause the HSMs to potentially receive unnecessary structural upgrades.

3.7 Design Optimization

Because the actual nature of the efflorescence is still unknown, process knowledge and/or characterization data are not available for the CPP-1774 efflorescence material. The project has determined that representative samples can be collected from the exterior walls of CPP 1774 HSMs. There are 30 individual HSMs inside CPP-1774. Per project direction, efflorescence will be collected from the most accessible HSMs; this approach is defensible because 1) not all HSMs exhibit efflorescence or are not easily accessible and 2) there is no reason to suspect any variation within the entire population - the origin of the concrete for all HSMs is the same. into a compositing container. It is recommended that a minimum of 10-20% (3-6 sample locations) of the overall population of 30 HSMs be included in the sample composite. It should be recognized that volumes are expected to be extremely limited. In compliance with PLN-524, a minimum of two samples for each analysis are recommended. The laboratory will provide minimum sample volumes necessary to achieve defensible data. The selected design alternative is based on no expected variation between HSMs and the data use. A composite of all locations will be collected to represent overall population.

4. SAMPLE COLLECTION, ANALYSIS, AND DATA MANAGEMENT

4.1 Sample Collection

4.1.1 Pre-Sampling Meeting

Before the start of each field sampling project, Environmental Services Project-assigned sampling resources prepare for the sampling activity in accordance with MCP-9228, "Managing Nonhazardous Samples," or MCP-1394, "Managing Hazardous Samples," and participate in applicable pre-job briefings conducted in accordance with MCP-3003, "Performing Pre-Job Briefings and Documenting Feedback."

4.1.2 Sampling and Analysis Requirements

Table 4-1 summarizes the locations to be sampled and the analyses to be performed for this sampling activity. The strategy is based upon the project determination that there should be no chemical variation between locations – it is expected that each identified deposit area will be collected in proportionate amounts to other areas and composited into a pan or equivalent for subsequent mixing and aliquoting to individual sampling containers. Using Equation (1) in PLN-524, and the data found in statistical tables, an appropriate number of samples for characterizing the CPP-1774 HSMs can be derived. In compliance with SW-846, for the purposes of evaluating solid wastes, the probability level (confidence interval) of 80% has been chosen. The upper limit of the 80% confidence interval (equivalent

to the 90% UCL utilized in section 3.5) is compared to appropriate regulatory levels. Table 2 of PLN-524 illustrates the parameters used to determine the number of samples for this project. The minimum and usual number of samples sets per media type is two, unless there is inadequate volume. Two data sets are needed to establish data comparability. Precision is stated in terms of relative percent difference (RPD) for two measurements. A technique for increasing sampling precision is to maximize the physical size (weight/volume) of the samples. Increasing the number of samples taken from a population also increases sample precision and accuracy. Because it is anticipated that a minimum of 10-20% of the overall population will be collected, this approach is expected to yield high confidence data for the overall population of concern. Minimum volumes for the requested analyses have been provided by the performing laboratory. The completeness goal for waste characterization sampling activities is 90% for noncritical and 100% for critical samples. Any samples for waste characterization are considered critical samples unless otherwise stated.

Table 4-1. Bottle requirements for Efflorescence material inside CPP-1774.

Location	Sample Medium	Analysis Type	Volume/Bottle Construction	Holding Time/Preservation
CPP-1774	Efflorescence Material (Salt Deposits)	To be determined by SAM	10 grams	To be determined by SAM

Maximum sample holding times will be provided by SAM on the field guidance forms and are defined from the date of sample collection to the date of sample preparation or analysis. Samplers will coordinate with the analytical laboratory to ensure that samples arrive at the laboratory in order to meet holding times.

If for some reason a sample is lost, containers are broken, or the sample is in some way unusable, the sample will be retaken. Any changes to number of samples, expected approach, the analytical or QC requirements will be noted in the project-specific lognotes as these types of changes are inherent to sampling activities. So long as there are no changes to scope—increased hazards not already accounted for or significantly changing the strategy—incidental changes that occur throughout the planning process may be documented in the sample lognotes and do not require a document revision form (DRF). A field DRF can be initiated, as needed, for unexpected conditions encountered in the field. Sampling logbooks will be maintained in accordance with MCP-9227, “Environmental Services Project Logkeeping Practices.” The sampler lead or designee will ensure that any other changes to this document regarding sampling frequency, location, and/or analysis are documented in the sample logbook.

Sampling logbook(s) will be maintained in accordance with MCP-9227, “Environmental Services Project Logkeeping Practices.”

4.1.3 Sampling Equipment and Documentation

The following equipment and supplies will be used for sampling at the task site. Additional required equipment used at the task site may be specified in the sampling logbook.

- Sampling logbook
- Scraper/Wire Brush (New or Decontaminated)
- Compositing container

- Laboratory contract
- Address labels
- Final plan
- Chain of custody (COC) form
- Nonphosphate detergent
- Absorbent towels
- Deionized water
- Blue ice
- Cooler(s)
- Scale
- Adhesive tape (clear, duct, and strapping)
- Aluminum foil
- Pens and markers
- Appropriate sample containers per field guidance forms and sample labels
- Custody seals
- Field guidance forms
- Personal protective equipment, as required and included in the job safety analysis (JSA) (Appendix A).

4.1.4 Field Equipment Calibration and Set-Up

Sampling will not be performed within radiologically controlled areas, therefore no calibration of this nature applies. However, to make sure sufficient volume is collected, ESP will use calibrated scales to verify sufficient volume of efflorescence material has been collected.

4.1.5 Sample Designation and Labeling

Each sample bottle will contain a label identifying the unique field sample number. Uniqueness is required for maintaining consistency and preventing the same identification code from being assigned to more than one sample. A systematic character code will be used to uniquely identify all samples. The Sample and Analysis Management (SAM) will generate a sampling table, numbers, and labels that correlate directly to characterization sampling. Refer to Appendix C. The information on the label and label placement are as provided in MCP-9228 or MCP-1394.

4.1.6 Chain of Custody

All samples collected will be managed via chain of custody in accordance with MCP-9228 or MCP-1394.

4.1.7 Sampling Design and Procedures

Sample collection will involve obtaining a composite of the efflorescence solids on the exterior walls of HSMs inside CPP-1774, most likely using a paint scraper or other equivalent means of representative sampling. As there is no reason to suspect any variation between the multiple deposit areas, the solids will be transferred directly into a compositing container for the purpose of compositing the efflorescence material into sample sets representative of the entire population of concern.

1. Confirm with facility if hazard review board is needed, and on POD. Attend/perform prejob brief.
2. Don the required PPE. If project safety representative requires additional PPE, it will be noted in the logbook, JSA Job Step 1.
3. Security personnel will escort sampling personnel into CPP-1774.
4. Visually inspect the impacted areas to determine how many locations are available and the approximate overall volume of material available for sampling. Note in logbook if any variation (color, consistency) is observed. It is recommended that 10-20% (3 to 6 locations) be collected, if possible. If so, Project Manager may request separate sample set, JSA Job Step 2
5. Maneuver aerial lift, ladder, or scissor lift to sampling location, JSA Job Step 3.
6. Use a new or decontaminated chisel, vise grips, paint nibbler, paint scraper, spackling tool, or equivalent tools to sample efflorescence material from outer surfaces of identified HSMs. Take care not to disturb (include in sample material) the underlying concrete, JSA Job Step 4.
7. Using agreed upon strategy, place the appropriate amount of material from each designated location into a single compositing container. Ensure that adequate volume for regular and split analysis has been obtained (scale), JSA Job Step 4
8. Homogenize the material.
9. Fill tared sample bottle(s), then weigh to confirm minimum material sample quantity for each analysis is obtained (regular and duplicate/split).
10. Record the gross bottle weight in the field logbook or on the sample bottle.
11. Record a drawing of the area scraped obtained in field logbook.

Note that, if the HSM(s) does not have a unique barcode or other identifier, samplers should assign and record on the container if feasible, and note in the logbook for sample data traceability.

12. Decontaminate any used materials/tools, as needed. No free liquids will be generated. Since all sample locations are being combined together into one composite sample split, decontaminating between locations is not required.

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13. Package and transport samples to INTEC lab, unless otherwise designated.

4.1.8 Sample Transport

Samples from CPP-1774 are expected to be sent to the onsite laboratory for analysis. Prepare samples for shipment, and complete the applicable shipping papers. Package samples, and provide packages to Packaging and Transportation (P&T) shipper for transport in accordance with MCP-9228 or MCP-1394.

4.1.9 Waste Management

Wastes generated during the characterization project will include sampling equipment—personal protective equipment, wipes, and compositing container. These articles will be handled, characterized, and disposed of in accordance with MCP-1390 “Waste Generator Services Waste Management.” WGS personnel will coordinate waste disposal activities in accordance with ICP procedures. Waste will be bagged, placed in containers, labeled, and stored in an approved storage area pending disposition. The project manager, with assistance from WGS, will prepare waste determination and disposition forms for determining the disposition routes for all waste generated during sampling and analysis.

The analytical laboratory will dispose of samples submitted to them for analyses or return them to the requester as stated in the applicable task order statement (TOS)(s). Samples returned from the laboratory will be accepted only if the original label is intact and legible. If the samples are returned, the project manager is responsible to properly disposition the samples with the assistance of WGS personnel. All waste must be characterized, and WGS personnel must preapprove disposal.

4.2 Sample Analysis

The SAM will approve the laboratory performing sample analysis. This laboratory will analyze the samples in accordance with project requirements, including:

- ER-SOW-394, “Idaho National Laboratory Sample and Analysis Management Statement of Work for Analytical Services.”

Project-specific request for analyses forms or TOS(s) identify additional requirements for laboratory analysis. The following sections identify analysis requirements for the characterization project.

4.2.1 Analytical Methods

To ensure that data of acceptable quality are obtained from the characterization project, standard EPA laboratory methods or technically appropriate methods for analytical determinations will be used to obtain sample data. Analytical methods to be used for this characterization activity are identified in Table 4-2.

Table 4-2. Analytical method and method descriptions.

Analytical Method	Method Description
Sulfur	See TOS
Calcium Carbonate	See TOS

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Any deviations from this information will be fully documented, and the laboratory will inform the project manager of the deviations.

4.2.2 Instrument Calibration Procedures

Laboratory instrumentation will be calibrated in accordance with the specific laboratory quality assurance plan. The SAM analytical laboratory authorization processes provide assurance that the analytical laboratories authorized to perform analysis maintain an appropriate laboratory quality assurance plan that addresses instrument calibration.

4.2.3 Laboratory Records

Laboratory records are required to be maintained in accordance with the specific laboratory quality assurance plan. The SAM analytical laboratory authorization processes provide assurance that the analytical laboratories authorized to perform analysis maintain an appropriate laboratory quality assurance plan that addresses laboratory records.

4.3 Data Management and Document Control

4.3.1 Data Reporting

A Level B, 21-day rush deliverable will be required for all data reported for this characterization project. The final data package documentation will conform to the criteria specified in ER-SOW-394. The ER SOW prepared by the SAM organization is the standard means by which analytical data deliverable requirements are defined by ICP projects to laboratories used by ICP. All laboratories used by this project will adhere to the documents used to establish technical and reporting standards.

4.3.2 Data Validation

Analytical data validation is the comparison of analytical results versus the requirements established by the analytical method. Validation involves evaluation of all sample-specific information generated from sample collection to receipt of the final data package. Data validation is used to determine whether analytical data are technically and legally defensible and reliable. The final product of the validation process is the validation report. The validation report communicates the quality and usability of the data to the decision-makers.

Since this is not waste characterization, data validation is irrelevant. It may be employed in the future.

4.3.3 Data Quality Assessment

The project data quality assessment and validation process is used to determine whether the data meet the project DQOs. Additional steps of the data quality assessment process may involve data plotting, testing for outlying data points, and other statistical analysis relative to the characterization project DQOs.

4.3.4 Closure Report

A closure report will be prepared for this project per applicable program requirements; Donna Kirchner (6-9873) is the Environmental Services point of contact for review of data and issuance of the closure report summarizing the sampling activity and the findings. The closure report will contain a

summary of all of the sample data generated during this sampling effort, and reference to the log notes, the pertinent notes to the file, the chain of custody (COC) forms, and the final sampling plan. The closure report will also describe the sample collection effort. A description of the data quality assessment process may also be included. The DQOs will be reviewed and evaluated to determine if the characterization project objectives were met.

4.3.5 Document Control

Refer to MCP-9227, “Environmental Services Project Logkeeping Practices” and MCP-9228, “Managing Nonhazardous Samples,” or MCP-1394, “Managing Hazardous Samples.” Document control consists of the clear identification of all project-specific documents in an orderly form, secure storage of all project information, and controlled distribution of all project information. Document control ensures controlled documents of all types related to the project will receive appropriate levels of review, comment, and revision as necessary. The project manager is responsible for properly maintaining project documents according to document control requirements. Upon completion of the characterization project, all project documentation and information will be transferred to compliant storage according to project, program, and company requirements. This information may include field logbooks, COC forms, laboratory data reports, engineering calculations and drawings, and final technical reports.

5. HEALTH AND SAFETY REQUIREMENTS

Per the requirements of MCP-3562, “Hazard Identification Analysis and Control of Operational Activities,” a hazard screening checklist was completed for this characterization activity to identify all hazards associated with this project. Hazards identified on the checklist along with corresponding mitigation requirements are documented on a JSA form per MCP-3450, “Developing and Using Job Safety Analyses.” The JSA is in Appendix A of this plan, and the Hazard Screening Checklist is in Appendix B. The JSA ensures that all hazards associated with sampling are identified and adequately mitigated. Sampling personnel must abide by all the health and safety requirements outlined in Appendix A. The persons identified as the Hazard Evaluation Group (HEG) through completion of this checklist, the project manager, and the facility management representative document their concurrence with this plan/JSA through approval signatures on DRF 318936.

6. REFERENCES

ER-SOW-394, “Idaho National Laboratory Sample and Analysis Management Statement of Work for Analytical Services.”

MCP-9439, “Environmental Sampling Activities at the INL.”

MCP-1394, “Managing Hazardous Samples.”

MCP-3003, “Performing Pre-Job Briefings and Documenting Feedback.”

MCP-3450, “Developing and Using Job Safety Analyses.”

MCP-3562, “Hazard Identification Analysis and Control of Operational Activities.”

MCP-9227, “Environmental Services Project Logkeeping Practices.”

MCP-9228, “Managing Nonhazardous Samples.”

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PLN-466

PLN-524, "Quality Assurance Project Plan for Environmental Services Characterization Sampling".

TEM-104, "Model for Preparation of Characterization Plans."

Services Authorization Form 3851

PRD-317

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Job/Title CPP-1774 Efflorescence Sampling (ESP-032-07)	Effective Date <u>07/12/2007</u>
Facility/Project & Location CPP-1774	
SME APPROVAL (A "Yes" response requires a review by SME.)	
No Yes SME	No Yes SME
<input type="checkbox"/> <input checked="" type="checkbox"/> Industrial Safety	Fredric French
<input type="checkbox"/> <input checked="" type="checkbox"/> Industrial Hygiene	Craig Davis
<input type="checkbox"/> <input checked="" type="checkbox"/> Fire Protection	Nancy Makey
<input type="checkbox"/> <input type="checkbox"/> RCT/RAD Eng.	Craig Netzel
<input type="checkbox"/> <input type="checkbox"/> Other: _____	
<input type="checkbox"/> <input checked="" type="checkbox"/> Env. Protection	
<input type="checkbox"/> <input checked="" type="checkbox"/> Quality Assurance	Kirk Swenson
<input type="checkbox"/> <input checked="" type="checkbox"/> Engineering	Jim Stalnaker
<input type="checkbox"/> <input checked="" type="checkbox"/> Other: <u>WGS Sarah Porter</u>	
<input type="checkbox"/> <input checked="" type="checkbox"/> Other: <u>Facility Manager Rick Gardner</u>	
Briefly Describe The Job and Expected Result Obtain samples of the Efflorescence material on the exterior walls of Horizontal Storage Modules (HSM) inside CPP-1774.	
Required Job Training/Required Personal Protective Equipment 24 Hour Hazwoper training and current refresher -- (QLHAZ24C or QLHAZ24T or QLHAZ40C) Heat/Cold stress (SMTT0005, SMT0010). Medic First (QL000AID) One team member at a minimum. Personal Protective Equipment Training (TRN 288) Ergonomic Training (TRN 1017) or equivalency (TRN 812), or (SMTT0009). Respiratory protection as designated by safety personnel, if required. Substantial footwear (leather upper above the ankle or safety shoes) is required for all persons entering sample area. PPE will be designated by the health and safety professionals covering this activity. Respiratory protection may be required. Ladder Training Fall Protection Training Aerial Lift Operator Training Scissor Lift Operator Training	
Additionally, the health and safety professionals covering this activity have final say in the training and PPE requirements.	

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Sequence Of Basic Job Steps	Potential Hazards	Hazard Control/PPE
Conduct, attend hazard review board, if required, and pre-job briefing.	a. Sampling activity is being performed inside CPP-1774	a. The job site supervisor is responsible to ensure that this activity is on the plan of the day and for conducting a hazard review board if applicable, and formal pre-job briefing with all employees involved in the job: this includes Safety/Industrial Hygiene, etc. as applicable. (See MCP-3003, Performing Pre-Job Briefing and Documenting Feedback.) Place the Pre-Job Checklist in the project files at the end of this sampling activity.
1. Don PPE.	1a. PPE donned improperly creating a potential hazard.	1a. PPE will be designated by the supporting safety professionals. Donning of PPE will be controlled administratively.
	1b. Heat/Cold stress.	1b. Stay time as required by IH. Ensure buddy system is being utilized. Personnel to monitor each other for signs and symptoms of heat stress. Follow MCP-2704, "Heat and Cold Stress." Donning of PPE will be controlled administratively.
2. Assemble sampling equipment.	2a. Tripping, falling, and slipping.	2a. Address trip, fall, and slip hazards in the pre-job briefing. Stay clear of obstructions and maintain awareness of surroundings and conditions. Keep area cleaned up to avoid slips/trips. Keep tools picked up and stored out of work area if not in use.
	2b. Ergonomic hazards (including lifting).	2b. Use appropriate tools associated with this sampling project. Be cognizant of body positioning. Take rest breaks as necessary. Ensure buddy system is being utilized. Do not lift more than 50 lbs. Or 1/3 body weight.
3. Use of ladders, aerial lifts or scissor-lifts to reach sample locations.	3a. Ladders: <ul style="list-style-type: none">• Fall from elevated locations.• Structural collapse of ladder.• Contacting overhead utilities or obstructions.	3a. Inspect ladder prior to use. Maintain three points of contact when climbing. Use ropes/buckets/etc. to move tools/equipment up and down ladders. Do not carry tools when climbing. Do not lean/work outside the safe boundaries of a ladder. Secure ladder (when feasible). Fall protection competent person evaluates need for fall protection equipment if work is performed from a ladder at heights of 6' or greater. Do not stand or sit on top of ladder. Do not lean step ladder or use as an extension ladder. Do not use stepladder to access higher levels (travel to upper floors). Wear hard hat when overhead hazards exist.
	3b. Aerial Lift, including scissor lift: <ul style="list-style-type: none">• Falls from elevated work platform.• Structural collapse of an elevated platform.• Contacting overhead utilities or obstructions	3b. Wear travel restriction connected to anchorage inside lift platform.. Adjust lanyard as short as possible. Do not exit aerial lift when elevated. PM is current and pre-operational evaluation is performed. Stable/secure footing required where the aerial lift is trammed/used. Caution: Uneven surfaces. Do not exceed safe load limits. Do not climb on railing. Stand on platform with feet firmly planted when performing work.

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Sequence Of Basic Job Steps	Potential Hazards	Hazard Control/PPE
4. A scraper and/or wire brush or equivalent will be used to collect efflorescence samples. Sample solids by collecting the material at designated sample locations. See Section 4.1.8 of this SPR. Decon or replace scraper blades as needed.	4a. Tripping, falling, and slipping.	4a. Address trip, fall, and slip hazards in the pre-job briefing. Stay clear of obstructions and maintain awareness of surroundings and conditions. Keep area cleaned up to avoid slips/trips. Keep tools picked up and stored out of work area if not in use.
	4b. Caught in or between objects	4b. Stay clear of obstructions and maintain awareness of surroundings and conditions.
	4c. Exposure to potentially hazardous dusts from chipping/scraping activities.	4c. Per IH direction
	4d. Cuts, Scraps, and Pinch Points associated with gaining access to efflorescence material.	4d. Wear appropriate PPE—leather gloves and safety glasses with side shields. Proper tools should be used for cutting, resizing sample material, or resizing sample material for placement into sample containers.
	4e. Striking against, being struck by, or making harmful contact with an object (i.e. overhead obstructions, falling objects).	4e. Wear appropriate PPE—leather gloves, safety glasses with side shields, and Hard Hat. Maintain awareness to surroundings and other work being performed. Do not place yourself between a stationary object and mobile equipment or between two mobile objects. Maintain safe body positions.
	4f. Ergonomic hazards – (including lifting).	4f. Do not lift more than 50 lbs. Or 1/3 body weight. Pay close attention to body positioning.
5. Record sampling activities in logbook. Complete sample labels (date and time) and Chain of custody forms (COCs).	No hazards.	No hazards.
6. Repeat Steps 2 through 4 until all sample locations are collected.	See individual steps.	See individual steps.
7. Bag and label or defer handling of wastes generated during sampling and decon (dipper(s), wipes, pans, etc.) to WGS personnel at their direction.	7a. No Hazards	7a. Contact appropriate Waste Generator Services (WGS) Waste Technical Specialist (WTS) upon waste generation.
8. Remove samples and sample equipment.	8a. Tripping, falling, and slipping.	8a. Address trip, fall, and slip hazards in the pre-job briefing. Stay clear of obstructions and maintain awareness of surroundings and conditions. Keep area cleaned up to avoid slips/trips. Keep tools picked up and stored out of work area if not in use.
9. Exit the sample area and doff PPE.	9a. PPE doffed improperly creating a potential hazard from unnecessary chemical and or radiological contact.	9a. If applicable, observe PPE doffing and personnel survey procedures posted at the exit of the designated sample area or per RCT direction and comply with RWP as applicable.

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Sequence Of Basic Job Steps	Potential Hazards	Hazard Control/PPE
	9b. Tripping, falling, and slipping.	9b. Address trip, fall, and slip hazards in the pre-job briefing. Stay clear of obstructions and maintain awareness of surroundings and conditions. Keep area clean to avoid slips/trips. Keep tools picked up and out of work area if not being used.
10. Package and ship samples.	10a. Back strain from lifting/lowering of heavy objects.	10a. Single person lifts will not exceed 50 pounds or 1/3 of the body weight involved (whichever is less). Use proper lifting techniques, and have two people lift each object.
11. Documents, lognotes, and other quality records – procurement of goods/services – laboratory; storing of controlled quality items; items requiring handling, storage, packaging and shipment to prevent or minimize deterioration.	11a. Loss of quality.	11a. Quality is a HEG reviewer of this document.

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Appendix B**Hazard Screening Checklist**

SCREEN 2 HAZARD PROFILE ANALYSIS		CHEC K BOX IF VALID	SUBJECT MATTER EXPERT SUPPORT (see legend at end of form)							
			OPS	S	IH	RAD	ENV	ENG	FP	Other
1.	The activity will involve work on any machinery with mechanical motion.	<input checked="" type="checkbox"/>		X	X				X	
2.	The work activity will be performed on a system that stores energy (such as springs, batteries, capacitors, hydraulic accumulators, etc.).	<input type="checkbox"/>		X					X	
3.	The work activity will require blocking of hinged or rotating equipment that could pose a pinching problem.	<input checked="" type="checkbox"/>		X					X	
4.	The work activity will require the employee to work on or near unguarded operating rotating equipment or with pinch points or sharp edges (near is the distance where an individual or tool could contact the piece of equipment).	<input type="checkbox"/>		X						
5.	The worker will be exposed to the danger of striking against, being struck by, or making harmful contact with an object (i.e., overhead obstructions, falling objects).	<input checked="" type="checkbox"/>		X						
6.	The worker can be caught in, by, or between objects.	<input checked="" type="checkbox"/>		X						
7.	The work activity will include the manual lifting of heavy objects.	<input type="checkbox"/>			X					
8.	The work activity will involve hoisting and rigging or material handling.	<input type="checkbox"/>		X						
9.	The hoisting and rigging will involve a non-routine critical lift.	<input type="checkbox"/>		X					X	
10.	The equipment involved in the work or during transit has the potential to contact an overhead, suspended, or other pathway obstruction (i.e., overhead wires, low clearances, gates, tight turn radius, etc.).	<input checked="" type="checkbox"/>		X						
11.	The activity will involve performing work where personnel or equipment can make contact with distribution system equipment or while working or passing within 50 feet of an overhead high voltage transmission line.	<input type="checkbox"/>		X						PWR

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SCREEN 2 HAZARD PROFILE ANALYSIS		CHEC K BOX IF VALID	SUBJECT MATTER EXPERT SUPPORT (see legend at end of form)							
Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other
12.	The work activity will have ergonomic hazards present (e.g., repetitive motion, excessive manual force, awkward or static postures, contact stress on body, vibration, work system not accommodating employee physical shape)	<input checked="" type="checkbox"/>		X			X			
13.	The work activity will create or occur in an area with inadequate lighting.	<input type="checkbox"/>	X							
14.	The work activity will involve an elevated work platform.	<input checked="" type="checkbox"/>	X				X			
15.	Scaffolding is required for this work activity. Work will be performed from a ladder or mobile ladder stand at a height	<input type="checkbox"/>	X							
16.	above 6 feet.	<input checked="" type="checkbox"/>	X							
17.	The work is being performed on a roof.	<input type="checkbox"/>	X				X			
18.	The work activity will require access into, or work near pits, excavations, or other negative elevations greater than 6 feet for construction workers, 4 feet for operational or maintenance work.	<input type="checkbox"/>	X							
19.	An aerial lift will be used for this work activity (i.e., boatswain's chair, vehicle-mounted devices, telescopes, or articulating boom).	<input checked="" type="checkbox"/>	X							
Electrical										
20.	The work activity will involve the performance of Nondestructive Examinations (NDE)	<input type="checkbox"/>					X		QA	
21.	The work activity will involve the abandonment of a hazardous energy (electric, hydraulic, pneumatic etc.) without being disconnected (air gapped) from the source.	<input type="checkbox"/>					X			
22.	The work activity will involve electrical zero energy checks or will work be performed on a non-isolated (energized without LO/TO or clearance performed) electric circuit or equipment.	<input type="checkbox"/>	X				X			
23.	The work activity will involve non-contact electrical work (visual inspections / install insulating barriers, etc).	<input type="checkbox"/>	X				X			

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Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other
24.	The work activity involves using extension cords or cause permanent or temporary electrical conductors to be exposed to liquids (opening a liquid line where fluid may run down onto an electrical junction box, water contacting extension cords, etc.).	<input type="checkbox"/>	X							
25.	The work activity will involve replacement or work on batteries to include removing/replacing intercell connections (excluding small appliance/flashlight batteries).	<input type="checkbox"/>		X	X			X		
26.	The work activity will involve breaker and motor starter racking (insertion or removal).	<input type="checkbox"/>		X				X		
27.	The work activity will involve installation, removal, relocation, or repair of overhead lines.	<input type="checkbox"/>		X			X	X		
28.	The work activity will involve disconnecting / connecting grounded conductors or personal protective grounds.	<input type="checkbox"/>		X				X		
Excavation/Surface Penetration										
29.	The work activity will involve a surface penetration (Any digging, drilling, driving, or cutting into walls, floors, ceilings, or other surfaces, regardless of depth, where a potential for damaging underlying cables or piping exists.)	<input type="checkbox"/>		X			X			
30.	The work activity will take place on an abandoned line, system, or equipment.	<input type="checkbox"/>		X	X	X	X	X	CRIT	
31.	The soil will be disturbed to a depth greater than 6" (mechanical excavation) or 12" (hand excavation).	<input type="checkbox"/>		X			X		USQ or MOC	
32.	The work activity will involve excavation in or adjacent to a CERCLA area, an Underground Radioactive Material Area (URMA) or Soil Contamination Area (SCA).	<input type="checkbox"/>		X		X	X	X	USQ or MOC	
33.	The work activity will involve excavations, trenching, drilling, geoprobe sampling, reseeding, or any other disturbances of soil.	<input type="checkbox"/>					X			
34.	The work activity will block a road or access to a facility.	<input type="checkbox"/>		CS			X	X	X	
									EP	

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Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other	
35.	The work activity will involve installing or relocating a temporary facility/structure.	<input type="checkbox"/>		CS	X			X	X	X	LSS
36.	The work activity will modify fire loading or building structures such as walls, ceiling, aisle space, floors, and doors.	<input type="checkbox"/>		CS				X	X	X	LSS USQ or MOC
37.	The work activity will affect the structural stability of buildings, walls, ceilings, or piping/equipment support systems.	<input type="checkbox"/>		CS				X	X		
38.	The work activity will create tripping hazards or occur in an area with an unstable surface for personnel to stand or walk on.	<input checked="" type="checkbox"/>		X					X		
39.	The work activity will be performed as fieldwork (work outside of a facility boundary area).	<input type="checkbox"/>		X				X	X		EP
40.	The work activity will be performed in an area contaminated with radiological, chemical, or other hazardous or waste constituents (excluding RCRA regulated areas), or in a CERCLA area of contamination or a Voluntary Consent Order cleanup area.	<input type="checkbox"/>		X	X	X	X	X		ER USQ or MOC	
41.	The work activity will involve a heavy industrial vehicle (i.e., fork lifts, heavy vehicles designed to operate within off-highway job sites, scrapers, bulldozers, tractors) or transportation of heavy loads.	<input type="checkbox"/>		X				X	X		USQ
42.	A fossil-fueled powered industrial vehicle/motor will be used inside a facility or within 50 ft. external to an occupied building.	<input type="checkbox"/>			X				X	Z	USQ
43.	There is potential to release a hazardous substance to a space in a quantity sufficient to exceed atmosphere IDLH (e.g., O ₂ deficiency, carbon monoxide, CO ₂ , release of toxic gases).	<input type="checkbox"/>			X						
44.	The work activity will involve a suspected confined space or it will potentially create a confined space, to include initially accessing areas closed for long periods.	<input type="checkbox"/>			X						
45.	The work activity will involve entry into a non-permit required confined space.	<input type="checkbox"/>		X	X				X		

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		OPS	S	IH	RAD	ENV	ENG	FP	Other
46. The work activity will involve entry into a permit required confined space.	<input type="checkbox"/>			X					
47. The work activity will involve breaking the boundary to a system operated under pressure or a vacuum.	<input type="checkbox"/>		X					X	
48. The work activity will involve a system containing flammable or combustible liquids or gases at positive pressure.	<input type="checkbox"/>		X	X			X	X	
49. The work activity will involve a system containing nonflammable gases under pressure >30 psig.	<input type="checkbox"/>		X				X	X	
50. The work activity will involve working on a > 15 psig pressurized liquid equipment/system which is capable of being isolated (excluding boilers, nonfired pressure vessels, etc.).	<input type="checkbox"/>		X				X		
51. The work activity will involve a liquid system containing piping size and velocity great enough to create a potential flooding hazard if the system has a large leak.	<input type="checkbox"/>		X					X	
52. The work activity will occur in an area with potential drowning hazards.	<input type="checkbox"/>		X						EP
53. The work activity will involve working on a steam system.	<input type="checkbox"/>		X				X	X	
54. The work activity will involve working on coded (ASME, etc.) pressure vessels, systems, or relief devices.	<input type="checkbox"/>		X					X	QA
55. The work activity will involve movement or replacement of a compressed gas cylinder(s).	<input type="checkbox"/>		X	X				X	
56. The activity will expose workers to an extreme temperature environment or expose workers to conditions that prevent the body from maintaining proper body temperature (e.g., hot weather, outside work in the winter, wearing of PPE).	<input checked="" type="checkbox"/>	8.		X				X	
57. The work activity will involve working on or near a high temperature system greater than 125 degrees Fahrenheit (near means a potential for contacting surface).	<input type="checkbox"/>		X					X	

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Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other
58.	The work activity involves using cryogenic systems or chemicals exhibiting cryogenic properties.	<input type="checkbox"/>	X	X		X				
59.	The work area is posted as a high noise (greater than 85 dB.) area or the work activities will produce high noise levels.	<input type="checkbox"/>			X					
60.	The work activity involves surface preparation, including grinding, abrasive blasting, scabbling, or chipping.	<input checked="" type="checkbox"/>	X	X		X	X	X		
61.	The work activity is likely to result in an inhalation or dermal exposure to dust, mists, or ashes.	<input type="checkbox"/>		X			X			
62.	The work activity will disturb or have the potential to disturb areas contaminated with rodent or pigeon feces or urine, or involve nesting birds.	<input type="checkbox"/>		X			X			
63.	The work activity will expose or have the potential to expose workers to bloodborne and/or other potentially infectious materials.	<input type="checkbox"/>		X			X			
64.	The work activity will create or disturb a potentially explosive dust.	<input type="checkbox"/>	CS	X				X	USQ or MOC	
65.	The work activity will involve cutting, welding, flame soldering, grinding, or plasma arc cutting or otherwise produce sparks or flames outside an approved welding area.	<input type="checkbox"/>	CS	X		X	X	X	LSS	
66.	The work activity involves use of flammable materials near an ignition source, such as static electricity, furnaces, hot plates, sparks, and open flames (excluding welding/cutting).	<input type="checkbox"/>	CS			X	X	X	LSS	
67.	The work activity will require dispensing or bulk handling of flammable and combustible liquids (excluding fueling vehicles).	<input type="checkbox"/>	CS	X		X		X	LSS USQ or MOC	
68.	The work activity will involve repair, installing, modifying, or disabling emergency response equipment (i.e., SCBA or vehicle storage area, and emergency information signs).	<input type="checkbox"/>	CS				X	X	EP LSS	

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Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other
69.	The activity will involve a ventilation system or ducting, fume hood, or dismantling a glove box that may contain residual chemicals, such as perchlorates, or dusts having the potential for explosion, fire, or toxic exposure.	<input type="checkbox"/>	CS	X		X	X	X	LSS USQ or MOC	
70.	The work activity will modify or affect HEPA filtration.	<input type="checkbox"/>			X		X		USQ or MOC	
71.	The work activity will modify or affect HVAC or local exhaust systems used to control exposures to hazardous substances.	<input type="checkbox"/>			X		X	X	USQ or MOC	
72.	The work activity will affect facility HVAC flow paths or velocities in a building containing RBAs or CAs.	<input type="checkbox"/>	X			X	X	X	USQ or MOC	
73.	The work activity will involve pyrophoric material.	<input type="checkbox"/>			X		X		X LSS USQ or MOC	
74.	The work activity will require using explosives (including squibs).	<input type="checkbox"/>	CS			X			X LSS USQ or MOC	
75.	The work requires using powder actuated devices or tools.	<input type="checkbox"/>		X			X			
8.1.1 Chemical/Hazardous Materials										
76.	The work activity will expose the worker to fumes, vapors, mists, gases, or dust (includes painting or working on or near lead-acid batteries, and motor exhaust in or near buildings beryllium, mercury, cadmium, hexavalent chromium, etc.).	<input checked="" type="checkbox"/>		X	X			X		
77.	The work involves uncharacterized or unknown chemical hazards (suspected container mislabeling, abandoned pipes/equipment, accessing long-term closed/sealed drums/vaults/tanks/cells).	<input type="checkbox"/>	CS	X		X		X	USQ or MOC CRIT *	

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		OPS	S	IH	RAD	ENV	ENG	FP	Other
78. The work activity will involve the storage of hazardous materials.	<input type="checkbox"/>			X		X	X	X	USQ or MOC
79. The work activity will involve working with beryllium or beryllium contaminated equipment.	<input type="checkbox"/>			X		X			
80. The work activity will involve the handling or storage of a carcinogen (as identified on the MSDS).	<input type="checkbox"/>			X			X		
81. The work activity will disturb, break up, dislodge, or block access to asbestos-containing or suspect material (such as thermal insulation; gaskets; valve packing; wall, floor, or ceiling material; roofing; insulated wiring; transite siding; etc.).	<input type="checkbox"/>			X		X	X		AP
82. The work activity will involve working with lead, lead products, or lead contaminated equipment that could pose an inhalation, ingestion, or injection hazard.	<input type="checkbox"/>		9.			X	X		
83. The work activity will involve working with cadmium, cadmium products, or cadmium contaminated equipment that could pose an inhalation, ingestion, or injection hazard.	<input type="checkbox"/>			X		X	X		
84. The work activity will involve recovery from spills or other releases of PCBs or cleaning up fire-related incidents involving PCBs.	<input type="checkbox"/>			X		X	X		
85. The work activity will involve maintaining, decontaminating, or excessing equipment containing or potentially contaminated with PCBs, to include fluorescent light ballasts manufactured before 1978.	<input type="checkbox"/>			X		X			
86. The work activity will involve procuring, applying, or storing pesticides (e.g., herbicides, rodenticide, fungicides, insecticides, and bactericides).	<input type="checkbox"/>			X		X			
87. The work activity will involve applying fertilizer.	<input type="checkbox"/>			X		X			
88. The worker's eyes or skin will be exposed to toxic or corrosive chemicals.	<input type="checkbox"/>			X					
89. The chemicals stored or used near the work activity could reasonably impact the work (or vice versa).	<input type="checkbox"/>			X		X	X	X	

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Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other
90.	The chemicals required by the work activity will exceed the threshold quantities of the facility safety analysis report or emergency preparedness hazard evaluation.	<input type="checkbox"/>	X		X		X	X	X	EP USQ or MOC
Does the work activity involve the use of a chemical? If "NO," then skip questions 91 through 96.										
91.	The work activity will involve purchase, use, or storage of Chemical Products/Chemicals/Hazardous Agents.	<input type="checkbox"/>			X		X			
92.	The chemical(s) used for the work activity have a health rating greater than 1 using the NFPA 704 Hazard Identification System.	<input type="checkbox"/>			X		X			
93.	The chemical(s) used for the work activity have a flammability rating greater than 1 using the NFPA 704 Hazard Identification System.	<input type="checkbox"/>		CS			X		X	USQ or MOC
94.	The chemical(s) used for the work activity have a reactivity rating greater than zero for any of the identified chemicals.	<input type="checkbox"/>			X		X		X	
95.	The chemical(s) used for the work activity have a special rating for any of the listed chemicals.	<input type="checkbox"/>			X			X	X	
96.	The work activity will involve use of a chemical without an NFPA 704 (Hazard Identification System) description on the MSDS.	<input type="checkbox"/>			X				X	
Environmental										
97.	The work involves the collection or disposition of solid, liquid, or gaseous samples (excludes samples for monitoring equipment performance).	<input checked="" type="checkbox"/>						X		10. Q A
98.	The work will be performed within a RCRA Treatment, Storage, and Disposal Facility (Permitted or Interim Status) or any Voluntary Consent Order closure.	<input type="checkbox"/>						X		*
99.	The work will activity will involve constructing or modifying container storage facilities or tanks (for regulated waste or >55 gal oil).	<input type="checkbox"/>		X			X		X	
Will the work activity involve aboveground or underground tanks? IF "NO", then skip questions 100 through 103.										

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Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other
100.	The work activity will involve constructing, modifying, repairing, maintaining or operating above ground storage tanks and underground storage tanks not regulated by 40 CFR 280.	<input type="checkbox"/>				X	X			
101.	The work activity will involve relocating, removing, or closing aboveground storage tanks and underground storage tanks not regulated by 40 CFR 280 (excluding septic tanks).	<input type="checkbox"/>				X				
102.	The work activity will involve constructing, modifying, or repairing underground storage tank (UST) systems.	<input type="checkbox"/>				X	X		11.	
103.	The work activity will involve use of portable or mobile oil storage tank or facility exceeding an aggregate capacity greater than 1,320 gallons in containers or tanks (sized greater than 55 gallons).	<input type="checkbox"/>				X		X		
Will the work activity involve or generate any type of waste (such as RCRA, PCB-containing, medical or infectious, oily waste or wastewater, or solid sanitary waste)? IF "NO", then skip questions 104 through 107.										
104.	The work activity will involve procuring off-site waste management and recycling services.	<input type="checkbox"/>				X			QA	
105.	The work activity will involve dispositioning excess materials.	<input type="checkbox"/>				X			USQ or MOC	
106.	The work activity will involve using, storing, or shipping off-site product lead (shielding or building material lead - in use, previously used, or stored for reuse; can't be recycled).	<input type="checkbox"/>			X	X	X		WGS	
107.	The work activity will involve or generate a waste (with or without an approved disposition path).	<input checked="" type="checkbox"/>					X		WGS	
Will the work activity involve wastewater or sanitary wastes? IF "NO", then skip questions 108 through 115.										
108.	The work activity will alter the path of or contribute to storm water drainage at an INL site facility within the Storm Water Corridor.	<input type="checkbox"/>				X	X			
109.	The work activity will involve discharging, or changing or adding new discharges of wastewater to the City of Idaho Falls sewer system.	<input type="checkbox"/>		X			X		WGS	

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Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other
110.	The work activity will involve constructing or modifying sewage or other wastewater systems.	<input type="checkbox"/>					X	X		
111.	The work activity will involve discharge or discharging wastewaters to a Site system.	<input type="checkbox"/>	X	X		X	X	X	WGS	
112.	The work activity will involve constructing or modifying septic tank/system.	<input type="checkbox"/>			X	X	X			
113.	The work activity will involve maintaining and repairing septic tanks/systems.	<input type="checkbox"/>			X		X			
114.	The work activity will involve pumping septic tanks or sanitary waste systems.	<input type="checkbox"/>			X		X			
115.	The work activity will involve abandoning or closing septic tanks.	<input type="checkbox"/>			X		X			
Will the work activity involve facilities, equipment, processes, or activities that control, monitor, or emit air pollutants (including fugitive emissions (i.e., fuel, fumes, dust, etc.) open burning, CERCLA releases of air pollutants, radioactivity, or hazardous substances, etc.)? IF "NO", then skip questions 116 through 121.										
116.	The work activity will involve operating, relocating, maintaining, modifying or constructing airborne emission sources (excluding vehicular engines).	<input type="checkbox"/>					X	X		
117.	The work activity will involve performing activities with the potential for fugitive dust or fugitive emissions.	<input type="checkbox"/>					X			
118.	The work activity will involve conducting open burning.	<input type="checkbox"/>					X	X	X	
119.	The work activity will involve maintaining and repairing motor vehicle gasoline station pumps.	<input type="checkbox"/>					X	X	X	
120.	The work activity has the potential or is expected to cause process/equipment air emissions to exceed or approach close to permitted or regulatory limits.	<input type="checkbox"/>	X				X	X		
121.	The work activity will be performed on radiological monitoring equipment.	<input type="checkbox"/>				X		X	12.	
Will the work activity involve ozone depleting substances (ODS, e.g., Halon, refrigerants) or appliances containing ODSs? IF "NO", then skip questions 122 through 126.										

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Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other
122.	The work activity will involve purchasing ODS (i.e., refrigerants, Halon and other ODS) Equipment or Recovery/Recycling Equipment.	<input type="checkbox"/>				X	X		QA*	
123.	The work activity will involve maintaining, servicing or repairing refrigeration and air conditioning equipment.	<input type="checkbox"/>	X	X		X	X			
124.	The work activity will involve recycling refrigerants from motor vehicle air conditioners.	<input type="checkbox"/>		X		X	X			
125.	The work activity will involve distributing, excessing, or disposing of appliances containing refrigerants.	<input type="checkbox"/>				X	X			
126.	The work activity will maintain, test, remove, or dispose Halon systems or Halon-containing equipment.	<input type="checkbox"/>		X		X	X	X	LSS	
Will the work activity involve water, production, injection, or observation wells, well protection, or boreholes? IF "NO", then skip questions 127 through 131.										
127.	The work activity will involve constructing or modifying potable water, production, monitoring, or observation wells.	<input type="checkbox"/>			X		X			
128.	The work activity will involve protecting wellheads.	<input type="checkbox"/>					X	X		
129.	The work activity will involve constructing or modifying injection wells.	<input type="checkbox"/>					X	X		
130.	The work activity will involve discharging to or operating a shallow injection well not requiring a permit.	<input type="checkbox"/>					X	X		
131.	The work activity will involve closing and/or abandoning wells, boreholes, or injection wells.	<input type="checkbox"/>					X	X		
Will the work activity add or modify drinking water systems such as water mains, storage tanks, treatment systems (e.g., liquid sanitary waste), wells, or diversions to a waste line from a well pump? IF "NO", then skip questions 132 and 133.										
132.	The work involves constructing or modifying drinking water systems.	<input type="checkbox"/>			X		X			
133.	The work activity will involve connection to, maintaining, altering, or repairing drinking water systems or removing a drinking water pump.	<input type="checkbox"/>			X		X			

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Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other
134.	The work activity will involve structures/buildings that are on the list for eligible facilities and buildings for the National Historic Register (see the Web at http://webfiles/ea/nepa/files/CRTTable.pdf) where the work is not included on the list of exempt activities (see MCP-3480, Appendix C).	<input type="checkbox"/>				X				
135.	The work activity will involve deactivating, decontaminating, dismantling, or closing facilities (including trailers), equipment, or process (non-CERCLA remedial actions).	<input type="checkbox"/>				X			13. L S	
136.	The work activity will involve reactivating buildings or facilities from standby (inactive) status.	<input type="checkbox"/>				X	X	X	LSS 14.	
137.	The work activity will involve exposing employees to non-ionizing radiation (e.g., microwave, radiofrequency emitters, and transmitter antennas), or installation, transfer, or removal of RF emitters.	<input type="checkbox"/>		X			X			
138.	The work involves Class II, III, or IV lasers.	<input type="checkbox"/>		X			X			
139.	The work activity will involve moving, handling, processing, or transporting Special Nuclear Material, TRU, or TRU/M.	<input type="checkbox"/>		X	X		X		SEC USQ CRIT	
<p>Will the work occur in a radiological buffer area, or is the work area bordered by any radiological postings, barriers, signs or labels? If "NO," then skip questions 140 through 152. If "YES and there is <u>NOT</u> a general RWP that encompasses the planned work, then review the following questions, number 139 through 151.</p>										
140.	The work activity will be performed inside of a radiological buffer area.	<input type="checkbox"/>				X		X		
141.	The work activity will be performed inside of a Radiological Material Area, or Radiological Material Area for storage.	<input type="checkbox"/>				X		X		
142.	The work activity will be performed inside a known or suspected High Contamination Area, Fixed Contamination Area, Contamination Area, or Airborne Radiological Area.	<input type="checkbox"/>				X		X		
143.	The work activity will be performed inside of a Radiation Area.	<input type="checkbox"/>				X		X		

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Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other
144.	The work activity will be performed inside of a known or suspected High Radiation Area or a Very High Radiation Area.	<input type="checkbox"/>			X					
145.	The welding, grinding, cutting, surface preparation, abrasive blasting, scabbling, chipping, or other treatment be performed on or near a surface in a manner that contamination could be uncovered or become airborne.	<input type="checkbox"/>			X		X	X		
146.	A new process or equipment will be introduced that will be used to contain or transport radioactive materials.	<input type="checkbox"/>	X			X	X	X	15. U S Q e f M O C	
147.	The work activity will involve moving a component, system, or equipment that has the potential for internal contamination.	<input type="checkbox"/>			X	X		X		
148.	The work activity will require handling or use of Radiologically Controlled Materials.	<input type="checkbox"/>				X		X		
149.	The work activity will involve use of radioactive sources or radiation producing devices, or devices that contain radioactive sources (e.g., radiography, x-ray machines).	<input type="checkbox"/>	X			X			QA	
150.	The activity will involve DD&D of a facility containing radiological materials.	<input type="checkbox"/>				X	X	X	USQ or MOC	
151.	The activity will involve the transfer, pumping, or draining of radioactive or radioactively contaminated liquids (including stormwater).	<input type="checkbox"/>	X		X	X	X	X		

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Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other
152.	The work activity will involve working with, recovering, or repackaging radioactive or radioactive mixed wastes.	<input type="checkbox"/>			X	X	X		WGS USQ or MOC	
153.	The work activity will require installation, fabrication, or modification of shielding (lead, steel, liquid, polyethylene, etc.).	<input type="checkbox"/>	X		X		XX		CRIT	
154.	The work activity will involve working with fissile material that may require criticality controls.	<input type="checkbox"/>			X		X		CRIT	
Does the proposed activity affect the operations at a facility identified in LST-268? IF "NO," then skip questions 155 through 159.										
155.	The planned activity will effect a change of fissile material, moderator, or reflector quantities or location within a Criticality Control Area (CCA).	<input type="checkbox"/>			X				CRIT USQ	
156.	The work activity will possibly cause a false criticality evacuation alarm or otherwise require changes to current criticality alarm system operation.	<input type="checkbox"/>	X		X		X		EP USQ CRIT	
157.	The work will affect the capability of a safety structure, system or component (see LST-253) to perform its function and is not an approved condition covered by an operations procedure.	<input type="checkbox"/>			X		X	X	USQ CRIT *	
158.	The work activity will require shutdown or disabling of a safety Structures, Systems, and Components (see LST-253) that is not allowed by an operations procedure.	<input type="checkbox"/>	X		X		X		EP USQ	
159.	Upon completion of the work, the plant or system within a nuclear facility will be left in a condition or configuration that is not exactly the same as it was prior to starting the activity.	<input type="checkbox"/>	X				X		USQ	
160.	The work activity will alter the consistency of the design requirements, physical configuration, or documentation of the SSC designated for configuration management.	<input type="checkbox"/>	X				X		USQ	
161.	The work activity will modify or disable emergency communications or evacuation systems.	<input type="checkbox"/>	X			X	X	X	EP WGS LSS	

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Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other
162.	The work activity will repair, modify, or disable the fire protection suppression/ detection systems (i.e., underground fire mains, fire suppression, fire alarms, etc.).	<input type="checkbox"/>							X	EP QA LSS
163.	The work activity will involve repair, installing, modifying, or disabling safety equipment (i.e., eyewashes, emergency showers, etc. not related to nuclear/ radiological safety protection systems).	<input type="checkbox"/>		X	X			X		
164.	The work activity will block or obstruct an aisle, entrance, exit, or safety equipment.	<input type="checkbox"/>		CS					X	EP
165.	The work will involve quality significant SSCs (QL-1 or QL-2) identified in the QPP/QAPjP or any of the safety category SSCs: Safety Class, Safety Significant, or which may have the following requirements: QA PRDs, quality activities, design or design change, interfaces, procurement of services or items, updating procedure or drawings, new hazard controls, storing or controlling items, controlling quality processes, quality inspections or verifications, testing, acceptance, or conformance verification, use of measuring and test equipment, or storing records.	<input checked="" type="checkbox"/>							X	QA
166.	The work is associated with the Nuclear Material Disposition (NMD) Program and subject to PLN-466 or PLN-533 (check with requester if unsure).	<input checked="" type="checkbox"/>	*							QA
167.	The work activity will involve changes to process computer software.	<input type="checkbox"/>						X		
168.	The work activity will involve repair (like-for-like replacement) or modification of a security related system.	<input type="checkbox"/>						X		SEC
169.	The work activity will interrupt or disable a security system.	<input type="checkbox"/>								SEC
170.	The work activity will occur in secured areas with special access requirements or be performed by personnel not security briefed for the area.	<input type="checkbox"/>								SEC
171.	Hazards from the proposed work are reasonably expected to expose employees in adjacent work areas or employees that may enter the area.	<input type="checkbox"/>		X	X					EP

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Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other
Will the work activity involve the creation or modification to an operations procedure (TPR, MCP)? IF "NO", then skip questions 172 through 197.										
172.	The work activity will involve performing site studies for new buildings or structures.	<input type="checkbox"/>					X	X		
173.	The work activity will involve reporting water consumption.	<input type="checkbox"/>				X	X			
174.	The work activity will construct or modify facilities, equipment, or processes (including changes to work conditions).	<input type="checkbox"/>		X	X	X	X		QA USQ or MOC	
175.	The work involves the operating facilities, equipment, or processes within the storm water corridor.	<input type="checkbox"/>					X			
176.	The work involves responding to a regulatory inspection.	<input type="checkbox"/>					X			
177.	The work involves the monitoring of storm water according to the Storm Water Pollution Prevention Plan for Industrial Activities.	<input type="checkbox"/>					X			
178.	The work involves the removing of brake pads.	<input type="checkbox"/>					X			
179.	The work involves the manufacturing of wood furniture and wood furniture components.	<input type="checkbox"/>					X			
180.	The work involves the operating or sampling of drinking water systems or exceeding permitted or regulated drinking water limits.	<input type="checkbox"/>					X			
181.	The work involves the purchasing of diesel fuels.	<input type="checkbox"/>					X		X	
182.	The work involves the procurement of off-site waste management and recycling services.	<input type="checkbox"/>				X		X	CRIT QA	
183.	The work activity involves procuring goods and services.	<input type="checkbox"/>					X			
184.	The work involves the procuring of external laboratory services for waste characterization.	<input type="checkbox"/>					X			
185.	The work involves the conducting of new or modification of existing research and development (R&D) activities, including indoor bench-scale and small-scale R&D activities, and small-scale projects	<input type="checkbox"/>			X		X	X	USQ or MOC	

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Hazard Concern or Issue			OPS	S	IH	RAD	ENV	ENG	FP	Other
186.	The work involves the leasing, renting, or transacting of real property.	<input type="checkbox"/>					X			
187.	The work involves the discharging to septic tank/systems.	<input type="checkbox"/>					X			
188.	The work involves the operating aboveground storage tanks and non-regulated underground storage tanks.	<input type="checkbox"/>					X			
189.	The work involves the operating and maintenance of regulated underground storage tanks (USTs).	<input type="checkbox"/>					X			
190.	The work involves the release, leaks, spills, or unusual operating conditions from regulated USTs.	<input type="checkbox"/>					X			
191.	The work involves changing the use of or reactivating regulated USTs.	<input type="checkbox"/>					X			
192.	The work involves temporarily discontinuing the use of or temporarily closing the regulated USTs.	<input type="checkbox"/>					X			USQ or MOC
193.	The work involves the operating of volatile organic storage tanks.	<input type="checkbox"/>					X			
194.	The work involves the construction or modification of facilities, equipment, or processes at Permitted or Interim Status RCRA facilities.	<input type="checkbox"/>					X			
195.	The work involves the operating of solid waste management units.	<input type="checkbox"/>					X			
196.	The work involves the operating and sampling of permitted injection wells.	<input type="checkbox"/>		X						SEC
197.	The work involves security actions, security vehicles, operations, maneuvers, disabling of alarms, working in secured areas, firearms, security simulations, tactical operations, specialized security equipment, etc...	<input type="checkbox"/>								USQ

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Appendix C

Sampling and Analysis Plan Table

(Insert completed SAP Table)

412.46
01/30/2006
Rev. 00

ICP CONTROLLED DOCUMENT VALIDATION

(NOTE: For Limited Field Use Validations, use Form 412.46A.)

1. Document ID: SPR-173	Title: CPP-1774 Efflorescence Sampling (ESP-032-07)	Rev. #: 0	DRF #: 318936
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2. Extent of Validation: Full Validation Partial Validation

3. Validation Type: Tabletop Walk-down (Simulated)
(No performance activities allowed using this form)

4. Validation Comments: (Include comments below or attach comments to this form.)

SPR-173 was written in accordance with PLN-524 and TEM-104. A complete HEG review was performed on SPR-173 and its corresponding JSA. Comments from HEG reviewers were adhered to and changes to draft plan were accepted by the reviewers. of the reviewers is available by accessing DRF#318936.

5. Validation Personnel (including lead validator):

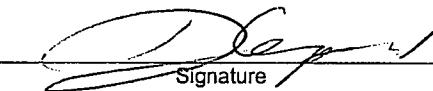
Printed Name	Discipline	Printed Name	Discipline
Donna Copeland	Document Owner		
Travis Andersen	Plan Author		

6. Lead Validator

Signature:

Donna Copeland

Printed Name



08/01/07

Date

7. Return completed form to document owner.

ICP USQ PROCESS APPLICABILITY

Change #: DRF 318936 Date: July 24, 2007
Doc ID: SPR-173 Title: CPP-1774 Efflorescence Sampling (ESP-032-07)

Complete the six questions listed below to determine whether a proposed activity or document creation/revision requires further evaluation by the USQ process. (Guidance is provided on page 2 of this form)

- a. Are the change impacts limited to LTHC3 facilities or transport activities for which potential impacts on hazard categorization have been addressed (i.e., there is no impact on a nuclear facility or transport activity as defined on LST-268)? Yes No
- b. Are the change impacts limited to facilities licensed and regulated by the NRC or to transportation activities subject to DOT regulation? Yes No
- CPP-1774, TMI-2 Independent Spent Fuel Storage Installation, is NRC licensed and not subject to the USQ process for Hazard Category 1, 2, and 3 nuclear facilities. A sampling procedure for CPP-1774 also is not subject to the USQ process.
- c. Does the change already require DOE approval for any reason? Yes No
- d. Is the change a minor change for which the USQ process is not required? Yes No

Preparer's name for answers to A-D: Michael P. LaFreniere, S# 70750 

- e. Was there a prior execution of the USQ process that bounds this change? Yes No
If Yes, specify USQ No.: _____
- f. Is there a Categorical Exclusion in MCP-123, App. B Applicable to this change? Yes No
If Yes, specify Cat Ex Designator: _____

USQ Preparer/Evaluator's Applicability Determination for Answers to "e & f":

USQ Preparer/Evaluator Printed Name	USQ Preparer/Evaluator Signature	Date
--	-------------------------------------	------

If any boxes are checked "Yes" no further USQ processing is required. If all boxes are check "No" (unanswered questions are assumed to be "No") submit document to USQ Evaluator for USQ processing.

DRF Number : 318936
Create, SPR-173 Revision NEW , CPP-1774 Efflorescence Sampling (ESP-032-07)

Click on the links below to view/print each attachment associated with the DRF

DRF Section
DRF

Link Descriptions
[Screen view of DRF # 318936](#) [Printer view of DRF # 318936](#)

Scope Section 3

Files Attached to Scope

No Files were attached to the scope section

Comments and Resolutions Section 4

Files that were reviewed

[DRF # 318936 Comment & Resolution Report](#)

Review #	Description	PDF File	Native File
1	SPR-173 draft review	/drf/xmlin2/DRAFT_318936_2_1.pdf	/drf/DRAFT_318936_2_1.doc
2		/drf/xmlin2/DRAFT_318936_2_2.pdf	/drf/DRAFT_318936_2_2.doc

Files attached to the Comments

No files were attached to the comments

Validation Review Section 5

USQ Section 7

A validation file was not attached

[USQ Process Applicability Form 431.62A](#)

[USQ Proposed Change Form 431.62](#)

Final Draft Document Section 8

/drf/FINAL_318936_2_0.doc