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RELEASE INSTRUCTIONS (RI)

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WHC-CM-5-4

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TO: D. A. Isom Copy #072	H6-08	TITLE: Laboratories Administration RELEASE NO.: 043 DATE PREPARED: February 20, 1996
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I have entered this release into the document per instructions. <u>D.A. Isom</u> Signature	<u>2/28/96</u> Date	If you have any questions about this release contact: Paula Noakes Phone: 373-4426
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INSTRUCTIONS

1. REMOVE AND/OR INSERT INDICATED SECTIONS INTO DOCUMENT AS SHOWN BELOW.
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SECTION NO. AND TITLE(S)	REMOVE			INSERT		
	PAGES	REV	DATE	PAGES	REV	DATE
Table of Contents	1-4	42	01/15/96	1-4	43	01/22/96
Section 3.9, "Laboratory Procedures"	all	4	04/28/95	all	5	01/15/96
Section 4.3, "Training Administration"; CHANGE 1	5-6	1	11/15/95	5-6	1/1	01/22/96
Section 6.2, "222-S Lockout/Tagout Guidance"; replaced by LAP-01-100.	1-6	0	09/20/95	CANCELED		
Section 6.7, "Occurrence Categorization, Notification, and Reporting (Conduct of Operations Chapter 7)"; title change	1-4	5	06/06/95	1-6	6	01/12/96
Section 6.8, "Lessons Learned Administration"	---	--	-----	1-4	0	01/22/96
Section 6.17, "Operator Aid Postings"	1-6	0	10/12/92	1-6	1	12/27/95
Section 8.8, "Corrective Action Management"	---	--	-----	1-4	0	01/08/96
Section 10.1, "Instrument Preventative Maintenance"	1-2	0	05/17/94	1-2	1	01/08/96

IMPLEMENTATION NOTICE

(ROUTE A COPY OF THE IMPLEMENTATION NOTICE TO ALL USERS OF THIS COPY OF THE MANUAL)

See attached manual release for detailed implementation notice.



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WHC-CM-5-4, *Laboratories Administration*Implementation Notice
Release #43

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The Table of Contents has been updated to include the following changes.

Section 3.9 "Laboratory Procedures"

This section has been updated to reflect current practices and to add information on training, responsibilities, and revised forms.

Section 4.3 "Training Administration"

This section has a page change that clarifies types of team training used at Analytical Services; page 5 is the only page affected.

Section 6.2 "222-S Lockout/Tagout Guidance"

This section has been canceled; information found in this section is now located in administrative procedure LAP-01-100, *222-S Lockout/Tagout Guidance*.

Section 6.7 "Occurrence Categorization, Notification, and Reporting (Conduct of Operations Chapter 7)"

This section has been updated to reflect current practices and references.

Section 6.8 "Lessons Learned Administration"

This new section describes the processing of lessons learned documents within Analytical Services.

Section 6.17 "Operator Aid Postings"

This section has been updated to reflect current laboratory practice regarding operator aids.

Chapter 8.0 "Quality Assurance/Quality Control"

The title of this chapter has been changed to more accurately reflect the actual contents of the chapter.

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2.0	ORGANIZATION		
NOTE:	The charter for Analytical Services may be found in WHC-CM-1, <i>Company Policies and Charters</i> .		
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	<i>Canceled</i>	07/06/95
2.1.7	Process Laboratories and Technology Charter	<i>Canceled</i>	07/11/95
2.1.8	PUREX Analytical Laboratories Charter	<i>Canceled</i>	07/20/95
2.1.9	Engineering and Technology Services Charter	1	03/31/95
2.2	Committees, Boards, and Task Teams	<i>Canceled</i>	08/17/95
2.2.1	Laboratory Instrument Control Board Charter	2	05/17/94
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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
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3.2	Out-of-Tolerance Report System	<i>Canceled</i>	01/15/93
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	Administration for Nuclear Materials	2	10/16/95
3.6	Laboratories Entry Requirements	0	03/07/95
3.7	222-S Complex Radiological Postings	<i>Canceled</i>	07/25/95
3.8	Shift Turnover at 222-S Laboratories Complex	<i>Canceled</i>	07/06/95
3.9	Laboratory Procedures	5	01/15/96
3.10	Procedure Changes and Procedure Change Authorizations (incorporated into 3.9, Rev. 3)	<i>Canceled</i>	03/23/95
3.11	Format and Content Guide for Analytical Services Technical Procedures	0	11/03/95
3.12	Internal Audit Program (moved to 8.5)	<i>Canceled</i>	08/15/94
3.13	Unreviewed Safety Questions (USQ) Program	4	12/11/95
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
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6.7	Occurrence Categorization, Notification, and Reporting (Conduct of Operations Chapter 7)	6	01/12/96
6.7-A	Corrective Action Requirements, Occurrence Categorization, Notification, and Reporting — Procedure (incorporated into 6.7, Rev. 5)	<i>Canceled</i>	06/06/95
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9.0	WORK CONTROL		
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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	1	08/17/95
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Laboratory Procedures

Approved by

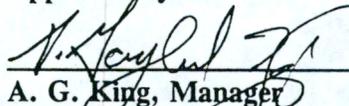

A. G. King, Manager
Analytical Services 1/9/96

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1.0 PURPOSE

This section implements the requirements of WHC-CM-3-5, *Document Control and Records Management Manual*, Section 12.5, "Technical Procedure Standard, as applied to Analytical Services' (AS) laboratory technical procedures. The AS laboratory procedure process is administered by the Procedures Administration (PA) function of AS Documentation Administration.

2.0 SCOPE

This section applies to all elements involved in processing 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*.

A technical procedure dictates a function (a sequence of actions) to be performed to achieve a defined outcome. Procedures are developed to safely perform work activities that directly affect the operating or design configuration, operability or accuracy of laboratory facilities, systems, equipment or components. See Section 1.1 of this manual for the AS policy regarding safety priority and procedure compliance. For the purposes of this section, the terms "technical procedure," "laboratory procedure," and "procedure" are synonymous.

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."

2.1 Implementation

1. Existing technical procedures are brought into compliance with this standard as they are revised.
2. New technical procedures are developed in compliance with this standard.

3.0 DEFINITIONS

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), 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), verified white copies, and procedure change authorizations (PCAs) are considered controlled copies and are identified as such.

Goldenrod (Performance Copy). A copy of an approved technical procedure that is released by PA, placed in specific controlled user locations, and validated to be the most recent revision. Each copy is identified as being valid by a triangular release stamp and assigned controlled notebook number on page 1, and by being issued on goldenrod paper.

White Copy. A copy of a an approved technical procedure used for reference purposes or to record one-time performance of an activity. White copies are available electronically on the Lab Procedure network directory or in hard copy from Procedures Administration.

History File

A file containing documentation related to the evolution of a procedure. The file contains such items as records of changes, and review comments and their disposition.

Inactive (Hold) Procedure

A laboratory technical procedure temporarily not required by the laboratory and placed in hold status.

Modification

An alteration to a technical procedure that does not change the procedure's intent, quality, safety, or process.

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.

Procedure Change

An approved change from one word to less than the entire procedure. A change is classified as a revision, modification, or procedure change authorization, and may be permanent or temporary.

Procedure Change Authorization (PCA)

The AS-specific designated 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. They are issued on pink paper and considered controlled documents. The most-current PCA form is available from PA or on the Lab Procedures network directory. See Attachment 1 for an example.

Procedure Review and Approval Form (PRAF)

The AS-specific designated form for process, review, and approval of laboratory technical procedures. The PRAF documents such activities as requests for changes, inactivations, voids, reactivations, periodic reviews, and technical review comments. The most current PRAF is available from PA or electronically on the Lab Procedure network directory. See Attachments 2 and 3 for example forms.

Review

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

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

Verification. 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 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 a modification, including alteration of a regulatory method (see HASQAP).

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.

222-S Laboratory Waste Stream Fact Sheet

Although not considered part of a procedure, fact sheets are produced in conjunction with specific new and revised laboratory analytical procedures identified by Regulatory Compliance to record waste stream information. Fact sheets are reviewed by the Environmental Compliance Officer or designee during procedure review. Fact sheets are not produced as part of the performance copy; however, they are filed with the master copy and become part of the procedure history file upon being superseded. See Attachment 4 for an example form.

Laboratory Procedures**User Test (Blue User)**

An unreleased laboratory technical procedure that has been approved for testing under the direction of a technical or approval authority. 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. Void procedures are considered canceled, but can be reactivated.

ZDOX

The AS-specific designated tracking system that tracks each step of the procedure process on a real-time basis. ZDOX is controlled solely by Procedures Administration.

4.0 RESPONSIBILITIES

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

4.1 Manager, Analytical Services

The AS Manager, or designee, is responsible for:

- Implementing this section as the defined, disciplined laboratory procedure standard
- 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 standard 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 procedure development, review, and approval 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 available on the Lab Procedure network directory. The 222-S Analytical Operations Manager is the designated approval authority for all 222-S laboratory operating

Laboratory Procedures

(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 or approving, via PRAF, removal of unused procedures from controlled user locations
- Providing PA with documentation indicating any delegation of their 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 complete and procedures are issued in a timely manner and in accordance with this standard
- Ensuring procedures are available when needed.

4.4 Procedures Administration

Procedures Administration personnel process laboratory technical procedures, incorporate required changes, prepare the final document, perform the final administrative review, and sign as the accountable Procedure Administrator. The following are also the responsibilities of Procedure Administration personnel.

- Assisting in the assignment of an identification number to procedures, with concurrence of the technical authority for all new procedures (see Appendix B for analytical procedure numbering).
- Ensuring all resolved comments are incorporated.

Laboratory Procedures

- 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, of each procedure.
- Distributing and maintaining availability of laboratory technical procedures.
- Keeping the Lab Procedure network directory current.
- Removing procedures from controlled notebooks, as applicable and/or requested.
- Ensuring procedures are processed, reviewed, and approved in a timely manner according to this standard.
- Maintaining the ZDOX and MAINTRAK Laboratory Procedure Tracking Systems, databases for tracking procedure status, current.
- Keeping the Analytical Services Laboratory Procedures index current via Soft Reporting.
- Ensuring the maintenance procedure index available on the Lab Procedure network directory is current.
- Tracking periodic reviews and processing procedures within the periodic review cycle.
- Generating and maintaining a keyword index to minimize redundancy.
- Tracking user test (blue user) procedures.
- Assigning numbers to, processing, and tracking PCAs.
- Maintaining a procedure history file in the Laboratory Technical Information Center.

4.5 Technical Authorities

Normally, AS technical authorities act as procedure writers; however, 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 Manager, Analytical Services.
- They provide technical direction for AS procedure writers, as applicable.

Laboratory Procedures

- They determine, with approval authority concurrence, the need for placing any unneeded procedure in inactive, void, or reactivate status.
- They specify or confirm goldenrod locations.
- Before preparing a new procedure, they verify there are no existing procedures that could be used with minor changes to minimize redundancy and promote standardization and consistency of procedures.
- They provide appropriate keywords for each assigned procedure.
- They assign the identification number for new procedures with the assistance of PA.
- They designate a procedure change as a revision or modification.
- They provide a documented basis for each procedure change.
- They identify training needs for each procedure change or new procedure.
- They identify actions for procedure compatibility to lab equipment or system configuration.
- They prepare, change, and perform the periodic review of assigned procedures.
- 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 conduct procedure verification.
- 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 affected by the procedure.
- They ensure the procedure complies with the facility safety documentation.
- They designate the validation method to be used.
- They document, resolve, and/or disposition review comments with designated reviewers and incorporate such into the draft procedure.

Laboratory Procedures

- 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 as described in Section 3.11, "Format and Content of Technical Procedures", 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 Manager, 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. They meet the training and qualification requirements established by the Manager, Analytical Services.

Technical review comments are normally documented on page two of the PRAF, however, they can be noted on the hard copy or on a separate sheet. 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 and PA is notified. As a minimum, procedure reviews conform to the requirements in WHC-CM-3-5, Section 12.7.

- All new procedures, revisions, modifications, and PCAs are reviewed by the assigned technical authority, approval authority, applicable technical reviewers, and PA.
- Incorporation of a PCA is 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.
- 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*.
- Procedures requiring review for unreviewed safety questions (USQs) are identified with a "USQ" suffix and reviewed by those certified to do so. A list of qualified USQ reviewers is available on the Lab Procedure network directory.

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 procedure release, a user test can be performed. The user test can 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, analytical results are not to be reported until issued as an approved procedure.

User tests are accompanied by a PRAF and appropriate approval signatures. 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. Changes are documented by marking up the hard copy or by making notes in the margin adjacent to the element being changed. Changes are also noted in the shift log and signed by the TA and Approval Authority or Shift Manager or designee.

User test changes may be handled as modifications or revisions, depending on their impact to the actual test. Modifications may be marked on the copy and approved by the technical authority and shift manager or approval authority or designee. Modifications can be approval designator N/A only. Technical changes (revisions) are handled via the PCA process described in this section.

Laboratory Procedures**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
- Meeting the training and qualification requirements established by the Manager, 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 the Manager, 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 standard 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 Administrative Procedures (LAPs).

5.1 Training

For the purposes of this section, "training" refers specifically to instructions concerning the laboratory procedures, i.e., training needs created by the change to a procedure or by creation of a new procedure. Whether training is needed and what kind of training is needed is identified by the technical authority on the PRAF. Training options include full training (or retraining), review of procedure before performance, or no training required. Training options must be designated on the PRAF before the procedure is released by Procedures Administration.

Training requirements, methods, and documentation are defined by the Manager, 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 the Lab Procedures network directory 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 that contains:

- **Developmental** references (such as vendor material, technical manuals, drawings, etc.), as applicable
- **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 the documented basis 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. For example, the use of EPA methods, such as SW-846, is permitted when the method is directly referred to by an approved technical procedure. Other basis documents, such as developmental references, can be listed in the procedure "Bibliography" section, and included in the history file, if desired.

The documented basis for each procedure change is recorded on the PRAF (see Attachment 2). In this way, the PRAF acts as the authorization for development, revisions, and changes. It also documents reviews and approvals, including disposition of comments. The "Basis for Procedure

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Change/New Procedure" block includes what element(s) of the procedure is being changed and why it is being changed, or provides justification for the new procedure. This basis is vital in documenting the evolution of each procedure. As part of the PRAF, it becomes a permanent part of the procedure's history file.

5.3 Procedure Identification

With the exception of maintenance procedures, laboratory technical procedures are assigned a unique identification number based on Appendix B. This identification number appears on the bottom of each page of the procedure. All procedures also have a revision/modification identifier that appears on the bottom of each page. Revisions (except to maintenance procedures) are classified by the first character, a letter, and modifications are identified by the second character, a number. Maintenance procedures are designated 1-0, 2-0, 3-0 for new or revised procedures. Modifications 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).

Laboratory administrative procedures are identified with the following: the first three characters are the letters "LAP", followed by a consecutive two-digit number, and ending with the three digit user location identifier described in Appendix B, i.e., LAP-45-100. These identifying numbers are assigned by PA.

All procedures related to unreviewed safety questions are identified with a "USQ" suffix, i.e., LO-040-121-USQ. A listing of USQ-related procedures is provided on the Lab Procedure network directory.

5.4 Procedure Use

Goldenrods (performance copies) and procedure change authorizations (PCAs) are maintained at specific controlled user locations, normally in controlled notebooks. Requests for addition or deletion of controlled user locations are addressed in writing or sent electronically via cc:mail to PA. Only PA personnel are allowed to remove goldenrod procedures from controlled user locations.

Goldenrods are released by PA, placed in the controlled user locations, and validated to be the most recent revision. Goldenrods are normally the ONLY valid copies used to perform or record the performance of an activity (some exceptions are noted below). 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.

White copies of procedures are normally used for reference purposes or to record one-time performance of an activity. However, use of white copies is permitted for activities such as filling out data sheets or operational safety limit surveillances, or for performing a procedure requiring signatures for hold points, etc. White copies are available electronically on the Lab Procedure network directory or in hard copy form from Procedures Administration. Before use, white copies must be verified to be the most recent revision and documented as such by printing and signing the "approved for use" block in the lower right hand corner with user name and date. Verification of the most recent revision is accomplished by comparing the revision or modification with the goldenrod

Laboratory Procedures

located in the laboratory where the activity is taking place or contacting PA. Performance copies of PCA'd procedures are obtained from PA.

6.0 PROCEDURE REVIEW, APPROVAL, AND CHANGE CONTROL**6.1 Review and Approval**

New procedures and procedure changes are reviewed and approved on a PRAF in accordance with the approval designator assigned by the technical authority in accordance with WHC-CM-3-5, Section 12.7. The approval designator of the PRAF indicates the impact of the change being approved, not that of the original procedure (unless the procedure is new). The approval designator of the procedure and the PRAF are not always the same.

Minimum review and approval requirements for new or revised procedures, modifications, and PCAs include the technical authority, approval authority, those required by the approval designator, and PA. Reviewer comments are documented on page 2 of the PRAF or by annotating and initialing the hard copy. The PRAF may be signed if desired, or signature may be obtained after comment resolution and incorporation.

Procedures requiring USQ review are identified in Section 3.13 of this manual, "Unreviewed Safety Questions Program". They are identified by the USQ suffix and contained in a "LO-USQ" directory in the Lab Procedure network directory.

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.

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.

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- To verify information contained within the procedure is accurate and complete.
- To verify the procedure is free of errors, easy to understand, and meets the guidelines of Section 3.11 of this manual for content and format.
- To verify applicable safety 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 the checklist in Attachment 5 are addressed or the checklist itself may be used and included in the history file. The appropriate validation method is determined by the Technical Authority based on the scope, hazard risk, and application of each procedure.

The "walk-through" method is preferred for validation. 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.

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 Disposition

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 in accordance with WHC-CM-3-5, Section 12.7, and other Westinghouse

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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.

- 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 modifications or revisions. Any technical authority, approval authority, or procedure user can initiate a procedure change.

1. The initiator provides a copy of the proposed changes, clearly written or highlighted on hard copy to Procedures Administration. Electronic copies of changes are not acceptable, unless specifically approved by PA.
2. The TA determines if the change is correct and should be incorporated into the procedure. Discuss with initiator.
3. The TA determines if the change is a modification or revision.
4. The TA 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 TA. If the initiator and technical authority are not the same individual, the approval authority for the procedure is contacted for review and technical authority review. The procedure is then routed to the assigned technical authority for review and approval.

6.2.1 Modifications

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

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Modifications are limited to:

- Alterations that do not change the procedure's intent, quality, safety, or process
- Format changes that do NOT alter the technical content of the procedure
- 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 Revisions

Revisions include any change that does not meet the criteria of a modification, including modification of a regulatory method (see HASQAP, Sections 8.4, 8.5, and 8.6). Typical revisions 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 determined to be difficult to follow. Normally, no more than five modifications are incorporated before a procedure revision is required, however, exceptions do exist, based on extent of changes and procedure flow. 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.

Any outstanding temporary change (PCA) that exists against a procedure in revision will be incorporated into the new revision or canceled upon issuance of a new revision. A new PCA will be required if needed.

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. Redlines and strikeouts are used with all changes during the review process to quickly identify what procedure content has been changed. Before release of modifications, strikeouts are removed and redlines

("change marks") are moved to the left margin. For modifications, 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 modification only. Change marks from previous versions are removed.

6.2.4 Temporary Changes

Temporary changes are issued via PCA 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 1). 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.
- PCA format can be any of the following:
 - PCA continuation pages. 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.
 - Annotated pages. If PCA changes allow, a marked-up copy of the procedure is attached to the PCA.
 - Annotated document. Copy printed off the Lab Procedures Drive and redlined.
- 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.

6.3 Inactivations and Voids

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, reactivations 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.

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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.

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.

Periodic reviews are based on the time interval from initial release of the procedure, with the clock being reset for any complete revision of the procedure. 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, a modification or revision is initiated.

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 here. The file is available in hard-copy or via other archival media.

6.7.2 Records

Any records generated as a result of employing laboratory technical procedures will be processed through data package or work control activities in accordance with this manual and dispositioned in accordance with applicable sections of WHC-CM-3-5, *Document Control and Records Management Manual* and applicable Records Inventory and Disposition Schedules.

7.0 DESIGNATED REVIEWERS

<u>Designated Reviewing Organizations</u>	<u>CMPOC</u>
Analytical Services Documentation Administration (Champion)	T6-03
222-S Procedures Conduct of Operations Champion	T6-20
HASQAP Compliance	T6-16
LABCORE Operations	T6-51
Office of Quality Assessment	S3-30
WSCF Analytical Operations	S3-2
222-S Analytical Operations	T6-16

8.0 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*, Pacific Northwest Laboratories, 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*.

Carlson, D. D., 1995, *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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WHC-CM-5-4, *Laboratories Administration*

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Attachment 1-1 of 4

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ATTACHMENT 1

EXAMPLE OF AN ANALYTICAL SERVICES
PROCEDURE CHANGE AUTHORIZATION

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

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Attachment 1-2 of 4

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Attachment 1. Example of an Analytical Services Procedure Change Authorization (Sheet 1 of 2)

Analytical Services Procedure Change Authorization		Approval Designer	PCA No. SL-	Page 1 of ____
Procedure No. _____ Rev/Mod _____		PCA Effective Date _____		
Title _____		PCA Expiration Date _____		
Facility <input type="checkbox"/> 222-8 <input type="checkbox"/> WSCF		PCA Type <input type="checkbox"/> Temporary <input type="checkbox"/> Continuation Sheet Attached <input type="checkbox"/> Extension <input type="checkbox"/> Annotated Pages Attached <input type="checkbox"/> Annotated Document Attached		
Change Requested By (Name) _____ (Title/Organization) _____ (Phone) _____		Goldenrod Locations (Performance Copies):		
Approval (Technical Authority) _____ (Date) _____ (Operations) _____ (Date) _____ (Safety) _____ (Date) _____ (Environmental) _____ (Date) _____ (QA) _____ (Date) _____ (Other) _____ (Date) _____ (Other) _____ (Date) _____		Reason for Change _____ Training Required <input type="checkbox"/> Full retraining <input type="checkbox"/> Review before performing <input type="checkbox"/> None required		
Final Approval (Approval Authority) _____ (Date) _____		Implementing this change will require operator actions to make lab equipment/systems and procedure compatible? <input type="checkbox"/> Yes (Described on Page 2) <input type="checkbox"/> No		
Distribution: Technical Authority _____ Approval Authority _____ LTS Support <u>K. M. Higley T6-51</u> Other _____ Other _____		Work Completion/Cancellation Due to <input type="checkbox"/> Work Completed (prior to expiration) <input type="checkbox"/> Other — Explain: SIGNATURES Technical Authority _____ Date _____ Approval Authority _____ Date _____		

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Laboratory Procedures

Attachment 1. Example of an Analytical Services Procedure Change Authorization (Sheet 2 of 2)

Analytical Services Procedure Change Authorization Continuation Sheet	Approval Designator	PCA No. SL-	Page ___ of ___
Description of operator actions required to make equipment and procedures compatible, if applicable.			
Description of Change (Page/Step No./Changes)			

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

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ATTACHMENT 2

EXAMPLE OF A PROCEDURE REVIEW AND APPROVAL FORM

9613401.0878

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

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Attachment 2-2 of 4

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Attachment 2. Example of a Procedure Review and Approval Form (Sheet 1 of 2)

ANALYTICAL SERVICES			
Procedure Review and Approval Form			
		Page <u>1</u> of <u> </u>	
Procedure Number Title	Current Rev/Mod Keywords (3):	Approval Designator for Change Rev/Mod _____ Rev/Mod _____ _____ to _____ _____ to _____	Technical Authority / Approval Authority Change Requested By _____ Signature/Date _____ Org _____ Governed Location (performance copies): _____
<input type="checkbox"/> New Procedure — Validation signature required below <input type="checkbox"/> Revision — Validation signature required below <input type="checkbox"/> Modification — No validation required <input type="checkbox"/> PCA No. _____ Incorporated <input type="checkbox"/> User Test ("Blue-User") <input type="checkbox"/> User Test 30-day Extension <input type="checkbox"/> Inactivate <input type="checkbox"/> Yield <input type="checkbox"/> Reactivate Training Required <input type="checkbox"/> Training/Requalification <input type="checkbox"/> Review before performing <input type="checkbox"/> None required	<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 (Technical Authority) _____ (Date) _____ (Approval Authority) _____ (Date) _____		
Basis for Procedure Change/New Procedure:		Implementing this change will require operator actions to make lab equipment/systems and procedures compatible? <input type="checkbox"/> Yes (see page 2) <input type="checkbox"/> No	
Procedure Review			
(please sign in black ink only)			
As is	With Add'l Changes (see page 2)	NOT ACCEPTABLE (see page 2)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(Technical Authority Signature) _____ (Print Name) _____ (Date) _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(Validator Signature) <input type="checkbox"/> walk-through <input type="checkbox"/> reference <input type="checkbox"/> simulation <input type="checkbox"/> table-top (Date) _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(Operations Signature) _____ (Print Name) _____ (Date) _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(Safety Signature) _____ (Print Name) _____ (Date) _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(Environmental Signature) _____ (Print Name) _____ (Date) _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(QA Signature) _____ (Print Name) _____ (Date) _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(Other Signature) _____ (Org.) _____ (Print Name) _____ (Date) _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(Other Signature) _____ (Org.) _____ (Print Name) _____ (Date) _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(Other Signature) _____ (Org.) _____ (Print Name) _____ (Date) _____

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

Procedure Number / Current Rev/Mod _____		Page _____ of _____	
Description of operator actions required to make equipment and procedures compatible, if applicable.			
Review and Comment			
_____ Signature		_____ Title/Org	_____ Date
Review and Comment			
_____ Signature		_____ Title/Org	_____ Date
APPROVAL AUTHORITY		<input type="checkbox"/> ALL OBJECTIONS RESOLVED <input type="checkbox"/> UNRESOLVED ISSUE EXISTS	
_____ (Signature)		_____ (Date)	
For Procedures Administration Use Only			
PROCEDURES ADMINISTRATION (review for WHC-CM-5-4 compliance, insert release date, move to network, distribute, file master)			Distribution Initials _____
_____ (Signature)		_____ (Date)	

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

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ATTACHMENT 3

EXAMPLE OF A MAINTENANCE PROCEDURE REVIEW AND APPROVAL FORM

9613401.0882

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

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

ANALYTICAL SERVICES			
Maintenance Procedure Review and Approval Form			
		Page ____ of ____	
Procedure Number _____	Current Rev/Chg _____	Approval Designator for Change _____	Manager/Approval Authority _____
Title _____			Technical Authority _____
Keywords (3): _____			Org. LAB ENGINEERING
			Validator (if applicable) _____
			Maintenance Engineer _____
<input type="checkbox"/> New Procedure <input type="checkbox"/> Revision -- Validation signature required below <input type="checkbox"/> Field Change -- No validation required <input type="checkbox"/> Inactivate <input type="checkbox"/> Void <input type="checkbox"/> Reactivate		Rev/Chg _____ to _____ Rev/Chg _____ to _____	<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
Basic for Procedure Change/New Procedure		TS/OSR Related? <input type="checkbox"/> No <input type="checkbox"/> Yes Ref: _____ Does revision require CBPLS or JCS Data Sheet (s) revision? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Requested By/Date _____		(Org) _____	
RECALL INFORMATION: <input type="checkbox"/> NEW PROCEDURE <input type="checkbox"/> FIELD CHANGE <input type="checkbox"/> N/A Performance Frequency _____ Start (after procedure issue) _____			
Procedure Review (please print name and sign in black ink only)			
ACCEPTABLE As Is	With Add'l Changes	NOT ACCEPTABLE (see reverse)	_____ (Date) (Technical Authority)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____ (Date) (Validator) <input type="checkbox"/> walk-through <input type="checkbox"/> reference <input type="checkbox"/> simulation <input type="checkbox"/> table-top
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____ (Date) (Operations)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____ (Date) (Safety)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____ (Date) (Environmental)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____ (Date) (QA)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____ (Date) (Other) (Org.)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____ (Date) (Other) (Org.)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____ (Date) (Other) (Org.)

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Attachment 3. Example of a 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	
APPROVAL AUTHORITY	<input type="checkbox"/> ALL OBJECTIONS RESOLVED <input type="checkbox"/> UNRESOLVED ISSUE EXISTS
_____ (Signature)	_____ (Date)
For Procedures Administration Use Only	
PROCEDURES ADMINISTRATION (review for WHC-CM-5-4 compliance, insert release date, move to network, notify work control, file master) Dist. Initials _____	
_____ (Signature)	_____ (Date)

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ATTACHMENT 4

EXAMPLE OF A 222-S LABORATORY WASTE STREAM FACT SHEET

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ATTACHMENT 5

PROCEDURE REVIEW CHECKLIST

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Laboratory Procedures

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

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- Detailed enough to allow performance without interpretation? Yes No N/A
- 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? Yes No N/A
 - 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? Yes No N/A
 - 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? Yes No N/A
 - Technical guidelines (such as Tech Specs) Yes No N/A
 - Format editorial requirements Yes No N/A

Reviewed By:

Print Name

Signature

Date

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APPENDIX A

LABORATORY PROCEDURE PROCESS

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Appendix A. Laboratory Procedure Process

NOTE: It is assumed that the Maintenance Engineer accepts Technical Authority responsibilities in regard to maintenance procedures and activities. The term Technical Authority is inclusive of maintenance engineer.

For new procedures:

**TECHNICAL
AUTHORITY
(TA) OR
MAINTENANCE
ENGINEER
(ME)**

1. Identifies need for a new procedure.
2. Prepares a draft procedure in accordance with "Format and Content Guide for Analytical Services Technical Procedures" (Section 3.11 of this manual). The TA can use the Analytical Services procedure macro for initial electronic draft submission to PA. The procedure macro is available from Procedures Administration.
3. Initiates a Procedure Review and Approval Form, available from Procedures Administration (PA) or on the Lab Procedures network directory, and fills in the shaded area per the following.

NOTE: Procedure Review and Approval Forms (PRAFs) become permanent records. Use care to ensure readability and comprehension. Use black indelible ink. Initiation of the PRAF and providing of the following information may also be done with the assistance of PA upon delivery of the procedure draft and prior to procedure processing. PA must have a completed, signed PRAF requesting a new procedure to proceed with processing.

- a. Determines type of procedure, and assigns a procedure number based on Appendix B, "Laboratory Procedure Numbering." PA can assist this activity and will provide the next sequential number. Maintenance procedures are numbered in numerical sequence. The next number may be obtained from PA.
- b. Fill in the Rev/Mod change number for Laboratory Procedures (operational, analytical, etc.) will be A-0, and 0-0 for Maintenance Procedures.
- c. Provides appropriate Approval Designators in accordance with WHC-CM-3-5, Section 12.7.
- d. Provides procedure title.
- e. Provides three keywords associated with the procedure.
- f. Checks "NEW PROCEDURE" box.

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- g. Checks appropriate box to indicate any training required for procedure implementation.
- h. Check "yes" or "no" box to indicate whether implementing the procedure will require any operator actions to make lab configuration of equipment and system compatible with the procedure. If "yes", describe action on Page 2 in "Review and Comment" block and obtain Operations signature that required actions are complete.
- i. Provides documented basis for procedure initiation.
- j. Identifies performance copy (goldenrod) locations for procedure distribution.
- k. Provides a desired validation method by checking the validation method under "Procedure Review."
- l. Enters "RECALL INFORMATION", TS/OSR, and CBRS/JCS information (applicable only to maintenance procedures performed under JCS PM/S or "PM" Recall System).
- m. Designates any additional reviewers as "other" in the "PROCEDURE REVIEW" section.
- n. Prints name and signs "Requested by" on line provided.
- o. Forwards PRAF and procedure draft to PA for processing.

PA

- 4. Reviews PRAF for completeness and correctness of information, and requestor signature. If PRAF is incomplete or incorrect, it is returned to the requestor for action.
- 5. Reviews ZDOX/MAINTRAK tracking system for duplicate procedures, using key words. If the drafted procedure is a duplicate, it is returned to the requestor for an explanation.
- 6. Enters PRAF information into ZDOX/MAINTRAK.
- 7. Arranges into Analytical Services procedure format via macro.
- 8. Types procedure, and arranges for electronic graphics (if needed).
- 9. Tracks on ZDOX/MAINTRAK and routes to Conduct of Operations reviewer (if applicable).

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- | | |
|---------------------------------------|---|
| CONDUCT OF OPERATIONS REVIEWER | 10. Reviews procedure and meets with requestor and TA to resolve any issues. |
| | 11. Routes to technical editor. |
| TECHNICAL EDITOR | 12. Provides technical editing to ensure completeness and compliance with Analytical Services format and Section 3.11 of this manual. Meets with TA as necessary. |
| | 13. Tracks and routes to PA. |
| PA | 14. Tracks and routes formatted draft to TA for review in readiness for full review cycle. |
| TA | 15. Reviews draft, resolves discrepancies with PA. |
| | 16. Approves draft, and returns to PA. The TA can sign with changes noted or upon resolution and incorporation of their comments. |
| PA | 17. Tracks and routes for full review in accordance with approval designator and any additional reviewers identified by TA. |
| REVIEWER | 18. Verifies procedures they review are technically adequate, accurate, and consistent in their respective areas of expertise. |
| | 19. Validates per assigned validation method to assure procedure usability, correctness, and compatibility with equipment or system. |
| | 20. Documents comments on page two of the PRAF or note comments on the review copy, and initials and dates. |
| | 21. Returns procedure and PRAF to PA, noting comments. Reviewers can sign with changes noted or upon resolution and incorporation of their comments. |
| PA | 22. Facilitates resolution of any comments between reviewer(s) and TA, and obtains signatures. |
| | 23. Incorporates changes and prepares final document. |
| | 24. Performs final administrative review for completeness of PRAF and procedure. |
| | 25. Tracks and submits to approval authority for review and approval signature. |

Laboratory Procedures

- AA 26. Reviews and signs, if approved, resolving any discrepancies with TA, if required.
27. Returns to PA.
- PA 28. PA rechecks for completeness and signs as procedure administrator.
29. Tracks on ZDOX/MAINTRAK as issued.
30. Moves electronic file to Lab Procedures network directory.
31. Updates Network Procedure Index (Maintenance only).
32. Stamps front page of master copy with release triangle.

NOTE: Steps 33 through 36 do not need to be completed for Maintenance procedures.

33. Notes number of performance copy (goldenrod) locations and makes appropriate number of goldenrod copies.
34. Writes goldenrod location numbers in red in release triangle for individual locations.
35. Distributes to identified locations.
36. Makes one white (information) copy and sends to TA.
37. Notifies Work Control and recall system (Maintenance only).
38. Files master file in active file.
39. Stamps previous copy as superseded and moves to history file.

NOTE: It is assumed that the Maintenance Engineer accepts Technical Authority responsibilities in regard to maintenance procedures and activities. The term Technical Authority is inclusive of maintenance engineer.

For procedure changes

- TECHNICAL
AUTHORITY
(TA) OR
MAINTENANCE
ENGINEER
(ME)**
1. Identifies need for a procedure change.
 2. Prepares hard-copy mark-up of changes. Electronic changes are not accepted by PA.
 3. Initiates a Procedure Review and Approval Form, available from Procedures Administration (PA) or on the Lab Procedures network directory, and fill in the shaded area per the following.

Laboratory Procedures

NOTE: Procedure Review and Approval Forms (PRAFs) become permanent records. Use care to ensure readability and comprehension. Use black indelible ink. Initiation of the PRAF and providing of the following information may also be done with the assistance of PA upon delivery of the procedure draft and prior to procedure processing. PA must have a completed, signed PRAF requesting the change to proceed with processing.

- a. Changes Rev/Mod designation to reflect letter change for revision and number change for modification. Maintenance procedure designation will reflect number change for revision and letter change for modification.
- b. Provides appropriate Approval Designators in accordance with WHC-CM-3-5, Section 12.7, and the current change. The approval designator reflects the impact of the current change only.
- c. Provides three keywords associated with the procedure.
- d. Checks "REVISION" or "MODIFICATION" (or FIELD CHANGE/EDITORIAL CHANGE if Maintenance procedure) box.
- e. Checks appropriate box to indicate any training required for procedure implementation.
- f. Check "yes" or "no" box to indicate whether implementing the procedure will require any operator actions to make lab configuration of equipment and system compatible with the procedure. If "yes", describe action on Page 2 in "Review and Comment" block and obtain Operations signature that required actions are complete.
- g. Provides documented basis for procedure change.
- h. Confirms performance copy (goldenrod) locations for procedure distribution.
- g. Provides a desired validation method (required for revision only) by checking the validation method under "Procedure Review."
- h. Enters "RECALL INFORMATION", TS/OSR, and CBRS/JCS information (applicable only to maintenance procedures performed under JCS PM/S or "PM" Recall System).

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- i. Designates any additional reviewers as "other" in the "PROCEDURE REVIEW" section.
 - j. Prints name and signs "Requested by" on line provided.
 - k. Forwards PRAF and hard-copy procedure mark-up to PA for processing.
- PA**
- 4. Reviews PRAF for completeness and correctness of information and "Requested by" signature. If PRAF is incomplete or incorrect, it is returned to requestor for resolution.
 - 5. Enters PRAF information into ZDOX/MAINTRAK.
 - 6. Ensures procedure format via macro.
 - 7. Incorporates changes, using redlines and strikeouts to indicate where changes exist. Arranges for electronic graphics (if needed).
 - 8. Tracks on ZDOX/MAINTRAK and routes to Conduct of Operations reviewer (if applicable).
- CONDUCT OF OPERATIONS REVIEWER**
- 10. Reviews procedure and meets with requestor and TA to resolve any issues.
 - 11. Routes to technical editor.
- TECHNICAL EDITOR**
- 12. Provides technical editing to assure completeness and compliance with Analytical Services format and Section 3.11 of this manual. Meets with TA as necessary.
 - 13. Tracks and routes to PA.
- PA**
- 14. Tracks and routes changed procedure to TA for review in readiness for full review cycle.
- TA**
- 15. Reviews changes and resolves any discrepancies with PA.
 - 17. Approves changes, and returns to PA. Reviewers can sign with changes noted or upon resolution and incorporation of their comments.
- PA**
- 18. Tracks and routes for full review in accordance with approval designator and any additional reviewers identified by TA.
- REVIEWER**
- 19. Verifies procedures they review are technically adequate, accurate, and consistent in their respective areas of expertise.

Laboratory Procedures

20. Validates per assigned validation method to assure procedure usability, correctness, and compatibility with equipment or system.
 21. Documents comments on page two of the PRAF or note comments on the review copy, and initials and dates.
 22. Returns procedure and PRAF to PA, noting comments. Reviewers can sign with changes noted or upon resolution and incorporation of their comments.
 - PA 23. Facilitates resolution of any comments between reviewer(s) and TA, and obtains signatures.
 24. Incorporates changes and prepares final document.
 25. Performs final administrative review for completeness of PRAF and procedure.
 26. Tracks and submits to approval authority for review and approval signature.
 - AA 27. Reviews and signs, if approved, resolving any discrepancies with TA, if required.
 28. Returns to PA.
 - PA 29. PA rechecks for completeness and signs as procedure administrator.
 30. Tracks on ZDOX/MAINTRAK as issued.
 31. Moves electronic file to Lab Procedures network directory.
 32. Updates Network Procedure Index (Maintenance only).
 33. Stamps front page of master copy with release triangle.
- NOTE: Steps 34 through 37 do not need to be completed for Maintenance procedures.**
34. Notes number of performance copy (goldenrod) locations and makes appropriate number of goldenrod copies.
 35. Writes goldenrod location numbers in red in release triangle for individual locations.
 36. Distributes to identified locations.
 37. Makes one white (information) copy and sends to the TA.

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38. Notifies Work Control and the recall system (Maintenance only).
39. Files master file in active file.
40. Stamps previous copy as superseded and move to history file.

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APPENDIX B

LABORATORY NUMBERING PROCEDURE

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Appendix B. 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.

Laboratory Procedures

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

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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 (Nb)	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.

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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.

NOTE: Quality Control procedures may also use the ICN code 150, which indicates an administrative control procedure.

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
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

Laboratory Procedures

ICN	Description
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
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 Tables 1 and 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)

Laboratory Procedures

- (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.

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

Laboratory Procedures

ICN	Description
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.

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 laboratory, 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

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

Code	Description of User Location
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

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.

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

3.9

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Laboratory Procedures

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Training Administration**4.7 Exceptions or Extensions to Training Path**

Exceptions or extensions to the normal training path will be conducted in compliance with WHC-CM-2-15, *Training Administration Manual*, Section 9.1, "Training Exceptions and Extensions". This includes exception to the minimum education and experience requirements. Documentation will clearly state the specific variation(s) and time interval requested and provide sound justification. Additionally, no individual may be exempted from requisite examination requirements associated with qualification.

The responsible manager and the training manager will approve all exceptions and extensions for facility-specific training. Facility-specific training includes courses developed for AS personnel and courses required by AS management. Courses required by regulatory sources may not be excepted. Approved exceptions and extensions will be filed in the individual's training field file in accordance with paragraph 4.12.

4.8 Continuing Training

Continuing training may consist of a combination of classroom-type and on-the-job training as it applies to the position. Continuing training includes the retraining courses listed in WHC-CM-5-4 Section 4.5, "Training Programs." Continuing training will be structured to be commensurate with specific position needs. These courses will be developed and revised in accordance with WHC-CM-5-4 Section 4.2, "Training Development and Maintenance." Facility drills are considered part of the continuing training program for laboratory personnel. A drill coordinator plans, conducts, and critiques facility drills. These drills involve coordination of activities between various laboratory groups and are considered team training exercises. Emergency Preparedness Drills will be scheduled and conducted for a facility in compliance with DOE/RL-94-02, *Hanford Emergency Response Plan*, WHC-CM-4-43, *Emergency Management Procedures*, WHC-CM-4-44, *Emergency Preparedness Administration*, and administrative guidance regarding conduct of drills.

In addition, continuing training programs will be developed for personnel who perform functions associated with safety class structures, systems, and components identified in the facility's safety basis document. Periodic examinations and/or evaluations, as allowed by contract, will be administered and documented throughout the cycle on material included in continuing training programs.

Laboratory personnel at nonreactor nuclear facilities are required to pass an annual Emergency Procedure/Abnormal Plant Conditions (EP/APC) examination. This would normally include laboratory managers, chemical technologists/technicians and scientists who perform work in the laboratory. Laboratory managers are also required to take a biennial Normal Operating Condition Exam.

4.9 Position Qualification

Position qualification is considered valid as long as the specified position requirements are maintained. Failure to complete a requalification item within the specified time limit will result in the loss of qualification to perform that task, unless an extension has been granted in accordance with paragraph 4.7.

4.10 Maintaining Position Proficiency

Personnel should work in their position on a regular basis to maintain proficiency.

An individual will not be assigned to a position for which they are not proficient. In the event of an extended absence, selected retraining may be required to regain proficiency. The extent of retraining will depend on the duration of the absence or time away from the specific duty area. Managers will assess the depth of retraining needed per the following guidance:

- a. Less than three months — No retraining is required.
- b. Greater than three months — The individual's immediate manager will conduct an interview to determine any areas of weakness. Based on this interview, selected retraining will be provided prior to reassignment. The base date of initial qualification or requalification remains unchanged.

4.11 Supplemental Instructors

Supplemental instructors may present specific training material.

These individuals will be selected by facility and training management based upon technical and instructional abilities. When possible, attending an OJT instructor/evaluator course is desirable prior to presenting training material. Academic and professional experience of the individual will be considered when identifying requirements to be completed prior to presenting training material.

Supplemental instructors will be selected from the following:

- Managers
- Subject matter experts
- Equipment vendors.

4.12 Training Field Files

If required for the position, training field files will be kept in a readily auditable format.

These files will contain the following items.

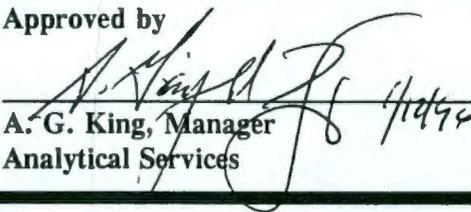
- Copies of approved exceptions and extensions, if any, to training requirements.
- Position qualification records, if applicable for the position.
- Other training related material that may be pertinent, at the managers discretion.

Official training records are maintained in the Training Records and Information (TRI) and the Training Matrix System (TMX) systems on soft reporting available on the Hanford Local Area Network. The TMX serves as the individual and organizational training plan. Hard copies are not required to be kept in field files.

January 12, 1996

Occurrence Categorization,
Notification, and Reporting
(Conduct of Operations Chapter 7)

Approved by


A. G. King, Manager
Analytical Services

1.0 PURPOSE

This procedure applies to all occurrences or potential occurrences within the Analytical Services organization.

2.0 SCOPE

This procedure applies to all Analytical Services facility managers/designees (222-S, Waste Sampling and Characterization Facility, and 1706-K East).

Appendices A and B refer to the Safety Significant Components for the 222-S Laboratory and the Waste Sampling and Characterization Facility.

3.0 RESPONSIBILITY

3.1 Facility Manager/Designee

All Analytical Services facility managers/designees (222-S, Waste Sampling and Characterization Facility, and 1706-K East) have the following responsibility.

The facility manager/designee is responsible for the occurrence reporting and notification requirements listed in WHC-CM-1-5, *Standard Operating Practices*, Section 7.1, and critiquing the event if necessary as defined in Section 6.2, "Critiquing Events". The Waste Sampling and Characterization Facility and 1706-KE must notify Operations Assurance and Support or the 222-S Shift Manager/BED within 2 hours of discovering the event.

Refer to WHC-CM-1-5, Section 7.1, Appendix A for occurrence categories and criteria.

*This section is a rewrite addressing changes in manual references and procedure. Therefore, no redlines are used to indicate changes.

4.0 PROCEDURE

- 4.1 Categorize occurrences as soon as possible and always within 2 hours of discovering the event or condition.
- 4.2 Occurrence categories marked "USQ" (WHC-CM-1-5, Section 7.1, Appendix A) shall be screened by a qualified USQ evaluator in accordance with procedure WHC-CM-5-4, Section 3.13.
- 4.3 Initiate an investigation of the event; collect information in accordance with WHC-CM-1-5, Section 6.1, "Guidelines for Supervisory Response to Abnormal Events and Conditions".
- 4.4 Initiate appropriate corrective actions.
- 4.5 Manage corrective actions in accordance with WHC-CM-1-4, *Corrective Action Management Manual* (responsible organization — Operations Assurance and Support).
- 4.6 During day shift hours (Monday through Friday), notify Operations Assurance and Support within 2 hours of discovery of the event. Operations Assurance and Support will assist if necessary in the notification of the Occurrence Notification Center (ONC), U.S. Department of Energy Facility Representative, critiquing the event, and inputting the occurrence report information into the Occurrence Reporting and Processing System (ORPS).
- 4.7 In the event of an occurrence during off shift hours, the Shift Manager/BED will notify the appropriate personnel (reference Emergency On Call List and Standing Order #17), the Occurrence Notification Center, and conduct a critique of the event.
- 4.8 The responsible organization manager shall supply the necessary information (~~i.e. that is~~, what caused the event to occur and corrective actions) to Operations Assurance and Support within 10 working days.

5.0 RECORDS

Any records generated as a result of activities described in this section will be managed in accordance with applicable Records Inventory and Disposition Schedules.

6.0 DESIGNATED REVIEWERS

<u>Designated Reviewing Organizations</u>	<u>CMPOC</u>
Operations Assurance & Support (Champion)	T6-16
HASQAP Compliance	T6-16
222-S Analytical Operations	T6-16
222-S Building Operations Manager	T6-20
222-S Shift Operations Manager	T6-20
WSCF Building Operations Manager	S3-28
1706-KE Building Operations Manager	X3-59

7.0 REFERENCES

WHC-CM-1-4, *Corrective Action Management Manual*.

WHC-CM-1-5, *Standard Operating Practices*.

Appendix A

222-S Laboratory Safety Significant Components (SSC)

The equipment listed below is referenced in WHC-SD-CP-SEL-001, *Safety Equipment List*, as Safety Class 3 systems. WHC-CM-1-5, Section 7.1, refers to Safety Class 3 equipment as Safety Significant SSC's.

SAFETY SIGNIFICANT SSC's

- 222-S building confinement structure
- 222-S final HEPA filters
- Hot cells 1A, 1E1, 1E2, 11A, and 1F
- 207-SL retention basin
- 296-S-21 main exhaust stack monitor
- Fume hoods
- Sample shipping containers
- Vacuum air sampling system (VAS)
- Continuous air monitors (CAMs)
- Electric exhaust fans (EF-1, 2, 3)
- Diesel exhaust fan (EF-4)
- Sample storage units
- 222-SC HEPA filters
- Fire detection and alarm system
- Halon fire protection system
- Water sprinkler fire protection system
- Carbon dioxide fire protection
- EPAX telephone paging system
- Safety showers and eyewashes
- Fire doors
- Emergency egress lighting
- Cranes, hoists, and lifting equipment

Appendix B**WSCF Laboratory Safety Significant Components (SSC)**

The equipment listed below is referenced in the *Waste Sampling and Characterization Facility Safety Equipment List* (WHC-SD-WM-SEL-036) as Safety Class 3 Equipment. WHC-CM-1-5, Section 7.1, refers to safety class 3 equipment as Safety Significant SSC's.

SAFETY SIGNIFICANT SSC's

- Intermediate HEPA filter for process vacuum system
- North laboratory ventilation and controls
- Nuclear spectroscopy laboratory ventilation and controls
- Fire protection systems
- ASME pressure vessels
- Public address system
- Standby electric power supply
- Stack record samplers
- Backflow prevention devices
- Emergency shower/eyewash stations & supply
- Contaminated liquid vault leak detection & secondary containment
- Vacuum air sampling system

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

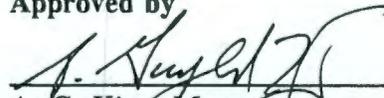
Occurrence Categorization, Notification,
and Reporting (Conduct of Operations Chapter 7)

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Lessons Learned Administration

Approved by



A. G. King, Manager
Analytical Services

1.0 PURPOSE

This procedure provides direction for the processing of lessons learned documents received or generated by the Analytical Services lessons learned point-of-contact, or other laboratory personnel.

2.0 SCOPE

This procedure applies to all Westinghouse Hanford Company (WHC) AS facilities or activities which may generate lessons learned documents.

3.0 DEFINITIONS

Analytical Services Point-of-Contact (POC)

The individual appointed to coordinate the distribution of lessons learned throughout AS.

Lessons Learned

(1) Information about an event that can be used by facilities and organizations in an attempt to avoid an identical or similar situation; or (2) a description of a good work practice that enables other organizations performing similar work to improve safety and efficiency.

Lessons Learned Document

The text or electronic file that presents a lesson learned.

4.0 RESPONSIBILITIES AND PROCEDURES

4.1 Reviewing and Distributing Incoming Lessons Learned Documents

4.1.1 POC

1. Review lessons learned received from the Hanford Site Lessons Learned Coordinator (LLC). Determine whether the lesson learned is applicable to AS organizations.
 - a. If a lessons learned does not apply to Analytical Services organizations, document the review and conclusion and inform the Hanford Site LLC. (If necessary, update the screening criteria on file for AS with the site LLC.)

Lessons Learned Administration

- b. If a lesson learned applies to AS organizations, route the lessons learned document to AS organization managers, including, but not limited to:

- (1) Building Operations
- (2) Analytical Operations
- (3) Work Control
- (4) Engineering
- (5) Maintenance
- (6) Radiological Control.

2. *Within 15 days*, return the results of the applicability review to the site LLC.

4.1.2 Managers

1. Determine if the lesson learned applies to your organization and whether corrective actions are necessary.
 - a. Enter requests for facility modifications into the Job Control System (JCS). See WHC-CM-1-8.
 - b. Determine the required reading completion date unless otherwise directed by facility management. Depending on the nature and urgency, distribute the lessons learned using the most effective method. These may include:
 - (1) Entering the lesson learned into required reading
 - (2) Discussing the lesson learned at a safety meeting
 - (3) Forwarding the lesson learned to the appropriate people electronically
 - (4) Posting it on a bulletin board.
2. Inform the POC:
 - a. On actions implemented or planned as a result of the lesson learned. The POC will forward open corrective actions to the facility Hanford Action Tracking System (HATS) administrator.

4.1.3 POC

1. File information received from organization managers with the appropriate lessons learned document in facility files.

4.2 Generating a Lessons Learned

Any employee who has knowledge of an event or good work practice can originate a lessons learned.

Lessons Learned Administration**4.2.1 Originator**

1. Prepare a draft lessons learned document. See WHC-CM-1-5 for proper format.
2. Route the lessons learned document to the POC for review.

4.2.2 POC

1. Review the draft lessons learned and send it to the responsible manager for approval and release.
2. Route the lessons learned to the applicable organizations for review.
3. For Hanford Site distribution, send the approved/released lessons learned to the Hanford Site LLC.

5.0 RECORDS

All records created at AS for lessons learned are dispositioned and maintained by the site Lessons Learned Coordinator.

6.0 DESIGNATED REVIEWERS

<u>Designated Reviewing Organizations</u>	<u>CMPOC</u>
Operations & Assurance Support (Champion)	T6-14
HASQAP Compliance	T6-16

7.0 REFERENCES

WHC-CM-1-4, *Corrective Action Management Manual*, 5.0, "Lessons Learned Evaluation Procedure."

WHC-CM-1-5, *Standard Operating Practices*, 14.1, "Managing Lessons Learned."

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

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

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Lessons Learned Administration

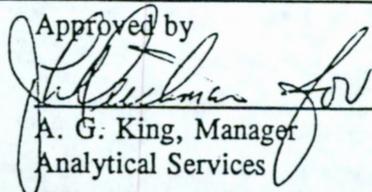
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December 27, 1995

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Operator Aid Postings
(Conduct of Operations Chapter 17)

Approved by



12/27/95

A. G. King, Manager
Analytical Services

1.0 PURPOSE

The purpose of this section is to provide instructions to facility personnel for requesting, reviewing, approving, and posting of operator aids. This section establishes and defines the implementation of U.S. Department of Energy (DOE) Order DOE 5480.19 *Conduct of Operations Requirements for DOE Facilities*, and WHC-SP-0708, *Westinghouse Hanford Company Conduct of Operations Manual*, Chapter 17 "Operator Aid Postings". Facility operator aids (information posted for personnel use) should provide information useful to operators in performing their duties.

This section describes the process to ensure operator aids are current, complete, and necessary. Information utilized in the operation of laboratory systems must be properly controlled. The use of informal, unauthorized, or out-of-date instructions, notes, graphs, drawings, and other documents in the facility can detract from proper operation or maintenance. Operator aids provide an important function in the safe operation of the facility.

2.0 SCOPE

This procedure applies to all Analytical Services (AS) organizational units that are responsible for laboratory operations. Administrative office areas are not included in the scope of this procedure.

Where a specific component of AS is resident in a facility that is not administered by AS management, the plant specific procedures will prevail if there is an instructional conflict. If no conflict exists, this procedure will be followed.

3.0 DEFINITIONS

Operator

Anyone authorized to operate equipment or laboratory instruments. This includes operations personnel, laboratory scientists, chemists, chemical technologists, and other facility personnel.

Operator Aid

Non-permanent information posted and controlled to provide useful, but not required, information to operators in performing their assigned duties.

Operator aids may come in many forms: excerpts from or derived (calculated) from approved procedures, system drawings, typed notes, information tags, curves, and graphs. These aids do not include postings authorized by other safety or administrative posting systems.

Operator Aid Index

A computer database managed by AS Documentation Administration (ASDA) that reflects a current listing of all Operator Aids in the facility.

Operator Aid Log

A computer database managed by ASDA that contains a copy of each Operator Aid posted in the facility.

Permanent Information

Information that appears on a medium not suitable to change and determined by management to be applicable indefinitely. An example would be an instruction engraved on a permanent label and controlled in accordance with design change requirements. These items are not Operator Aids in this procedure.

4.0 RESPONSIBILITIES**4.1 Facility Operations Manager**

The Facility Operations Manager is responsible for:

1. Providing overall direction and administration of this procedure
2. Providing liaison with other facility department managers to ensure needed information is available, current, and complete
3. Approving/authorizing Operator Aids to be posted.

4.2 Shift Manager/Building Operations Manager

The Shift Manager/Building Operations Manager is responsible for:

1. Performing a periodic review of all operator aids in accordance with paragraph 6.4 of this manual section
2. The posting and removal of Operator Aids.

4.3 Laboratory Managers and Personnel

All laboratory managers and personnel are responsible for:

1. Ensuring operator aids used in the facility conform to the requirements of this procedure
2. Submitting proposed operator aids to the Facility Operations Manager for inclusion in the Operator Aid Posting system

3. Utilizing only current and approved operator aids in the performance of duties
4. Reporting any unauthorized operator aids observed to the Facility Manager, cognizant line Manager, or Shift Manager for resolution.

5.0 USE OF OPERATOR AIDS

- 5.1 Operator aids use shall be minimal.
- 5.2 Operator aids shall not be used to bypass the normal facility procedure review and approval process. Operator aids that alter procedures shall not be approved.
- 5.3 Operator aids may supplement approved procedures, but should not be used in lieu of approved procedure. They should be viewed as a convenience, not as a requirement.

Operator aids can remind users of information that might otherwise be overlooked and/or provide guidance or clarity that is not procedural in nature.

6.0 PROCEDURE

6.1 Operator Aid Development, Approval, and Posting

Any facility employee, with concurrence from their line manager, may request the posting of an operator aid by submitting a copy of the proposed operator aid to the Facility Manager. The copy shall be submitted formatted exactly as the employee would like to have it posted. The request shall be accompanied by an "Operator Aid Request Form", any reference documents applicable (that is, procedure number and rev/mod number, OSD's, and so forth) to the proposed operator aid, and the posting location of the desired aid.

Analytical Services Documentation Administration will manage the computer database that tracks all operator aids. They will maintain an index of the operator aids on the Laboratory Procedure Network Directory. This directory will also contain blank formatted operator aids to be used by employees submitting operator aid proposals.

Aids that are approved for use within the facility complex by the Facility Manager will be forwarded to ASDA to be included in the database. Once included, a hard copy of the approved operator aid will be delivered to the Shift Manager/Building Operations Manager to be posted.

6.2 Documentation

An Operator Aid Directory, containing a copy of each approved and posted Operator Aid, shall be maintained by ASDA. The directory will include a log of all current operator aids and an index (see Attachment for example) recording the following information:

1. Sequential serial number — The number should indicate the year and the next consecutive number of an operator aid. For example, 92-015 would indicate the 15th operator aid issued for the year 1992.
2. Requestor/Organization — Name of the individual proposing an operator aid and the requestor's organization.
3. Date posted — The date the Facility Operations Manager authorized the operator aid to be posted.
4. Location — Area where the operator aid is to be posted. This location will be specific enough to allow the operator aid to be easily found by the information contained in the Operator Aid Index.
5. Reason for posting — ASDA will enter the reason the operator aid needs to be posted (as written on the "Operator Aid Request Form") and will ensure that a copy of the operator aid is placed into the Operator Aid Log, in numerical order.
6. Manager approval signature — The Facility Operation Manager's signature on the Operator Aid will serve as authorization to post the Operator Aid.

6.3 Operator Aid Cancellation and Removal

When an operator aid is no longer current, correct, complete, or necessary, the Shift Manager/Building Operations Manager shall have it removed. The Shift Manager/Building Operations shall date and sign the deactivated operator aid and forward it to ASDA to be closed out in the operator aid index and log.

6.4 Operator Aid Periodic Review

The Facility Operations Manager will direct a semiannual audit of posted operator aids to ensure the following:

1. A continuing need exists for each posted operator aid
2. All active operator aids registered in the log are posted
3. Information contained in the operator aid is current and applicable
4. The physical location of each operator aid is correct
5. No unauthorized operator aids exist
6. Each operator aid is legible and in good condition (no unapproved pen-and-ink changes exist).

7. Drawings that are approved and posted as operator aids are included in the facility's drawing control system.

The audit will be documented in the Operator Aid Index maintained by ASDA. Information recorded in the index is to include: Name of person performing the audit, date the audit was performed, which operator aids were audited, and a list of any inconsistencies found during the audit. Operator aids no longer posted shall be removed from the index and missing aids will be replaced if still valid.

7.0 RECORDS

Any records generated as a result of activities described in this section will be managed in accordance with applicable Records Inventory and Disposition Schedules.

8.0 DESIGNATED REVIEWERS

<u>Designated Reviewing Organizations</u>	<u>CMPOC</u>
222-S Analytical Operations (Champion)	T6-16
HASQAP Compliance	T6-16
Shift Operations	T6-20
AS Documentation Administration	T6-03

9.0 REFERENCES

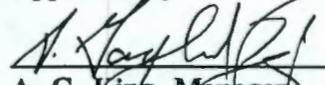
DOE 5480.19, *Conduct of Operations Requirement for DOE Facilities*

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

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

Corrective Action Management

Approved by


A. G. King, Manager
Analytical Services

1.0 PURPOSE

This section provides direction for conducting, tracking, and closure activities associated with the corrective action for formally reported adverse conditions or deficiencies.

2.0 SCOPE

This section applies to all Analytical Services (AS) facilities and organizations.

3.0 DEFINITIONS

Actionee

The individual assigned responsibility for completing actions to correct a condition. The actionee may also be the condition owner.

Adverse Condition

Term applied to deviations, failures, malfunctions, deficiencies, defective items, and nonconformances in items or activities affecting quality, safety, health, operability, or the environment.

Condition Identifier

The person or organization identifying an adverse condition that requires corrective action.

Condition Owner

The manager with responsibility to initiate and implement remedial and corrective action. The condition owner may also be the actionee.

Corrective Action Management System — CAMS

The system utilized to ensure adverse conditions are identified, tracked, and resolved.

Corrective Action Evaluation Group — CAEG

Group trained to determine and assign Priority Planning Grid (PPG) and Root Cause Analysis (RCA) values to adverse conditions.

Database Administrator (DBA)

The individual responsible for entering all data into HATS, and maintaining a monthly report.

Corrective Action Management**Hanford Action Tracking System (HATS)**

The database used to manage internally and externally identified deficiencies and associated corrective actions. HATS is the only database to be used for tracking corrective actions within Analytical Services.

Non-CAMS

A term used for actions that are tracked in the HATS database, but are not related to adverse conditions.

PPG A graded approach to determine the extent of corrective action required for each adverse condition. Priority Planning Grid (PPG) meetings will be held by Operations Assurance and Support (OAS) CAEG to assign values to the condition in accordance with WHC-CM-1-4, *Corrective Action Management Manual*.

4.0 RESPONSIBILITIES**4.1 Corrective Action Evaluation Group (CAEG)**

- a. CAEG team members are responsible for evaluating assigned conditions and developing consensus on PPG relative risk values and assisting and/or providing Root Cause Analysis (RCA) and Lessons Learned. The condition identifier and condition owner will be invited to the PPG meeting.

NOTE: Root Cause Analysis (RCA) is required for all identified conditions. If the PPG value is less than 25, OAS will assist the condition owner in determining the RCA. When PPG value is greater than 25, the RCA will be performed and documented in accordance with WHC-CM-1-4. The formal RCA will be prepared by trained RCA analysts. If a lesson learned applies, it will be done in accordance with WHC-CM-1-5, *Standard Operating Practices*, Section 14.1.

4.2 Condition Owner

- a. Accepts overall responsibility for the processing of the specific adverse condition from discovery through verification, documentation of completion and closure of all remedial and corrective actions.
- b. Normally have 30 days to respond to assessments. The response should be sent to the DBA, indicating the condition identifier (e.g., IAA-95-0013-AUD-15), the action taken, and date completed.
 1. If the response initiates actions to be completed in the future, actionees and estimated dates of completion must be included.
 2. As the actions are completed, condition owners/actionees shall notify the DBA. This may be via cc:mail or hard copy. The message should include condition identifier, action taken and the date completed.

Corrective Action Management

NOTE: Condition owners/actionees are notified automatically by cc:mail HATS notification system under the following circumstances:

- When a new condition is assigned
- When there is a change of condition owner
- When there is a change of completion date
- When a condition becomes delinquent.

4.3 Database Administrator (DBA)

- a. Ensures any responses, actions, and changes are input into the HATS database.
- b. Maintains the record copy of the adverse condition corrective action file for each condition.

4.4 Managers

- a. Ensure resolution and correction of adverse conditions within their area of responsibility.
 1. The DBA will generate a monthly report and will issue the report to each responsible manager.
 - (a) Managers should review this report with their actionees to determine status of corrective actions assigned to their organization. The report will show condition number, PPG value, description of condition, status, due date, organizational code, and comments.

5.0 RECORDS

Records that substantiate the completion of essential elements of the CAM System requirements for processing a condition are Quality Assurance Records and shall be retained in accordance with WHC-CM-3-5, *Document Control and Records Management Manual*. These records will be maintained by the DBA.

Corrective Action Management

6.0 DESIGNATED REVIEWERS

<u>Designated Reviewing Organizations</u>	<u>CMPOC</u>
Operations Assurance and Support (Champion)	T6-14
HASQAP Compliance	T6-16

7.0 REFERENCES

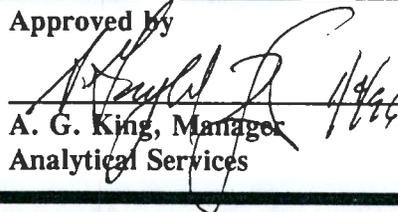
WHC-CM-1-4, *Corrective Action Management Manual*

WHC-CM-1-5, *Standard Operating Practices*
Section 14.1, "Managing Lessons Learned."

WHC-CM-3-5, *Document Control and Records Management Manual*
Section 9.0, "Quality Assurance Records."

Instrument Preventative Maintenance

Approved by


A. G. King, Manager
Analytical Services

1.0 PURPOSE

This section describes the preventative maintenance program for analytical instruments at the 222-S Laboratory. The program will be comprised of instrument preventive maintenance (IPM) schedules and either logbooks or Job Control System (JCS) work packages.

2.0 SCOPE

This section applies to analytical instruments used for generating quantitative results that will be reported to laboratory customers, and implements WHC-CM-4-2, *Quality Assurance Manual*, QI 12.7, "Assuring Availability of Laboratory Instruments." This section is met by the laboratory maintaining an external maintenance contract, an appropriate spare parts inventory, or redundant instrument capacity.

3.0 PROCEDURE

3.1 Instrument Preventative Maintenance

Preventative maintenance is performed at the 222-S Laboratory in accordance with manufacturer's recommendations, instrument performance history, and operating instrument/system characteristics and usage. This maintenance is performed to minimize downtime of instrument systems and assure acceptable instrument performance. Preventative maintenance consists of routine inspections, instrument maintenance, and/or significant corrective action(s). In general, the schedules are based upon performance: run-to-failure or failure of the control standard to meet acceptance criteria. Schedules and maintenance may be managed through the 222-S Job Control System.

3.1.1 Routine Inspections

Routine inspections are instrument inspections performed (for example, daily, weekly, or as needed) by the responsible scientist/analyst before instrument operation. The frequency of these inspections are based upon manufacturer's recommendations and instrument performance history.

3.1.2 Instrument Maintenance

Instrument maintenance shall be performed by qualified personnel. This action may be provided through an external maintenance contract. When instrument maintenance or significant corrective action(s) is performed, the person performing the action shall initial, date, and include a

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

Instrument Preventative Maintenance

notation of the action in the logbook, bench sheet, service report, JCS work package, or electronic record system. Significant corrective action(s) notations include but are not limited to:

- (1) Failure to calibrate and require an evaluation of the instrument
- (2) Replacement of critical component of measurement or testing system
- (3) Repetitive failure of laboratory control standard
- (4) Reclassification of an "out of service" instrument to operational status.

3.2 Logbooks

An IPM logbook or notebook will be kept for each instrument in accordance with WHC-CM-5-4, Section 6.11, "Logkeeping." More than one instrument may be logged in a single book if the instruments are in the same laboratory room. The responsible scientist(s) will ensure the logbook is maintained. If maintenance is controlled through the JCS system, the work package serves as the record and no logbook is necessary.

3.3 Schedules

IPM schedules will be defined in the JCS system or IPM logbook. Schedule activities may be grouped to reduce reporting entries. For example, a set of activities may be defined as "daily checks." Completion of the action may be documented with a single statement, or if a table is used a single check mark, indicating the activity is complete.

4.0 RECORDS

Any records generated as a result of activities described in this section will be managed in accordance with applicable Records Inventory and Disposition Schedules.

5.0 DESIGNATED REVIEWERS

<u>Designated Reviewing Organizations</u>	<u>CMPOC</u>
Office of Quality Assessment (Champion)	T6-16
222-S Analytical Operations	T6-16

6.0 REFERENCES

WHC-CM-5-4, *Laboratories Administration*
Section 6.11, "Logkeeping"

WHC-CM-4-2, *Quality Assurance Manual*