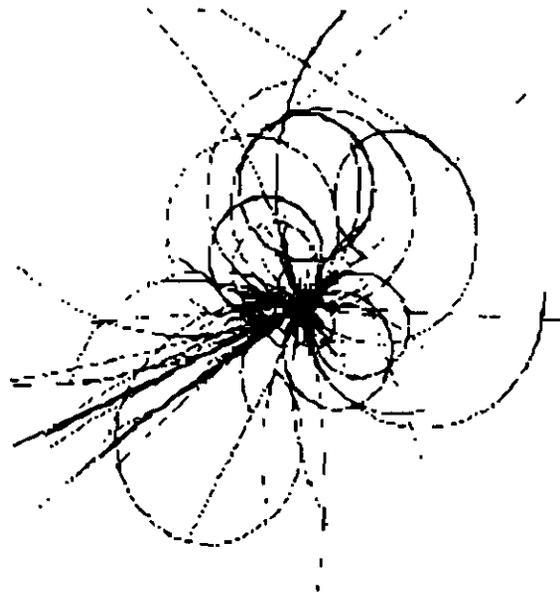


THE SUPERCONDUCTING SUPER COLLIDER LABORATORY



SSC - N - 358

NOTES

SUPERCONDUCTING
SUPER
COLLIDER

MATERIAL SPECIFICATION

NO. 

TITLE: SSC TECHNOLOGY TRANSFER PLAN
PHASE I

ISSUE DATE Draft 6/22/87

REV. NO. _____

REV. DATE _____

- PREPARED BY _____
V. N. Karpenko - SSC Division Head, Magnet Division
- APPROVED BY _____
M. Tigner - SSC Director

REVISION RECORD

REVISION NO.	DATE	PAGE	SUBJECT	APPROVAL

1. Purpose

This document describes the SSC-CDG proposed plan for implementing Phase I of the SSC Technology Transfer program. Program objectives, participant selection methods, technology transfer methods, schedules, SSC-CDG/national laboratory coordination responsibilities, costs and reporting requirements are included herein.

- 1.1 Technology Transfer Objectives - Significant superconducting magnet analysis, design, material, processing, fabrication, and testing experience has been acquired by the SSC Associated National Laboratories, i.e., Brookhaven, Fermi, Lawrence Berkeley, and URA-CDG in the research and development of SSC magnets.

In order to aid in the development of an industrial technological capacity that could reliably and efficiently produce the required number of SSC production magnets, the SSC-CDG will coordinate an industry magnet technology transfer program in accordance with the following.

2. Transfer Program Elements

- 2.1 Program Announcement - A description of the Technology Transfer program will be announced in the Commerce Business Daily (Appendix A) soliciting interested industry parties to submit written expressions of interest, with required qualifications, within 30 days of the announcement date.
- 2.2 Participant Selection - A CDG Magnet Division chaired coordinating committee of associated laboratory representatives shall evaluate the announcement responses and select qualified participants in accordance with the applicable provisions of SSC-MAG-A-05 (SEB Procedure).
- 2.3 Transfer Documentation - Selected participants shall be provided the following documentation describing the Technology Transfer program.

Design Description (update of Conceptual Design)

Conceptual Design Report (SSC-SR-2020 and attachments)
System Requirements (SSC-MAG-D-101)
Drawing Package
Process Specs
Material Specs
Analysis Results (as appropriate)
Cost Estimates
Schedules
Quality Assurance Plan (SSC-MAG-Q-600)
Test Requirements and Procedures
Parameter List (SSC-SR-2020A)
Industrialization Plan

Technology Transfer Plan (SSC-MAG-A-11)
To the Heart of the Matter
Supercollider R&D (First Two Years)
Magnet R&D Program
Scope of Work - Summary (SSC-MAG-A-10)

2.4 SSC-CDG-Coordination Focal Points - The SSC-CDG Magnet Division shall be responsible for coordinating all Technology Transfer program activities. The CDG Magnet Division shall coordinate associated laboratory activities with the respective laboratory designated technology transfer program representative.

2.5 Participant Representation

- Program Briefing (SSC-CDG/LBL) - No more than five (5) representatives (at any one time) from each selected industry participant may attend the SSC transfer briefing conference to be held at SSC-CDG/LBL. (See Figure 1 for schedule dates.)
- Laboratory Orientations - No more than three (3) representatives (at any one time) from each selected industry participant may attend the laboratory orientation sessions. (See Figure 1 for schedule dates.)

2.6 Transfer Program Elements (Ref. Fig. 1 Schedule)

2.6.1 Program Briefing - The Technology Transfer program will be initiated at a 2 day program briefing held at LBL by the SSC Central Design Group and participating laboratories for all industry participants. The following is a general outline of the briefing agenda.

- General
 - SSC Purpose
 - SSC Technical Systems
 - SSC Organization
- Magnet System
 - System Requirements Documentation
 - Relationships of Tolerances to Field Uniformity
 - Analysis Methods and Results
 - R/D Status
 - CDG
 - BNL
 - FNAL
 - LBL
- Project Status Technical Costs and Schedules
- Industrialization Program
 - Technology Transfer
 - Tooling and Preproduction
 - Production
- Technology Transfer
 - Schedule/Agendas for Each Laboratory

2.6.2 LBL Orientation - Industry orientation at LBL is scheduled for eight days at two laboratory locations. Magnet operations to be reviewed include as a minimum:

- Magnet Design, Tooling, Assembly and Test
 - Magnet Design
 - Coil Material Property Data
 - Wire, Cable, and Insulation Receiving Inspection, Test, Records
 - Wire/Cable/Magnet Quality Data System
 - Coil
 - Coil Collaring
 - Yoke
 - Strain Gauging
 - Warm and Cryogenic Testing
 - Test Results

2.6.3 BNL Orientation - Industry orientation at BNL is scheduled for four and one half (4.5) weeks at three laboratory locations. Magnet operation to be reviewed are as follows:

- Magnet Design, Tooling, Assembly and Test
 - Magnet Design
 - Coil
 - Coil Collaring
 - Yoke
 - Beam Tube
 - Trim Coil
 - Strain Gauging
 - Shell
 - Interconnectors
 - Warm and Cryogenic Testing
 - Test Results
 - Shipping

2.6.4 FNAL Orientation - Industry orientation at FNAL is scheduled for three weeks at two laboratory locations. Magnet operations to be reviewed are listed in 2.6.2 above in addition to the following:

- Cryostat Design, Tooling, Assembly, Test
 - Heat Loss Budget
 - Shields and Piping
 - Supports
 - Vacuum Vessel
 - Interconnectors
 - Assembly
 - Warm and Cryogenic Testing
 - Test Results
- Tevatron Coil Winding and Collaring

2.6.5 Industry Option - A four week period has been scheduled to allow continued industry orientation at one or more of the three laboratories and/or at CDG at the participant's option.

2.7 Laboratory Support Arrangements

2.7.1 Industry Representative Responsibilities - Each laboratory shall designate a transfer program coordinator to manage industry orientation arrangements including:

- Documentation Collection, Organization and Dissemination
- Prepare Agenda and Schedules
- CDG Coordination
- Logistics

2.7.2 Orientation Guides - Each group of industry representatives shall be accompanied by a laboratory coordinator while touring laboratory magnet facilities.

July

SSC-MAG-A-11
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General Schedule - Phase I Technology Transfer

Industry Reps - 3 per Co.
Anticipated - 7 Co's - 21 people
Worst Case - 10 Co's - 30 people

- 7/15 ▼ CBD Announcement
- 7/24 ▼ Tech Data Release
- 8/14 ▼ Response Close Date
- 9/30 ▼ Participant Selection
 - ▼ SSC Magnet Data Package Release
- 10/5 & 6 ▼ SSC-CDG Briefing Conference
- 10/7-10/16 ▼ LBL - 2 Groups/2 Stations
- 10/21-11/20 ▼ BNL - 3 Groups/3 Stations
- 12/1-12/18 ▼ FNAL - 2 Groups/2 Stations
 - 12/18 ▼ Determination of Optional Review/Coordination
- 1988 - 1/4-1/29 ▼ Industry Option

Figure 1.

June 22, 1987

MEMO

TO: DISTRIBUTION

FROM: V. KARPENKO

SUBJECT: REVIEW OF SSC TECHNOLOGY TRANSFER PLAN

The attached draft SSC Technology Transfer Plan is routed for your review and comment. The dates shown in the Figure 1 Schedule are provided for planning purposes only and will change to adjust to program events.

Please return your comments.

VK:jm

Enc.

Distribution:

SSC:

BNL:

FNAL:

LBL: