DESIGN PROCEDURE

I. General:

This document describes the steps involved with the design of a new instrument in the Electronics Facility. The purpose of this procedure is to improve communications between the requestor and the Electronics Facility and to align the expectations of both parties toward a common plan and to provide acceptable project results.

II. Initiation:

Work Order. A requestor initiates a new design project by completing a work order on a work order computer. All required items must be completed before the system will allow a work order to be printed. The requestor is advised to use the space provided on the work order to indicate the maximum number of hours to be spent on the project. This allows the requestor to maintain a reasonable amount of cost control and to communicate the expectations regarding cost. This is particularly important if a formal estimate has not been requested. The work order is to be printed and delivered to the Electronics Facility manager.

Design Specifications. The manager will have the requestor complete the form entitled "Design Specifications" and the manager will attach it to the work order. The project PI and the Electronics Facility manager will be required to sign the Design Specifications sheet before work can commence on the project. The Electronics Facility manager will ensure that sufficient information is included on the Design Specifications sheet to permit the design to be implemented. This may require that Electronics Facility personnel visit the laboratory where the instrument will be used and make measurements of related signals. The manager may require that the requestor provide specific information or plots of the signals to be attached to the Design Specifications sheet. Information on the Design Specification sheet should be complete enough to allow a suitable instrument to be designed from the data given. If certain specifications are unknown but must be investigated as part of the design and development work, they should be noted as such. Any additional specifications or changes to the Design Specification sheet may incur additional time and costs and therefore must be approved by the Electronics Facility manager and the PI before they can be implemented. The Design Specifications sheet allows the requestor to specify the instrument characteristics such as inputs, outputs, controls, interfaces, size, construction, and power supply. It also allows the requestor to specify that a formal estimate of time and cost is needed. This estimate can consist of a rough estimate (the Facility will generate an estimate based on previous similar projects), a fixed-fee estimate (the Facility guarantees an instrument design for a specific price), or a fixed-fee plus cost estimate (the Facility guarantees certain milestones for the fixed fee, but the instrument cost will ultimately be determined by the hours required beyond meeting the milestones). When requesting an estimate, the PI agrees to pay for the time spent by the Facility in generating an estimate. The rough estimate requires the least amount of time to generate. The requestor can also specify milestones and timing for complex projects. In addition, the requestor can specify and schedule interim reports.

DESIGN SPECIFICATIONS

GENERAL DESCRIPTION OF APPARATUS:

INPUT LIST:

Input #	Parameter	Source	Description	Connector Type

OUTPUT LIST:

Output #	Parameter	Destination	Description	Connector Type

FRONT PANEL CONTROLS:

Name	Function

CHASSIS REQUIREMENTS:

Dimensions: _____ Front Panel Labeling: _____
Shielding: _____ PCB or Hand Wired: _____
Finish: _____
Special Requirements: _____

POWER SOURCE REQUIREMENTS:

Type (External, Internal, Battery, etc.):

_____
_____
_____

MISCELLANEOUS COMMENTS:

_____
_____
_____
_____

ESTIMATE REQUIRED? □ YES □ NO

Type of Estimate: □ Rough □ Fixed Fee □ Fixed Fee Plus Cost

Estimate Attached □

Note: Time required to produce estimates will be billed at the design rate.

MILESTONES ATTACHED? □ YES □ NO

INTERIM REPORTS REQUIRED? □ YES Schedule: _____
□ NO

ESTIMATED COMPLETION DATE: _____

_____ _____
Approved – Electronics Facility Manager Date

_____ _____
Approved – Principle Investigator Date