

START DOCUMENT REVISION INSTRUCTIONS (DRI)

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TO:

D. A. Isom
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H6-08

DOCUMENT NO.: WHC-CM-5-4

TITLE: Laboratories Administration

RELEASE NO.: 38 PAGE 1 OF 1

INSTRUCTIONS

1. Remove and/or insert indicated sections into document as shown below.
2. Update the Revision Record at the front of the document.
3. Sign and date this form, fold, and mail it to Documentation Administration.

TEXT IDENTIFICATION	REMOVE			INSERT		
	PAGES	REV	DATE	PAGES	REV	DATE
Table of Contents	1-4	37	03/23/95	1-4	38	04/27/95
2.1.1, "222-S Analytical Operations Charter"	1-2	2	10/22/93	1-12	3	04/13/95
2.1.3, "Laboratory Integration Planning and Control Charter"; <u>title changed to "Program Management and Integration Charter"</u>	1-3	1	06/10/92	1-2	2	04/05/95
2.1.4, "Work Control and Data Management Charter"; <u>canceled</u>	1-2	2	09/13/93	CANCELED		
2.1.5, "Office of Sample Management Charter"; <u>canceled</u>	1-3	1	10/30/92	CANCELED		
2.1.9, "Laboratory Engineering Charter"; <u>title changed to "Engineering and Technology Services Charter"</u>	1-3	0	06/10/92	1-4	1	03/31/95
2.2.6, "Laboratories Pollution Prevention Council Charter"	1-2	0	04/18/94	1-2	1	05/01/95
2.3.1, "Waste Sampling and Characterization Facility - Startup Charter"; <u>canceled</u>	1	0	09/13/93	CANCELED		
2.3.2, "Waste Sampling and Characterization Facility - Analytical Operations Charter"	1-2	0	09/13/93	1-2	1	03/29/95
3.1, "Manual Administration"	1-3	4	09/13/93	1-6	5	03/29/95
3.1-A, "Manual Administration - Procedure"; <u>canceled</u> (incorporated into Section 3.1, Rev. 5)	1-3	0	09/13/93	CANCELED		
3.7, "222-S Complex Radiological Postings"	1-6	0	03/21/95	1-6	1	04/26/95
3.9, "Laboratory Procedures"	1-53	3	03/20/95	1-54	4	04/28/95
3.18, "Hanford Environmental Information System (HEIS) Data Entry"	---	--	---	1-2	0	03/30/95
3.19, "Sample Authorization Form (SAF) Issuance and Procedure"	---	--	---	1-2	0	03/30/95

IF YOU HAVE ANY QUESTIONS ABOUT THIS RELEASE CONTACT:

Paula Noakes, 373-4426

05/04/95

Documentation Administration

Date

I have completed the above instructions and updated the Revision Record at the front of the document.

DA Isom

5/19/95

Signature

Date

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Documentation Administration T6-03



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WHC-CM-5-4, *Laboratories Administration***Implementation Notice
Release #38****Table of Contents**

The Table of Contents has been updated to include new sections; corrections were also made to some titles and issue dates.

Section 2.1.1 "222-S Analytical Operations Charter"

This charter has been revised to reflect recent reorganizations and changes in work scope.

Section 2.1.3 "Program Management and Integration Charter"

This charter has been revised to reflect reorganizations and changes in work scope.

Section 2.1.4 "Work Control and Data Management Charter" — Canceled

This charter has been canceled. Activities covered by this charter have been incorporated into other organizations and are reflected in those charters; for example, see Sections 2.1.3, and 2.1.9.

Section 2.1.5 "Office of Sample Management Charter" — Canceled

This charter has been canceled. Activities covered by this charter that remain in WHC have been incorporated into other organizations and are reflected in those charters; for example, see Sections 2.1.3, 2.1.9, and 2.3.3.

Section 2.1.9 "Engineering and Technology Services Charter"

This charter has been revised to reflect reorganizations and changes in work scope.

Section 2.2.6 "Laboratories Pollution Prevention Team Charter"

This section was modified to correct organizational names. No significant changes were made.

Section 2.3.1 "Waste Sampling and Characterization Facility - Startup Charter" — Canceled

This charter has been canceled. The Waste Sampling and Characterization Facility is now operating under Section 2.3.2, "Waste Sampling and Characterization Facility - Analytical Operations Charter".

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Section 2.3.2 "Waste Sampling and Characterization Facility — Analytical Operations Charter"

This charter has been revised to reflect current operations of the Waste Sampling and Characterization Facility since startup.

Section 3.1 "Manual Administration"

Section 3.1-A "Manual Administration - Procedure" — Canceled

Section 3.1 has been rewritten to reflect changes in the process of manual administration.

Section 3.1-A has been canceled; information contained in that section has been incorporated into Section 3.1, Revision 5.

Section 3.7 "222-S Complex Radiological Postings"

This section has been modified to more accurately reflect radiological postings used in 222-S in accordance with requirements found in HSRCM-1, *Hanford Site Radiological Control Manual*.

Section 3.9 "Laboratory Procedures"

This section has been modified to more accurately reflect refinements in the procedure process, including additional detail regarding administration of maintenance procedures.

Section 3.18 "Hanford Environmental Information System (HEIS) Data Entry"

This is a new section that describes the entry of data into the HEIS system by Sample Data and Laboratory Administration staff.

Section 3.19 "Sample Authorization Form (SAF) Issuance and Procedure"

This is a new section that describes the procedure used by the Sample Data and Laboratory Administration organization to issue Sample Authorization Forms authorizing sample collection.

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1.0	POLICIES		
1.1	Safety Priority and Procedure Compliance Policy	1	03/23/95
2.0	ORGANIZATION		
2.1	Charters — Section Title (no text)		
2.1.1	222-S Analytical Operations Charter	3	04/13/95
2.1.2	222-S Facility Operations Charter (incorporated into 2.1.1)	<i>Canceled</i>	10/22/93
2.1.3	Program Management and Integration Charter	2	04/05/95
2.1.4	Work Control and Data Management Charter	<i>Canceled</i>	04/26/95
2.1.5	Office of Sample Management	<i>Canceled</i>	04/26/95
2.1.6	Plutonium Finishing Plant Engineering Laboratory	1	07/31/92
2.1.7	Process Laboratories and Technology Charter	1	10/12/92
2.1.8	PUREX Analytical Laboratories Charter	1	10/22/93
2.1.9	Engineering and Technology Services Charter	1	03/31/95
2.2	Committees, Boards, and Task Teams	1	11/30/92
2.2.1	Laboratory Instrument Control Board Charter	2	05/17/94
2.2.2	PAL Chemical Hygiene Committee Charter	0	10/22/93
2.2.5	Laboratories ALARA Committee Charter	1	10/22/93
2.2.6	Laboratories Pollution Prevention Team Charter	1	05/01/95
2.2.8	Laboratory Facility Plant Review Committee Charter	1	09/23/94
2.3.1	Waste Sampling and Characterization Facility — Startup Charter	<i>Canceled</i>	04/12/95
2.3.2	Waste Sampling and Characterization Facility — Analytical Operations Charter	1	03/29/95
2.3.3	Office of Quality Assessment Charter	0	03/14/95
2.3.4	Laboratory Transition Charter	0	03/21/95
3.0	ADMINISTRATION		
3.1	Manual Administration	5	03/29/95
3.1-A	Manual Administration — Procedure	<i>Canceled</i>	04/05/95
3.2	Out-of-Tolerance Report System	<i>Canceled</i>	01/15/93

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3.3	Corrective Action Requirements, Occurrence Categorization, Notification, and Reporting (moved to 6.7)	<i>Canceled</i>	09/13/93
3.4	Data Package Preparation	1	08/15/94
3.5	222-S Fissile Material Control	0	10/22/93
3.6	Laboratories Entry Requirements	0	03/07/95
3.7	222-S Complex Radiological Postings	1	04/26/95
3.8	Shift Turnover at 222-S Laboratories Complex	0	03/27/92
3.9	Laboratory Procedures	4	04/28/95
3.10	Procedure Changes and Procedure Change Authorizations (incorporated into 3.9, Rev. 3)	<i>Canceled</i>	03/23/95
3.12	Internal Audit Program (moved to 8.5)	<i>Canceled</i>	08/15/94
3.13	Unreviewed Safety Questions (USQ) Program	1	09/23/94
3.14	Laboratory Sample Tracking	0	08/15/94
3.14-A	Laboratory Sample Tracking — Procedure	0	08/15/94
3.15-A	Data Package Administrative Verification — Procedure	0	08/15/94
3.16	Data Package Control Requirements and Procedure	1	03/01/95
3.16-A	Data Package Control — Procedure (incorporated into 3.16, Rev. 1)	<i>Canceled</i>	03/01/95
3.17	222-S Laboratory Radioactive Material Inventory Control Program	0	06/30/94
3.18	Hanford Environmental Information System (HEIS) Data Entry	0	03/30/95
3.19	Sample Authorization Form (SAF) Issuance and Procedure	0	03/30/95
4.0	TRAINING		
4.1	Training Responsibilities and Definitions ("On-the-Job Training" moved to Section 4.4)	1	10/01/94
4.2	Training Development and Maintenance	0	11/30/93
4.3	Training Administration	0	11/30/93
4.4	On-the-Job Training	3	08/15/94
4.5	Training Programs	1	08/15/94
	Appendix A — Analytical Services Training page change A3-A6 (10/1/94)	1	08/15/94

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	Appendix B — 222-S/222-SA Laboratories Training	1	08/15/94
	Appendix C — PUREX Analytical Laboratory Training	1	08/15/94
	Appendix D — Field Analytical Services	1	08/15/94
	Appendix E — Waste Sampling and Characterization Facility Training	2	10/01/94
5.0	PROCEDURES		
5.1	Analytical Laboratory Procedures (renumbered 3.9)	<i>Canceled</i>	01/15/93
5.2	Supporting Documents	<i>Canceled</i>	09/15/92
5.3	Laboratory Directions	<i>Canceled</i>	09/15/92
5.4	Laboratory Test Programs	0	03/30/92
6.0	CONDUCT OF OPERATIONS		
6.7	Corrective Action Requirements, Occurrence Categorization, Notification, and Reporting	4	09/13/93
6.7-A	Corrective Action Requirements, Occurrence Categorization, Notification, and Reporting — Procedure	0	09/13/93
6.11	Logkeeping Practices	0	05/17/94
6.17	Operator Aid Postings	0	10/12/92
7.0	RECORDS MANAGEMENT		
7.1	Laboratory Data Management Access Control for Data Packages	0	01/15/93
7.2	Quality Assurance Records	0	10/22/93
8.0	QUALITY CONTROL		
8.1	Laboratory Quality Assurance Program and Project Plans	0	12/14/90
8.2	Laboratory Instrument Calibration Control System	0	12/20/90
8.3	Laboratory Quality Affecting Software Control System	1	08/15/94
8.5	Laboratory Assessments	0	08/15/94
8.5-A	Laboratory Assessments — Procedure	0	08/15/94

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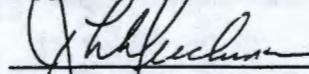
<u>Section</u>	<u>Title</u>	<u>Revision</u>	<u>Effective Date</u>
9.0	WORK CONTROL		
9.1	Material Control	0	07/30/93
9.1-A	Material Control — Procedure	0	07/30/93
9.2	Restricted Access Area Signage	0	04/18/94
9.3	222-S Complex Construction Work Authorization	0	05/02/94
9.4	222-S High and Very High Radiation Access Control	0	03/20/95
10.0	LABORATORY INSTRUMENTS		
10.1	Instrument Preventive Maintenance Program	0	05/17/94

April 13, 1995

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222-S Analytical Operations Charter

Approved by

M. L. Bell, Director
Analytical Services

1.0 CHARTER

222-S Analytical Operations manages the 222-S Laboratory facilities in performing radioanalytical, inorganic, and organic chemistry analyses in support of Westinghouse Hanford Company (WHC) environmental programs and waste management activities. A Program Support group provides project coordination to enhance laboratory quality and throughput. Also provided are Hazardous Material Control activities to ensure proper chemical storage and Building Operations to assure facilities are maintained and to manage maintenance and construction activities. Shift Operations provides around-the-clock analysis capability.

2.0 RESPONSIBILITIES

The responsibilities for the 222-S Analytical Operations organizations are summarized and presented below.

2.1 Building Operations

- 2.1.1 Manage 222-S Building Operations in a safe, efficient, and environmentally sound manner.
- 2.1.2 Maintain a fully trained and qualified staff. This includes manager, chemists, and chemical technologists.
- 2.1.3 Provide scientific apparatus glass working services for the Hanford Site.
- 2.1.4 Provide power operator support to 222-S, Waste Sampling and Characterization Facility, Solid Waste Operations, T Plant, and Bechtel Hanford, Inc., in the 200 West Area 24 hours per day, 7 days each week.
- 2.1.5 Maintain stockroom supplies and special personnel protective clothing for the facility.
- 2.1.6 Administer the Work Authorization Approval system for the 222-S Complex in accordance with WHC-CM-5-4, Section 9.3, "222-S Complex Construction Work Authorization."
- 2.1.7 Provide direction at the Job Control System Plan of the Day meetings.

This revision is a total rewrite; therefore, no redlines are used to indicate changes.

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- 2.1.8 Establish operations work priorities and review with maintenance, engineering, health physics, and work control each week.
 - 2.1.9 Maintain control of the Lock and Tag activities for the 222-S Complex at all times to ensure continuing safe operations.
 - 2.1.10 Perform all required inspections and surveillances in a timely manner.
 - 2.1.11 Plan, control and administer the 222-S Building Operations cost account such that it supports the needs of the analytical laboratory while staying within budget.
 - 2.1.12 Maintain control of the analytical operations inventory of precious metals.
 - 2.1.13 Monitor, treat, and prepare for shipment liquid radioactive mixed waste in the 219-S Facility.
 - 2.1.14 Act as building administrator for the 222-S Laboratory and its related support buildings.
 - 2.1.15 Act as primary contact for Hanford Site security needs at 222-S and its related support buildings, as well as maintaining key control of the buildings in the 222-S Complex.
 - 2.1.16 Provide constant updates to 222-S Shift Operations Managers as to status of maintenance and construction activities in the 222-S Complex.
 - 2.1.17 Function as the Building Emergency Director during dayshift on weekdays.
- 2.2 Hot Cell and Sample Preparation
- 2.2.1 Manage the hot cell and sample preparation functions in a safe, efficient, and environmentally sound manner.
 - 2.2.2 Maintain a fully trained and qualified staff. This includes managers, chemists, and chemical technologists.
 - 2.2.3 Adhere to procedures and controlling documents (for example, quality assurance plans), that govern departmental operations.
 - 2.2.4 Document quality of performance through adherence to accepted quality control practices and demonstrate quality through participation in various Performance Evaluation Programs.
 - 2.2.5 Maintain laboratory analytical procedures that accurately reflect current practices, customer needs, and regulatory requirements.

222-S Analytical Operations Charter

- 2.2.6 Receive, extrude, subsample, and prepare tank core samples for analyses in support of Tank Waste Remediation System (TWRS) programs.
- 2.2.7 Prepare sample digestions in support of radioanalytical and inorganic chemistry analyses.
- 2.2.8 Maintain tracking of tank core archival samples.
- 2.2.9 Calibrate pipettors, dispensers, and balances on a scheduled basis to maintain laboratory equipment within analytical specifications.
- 2.2.10 Provide quality analytical laboratory support to the waste management programs.
- 2.2.11 Prepare shipments of tank core samples to laboratories and customers as directed by program management services.
- 2.2.12 Prepare U.S. Environmental Protection Agency and water pollution quality assurance samples for inorganic chemical analyses to support the laboratory Resource Conservation and Recovery Act (RCRA) qualifications.
- 2.2.13 Address and complete audit findings in a quality and complete manner within established time periods.
- 2.2.14 Address all employee concerns in a timely manner to ensure safety for all laboratory personnel.
- 2.2.15 Receive, track, and dispose of all samples sent to the 222-S Laboratory for analyses.
- 2.2.16 Maintain a radionuclide inventory of core equivalent samples (CES) in the laboratory as mandated by the Interim Safety Basis for the 222-S Laboratory.
- 2.2.17 Interface with customers and AS technical managers to coordinate sample arrival, analyses and disposal.
- 2.2.18 Coordinate the return of designated samples to customers when analytical analyses are complete.
- 2.2.19 Monitor refrigerators to ensure compliance with HASQAP and RCRA storage and handling protocols.
- 2.2.20 Complete chain of custody paperwork for all samples received into the 222-S Analytical Laboratory.

222-S Analytical Operations Charter**2.3 Radioanalytical Chemistry**

- 2.3.1 Manage all radioanalytical work performed at the 222-S complex in a safe and efficient manner.
- 2.3.2 Maintain a fully trained and qualified staff. This includes managers, chemists, and chemical technologists.
- 2.3.3 Adhere to procedures and controlling documents (for example, quality assurance plans), that govern departmental operations.
- 2.3.4 Provide quality radioanalytical data for all environmental, waste management, and facility operations programs as requested.
- 2.3.5 Ensure quality, quantity, accuracy, and timeliness of analytical data.
- 2.3.6 Document quality of performance through adherence to accepted quality control practices and demonstrate quality through participation in various Performance Evaluation Programs.
- 2.3.7 Maintain laboratory analytical procedures that accurately reflect current practices, customer needs, and regulatory requirements.
- 2.3.8 Participate in the WHC Accident Prevention and ALARA Council to ensure safe operation of the 222-S Laboratory at all times.
- 2.3.9 Ensure appropriate level of technology is maintained to effectively meet the customer's needs, and continue to develop new technologies for a more effective and efficient means of operation in support of the customer's needs.
- 2.3.10 Address all employee concerns in a timely manner to ensure safety for all laboratory personnel.
- 2.3.11 Ensure planning and scheduling is maintained to ensure all analysis schedules are met within the operating budget for the 222-S Laboratory.

2.4 Inorganic Chemistry

- 2.4.1 Maintain and promote a safe working environment.
- 2.4.2 Ensure staff is properly trained to perform group responsibilities.
- 2.4.3 Adhere to procedures and controlling documents (for example, quality assurance plans), that govern departmental operations.
- 2.4.4 Perform timely and quality inorganic analyses for Hanford operations, including tank waste characterization, process control, plant decommissioning support, etc.

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- 2.4.5 Maintain and upgrade analytical instrumentation to provide timely and quality analytical results.
 - 2.4.6 Document quality of performance through adherence to accepted quality control practices and demonstrate quality through participation in various Performance Evaluation Programs.
 - 2.4.7 Maintain laboratory analytical procedures that accurately reflect current practices, customer needs, and regulatory requirements.
 - 2.4.8 Provide technically competent staff to assist and consult with customers on analytical problems.
 - 2.4.9 Plan and schedule work to ensure timely completion of analyses.
 - 2.4.10 Generate re-analyses as required to ensure quality results.
 - 2.4.11 Release analytical data to customers or customer interfaces based on review for completeness, accuracy, and precision.
 - 2.4.12 Address all employee concerns in a timely manner to ensure safety for all laboratory personnel.
 - 2.4.13 Select and propose for procurement new equipment to ensure continuity of operations.
 - 2.4.14 Identify and propose for hiring staff to fulfill departmental needs.
- 2.5 Organic Chemistry
- 2.5.1 Maintain and promote a safe working environment.
 - 2.5.2 Maintain a fully trained and qualified staff. This includes managers, chemists, and chemical technologists.
 - 2.5.3 Address all employee concerns in a timely manner to ensure safety for all laboratory personnel.
 - 2.5.4 Adhere to procedures and controlling documents (for example, quality assurance plans), that govern departmental operations.
 - 2.5.5 Plan programs for analysis of liquids, solids, gaseous materials, substances and compounds.
 - 2.5.6 Determine types of tests to be performed.

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- 2.5.7 Assign projects to personnel, and direct and advise personnel in special testing methods.
 - 2.5.8 Document quality of performance through adherence to accepted quality control practices and demonstrate quality through participation in various Performance Evaluation Programs.
 - 2.5.9 Maintain laboratory analytical procedures that accurately reflect current practices, customer needs, and regulatory requirements.
 - 2.5.10 Evaluate new laboratory methods and techniques.
 - 2.5.11 Review laboratory reports and interpret laboratory findings.
 - 2.5.12 Maintain laboratory schedules.
 - 2.5.13 Evaluate activities to ensure compliance with approved goals and objectives.
 - 2.5.14 Provide quality analytical support for environmental programs, waste management activities, and other WHC programs.
 - 2.5.15 Implement new methodology in the laboratory.
- 2.6 Program Support
- 2.6.1 Consult with customers to evaluate the analytical requirements (data quality objectives) for their projects/tasks through detailed understanding of Technical Project Plans, Statements of Work, etc.
 - 2.6.2 Define work scope for specific tasks to the Analytical Operations teams and continuously monitor status (quality and schedule).
 - 2.6.3 Plan and administer project coordination activities to be consistent with programmatic long range plans and requirements.
 - 2.6.4 Utilize the resources of Analytical Operations to ensure timely completion of program commitments within budget constraints.
 - 2.6.5 Manage data package generation and completed product to provide quality results meeting all customer needs. Develop, overview, and maintain schedules to ensure programmatic goals are achieved.
 - 2.6.6 Act as central point of contact for Analytical Operations to coordinate completion of programmatic work (Waste Tank Safety, SST stabilization, etc.) within Analytical Operations. Integrate programmatic and long term plans and schedules from Program Management and Integration into laboratory plans.

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- 2.6.7 Act as management focal point for resolution of data problems.
 - 2.6.8 Identify and withhold from use analytical data, non-conforming items and materials, and practices that do not meet acceptable standards.
 - 2.6.9 Address all employee concerns in a timely manner to ensure safety for all laboratory personnel.
- 2.7 Hazardous Materials Control
- 2.7.1 Conduct hazardous waste operations in a safe and efficient manner.
 - 2.7.2 Maintain a fully trained and qualified staff, including managers and chemical technologists.
 - 2.7.3 Address all employee concerns in a timely manner to ensure safety for all laboratory personnel.
 - 2.7.4 Maintain 222-S Satellite Accumulation Area, Temporary Storage, and Treatment, Storage, Disposal in compliance with 40 CFR 260 (RCRA), WAC 173.303, and U.S. Department of Energy (DOE) orders documented through weekly inspections.
 - 2.7.5 Ensure proper chemical storage through appropriate segregation practices.
 - 2.7.6 Maintain compliance at 222-S, 219-S and TSD through proper disposal by procedure, governing both slurping and pouring evolutions.
 - 2.7.7 Manage, handle, and ship waste and material from the 222-S facility to appropriate storage and disposal facilities (Central Waste Complex or 616 Building).
 - 2.7.8 Package and ship samples from 222-S to the 325 Laboratory, Los Alamos National Laboratory, and commercial laboratories.
 - 2.7.9 Ship routine water samples to Waste Sampling and Characterization Facility.
 - 2.7.10 Develop, update, and maintain laboratory waste handling procedures.
 - 2.7.11 Properly store and dispose of unused offsite sample return portions.
 - 2.7.12 Package samples for return to original generators.
 - 2.7.13 Prepare waste disposal letters for 222-S generators.
 - 2.7.14 Provide waste disposal support and guidance to all 222-S generators, including ICF Kaiser Hanford.

222-S Analytical Operations Charter**2.8 Shift Operations**

- 2.8.1 Operate the 222-S Laboratory in a safe, efficient, and environmentally sound manner.
- 2.8.2 Maintain a fully trained and qualified staff to support around the clock analytical operations.
- 2.8.3 Address all employee concerns in a timely manner to ensure safety for all laboratory personnel.
- 2.8.4 Provide quality and timely analytical support to all 222-S Laboratory customers.
- 2.8.5 Function as the Building Emergency Director for the facility on backshifts and weekends, and maintain the Building Emergency Plan.
- 2.8.6 Discontinue any operation considered to be an immediate danger to personnel, facilities, and environment and ensure safe shutdown and accountability of personnel.
- 2.8.7 Concur on facility work impacting operation, safety, and effectiveness.

2.9 Process Chemistry and Statistics

- 2.9.1 Provide laboratory testing to support development, assessment, troubleshooting, and improvement of chemical processes.
- 2.9.2 Address all employee concerns in a timely manner to ensure safety for all laboratory personnel.
- 2.9.3 Provide general statistical consulting services.
- 2.9.4 Maintain equipment, facilities, and expertise needed to provide special chemical and statistical needs to all programs within Westinghouse Hanford Company. These special services are also available to other Hanford Contractors, provided the work lies within the contractual work scope of WHC.
- 2.9.5 Test proposed chemical processes and process modifications, on laboratory scale. This work may be done with the actual process feed or with synthetic materials as required.
- 2.9.6 Manage facilities for this work, including laboratories for work with non-radioactive samples and for radioactive samples with radiation readings up to several tens of Rads.
- 2.9.7 Maintain four hot cells for process chemistry work.

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- 2.9.8 Provide experience with a number of processing methodologies, including ion exchange; thermal treatment; immobilization by grouting, casting with polymeric materials, or absorption into solid materials; distillation; decontamination and solids washing, precipitation, membrane separations, and solvent extraction.
- 2.9.9 Develop new methods for characterizing Hanford wastes and other materials; method development may be necessitated by a customer's request for a different property than has been measured in the past, or because the material is not amenable to the normal methods of analysis. PC&S normally develops only the physical methods of analysis, such as those measuring thermal and rheological properties; chemical methods are usually developed by other laboratory organizations.
- 2.9.10 Provide statistical consulting services to all aspects of WHC and to other Hanford contractors. The organization has expertise in designing and analyzing comparative experiments such as factorial experiments and fractions of factorial experiments. Analysis of more complicated sampling designs is often required, also. The organization maintains access to full-featured statistical analysis software such as SAS and S-Plus.
- 2.9.11 Determine testing procedures to accommodate customer's data requirements.
- 2.9.12 Perform testing to accommodate data requirements safely.
- 2.9.13 Provide reports to customers to transfer the required data effectively.
- 2.9.14 Maintain facilities, personnel, and training to perform radioactive laboratory work and other chemical and statistical activities.
- 2.9.15 Approve test plans and procedures for work to be performed by the unit.
- 2.9.16 Approve technical reports of work performed by the unit.
- 2.9.17 Order cessation of work when safety, environmental, quality, funding, or efficiency concerns dictate.
- 2.9.18 Restrict access to facilities and equipment used by the organization to facilitate safety, quality, and efficiency of work.
- 2.9.19 Communicate with technical professionals in all WHC divisions and in other DOE contractor organizations to understand and accommodate their data and testing needs. Process Chemistry Development personnel must deal on a daily basis with organizations providing services in the laboratory, such as Job Control, Health Physics, Analytical Operations, and Analytical Services Programs & Integration. Process Chemistry Development personnel often make technical presentations to WHC and DOE customers, and at DOE- and society-sponsored meetings.

3.0 INTERFACES

- 3.1 There are five operational functional areas which must be well coordinated to ensure the Laboratory conducts its activities safely and efficiently. The Building Operations Manager will have overall responsibility for coordination of these activities on dayshift Monday through Friday. On backshifts and weekends, they will be coordinated by the Shift Manager.

These functional areas and their performers are listed below.

3.1.1 Emergency Preparedness and Response

Direction of facility evacuation, personnel accountability and other emergency response activities will be conducted by the Building Emergency Director (BED). The BED on dayshift, Monday through Friday will be the Building Operations Manager. The Shift Manager will perform this function on backshifts and weekends.

3.1.2 Analytical Production

The generation of analytical results is the primary product of the laboratory. The organizations participating directly in this activity are: Hot Cell and Sample Preparation, Radioanalytical Chemistry, Organic Chemistry, Inorganic Chemistry, and Shift Operations. The Program Support organization provides programmatic direction to assist these groups in establishing priorities to support customer needs. The Building Operations Manager will coordinate with these groups to ensure:

- a. Maintenance activities do not adversely impact critical analysis activities
- b. Equipment malfunctions identified by laboratory personnel are promptly entered into the Job Control System for correction
- c. Requests for required support, e.g., staging of materials are properly prioritized and supported

3.1.3 Work Control

NOTE: Maintenance activities will generally be conducted on dayshift, Monday through Friday.

Personnel in the Building Operations organization will prepare the Lockout/Tagout Authorizations and conduct Job Control System administrative activities associated with the release and control of work in the facility. The Building Operations Manager will release work to be performed after all prerequisite conditions are met. The Building Operations Manager will serve as the Operations point of contact with the Engineering, Work Control and Maintenance organizations.

222-S Analytical Operations Charter**3.1.4 Waste Handling**

The Hazardous Materials Control group conducts the majority of the packaging, storage, and shipping of waste materials. The Building Operations group conducts the activities in support of radioactive liquid waste tank offload. This activity is scheduled for weekday dayshifts only. The Manager of the Hazardous Material Control group will oversee these activities and will coordinate facility support with the Building Operations Manager.

3.1.5 Building Support Equipment Operation

The Power Operators operate the building support equipment such as ventilation, chilled water, and steam systems. This activity is coordinated by the Building Operations Manager on dayshift Monday through Friday and the Shift Manager on backshifts and weekends.

- 3.2 The Building Operations Manager will conduct a turnover with the Shift Manager at the end of each week day to ensure the Shift Manager is aware of the building status and activities in progress or scheduled to occur during the backshift or weekend. The Shift Manager will then coordinate all Laboratory activities until relieved by the Building Operations Manager at the beginning of the next work day.
- 3.3 Analytical Operations will directly interface with Engineering and Technology Services and Program Management and Integration to receive services from these groups in support of laboratory activity. These services include: engineering, maintenance, standards laboratory, project upgrades, Laboratory Information Management System support, financial business management, program management, procedure administration, etc.
- 3.4 Client interface for analyses performance will be through Program Support. This group is the single point-of-contact for data reports from the laboratory.

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April 5, 1995

Program Management and
Integration Charter

Approved by


M. L. Bell, Director
Analytical Services

4/19/95

1.0 CHARTER

The Program Management and Integration function provides strategic planning, technical and administrative procedures processing and control, records management administration, commercial laboratory contracts, budgetary support, customer interface, and organizational integration services for Analytical Services (AS). It also provides oversight to ensure availability of adequate analytical resources to meet customer requirements in a quality and cost-effective manner.

2.0 RESPONSIBILITIES

- 2.1 Provide strategic planning and engineering studies.
- 2.2 Provide schedules of projected sampling activities and report key information on sampling and laboratory schedules and production output.
- 2.3 Coordinate, integrate, and track laboratory issues and milestones.
- 2.4 Provide AS budget and cost information for control within spending limits.
- 2.5 Provide budget support and customer interface reporting activities.
- 2.6 Process and control distribution of the WHC-CM-5-4, *Laboratories Administration* manual.
- 2.7 Provide administrative control, upgrade, processing, and tracking of all AS technical procedures.
- 2.8 Transmit analytical laboratory data and Case File Purges to permanent storage.
- 2.9 Coordinate validation services, technical verification, and contractor services to prepare the analytical data package for validation and closure of corrective actions by the laboratory.
- 2.10 Coordinate commercial laboratory contracts and payment for services rendered.
- 2.11 Provide technical leadership for all offsite laboratory controls supporting Hanford Site programs.
- 2.12 Coordinate sample and disposal return activities from support laboratories.

*This revision is a total rewrite; therefore, no revision bars have been used to indicate changes.

Program Management and Integration Charter

- 2.13 Provide liaison and formal communication in cooperation with customer and regulatory oversight agencies.
- 2.14 Review program scope for laboratory services and provide technical expertise during the data quality objectives process.
- 2.15 Prepare cost and schedule estimates for required analytical services and serve as the work package manager.
- 2.16 Plan laboratory and appropriate programmatic work scopes.
- 2.17 Prepare integrated schedules for laboratories and client analytical services.
- 2.18 Provide interface between clients and commercial laboratories as required.
- 2.19 Provide laboratory interface between clients and DOE-RL Waste Management Division.

March 31, 1995

Engineering and Technology
Services Charter

Approved By


M. J. Bell, Director
Analytical Services

4/15/95

1.0 CHARTER

Engineering and Technology Services provides engineering services, environmental management, maintenance and work control, chemical standards management, automatic data processing and information systems, training, and operational assurance and support required by Analytical Services (AS).

2.0 SCOPE

2.1 Laboratory Engineering

This group provides design support, operational test procedures, engineering studies and functional design criteria as required for facility modifications. Laboratory Engineering provides cognizant engineering for the operation and maintenance of facility equipment and systems (excluding analytical instruments).

2.2 Information Systems

This group provides data processing systems for AS Laboratories and the Plutonium Finishing Plant Analytical Laboratory, and helps implement technology based productivity improvements. Services provided include the acquisition and use of computers, software and applications programs, coordinating the development of information management systems (for example, Laboratory Information Management System), and interfacing with BCS Richland, Inc. and external organizations in planning for replacement/expansion of automated data processing hardware and software systems.

2.3 Standards Laboratory

This group provides standards and reagents, both radioactive and nonradioactive, to onsite and offsite laboratories. In addition, chemical inventory tracking support is provided to 222-S and the Waste Sampling and Characterization Facility Laboratories using the Standards Laboratory Inventory Control Program.

2.4 Environmental Services

This group is responsible for environmental, waste handling, and operating specification documents used at the 222-S Complex. This group develops and modifies as necessary all waste handling procedures. Environmental Services also monitors the waste volume generated, and issues an annual hazardous and radioactive solid waste forecast. The Environmental Services manager serves as the environmental compliance officer for both the

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Analytical Services department and the Tank Waste Remediation System (TWRS) Characterization Project.

2.5 Maintenance and Work Control

This organization ensures proper maintenance of 222-S and the Waste Sampling and Characterization Facility Complexes through implementation of the Job Control System and facility-specific procedures. The group also provides calibration, maintenance, and preventive maintenance on AS equipment.

2.6 Operations Assurance and Support

This group provides an overview of AS with the objective of ensuring continuous improvement. Support activities include corrective action management, conduct of operations, as low as reasonably achievable and safety activities, emergency preparedness drills, and the self-assessment program. The group conducts event investigation and reporting with associated root cause analysis and lessons learned, and prepares and distributes required reading documents. It coordinates monthly safety/housekeeping inspections, and develops and presents manager and employee training as required.

3.0 RESPONSIBILITIES

- 3.1 Provide cognizant engineering support according to WHC-CM-6-1, *Standard Engineering Practices*, for laboratory facility related functions.
- 3.2 Oversee, manage, and control the computer hardware and software systems used by the laboratories in a manner that minimizes downtime and maximizes beneficial usage.
- 3.3 Design, procure, and operate laboratory information management systems that promote laboratory productivity, quality, and facilitate timely reporting of analytical results.
- 3.4 Identify and assist in the implementation of technology-based laboratory productivity improvement.
- 3.5 Provide quality chemical standards with documented traceability to recognized standards and chemical reagents.
- 3.6 Prepare environmental documents, safety analysis reports, waste handling procedures, operating documents, and Operational Test Procedures.
- 3.7 Staff the position of Environmental Compliance Officer for AS and TWRS Characterization Project.
- 3.8 Ensure proper maintenance of 222-S Laboratory Complex through implementation of the 222-S Job Control System and facility-specific procedures. (Maintenance of analytical instruments is assigned elsewhere.)

Engineering and Technology Services Charter

- 3.9 Provide support to coordinate corrective action management, emergency preparedness drills, and self-assessment programs.
- 3.10 Perform event investigation and reporting, and assist in critiques, root cause analysis, trending, and lessons learned activities.
- 3.11 Provide manager and employee training as required.

4.0 AUTHORITIES

- 4.1 To discontinue use of any portion of a facility or process considered an immediate and significant danger to personnel, facilities, or environment, and to provide technical support to ensure a safe shutdown.
- 4.2 To set impact levels for technical documents prepared by this organization according to WHC-CM-6-1.
- 4.3 To require concurrence on facility-related modifications, procedures, and facility work directly or indirectly impacting the operation, safety, and effectiveness of the 222-S Laboratory Complex or the Waste Sampling and Characterization Facility Complex.
- 4.4 To represent AS in areas of automation and chemical standards.
- 4.5 To audit laboratory automatic data processing equipment for compliance with laboratory and company policies.
- 4.6 To halt use, development, or procurement of any hardware or software deemed inappropriate or not in line with established plans, until a management review is conducted.
- 4.7 To execute the responsibilities of the Environmental Compliance Officer for AS and TWRS Characterization Project.
- 4.8 To investigate, critique, and report events and occurrences as may be required.
- 4.9 To conduct self-assessments of all AS facilities and operations.
- 4.10 To assign actionees for corrective action(s) as may be required.
- 4.11 To conduct or coordinate emergency preparedness drills as required.
- 4.12 To assure that all employees remain trained/qualified to perform assigned work.

5.0 INTERFACES

- 5.1 Other Westinghouse Hanford Company organizations and other Hanford Site contractors as required to meet above responsibilities and scope.
- 5.2 Local Richland Operations Office and other U.S. Department of Energy site personnel to obtain or give information relevant to assigned scope.
- 5.3 Commercial firms as part of procurement or to identify productivity/throughput opportunities.

6.0 REFERENCES

WHC-CM-6-1, *Standard Engineering Practices*, Westinghouse Hanford Company, Richland, Washington.

May 1, 1995

Page 1 of 2

Laboratories Pollution
Prevention Team Charter

Approved by


M. L. Bell, Director
Analytical Services

1.0 CHARTER

The Pollution Prevention Team will consist of members appointed by Analytical Services managers and chaired by the Regulatory Compliance Manager or designee. The team is chartered to develop, maintain, and implement a Pollution Prevention Program encompassing all Analytical Services organizations not currently covered by an existing pollution prevention plan.

2.0 RESPONSIBILITIES

- 2.1 Develop Pollution Prevention Program in accordance with WHC-SD-WM-EV-014, *Guide for Preparing and Maintaining Facility-Specific Waste Minimization Plans*.
- 2.2 Establish waste minimization goals and objectives.
- 2.3 Prioritize waste streams or facility areas for assessments.
- 2.4 Perform process waste assessments.
- 2.5 Evaluate the technical and economic feasibility of options to reduce, recycle, or treat all waste streams.
- 2.6 Report all pollution prevention and waste minimization efforts, as required.
- 2.7 Interface with management to implement waste minimization options.
- 2.8 Facilitate technological transfers as applicable in the promotion of pollution prevention and waste minimization.
- 2.9 Hold meetings at a minimum of one per quarter.
- 2.10 Document all meetings and activities through minutes or internal memos to be kept on file by the chairperson.

3.0 REFERENCE

Floyd, B. C., 1994, *Guide for Preparing and Maintaining Facility-Specific Waste Minimization Plans*, WHC-SD-WM-EV-014, Westinghouse Hanford Company, Richland, Washington.

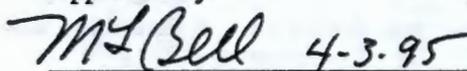
Laboratories Pollution Prevention Charter

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March 29, 1995

Waste Sampling and Characterization
Facility — Analytical Operations Charter

Approved by



M. L. Bell, Director
Analytical Services

1.0 CHARTER

Waste Sampling and Characterization Facility Analytical Operations manages the Waste Sampling and Characterization Facility complex and provides analytical laboratory services which include:

- Counting room support in stack and room air monitoring and low-level environmental samples
- Quality assurance oversight of commercial laboratories used for analyzing low-level environmental samples
- Process control support to liquid effluent treatment systems
- Analysis of samples for safe drinking water
- Support analysis of breathing zone and bulk samples for the presence of asbestos fibers
- Support analysis of Industrial Hygiene sampling at the work place.

2.0 RESPONSIBILITIES

- 2.1 Provide safe building operations for the Waste Sampling and Characterization Facility complex.
- 2.2 Provide quality, cost-competitive, and timely analytical services as designated in statements of work issued by Hanford Analytical Services Management.
- 2.3 Participate in the Department of Energy and U.S. Environmental Protection Agency and U.S. Environmental Protection Agency Contract Laboratory Program Performance Evaluation measurement programs.
- 2.4 Perform radiochemical analyses according to EPA-600/4-80-032, Prescribed Procedures for Measurement of Radioactivity in Drinking Water.
- 2.5 Perform organic analyses in accordance with U.S. Environmental Protection Agency Contract Laboratory Program, SW-846, Test Methods for Evaluating Solid Waste: Physical/Chemical

This revision is a total rewrite; therefore, no redlines are used to indicate changes.

Methods, and Clean Water Act protocols for volatile organics, semi-volatile organics and pesticides/polychlorinated biphenyl.

- 2.6 Perform inorganic analyses in accordance with U.S. Environmental Protection Agency Contract Laboratory Program, SW-846, and Clean Water Act protocols.
- 2.7 Perform organic and inorganic analyses in accordance with Safe Drinking Water Act protocols.
- 2.8 Perform analysis of Industrial Hygiene breathing zone samples for solvents and fumes for the determination of safe working conditions and/or employee exposure.
- 2.9 Perform analysis of breathing zone air samples and bulk samples of materials for the presence and concentration of asbestos fibers.

3.0 REFERENCES

EPA, 1990, Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd Edition, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.

Krieger, Herman L., Earl L. Whittaker, 1980, Prescribed Procedures for Measurement of Radioactivity in Drinking Water, EPA-600/4-80-032, Environmental Monitoring and Support Laboratory, Office of Research and Development, U.S. Environmental Protection Agency, Cincinnati, Ohio.

March 29, 1995

Manual Administration

Approved by

M. L. Bell 3-30-95

M. L. Bell, Director
Analytical Services

1.0 PURPOSE

This section establishes the administration of Analytical Services (AS) controlled manual sections. The manual incorporates organizational charters, administrative requirements, conduct of operations principles, training requirements, AS job control system administration, and control systems for safe lab operations. It is used by all AS personnel during normal work assignments unless specifically excluded. Each AS facility has an emergency procedures manual for abnormal operating conditions.

2.0 SCOPE

This section applies to the AS controlled manual, WHC-CM-5-4, *Laboratories Administration*.

3.0 DEFINITIONS

WHC-CM-5-4 Section Review and Approval Form (RAF)

The form used by Documentation Administration to review, approve, and comment on WHC-CM-5-4 sections.

Section Champion

Section Champions are facility-designated personnel with the necessary training and experience to fulfill the applicable responsibilities. Section champions are assigned responsibility for section content and annual review.

Manual Administrator

Documentation Administration staff member who processes sections of this manual.

Annual Review

The process of ensuring that a section meets and reflects all applicable technical and editorial changes that have been made since the last revision.

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Manual Administration

Laboratory Technical Information Center (LTIC)

Information center in which copies of AS records and historical information reside.

Approval Authority

The Director, Analytical Services, is the approval authority for the WHC-CM-5-4 manual. The Director may delegate approval authority to other staff members as needed.

4.0 REQUIREMENTS

Each manual section is required to have an annual review. This review must be documented on a WHC-CM-5-4 Section Review and Approval Form and maintained in the history files.

The manual administrator is required to promptly notify manual users of all updates and to ensure that updates are distributed, both electronically and in hard copy form, in a timely manner to manual holders.

Manual holders are required to update their hard copy manual and return signed Document Revision Instruction forms to Documentation Administration.

5.0 RESPONSIBILITIES

Manual Administrator

The manual administrator is responsible for maintaining, updating, and distributing manual sections in accordance with established company policies and procedures.

Section Champion

Section champions are responsible for reviewing their manual section for compliance and applicability on an annual basis, determining designated reviewers, and dispositioning comments resulting from section review.

Designated Reviewers

Designated reviewers are appointed by the section champion and are responsible for reviewing manual sections in their field of expertise.

Approval Authority

The approval authority is responsible for final approval of each manual section.

Manual Administration**Manual Custodians**

Manual custodians are responsible for maintaining and updating assigned copies of the WHC-CM-5-4 manual.

6.0 RECORDS**History Files**

History files are maintained by the manual administrator and contain background information regarding manual revisions, signed master copies of each revision, and lists of individuals assigned copies of the manual.

7.0 PROCEDURE

- 7.1 AS employee submits addition, deletion, change, or new section to Manual Champion.
- 7.2 If section already exists, skip to Step 7.2.3. If a section is new, the following steps are performed.
 - 7.2.1 Manual Administrator assigns and issues number for section.
 - 7.2.2 Manual Administrator enters information regarding section into database for tracking purposes.
 - 7.2.3 Manual Administrator performs preliminary section formatting and submits for editing
- 7.3 If section already exists, the following steps are performed.
 - 7.3.1 With concurrence of section champion, Manual Administrator incorporates changes.
 - 7.3.2 Manual Administrator reformats section (if necessary), and submits for editing.
- 7.4 When editing is complete, Manual Administrator submits section to section champion for review and approval.
- 7.5 Section Champion determines review team, which may consist of the following:
 - Author
 - Peer/technical review
 - Environmental
 - Safety
 - Quality assurance
 - Outside independent review
 - Manager/approval authority.

Manual Administration

- 7.6 Section Champion resolves and dispositions comments and submits to Manual Administrator.
- 7.7 Manual Administrator incorporates comments.
- 7.8 Manual Administrator prepares document for approval authority signature.
- 7.9 Manual Administrator submits document to approval authority for final signature.
- 7.10 Approval authority returns document to Manual Administrator for issuance.
- 7.11 Manual Administrator assists in resolving and dispositioning any comments from the approval authority with section champion.
- 7.12 Manual Administrator incorporates any remaining comments and prepares document for issuance.
- 7.13 Manual Administrator distributes document to Manual Custodians and notifies management by sending implementation notice via daily change report for procedure changes that changes have been made.
- 7.14 Manual Administrator files working package in history files.
- 7.15 Manual Administrator ensures current version of section is transferred to network drive, previous versions are removed from active directory, and electronic manual users are notified that a new section is available for use.
- 7.16 If a waiver to a previously published section is required, the Manual Administrator will process the waiver in accordance with WHC-CM-1-3, *Management Requirements and Procedures*, MRP 2.21, "Controlled Manual Waiver Process."

8.0 DESIGNATED REVIEWERSDesignated Reviewing Organizations

222-S Analytical Operations

CMPOC

T6-16

9.0 FORMS

WHC-CM-5-4 Section Review and Approval Form (RAF)

Manual Administration

10.0 REFERENCE

WHC-CM-1-3, *Management Requirements and Procedures*.
MRP 2.21, "Controlled Manual Waiver Process"

11.0 BIBLIOGRAPHY

WHC-CM-1-3, *Management Requirements and Procedures*
MRP 3.3, "Records Management Program"

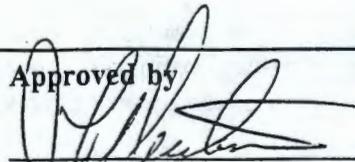
WHC-CM-3-6, *Uniform Publications System*

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April 26, 1995

222-S Complex Radiological
Postings

Approved by


M. L. Bell, Director
Analytical Services

4/27/95

1.0 PURPOSE

To provide policy on 222-S radiological postings. This instruction applies to all Analytical Services and support organizations, including Radiological Control.

2.0 SCOPE

This section applies to radiological postings as depicted in Appendix H2 D, Part A, *Hanford Site Radiological Control Manual* (HSRCM-1) within the 222-S Complex, except 218-W-7 Dry Waste Burial Ground. It does not address Labels and Tags as depicted in Appendix H2 D, Part B. Material/personnel surveys and Personal Protective Equipment requirements are listed in the applicable Radiological Work Permit.

3.0 RADIOLOGICAL POSTINGS

Radiological postings are utilized to alert personnel to the presence of radiation and radioactive materials and to aid them in minimizing exposures and prevent the spread of contamination.

Signs shall be conspicuously posted, clearly worded, and where appropriate include radiological control instructions.

Posted areas shall be as small as practical while permitting *efficient operation* of the laboratory.

3.1 Radiological Area Definitions and Requirements

3.1.1 Radiologically Controlled Areas (RCAs)

The words "Caution, Radiologically Controlled Area" shall be posted at the access point to areas that contain radioactive material and/or radiation fields which require posting under Steps 3.1.2 through 3.1.9.

3.1.2 Radiation Area (RA)

The words "Caution, Radiation Area" shall be posted at any accessible area to individuals in which radiation levels could result in an individual receiving deep dose equivalent in excess of 0.005 rem (5 mrem, 0.05 millisievert) in 1 hour at 30 centimeters from the source or from any surface the radiation penetrates.

222-S Complex Radiological Postings

3.1.3 High Radiation Area (HRA)

The words "Danger, High Radiation Area" shall be posted at any accessible area to individuals in which radiation levels could result in an individual receiving deep dose equivalent in excess of 0.1 rem (100 mrem, 0.001 sievert) in 1 hour at 30 centimeters from the source or from any surface the radiation penetrates.

3.1.4 Very High Radiation Area

The words "Danger, Very High Radiation Area" shall be posted at any accessible area to individuals in which radiation levels could result in an individual receiving deep dose equivalent in excess of 500 rads (5 grays) in 1 hour at 100 centimeters from the source or from any surface the radiation penetrates.

3.1.5 Airborne Radioactivity Areas (ARA)

The words "Caution, Airborne Radioactivity Area" shall be posted for any occupied area in which airborne radioactivity levels exceed, or are likely to exceed 10% of any derived air concentration.

3.1.6 Contamination Areas (CA)

The words "Caution, Contamination Area" shall be posted where contamination levels in excess of 20 dpm alpha and/or 1000 dpm beta-gamma, but less than 2,000 dpm alpha and/or 100,000 dpm beta-gamma general area removable contamination exist.

3.1.7 High Contamination Areas (HCA)

The words "Danger, High Contamination Area" shall be posted where contamination levels in excess of 2,000 dpm alpha and/or 100,000 dpm beta-gamma general area removable contamination exists.

3.1.8 Radioactive Material Areas (RMA)

For the purpose of this procedure, radioactive materials is any material, equipment, or system component determined to be contaminated or suspected of being contaminated. The words "Caution, Radioactive Material Area" will be posted on storage cabinets and/or facilities that contain contamination levels in excess of Table 2-2 and are located outside of an RBA, CA, HCA or ARA.

3.1.9 Radiological Buffer Areas (RBA)

The words "Caution Radiological Buffer Area" shall be posted at secondary boundaries to radiological areas such as Contamination (CA), High Contamination (HCA) or Airborne Radioactivity Areas (HCA). RBA postings may also be used to identify areas that have a potential to generate radioactive contamination in localized areas such as benchtop or glovebox operations located in areas otherwise free of contamination.

222-S Complex Radiological Postings**3.2 222-S Facility Posting Designation**

- 3.2.1 *Laboratory Proper {RCA}* — Offices 5A through 5H, Men's and Women's change rooms (6A & 6K), Janitor Closets 7C & 7D, Airlocks into the change rooms, Corridor 8J, Corridor 8H, Corridor 8K, Room 3B (lab leaders office) Room 3C (stock room), Room 2A (door 13 sample receiving), Room 9A (door 10 sample receiving) and Door 5 stairwell.
- 3.2.2 *Laboratory Proper {RBA/RMA/RA}* — Includes the entire laboratory area on the main floor, excluding those areas specified in 3.2.1, 3.2.3, 3.2.4 and 3.2.5.
- 3.2.3 *Laboratory Proper {RBA/RMA}* — Includes Rooms 4V, 4M and 3B1 (Anti-C donning area).
- 3.2.4 *Laboratory Proper {CA or HCA}* — Includes all laboratory fume hoods (except those located in rooms 4V, 4M, & 1GC), glove boxes, hotcells, hotcell bonnets/airlocks, or other engineered barriers (case-by-case basis) designed to prevent the spread of contaminants; i.e., sample storage.
- 3.2.5 *Laboratory Proper {HRA}* — All hotcell manned access doors. Reference WHC-CM-5-4, Section 9.4, "222-S High and Very High Radiation Access Control."
- 3.2.6 *222-S Duct Level {RCA}* — The entire duct level excluding those specified in 3.2.7.
- 3.2.7 *222-S Duct Level S3B & S3A {RBA}* — Rooms S3B (Manipulator Repair) and S3A (storage) will be posted as an RBA, unless during progress of work removable contaminants are detected or as specified by Radiological Work Permit.
- 3.2.8 *Stairwell to Counting Room and Tunnels {RBA/RMA}* — Consist of the following rooms: B1-A, B1-B, B1-C, B1-D, B1-F, and B1-G in the counting room area. Consist of the following areas: corridor B-8A, corridor B-8B, corridor B-8C, corridor B-8D, corridor B-8E, corridor B-8G, and T-3 (vacuum pump room) in the tunnel areas.
- NOTE: Portions of the tunnel are temporarily posted as Contamination Areas until such time that release surveys can be performed.
- 3.2.9 *T-4 {RA/ARA}* — Located in the lower level. Entry controlled by technical work document; for example, JCS Work Package or Work Plan.
- 3.2.10 *T-7/8 {ARA/HRA}* — Located in the lower level. Entry controlled by technical work document; for example, JCS Work Package or Work Plan. Reference WHC-CM-5-4, Section 9.4, "222-S High and Very High Radiation Access Control."

3.3 222-S Support Facilities Posting Designation

- 3.3.1 *222-SC Filter Building {RCA/RMA}* — Filter room only.

222-S Complex Radiological Postings

- 3.3.2 *222-SB Filter Building, Foyer {RCA}* — The entrance to the foyer will be posted as an RCA. When entries to the filter room are made, an RBA will need to be established within the foyer for contamination control.
- 3.3.3 *222-SB Filter Building, Filter Room {ARA}* — The entrance to the filter room will be posted as an ARA due to potential for airborne contaminants with an open filter bank design.
- 3.3.4 *222-SE Filter Building, Foyer {RCA}* — The entrance to the foyer will be posted as an RCA. When entries to the filter room are made, an RBA will need to be established within the foyer for contamination control.
- 3.3.5 *222-SE Filter Building, Filter Room {ARA}* — The entrance to the filter room will be posted as an ARA due to potential for airborne contaminants with an open filter bank design.
- 3.3.6 *Californium Multiplier System PIT {RCA/RMA}* — The Californium Multiplier System pit contains two Californium sources for the Delayed Neutron Activation Analysis System. There is no radioactive material in the accessible area of the pit nor can the sources be exposed, which would emit a radiation field, without performing maintenance on the system. The access doors however are maintained in a locked condition with strict access controls.

3.4 Waste Handling Facilities Posting Designation

- 3.4.1 *219-S Waste Handling Facility Operating Gallery {RCA}* — The entire northern boundary of the control panel (refer to 3.4.2 for southern boundary posting designation).
- 3.4.2 *219-S Waste Handling Facility Operating Gallery {RMA/RBA/CA}* — The entire southern boundary of the control panel will be posted as an RMA/RBA. In addition, a CA posting will be placed at the established boundary directly behind the control panel.
- 3.4.3 *219-S Waste Handling Sampling Gallery, Foyer {RCA/RMA}* — Entire Foyer.
- 3.4.4 *219-S Waste Handling Sampling Gallery {RBA}* — Entire room except sample fume hood (refer to 3.4.4).
- 3.4.5 *219-S Waste Handling Facility Sampling Gallery {CA}* — Sample fume hood.
- 3.4.6 *219-S Vaults A-B, Ground Level {RCA/RBA/RMA}* — The access point will be posted as an RCA/RMA/RBA.
- 3.4.7 *219-S Vault A {ARA/RA}* — The entire area below the cover blocks is considered an ARA/RA. Entry is controlled by technical work document; for example, JCS Work Package or Work Plan.

222-S Complex Radiological Postings

- 3.4.8 *219-S Vault B {ARA/HRA}* — The entire area below the cover blocks is considered an ARA/HRA. Reference WHC-CM-5-4, Section 9.4, "222-S High and Very High Radiation Access Control."
- 3.4.9 *207-SL Basin, Ground Level {RCA/RMA}* — The perimeter will be posted as an RCA with the Auto Sampling System and storage box posted as an RMA.
- 3.4.10 *207-SL Basin {CA}* — The CA posting will be attached to access hatches to the 207-SL Basin inlet/outlet weirs. An RBA will need to be established at the access hatches of the weirs when personnel entries are made into the basin.
- 3.4.11 *207-SL Retention Basin Water Tanks {RCA/RMA}* — The perimeter will be posted as an RCA with the Retention Basin Water Tanks posted as an RMA at the access point to the ladders.
- 3.4.12 *222-SD Solid Waste Handling Storage Facility, Non-shielded Area {RCA/RMA/RBA}* — Non-shielded area will be posted as an RCA/RMA/RBA for storage of radioactive material with deep dose equivalent under 0.005 rem (5 mrem, 0.05 millisievert) in 1 hour at 30 centimeters from the source or from any surface the radiation penetrates. For material with deep dose in excess of 0.005 rem (5 mrem, 0.05 millisievert) in 1 hour at 30 centimeters from the source or from any surface the radiation penetrates with dimensions that will fit into the shielded area reference 3.4.13. For material that will not fit into the shielded area (i.e., burial box) temporary Radiation Area signage will be posted at the 0.005 rem boundary.
- 3.4.13 *222-SD Solid Waste Handling Storage Facility, Shielded Area {RCA/RA/RMA}* — Shielded area, if waste material is present, will be posted as an RCA/RA/RMA for storage of radioactive material with deep dose equivalent in excess of 0.005 rem (5 mrem, 0.05 millisievert) in 1 hour at 30 centimeters from the source or from any surface the radiation penetrates.
- Waste Materials which could result in an individual receiving deep dose equivalent in excess of 0.1 rem (100 mrem, 0.001 sievert) in 1 hour at 30 centimeters from the source or from any surface the radiation penetrates will be shielded to a less than value.
- 3.4.14 *Connex Box #1, 222-S Dangerous and Mixed Waste Storage {RCA/RMA/RA}* — Waste materials which could result in an individual receiving deep dose equivalent in excess of 0.1 rem (100 mrem, 0.001 sievert) in 1 hour at 30 centimeters from the source or from any surface the radiation penetrates will be shielded to a less than value.
- 3.4.15 *Connex Box #2, 222-S Dangerous and Mixed Waste Storage {RCA/RMA/RA}* — Waste materials which could result in an individual receiving deep dose equivalent in excess of 0.1 rem (100 mrem, 0.001 sievert) in 1 hour at 30 centimeters from the source or from any surface the radiation penetrates will be shielded to a less than value.
- 3.4.16 *Connex Box #3, Soiled Anti-C's {RCA/RMA}* — Storage facility for soiled Anti-C's.

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- 3.4.17 *Connex Box #5, Laundered Anti-C's {RCA/RMA}* — Storage facility for laundered Anti-C's.
- 3.4.18 *Connex Box #6, Lead Storage {RCA/RMA}* — Storage facility for lead shielding.
- 3.4.19 *Solid Waste Storage Facility (Bull Pen) {RCA/RMA/RBA}* — Both the east and west access points to the bull pen will be posted as RCA/RMA/RBA. For material with deep dose in excess of 0.005 rem (5 mrem, 0.05 millisievert) in 1 hour at 30 centimeters from the source or from any surface the radiation penetrates, temporary Radiation Area signage will be posted at the 0.005 rem boundary.

4.0 DESIGNATED REVIEWING ORGANIZATIONS

<u>Designated Reviewing Organizations</u>	<u>CMPOC</u>
Analytical Operations	T6-16
Radiological Control	T6-28

5.0 REFERENCES

HSRCM-1, *Hanford Site Radiological Control Manual*, Rev. 2, Westinghouse Hanford Company, Richland, Washington.

WHC-CM-5-4, *Laboratories Administration*, Section 9.4, "222-S High and Very High Radiation Access Control," Westinghouse Hanford Company, Richland, Washington.

April 28, 1995

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Laboratory Procedures

Approved by

M. L. Bell, Director
Analytical Services

5/1/95

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Laboratory Procedures**1.0 PURPOSE**

This section establishes the laboratory procedure function for Analytical Services' (AS) technical procedures. It provides direction and defines the function used for the identification of need, initiation, preparation, review (verification and validation), approval, change, revision, release, issue, use, and periodic review of technical procedures.

This laboratory procedure function is implemented by the Procedures Administration (PA) function of AS Documentation Administration in support of applicable requirements of U.S. Department of Energy (DOE) Orders 4330.4B and 5480.19, DOE procedure standards and guides (such as DOE-STD-1029-92, "Writer's Guide for Technical Procedures"), and the requirements of WHC-CM-3-5, *Document Control and Records Management Manual*.

2.0 SCOPE

This section applies to all elements involved in preparing laboratory technical procedures. It does not apply to non-technical procedures, administrative desk instructions, or work packages controlled under WHC-CM-1-8, *Work Management Manual*.

Deviations from the requirements of this section are documented and approved by waiver as identified in WHC-CM-1-3, *Management Requirements and Procedures*, MRP 2.21, "Controlled Manual Waiver Process."

3.0 DEFINITIONS**Administrative (Editorial) Change**

An alteration to a technical procedure that is considered to be editorial (such as misspelled words, organizational name changes, discussion, etc.) and does not change the procedure's intent. Administrative changes, as a minimum, require the approval of the technical authority and approval authority. Administrative changes do not require any personnel retraining.

Approval Designator

The system which establishes approval requirements based on a document's importance to Safety, Environment and Quality. The Approval Designators are assigned by the technical authority per the criteria given in WHC-CM-3-5, Section 12.7, "Approval of Environmental, Safety, and Quality Affecting Documents," and WHC-CM-7-5, Section 13, "Environmental Compliance Officers, Central Environmental Committee, Environmental Reviews."

Approval Authority

The technical authority's cognizant manager or designee thereof. Approval authorities are delegated to sign those procedures within their field of expertise. The 222-S Analytical Operations Manager is the designated approval authority for all 222-S laboratory operating (LO) procedures.

Laboratory Procedures**Approved Technical Procedure**

A laboratory technical procedure approved, at a minimum, by the required AS organizations and in accordance with the assigned Approval Designator. Approval can be in written form, by signature or initials, by documented telephone conversation (telecon) per Section 6.1.5, or sent electronically via cc:mail.

Controlled Copy

A hard copy or electronic version of an approved laboratory technical procedure that is maintained at specific controlled user locations, normally in controlled notebooks. Goldenrods (performance copies) and procedure change authorizations (PCAs) are considered controlled copies and identified as such. Requests for addition or deletion of controlled user locations are addressed in writing to PA.

Goldenrod (Performance Copy). The copy of a technical procedure released by PA, placed in controlled user locations, and validated to be the most recent revision. Goldenrods are the ONLY valid copies used to perform or record the performance of an activity. Each is identified as such and as being valid by a release stamp and assigned controlled notebook number on page 1, and by being issued on goldenrod paper. Removal of goldenrod procedures from controlled user locations is not allowed.

White Copy. A copy of a technical procedure to be used for reference purposes. White copies are available electronically on the network or in hard copy form from Procedures Administration. Operators are permitted to use white copies when filling out data sheets.

Inactive (Hold) Procedure

A laboratory technical procedure not required by the laboratory on a temporary basis and placed in hold status. Inactive procedures are normally the result of a procedure past its periodic review or requested inactive by the technical and/or approval authority, and documented on a Procedure Review and Approval Form (PRAF) or other approval means.

Material Safety Data Sheet

A data sheet prepared by the supplier of gases, chemicals, toxic or hazardous substances, and other materials that contain specific information about the hazards represented by the substance and the procedures to follow for safe handling when using the substance (WHC-CM-4-40, *Industrial Hygiene Manual*, Section 2.1, "Hazard Communication Program"). The Hanford Environmental Health Foundation assigns a Material Safety Data Sheet number to each data sheet onsite.

Periodic Review

The periodic function of verifying and validating that a technical procedure meets and reflects all current applicable technical, administrative, and facility configuration changes that have been made since the last revision. The review is documented on a PRAF. Upon completion, the date of the next periodic review is established from the date of release.

Laboratory Procedures**Procedure Change**

An approved change from one word to less than the entire procedure. A change is classified as either administrative (editorial) or technical and may be permanent or temporary.

Procedure Change Authorization (PCA)

The form that authorizes immediate implementation of approved changes to an existing technical procedure. PCAs are valid for a 90-day period of time or duration of an event. Only one PCA is allowed on any one procedure at any given time. They are issued on pink paper and considered controlled documents. The PCA form is available from PA or on Hanford Site Forms (A-6400-242 and A-6400-242.1). See Attachment 1.

Procedure Review and Approval Form (PRAF)

The AS-specific designated form for process, review, and approval of laboratory maintenance and technical procedures. The PRAF replaces the "stripey" and DARF forms, and documents many functions, such as inactivations, voids, reactivations, periodic reviews, and technical review comments. The PRAF is available from PA or electronically on the network. See Attachments 2 and 3.

Review

The portion of the laboratory technical procedure development function that includes cross-disciplinary review, verification, validation, and disposition of resulting valid technical comments.

Validation. The portion of the procedure review function that tests procedure usability, correctness, and compatibility with the equipment or system. Validation is normally performed by personnel who will be using the procedure.

Verification. The portion of the procedure review function that independently evaluates the procedure for technical accuracy and proper format. Verification includes cross-disciplinary reviews requested by the technical authority and any additional organization, personnel, or other discipline (fire systems, industrial safety, nuclear safety, environmental, quality) to ensure the procedure is free of technical errors.

Revision

A technical change to a laboratory technical procedure that alters the results, requirements, or methods by which a procedure is performed, or that does not meet the definition of an administrative (editorial) change, including modification of a regulatory method. Revisions, as a minimum, require the approval of the technical authority, approval authority, and any additional signature required by the applicable approval designator. Revisions require personnel retraining.

Technical Authority

Technical authorities are cognizant engineers/scientists or other facility-designated personnel with the necessary training and experience to fulfill the technical responsibilities for the procedure. Normally, a procedure writer is the technical authority assigned responsibility for the procedure, but some exceptions do exist.

Laboratory Procedures**Technical Procedure**

A laboratory technical procedure that prescribes a function (a sequence of actions) to be performed to achieve a defined outcome. For the purposes of this section, the terms "technical procedure," "laboratory procedure," and "procedure" are synonymous.

User Test (Blue User)

Limited testing of a laboratory technical procedure under the direction of a technical or approval authority before official release by PA. User test authorization is obtained on the PRAF and the user test procedure printed on blue paper for unique identification.

Void (Canceled) Procedure

A laboratory technical procedure that is no longer required by the laboratory on a permanent basis. Void procedures are considered canceled, but can be reactivated. A procedure is formally requested void by the technical and/or approval authority, and documented in writing on a PRAF or other approval means.

4.0 RESPONSIBILITIES

The following defines the functional roles and responsibilities of the various entities involved in the laboratory procedure function.

4.1 Director, Analytical Services

The AS Director, or designee, is responsible for:

- Implementing this section as the defined, disciplined laboratory procedure function
- Setting the policy for laboratory technical procedure use and applicability
- Issuing an approval authority list that assigns authority and establishes accountability for laboratory technical procedures
- Ensuring the AS laboratory procedure function complies with the requirements identified by WHC-CM-3-5, *Document Control and Records Management Manual*, Section 12.5, "Technical Procedure Standard"
- Determining AS specific training requirements for procedure owners, users, and developers (procedure writers, technical authorities, and reviewers)
- Ensuring personnel participating in the procedure development, review, and approval functions are trained and qualified to do so.

4.2 Approval Authorities

Approval authorities are responsible for review of procedures in their field of expertise. A current approval authority list is owned by PA and approved by AS director. The 222-S

Laboratory Procedures

Analytical Operations Manager is the designated approval authority for all 222-S laboratory operating (LO) procedures and designated reviewer of all 222-S laboratory procedures.

Approval authorities are responsible for:

- Owning procedures that address the applicable requirements listed in Paragraph 5.0 of this section
- Identifying technical authorities, as appropriate
- Ensuring AS procedure users utilize and comply with procedures in accordance with this manual, Section 1.1, "Safety Priority and Procedure Compliance Policy"
- Reviewing procedures under their cognizance and in their field of expertise
- Ensuring all required personnel review and approve procedures (additional reviews/approvals can be added by the approval authority as deemed appropriate)
- Requesting, via PRAF, removal of unused procedures from controlled user locations
- Providing PA with documentation indicating any delegation of their approval authority.

The manager of AS Documentation Administration has approval authority for all procedures and is the alternate approval authority in the absence of the primary approval authority.

4.3 Manager, Documentation Administration

The AS Documentation Administration manager is responsible for:

- Maintaining a controlled procedure function meeting the requirements identified in this section
- Ensuring procedure processing is completed and procedures issued in a timely manner and in accordance with the direction and functions defined in this section
- Ensuring procedures are available when needed.

4.4 Procedures Administration

Procedures Administration personnel (reporting to the Manager, Documentation Administration) process laboratory maintenance and technical procedures, incorporate any required changes, prepare the final procedure, perform the final administrative review, and sign off as Procedure Administrator. The following are also the responsibilities of Procedure Administration personnel.

- Assigning a unique identification number to procedures, with concurrence of the technical authority for all new procedures (see Appendix A for analytical procedure numbering).

Laboratory Procedures

- Ensuring all resolved comments are incorporated.
- Releasing completed procedures by applying a release stamp and date of release to page one of each procedure.
- Issuing controlled copies printed on goldenrod paper.
- Issuing, distributing, and maintaining availability of laboratory maintenance and technical procedures.
- Maintaining current the electronic network for information and reference.
- Removing procedures from controlled notebooks, as applicable and/or requested.
- Ensuring procedures are processed, reviewed, and approved in a timely manner according to the functions defined in this section.
- Maintaining current the ZDOX and MAINTRAK Laboratory Procedure Tracking Systems, databases for tracking procedure status.
- Maintaining current the Analytical Services Laboratory Procedures index via Soft Reporting.
- Maintaining current the maintenance procedure index available on the electronic directory.
- Tracking periodic reviews and processing procedures in the periodic review cycle.
- Creating and maintaining a keyword index to minimize redundancy and duplication of laboratory maintenance and technical procedures already in use.
- Tracking user test (blue user) procedures.
- Assigning numbers to, processing, and tracking PCAs.
- Maintaining a procedure history file in hard copy or other archival media in the Laboratory Technical Information Center.

4.5 Technical Authorities

Normally, AS technical authorities act as the procedure writers (there are some exceptions). Technical authorities are ultimately responsible for submitting to PA a procedure containing all the required elements and ensuring that a procedure is technically adequate, accurate, and consistent. The following statements explain how technical authorities accomplish this.

- They meet the training and qualification requirements established by the Director, Analytical Services.
- They provide technical direction for AS procedure writers.

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- They determine, with approval authority concurrence, the need for placing any unneeded procedure in inactive (hold), void (cancel), or reactivation status.
- They specify or confirming goldenrod locations
- Before issuing a new procedure, they contact PA to verify there are no existing procedures that could be used with minor changes or additions to minimize redundancy and promote standardization and consistency of procedures.
- They identify and provide to PA appropriate keywords for each assigned procedure to effectively limit the number of procedures for the same task and give consideration to combining related procedures into a single or base document with broader application.
- They concur with the assignment of the identification number for new procedures as assigned by PA.
- They prepare, change, and perform the periodic review of assigned procedures in consideration of changes in technology, administrative practices, or regulatory requirements.
- They determine appropriate level of detail required based on the training and qualification of the final user.
- They assign approval designators for each procedure, in accordance with WHC-CM-3-5, Section 12.7.
- They designate any additional procedure reviewers to verify adequacy, accuracy, and consistency of the procedure.
- They ensure performance of Unreviewed Safety Question screens and evaluations as necessary to ensure safety basis is not effected by the procedure.
- They ensure the procedure complies with the facility Safety Analysis Report, Technical Safety Requirement, and Interim Safety Basis criteria, or other safety documentation prepared under the requirements of WHC-CM-4-46, *Nonreactor Facility Safety Analysis Manual*.
- They conduct procedure verification.
- They designate the validation method desired or required.
- They document, resolve, and/or disposition review comments with designated reviewers and incorporate such in the draft procedure in a timely manner. Conflicting comments between the technical authority and reviewers are resolved in individual discussions. Disposition of comments and any unresolved comments are noted on page two of the PRAF.

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- They provide or direct reviewers to references and background information upon which to base their reviews. Although not required to maintain all of the information on file, they are responsible for providing that which is not readily available elsewhere for the history file in Laboratory Technical Information Center.
- They provide legible figures and/or drawings to PA for incorporation, as appropriate.

4.6 Procedure Writers

AS procedure writers are responsible for developing procedures, using applicable writer's guides, and providing specific instructions for task performance under the direction of the appropriate technical authority. They meet the training and qualification requirements established by the Director, Analytical Services.

4.7 Technical Reviewers

Technical reviewers are responsible for verifying procedures they review in their respective areas of expertise are technically adequate, accurate, and consistent, and for meeting the training and qualification requirements established by Director, Analytical Services.

Technical review comments are documented on page two of the PRAF, but can be noted on the hard copy. The review period, which is normally less than ten working days from receipt of the procedure, is timely. Deviations in review periods are negotiated with the technical authority, if required, and notification made to Procedure Administration. As a minimum, procedure reviews conform to the requirements in WHC-CM-3-5, Section 12.7.

- All new procedures and revisions are reviewed and signed by the assigned technical authority, approval authority, technical reviewers, and PA.
- All administrative changes are reviewed and approved by the technical authority, approval authority, and PA.
- Issuance of a PCA requires all technical reviews and approvals as determined by the approval designator of the PCA.
- Incorporation of PCA changes are reviewed by the technical authority and approval authority.
- Quality assurance review is based on the approval designator as defined in WHC-CM-3-5, Section 12.7.
- Safety review is based on the approval designator as defined in WHC-CM-3-5, Section 12.7.

Laboratory Procedures

- Procedure changes that have the potential of releasing hazardous material to the environment exceeding permitted standards will be reviewed by AS Environmental Compliance Officer or designee as defined in WHC-CM-7-5, *Environmental Compliance*.
- Procedure changes concerning radioactive material or hazardous material packaging and transportation are reviewed by Transportation Logistics as defined in WHC-CM-2-14, *Hazardous Material Packaging and Shipping*.
- Procedure changes used for the measurement of all elements affecting quantities or control of nuclear materials are reviewed by Safeguards Materials Control as defined in WHC-IP-1019, *Material Control and Accountability Plan*.

4.7.1 Cross-Disciplinary Review. A procedure can be submitted to additional designated organizations or personnel to ensure it is free of technical errors. The technical authority or approval authority can request this cross-disciplinary review. The reviews are documented on page two of the PRAF and maintained as part of the review record. This review is not mandatory.

4.7.2 Peer Review. A new or revised procedure can be submitted to a peer or peers for independent technical review. Peer reviews are documented on page two of the PRAF and maintained as part of the review record. This review is not mandatory.

4.7.3 User Test (Blue User). Prior to release, a user test can be performed. A user test procedure is printed on blue paper to prevent confusion with released procedures. User tests are accompanied with a PRAF and appropriate approval signatures. The approval authority determines technical reviewers required to sign are consistent with the procedure and approval designator. Any active procedure being converted to a blue user is inactivated during the blue user test period.

The user test procedure is controlled by the technical authority. Within 90 days of issue, it is either issued as a formal procedure or the activity is canceled. It can be reissued for an additional 30 days with appropriate approvals documented on a new PRAF.

The user test may serve as the documented peer review and for qualifying a method. A user test being evaluated as a possible succeeding revision may be used under controlled conditions; however, test results are not to be used as a reference until approved.

4.8 Verifiers

Verifiers are responsible for the following:

- Reviewing new procedures and procedure changes to verify accuracy, adequacy, and consistency
- Providing comments and recommendations that are consistent with level of expertise and qualification

Laboratory Procedures

- Meeting the training and qualification requirements established by Director, Analytical Services.

4.9 Validators

Validators are responsible for the following:

- Performing validations that are consistent with procedure use in accordance with Section 6.1.2
- Providing comments and recommendations that are consistent with level of expertise and qualification
- Meeting the training and qualification requirements established by Director, Analytical Services.

4.10 Procedure Users

Procedure users are responsible for the following:

- Using procedures in accordance with established policy on compliance
- Taking ownership for procedure use and assisting in maintaining those procedures current and accurate.

5.0 REQUIREMENTS

This section is applicable to all elements of the AS laboratory procedure function for technical procedures. Procedures are developed for anticipated operations, transients, evolutions, surveillances, maintenance, tests, and abnormal or emergency situations. The requirement to develop a procedure, or the extent of detail in a procedure, depends on the complexity of the task, the risk associated with the task, the experience and training of the expected user(s), and the frequency of performance. Laboratory technical procedures include but are not limited to the following:

- Laboratory Analytical Procedures (LAs)
- Laboratory Computer Procedures (LCs)
- Laboratory Essential Materials Procedures (LEs)
- Laboratory Operating Procedures (LOs)
- Laboratory Quality Control Procedures (LQs)
- Laboratory Reference Material Procedures (LRs)
- Laboratory Technology Procedures (LTs)
- Laboratory specific maintenance procedures
- Laboratory specific preventative maintenance procedures.

Laboratory Procedures**5.1 Training**

For the purposes of this section, "training" refers specifically to instructions concerning the laboratory procedure function. Training requirements, methods, and documentation are defined by the Director, Analytical Services and defined in Section 4.0 of this manual. This section is available in hard copy as part of WHC-CM-5-4, *Laboratories Administration*, and accessible in electronic format on a network drive to support training activities.

5.2 Documented Basis

A documented basis is required for all laboratory technical procedures. The basis includes a listing of documents used during procedure development as the following:

- **Developmental** references (such as vendor material, technical manuals, drawings, etc.)
- **Implementing** (requirement) references (such as Westinghouse Hanford Company Level I and II controlled manuals, Occupational Safety and Health Administration, American National Standards Institute/American Society of Mechanical Engineers, U.S. Department of Energy Orders, national standards, Code of Federal Regulations, Safety Analysis Report, Technical Specifications, etc.).

Requirements identified in developmental and implementing documents are integrated into the procedure, where applicable and whenever possible. Documents required "in hand" for actual procedure performance are listed in the procedure "Reference" section.

Documentation of the basis for procedure revisions (technical changes) is included on Page 2 of the PRAF for inclusion in the procedure history file.

5.3 Procedure Identification

All laboratory technical procedures are assigned a unique identification number based on Appendix A. This identification number appears on the bottom of each page of the procedure. All procedures also have a revision/administrative identifier that also appears on the bottom of each page. Revisions (except to maintenance procedures) are classified by the first character, a letter, and administrative changes are identified by the second character, a number. Maintenance procedures are designated 1-0, 2-0, 3-0 for new or revised procedures. Administrative changes are indicated as 1-A, 1-B, 1-C for maintenance procedure activity. The identifier is separated by a hyphen. Revision identification includes modification of a method as defined by the Hanford Analytical Services Quality Assurance Plan (HASQAP).

5.4 Format and Content

U.S. Department of Energy Standard DOE-STD-1029-92, "Writer's Guide for Technical Procedures" is the basis of the format and content of AS laboratory technical procedures. INPO 85-026, "Writing Guideline for Maintenance and Calibration Procedures," is considered the basis of the format and content of AS laboratory maintenance and preventative maintenance procedures. These formats are also consistent with the guidelines for publications standards found in WHC-CM-3-6, *Uniform Publications System*. These guidelines include the site

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standards for abbreviations, acronyms, chemical notation, scientific notations, equations, units of measurements, and other editorial preferences. Any other necessary nomenclature will be clearly defined at the point of first use. A WordPerfect¹ macro is available from PA that can be used to electronically guide the technical authority or procedure writer through these formats during procedure development.

The following lists some of the requirements of laboratory maintenance and technical procedures.

- Format and content of laboratory technical procedures are uniform and consistent with this section and meet the requirements identified above.
- All instructions are clear and precise.
- Each step contains only one action.
- The nomenclature used within the procedure to identify equipment is identical to the nomenclature (if available) on the equipment actually installed.
- The procedure is written to minimize risk to personnel and equipment. Human factors are considered during procedure preparation. Where potential hazards exist, adequate warning or caution statements are provided.
- Warnings, notes, cautions, and criticality statements are easily identifiable and do not contain action statements. The probability of missing an action step increases when it is included in a warning, note, or caution.
- Warnings, notes, cautions, and criticality statements precede the step to which they apply.
- Warnings, notes, cautions, and criticality statements appear on the same page as the step to which they apply to ensure personnel are alerted to necessary information before performing a procedural step.
- The procedure is written to the degree of detail necessary for performing the required activity.
- The procedure, when appropriate, informs persons performing the procedure what responses to expect from their actions or the desired result of their actions.
- Sign-off blanks are provided for steps requiring sign off.
- Independent verification signoff is provided for applicable steps or sections of a procedure when required.

¹WordPerfect is a trademark of WordPerfect Corporation.

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- When assistance from another group is required, instructions for notification of the responsible group is provided by the procedure.
- Acceptance criteria and/or other requirements within the procedure are clearly stated so the user can easily determine if the results are within the acceptable range.
- Vendor information is reviewed to ensure all necessary technical requirements are included in the procedure.
- As Low As Reasonably Achievable principles are considered when writing or revising the procedure. Applicable radiological hold and survey points are identified in accordance with the *Hanford Site Radiological Control Manual* (HSRCM-1, Rev. 2). As Low As Reasonably Achievable principles applying to hazardous material, hazardous waste, chemicals, and radiological contamination are considered.
- Technical Specification, Operational Safety Requirements, and all other applicable requirements or limits are identified.

Laboratory technical procedures, excluding maintenance procedures, contain the following elements as listed. Mandatory elements are indicated and others included, as appropriate. The Procedure Steps element always begins a new page.

Approval Designator (MANDATORY). The approval designator is identified for each procedure in accordance with WHC-CM-3-5 and appears on page one of the procedure and the PRAF. The approval designator is carried to the PRAF for information only. Required reviews are guided by the new/revised or administrative designation on the PRAF.

Summary (MANDATORY). The summary contains a short description or abstract of the procedure containing enough information to distinguish it from other procedures.

Applications (MANDATORY). Applications define the specific scope and purpose of the procedure and can be combined with the following element under the title "Applications/Limitations."

Limitations (MANDATORY). Limitations briefly describes areas in which the procedure is not applicable. A statement of accuracy and precision is given, as appropriate.

Quality Control Protocol. Some procedures, such as environmental analysis, are used to support specific projects with specific quality control requirements. For these procedures, the source of the quality control requirements is identified. The following information is typical of quality control requirements: preparative blank, laboratory control sample matrix spike, sample duplicate, and frequency and type of calibration.

Safety (MANDATORY). Safety identifies relevant safety hazards, including applicable radiological work permits. Supporting document WHC-SD-CP-LB-003, *Safety in the Analytical Laboratory*, is the laboratory safety baseline. Technical authorities must review safety requirements and include relevant safety warnings that pertain to the actions directed by

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the procedure. Hold points for health-physics technician approval are designated by an (HP) in the left margin next to the appropriate step. Safety requirements are identified in the following documents:

- HSRCM-1, *Hanford Site Radiological Control Manual*
- WHC-CM-4-3, *Industrial Safety Manual*
- WHC-CM-4-29, *Nuclear Criticality Safety Manual*
- WHC-CM-4-40, *Industrial Hygiene Manual*
- WHC-CM-4-46, *Nonreactor Facility Safety Analysis Manual*.

Reagents. If the procedure requires analytical reagents, a list of reagents is provided and their applicable Material Safety Data Sheet number placed in parentheses by each chemical name. Reagent makeup, storage container requirements, unique storage needs, shelf-life requirements, special labeling, and special preparation steps are included, as applicable. Special notation for any known or suspected carcinogens is made on the reagents list. The supporting document WHC-SD-CP-LB-028, *Laboratory Reagents*, provides a detailed list of many common laboratory reagents, shelf lives, and storage requirements. If reagent preparation is described fully in other current Westinghouse Hanford Company documentation, it is included in the "Reference" section.

Equipment. Special equipment requirements are listed. Standard hood or glovebox equipment is assumed to be available at the work station and does not need to be listed, unless the technical authority prefers to include the equipment for clarity. The fabrication of off-standard equipment is referenced or described. Any special procedures or forms required are also listed.

Procedure Steps (MANDATORY). A step-by-step description of activities necessary to perform the task presented in a logical and sequentially numbered order or an assignment of responsibilities. Only one action is performed per step. Explanatory "notes" are included for clarification of the process and precede the step to which the note refers. "Cautions" (potential for facility, equipment, data loss, or process damage) and "Warnings" (potential for personnel hazards) are included for relevant safety hazards before the action is described. Steps with potential for criticality specification violation are identified as "Criticality" prior to the step. Hold Points are identified.

Calculations. Calculations required to complete the work are described. Examples with sample values are included. All combined factors are fully described and units noted in metric.

Calibrations. When calibrations are required, a description of how to carry out required calibrations is given. Calibration descriptions are monitored in accordance with guidelines established by the Laboratory Instrument Calibration Control Board, Section 8.2 of WHC-CM-5-4.

Discussion. A discussion with supporting data from references of the theoretical aspects of the procedure. Brief identification of unique characteristics and interfaces to aid in troubleshooting are included.

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References. A reference list of published information contained within the procedures that provides a documented basis for performance of the procedure, including that required for actual procedure performance. Procedure changes to update references are initiated only during required periodic review unless the document is required for actual procedure performance. Technical authorities provide or direct reviewers to references and background information upon which to base their reviews.

Bibliography. A list of published information that may or may not be directly referred to in the procedure, but may be included as interest to the procedure user or reader.

Laboratory maintenance procedures contain the following elements:

Purpose and Scope. Purpose and scope describe the objective of the procedure and identify major activities and equipment covered by the procedure.

References. The reference section identifies those documents required in the field to perform any given procedure.

Personnel Requirements. The number of personnel, minimum skill level, and hours required to perform the procedure are estimated and included here.

Precautions and Limitations. Safety requirements that must be met before the procedure can be performed or potential hazards and special conditions that may be encountered during procedure performance are stated.

Special Tools, Equipment, and Materials. Special tools not routinely carried, test equipment, contaminated tools, and supplies needed to perform the procedure to prepare the user are identified. Calibrated tools and test equipment are identified by part numbers. The phrase "or equivalent" is not used unless equivalency checks are stated.

Prerequisites. The prerequisite conditions describe equipment, system conditions, or pre-task steps that must be met or completed before the procedure can be performed.

Instructions. Instructions are presented. A new heading is provided for each major activity (remove, disassemble, etc.).

Restoration. The tasks required to return the component and system to operation are identified.

Testing and Acceptance. Acceptance limits and post-maintenance test requirements that must be performed to ensure equipment is operable and any problem corrected are specified.

Disposition. The disposition of the completed procedure and/or data sheets is described. Include identification of whom to notify that the procedure has been completed.

Bibliography. The bibliography identifies important references on which the procedure is based and references cited in the instructions, to include applicable technical specifications.

Laboratory Procedures

Tables and Data Sheets. Checklists and reference tables used by the performer to ensure completion of instruction steps and restoration steps. Normally found at the end of a procedure.

Attachments. A list of procedure attachments or enclosures is provided.

6.0 PROCEDURE PROCESS**6.1 Review and Approval**

New and revised (procedures with technical changes) procedures are reviewed and approved in accordance with the approval designator assigned to the procedure by the Technical Authority and specified in WHC-CM-3-5, Section 12.7. Minimum review and approval requirements for new and/or revised procedures includes technical authority, approval authority, those required by the approval designator, and PA. Review and approval are documented on a PRAF.

The PA prepares a PRAF and routes the PRAF and new or revised procedure to the designated reviewers for approval. Each reviewer summarizes comments on page 2 of the PRAF or annotates and initials the hard copy, signs the PRAF (if desired, or after comment resolution and incorporation), and returns the PRAF and reviewed procedure to PA in a timely manner (normally 10 working days), unless prior notification to PA is made.

Minimum review and approval for administrative (editorial) changes includes the technical authority, approval authority, and PA. The review and approval are also documented as described above on a PRAF.

Cross-disciplinary reviews are performed whenever any of the following conditions apply.

- The response of a system under the direct control of another group is altered and notification of the affected group is required.
- The steps in a procedure may affect the use or operation of equipment under the control of another group.
- Cases where expertise in specific disciplines or specialized training are needed beyond that of the primary reviewer(s) to ensure a complete technical review of the procedure.

6.1.1 Verification

Procedure verification is performed by the Technical Authority on new and revised procedures. The following statements explain why verification is documented by review signature on the PRAF.

- To verify all information contained within the procedure is accurate and complete.
- To verify the procedure is free of errors, is easily understandable, and meets the guidelines for content and format.

Laboratory Procedures

- To verify Technical Specification, Operational Safety Requirements, and all other applicable requirements or limits are identified and satisfied. The reviewer checks for omissions of Technical Specification or Operational Safety Requirements provisions that may not be identified in the procedure.
- To verify the procedure does not contain steps that could potentially lead to Technical Specification or Operational Safety Requirements violations, expose personnel or the environment to hazardous conditions, or cause equipment damage.
- To verify the procedure can be accomplished in the sequence written.
- To verify the procedure provides for easy interaction between groups, and efficient use of resources.
- To verify references specified in the procedure are applicable to the procedure being performed.

6.1.2 Validation

Procedure validation is performed on new procedures and procedure revisions.

Procedure validation method is determined by the Technical Authority and performed by personnel responsible for normal performance of the procedure by any of the methods described below.

Validation is documented by signature on the PRAF and retained in the procedure history file. The validation steps contained in Attachment 4 are addressed. The appropriate method is determined based on the scope, hazard risk, and application of each procedure.

The "walkthrough" method is preferred for validation and is used unless plant conditions preclude the walkthrough (some examples are when systems or equipment are located in a high radiation zone, or if the walkthrough may cause unnecessary personnel exposure to hazardous environments). Alternate methods may be used when a walk-through is not practical. The following explain the walkthrough method and some alternate methods.

- Walk-through method. A method in which the intended users take the procedure to the location where the task is to be done and, without actually performing the task, ensure that each step is correct and readily usable as written. Where available, a simulator may be used for this method.
- Reference method. A method where an analytical review that does not simulate actual operation, but validates the procedure through document reviews. This method may be used for procedures developed from a previously performed procedure (such as a work package, test procedure or vendor technical manual). To use this method, the procedure must have been performed using the parent document and must contain the same instructions.

Laboratory Procedures

The procedure is then validated based on the fact that the instructions were performed successfully via another document.

- Simulation Method. A method whereby personnel who would normally perform the procedure do so on simulators or mock-ups of the equipment.
- Table Top Method. A method whereby personnel explain and/or discuss procedure action steps. Appropriate drawings and references are used.

6.1.3 Comment Resolution

All organizations and personnel that formally request or are required to review a procedure are provided an opportunity for such review. Valid technical comments received during such reviews are resolved in a timely manner between the technical authority and the reviewers, and disposition is documented on page two of the PRAF. If review is not completed within 20 working days, the approval authority can issue the procedure without reviewer approval, unless an extension of time to complete the review is negotiated.

6.1.4 Final Administrative Review

Before release for use, a final administrative review is performed by Procedures Administration to ensure the new procedure or procedure change is accurate and consistent with the laboratory procedure function. The following are included in the review verification.

- The development and review process is completed in accordance with this section defining the laboratory procedure function.
- The procedure meets the guidelines for format and content.
- References specified in the procedure are current and applicable to the procedure being performed.
- Reviews are performed by all groups identified to be affected by the procedure and by organizations specified in WHC-CM-3-5, Section 12.7.
- Technical comments received during the review process are resolved and dispositioned, and incorporated when applicable.

6.1.5 Approval and Telecon Approval

The number of approvals is minimized to encourage procedure ownership. Each procedure is approved on a PRAF accordance with WHC-CM-3-5, Section 12.7, and other Westinghouse Hanford Company approval requirements (such as Packaging and Shipping, Radiological Control, etc.).

When a change to an approved laboratory technical procedure is identified as urgent, the change is initiated in accordance with this laboratory procedure function. Reviews and approvals may be obtained via telephone (telecon) or sent electronically via cc:mail. The following criteria apply to all telecon changes.

Laboratory Procedures

- The person called to perform the review and grant an approval accepts full responsibility for ensuring that the review performed is adequate for the approval granted.
- The person calling for approval documents the approval on the PRAF or procedure by printing the date and the name of the person called near the change made and approved. The caller signs and prints their name near the name of the person giving approval and indicates the approval was "per telecon."

6.2 Change Control

Procedure changes are necessary to ensure procedures reflect current practices, equipment changes, and new requirements. When need for a change to an approved procedure is identified, the change is initiated and processed in accordance with this section. The review and approval process for each procedure change is documented on a PRAF.

Changes to laboratory technical procedures are considered either administrative (editorial) or technical. Any technical authority, approval authority, or procedure user can initiate a procedure change. The initiator of the change has the following responsibilities in addition to the responsibilities of the technical authority.

1. The initiator provides a copy of the proposed changes, clearly written or highlighted on hard copy to Procedure Administration. Electronic copies of changes are not acceptable, unless specifically approved by PA.
2. The initiator provides information to the procedure administrator to assist in determining if the change is administrative or technical (revision).
3. The initiator provides a legible, reproducible copy of all figures or drawings required in the procedure.
4. The initiator informs other users of the procedure that a change is in process and determines what effect a change will have on their use of the procedure.

After changes to a procedure are received and incorporated, PA returns the changed procedure to the initiator. If the initiator and technical authority are not the same individual, the approval authority of the organization that generated the procedure is contacted by the initiator for review and technical authority review. Changes are then routed to the assigned technical authority for review and approval.

6.2.1 Administrative (Editorial) Changes

Administrative changes are reviewed and approved on a PRAF and in accordance with this section.

Administrative changes are limited to:

- Format changes that do NOT alter the technical content of the procedure, including step sequence

Laboratory Procedures

- Correction of grammatical, typographical, or spelling errors that do NOT affect:
 - numbers (other than page, step, table, figure title numbers, or obvious typographical errors)
 - units of measure, including updates to metric configuration
 - nameplate information/data
 - acceptance QC criteria, detection limit, accuracy, and precision
- Update of position or organizational names or titles, if the change does not alter responsibilities with regard to AS laboratory procedure functions
- Update of references, unless there has been a change in the reference that affects the technical content of the procedure
- Pagination, table, or figure title number changes.

6.2.2 Technical Changes (Revisions)

Technical changes (revision) include any change that does not meet the criteria of an administrative (editorial) change, including modification of a regulatory method (see HASQAP, Sections 8.4, 8.5, and 8.6). Typical technical changes include changing the technical content of a procedure, altering results, or affecting the approval designation. A technical change is also initiated when a procedure is affected by changing to the point that it is difficult to follow, or if a single change is so extensive that the procedure is difficult to follow. A technical change to a laboratory technical procedure is reviewed and approved on a PRAF. Technical changes made and incorporated into the procedure conform to criteria set forth in this laboratory procedure function.

All outstanding temporary changes (PCAs) that exist against a procedure in revision will be incorporated into the new revision or rewritten against the newly revised document.

6.2.3 Incorporation of Changes

Approved changes are incorporated in accordance with this section. Pen and ink changes are not allowed. The use of tape or obliterating agents in a procedure is also not allowed.

For administrative changes, each changed portion of the procedure is identified by a single vertical line in the left margin corresponding to the number of lines changed. The change marks indicate changes in the current administrative change only. Change marks in previous versions will be removed.

Revised procedures do not require change marks because they are considered "new" procedures.

Laboratory Procedures**6.2.4 Temporary Changes**

Temporary changes are issued to immediately implement a technical change or permit a temporary departure from an existing procedure for a 90-day period of time or duration of an event. Only one PCA is allowed on any one procedure at any given time. Immediate temporary departure for certain instances, such as correcting safety, operational difficulties or technical improvements, is authorized by the issuance of a PCA (see Attachment 4). Procedure Change Authorizations designate the period of time or duration of the event for which they are valid and are subject to a 90-day review to ensure final cancellation, incorporation into an existing procedure, or 30-day extension. Extensions are obtained by contacting PA, who will revise and initial the date on the master, release and issue new copies, and update ZDOX to reflect the extended date.

Procedure Change Authorizations are issued on pink paper for immediate identification and inserted into the goldenrod copies. They are considered controlled documents and tracked by PA. Laboratory technical procedures are allowed only one PCA issued against them at any one time.

Procedure Change Authorizations are required to be reviewed and approved as determined by the approval designator of the procedure and PCA changes. The following requirements also apply.

- A PCA number (SL-XXXXX) is obtained from PA, who maintains a logbook and tracks the activity on ZDOX.
- The initiator (normally technical authority) submits the PCA to PA at the time of the change or on the next business day.
- The PCA number appears on each page of the procedure that is changed by the PCA, and on each PCA continuation page.
- A new PCA continuation page is used for each page of the procedure that is changed. Changes on multiple pages of a procedure cannot be combined onto one PCA continuation sheet.
- Whenever the PCA changes allow, a mark-up copy of the procedure is attached to the PCA.
- All required approvals are obtained or the PCA cannot be released or issued.

If a deviation from a procedure is required and a PCA number cannot be obtained from PA in a reasonable period of time (such as during a weekend), documentation of the deviation is made on a PCA form, approved in accordance with the approval designator, and submitted to PA on the next business day for processing.

If a PCA is written that applies only for a specific time period or for specific activities, that PCA may be canceled upon completion of the work activity or time period. Cancellation of a PCA is accomplished by obtaining the file copy of the PCA from PA and acquiring the required approvals in the "Work Completion/Cancellation" block.

Laboratory Procedures**6.3 Inactivations and Voids (Cancels)**

When AS procedures are no longer required in AS facilities or by AS organizations or personnel, they are removed from active status. The following methods are used to remove an active procedure to an inactive (hold) or void (canceled) status.

1. Technical authorities and/or approval authorities notify PA in writing that a procedure needs to be removed from active status. The notification to be inactivated or voided, and the effective date for change of status is included. Normally, a PRAF is used for this notification.
2. Procedures Administration enters the inactive or void notification into the tracking system, removes the procedure from the controlled notebook, stamps the original procedure "Inactive" or "Void," and files the notification in the procedure history file in the Laboratory Technical Information Center.

6.4 Reactivations

Reactivation of an inactive or void procedure is initiated and documented on a PRAF. Normally, they result from a renewed need for a procedure or to restore a procedure that has passed its periodic review. An inactive document can be reactivated and placed back into use without a review if the periodic review date has not passed. However, if the periodic review date has passed, the procedure requires a full review by the technical authority, approval authority, and those required by the approval designator before reissue.

6.5 Periodic Review

To ensure the technical accuracy and adequacy of procedures, the following review cycle has been established for laboratory technical procedures, based on the associated approval designator:

- Any Safety (S) approval designator - 2 years
- Any Environmental (E) or Quality (Q) approval designator - 3 years
- Any Not Applicable (NA) approval designator - 5 years.

This review cycle meets criteria for procedure, type of equipment or system affected, vulnerability, safety implications, and frequency of procedure use for determining the review interval. Manufacturer's documents are considered, as appropriate, during this review. This meets the requirements of WHC-SP-0708, *Westinghouse Hanford Company Conduct of Operations Manual*, Chapter 16, "Operations Procedures" and WHC-CM-3-5, Section 12.5.

Laboratory technical procedures are tracked by Procedures Administration to determine when periodic reviews are required. Technical authorities are notified at two-month, one-month, two-week, and one-day intervals to assure periodic review is completed as scheduled. The periodic review is documented on a PRAF and submitted to Procedure Administration for laboratory procedure processing and entry into the database tracking system.

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Any procedure that passes its required periodic review date is removed from controlled notebooks and placed in inactive status by PA until formal review is acquired or notice of reactivation is submitted by the technical and approval authorities. The new date of periodic review will be established from the date of release.

6.6 Procedure Use Requirements

Laboratory technical procedures are readily available at controlled user locations throughout AS facilities. Goldenrods are clearly identified by the release stamp and assigned controlled notebook number on page one, and their color (issued on goldenrod paper). This assures the user that the procedures are valid, controlled to laboratory procedure functional requirements, and the most current revision available.

Status of any laboratory technical procedure can be confirmed by consulting the Analytical Services Laboratory Procedure index available on Soft Reporting or by contacting Procedures Administration prior to use.

Analytical Services laboratory technical procedure activities are conducted in accordance with applicable documents reflecting facility design bases. The requirements for use of procedures are clearly defined and understood by all procedure users. If procedure changes are required, an administrative or technical change is initiated.

When a procedure cannot be followed as written or unexpected results occur, work is temporarily halted and the equipment or system left in a safe condition. Procedures are appropriately changed before restarting the activity. Appropriate approval authorities (operations and technical managers) are promptly notified.

The exception to this policy, procedure users may take whatever action is necessary during emergency conditions to place the facility or equipment in a safe condition, and to protect equipment, personnel, and public safety without first initiating a procedure change. Prompt notification of the appropriate approval authorities (operations and technical managers) is required following any "emergency" actions.

Laboratory technical procedures are open and followed step by step when:

- A trainee is conducting the activity under supervision of qualified personnel
- Activity being conducted is non-routine, complex, or infrequently performed
- Evidence exists in the form of incidents or observations indicating a general weakness in procedural knowledge
- Activity requires step-by-step compliance without deviation (activity is being conducted on safety equipment, equipment important to facility reliability, and equipment/systems that could result in a transient or facility shutdown)
- Procedure contains signoffs

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- A performance error could cause significant adverse impact on the environment, the facility or equipment.

Procedure users need not reference emergency procedures during performance of immediate actions because these actions are committed to memory; however, the emergency procedure immediate action instructions are reviewed after the actions are performed, verifying all required actions have been performed.

6.7 Records**6.7.1 Indexes and Files**

The following indexes and files are maintained by Procedures Administration.

- A master database of AS laboratory technical procedures is maintained current via ZDOX Laboratory Procedure Tracking System.
- A master database of AS maintenance procedures is maintained current via MAINTRAK Laboratory Procedure Tracking System.
- A master index of AS laboratory technical procedures is maintained current via ZDOX to Analytical Service Laboratory Procedures available on Soft Reporting.
- A master file is maintained in Laboratory Technical Information Center for each procedure identified by the master index.
- The master file contains a controlled master of the most current version of the procedure.
- The master file is kept current and maintained as a controlled source for generating goldenrods.
- The electronic (computer based) procedure master file also has a backup.
- A history file is established and maintained in Laboratory Technical Information Center for each procedure defined by the master index. The history file contains a record of all changes to each procedure, including comments received during the review cycle and their disposition. For example, copies of signed PRAFs are kept in the history file to assist in determining the reviews required for each procedure change. The file is available in hard-copy or via other archival media.

6.7.2 Records

Records generated during laboratory technical procedure development are processed by Procedures Administration in accordance with applicable sections of WHC-CM-3-5, *Document Control and Records Management Manual* and applicable Records Inventory and Disposition Schedule.

7.0 REFERENCES

DOE-RL-94-55, *Hanford Analytical Services Quality Assurance Plan*.

DOE-STD-1029-92, "Writer's Guide for Technical Procedures."

HSRCM-1, Rev. 2, *Hanford Site Radiological Control Manual*, U.S. Department of Energy, Richland, Washington.

WHC-CM-1-8, *Work Management*.

WHC-CM-2-14, *Hazardous Material Packaging and Shipping Manual*.

WHC-CM-3-5, *Document Control and Records Management Manual*.

WHC-CM-3-6, *Uniform Publications System*.

WHC-CM-4-3, *Industrial Safety Manual*.

WHC-CM-4-29, *Nuclear Criticality Safety Manual*.

WHC-CM-4-40, *Industrial Hygiene Manual*.

WHC-CM-4-46, *Nonreactor Facility Safety Analysis Manual*.

WHC-CM-7-5, *Environmental Compliance Manual*.

WHC-SP-0708, *Westinghouse Hanford Company Conduct of Operations Manual*.

Flint, S. K., 1994, *Safety in the Laboratory*, WHC-SD-CP-LB-003, Westinghouse Hanford Company, Richland, Washington.

Flint, S. K., 1989, *Laboratory Reagents*, WHC-SD-CP-LB-028, Westinghouse Hanford Company, Richland, Washington.

Serier, M. N., 1994, *Material Control and Accountability Plan*, WHC-IP-1019, Westinghouse Hanford Company, Richland, Washington.

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ATTACHMENT 1

PROCEDURE CHANGE AUTHORIZATION

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Attachment 1. Procedure Change Authorization (Sheet 1 of 2)

PROCEDURE CHANGE AUTHORIZATION		Approval Designator	PCA No.	Page 1 of ____
PROCEDURE No.	Rev./Mod. Type	PCA EFFECTIVE DATE		
Title		PCA EXPIRATION DATE		
FACILITY		PCA TYPE		
Controlled Location Codes Where PCA does <u>not</u> apply.		<input type="checkbox"/> Supersedure <input type="checkbox"/> PCA continuation sheet attached <input type="checkbox"/> Temporary <input type="checkbox"/> Annotated pages attached <input type="checkbox"/> Permanent <input type="checkbox"/> Annotated document attached		
INITIATED BY		REASON FOR CHANGE		
Name				
Title/Organization	Phone			
APPROVAL				
Cognizant Engineer	Date			
Cognizant Engineer's Manager	Date			
Technical	Date			
Quality Assurance	Date			
Safety	Date			
Environmental	Date			
OPTIONAL APPROVAL				
<input type="checkbox"/> Safeguards Material Control	Date	<input type="checkbox"/> Work Completed (prior to expiration) <input type="checkbox"/> Other - Explain:		
<input type="checkbox"/> Operations Support Services	Date	SIGNATURES		
FINAL APPROVAL		Operational/Title		Date
Approval Authority	Date	Technical/Title		Date
DISTRIBUTION:		Information Copies		
Engineering Configuration Management (for SOPs, JPAs, POPs only)	_____	_____		
Manager, Technical Component	_____	_____		
QA Representative	_____	_____		

Attachment 1. Procedure Change Authorization (Sheet 2 of 2)

PROCEDURE CHANGE AUTHORIZATION	Approval Designator	PCA No.	Page ____ of ____
Description of Change (Page/No./Steps/Changes)			

ATTACHMENT 2

PROCEDURE REVIEW AND APPROVAL FORM

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Attachment 2. Procedure Review and Approval Form (Sheet 2 of 2)

Procedure Number / Rev/Mod _____	Page _____	of _____
Review and Comment		
_____ Signature	_____ Title/Org	_____ Date
Review and Comment		
_____ Signature	_____ Title/Org	_____ Date
For Procedures Administration Use Only		

ATTACHMENT 3

MAINTENANCE PROCEDURE REVIEW AND APPROVAL FORM

Laboratory Procedures

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Laboratory Procedures

Attachment 3. Maintenance Procedure Review and Approval Form (Sheet 1 of 2)

ANALYTICAL SERVICES			Maintenance Procedure Review and Approval Form			Page ____ of ____
Procedure Number _____	Rev/Chg _____	Approval Designator _____	Manager _____			
Title _____			Technical Authority _____			
Keywords (3): _____			Org <u>LAB ENGINEERING</u>			
			Validator (if applic.) _____			
			Maintenance Engineer _____			
<input type="checkbox"/> New Procedure — Full Review Required <input type="checkbox"/> Technical Change (Revision/Rewrite) — Full Review Required <input type="checkbox"/> Field Change/Editorial Change (Modification) — Tech. Authority/Approval Authority Review/Approval (minimum) <input type="checkbox"/> Cancellation of Procedure — Tech. Authority/Approval Authority Review/Approval (minimum) <input type="checkbox"/> Reactivate Procedure — Tech. Authority/Approval Authority Review/Approval (minimum)			<input type="checkbox"/> PERIODIC REVIEW OF LABORATORY PROCEDURE Procedure Review Date _____ Date Due to Procedures Administration _____ <input type="checkbox"/> This laboratory procedure has been reviewed as required and found to be satisfactory for continued safe operation. <input type="checkbox"/> Change Required <input type="checkbox"/> Cancel this procedure <input type="checkbox"/> Inactivate this procedure			
DESIRED VALIDATION METHOD <input type="checkbox"/> First-Use <input type="checkbox"/> Walk-through <input type="checkbox"/> Reference <input type="checkbox"/> Simulation <input type="checkbox"/> Table-top			Please sign below under "Procedure Review."			
TS/OSR Related? <input type="checkbox"/> No <input type="checkbox"/> Yes Ref.: _____ Does revision require CBRS or JCS Data Sheet (s) revision? <input type="checkbox"/> Yes <input type="checkbox"/> No			RECALL INFORMATION: <input type="checkbox"/> NEW PROCEDURE <input type="checkbox"/> FREQ. CHANGE <input type="checkbox"/> N/A Performance Frequency: _____ Start (after procedure issue): _____			
Procedure Review (sign in black ink only)						
	ACCEPTABLE As is	With Changes Noted	NOT ACCEPTABLE (see reverse)			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	(Tech. Authority Signature)	(Org.) (Date)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	(Validator)	(Org.) (Date)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	(Safety)	(Org.) (Date)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	(Environmental)	(Org.) (Date)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	(QA)	(Org.) (Date)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	(Other)	(Org.) (Date)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	(Other)	(Org.) (Date)
MANAGER/APPROVAL AUTHORITY						<input type="checkbox"/> ALL OBJECTIONS RESOLVED <input type="checkbox"/> UNRESOLVED ISSUE EXISTS
_____ (Signature)						_____ (Date)
PROCEDURES ADMINISTRATION (review for WHC-CM-5-4 compliance, insert release date, move to network, notify Work Control, file master)						
_____ (Signature)						_____ (Date)

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Attachment 3. Maintenance Procedure Review and Approval Form (Sheet 2 of 2)

Procedure Number / Rev/Chg _____	Page _____ of _____	
Review and Comment		
_____ Signature	_____ Title/Org.	_____ Date
Review and Comment		
_____ Signature	_____ Title/Org.	_____ Date
For Procedures Administration Use Only		

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ATTACHMENT 4

PROCEDURE REVIEW CHECKLIST

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This checklist is designed to assist personnel in performing a procedure review. Validation methods are defined in paragraph 6.1.2. Technical comments, if any, are recorded on a PRAF or on the back of this checklist, if it is used.

Review Performed	Validation Method
Verification <input type="checkbox"/> Validation <input type="checkbox"/>	Walk Thru <input type="checkbox"/> Reference <input type="checkbox"/> Simulation <input type="checkbox"/> Table Top <input type="checkbox"/>

1. Can the procedure be performed in the sequence written? Yes No N/A
2. Can the individual steps be performed? Yes No N/A
 - Each step specifically identified the action to be taken (such as open, shut, turn) Yes No N/A
 - Limitations are expressed quantitatively Yes No N/A
 - Equipment and parts are identified clearly and reflect exact equipment nomenclature Yes No N/A
 - Steps requiring sign-off are clearly delineated and adequate sign-off space provided Yes No N/A
 - The procedure accurately reflects the current configuration of the process or equipment Yes No N/A
 - The amount and level of information is adequate Yes No N/A
3. Can the user locate and identify all equipment referred to in the procedure? Yes No N/A
4. Does the procedure provide actions or procedures which must be completed prior to performance (Prerequisites)? Yes No N/A
 - Plant, system, or equipment lineups? Yes No N/A
 - Precautions to be observed? Yes No N/A
 - Plant, system, or equipment limitations? Yes No N/A
 - By part number or other unique nomenclature? Yes No N/A
5. Can the user perform the procedure without obtaining additional information from persons or documents? Yes No N/A
 - If other documents are needed, are they referenced clearly enough to allow the operator to proceed efficiently? Yes No N/A
6. Does the procedure include adequate QA, Safety, Environmental, or HPT hold points? Yes No N/A
7. Are instructions written in short, concise, identifiable steps as opposed to multi-step paragraphs? Yes No N/A
 - In the correct order to perform the task? Yes No N/A
 - Missing? Yes No N/A
 - Detailed enough to allow performance without interpretation? Yes No N/A

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- Too detailed? Yes No N/A
- 8. Are notes, cautions, or warnings placed directly ahead of the steps to which they apply? Yes No N/A
- 9. Does procedure include signoff spaces for independent verifications? Yes No N/A
- 10. Are graphs, charts, and tables adequate for readability and use?
 - Are they compatible with the procedure? Yes No N/A
 - Can values be extracted or interpolated easily? Yes No N/A
 - Are units of scale and measurement useable? Yes No N/A
 - Are titles descriptive of contents and use? Yes No N/A
- 11. Do included worksheets or data sheets provide sufficient space to record data or perform necessary calculations? Yes No N/A
- 12. If any follow-up action, test, or procedure must be performed, is that action clearly identified?
 - Are correct personnel specified? Yes No N/A
 - Are reporting chains specified correctly? Yes No N/A
 - Are actions or referenced procedures specified correctly? Yes No N/A
- 13. Is the procedure updated to current guidelines?
 - Technical guidelines (such as Tech Specs) Yes No N/A
 - Format editorial requirements Yes No N/A

Reviewed By:

 Print Name

 Signature

 Date

APPENDIX A

LABORATORY NUMBERING PROCEDURE

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Laboratory Procedures

Appendix A

LABORATORY NUMBERING PROCEDURE

This procedure is used by Procedures Administration and technical authorities to determine the appropriate identification number for procedures.

The Index Category Number (ICN), a part of the total procedure number, is a coded system that identifies the measurement or laboratory activity directed by the method, the technique used, and primary laboratory user. With application of an information-based numbering system, document retrieval time is reduced and addition and removal of procedures can be easily accommodated. This procedure is limited to procedures that are developed and controlled by Analytical Services Procedure Administration.

5.1 General Information

Each laboratory procedure is assigned a unique identification code in the following format, where A is an alphabetic character and N is a number.

Procedure Type (Section 5.2)	AA-			
ICN (Sections 5.3 through 5.6)		NNN-		
User Location (Section 5.7)			N	
Numerical Identifier (Section 5.8)				NN

- NOTES:**
- The ICN for analytical procedures is based on the first two digits identifying the single or multiple element, ion, compound, isotope or property measured. The third digit of the ICN identifies the measurement technique. Most single element analyses are based on the atomic number of the element of interest. Multiple analyte methods have been assigned numbers that correlate with atomic numbers of elements not normally found in Hanford samples.
 - The ICN for operational procedures identifies the type of laboratory support activity covered.

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5.2 Procedure Type

5.2.1 Determine the procedure type, using the following listing, and refer to the appropriate Section.

Type	Laboratory Procedure	See Section
LA	Analytical	5.3
LC	Computer	5.6
LE	Essential Material	5.3
LO	Operating	5.4
LQ	Quality Control	5.3
LR	Reference Material Specification	5.5
LT	Technology	5.3 or 5.4

5.3 Analytical, Essential Material, and QC Index Category Numbers

5.3.1 Use Table 1 to determine the single element or type of material being analyzed, specified, or controlled by the procedure.

Table 1. Single Element ICN

Element	ICN
Actinium (Ac)	23x
Aluminum (Al)	33x
Americium (Am)	95x
Antimony (Sb)	35x
Argon (Ar)	20x
Arsenic (As)	35x
Astatine (At)	37x
Barium (Ba)	22x
Berkelium (Bk)	97x
Beryllium (Be)	22x
Bismuth (Bi)	35x
Boron (B)	33x
Bromine (Br)	37x
Cadmium (Cd)	32x
Calcium (Ca)	22x
Californium (Cf)	98x
Carbon (C)	34x

Element	ICN
Gold (Au)	31x
Hafnium (Hf)	24x
Helium (He)	20x
Holmium (Ho)	59x
Hydrogen (H)	21x
Indium (In)	33x
Iodine (I)	37x
Iridium (Ir)	28x
Iron (Fe)	28x
Krypton (Kr)	20x
Lanthanum (La)	23x
Lead (Pb)	34x
Lithium (Li)	21x
Lutetium (Lu)	59x
Magnesium (Mg)	22x
Manganese (Mn)	27x
Mendelevium (Md)	.

Element	ICN
Praseodymium (Pr)	59x
Promethium (Pm)	61x
Protactinium (Pa)	91x
Radium (Ra)	22x
Radon (Rn)	20x
Rhenium (Re)	27x
Rhodium (Rh)	28x
Rubidium (Rb)	21x
Ruthenium (Ru)	28x
Samarium (Sm)	59x
Scandium (Sc)	23x
Selenium (Se)	36x
Silicon (Si)	34x
Silver (Ag)	31x
Sodium (Na)	21x
Strontium (Sr)	22x
Sulfur (S)	36x

Not defined.

Laboratory Procedures

Element	ICN
Cerium (Ce)	58x
Cesium (Cs)	21x
Chlorine (Cl)	37x
Chromium (Cr)	26x
Cobalt (Co)	28x
Copper (Cu)	31x
Curium (Cm)	96x
Dysprosium (Dy)	59x
Einsteinium (Es)	*
Erbium (Er)	59x
Europium (Eu)	59x
Fermium (Fm)	*
Fluorine (F)	37x
Francium (Fr)	21x
Gadolinium (Gd)	59x
Gallium (Ga)	33x
Germanium (Ge)	34x

Element	ICN
Mercury (Hg)	32x
Molybdenum (Mo)	26x
Neodymium (Nd)	59x
Neon (Ne)	20x
Neptunium (Np)	93x
Nickel (Ni)	28x
Niobium (Ni)	25x
Nitrogen (N)	35x
Nobelium (No)	*
Osmium (Os)	28x
Oxygen (O)	36x
Palladium (Pd)	28x
Phosphorus (P)	35x
Platinum (Pt)	28x
Plutonium (Pu)	94x
Polonium (Po)	36x
Potassium (K)	21x

Element	ICN
Tantalum (Ta)	25x
Technetium (Tc)	43x
Tellurium (Te)	36x
Terbium (Tb)	59x
Thallium (Tl)	33x
Thorium (Th)	90x
Thulium (Tm)	59x
Tin (Sn)	34x
Titanium (Ti)	24x
Tungsten (W)	26x
Uranium (U)	92x
Vanadium (V)	25x
Xenon (Xe)	20x
Ytterbium (Yb)	59x
Yttrium (Y)	23x
Zinc (Zn)	32x
Zirconium (Zr)	24x

5.3.2 Use Table 2 for procedures involving multiple determinations or measurements of nonelemental forms.

Table 2. Multielement and Nonelement ICN

ICN	Description
50	Procedures with the capability of determining a number of cations, elements or radioisotopes, with little or no change in equipment or method. Examples are: atomic absorption, emission spectrography, gamma energy analysis, X-ray, ICP.
51	Procedures for measuring physical parameters, such as viscosity, specific gravity, weight, loss on ignition, specific conductance.
52	Procedures for the analysis of organic materials, such as solvents, degradation products, complexants.
53	Procedures with the capability of determining a number of anions. Instrumental examples are the Raman Spectrophotometer and the Ion Chromatograph. (For specific nonelemental anions, see ICN 62, and 64 through 69.)
54	Preparation methods — sample breakdown, evaporation, ion-exchange concentration, alpha, beta, or gamma mounts.

Laboratory Procedures

ICN	Description
55	Procedures for measuring oxidation/reduction agents, such as permanganate, hydrazine.
56	Procedures for measuring water or moisture in samples or essential materials.
62	Carbonate — CO_3^{-2}
63	Ammonium — NH_4^+
64	Nitrite — NO_2^-
65	Nitrate — NO_3^-
66	Hydroxide — OH^-
67	Phosphate — PO_4^{-3}
68	Sulfate — SO_4^{-2}
69	Cyanide — CN^-

NOTE: Other code groups can be assigned, as necessary, to identify unusual or nonroutine procedures.

5.3.3 Determine the third digit of the ICN, using one of the principle methodology or analytical technology codes shown in Table 3.

Table 3. Principle Methodology and Analytical Technology Codes

Code	Keyword(s)	Description
0	Gravimetric	Precipitation, Thermogravimetric Analysis (TGA), density by weight, loss on ignition, and so forth
1	Titrimetric	Acid/base, redox, standard addition, pH electrode (endpoint detection), specific-ion electrodes, volumetric methods
2	Electrochemical	Polarography, coulometry, amperometry, Karl Fischer (water), pH
3	Separations	Liquid/liquid and liquid/solid ion exchange, gas chromatography, liquid chromatography, ion chromatography
4	Evolution Techniques	Combustion, ashing, leaching, pyrohydrolysis, distillation, Differential Scanning Calorimetry (DSC), Differential Thermal Analysis (DTA)
5	Photometric	UV/Vis/IR, fluorescence, emission, Inductively Coupled Plasma (ICP), Atomic Absorption Spectrometry (AAS), Raman
6	Mass Spectrometric	Isotopic ratios, isotopic dilution, sample preparation/support activities
7	Activation	X-Ray Emission/Diffraction/Absorption, neutron/gamma/X-ray activation

Laboratory Procedures

Code	Keyword(s)	Description
8	Nuclear Spectroscopic	Passive alpha, beta, gamma, neutron methods; calorimetry, nondestructive assay (NDA)
9	General	Those procedures whose methodology is not described by the above categories; such as, densitometry, tensiometry, turbidity

5.3.4 Go to Sections 5.7 and 5.8 to determine User Location and sequential number assignments.

5.4 Laboratory Operating Procedures (LO and LT)

5.4.1 Use Table 4 to determine the appropriate ICN.

Table 4. Laboratory Operating (LO) and Technology (LT) ICN.

ICN	Description
001	Process emergency
002	Facility emergency
020	General
040	Surveillance
060	Ventilation
080	Sampling
085	Safety rules
090	Shipping/receiving/packaging
100	Burial and waste handling
110	Equipment maintenance
120	Chemical makeup
140	Testing of equipment, such as pressure test, calibration
150	Laboratory administrative controls
155	Laboratory procedure preparation
160	Specials (such as hot cell extrusion)
161	Operation of facility equipment
162	Safety equipment/use and maintenance

Laboratory Procedures

ICN	Description
180	Criticality control/SNM accountability
190	Decontamination of laboratory areas/equipment

5.4.2 Go to Sections 5.7 and 5.8 to determine User Location and sequential number assignments.

5.5 Reference Material Specifications (LR)

5.5.1 The first two letters are always "LR."

5.5.2 The ICN is determined as follows.

5.5.2.1 Select the applicable code numbers from Table 2.

NOTE: If code 50 (multiple cations) or code 53 (multiple anions) is applicable, the following priority list is used to identify the most important component; and an element is selected from Table 1.

- (1) Special Nuclear Materials (Pu, enriched U, ²³³U)
- (2) Element with the lowest acceptable uncertainty (greatest precision)
- (3) Element with the highest nuclear activity (most radioactive)
- (4) Element with the highest atomic number (use a standard periodic table).

5.5.2.2 Select the applicable methodology or technology from Table 3.

5.5.2.3 Go to Sections 5.7 and 5.8 to determine User Location and sequential number assignments.

5.6 Computer Procedures (LC)

5.6.1 The first two digits of the ICN for an LC indicate the individual computer system as shown in Table 5.

Laboratory Procedures

Table 5. Computer System Codes

ICN	Description
50	MicroVax systems
60	M-600 systems (PALS, CS/DLS)
65	APPLE Microcomputer systems
68	APPLE MacIntosh Microcomputer systems
70	IBM-PC Microcomputer systems
83	NOVA 830 (SALS)
84	NOVA 840 (SALS)
85	CASS 840 (SALS)

NOTE: Codes may be assigned or deleted as needed.

5.6.2 The third digit of the ICN is used to identify the *type* of computer operation as shown in Table 6.

Table 6. Type of Computer Application

ICN	Description
0	Master procedure
System Procedures	
1	System maintenance, diagnostics, backup, files listing, and so forth
2	Startup/shutdown procedures
3	Peripheral equipment operations; tape drives, discs, terminals, line printers, and so forth
4	File maintenance; multi-programmatic or system
5	Spreadsheet
Application Procedures	
8	RUN procedures, including sign-on/sign-off routines
9	File maintenance; program specific

NOTE: Codes 6 and 7 are reserved until needed.

5.6.3 Go to Sections 5.7 and 5.8 to determine User Location and sequential number assignments.

Laboratory Procedures

5.7 User Location

5.7.1 Select the User Location code from Table 7.

NOTE: The assignment of a particular user location digit *does not* preclude use of any approved procedure at a different location, provided all applicable safety precautions are followed.

Table 7. User Location Codes

Code	Description of User Location
0	Generic laboratory procedure developed for two or more operating locations
1	222-S Complex, including 222-SA Standards Laboratory
2	PUREX Analytical Laboratory
3	PFP Engineering Laboratory, including the nondestructive assay and standards laboratories
4	Waste Sampling and Characterization Facility (WSCF); may also designate procedures derived from Contract Laboratory Program, Resource Conservation and Recovery Act, SW-846, or other methods ²
5	Special Studies (including Environmental Analytical Laboratory)
6	Chemical Engineering Laboratory
7	Engineering and Environmental Demonstration Laboratory
8	Plutonium Process Support Laboratories
9	Process Chemistry Laboratories; may also use -1## if a procedure is being tested for eventual transition to a 222-S Analytical Laboratory procedure

²Any procedure that is derived from other published methods should clearly state the method and version used in the Summary section of the procedure; for example, "This procedure is equivalent to SW-846," or "This procedure implements the technology found in 40 CFR Part 41, Subpart C, Appendix C."

Laboratory Procedures**5.8 Numerical Identifier**

NOTE: The numerical identifier is the method used to identify individual procedures within the same category at any given user location.

5.8.1 Consult the Facility Documentation Master Index to determine the last issued procedure in the category of interest.

5.8.2 Consult User Test Procedure and To-be-Issued records to determine if numbers have been assigned to procedures still in preparation.

5.8.3 Many categories have been subdivided into two or more subcategories for ease in grouping similar procedures.

NOTE: Category 37x covers procedures for the analysis of fluorine, chlorine, bromine, iodine, and astatine. These have been generally grouped in the following manner.

Chlorine	LA-37x-x01 to LA-37x-x30
Fluorine	LA-37x-x31 to LA-37x-x60
Iodine	LA-37x-x61 to LA-37x-x90
Bromine, astatine	LA-37x-x91 to LA-37x-x99

5.8.4 Based on the guidance given in the previous Steps, determine the numerical identifier, x01 to x99, for the new procedure.

Laboratory Procedures

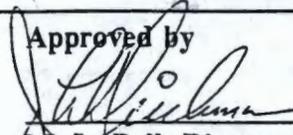
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March 30, 1995

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Hanford Environmental Information
System (HEIS) Data Entry

Approved by


M. L. Bell, Director
Analytical Services

1.0 PURPOSE

This instruction outlines the process used to provide Hanford Environmental Information System (HEIS) identification numbers for Analytical Services (AS) sample activities that use Sample Authorization Forms (SAFs).

2.0 RESPONSIBILITIES

2.1 Sample Data and Laboratory Administration (SDLA) interfaces with HEIS.

- SDLA is responsible for entry of AS Sample Authorization Form information into HEIS. HEIS data entry instructions are found in DOE/RL-93-24-2, *Hanford Environmental Information System (HEIS) Operator's Manual*, Section 4.0, "Data Entry."

3.0 PROCEDURE

3.1 Information from approved SAFs is entered into HEIS.

3.1.1 The SDLA Data Management Administrator will enter the following fields from approved SAFs into the HEIS database:

- SAF number
- SAF title
- Round number
- Task identification
- Project identification
- Charge code
- Sample priority
- Number of samples
- Expected sample start date

3.2 Approved SAFs may be issued HEIS numbers.

3.2.1 Following approval of an SAF, a request for a HEIS number may be submitted to the SDLA Data Management Administrator. The request will include the following information and may be submitted via cc:mail (a follow-up phone call from the requestor is advised because of congestion factors on cc:mail):

- Project identification

- SAF number
- Round number
- Task identification
- Number of samples requested
- Estimated sampling date

3.2.2 The SDLA Data Management Administrator will verify correctness of the SAF number and issue HEIS numbers required. Numbers are issued in accordance with the above Operator's Manual and WHC-CM-5-4. Sample Authorization Forms must be approved before HEIS sample numbers are issued.

3.3 Unique identifiers will be used for sub-samples sent to different laboratories.

3.3.1 Sample numbers will be sent via cc:mail to the requestor unless otherwise advised.

3.3.2 A copy of the sample request and an index of issued samples numbers are maintained in SDLA files by date requested.

3.3.3 Any HEIS numbers not used for sampling will be returned to the Data Management Administrator via cc:mail.

3.3.4 Output files containing issued sample numbers are stored in diskettes for future reference.

4.0 DESIGNATED REVIEWING ORGANIZATIONS

Organizations designated to review changes to this document are listed below.

<u>Designated Reviewing Organization</u>	<u>CMPOC</u>
ESQA	H4-16

Comments from other organization are welcome; however, such courtesy comments are resolved at the option of the originating organization.

5.0 REFERENCES

DOE/RL-93-24-2, *Hanford Environmental Information System (HEIS) Operator's Manual*.

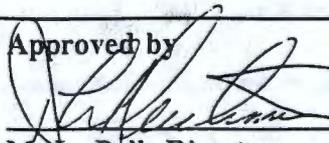
WHC-CM-5-4, *Laboratories Administration*.

March 30, 1995

Page 1 of 2

**Sample Authorization Form (SAF) Issuance
and Procedure**

Approved by


M. E. Bell, Director
Analytical Services**1.0 PURPOSE**

This section identifies the process used to issue Sample Authorization Forms (SAFs), which authorize programs to collect samples for laboratory analysis. This section does not apply to sampling activities being managed by other Westinghouse Hanford Company organizations.

2.0 REQUIREMENTS

2.1 Sampling authorization is in accordance with Hanford Facility Agreement.

2.1.1 Sample authorization is performed as a requirement of the *Hanford Agreement and Consent Order*, Section 3.0 "Unit Identification, Classification, and Prioritization," and Section 11.0 "Work Schedule and Other Work Plans."

2.2 Samples tracked through Analytical Services (AS) have a SAF.

2.2.1 Sample numbers issued by AS are directly linked to a SAF.

2.3 SAFs are approved by the Technical Representative.

2.3.1 All drafts of SAFs are reviewed and authorized by the AS Project Coordinator. The Technical Representative approves final issuance of the SAF.

3.0 PROCEDURE

The following steps are taken after Analytical Services has received notification of an upcoming sampling event. Notification is received by either a Sample or Project Coordinator.

3.1 The Technical Representative will notify the AS Sample or Project Coordinator of an upcoming sampling event.

3.2 The Sample Coordinator will generate a draft SAF and Field Sample Requirement (FSR) per the Technical Representative specifications.

NOTES:

- All information fields on the SAF and FSR are completed prior to the Project Coordinator review. Verification of charge code validity is also performed.

- Each applicable laboratory has a unique FSR under the SAF.

3.3 The Project Coordinator will review, initial and date draft SAFs and FSRs for approval.

3.4 The Sample Coordinator will perform the following actions.

- 3.4.1 Fax the Technical Representative a draft copy of the Coordinator reviewed SAF and FSR for approval.
- 3.4.2 Incorporate final comments and issue a copy of the SAF and FSR to the Technical Representative, Sample Data and Laboratory Administration Data Management Administrator, and the appropriate laboratories.

NOTE: The Technical Representative is responsible for contacting the appropriate sampling organization to schedule sampling.

- 3.4.3 File the original SAF and FSR documentation in the Sample Coordination technical files.

4.0 DESIGNATED REVIEWING ORGANIZATIONS

Organizations designated to review changes to this document are listed below. The controlled manual point-of-contact listed for the designated reviewing organizations are responsible for coordinating the review and consolidating and submitting comments to the originating organization.

<u>Designated Reviewing Organization</u>	<u>CMPOC</u>
ESQA	H4-16

Comments from other organizations are welcome; however, such courtesy comments are resolved at the option of the originating organization.

5.0 REFERENCES

Hanford Facility and Consent Order, 89-10;
Section 3.0, "Unit Identification, Classification and Prioritization"
Section 11.0, "Work Schedule and Other Work Plans."