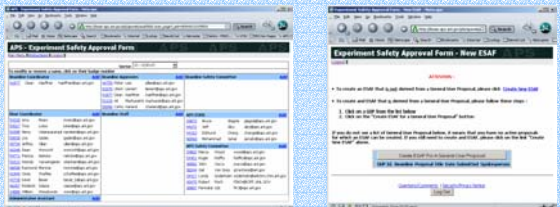


APS Experiment Safety Assessment System

B. Glagola, S. Davey, M. Wood, M. Jamal, J. Broniarczyk

Administration

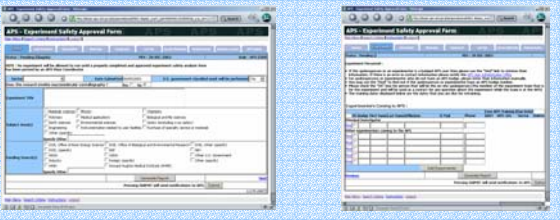


The ESAP system is accessible via the web for APS Users throughout the world. Access for the administrative roles is defined and controlled for each beamline. The Beamline Coordinator or the APS can modify the membership of the beamline administration roles.

APS Users can create an ESAP from the page shown above. If the User is creating an ESAP for a General User Proposal (GUP), a list of the active proposals that they appear on will be displayed. Selecting that proposal will allow transfer of data from the proposal to partially fill out the ESAP. Non-GUP ESAPs are completely filled out by the User.

The Experimenters page is used to collect contact information about the experiment team members that will be present at the APS. For a GUP-related ESAP the information is transferred from the GUP. Users may be added to or deleted from the list. A "Find" link is available to transfer contact information from the APS User Database automatically. The status of the User's Core APS Training is also displayed. The group must also designate an On-site Spokesperson (OS) that will be responsible for the experiment during the visit to the APS.

The General page of the ESAP collects administrative information and allows for the selection of the beamline where the experiment will be executed. This page is auto-filled for GUP-related ESAPs and may be edited. The Subject and Science information is gathered for DOE reporting.

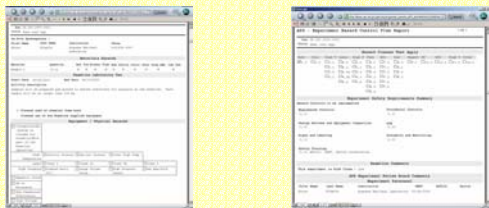


Experiment Postings



The ESAP system generates two reports for posting at the beginning of the experiment: 1) the Experiment Authorization Form (EA) and the Experiment Hazard Control Plan (EHCP). The EA contains the signatures and authorizations for the experiment to take place. The Beamline and APS approver names and dates are printed on the form. The On-Site Spokesperson and the designated Beamline person sign the form to verify that the form is correct and that all controls and procedures have been implemented. For "High-risk" experiments there is also a signature line for the APS verifier designated in the ESAP. This form is posted in the locked cabinet at the end of the beamline.

The EHCP is a summary of the ESAP showing the material and equipment hazards for the experiment. It contains the description of the experiment activity as provided by the User, and comments from both the Beamline and the APS. The applicable hazard classes are denoted and the summary of requirements are listed. At the end of all the participants are listed along with a summary of when they are due for retraining. All attachments/procedures attached to the ESAP should be printed and posted along with the EHCP. The EHCP is posted at the station where the experiment is to be performed so that the relevant safety information is available to all members of the experiment team.



Abstract

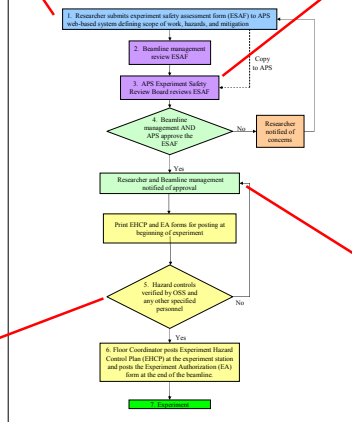
The APS has offered a web-based Experiment Safety Approval Form (ESAP) since 1997. This year, the ESAP system was upgraded to comply with the DOE requirement that the APS provide the safety plan for all experiments.

In addition, enhancements were made to the safety information and feedback provided to the user population via the ESAP. Improvements were also made to the underlying code and to the graphical user interface to the ESAP. The ESAP system continues to make use of an ORACLE database and a web-based front end. The redesign of the system was undertaken with the assistance of APS-user beamline personnel, who compiled suggested improvements and additions to the system. The ESAP system consists of four parts: 1) administrative roles and process; 2) the ESAP for collecting experiment related hazard information; 3) review and approval by both beamline personnel and the APS; and 4) two automatically generated reports (the Experiment Authorization Form and the Experiment Hazard Control Plan), which are posted at the beamline at the beginning of the experiment.

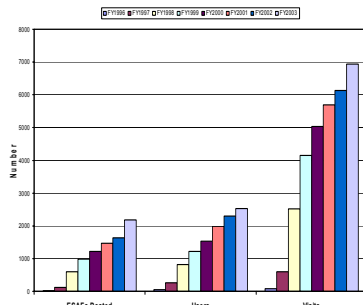
Introduction

The APS Experiment Safety Assessment System provides a uniform method of collecting information about the hazards associated with experiments and providing required mitigation of these hazards. The system is web-based and easily accessible to all APS Users and Beamline staff. The new Experiment Safety Approval Form (ESAP) allows for approval by both the Beamline and the APS of all experiment activities. The flow of Experiment Safety Approval and the major sections of the ESAP are shown in the figures.

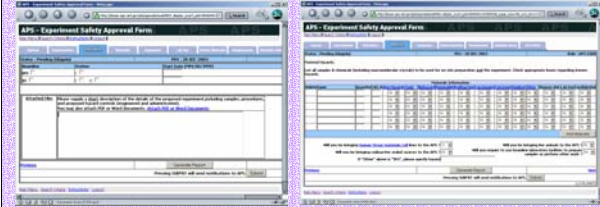
Flow of APS Experiment Safety Approval



APS Users and Experiments



Hazard and Requirements Definition

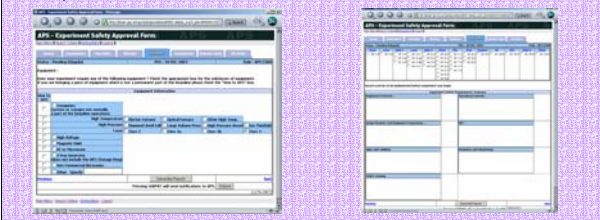


The Description page is used to select the beamline, station and starting date of the experiment. The User is asked to provide a description of their experiment including hazard description, mitigation plans and special procedures to be followed. Descriptive files may be attached to the ESAP by using the "Attach PDF or Word Documents" link. The page also displays the Beamlines and Experiment Stations that are available for the Sector chosen.

The Materials page is for designating the hazards associated with any materials/samples that will be used for the experiment (including preparation and other laboratory work). If the "Any Hazards" answer is "Y" then other hazard boxes must be "Y". Below the table additional questions are asked to trigger other safety or regulatory conditions that must be satisfied.

The Requirements page is used to provide a summary of the safety requirements for the experiment. The ESAP system collects the responses from the Materials hazards and equipment pages and matches the experiment to a set of predefined APS Experiment Hazard Classes (EHC). The selected EHCs (shown as checked boxes in the table) are used to provide a summary of minimal safety requirements that must be met for the experiment to proceed. This information is available to the User at the time the ESAP is first completed. It provides the Users an opportunity to see if there are any special safety requirements.

The Equipment page is used to identify hazards that are associated with different types of experiment equipment. If the piece of equipment has not been used at the APS previously this is designated by checking the "New to APS" box. New equipment may require safety inspections and procedures before it may be used.



Approvals and E-mails

Before an experiment may be run it must be approved by both the Beamline and the APS. There are two approval pages provided. On both pages there are boxes for Safety Committee comments that remain confidential and are not part of the final posting. This is used for Beamline Safety Committees and APS ESAP Safety Committees that include ANL personnel from outside the APS. The second comment boxes are for "final" comments that would be posted as part of the EHCP. The approver name entered on the pages is the person that is logged into the system.

On the Beamline page the sequence number is assigned to the ESAP. The Beamline approver designates the beamline person that will do verification of the required safety controls at the start of the experiment.

On the APS page an APS verifier of safety controls can be designated for "High" risk experiments.

The ESAP system was designed to allow for improved communication. A series of e-mails are generated for each ESAP as shown in the table below. These e-mails are generated by the system and sent out automatically.

E-mails Generated by the ESAP system

Action	Recipients		
	APS	Beamline	User
New ESAP	Y	Y	Y
Modified	Y	Y	
Beamline Approved	Y	Y	
APS Approved	Y	Y	
When Approved by both Beamline and APS	Y	Y	Y

