

TOF Note #XXXX

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<u>Project</u> TOF Detector Project		
<u>Subsystem</u> TOF Project Office		
<u>Title</u> Change Control Procedure		
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 Required Signatures:		
 _____ Project Director, G. Eppley		
 _____ Project Engineer , R. L. Brown		

TOF Detector Project TOF Project Office Change Control Procedure

1. Introduction:

This document describes the TOF Change Control Procedure for document control within the scope of the TOF Project, its Project Management Office and TOF Subsystems. Over the term of the TOF construction project, it is expected that the design or definition of components will evolve. When components of a system of the complexity of the TOF Detector change without a system of checks and balances, confusion may occur; this would affect the technical, cost or schedule outcome of the TOF construction project. The following procedure is meant as a simple means of controlling this natural evolution that will reduce or eliminate change as a source of problems.

2. Scope of Documents:

Items that fall under this Change Control Procedure include the following:

- TOF Engineering Drawings and Schematics with revision "A" or higher.
- Controlled TOF Notes with revision "A" or higher.
- Statements of Work.
- Specifications.
- Memorandum of Understanding.
- Requirements Documents.
- Lists of Deliverables.
- WBS Dictionary.
- Project Schedule.
- Interface/Integration Specifications.
- Integration Envelopes.
- Documented Work Procedures.
- Rigging Procedures.
- Operations Procedures.
- TOF Detector Baseline Configuration.

3. Graded Approach:

TOF change control will follow a graded approach with three (3) levels of project impact. All three levels of change are reportable to the TOF Project Management Office for tracking, but it is only Levels 1 & 2 which requires project office approval. Changes which only affect a single subsystem; do not impact the subsystems interfaces, overall performance, cost, or schedule goals, will be managed and controlled by the subsystem managers (local institutions) and are considered Level 3 changes. Elements of Level 1 and 2 will possess one or more of the following attributes:

Physical interface: the envelope within which the element will be contained.

Utilities interface: the location, size, and rate of “flow” of utilities supplied.

Signal interface: the location, number and size of input/output signal cabling.

Structural interface: the location, number, shape, size, hole pattern, etc., of the element component from which the subsystem is supported or aligned.

Parameters, function, and requirements which are used to define the technical scope and specification of the element component.

Significant cost or the possibility of affecting the subsystem delivery schedule.

The scope of potential changes varies from the simplest, which may minimally affect things internal to the subsystem with no influence on things external; to the most complex, which may affect the total cost or schedule of the TOF Project, or impact the scope of the physics done with the TOF detector. Table 1 defines the three categories of changes and the method of review and approval level required for each.

4.0 TOF Change Control Board:

TOF Change Control Board has the responsibility to review and either approve or reject all Level 1 changes to TOF Controlled Documents. The board is composed of:

- Chairman: TOF Project Director
- Members: TOF Project Spokespersons
Project Managers
Project Engineer
Subsystem Managers
- Advisors: STAR/TOF Oversight Manager
STAR ESH&Q Coordinator
Others deemed appropriate

5.0 Requesting a Change:

A TOF Engineering Change Request/Notice (ECR/N) is entered using the online forms on the TOF Web site. This area is User/Password protected and so you must contact the TOF Project Management Office to gain entry. Each ECR entry will be logged into a data base as a status “Pending” along with a detailed email confirmation to the requestor and Project Office. After appropriate level of review, the requestor will be notified with a status of either “Approved” or “Rejected”. If an ECR is rejected the reason for the

rejection will be stated. To review an ECR/N you can access the database on the TOF Web site. Level 3 requests require no formal review by the project office; however they must all be entered into the database as an official record and for review by the project office to insure the request meets the level 3 criteria. It should take only a few days to change a Level 3 ECR to “Approved” status. The resolution time for Level 1 & 2 ECR’s is dependent upon the complexity and ramifications of the change. The TOF CCB and project office will work to keep this time to a minimum.

The online ECR/N request form will require the following fields of information completed:

- 1. Change Control Level.**
Use Table 1 to determine appropriate tentative change level.
- 2. ECR/N No.**
Completed by the TOF Project Office (refer to section 6.0 below).
- 3. TOF Document No.**
This is the number of the KOPIO document that is to be changed.
- 4. Revision From: To:**
Give the current and future revision numbers or letters.
- 5. Document Title.**
Give the title of the document to be changed.
- 6. Next Assembly (used on) No.**
Used for engineering drawings in which the drawing that is to be changed is referenced on an assembly drawing.
- 7. Description of Change.**
Describe the document change in appropriate detail giving location of change on a drawing.
- 8. Reason for Change.**
Describe the reason for the change in appropriate detail.
- 9. Impact on other Subsystems.**
Describe the impact the change will have on other subsystems.
- 10. Impact on Cost or Schedule.**
Describe the impact the change will have on cost or schedule. This section must be filled out in detail if the change meets the Level I criteria in Table 1 of this document.
- 11. Status.**
Completed by the TOF Project Office and indicates the current status of the ECR/N.
- 12. Reason for Rejection.**
Completed by the TOF Project Office and will describe in detail the reason that the change request has been rejected.
- 13. Review /Approval.**
This area will only appear on the official hardcopy sent to the requestor from the TOF Project Office. It will have the appropriate approval signatures from the project office. A hardcopy of the ECR/N will be kept on file with the project office.

6.0 Engineering Change Request/Notice Numbers:

TOF ECR/N numbers are issued by the TOF Project Management office and used in tracking document changes on an ECR/N electronic database for project/collaboration access. The number will consist of eight (8) characters with the first 7 characters using as much of the unique number of the document being revised and the 8th character the next succeeding revision letter. For example an engineering drawing with a number 1-3-5-123-5 having an electronic file name 1351235A would be given and ECR/N number 1351235B for the next succeeding revision letter. An example of a Controlled TOF Note with a number TOF1234A would have an ECR/N number TOF1234B for the next succeeding revision letter.

Table 1: Change approval levels

Level	Cost, Schedule, and Technical Impact	Review/Approval
1	Total project cost or cumulative allocation of contingency > \$500k; WBS level 1 milestone delay >3-months; Technical deviation that significantly impacts other subsystems or baseline performance parameters.	DOE Manager, STAR Oversight Manager, and TOF CCB
2	WBS level 2 cost or cumulative allocation of contingency > \$250k; WBS level 2 milestone delay >3-months; Technical deviation with minor impact on other subsystems and doesn't affect baseline performance parameters.	STAR Oversight Manager, and TOF CCB.
3	WBS level 3 cost or cumulative allocation of contingency > \$50k; WBS level 3 milestone delay >3-months; Technical deviation with no impact on other subsystems and doesn't affect baseline performance parameters.	TOF Project Office (for tracking)