

## How to Write a CDF Procedure

This procedure outlines the form to be followed for all procedures used in the CDF experiment.

### Editorial Hand-Processed Changes Other Than Spelling Require Co-Project Manager Approval

HPC Number	Date	Section Number	Initials
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____
7.	_____	_____	_____
8.	_____	_____	_____
9.	_____	_____	_____

Approvals:

\_\_\_\_\_  
(CDF Co-Project Manager)

\_\_\_\_\_  
(Date)

**1.0 Controlled Copies of this procedure.**

Three controlled copy of this (CDF-II – 101) procedure will exist.

One will be held in the CDF Department Office Library.

The others will be on the CDF web page at  
<http://www-cdf.fnal.gov/cdfsafecdfproclist.html>  
and at ADMIN.CDF / ES&H / PROCEDURES

All other copies will be marked, " INFORMATIONAL COPY ONLY "

## **2.0 CDF Procedure Format**

Each procedure will contain:

- 1) A title page, including a short description of the procedure a space for authorizing hand processed changes and necessary approvals,
- 2) A section listing the location of all controlled copies of the procedure,
- 3) The procedure itself, including any prerequisites, the list of numbered steps to be followed, and any appropriate Warnings, Cautions, or Notes,
- 4) A section containing checklists to be used in execution of the procedure,
- 5) A section on deviations from the procedure,
- 6) A section on required training (if any), including an authorized list of people to serve as instructors for the procedure,
- 7) A section on training materials,
- 8) A section referencing the list of people who have been officially trained,
- 9) A section listing references and supporting documentation.

Details for each section are outlined in sections 2.1 - 2.9 of this procedure.

The entire document will be written in Microsoft Word using a font of at least 12 point in size. Each section of the procedure will begin on a new page. A floppy disk containing the Word document will be created and deposited in the CDF Department Office Library.

Each page of the document must contain the number and name of the procedure in the top left corner of every page. Contact the CDF Department Office for sequential procedure numbers. Each page of the document must contain the procedure date/time in the top right hand corner of every page. This date/time serves as the version number of the document.

Each page must contain a footer, which shows the number of the page in the lower right hand corner of each page. The page numbers should be in the format, "page x of N".

Copies of this standard procedure outline are available in the CDF Department Office, on the CDF Web Page and on ADMIN.CDF / ES&H / PROCEDURES

## 2.1. The Title Page

The title page is page 1 of each document, and contains three sections:

(a) The procedure Title in bold underlined 18-point font.

If the procedure is a Safety procedure, the title should include the phrase " (this is a Safety Procedure) " immediately under the title.

(See the CDF Department Office for an initial determination of which procedures are "Safety" procedures).

(b) A short description of the procedure

(c) An approval section:

- 1) The CDF Co-Project Manager must approve all procedures.
- 2) All procedures must provide provisions for hand processed changes. This allows changes to be made to an existing procedure and also allows the altered procedure to remain in effect. The Operations Manager must be informed of changes so the procedure can be reviewed and formally reissued.
- 3) Procedures written for personnel from multiple Particle Physics Division Departments must be approved by each Co-Project Manager and by the Particle Physics Division Head.
- 4) Safety Procedures must be approved by the Particle Physics Division Head and by the Beams Division Head if relevant.
- 5) The procedure can be created and submitted for approval using the template at <http://www-cdf.fnal.gov/cdfsafecdfproclist.html>.

The CDF Department Office will coordinate the approval process.

## 2.2. The Controlled Copies Section.

This section must list the location of every official copy of the procedure.

In general:

- (a) One official copy of each procedure must reside in the CDF Department Office, on the CDF Web Page and on ADMIN.CDF / ES&H / PROCEDURES
- (b) Additional official copies should reside with other Particle Physics Division Departments if their personnel are required in the procedure,
- (c) One official copy must reside in the Particle Physics Division Office if the Particle Physics Division Head is required to approve the procedure,
- (d) One official copy must reside in the Beams Division Office if the Beams Division Head is required to approve the procedure,

(e) At **least one official copy should reside at the point of use.**

That is with the group responsible for carrying out the procedure.

This section must contain the statement that all other copies will be marked, " INFORMATIONAL COPY ONLY ".

### 2.3 The Procedure Section.

This section should contain a complete description of the procedure in numbered steps. This is the actual section people will use and it should be clear, concise, and self-contained.

The following list is an example:

- (a) Step 1 is always a list of prerequisites.  
Prerequisites can be special people; special training required, special equipment, checklist forms, . . .
- (b) Step 2: Obtain authorization from...
- (c) Step 3: Post...
- (d) Step 4: Check this....
- (e) Step 5: Do this...

**WARNING:** a warning message alerts readers to situations, which may cause injury. It must immediately precede the procedure step to which it applies.

Warnings can appear before Step 1 of the procedure if appropriate.

The same Warning should not be repeated countless times throughout the procedure.

- (f) Step 6: Perform the following:

**CAUTION:** a caution message alerts readers to situation, which may cause damage to equipment or systems. It must immediately precede the procedure step to which it applies.

- (g) Step 7: Do this...

**NOTE:** a note message alerts readers to possible problems and to prior knowledge which they are expected to have. It must immediately precede the procedure step to which it applies.

- (h) Step 8: Complete the following ...

## 2.4 Checklist Section

This section should contain any checklists used with the procedure. The section should indicate where people could find blank checklists.

Special checklists called " Procedure Execution Forms " are normally required in all Safety procedures to provide a written record that the procedure has been followed. If such a form is not required, an explanation must appear in the checklist section.

Safety Procedure Execution Forms must contain the following:

- a) A clearly labeled blank line where the date can be recorded.
- b) A clearly labeled blank line where the person(s) executing the procedure must sign (and also legibly print their name and ID#).
- c) A statement indicating where the completed form will be posted.

There are only four appropriate posting places:

- 1) The CDF Logbook,
- 2) CDF Electronic Logbook at <http://www-b0.fnal.gov:8000/e-log/>
- 3) The CDF Cryo logbook in the CDF Cryo control room,
- 4) The CDF Gas system logbook in the CDF Gas Tech area.

All Procedure Execution Forms should contain space to specifically note any deviations from the procedure (see section 2.5).

## 2.5 Section on Deviations from the Procedure

This is the trickiest section to write. The idea is to give people some guidance on how to proceed if some step of the written procedure cannot be executed or should not be executed.

Clearly if you could anticipate all possible deviations, you could just put each case in the body of the procedure as an " If this . . . then do this . . . " step. However,

we must recognize that in a Particle Physics environment like CDF, sometimes we need to do things differently than originally planned.

It may also be physically impossible to fully execute a procedure because some piece of equipment fails; nevertheless, it may be perfectly legitimate to carry on with the Particle Physics program. Often this may not even result in any delay to the program because the piece of failed equipment is not required for the next immediate phase of the experiment.

So we should not necessarily just come to a full stop and require a new procedure complete with all levels of sign-offs. Instead we should **think** about the basic purpose of the procedure, **confer** with people next in the chain of command, **think** if there are any Environment, Health, and Safety impacts which could stem from not executing a step of the procedure, and possibly continue with a **DEVIATION** in the procedure. **Such DEVIATIONS must always be recorded in an appropriate place** (e.g. logbooks, on checksheets, on Procedure Execution Forms).

Another example: The Beams Division wishes to run Tevatron beam with the CDF Solenoid off to check the influence on the Tevatron beam orbit. They may request leaving the Solenoid "locked out" to enforce this.

Another example: The CDF experiment requests a powered checkout of the Solenoid system in a circumstance with people present in the Collision Hall. The Search and Secure Procedure is inappropriate, but the safety system requires the full Search and Secure Procedure before the Solenoid can be powered. This case requires a special sign-off within the Beams Division countersigned by the Particle Physics Division Head so that the safety system can be "jumpered out". Depending on the circumstances, the Beams Division Safety Officer may require new and additional safeguards, which cannot be written down as a CDF procedure.

Some guidance possibilities:

a) Outline circumstances under which people could complete the rest of the procedure and use a "Lock Out / Tag Out " procedure to enforce compliance with the procedure. That is, if we can't check that a piece of equipment is in the proper state, we can lock it out and still carry on.

b) Give people a call list so they know whom to contact for repairs.

c) Give people a call list so they know whom to contact for authorization to skip a part of the procedure (e.g. the CDF Co-Project Manager if that was the only signature required authorizing the procedure initially).

## 2.6 Section on Required Training and Authorized Training Personnel.

This section should outline all training or qualifications required by personnel executing the procedure. An example would be needing controlled access training to enter the collision hall.

This section should also list those individuals authorized to do the training. Typically, senior personnel with previous experience can be considered qualified. Note that this list appears in the procedure and is authorized by the signatures on the title page. Make sure enough qualified people are listed to avoid getting the authorizations over and over again. You may want to include an explanation of why each person is a qualified instructor.

Eventually this information will reside on the CDF web page, for now follow the form indicated below and return it to the Assistant Department Head:

### LIST OF AUTHORIZED INSTRUCTORS FOR THIS PROCEDURE:

Name \_\_\_\_\_ I.D.#  
Last, First \_\_\_\_\_

## 2.7 Training Materials Section.

This section should contain any materials used in training people to execute the procedure. The section should begin with a list of materials needed.

Examples are copies of training material handouts, maps, videos, and tests to check the training, written explanations with attached sign-off sheets, . . .

## 2.8 Section Listing Trained People for this procedure.

This section should reference the place(s) where a list of those individuals appropriately trained can be found.

Eventually the list may reside in a lab-wide database. Until that time, such lists should be maintained with each copy of the procedure in a special section at the end of the procedure. The list is not considered part of the procedure and does not need to be

authorized by those signing the title page. The list is considered part of the controlled document and all controlled copies of the document must have the up-to-date list.

However, if training by an authorized instructor is required, that instructor must sign a training form and the form must reside in the CDF Department Office Library copy of the procedure. Such a training form must include the name and ID# of the person trained, the date of training, the date the training expires, the signature of the person who was trained, and the signature of the instructor. Then return it to the Assistant Department Head

## 2.9 Section on References and Supporting Documentation.

List books, binders, manuals, or any other information necessary to understand this procedure.

### **3.0 Checklist**

Does not apply to this procedure.

**4.0 Deviations from the Procedure**

An obvious acceptable deviation from this procedure is to avoid the requirement that the procedure be written with Microsoft Word. For procedures being retrofit to this format, this may be a major waste of effort -- previously written sections could be left in an old format. In case of time pressure, even a handwritten procedure can be acceptable if it is legible. Just confer with the Department Office.

**5.0 Required Training and Authorized Training Personnel.**

There is no required training for this (CDF-II 101) procedure.

## **6.0 Training Materials.**

There are no special training materials for this procedure.

Section 2.0 is meant to be self - sufficient.

**7.0 List of Trained People for this procedure.**

Does not apply in this procedure.

**8.0 References and Supporting Documentation.**

See CDF-2 - "Procedure for Search and Secure of the Collision Hall" as an example of a CDF Procedure.

A Template for this procedure is available on the CFD web page at <http://www-cdf.fnal.gov/cdfsafecdfproclist.html> titled CDF-II-101 f "Procedure Form - Template"