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Managing APS Facility Procedures

Changes made in this revision:

- Delete C. Eyberger from author list
- Approval of:
  - Facility-wide/cross-divisional facility operations procedures is assigned to the Deputy ALD-Operations
  - Facility-wide/cross divisional ESH/QA procedures is assigned to APS ESH/QA Coordinator
  - User Policy and Procedure is assigned to the Deputy ALD-X-ray Science
- For the purposes of this policy and procedure, the responsibilities of the Division Director are assigned to:
  - the DALD-X-ray Science for procedures prepared by the User Administration & Support Group and
  - the PSC ESH/QA Coordinator for procedures prepared by the User ESH Support Group
- Approval of supervisors of implementing groups made optional
- Numerous edits for style without material change in processes

Authors:

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Approved by:

Division Directors

Deputy ALDs

PSC ESH/QA Coordinator

APS Director

Applicability:

Division	Cross-divisional/ facility-wide	ES&H	Safety Interlocks	M&TE	User	Linac	PAR	Booster	Storage Ring
	x								

Table of Contents

Managing APS Facility Procedures

Policy

Each group at the APS shall maintain documented procedures to ensure a safe work environment and reliable and efficient operations.

This policy and associated procedure apply to APS mission/safety critical procedures, namely those that are required to ensure a safe work environment and reliable, efficient operations at the APS. This procedure need not be followed for work practices that rely on knowledgeable trained worker, provided that the unavailability of the worker will not impact safe, reliable, efficient operations at the APS.

APS managers shall ensure procedures, for the systems/processes that they are responsible for, are:

- Complete and kept current
- Available to workers who currently use them and to others that might need them in the future
- Maintained in the central APS integrated content management system (ICMS)

APS management shall designate Procedure Administrators (PA) who shall manage APS procedures in ICMS:

- Initiate and monitor review workflows
- Ensure approved procedures are posted
- Ensure that document system metadata includes at a minimum an effective date and expiration date or review period for each procedure
- Assist in notifying effected groups that a new or revised procedure is in effect

Typically, facility procedures should be reviewed on a triennial or more frequent basis.

If a reviewer disapproves a procedure, the document is routed back to the PA and the PA returns it to the author. The author is responsible for addressing any issues and resubmitting the document to the PA for rerouting for approval.

The template used for APS procedures is available through ICMS, document APS_1191216. The native file can be downloaded and used to create an APS procedure.

Authors will identify documents/records generated as a result of performing the procedure (e.g., forms, checklist, work permits, approval/authorizations, etc.) and how they will be controlled (e.g., responsible custodian, location, format/media, and retention requirements - see Managing APS Documents Policy – APS_1273342).

Authors shall include specific control measures (e.g., the particular type and, requirements for use of, personal protection equipment) for the specific hazards identified in procedures and shall ensure that these measures are included in the appropriate action

steps. Hazard controls should be developed in accordance with Work Planning and Control at the APS – APS_1432773. Generic statements, such as "controls are defined in the ANL Laboratory Management System policies and procedure" should be avoided and only used when specific controls cannot be defined. Safety-related procedures are reviewed by the ESH Coordinators, who shall verify that appropriate specific controls have been included. (Appendix B is a guideline for describing hazard control measures in procedures.)

Required reviews/approvals

1. Author
2. Author's supervisor – the supervisor's approval is a certification that the procedure will safely meet technical/operational requirements
3. Other case-specific required reviews:

Potentially Impacted System/Equipment	Required review and approval
Personnel safety	Author's Division ESH Coordinator
Accelerator systems	Affected Machine manager(s)
Safety interlocks	Safety Interlock Group Leader
Safety interlock system design	APS Radiation Safety Policy Committee Chair (The Chair's approval represents the committee's approval.)
Radiation shielding	Accelerator Health Physicists
Measurement and test equipment	QA Representative
User Policy and Procedure	User Administration and Support Group Leader or AES Technical Operations Specialist

Management Approvals

The APS Director approves this procedure and assigns the following management oversight authorities:

Organizational Applicability	Required review and approval/disapproval;
Division – procedure principally executed within a Division, may have little or only incidental involvement of other Divisions (e.g., sign-offs, services)	Author's Division Manager (DD, DDD, or ADD)
ESH/QA, cross-divisional* and Procedures prepared by the User ESH Group	APS ESH/QA Coordinator
Facility Operations, cross-divisional*	DALD-Operations
User Policy and Procedures and Procedures prepared by the User Administration and Support Group	DALD-X-ray Science

*cross-divisional procedures are executed by groups in more than one division and include procedures, like this one, that are to be used across the APS

Optional reviews

The author and any reviewer may seek the advice of subject matter experts, APS or Argonne safety committees, or APS technical panels. Authors should avoid adding reviewers that their inclusion will add little or no value to the vetting or implementation of the procedure.

Authors may include the supervisor(s) of employee(s) that will carry out the procedure (if different than above) – the supervisor's approval confirms the acceptance of the responsibilities and that the assignment is appropriate.

References - Source Requirements

DOE Standard: Writer's Guide for Technical Procedures (DOE-STD-1029-92)
Work Planning and Control at the APS (APS_1432773)
Managing APS Documents Policy (APS_1273342)
Control of APS Measuring and Test Equipment (APS_1281549)

Corrections/Opportunities for Improvement

Any user or reviewer of a facility procedure: 1) shall advise a PA if there are errors or omissions in a procedure and 2) is encouraged to advise a PA of opportunities for improvement. The PAs will work with the author to address the feedback.

If there is an error or omission in a procedure, the worker should ensure that the work process is executed safely and advise a Procedure Administrator (PA) of the need for correction/amendment.

A PA may make minor corrections without requiring re-review/re-approval of the procedure. A minor change is one that does not have the potential to change the meaning of the procedure and includes changes such as correcting spelling, grammar, or other typographical errors; limited text clarifications; or minor format changes. If there is the potential for changing the meaning of the procedure then re-review/re-approval is required. Changes and the reason for changes must be recorded in the procedure's metadata in ICMS.

Procedure

1 Introduction

1.1 Purpose

This procedure defines the process for managing facility procedures to help ensure a safe work environment and reliable, efficient operations at the APS.

1.2 Scope

This procedure:

- Defines the process for establishing and maintaining APS procedures.
- Does not define a process for developing the content of APS procedures.

1.3 Applicability

This procedure need not be followed for work practices that rely on knowledgeable trained worker, provided that the unavailability of the worker will not impact safe, reliable, efficient operations at the APS.

2 Preparation – Prerequisite Actions

Authors draft/update procedures, prior to submitting a procedure to a PA for workflow.

3 Acceptance Criteria

Section 4.2 defines required approvals.

4 Performance - Procedure Action Steps

4.1 Upload procedure and start workflow:

4.1a If the procedure is a **New Procedure:**

1. The author submits the proposed procedure to a PA and assists the PA with identifying ICMS metadata values, including workflow/review requirements.
2. The PA checks the procedure into ICMS.

Or

4.1b If the procedure is **undergoing periodic review** of an existing procedure:

1. PA notifies an author of the pending expiration of a procedure.
2. If the PA has not been advised by the author of proposed revisions, the PA checks out the current procedure from ICMS, updates procedure header

information and metadata (e.g., last review date, revision number, etc.) and checks the procedure into ICMS (the author will be in the workflow - if the authors seeks a revision they can reject the procedure in workflow and provide updates)

Or

4.1c If the procedure is a **revision** of an existing procedure:

1. The author submits the revised procedure to the PA and assists the PA on updated metadata values and workflow/review requirements.
2. PA checks out the current procedure from ICMS, checks in the new version.

4.2 Required Reviews/Approvals

The PA initiates the approval workflow.

The general sequence of review and approvals is:
1. Author and the technical groups that will carry out the procedure,
2. Safety and QA oversight, and
3. Management endorsement.

As needed, any reviewer may seek the advice of subject matter experts, APS or Argonne safety committees, or APS technical panels.

If a reviewer disapproves a procedure, it is routed back to the PA, the author is responsible for addressing any issues, and the PA will return to step 4.1 and reroute for approval.

4.2.1 **Author** – verifies that the correct version/revision is in workflow.

4.2.2 **Author's supervisor** (or designee) – certifies that the procedure will safely meet technical/operational requirements or disapproves the procedure.

4.2.3 **Case Specific Reviews and Approvals**
Each reviewer is verifying that for their subject area that the technical content is correct and/or safety concerns have been adequately addressed. The default will be to route the procedure for the case-specific safety and QA reviews in parallel.

4.2.3.1 **ES&H**
IF the procedure involves activities or changes to any system that provides personnel safety protection and/or describes hazard control measures (i.e., LOTO required, radiation survey required, radioactive equipment, radiation shielding, hazardous materials, safety interlocks including ACIS and PSS, use of personal protection equipment, etc.),

THEN the procedure is reviewed and approved or disapproved by the responsible **Divisions' ES&H Coordinator** or designee.

4.2.3.2 **Safety Interlocks**

IF the procedure involves either:

Prescribed use, maintenance, modification or testing of the accelerator's Access Control Interlock Systems (ACIS),
or
Prescribed use, maintenance, modification or testing of the beamline's Personnel Safety Systems (PSS),

THEN the procedure is reviewed and approved or disapproved by the Chair of the **APS Radiation Safety Policy and Procedures Committee** or designee.

4.2.3.3 **Radiation Shielding**

IF the procedure might impact radiation shielding, handling radioactive materials or requiring radiation survey;

THEN the procedure is reviewed and approved or disapproved by the **Accelerator Health Physicists assigned to the APS** or designee.

4.2.3.4 **Accelerator Systems**

IF the procedure entails manipulation (steering, kicking, exciting, etc.) of a charged particle beam or the facilities to manipulate the beam,

THEN the procedure is reviewed and approved or disapproved by the person(s) designated as responsible for the overall performance of the affected accelerators (i.e., **Machine Manger**) or designee:

Affected Device	**Reviewer**
Linac	Linac Manger
LET, PAR	PAR Manager
HET, Synchrotron	Synchrotron Manager
Storage Ring	Storage Ring Manager

4.2.3.5 **APS Measurement and Test Equipment**

IF the procedure involves:

- The use of measurement and test equipment (MTE) for the verification of a Personnel Safety System, Machine Protection System, Radiation Shielding Component, or Radiation Safety System as defined by APS Procedure #1-01304 (APS_1189715),
- The use of MTE to accept APS-purchased or APS-built hardware that could impact the ability of the APS to provide beam to the users,
- The use of MTE for mission-critical applications as defined by the author's Group Leader, or
- Calibration procedures for MTE;

THEN the procedure is reviewed and approved or disapproved by an **APS QA Representative (QAR)** or designee. The QAR or designee will ensure, as appropriate, that the procedure under review implements the Control of APS Measuring and Test Equipment (APS_1281549) procedure.

4.2.4.6 **User Policies and Procedures**

IF the procedure applies to users, including APS/Argonne-employee users and non-Argonne employee users;

THEN the procedure is reviewed and approved or disapproved by the User Administration and Support Group Leader or the Technical Operations Specialist

4.2.5 **Management Approvals**

Organizational Applicability	Final Approval
Division – procedure principally executed within a Division, may have incidental involvement of other Divisions (e.g., sign-offs, services)	Author's Division Manager (DD, DDD, or ADD)
ESH/QA APS-wide/cross-divisional/user	APS ESH/QA Coordinator
Facility Operations APS-wide/cross divisional	DALD-Operations
User Policy and Procedure	DALD-X-ray Science

4.3 Posting of approved procedure

ICMS will route the procedure to the PA for final review/edit and the PA may make minor corrections as described in the above policy.

The approved procedure will be available through ICMS and a Permanent URL is linked the latest version. The PA maintains a list of recently revised procedures in ICMS:

APS_1235756. Also, APS personnel can subscribe to a procedure in ICMS and will be automatically notified of revisions of specific procedures.

5 Closeout - Post Performance Activity

The procedure becomes effective upon release in ICMS.

If during the execution of a procedure there are errors, omissions, or opportunities for improvement identified, the worker should advise a PA of the need for correction/amendment.

6 Documents and Records

Description of Document/Record	Custodian	Storage Location and Medium	Retention Requirement
Policies and Procedures	Procedure Administrator	Electronic files in ICMS	5 years

7 Appendices

Appendix A – APS Procedures Standard Format
Appendix B – Guidelines for Describing Hazard Control Measures

Feedback and Improvement

If you are using this procedure and have comments or suggested improvements for it, please go to the APS Policies and Procedures Comment Form* to submit your input to a Procedure Administrator. If you are reviewing this procedure in workflow, your input must be entered in the comment box when you approve or reject the procedure.

Instructions for execution-time modifications to a policy/procedure can be found in the following document: Field Modification of APS Policy/Procedure (APS_1408152).

* https://www1.aps.anl.gov/Document-Central/APS-Policies-and-Procedures-Comment-Form

Appendix A - APS Procedures Standard Organization

The template for APS procedures is available as ICMS document APS_1191216. The native file can be downloaded and used to format an APS procedure.

Listed below are the contents of an APS standard procedure. Not all procedures require each of these sections. If a procedure does not need an element, do not include it.

1. **Coversheet**
   A simple descriptive title to identify the applicable system, equipment, process, or activity and one that differentiates the procedure from other procedures

2. **Revision Status**
   A clear summary of changes

3. **Table of Contents**

4. **Introduction**
   a. Purpose - goal to be achieved by performing the procedure
   b. Scope - activities covered, or not covered, by the procedure
   c. Applicability – conditions that require the procedure

5. **References – Requirements Sources**

6. **Hazards – Precautions and Limitation**
   a. Inform the user of hazardous conditions and their potential effect
   b. Delineated precautions that affect the entire procedure or occur at more than one point in the procedure

7. **Preparation – Prerequisite Actions**
   a. Planning/coordination (e.g., training, pre-job meeting, etc.)
   b. Identification of documents that will be needed at job site
   c. Special tools that will be required
   d. Field preparations (e.g., LOTO)
   e. Identify approvals and notifications that must be provided before initiating the procedure

8. **Acceptance Criteria**
   Basis for determining whether an activity has succeeded of failed

9. **Performance - Procedure Actions Steps**

10. Closeout – Post-performance Activity

Test and Restoration of systems to desired configuration

11. Documents and Records

Identify documents and records created by the execution of the procedure, who is responsible for the document/record, and how they are managed/controlled:

Description of Document/Record	Custodian	Storage Location and Medium	Retention Requirement

12. Appendices

a. Include forms, tables, figures, and check lists that are too large to be incorporated in the procedure action steps
b. Reference appendices in the text of the procedure

Appendix B - Guideline for Describing Hazard Control Measures

The following are acceptable for specifying hazard controls:

1. Include an action step to initiate the hazard control immediately preceding the action step involving the hazard. (For example: insert an action step of "don nitrile gloves" immediately before a step involving handling an item in a solvent solution.)
2. Include warnings and cautions in the procedure to attract attention to information that is essential to safe performance. Do not embed action steps in warnings or cautions. Refer to the DOE standard, section 4.10 for additional guidance in preparing warnings and cautions[1]. Warnings alert users to potential hazards to personnel. Cautions alert users to potential hazards to products or equipment.
3. Write precautions and limitations to inform users of hazardous conditions and their potential effects and include these in the Hazard Control – Precautions and Limitations section of the procedure. This section should not include user actions but may include hazards that may be present in more than one point in the procedure. Precautions (a) alert procedure users to actions and conditions that represent potential hazards to personnel or possible damage to equipment or (b) establish abnormal conditions. Limitations define boundaries that are not to be exceeded.[1] (For example the Hazard Controls section can describe personal protective equipment or other hazard controls required for the tasks or areas that the tasks are to be performed within.)
4. Include a list in the Hazard Control – Precautions and Limitations section identifying hazard controls and explicit personnel protective equipment needed for the work to be performed.

[1] DOE Standard: Writer's Guide for Technical Procedures (DOE-STD-1029-92)