

# **Sample Chain-of-Custody and Control**

Nuclear Secured / Radiation Safety

NS-RS-PR-303, 0

Date Effective: 11 August 2019

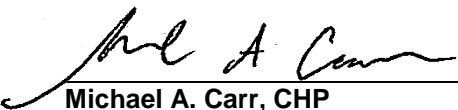
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# History and Approvals

## History

Revision	Intent Y/N	Purpose description
0	Y	For Issue (Partial Rebrand CS-FO-PR-003)

## Approvals

Preparer:  8/5/2019  
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 Radiation Safety Officer Date

Approver:  8/14/2019  
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 Senior Vice President Field and Staffing Services

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## 1. Purpose and Scope

### 1.1. Purpose

The purpose of this procedure is to provide the guidelines and criteria for the storage and transfer of radiological samples.

### 1.2. Scope

This procedure applies to all Nuclear Secured (NS) personnel and subcontractors that perform sampling activities where the NS Radiation Protection Plan (RPP) has been implemented, specifically, for the performance of radiological surveys and sampling for radiological hazards.

## 2. References

- 2.1. NS-RS-PR-302, *Sample Collection*
- 2.2. NS-RS-PR-501, *Air Sampling and Analysis*
- 2.3. NS-RS-PR-502, *Bio-Assay Sampling*

## 3. General

### 3.1. Definitions

None

### 3.2. Responsibilities

Depending on personnel qualifications and the size of the project, project personnel may be assigned multiple roles and/or responsibilities.

#### 3.2.1. NS Radiation Safety Officer

The NS Radiation Safety Officer (RSO) maintains and oversees the implementation of the NS RPP. The RSO shall ensure that radiation safety, radioactive materials management, and radiological operations procedures and programs are kept up to date such that they comply with current regulations and incorporate current and relevant industry practices and regulatory guidance.

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3.2.2. Project Manager

The Project Manager (PM) is responsible for ensuring that the proper program procedures and programs are implemented on the project site as required by customer agreements and contracts. The PM is responsible for ensuring that these programs and procedures are properly incorporated into project specific plans and procedures. The PM is responsible for ensuring that the NS RPP and client programs and procedures, as applicable, are available for use by project personnel.

3.2.3. Project Health Physicist

The Project Health Physicist (PHP) is responsible for assisting the RSO in providing health physics support to the PM and Radiation Protection Supervisor (RPS). This includes technical support to ensure procedural and regulatory compliance and to ensure that the project-specific Data Quality Objectives (DQOs) are met.

3.2.4. Radiation Protection Supervisor

The Radiation Protection Supervisor (RPS) is responsible for implementing the NS RPP at the project location. The RPS manages and oversees the project personnel in regards to radiation safety and reports directly to both the PM and the RSO.

3.2.5. Health Physics Personnel

Health physics personnel are responsible for the collection and control of radiological samples.

### **3.3. Precautions and Limitations**

3.3.1. Project management should establish a sample retention schedule based on the type of sample(s) collected and archived (e.g., Final Status Survey, Characterization, Waste Profiling, Air Sampling, Bio-Assay, etc.). An example sample retention schedule is provided as Attachment 7.1.

3.3.2. Contact the analytical laboratory to ensure the proper sample quantities are collected to support the specified analyses to ensure the data quality objectives are met.

3.3.3. Preserve samples as directed by the laboratory.

3.3.4. Maintain and ship samples at the necessary temperatures as directed by the laboratory based on the sample media and analyses to be performed.

3.3.5. Custody seals should be used to ensure sample integrity as required by the analytical laboratory.

3.3.6. Contact the receiving facility/licensee and determine if they have a required Chain-of-Custody form to be used.

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## 4. Pre-Requisites / Requirements

- 4.1. Establish a sample log in accordance with NS-RS-PR-501, *Air Sampling and Analysis* and NS-RS-PR-502, *Bio-Assay Sampling* as applicable.
- 4.2. Samples shall be labeled using indelible ink or an adhesive sample label with the necessary sampling information in accordance with NS-RS-PR-302, *Sample Collection*
- 4.3. Sample chain-of-custody is required when shipping samples off-site or transferring sample control to another licensee. Chain-of-Custody is not required while samples are maintained and controlled on-site.

## 5. Procedure

### 5.1. Sample Storage and Control

- 5.1.1. Bio-Assay samples shall be stored and controlled in accordance with NS-RS-PR-502, *Bio-Assay Sampling*.
- 5.1.2. Maintain a sample log for all samples collected in accordance with NS-RS-PR-302, *Sample Collection*, NS-RS-PR-501, *Air Sampling and Analysis* and NS-RS-PR-502, *Bio-Assay Sampling* as applicable.
- 5.1.3. Samples shall be labeled in accordance with NS-RS-PR-302, *Sample Collection*, NS-RS-PR-501, *Air Sampling and Analysis* and NS-RS-PR-502, *Bio-Assay Sampling* as applicable.
- 5.1.4. Store samples in a controlled area as directed by project management to maintain sample integrity and to prevent damage as a result of temperature extremes, sample stacking, etc.
- 5.1.5. Organize sample such that they may be easily located and retrieved. Samples may be organized and archived base on the sample ID, survey unit, etc.
- 5.1.6. Retain samples in accordance with the sample retention schedule established by project management based on the type of sample and sample use.
- 5.1.7. Samples may be properly disposed once the retention duration has been met and as directed by Project Management.

### 5.2. Chain-of-Custody

- 5.2.1. When transferring sample control to another licensee or shipping samples to an off-site laboratory for analysis, complete a Chain-of-Custody form (Attachment 7.2 or equivalent).

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- 5.2.2. Complete the required information on the Chain-of-Custody form accordingly.
- 5.2.3. For sample analysis, provide the name, phone number, and e-mail address of the person who should receive analysis results.
- 5.2.4. Specify whether the analytical laboratory is to dispose the samples, retain for a period of time prior to disposal or return the samples as applicable.
- 5.2.5. Line through and N/A any empty spaces on the Chain-of-Custody to prevent the addition of more samples to the record.
- 5.2.6. Sign the Chain-of-Custody record documenting relinquishment of sample ownership.
- 5.2.7. File a copy of the Chain-of-Custody Record in the project records.
- 5.2.8. Enclose the original Chain-of-Custody Record with the shipment / transfer and seal the container/package.
- 5.2.9. Ship samples in accordance with Section 5.3.

### **5.3. Sample Shipment**

- 5.3.1. Samples containing DOT Hazardous Materials shall be shipped in accordance with the US DOT Hazardous Materials regulations (49CFR100-185) and the NS Hazardous Materials Shipping procedures.
- 5.3.2. Personnel shipping samples containing DOT Hazardous Materials shall be qualified as an NS DOT Hazardous Materials shipper in accordance with NS Hazardous Materials Shipping procedures..
- 5.3.3. Samples shall be prepared in accordance with laboratory instructions.
- 5.3.4. Boxes or coolers containing glass sample containers should be labeled as "Fragile."
- 5.3.5. Shipping containers should have enough packing material to adequately protect the sample containers from being damaged.
- 5.3.6. Shipping containers with liquid samples should have enough absorbent materials to absorb liquids should containers break or leak.
- 5.3.7. Follow-up with the receiving facility to ensure sample receipt and request a return copy of the signed Chain-of-Custody records documenting sample acceptance.

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## 6. Records

- 6.1. Surveys
- 6.2. Sample Log
- 6.3. Sample Retention Schedule
- 6.4. Chain of Custody

## 7. Attachments and Forms

- 7.1. Sample Retention Schedule (example)
- 7.2. Chain-of-Custody Record (example)



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**Attachment 7.1**

**Sample Retention Schedule (example)**

<b>Sample Type</b>	<b>Retention Period</b>
Final Status Samples	Project Duration
Air Samples	Project Duration
Environmental / Discharge (Public Monitoring)	Project Duration
Characterization Samples	30 Days post analysis
Waste Characterization / Profile	30 Days post analysis
Bio-Assay	30 Days post analysis
Informational	Dispose on analysis

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**Attachment 7.2**

**Chain-of-Custody Record (example)**

Client: _____	Project Manager: _____	Date: _____
Address: _____	Telephone Number: _____	CoC Number: _____
City: _____	Site Contact: _____	Page: _____ of _____
State: _____ Zip Code: _____	Lab Contact: _____	

Project Name: \_\_\_\_\_  
 Project Location: \_\_\_\_\_  
 Carrier/Waybill Number: \_\_\_\_\_  
 Contract/PO Number: \_\_\_\_\_

Analysis (Attach list if more space is needed)											

Sample ID Number	Date	Time	Matrix				Containers & Preservatives									
			Air	Aqueous	Sediment	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH					

Comments:	Possible Hazard Identification Non-haz. <input type="checkbox"/> Radioactive <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Unknown <input type="checkbox"/>	Sample Disposal Return to client <input type="checkbox"/> Disposal by lab <input type="checkbox"/> Archive for __ months <input type="checkbox"/>	Turn Around Time 24 hrs <input type="checkbox"/> 48 hrs <input type="checkbox"/> 7 days <input type="checkbox"/> 14 days <input type="checkbox"/> 21 days <input type="checkbox"/> Other _____ <input type="checkbox"/>
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	Date	Time		Date	Time
Relinquished by:			Received by:		
Relinquished by:			Received by:		
Relinquished by:			Received by:		