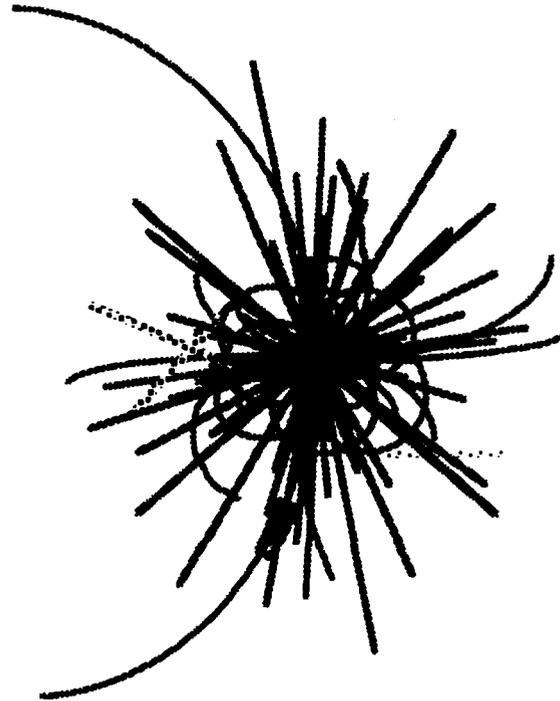


SSCL #357

**SUPERCONDUCTING SUPER COLLIDER LABORATORY**



**SSC PROJECT  
MONTHLY PROGRESS REPORT  
AUGUST 1991**

**AUGUST  
DOE MONTHLY REVIEW AGENDA  
SEPTEMBER 27, 1991**

1:30 - 1:40	Opening Remarks	Joe Cipriano/Ed Siskin
1:40 - 1:50	Project Overview	Paul Reardon
1:50 - 2:00	Administration Division	Bob Van Ness
2:00 - 2:30	Accelerator Design & Operations Division	Don Edwards
2:30 - 2:50	Accelerator Systems Division	Ted Kozman
2:50 - 3:10	Magnet Systems Division	Tom Bush
3:10 - 3:30	Conventional Construction Division	Jon Ives
3:30 - 3:50	Physics Research Division	Fred Gilman
3:50 - 4:00	Discussion	
4:00 - 4:10	Closing	Joe Cipriano/Ed Siskin

## **INTRODUCTION**

The August 1991 Monthly Progress Report consolidates divisional status reports by machine, as appropriate. Changes in conditions (red, yellow, green) from the previous month's report are marked with an asterisk. This report is intended to summarize Divisional status; additional information is available through the responsible organizations. Backup documentation and signatures are on file with the Project Cost, Schedule, and Reporting Group.

The Monthly Progress Reports are distributed electronically. All authorized SSCL personnel can access distribution via a locked folder on the PMO server. All DOE recipients will receive a copy via QuickMail. Hard copies will be provided to other Laboratory and University personnel who are PC based, or do not have computers for E-mail. Retrieving, printing, and security of the Monthly Progress Report will become the responsibility of the authorized recipients.

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# **PROJECT MANAGER'S OVERVIEW**

PROJECT MANAGER'S STATUS REPORT											
DESIGN <input checked="" type="checkbox"/>	PRODUCTION <input checked="" type="checkbox"/>	RESEARCH & DEVELOPMENT <input checked="" type="checkbox"/>	PART I								
CONSTRUCTION <input checked="" type="checkbox"/>											
<b>1. IDENTIFIERS:</b>											
1a. PROJECT TITLE/NUMBER DE-AC02-89ER40486 SUPERCONDUCTING SUPER COLLIDER LABORATORY		1b. REPORTING PERIOD August 1991									
1c. MANAGING DIVISION  Project Manager's Overview		1f. PERFORMING ORGANIZATION(S)  Accelerator Design & Operations Division Accelerator Systems Division Magnet Systems Division Conventional Construction Division Physics Research Division Project Management Division Laboratory Technical Services Division Administration Division Directorate									
1d. OFFICE CONTACT  Robert Morse (ext. 4013)											
1e. PROJECT MANAGER  Paul Reardon (ext. 3087)											
<b>2. DIVISION MANAGER'S PERSONAL ASSESSMENT:</b>											
2a. Summary Status											
<p>Green</p> <div style="border: 1px solid black; width: 30px; height: 30px; text-align: center; margin: 5px auto;">G</div>	<p>Yellow</p> <div style="border: 1px solid black; width: 30px; height: 30px; background-color: yellow; text-align: center; margin: 5px auto;">Y</div>	<p>Red</p> <div style="border: 1px solid black; width: 30px; height: 30px; background: repeating-linear-gradient(45deg, transparent, transparent 2px, red 2px, red 4px); text-align: center; margin: 5px auto;">R</div>	<table border="1" style="margin: 0 auto;"> <tr><td style="text-align: center;">COST</td></tr> <tr><td style="text-align: center;">SCHEDULE</td></tr> <tr><td style="text-align: center;">TECHNICAL</td></tr> <tr><td style="text-align: center;">OVERALL PROJECT</td></tr> </table>	COST	SCHEDULE	TECHNICAL	OVERALL PROJECT				
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SCHEDULE											
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OVERALL PROJECT											
		<p>LAST PERIOD</p> <table border="1" style="margin: 0 auto;"> <tr><td style="text-align: center;">G</td></tr> <tr><td style="text-align: center;">Y</td></tr> <tr><td style="text-align: center;">G</td></tr> <tr><td style="text-align: center;">G</td></tr> </table>	G	Y	G	G	<p>THIS PERIOD</p> <table border="1" style="margin: 0 auto;"> <tr><td style="text-align: center;">G</td></tr> <tr><td style="text-align: center;">Y *</td></tr> <tr><td style="text-align: center;">G</td></tr> <tr><td style="text-align: center;">G</td></tr> </table>	G	Y *	G	G
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* Pending IPS approval.											

**PROJECT STATUS REPORT  
PART I**

**PROJECT MANAGER'S OVERVIEW**

**2b. PROJECT MANAGER'S NARRATIVE HIGHLIGHTS**

(See item 5 for details on problems and variances)

**WBS**

1.1.2.1.2	Ion Source	Commissioned Emittance Measuring Unit (Linac).
2.1	Linac Facility	Completed Title I (Preliminary) design.
2.1.6	String Enclosure (ASST)	Began installation of roofing, siding, insulation, and duct work.
2.3	Infrastructure	TNRLC obtained possession of Parcel 156 (last remaining).
4.2.1	Accelerator R&D	Awarded collider corrector magnet phase I contracts.
4.2.1	Technical Specifications	Issued two (2) specifications.
4.2.1	Low Energy Booster (LEB)	Began Russian (INP) technical collaboration.
4.2.1	Accelerator Systems String Test	Completed vendor Critical Design Review and testing of the first article magnet power supplies.

PROJECT STATUS REPORT PART I			PROJECT MANAGER'S OVERVIEW
5. SIGNIFICANT PROBLEMS/VARIANCE ANALYSIS			
5a. PROBLEMS, IMPACT ON PROJECT, CORRECTIVE ACTION			RESPONSIBLE GROUPS
PROBLEM IDENTIFICATION	IMPACT	CORRECTIVE ACTION	
2.2.2.1.1 IR4 Underground Hall and Shaft Structure - Rescoping of mechanical and electrical systems and underground design requirements.	Significant increases in scope from baseline will have cost and schedule impact.	Composite CCB package in process to address scope changes for Interaction Regions (IR1, IR4, IR5, IR8).	CCD, PB/MK, ADOD
3.1.2, 3.1.3 Cost & Scheduling - Development of Integrated schedules and development of new Work Breakdown Structure (WBS).	Mid-July 1991 Integrated Project Schedule (IPS) completion not achieved. Potential delay in implementation of WBS.	Workshops to develop IPS were held in August. Expect finalization and issuance in September. WBS in final review.	PMO
4.2.1 ASST - Building Construction.	Current schedule projects 2 week to 2 month delays in the Beneficial Occupancy Date (BOD) of ASST Buildings.	Working on partial BOD. Contractor working to recover time lost due to rain and conduit problems.	CCD, ADOD, PB/MK
4.2.1.6 Collider - Relocation of utility shaft resulted in increased system complexity.	Increased peak voltage as a result of power feed locations.	Proposed reduced spacing of niches and increased number of voltage dumps will improve system reliability. CCB package will be submitted.	ADOD
4.2.1 Development/Approval of Technical Specifications.	Six (6) to fifteen (15) week slips expected in issuance of remaining specifications.	Continued attention on expediting specifications. Five (of 22 total) have been issued.	ADOD
5b. ITEMS REQUIRING PMO/DIRECTORATE/DOE ACTION			
N/A	N/A	N/A	N/A

<b>PROJECT STATUS REPORT PART II</b>		<b>PROJECT MANAGER'S OVERVIEW</b>	
<b>8. MILESTONE LOG</b>			
<b>SIGNIFICANT MILESTONES ACCOMPLISHED SINCE LAST REPORT</b>		<b>BASELINE DATE</b>	<b>ACTUAL DATE</b>
<b>WBS</b>			
<b>SIGNIFICANT MILESTONES OPEN</b>		<b>BASELINE DATE</b>	<b>FORECAST DATE</b>
2.1.2	Start Linac Facility Construction	August 1991	February 1992*
2.4.22	Magnet Development Lab Beneficial Occupancy	April 1991	September 1991
<b>KEY MILESTONES UPCOMING - NEXT THREE MONTHS</b>		<b>BASELINE DATE</b>	<b>FORECAST DATE</b>
2.1.6.25	ASST Beneficial Occupancy	September 1991	October 1991
2.1.6.2	Start Basic Tunnel Construction	October 1991	January 92**
2.4.2	Start Magnet Test Lab Construction	September 1991	September 1991

\* No technical system impact, Beneficial Occupancy Date expected to be met.

\*\* Collider construction sequencing rescheduled, pending IPS approval.

**PROJECT MANAGEMENT DIVISION  
Change Control Board (CCB) Action Items**

CCB		<u>Impact</u>		CCB		DOE
Date	Description	*Dollars	Sched	Action	Comments	Action
8/21/91	ECR E20-000100 Rev A Linear Ramp Mode - LEB			Approved		

## BASELINE SCHEDULE

WBS	DESCRIPTION	BASELINE (DEC 90)	PROJECTED* (A indicates actual date)	EXTENDED DESCRIPTION
3.0	Baseline Validation Complete	JUL90	1 JUL90 A	Completion of documents and briefings on Baseline Cost Estimate & Schedule and Supplemental Concept Design Report.
2.5.1	A-E/CM Letter Contract & NTP	AUG90	17 AUG90 A	DOE Approval and release of a letter contract, pending a full contract, for PB/MK to begin formal design & construction work.
1.2.3	CDM Authorization to Incur Costs	NOV90	15 NOV90 A	DOE permission for the CDM contractors to incur costs toward their contract in beginning the Collider Dipole Magnet industrial program.
3.0	SEIS Record of Decision (ROD)	JAN91	1 FEB91 A	Secretary signature and formal filing of the Environmental Record of Decision. This allows non-reversible project construction to begin.
5.2	Begin Conceptual Design for Detectors	FEB91	1 MAR91 A	Start the detector concept design and Title I conventional facilities design effort.
2.1.6	Start SSC Civil Construction	MAR91	13MAR91A	The first construction notice to proceed after the SEIS ROD. The first facility is the E1 Infrastructure.
2.2.1	Notice to Proceed (NTP) Experimental Halls	JUN93	JUN93	The first notice to proceed for construction of the experimental (interaction region) halls; IR-4 and IR-1. <sup>1</sup>
4.2.1	Accelerator System String Test (Phase I)Complete	OCT92	OCT92	Cooldown, power up and testing of the 1/2 cell with accelerator components including the string test of 5 Collider Dipole magnets of industrial fabrication.

### Variance Remarks

<sup>1</sup> = Forthcoming CCB request to reconcile dates.

\* = These dates are current projected dates from schedule updates and pending Change Control Board proposals.

WBS	DESCRIPTION	BASELINE (DEC 90)	PROJECTED* (A indicates actual date)	EXTENDED DESCRIPTION
1.2.3	Full-rate Production Contract Awarded on Collider Magnets	APR94 <sup>2</sup>	JAN95	SSCL award of the full rate production contract(s) for collider magnets requires prior DOE approval.
1.2.3	Start First Half Sector CDM Delivery from vendor plant	APR94 <sup>2</sup>	JUL94	Start Delivery of the first contractor production magnet (CDM) from the contractor's dock to the MAAS.
1.1.6	First Collider Half Sector - Start Magnet Installation	JUN94 <sup>2</sup>	SEP94	Start magnet and spool installation after completion of tunnel finish-out including power, lights & ventilation and primary technical components e.g. piping, electrical components cryogenics, etc.
4.1	LINAC Start Commissioning (600 MeV)	OCT94	OCT94	Start commission with beam of the full 600 MEV LINAC and signoff after suitable checkout of engineering and safety systems.
1.1.6	First Collider Half Sector - Start Cooldown	MAR95 <sup>2</sup>	AUG95	Cooldown of the first complete half sector (E1-F1) and the concurrent power safety check of a full half sector. Requires last magnetic component (472 15M, 8 13M, 96 CQM & 96 spools) delivered to tunnel 4 months prior to this date.
4.1	LEB Start Commissioning	OCT95	OCT95	Beginning of the LEB beam commissioning installation and suitable checkout of the subsystems and safety signoff. Requires the LINAC to be able to provide test beam.
5.0	Beneficial Occupancy of Large Experimental Halls	JAN96	JAN96	Beneficial occupancy of the experimental (interaction region) halls. This BOD includes lighting, power & ventilation, etc. and is 9 months after the first BOD where just the unfinished chamber is turned over for technical survey.

**Variance Remarks**

<sup>2</sup> = CCB Request in process to modify baseline schedule.

\* = These dates are current projected dates from schedule updates and pending Change Control Board proposals.

WBS	DESCRIPTION	BASELINE (DEC 90)	PROJECTED* (A indicates actual date)	EXTENDED DESCRIPTION
4.1	MEB Start Commissioning	JUN96	JUL96	Beginning of the MEB commissioning after installation and suitable checkout of the subsystems and safety signoff. Requires the LEB to be able to provide test beam.
1.1.5	HEB Start Installation	AUG96	SEP96	HEB installation of major technical components after completion of tunnel out fitting (e.g. power, lights, ventilation) technical components include piping, electrical components cryogenic components, spools, magnets etc.
1.1.4	MEB Test Beams Available	JAN97	APR97	Completion of the MEB and test beam commissioning activity so that beam for detector component testing is available some fraction of the time.
4.1	HEB Start Commissioning	SEP98	SEP98	Beginning of the HEB commissioning after installation and suitable checkout of the subsystems and safety sign off. Requires the MEB to be able to provide test beam.
5.2	West Detectors - Start Commissioning	MAR99	MAR99	Beginning of the Detector commissionings. Includes operable beamline through detectors to support Collider commissioning.
4.1	Collider - Start Commissioning (Beam)	MAR99	APR99	Beginning of the full Collider beam commissioning after sector testing is successfully completed. Requires the HEB to be able to provide beam. Requires accelerator components to be previously installed and checked in both IR halls.
4.1	Beam to Exp. (End of Project/Begin Operations Phase)	SEP99	SEP99	Completion of the Collider and West detectors and Collider commissioning activities. The SSC is now ready to perform experiments in two experiment (interaction regions) halls.

**Variance Remarks**

\* = These dates are current projected dates from schedule updates and pending Change Control Board proposals.

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DIVISION PROJECT STATUS REPORT				
DESIGN	<input type="checkbox"/>	PRODUCTION	<input type="checkbox"/>	PART I
CONSTRUCTION	<input type="checkbox"/>	RESEARCH & DEVELOPMENT	<input type="checkbox"/>	
1. IDENTIFIERS:				
1a. PROJECT TITLE/NUMBER DE-AC02-89ER40486 SUPERCONDUCTING SUPER COLLIDER LABORATORY		1b. REPORTING PERIOD August 1991		
1c. MANAGING DIVISION  Administration		1f. PERFORMING ORGANIZATION(S)  Personnel Procurement Finance Minority Affairs MIS Records Management		
1d. DIVISION/OFFICE CONTACT  Carol Matteson (ext. 5053)				
1e. DIVISION MANAGER  Robert L. Van Ness (ext. 1540)				
2. DIVISION MANAGER'S PERSONAL ASSESSMENT:				
2a. Summary Status				
GROUP	TECHNICAL	COST	SCHEDULE	OVERALL
OVERALL DIVISION ASSESSMENT	Green	Green	Green	Green
PREVIOUS DIVISION ASSESSMENT	Green	Green	Green	Green

**ADMINISTRATION DIVISION**

**Goal** To provide required support of Laboratory Mission and Organizations.

**WBS Elements** **Description**

4.3 Lab Administration & Support

**Accomplishments**

4.3.2-Finance Directed research project to evaluate/improve indirect cost policy for FY91. Coordinated implementation of policy into the Baseline Cost Estimate (BCE) with Project Management consultants. Procured and installed COVIA System.

4.3.3-Procurement Briefed DOE and obtained approval for credit card arrangement as option to existing small value order system. Created Exception Expediting Report to ensure prompt followup of items not delivered within seven days of scheduled delivery.

4.3.5-Personnel Completed final implementation of the new SSCL Exempt Classification System.

4.3.7-Minority Affairs The Manager of EEO/AA participated in several key seminars on cooperative education presented by the Texas Cooperative Education Association (TCEA), and a college Roundtable discussion focusing on minority recruiting and co-op programs.

4.3.9-MIS Pursuing acquisition of Procurement and Accounts Payable software to replace Deltek modules. Developed acquisition strategy for this process. Initiating requirements study for Payroll/Personnel to establish functionality of replacement software for these Deltek modules.

**Issues and Concerns** None.

**Corrective Action** N/A.

**Condition** Green

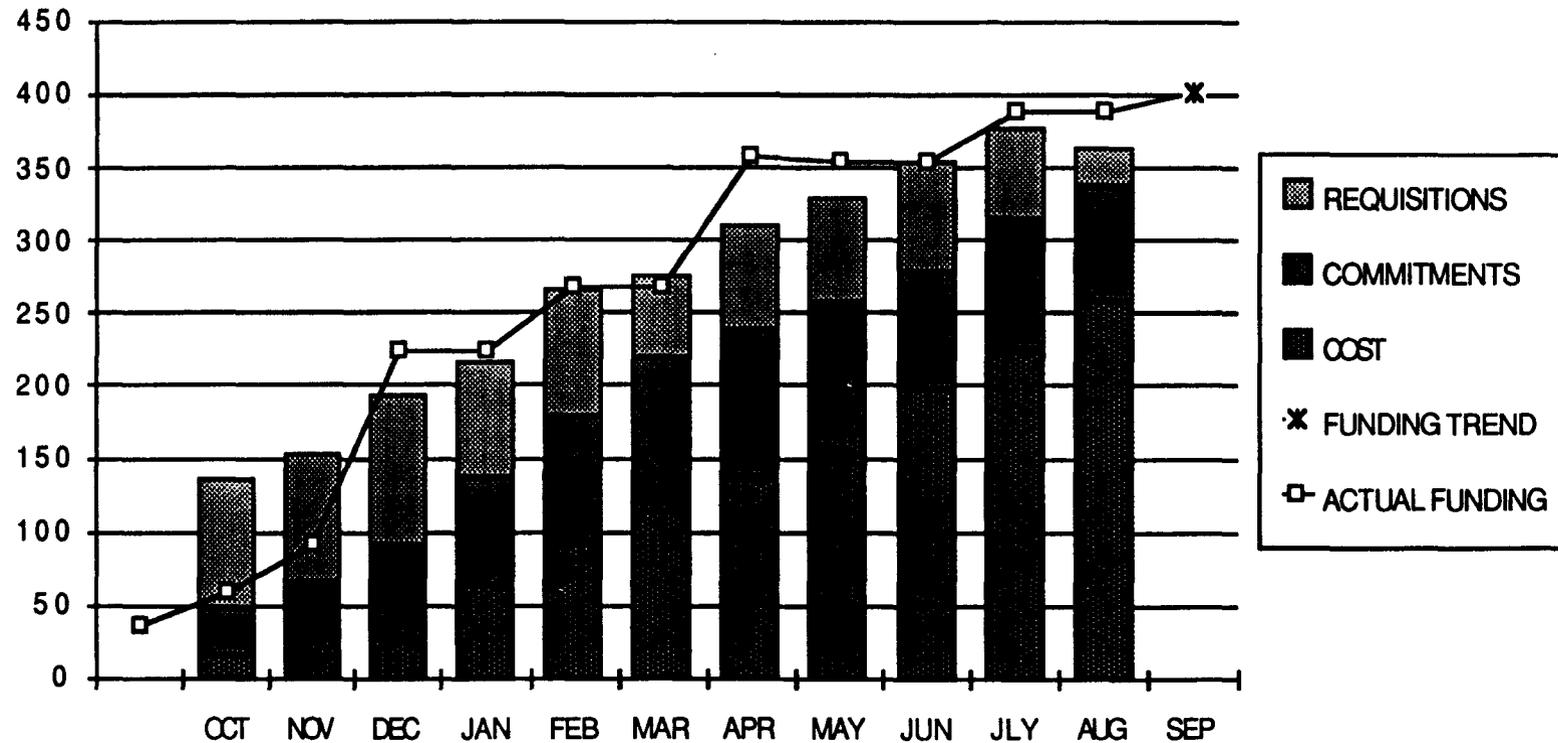
**POC** R. L. Van Ness

**DATE:** September 10, 1991

## FINANCIAL OVERVIEW

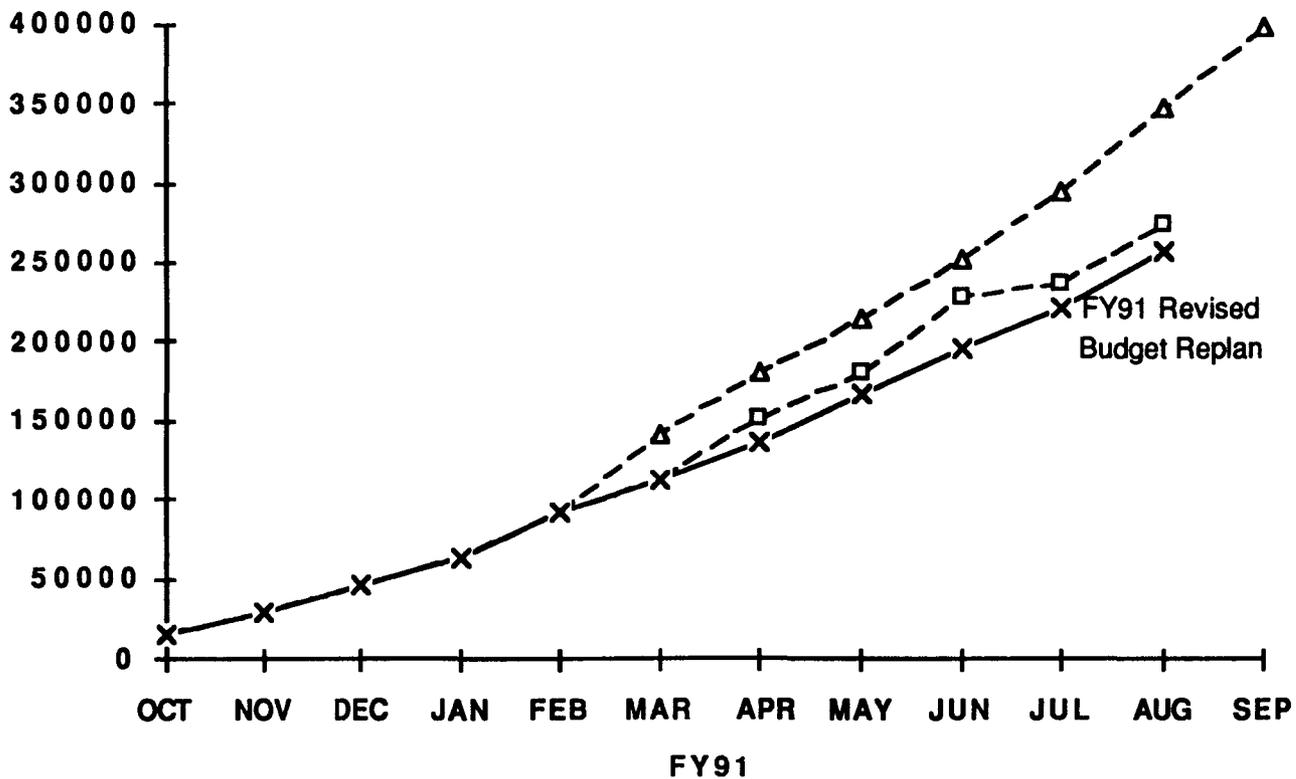
LABORATORY  
ALL FUNDS

### PROJECTED FY91 FUNDING VS YTD CONTRACT SUMMARY (KS-TPC)



9/12/91

**SSCL ALL FUNDS**  
**Status as of: August 1991**  
**Dollars x 000's**



▲ Budget(BCWS)  
 □ Performance(BCWP)  
 ·X· Actuals(ACWP)

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DIVISION PROJECT STATUS REPORT				
DESIGN <input type="checkbox"/>		PRODUCTION <input type="checkbox"/>	PART I	
CONSTRUCTION <input type="checkbox"/>		RESEARCH & DEVELOPMENT <input type="checkbox"/>		
<b>1. IDENTIFIERS:</b>				
1a. PROJECT TITLE/NUMBER DE-AC02-89ER40486 SUPERCONDUCTING SUPER COLLIDER LABORATORY	1b. REPORTING PERIOD August 1991			
1c. MANAGING DIVISION  Accelerator Design and Operations Division (ADOD)	1f. PERFORMING ORGANIZATION(S)  Linear Accelerator (Linac) High Energy Booster (HEB) Accelerator Systems String Test (ASST) Low Energy Booster (LEB) Collider Medium Energy Booster (MEB) Beamlines			
1d. DIVISION/OFFICE CONTACT  Don Edwards (ext. 3020)				
1e. DIVISION MANAGER  Don Edwards (ext. 3020)				
<b>2. DIVISION MANAGER'S PERSONAL ASSESSMENT:</b>				
2a. Summary Status				
GROUP	TECHNICAL	COST	SCHEDULE	OVERALL
Linac	Green	Green	Green	Green
LEB	Green	Green	Red	Green
MEB	Green	Green	Red	Green
HEB	Green	Green	Red	Green
Collider	Green	Green	Green	Green
ASST	Green	Green	Green	Green
Beamlines	Green	Green	Green	Green
<i>OVERALL DIVISION ASSESSMENT</i>	Green	Green	Red	Green
<i>PREVIOUS DIVISION ASSESSMENT</i>	Green	Green	Red	Green

**ADOD  
FY91 Deliverables**

<b>Goal</b>	To supply the necessary deliverables to support the project milestones.
<b>WBS Elements</b>	<b>Description</b>
4.2.1	Accelerator R&D
<b>Accomplishments</b>	Good progress on specification preparation.
<b>Issues and Concerns</b>	Preparation of some 3A and 3B specifications are behind schedule. The first issue of the specifications have some TBD's.
<b>Corrective Action</b>	Proceed with approvals so that the major portions of the specifications are available for use. Complete the TBD's as soon as possible.
<b>Condition</b>	Green
<b>POC</b>	Don Edwards

**DATE** September 9, 1991

**ADOD  
FY91-92 Deliverables**

<b>WBS</b>	<b>Deliverables</b>	<b>Baseline Schedule</b>	<b>Current Projection</b>	<b>Condition Appraisal</b>
4.2.1	Set Coordinates, All Accelerators	April 1991	April 1991	Complete
	Magnet Requirements Completed			
	LEB	June 1991	October 1991	Red
	MEB	June 1991	October 1991	Red
	HEB	June 1991	October 1991	Red
	RF Requirements Completed			
	LEB	June 1991	October 1991	Red
	MEB	June 1991	October 1991	Red
	HEB	June 1991	October 1991	Red

## ACCELERATOR SYSTEM STRING TEST (ASST)

<b>Goal</b>	Demonstrate collider operation of a half-cell of industrially produced magnets.		
<b>WBS Elements</b>	<b>Description</b>	<b>WBS Elements</b>	<b>Description</b>
4.2.1	Accelerator R&D	2.1.6	(String enclosure/N15 service buildings)
<b>Accomplishments</b>	<p>Started installation of roofing, siding, insulation and air-conditioning ducts for string enclosure.</p> <p>Finishing iron work for refrigerator building.</p> <p>Completed conduit work in floor for compressor building. Poured grade beams and pits.</p> <p>On August 20 reached agreement with Hill County to get 25 KV power to E1 by October 14 (2 months ahead of schedule).</p> <p>On August 23 Cryogenics Consultants, Inc. (CCI) announced as winner of contract to build "Plan B" refrigerator.</p> <p>ER five dipole string at FNAL reached full current (6500A) on August 30.</p>		
<b>Issues and Concerns</b>	<p>Need a replacement for person in charge of string installation and specific assignment of tasks.</p> <p>Software for controls system a concern.</p> <p>Funds not available in construction reserve to cover change order for under floor conduits in Compressor Building, etc.</p> <p>Need training of personnel in installation of magnets with new interconnect design.</p> <p>Population at E1 growing rapidly with addition of office trailer September 23.</p> <p>KPS has rejected idea of a work-around with SEDALCO and JODs. This may cause a delay in refrigerator.</p> <p>Writing of PSAR, SAR and ORR.</p>		
<b>Corrective Action</b>	<p>ASD Mechanical Engineering hired Frank Spinosa to be in charge of magnet installation and are reorganizing group responsibilities.</p> <p>ASD Controls hired Ralph Bork to be focus of all ASST activity and are assigning programmers to Grey's residence at E1.</p> <p>May require a CCB action.</p> <p>Technicians from ASD sent to FNAL to help with magnet installation on test stands. Need to do the same at BNL.</p> <p>Will require temporary office assistance.</p> <p>SSC must rely more heavily on "Plan B" refrigerator and must insure its timely delivery.</p> <p>There must be a clear statement from Lab management ASAP of responsibilities and resources must be provided.</p>		
<b>Condition</b>	Green		
<b>POC</b>	Thomas Dombeck		DATE September 11, 1991

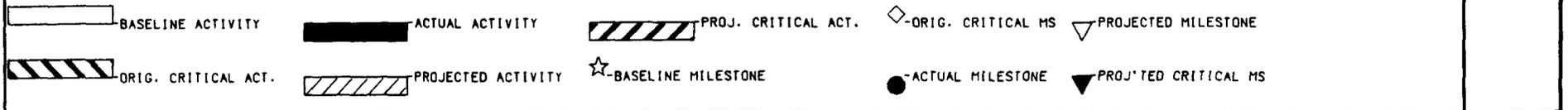
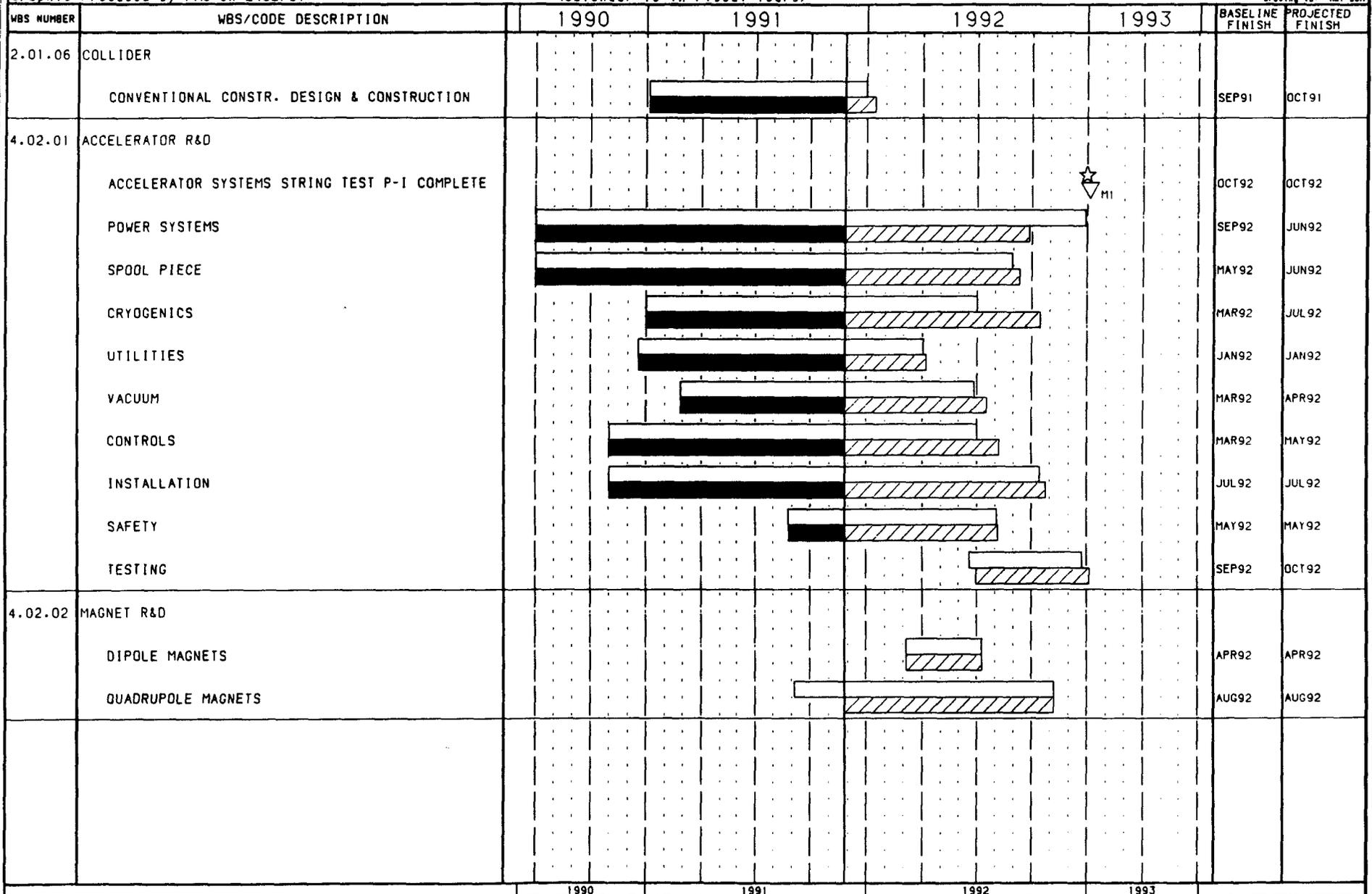
SUPERCONDUCTING SUPER COLLIDER

3 YEAR TERM COMPARATIVE SUMMARY BARCHART  
 TIER III TMR Report: ASST w/Level 1&2 MS  
 (Calendar is in Fiscal Years)

INTEGRATED PROJECT SCHEDULE, Ver. 12, Rev. 8

Network Status Date: 25AUG91  
 Graphic Produced by PMO on 24SEP91

SSCL REVIEW SUMMARY BY WBS  
 Drawing ID: AST-SUM



## LINEAR ACCELERATOR (LINAC)

<b>Goal</b>	Design, Construct and Commission a 600 MeV H <sup>-</sup> Linac with high reliability and low transverse emittance to supply beam to the Low Energy Booster (LEB).		
<b>WBS Elements</b>	<b>Description</b>	<b>WBS Elements</b>	<b>Description</b>
1.1.2.1.2	Ion Source/Matching	1.1.2.1.4	Drift Tube Linac (DTL)
1.1.2.1.3	Radio Frequency Quadrupole (RFQ)		
<b>Accomplishments</b>	<p>Commissioned Emittance Measuring Unit and began development of operational procedures.</p> <p>Prepared a draft long-term Magnetron Ion Source &amp; LEBT system R&amp;D plan.</p> <p>Conducted first successful operation of LBL rf volume source with laser starter.</p> <p>Physics design of RFQ drive loops well advanced.</p> <p>Continued machining of vane/cavity quadrants for RFQ.</p> <p>Received electroforming tooling (on loan) and completed modifications.</p> <p>Maintained RFQ schedule in spite of preparations for Tiger Team visit in September.</p> <p>Received offers on DTL manufacture. Technical proposals are responsive and evaluation of technical/management packages complete.</p> <p>Confirmation of feasibility of powering both DTL/CCL bunchers from single klystron.</p>		
<b>Issues and Concerns</b>	<ol style="list-style-type: none"> <li>1) Smooth integration of computerized data acquisition and controls into Ion Source/LEBT operation.</li> <li>2) Lack of slack in an essentially linear fabrication schedule for RFQ.</li> <li>3) Lack of experienced manpower to manage DTL acquisition.</li> </ol>		
<b>Corrective Action</b>	<ol style="list-style-type: none"> <li>1) Evaluate feasibility of integrated task teams.</li> <li>2) LANL shops working overtime to make up some lost time.</li> <li>3) LANL rf structures expert to arrive at SSCL in early September. Receipt of additional support from rf Engineering Department appears likely.</li> </ol>		
<b>Condition</b>	Green		
<b>POC</b>	Warren Funk (ADOD); Ted Kozman (ASD); Deryl L. Earsom (CCD)	<b>DATE</b>	September 11, 1991

## LINAC (Continued)

<b>Goal</b>	Design, Construct and Commission a 600 MeV H <sup>-</sup> Linac with high reliability and low transverse emittance to supply beam to the Low Energy Booster (LEB).		
<b>WBS Elements</b>	<b>Description</b>	<b>WBS Elements</b>	<b>Description</b>
1.1.2.1.5	Coupled Cavity Linac (CCL)	2.1.2	Linear Accelerator Conventional Construction (including beam transfer to LEB)
1.1.2.1.8	Quadrupole Magnets		
1.1.2.1.12	RF System		
<b>Accomplishments</b>	<p>Two Chinese collaborators have arrived at SSCL and have started work for the CCL. Further visits to FNAL have clarified remaining CCL technical issues.</p> <p>In anticipation of a decision to proceed immediately with construction of a 1 GeV linac, work on CCL re-optimization has led to a conclusion that only 5, rather than 6 additional modules will be needed.</p> <p>Began preparation of a Critical Item Development Specification for the CCL modules.</p> <p>Identified design issues for discussion with Indian contributors on Quadrupole Magnets.</p> <p>Identified of significant issues on control of rf power systems.</p> <p>Completed Title I (Preliminary) Design and initiated Title II (Final) Design.</p>		
<b>Issues and Concerns</b>	<ol style="list-style-type: none"> <li>1) Two outstanding decisions remain to be taken: will Chinese provide CCL? Will we build 1 GeV linac now?</li> <li>2) Management of an Indian contribution of the pulsed quads.</li> <li>3) Delay in award of klystron order.</li> <li>4) Projecting 6-month schedule slip in issuance of construction Notice to Proceed with a 17 day slip in baseline BOD from December 11, 1992 to December 28, 1992. An additional one-month slip in schedule is possible due to 1 GeV design/bid alternate. Authorized Scope (EAC) and Budget (BCE) have not been reconciled. Additional design costs to be incurred as a result of increase in authorized scope and other directives.</li> </ol>		
<b>Corrective Action</b>	<ol style="list-style-type: none"> <li>1) Proceed full speed with engineering development and support efforts to reach decisions; prepare contingency plans to minimize cost and schedule impact of decision.</li> <li>2) Visit to India by technical team being planned. Now we need to improve internal communications.</li> <li>3) Support of ASD activities to generalize RFP for modulators.</li> <li>4) Secure CCB Action for additional authorized funds and revised schedule. (Note: CCD cost/schedule condition is red.)</li> </ol>		
<b>Condition</b>	Green		
<b>POC</b>	Warren Funk (ADOD); Ted Kozman (ASD); Deryl L. Earsom (CCD)	<b>DATE</b>	September 11, 1991

SUPERCONDUCTING SUPER COLLIDER

LONG TERM COMPARATIVE SUMMARY BARCHART

INTEGRATED PROJECT SCHEDULE, Ver. 12, Rev. 8

Network Status Date: 25AUG91

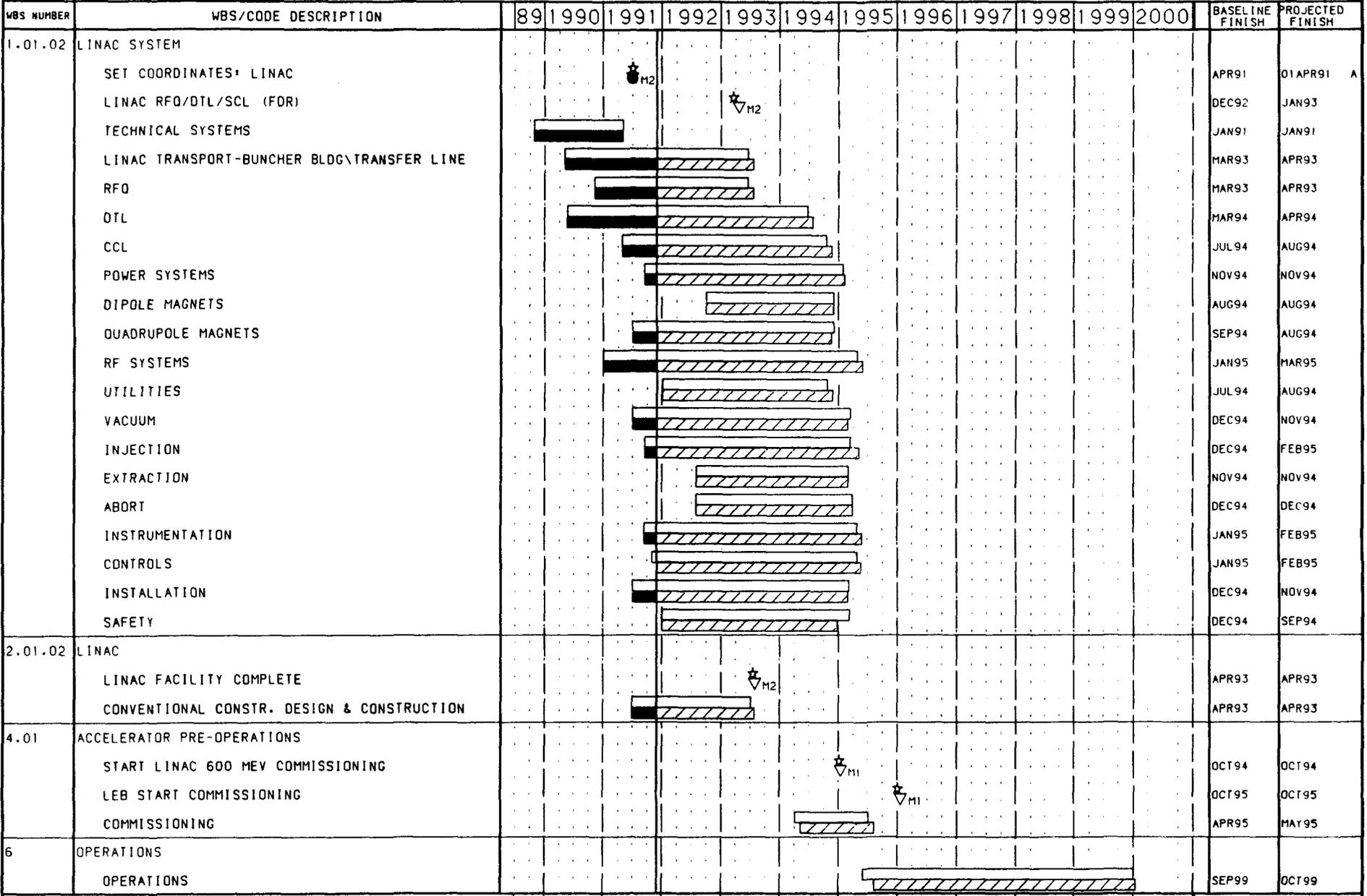
TIER III TMR Report: LINAC w/Lev. 1&2 MS

SSCL REVIEW SUMMARY BY WBS

Graphic Produced by PMO on 24SEP91

(Calendar is in Fiscal Years)

Drawing ID: LIN-SUM



## LOW ENERGY BOOSTER (LEB)

<b>Goal</b>	Commissioned LEB FY95.		
<b>WBS Elements</b>	<b>Description</b>	<b>WBS Elements</b>	<b>Description</b>
4.2.1	Accelerator R&D	2.1.3	Low Energy Booster Conventional Construction (including beam transfer to MEB)
1.1.3	LEB		
<b>Accomplishments</b>	<p>Began Russian (INP) technical collaboration ; identified general tasks and began development of specific details of tasks. Quadrupole drawing package, Dipole base design, and Trim quadrupoles, sextupoles, orbit correctors under design.</p> <p>Began bottoms up review: Bottom up cost and resource loading of schedule, details for FY92 by work package, and general for FY93-95.</p> <p>Developed the LEB transfer line schedule.</p> <p>Continuing Title I Preliminary Design.</p>		
<b>Issues and Concerns</b>	<ol style="list-style-type: none"> <li>1) Lack of plan against which to measure progress.</li> <li>2) Lack of clear delineation of responsibility/authority.</li> <li>3) Two of the 3B specifications have not been approved. The preliminary design of the dipole and quadrupole magnets is scheduled to complete in September.</li> <li>4) Projecting two-month slip in issuance of construction NTP.</li> </ol>		
<b>Corrective Action</b>	<ol style="list-style-type: none"> <li>1) Plan against which to measure progress under development.</li> <li>2) Clear delineation of responsibility/authority requirement articulated since October, 1990.</li> <li>3) Expedite issuance of 3B specifications.</li> <li>4) None. Projecting early turnover for installation. No FY funding impact.</li> </ol>		
<b>Condition</b>	Red (schedule)		
<b>POC</b>	Richard C. York (ADOD); Ted Kozman (ASD); Deryl L. Earsom (CCD)	<b>DATE</b>	September 9, 1991

SUPERCONDUCTING SUPER COLLIDER

LONG TERM COMPARATIVE SUMMARY BARCHART

INTEGRATED PROJECT SCHEDULE, Ver. 12, Rev. 8

Network Status Date: 25AUG91

TIER III TMR Report: LEB w/ Level 1&2 MS

SSCL REVIEW SUMMARY BY WBS

Graphic Produced by PMO on 24SEP91

(Calendar is in Fiscal Years)

Drawing ID: LEB-SUM

WBS NUMBER	WBS/CODE DESCRIPTION	90	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	BASELINE FINISH	PROJECTED FINISH
1.01.03	LEB SYSTEM													
	SET COORDINATES: LEB												APR91	01 APR91
	POWER SYSTEMS												MAY96	MAY96
	DIPOLE MAGNETS												APR95	JUL95
	QUADRUPOLE MAGNETS												APR95	JUN95
	CORRECTION MAGNETS												MAR95	MAY95
	RF SYSTEMS												DEC94	JUN95
	UTILITIES												MAR95	APR95
	VACUUM												MAY95	JUL95
	INJECTION												NOV95	JAN96
	EXTRACTION												JUN95	JUL95
	ABORT												APR95	MAY95
	INSTRUMENTATION												JUN95	AUG95
	CONTROLS												JUN95	JUL95
INSTALLATION												JUL95	AUG95	
SAFETY												MAY95	JUL95	
TESTING												SEP95	OCT95	
2.01.03	LEB													
	LEB FACILITY COMPLETE												DEC93	JAN94
	CONVENTIONAL CONSTR. DESIGN & CONSTRUCTION												DEC93	JAN94
4.01	ACCELERATOR PRE-OPERATIONS													
	LEB START COMMISSIONING												OCT95	OCT95
	LEB COMPLETE COMMISSIONING												APR96	APR96
	START MEB COMMISSIONING												JUN96	JUL96
	COMMISSIONING											APR96	APR96	
6	OPERATIONS													
	OPERATIONS												SEP99	OCT99

□ BASELINE ACTIVITY    ■ ACTUAL ACTIVITY    ▨ PROJ. CRITICAL ACT.    ◇-ORIG. CRITICAL MS    ▽PROJECTED MILESTONE  
 ▩ ORIG. CRITICAL ACT.    ▬ PROJECTED ACTIVITY    ☆BASELINE MILESTONE    ●-ACTUAL MILESTONE    ▽ PROJ'D CRITICAL MS

## MEDIUM ENERGY BOOSTER (MEB)

**Goal** To provide an accelerator which will accelerate protons from 12 GeV/c to 200 GeV/c for injection into the HEB and to provide test beams, on a schedule to meet major milestones.

WBS Elements	Description	WBS Elements	Description
4.4.4.1	MEB	4.2.1	Accelerator R&D
4.1.4.1	MEB Dipole	2.1.4	MEB Conventional Construction (including beam transfers to HEB bored tunnel for Test Beam)

**Accomplishments**

- 3A specifications in final sign off.
- 3B specifications progress being made.
- ASD assignments made for vacuum.
- Focusing in on MEB Dipole design options.
- Developed the MEB transfer line schedule and completed detailed schedules at tier 3.
- CCD continued Preliminary Design Requirements (PDR) with the working group. Draft PDR to be ready for staffing September 9, 1991.

**Issues and Concerns**

- 1) Ministraight space extremely tight. Continued concern over main magnetic element design.
- 2) Need more physics design effort on MEB Dipole.
- 3) The 3A and 3B specifications are still being worked.

**Corrective Action**

- 1) Focused attention on space budget by Mechanical Engineering.
- 2) Fermilab consultant requested to come, working on other sources of help.
- 3) Expedite issuance of (4) specifications.

**Condition** Yellow (Schedule)

**POC** Rod Gerig (ADOD); Ted Kozman (ASD); Jack H. Clifton (CCD)

**DATE:** September 9, 1991

**SUPERCONDUCTING SUPER COLLIDER**

LONG TERM COMPARATIVE SUMMARY BARCHART

INTEGRATED PROJECT SCHEDULE, Ver. 12, Rev. 8

Network Status Date: 25AUG91  
Graphic Produced by PMO on 24SEP91

TIER III TMR Report: MEB w/ Level 1&2 MS  
(Calendar is in Fiscal Years)

SSCL REVIEW SUMMARY BY WBS

Drawing ID: MEB-SUM

WBS NUMBER	WBS/CODE DESCRIPTION	Year										BASELINE FINISH	PROJECTED FINISH						
		1991	1992	1993	1994	1995	1996	1997	1998	1999	2000								
1.01.04	MEB SYSTEM																		
	SET COORDINATES: MEDIUM ENERGY BOOSTER		★ M2														APR91	01 APR91	A
	POWER SYSTEMS		▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	JUN96	MAY96	
	DIPOLE MAGNETS		▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	JUN96	APR96	
	QUADRUPOLE MAGNETS		▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	JUN96	APR96	
	CORRECTION MAGNETS		▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	JUN96	APR96	
	RF SYSTEMS		▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	MAY96	JUN96	
	UTILITIES		▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	JAN96	FEB96	
	VACUUM				▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	JUN96	MAY96	
	INJECTION		▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	APR96	APR96	
	EXTRACTION			▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	APR96	APR96	
	ABORT			▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	JUL96	JUL96	
	INSTRUMENTATION		▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	JUN96	JUL96	
	CONTROLS			▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	JUN96	JUN96	
INSTALLATION				▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	JUN96	MAY96		
SAFETY			▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	JUN96	JUN96		
2.01.04	MEDIUM ENERGY BOOSTER (MEB)																		
	MEB FACILITY COMPLETE																SEP94	SEP94	
	CONVENTIONAL CONSTR. DESIGN & CONSTRUCTION		▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	SEP94	SEP94	
4.01	ACCELERATOR PRE-OPERATIONS																		
	START MEB COMMISSIONING																JUN96	JUL96	
	COMPLETE MEB COMMISSIONING																DEC96	JAN97	
	START TEST BEAM AREA COMMISSIONING																JAN97	JAN97	
	MEB TEST BEAMS AVAILABLE																JAN97	APR97	
	HEB START COMMISSIONING (BEAM)																SEP98	SEP98	
COMMISSIONING																DEC96	JAN97		
6	OPERATIONS																		
	OPERATIONS																SEP99	OCT99	

BASELINE ACTIVITY    
  ACTUAL ACTIVITY    
  PROJ. CRITICAL ACT.    
  -ORIG. CRITICAL MS    
  ▽ PROJECTED MILESTONE  
 ORIG. CRITICAL ACT.    
 PROJECTED ACTIVITY    
 ★ BASELINE MILESTONE    
 ● ACTUAL MILESTONE    
 ▽ PROJECTED CRITICAL MS

## HIGH ENERGY BOOSTER (HEB)

<b>Goal</b>	To design and manage the construction and commissioning of the HEB.		
<b>WBS Elements</b>	<b>Description</b>	<b>WBS Elements</b>	<b>Description</b>
1.1.5	HEB System	2.1.5	HEB
1.2.2	HEB Magnet Production	4.2.1	Accelerator R&D
<b>Accomplishments</b>	<p>HEB schedule, including transfer line, developed into the Integrated Project Schedule (IPS). The schedules have now been produced to tier 3, and the IPS is scheduled to be signed-off in mid-September.</p> <p>3B transfer line and abort specifications out for formal review.</p> <p>3B magnet specifications in final preparation.</p> <p>Overall CCB change package (High-Q, magnet filament size, magnet slot length) in preparation.</p> <p>ASD started working on the corrector magnet design.</p>		
<b>Issues and Concerns</b>	Approval of the 3B specification.		
<b>Corrective Action</b>	Expedite issuance of specifications.		
<b>Condition</b>	Red (Specifications)		
<b>POC</b>	David E. Johnson (ADOD); Ted Kozman (ASD)		<b>DATE:</b> September 9, 1991

SUPERCONDUCTING SUPER COLLIDER

LONG TERM COMPARATIVE SUMMARY BARCHART

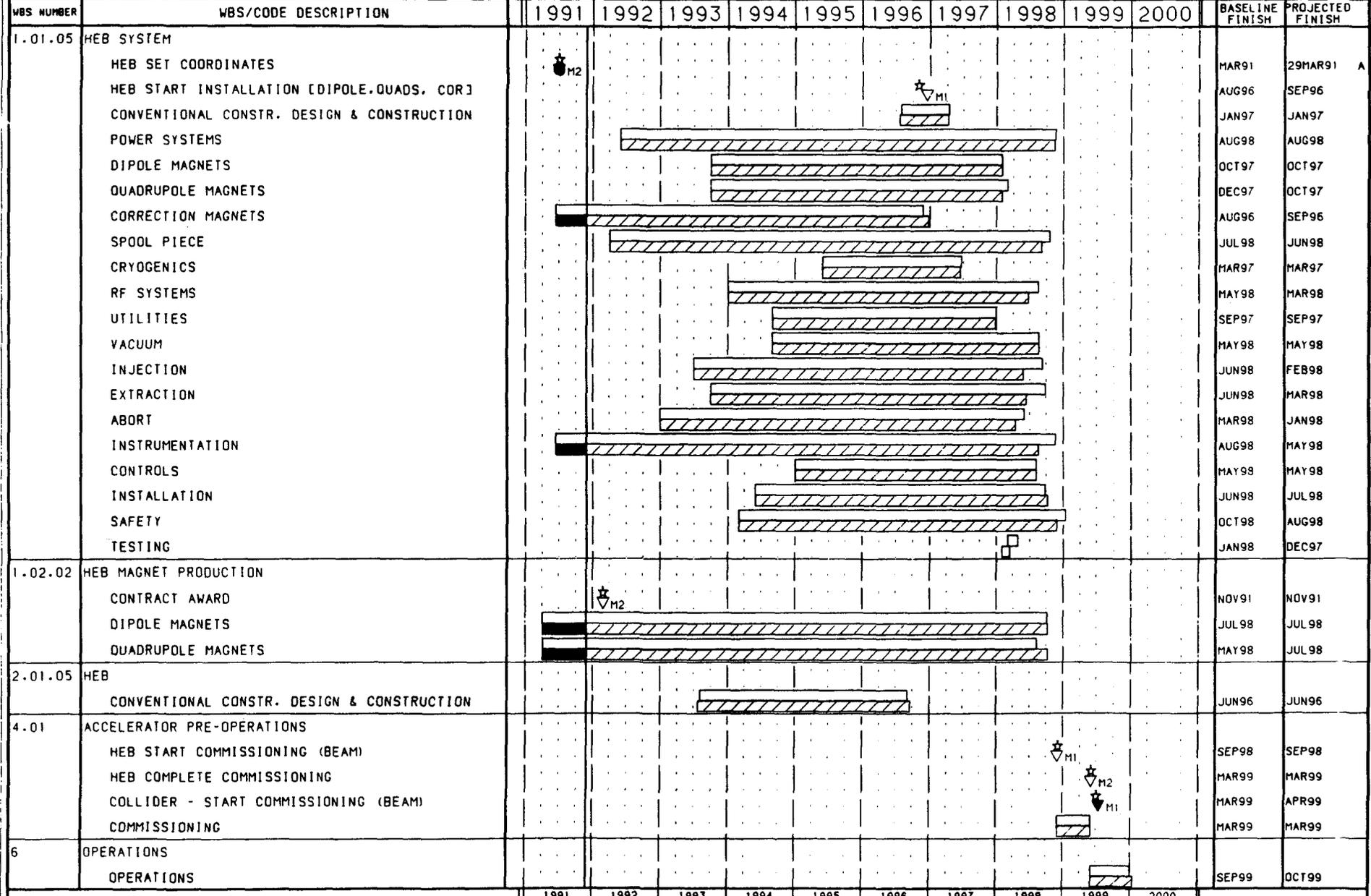
INTEGRATED PROJECT SCHEDULE, Ver. 12, Rev. 8

Network Status Date: 25AUG91  
Graphic Produced by PMO on 24SEP91

TIER III TMR Report: HEB w/ Level 1&2 MS  
(Calendar is in Fiscal Years)

SSCL REVIEW SUMMARY BY WBS

Drawing ID: HEB-SUM



BASELINE ACTIVITY    
  ACTUAL ACTIVITY    
  PROJ. CRITICAL ACT.    
 ◇-ORIG. CRITICAL MS     ▽-PROJECTED MILESTONE  
 ORIG. CRITICAL ACT.    
 PROJECTED ACTIVITY    
 ★-BASELINE MILESTONE     ●-ACTUAL MILESTONE     ▽-PROJ'ED CRITICAL MS

## COLLIDER

**Goal**                      Develop design and specification of 20 TeV Collider, provide tunnel segments and servicing shafts, and support commissioning in FY99.

<b>WBS Elements</b>	<b>Description</b>	<b>WBS Elements</b>	<b>Description</b>
4.2.1	3B specifications, integrated schedule	1.1.8	Global systems
4.2.1	Accelerator R&D	2.1.6.2	N15 Shafts and N15 to N20 Tunnel Segment
1.1.6	Collider		N20 and N25 Shafts and N20 to N30 Tunnel Segment N30 to N45 Shafts and N30 to N45 Tunnel Segment

**Accomplishments**

- Developed Integrated Collider schedule (Tier II).
- Working on West Utility schedule (front end activities).
- Started work with MSD on IR quads.
- Held System Design Review on collider dipole magnets August 28-29, 1991.
- Contract with CSA for modeling of West Utility in preparation.
- Awarded Correction Magnet Phase I contracts.
- N15 Magnet Shaft has been bid. The apparent low bid was \$3.74 Million. The contract will be awarded about September 16. Received Title II submittal for the N15 to N20 Basic Tunnel. Briefed the Collider Tunnel Elevation Study to the SSCL.

**Issues and Concerns**

- 1) Radiation shielding of shafts.
- 2) 3A and 3B specifications still being worked.
- 3) Larger tunnel diameter may require change in tunnel elevation to provide required shielding at collider low cover areas.

**Corrective Action**

- 1) Set up working group.
- 2) Expedite issuance of specifications.
- 3) The A-E/CM has been tasked to perform a Collider Tunnel Elevation Study. The study has been briefed to the SSCL, and a decision about collider tunnel elevation is imminent.

**Condition**                      Green  
**POC**                              Rainer Meinke (ADOD); Ted Kozman (ASD); Tracy K. Lundin (CCD)                      **DATE:** September 9, 1991

SUPERCONDUCTING SUPER COLLIDER

LONG TERM COMPARATIVE SUMMARY BARCHART

INTEGRATED PROJECT SCHEDULE, Ver. 12, Rev. 8

Network Status Date: 25AUG91  
Graphic Produced by PMO on 24SEP91

TIER III TMR: ACCELERATOR COMMISSIONING  
(Calendar is in Fiscal Years)

SSCL REVIEW SUMMARY BY WBS

Drawing ID: COM-RUM

WBS NUMBER	WBS/CODE DESCRIPTION	Calendar (1994-2000)												BASELINE FINISH	PROJECTED FINISH		
		1994	1995	1996	1997	1998	1999	2000									
4.01	ACCELERATOR PRE-OPERATIONS																
	START LINAC 600 MEV COMMISSIONING		▽ M1													OCT94	OCT94
	LEB START COMMISSIONING			☆ M1												OCT95	OCT95
	LEB COMPLETE COMMISSIONING				☆ M2											APR96	APR96
	START MEB COMMISSIONING					☆ M1										JUN96	JUL96
	COMPLETE MEB COMMISSIONING						☆ M2									DEC96	JAN97
	START TEST BEAM AREA COMMISSIONING							▽ M2								JAN97	JAN97
	COMPLETE TEST BEAM AREA COMMISSIONING								▽ M2							APR97	APR97
	MEB TEST BEAMS AVAILABLE									☆	▽ M1					JAN97	APR97
	HEB START COMMISSIONING (BEAM)										▽ M1					SEP98	SEP98
	HEB COMPLETE COMMISSIONING											☆ M2				MAR99	MAR99
COLLIDER - START COMMISSIONING (BEAM)												▽ M1			MAR99	APR99	
COMMISSIONING															SEP99	OCT99	
5.02	DETECTORS																
	COMMISSIONING												▨		AUG99	AUG99	

BASELINE ACTIVITY    
  ACTUAL ACTIVITY    
  PROJ. CRITICAL ACT.    
 ◊-ORIG. CRITICAL MS     ▽-PROJECTED MILESTONE  
 ORIG. CRITICAL ACT.    
 PROJECTED ACTIVITY    
 ☆-BASELINE MILESTONE     ●-ACTUAL MILESTONE     ▽-PROJ'ED CRITICAL MS

## TEST BEAMS

<b>Goal</b>	Design and build 200 GeV Test Beams and Calibration Hall.		
<b>WBS Elements</b>	<b>Description</b>	<b>WBS Elements</b>	<b>Description</b>
1.1.7.1	Test Beams	2.1.7	Test Beams Conventional Construction
<b>Accomplishments</b>	<p>Completed technical specifications of facility requirements.</p> <p>Facility Preliminary Design Requirements now in draft form; expect Title I to result in cost-optimized construction technique.</p> <p>Submitted new WBS structure to PMO.</p> <p>Continued construction working group general planning.</p> <p>Preliminary Design Requirements for test beam tunnel in MEB design and construction package.</p>		
<b>Issues and Concerns</b>	None.		
<b>Corrective Action</b>	N/A.		
<b>Condition</b>	Green		
<b>POC</b>	John McGill (ADOD); Jack H. Clifton/Deryl Earsom (CCD)		<b>DATE</b> September 9, 1991

**SUPERCONDUCTING SUPER COLLIDER**

**LONG TERM COMPARATIVE SUMMARY BARCHART**

**INTEGRATED PROJECT SCHEDULE, Ver. 12, Rev. 8**

Network Status Date: 25AUG91  
Graphic Produced by PMO on 24SEP91

**TIER III TMR: TEST BEAM AREA w/Lev.1&2MS**  
(Calendar is in Fiscal Years)

SSCL REVIEW SUMMARY BY WBS  
Drawing ID: TBA-SUM

WBS NUMBER	WBS/CODE DESCRIPTION	1992	1993	1994	1995	1996	1997	1998	1999	2000	BASELINE FINISH	PROJECTED FINISH	
1.01.07	TEST BEAMS												
	TECHNICAL SYSTEMS											JAN96	JAN96
	POWER SYSTEMS											APR96	APR96
	UTILITIES											APR96	APR96
	VACUUM											APR96	APR96
	INSTRUMENTATION											MAY96	MAY96
	CONTROLS											MAY96	MAY96
	INSTALLATION											MAR96	MAR96
	SAFETY											MAY96	MAY96
TESTING											AUG96	AUG96	
2.01.07	TEST BEAM												
	CONVENTIONAL CONSTR. DESIGN & CONSTRUCTION											AUG95	AUG95
4.01	ACCELERATOR PRE-OPERATIONS												
	START MEB COMMISSIONING											JUN96	JUL96
	START TEST BEAM AREA COMMISSIONING											JAN97	JAN97
	COMPLETE TEST BEAM AREA COMMISSIONING											APR97	APR97
	MEB TEST BEAMS AVAILABLE											JAN97	APR97
	COMMISSIONING											APR97	APR97
OPERATIONS											OCT99	OCT99	
5.01.02	SUBSYSTEMS RESEARCH & DEVELOPMENT												
	PROGRAM ADVISORY COMMITTEE CONVENES											APR92	APR92

BASELINE ACTIVITY    
 ACTUAL ACTIVITY    
 PROJ. CRITICAL ACT.    
 -ORIG. CRITICAL MS    
 PROJECTED MILESTONE  
 ORIG. CRITICAL ACT.    
 PROJECTED ACTIVITY    
 -BASELINE MILESTONE    
 -ACTUAL MILESTONE    
 PROJ'ED CRITICAL MS

**SUPERCONDUCTING SUPER COLLIDER**

LONG TERM COMPARATIVE SUMMARY BARCHART

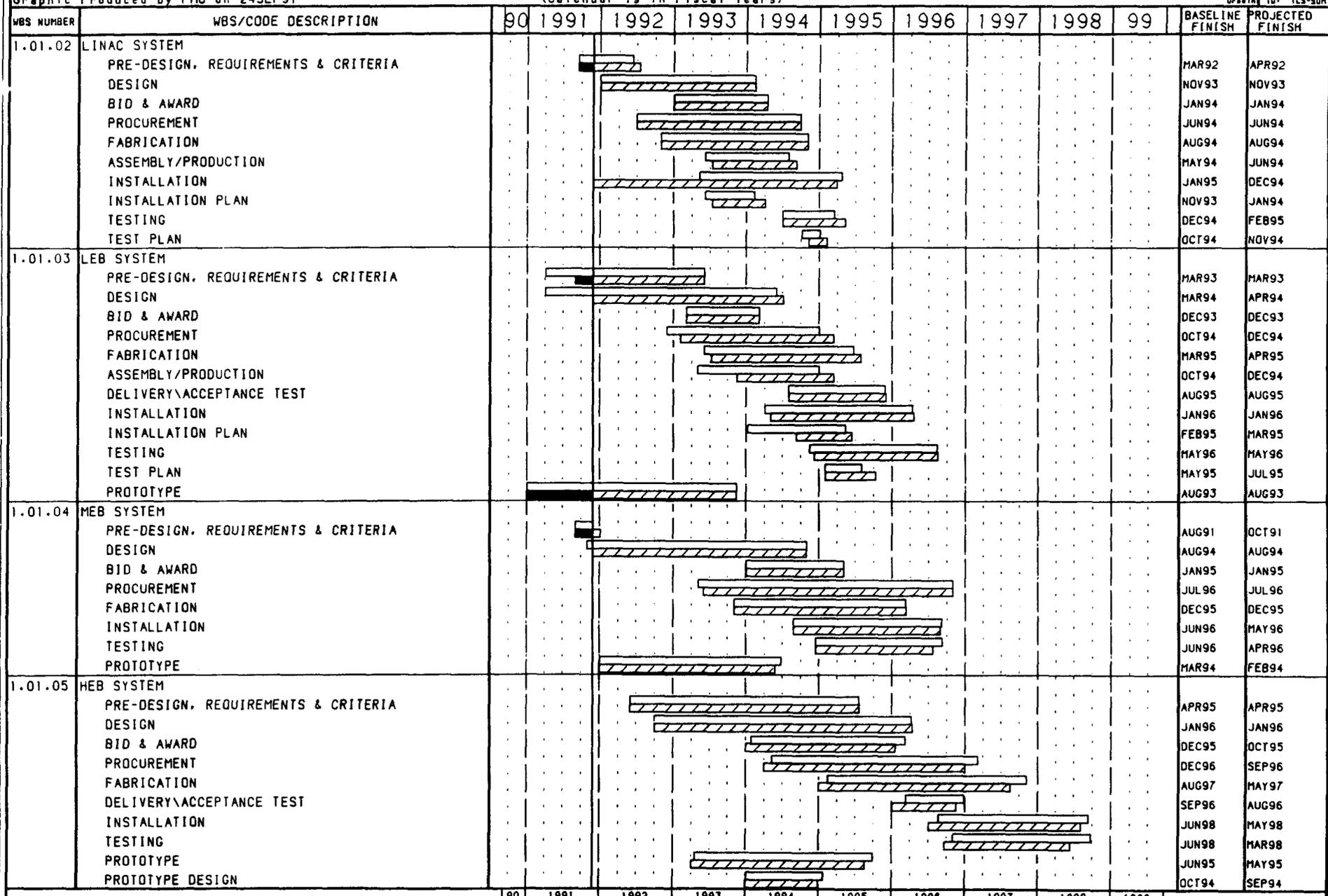
INTEGRATED PROJECT SCHEDULE, Ver. 12, Rev. 8

Network Status Date: 25AUG91  
Graphic Produced by PMO on 24SEP91

**TIER III TMR: TRANSFER LINES w/Lev. 1 MS**  
(Calendar is in Fiscal Years)

SSCL REVIEW SUMMARY BY WBS

Drawing ID: TLS-200



BASELINE ACTIVITY    
  ACTUAL ACTIVITY    
  PROJ. CRITICAL ACT.    
 ○-ORIG. CRITICAL MS     ▽-PROJECTED MILESTONE  
 ORIG. CRITICAL ACT.    
 ▨-PROJECTED ACTIVITY     \*BASELINE MILESTONE     ●-ACTUAL MILESTONE     ▽-PROJECTED CRITICAL MS



DIVISION PROJECT STATUS REPORT				
DESIGN	<input checked="" type="checkbox"/>	PRODUCTION	<input type="checkbox"/>	PART I
CONSTRUCTION	<input checked="" type="checkbox"/>	RESEARCH & DEVELOPMENT	<input checked="" type="checkbox"/>	
1. IDENTIFIERS:				
1a. PROJECT TITLE/NUMBER	DE-AC02-89ER40486		1b. REPORTING PERIOD	August 1991
1c. MANAGING DIVISION	Accelerator Systems		1f. PERFORMING ORGANIZATION(S)	Division Office Mechanical Engineering Electrical Engineering RF Engineering Controls Beam Instrumentation Cryogenics Systems
1d. DIVISION/OFFICE CONTACT	Ted Kozman (ext. 3825)			
1e. DIVISION MANAGER	Ted Kozman (ext. 3825)			
2. DIVISION MANAGER'S PERSONAL ASSESSMENT:				
2a. Summary Status				
GROUP	TECHNICAL	COST	SCHEDULE	OVERALL
Division Office	Green	Green	Green	Green
Mechanical Engineering	Green	Green	Red	Yellow
Electrical Engineering	Green	Green	Green	Green
RF Engineering	Green	Green	Yellow	Green*
Controls	Green	Green	Green	Green
Beam Instrumentation	Green	Green	Green	Green
Cryogenics Systems	Green	Green	Yellow	Green*
<i>OVERALL DIVISION ASSESSMENT</i>	Green	Green	Yellow*	Green
<i>PREVIOUS DIVISION ASSESSMENT</i>	Green	Green	Green	Green

\* change in status

## ACCELERATOR SYSTEMS DIVISION

### Yellow Conditions:

1. Electrical Engineering staffing -- improving but still need engineers in a few key areas.
2. Controls staffing -- a few accepted during the month, but still need more people.
3. RF Engineering schedule -- the following systems are contributing to the overall schedule concern: 1 Mev Linac, LEB test stand, and the LEB cavity requirements and design. With a few more engineers to follow these activities the concerns would be eliminated.
4. Cryogenics staffing -- still need a few more cryogenics engineers.
5. Cryogenics schedule -- still have concern on all of the Koch and PB/MK interfaces and BOD's..

### Red Conditions:

1. Mechanical Engineering/Schedule -- we are currently three months behind the initial planned date for the ER spool piece delivery (FY91 deliverable).

### Overall:

Technical -- Green -- same as July.

Cost -- Green -- same as July.

Staffing -- Green -- Better than July

Schedule -- Yellow -- Worse than July

Overall Division -- Green -- Better than July.

**ACCELERATOR SYSTEMS DIVISION**  
**FY91 Deliverables**

<b>WBS</b>	<b>Milestone</b>	<b>Baseline Schedule</b>	<b>Current Projection</b>	<b>Condition Appraisal</b>
4.2.1	Start refrigerator fabrication for ASST	November 1990	November 1990 <sup>A</sup>	Complete
4.2.1	Magnet supports - order prototype for ASST	December 1990	December 1990 <sup>A</sup>	Complete
4.2.1	4cm prototype spool available for ER string test	June 1991	September 1991*	Red
4.2.1	Power supplies, quench protection procurement started	July 1991	February 1991 <sup>A</sup>	Complete
1.1.2	LINAC RFQ procurement started	December 1990	December 1990 <sup>A</sup>	Complete
1.1.2	Start procurement of klystrons and power systems	February 1991	February 1991 <sup>A</sup>	Complete
1.1.2	LINAC final design review	August 1991	August 1991**	Green
1.1.6	Start procurement of E1 cryoplant with the ASST/MTL	November 1990	November 1990 <sup>A</sup>	Complete
1.1.6	Start corrector magnet procurement for collider	September 1991	July 1991 <sup>A</sup>	Complete

<sup>A</sup>Milestone complete

\* Delivery of Spool Pieces

\*\*Series of reviews: RFQ--4/91, CCL--11/91, DTL--12/92

**ACCELERATOR SYSTEMS DIVISION  
FY91 DELIVERABLE MILESTONES**

Start Refrigerator Fabrication -- Completed on time.

Magnet Supports -- Order Prototype -- Completed on time.

ER Spool Pieces --Scheduled September delivery.

Power Supplies, Quench Protection Procurement Started -- Completed early.

Linac RFQ Procurement Started -- Completed on time.

Start Procurement of Klystrons and Power Systems - Completed on time.

Linac final design review is a series of design reviews (for each section of the Linac) scheduled to start for the RFQ in April, 1991 (completed on time); the CCL in November, 1991; and the DTL scheduled for December, 1992. This apparent slip is for procurement time for the DTL and will not change or delay the overall Linac start of commissioning.

Start Procurement of E1 Cryoplant -- Completed on time.

Start of corrector magnet procurement for the collider -- this was completed one month ahead of schedule.

**ACCELERATOR SYSTEMS DIVISION  
FY92 DELIVERABLES**

<b>WBS</b>	<b>Milestone</b>	<b>Baseline Schedule</b>	<b>Current Projection</b>	<b>Condition Appraisal</b>
4.2.1	Two Spools completed for ASST	March 1992	January 1992	Green
1.1.6	Cryogenic 4 K Plant - Commissioning Complete	April 1992	April 1992	Green
4.2.1	Accelerator Systems available for Cooldown for ASST	April 1992	April 1992	Green
1.1.2	Start SCL Procurement for Linac	October 1991	November 1991	Yellow
1.1.2	Start DTL Fabrication for Linac	October 1991	February 1992	Red
1.1.2	Linac RFQ Completed	July 1992	July 1992	Green
1.1.2	Delivery of Klystrons and Power Systems	July 1992	July 1992	Yellow
1.1.3	LEB Magnet Engineering Complete	December 1991	December 1991	Yellow
1.1.3	Start Procurement Process for LEB Dipole/Quadrupole	June 1992	June 1992	Green
1.1.6	E2 Cryoplant - Start Procurement	June 1992	June 1992	Green

**ACCELERATOR SYSTEMS DIVISION  
FY92 DELIVERABLE MILESTONES**

The ASST Spool Pieces are projected to be delivered earlier than originally scheduled (in January).

Cryoplant and Accelerator Systems available for cooldown are currently scheduled to be completed in April 1992. We are continuing successfully and hope these will be completed early. The deliverable for Accelerator Systems available for cooldown for ASST will be completed as soon as all Accelerator Systems are ready for the cooldown of the string. These are currently planned to be completed by April 1992.

The start of the SCL procurement for the Linac is currently scheduled for November, 1991, which is one month later than the original schedule so this is a yellow condition. This will not delay the start of commissioning of the Linac.

Start DTL Fabrication for the Linac is currently planned for February, 1992; this will not delay the commissioning of the Linac. This slip, which results in a Red condition, is because the detailed schedule now reflects the procurement philosophy of performance specification and the December date is when the CDR is scheduled and the final design can begin.

Linac RFQ completed is on schedule and currently planned for July, 1992.

Delivery of Klystrons and Power Systems -- This milestone is in jeopardy because of late award of Klystron order.

Have some worry about completing the LEB Magnet Engineering as scheduled due to the fact that we started later than anticipated and have space problems. We have a slow start because of the needed requirements, coordinates, and lattice definition. For this reason this is a Yellow condition. We have no new currently planned date.

Start procurement process for the LEB magnets is green -- we have no new schedule.

E2 Cryoplant -- start procurement, June 1992 is the currently planned schedule.

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DIVISION PROJECT STATUS REPORT				
DESIGN <input checked="" type="checkbox"/>	PRODUCTION <input type="checkbox"/>			
CONSTRUCTION <input type="checkbox"/>	RESEARCH & DEVELOPMENT <input checked="" type="checkbox"/>			PART I
<b>1. IDENTIFIERS:</b>				
1a. PROJECT TITLE/NUMBER DE-AC02-89ER40486 SUPERCONDUCTING SUPER COLLIDER LABORATORY		1b. REPORTING PERIOD August 1991		
1c. MANAGING DIVISION  Magnet Systems Division		1f. PERFORMING ORGANIZATION(S)  Engineering Test Production Quality Assurance Business Management Fermi National Accelerator Laboratory Lawrence Berkeley Laboratory Brookhaven National Laboratory General Dynamics Space System Division Westinghouse Electric Corporation		
1d. DIVISION/OFFICE CONTACT  Ken Mountain (ext. 1161)				
1e. DIVISION MANAGER  Tom Bush (ext. 2023)				
<b>2. DIVISION MANAGER'S PERSONAL ASSESSMENT:</b>				
<b>2a. Summary Status</b>				
GROUP	TECHNICAL	COST	SCHEDULE	OVERALL
Program Management	Green	Green	Green	Green
HEB Magnets	Green	Green	Green	Green
Collider Ring Magnets	Green	Green	Green	Green
Magnet Equipment & Tooling	Green	Green	Green	Green
Magnet R&D	Green	Green	Green	Green
<i>OVERALL DIVISION ASSESSMENT</i>	Green	Green	Green	Green
<i>PREVIOUS DIVISION ASSESSMENT</i>	Green	Green	Green	Green

**MAGNET SYSTEMS DIVISION  
Other Labs & Universities**

<b>Goal</b>	Provide the ASST magnets, and support magnet R&D at SSCL.
<b>WBS Elements</b>	<b>Description</b>
1.2.2.1	Magnet R&D
<b>Accomplishments</b>	<i>FNAL:</i> Nine magnets and one practice cold mass currently in process. General Dynamics is involved in seven magnets. Yoke and skinning press problems resolved and again operational. <i>BNL:</i> WEC has full complement on board at the BNL site. First magnet (DCA207) is in final assembly. Work has started on the technology transfer magnet (DCA208). <i>LBL:</i> The first two LBL magnets have been completed. The technology transfer magnet (QCC405) has been started. <i>SSCL:</i> Completed collaring of DSA101. Began practice welding of DSA101 cold mass.
<b>Issues and Concerns</b>	Delivery of some magnets components (cable and strip heaters) are critical.
<b>Corrective Action</b>	Monitor procurement process and attempt to get vendors to expedite.
<b>Condition</b>	Green
<b>POC</b>	Roger Coombes

**DATE:** August 25, 1991

**MAGNET SYSTEMS DIVISION  
HEB Dipole Magnets**

<b>Goal</b>	Provide reliable HEB dipole magnets on schedule and within budget.
<b>WBS Elements</b>	<b>Description</b>
1.2.2.1	HEB Dipole Magnets
<b>Accomplishments</b>	Convened SSB for development contract. Conducted FY92 and FY93 budget exercise for SSCL effort. Developed a revised level 3A spec in conjunction with ADOD. Working out final issues on level 3B spec.
<b>Issues and Concerns</b>	FY92 and FY93 budgets need to be adjusted upward. Present allocation of \$5.5M insufficient to fund subcontractor. Lack of finalized level 3A and 3B spec.
<b>Corrective Action</b>	The FY92 budget allocation for the subcontractor and SSCL effort must be increased.
<b>Condition</b>	Green
<b>POC</b>	Dave Fortunato

**DATE:** August 25, 1991

**MAGNET SYSTEMS DIVISION  
HEB Quadrupole Magnets**

<b>Goal</b>	Provide reliable HEB Quadrupole magnets on schedule and within budget.
<b>WBS Elements</b>	<b>Description</b>
1.2.2.2	HEB Quadrupole Magnets
<b>Accomplishments</b>	Conducted legal reviews of draft CEN/SACLAY contract. Conducted a budget workshop for the SSCL effort.
<b>Issues and Concerns</b>	Internal legal review comments need to be addressed. Lack of Level 3B spec is critical. Budget allocation for FY92 may be insufficient.
<b>Corrective Action</b>	Settle all open T's and C's with SSCL procurement and legal. Provide funding allocation that meets program requirements. Provide Level 3A and 3B specs.
<b>Condition</b>	Green
<b>POC</b>	Dave Fortunato

**DATE:** August 25, 1991

**MAGNET SYSTEMS DIVISION  
15 Meter CDM/13 Meter CDM**

<b>Goal</b>	Provide reliable collider dipole magnets on schedule and with budget.		
<b>WBS Elements</b>	<b>Description</b>	<b>WBS Elements</b>	<b>Description</b>
1.2.3.1	15 meter CDM	1.2.3.2	13 meter CDM
<b>Accomplishments</b>	<p>Held the first monthly program review.</p> <p>Second monthly program reviews were held with General Dynamics and Westinghouse during the week of August 19.</p> <p>Conducted initial C/SCSC review of Westinghouse on July 22.</p> <p>General Dynamics formal dedication of Hammond, LA, Facility on August 8.</p> <p>Successfully cleared first General Dynamics procurement package through SSCL review/approval process.</p> <p>Hired site manager for follower and placed him at Brookhaven.</p> <p>Westinghouse commenced effecting interface with leader, General Dynamics.</p> <p>Commenced industry assembly of backup ASST at Brookhaven with contractors on site</p> <p>Westinghouse officially opened offices at Round Rock, TX, August 20.</p> <p>Conducted a series of technical meetings with General Dynamics in preparation for Systems Design Review (SDR).</p> <p>Prepared FY92 budget requirements for CDM program and presented for approval.</p>		
<b>Issues and Concerns</b>	<p>Hiring of a subcontract administrator and support personnel sufficient to support these major contracts.</p> <p>Ability of the SSCL to support the review of subcontractor procurement actions without impact to schedule.</p> <p>Success of SDR to support required product development.</p>		
<b>Corrective Action</b>	<p>Continue to bring program requirements to management attention.</p> <p>Test procurement review process with initial subcontractor purchases and adjust process and resources as required.</p> <p>Planning, preparation and participation by all persons required to complete SDR on August 27/28.</p>		
<b>Condition</b>	Green		
<b>POC</b>	Herb Trenham	<b>DATE:</b> September 25, 1991	

**MAGNET SYSTEMS DIVISION  
Collider Quadrupole Magnets**

<b>Goal</b>	Provide reliable Collider Dipole Magnets on schedule and within budget.
<b>WBS Elements</b>	<b>Description</b>
1.2.3.3	Collider Ring Quadrupole Magnets
<b>Accomplishments</b>	Procurement package for high current supply received; first major procurement item of B&W subcontract; will use to exercise SSCL approval process.  B&W issued RFP's for curing, collaring and yoking/skinning presses per program schedule; leading to purchase orders at end of October/beginning of November.  Program review provided by B&W for MSD Associate Director August 13.  Working meeting for engineering activity planning held with B&W August 20-22.  Activity continuing to support the issue of compliance with ASME boiler and pressure code. Proposal for study expected in September.
<b>Issues and Concerns</b>	Need to estimate impact on program of compliance with ASME boiler and pressure code depending on path selected.  Close interface being maintained with B&W on development of detail plans for CQM magnets.  B&W design analysis staff are almost all new hires or transfers from other technologies (Interatom is primary cold mass designer).
<b>Corrective Action</b>	None
<b>Condition</b>	Green
<b>POC</b>	Sol Shapiro

**DATE:** September 25, 1991

**MAGNET SYSTEMS DIVISION  
2.5 Micron Conductor**

<b>Goal</b>	Continue the development of 2.5 $\mu$ m conductor in support of the HEB magnet program.		
<b>WBS Elements</b>	<b>Description</b>	<b>WBS Elements</b>	<b>Description</b>
4.2.2.3	Continue process development for 2.5 $\mu$ m conductor	1.2.2	Supply prototype conductor for HEB magnet programs requiring 2.5 $\mu$ m conductor
<b>Accomplishments</b>	<p>Continuing to develop process which, if successful, allows 2.5<math>\mu</math>m fabrication for the same cost as 6<math>\mu</math>m. Contract preparation continues.</p> <p>Agreement reached with Supercon, Inc. on pricing.</p> <p>Hitachi negotiations scheduled for September 9 due to conflict with HEB program.</p>		
<b>Issues and Concerns</b>	<p>Contract award delayed until results from KEK and FNAL R&amp;D programs complete.</p> <p>Premature to kill 2.5<math>\mu</math>m program in light of IGC/ASI process potential.</p> <p>Contract preparation is difficult in parallel with 6<math>\mu</math>m workload.</p> <p>Long delays in contract approval process may impede the schedule.</p>		
<b>Corrective Action</b>	<p>Relieved SCA of all responsibility except for wire and cable procurements. Procurement assigned full-time clerk to support SCA.</p> <p>Providing direct support to SCA by members of conductor group for document preparation, etc.</p> <p>Continue 2.5<math>\mu</math>m program for this year with IGC/ASI, as a minimum, to verify if new process yields manufacturable results (three full-size billets already in process at IGC on IR&amp;D, first yielded successful results).</p>		
<b>Condition</b>	Green		
<b>POC</b>	Don Capone		<b>DATE:</b> August 25, 1991

**MAGNET SYSTEMS DIVISION  
6 Micron Conductor**

<b>Goal</b>	Qualify conductor vendors for the SSCL magnet programs requiring 6µm conductor.		
<b>WBS Elements</b>	<b>Description</b>	<b>WBS Elements</b>	<b>Description</b>
4.2.2.3	Complete process optimization to ensure adequate fabricability.	1.2.3	Supply prototype and preproduction conductor for magnet programs requiring 6µm conductor.
<b>Accomplishments</b>	DOE meeting August 19, 1991 agreed to approve remaining contracts based on three under review at this time (one of each contract type now in review). IGC/ASI initial review completed. Some issues to be corrected prior to processing start. All vendor liaisons are on board. Initial monitoring visits to suppliers scheduled for late September and early October.		
<b>Issues and Concerns</b>	Serial review of complex contracts requires more time than originally anticipated. Projected September 1 start dates contain only two months of float to support the CDM cable delivery requirements. Long lead time required for foreign travel makes rapid monitoring of problems difficult. Regular technical reviews not a problem.		
<b>Corrective Action</b>	Emphasis on first inner and outer subcontracts to support CDM program. Procurement has assigned a full-time clerk to support the SCA. Vendor liaisons have been assigned to support the SCA directly in contract preparation, as required. Submitting foreign travel requests now for anticipated travel requirements. Latest request was approved in about 15 days, using the new request forms. This may be acceptable, even for problems.		
<b>Condition</b>	Green		
<b>POC</b>	Don Capone	<b>DATE:</b>	August 25, 1991

**MAGNET SYSTEMS DIVISION**  
**MDL Tooling**

<b>Goal</b>	Equip the Magnet Development Lab (MDL) with tooling to support magnet production plans.
<b>WBS Elements</b>	<b>Description</b>
1.2.4.1	MDL Tooling
<b>Accomplishments</b>	Conducted final design review of Merrick Eng/Tally Industries design for the auto Linear Welding System required for cold mass shell welding.  Used the collaring press to successfully collar magnet DSA101.  Used a 10 ft. section of the shell welding press set up in the magnet evaluation lab to weld a practice section of DSA101 cold mass.  Ordered a wedge wrapper.
<b>Issues and Concerns</b>	Selva coil winder delivery has slipped to March 1992. This will delay magnet production capability in the MDL by two months.
<b>Corrective Action</b>	Working with Selva to pull in schedule.
<b>Condition</b>	Green
<b>POC</b>	David Bailey

**DATE:** September 25, 1991

**CONVENTIONAL CONSTRUCTION DIVISION  
Magnet Development Lab (MDL)**

<b>Goal</b>	Support MSD PBOD of April 1, 1991 and a BOD of July 1, 1991.
<b>WBS Elements</b>	<b>Description</b>
2.4.2.2	Magnet Development Lab (MDL)
<b>Accomplishments</b>	Interior finish proceeding.  Completing interior finishout.  Second floor drywall complete.  Turnover of 1st floor and South Mezzanine to MSD for installation of technical equipment on September 6.  MSD scheduled move-in on or about September 30.
<b>Issues and Concerns</b>	Interim electrical power (Hill County). Fire pumps scheduled delivery September 20; installed September 30, 1991. Final negotiations on large modification 13.
<b>Corrective Action</b>	Expedite and monitor resolution of remaining issues.
<b>Condition</b>	Red (10% Cost overrun)
<b>POC</b>	Craig N. Trimble

**DATE:** September 11, 1991

**MAGNET SYSTEMS DIVISION**  
**MTL Equipment and Tooling**

<b>Goal</b>	Design and test the measurement and control instrumentation which will be used to evaluate superconducting magnet performance in the Magnet Test Laboratory (MTL).
<b>WBS Elements</b>	<b>Description</b>
1.2.4.2	MTL Equipment and Tooling
<b>Accomplishments</b>	Laid out the isolation amplifier interface board. Acceptance test of three high current DC power supplies is in progress. Completed a preliminary facilities layout of the MTL pit. Developed an approximation method to quickly estimate single magnet cooldown time as a function of refrigerator flow rate. This method can be used to analyze the magnet vendors' cold test facility requirements. Quench binary files and the quench analysis software have been ported to the Sun environment. The binary files were transported using the SDS file structure developed by accelerator controls. We are now using the Sun to do quench analysis that was previously done on a Vax. The rotating coil field harmonic system software is now in test at BNL's calibration facility.
<b>Issues and Concerns</b>	33mm ID for CDM beam pipe impacts magnet measurement instrumentation design.
<b>Corrective Action</b>	Evaluate options for reduced instrumentation size and alternate warm bore designs.
<b>Condition</b>	Green
<b>POC</b>	Mark Coles
	<b>DATE:</b> September 25, 1991

**CONVENTIONAL CONSTRUCTION DIVISION  
Magnet Test Lab (MTL)**

<b>Goal</b>	Support MSD with a BOD of May 15, 1992 and a PBOD of March 15, 1992.
<b>WBS Elements</b>	<b>Description</b>
2.4.2.1	Magnet Test Lab (MTL)
<b>Accomplishments</b>	Title II - 100% steel package awarded (under baseline estimate). Bid date set for September 10, 1991 after Addendum No. 1.
<b>Issues and Concerns</b>	DOE approval of CCB for funding for technical systems elements, Refrigeration Area, Compressor Building, and schedule adjustment.
<b>Corrective Action</b>	Obtain DOE approval.
<b>Condition</b>	Green (assuming DOE approval of CCB action)
<b>POC</b>	Craig N. Trimble

**DATE:** September 11, 1991

**MAGNET SYSTEMS DIVISION  
Major Project Milestones**

<b>WBS</b>	<b>Milestone</b>	<b>Baseline Schedule</b>	<b>Current Projection</b>	<b>Condition Appraisal</b>
1.2.3	CDM authorization to incur costs	November 1991	November 15, 1991 <sup>A 2</sup>	Green
	Full-rate production contract awarded on collider magnets	April 1994 <sup>1</sup>	January 1995	Green
	Start first half sector CDM delivery from vendor plant	April 1994 <sup>1</sup>	July 1994	Green

<sup>1</sup> CCB action in process to modify baseline schedule dates to reflect actual work schedule.

<sup>2</sup> Note that GD did not incur costs until May 1991.

<sup>A</sup> Indicates actual date.

**MAGNET SYSTEMS DIVISION  
FY91/92 Deliverables**

<b>WBS</b>	<b>Milestone</b>	<b>Baseline Schedule</b>	<b>Current Projection</b>	<b>Condition Appraisal</b>
4.2.2.2	Complete Testing of 1st Lab Prototype Quad Cold Mass	May 1991	May 1991 <sup>A</sup>	Green
1.2.3.1	Start GD assembly of dipoles at FNAL	June 1991	June 1991 <sup>A</sup>	Green
1.2.3.1	First 5cm Long Magnet Assembled	September 1991	September 1991	Green
1.2.4	Start Magnet Lab Tooling Procurement	October 1990	October 1990 <sup>A</sup>	Green
4.2.2.3	Collider S/C Dipole Magnet Cable Vendor Qualification program started	January 1991	January 1991 <sup>A</sup>	Green
1.2.3.1	CR Dipole Development started in Industry (delay in contract award)	February 1991	April 1991 <sup>A</sup>	Green
1.2.3.3	CR Quad Development started in Industry (awaiting contract approval)	April 1991	June 1991 <sup>A</sup>	Green
4.2.2.2	Quad string test delivered to ASST	March 1992	March 1992	Green
4.2.2	All string test delivered to ASST	May 1992	May 1992	Green
1.2.4	Complete Installation of Magnet Lab Tooling	September 1992	September 1992	Green

<sup>A</sup> Indicates actual date.

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DIVISION PROJECT STATUS REPORT				
DESIGN <input checked="" type="checkbox"/>	PRODUCTION <input type="checkbox"/>			
CONSTRUCTION <input checked="" type="checkbox"/>	RESEARCH & DEVELOPMENT <input type="checkbox"/>			<b>PART I</b>
<b>1. IDENTIFIERS:</b>				
1a. PROJECT TITLE/NUMBER DE-AC02-89ER40486 SUPERCONDUCTING SUPER COLLIDER LABORATORY	1b. REPORTING PERIOD August 1991			
1c. MANAGING DIVISION  Conventional Construction	1f. PERFORMING ORGANIZATION(S)  CCD Division Office Program Management Department Requirements Planning Department Engineering & Design Department Construction Department PB/MK Team TNRLC			
1d. DIVISION/OFFICE CONTACT  Robert K. Tener (ext. 4012)				
1e. DIVISION MANAGER  Jon R. Ives (ext. 4028)				
<b>2. DIVISION MANAGER'S PERSONAL ASSESSMENT:</b>				
2a. Summary Status				
	TECHNICAL	COST	SCHEDULE	OVERALL
2.1.1 CCD Administration	Green	Yellow	Green	Yellow
2.1.2 thru 2.1.5 Injector	Green	Green	Green	Green
2.1.6 Collider	Green	Green	Yellow	Green
2.2 Experimental Halls	Green	Green	Green	Green
2.3 Infrastructure	Green	Green	Green	Green
2.4 Campus	Green	Green	Yellow	Green
2.5 A-E/CM	Green	Red	Green	Green
<i>OVERALL DIVISION ASSESSMENT</i>	Green	Green	Yellow	Green
<i>PREVIOUS DIVISION ASSESSMENT</i>	Green	Green	Yellow	Green

**CONVENTIONAL CONSTRUCTION DIVISION  
Conventional Facilities**

**Goal**

**WBS Elements            Description**

2.0                            Conventional Facilities

**Accomplishments**

2.1                            Completed Title I design on Linac facility. N15 Magnet Shaft bids opened for September award. PB/MK's Collider Tunnel Elevation Study was presented to SSCL. Completed ASST steel erection. Commenced Exploratory Shaft drilling.

2.3                            Completed Title II design on N15 Site Infrastructure. Issued NTP for construction of HCEC power line. Received bids for construction of N15 Perimeter Road. Established working group for West Campus water and wastewater facilities.

2.4                            Completed Title II design on MTL; awarded steel package. Preconcept site plan for West Campus Complex approved; initiated Pre-Title I design.

2.5                            PB/MK submitted proposed FY92 Annual Work Plan.

- Issues and Concerns**
1. Development of integrated cost and schedule systems.
  2. Baseline cost estimate does not cover A-E/CM PM&A costs.

- Corrective Action**
1. PMO activities underway to develop integrated cost and schedule systems.
  2. Change Control action to reflect A-E/CM PM&A costs to cover scope of contract as negotiated.

**Condition**                    Green (overall); Red (cost)

**POC**                            R.K. Tener

**DATE:** September 11, 1991

**CONVENTIONAL CONSTRUCTION DIVISION  
N15 (E1) Infrastructure**

<b>Goal</b>	Provide necessary infrastructure to support BOD of each completed facility.
<b>WBS Elements</b>	<b>Description</b>
2.3.2	Infrastructure - Primary
2.3.3	Infrastructure - Secondary
<b>Accomplishments</b>	<p>HCEC line cleared for cultural resources.</p> <p>Issued NTP for construction of HCEC electric line.</p> <p>Completed 100% Title II Final Design Plans for N15 Site Infrastructure.</p> <p>Completed 90% Title II Final Design Plans for N15 to N20 Tunnel Infrastructure.</p> <p>Received bids for construction of N15 Perimeter Road.</p> <p>Completed Title I Preliminary Design Plans for N15 Low Conductivity Water Plant Infrastructure.</p> <p>Received bids for furnishing and erecting Cooling Tower.</p> <p>TNRLC took possession of Parcel 156, access agreement in process.</p>
<b>Issues and Concerns</b>	<p>Cultural resource clearances.</p> <p>Vacation of Hoyt Road by county.</p>
<b>Corrective Action</b>	<p>CCD assumed coordination of cultural resource activities, expect majority (sufficient for construction) to be complete late September.</p> <p>SSCL - Legal has assumed lead on vacation of county roads.</p>
<b>Condition</b>	Green
<b>POC</b>	Richard Wiebe

**DATE:** September 11, 1991

**CONVENTIONAL CONSTRUCTION DIVISION  
Collider Infrastructure Other than N15 (E1)**

<b>Goal</b>	Provide necessary infrastructure to support BOD of each completed facility.
<b>WBS Elements</b>	<b>Description</b>
2.3.2	Infrastructure - Primary
2.3.3	Infrastructure - Secondary
<b>Accomplishments</b>	Conceptual Design started – N20, N25.
<b>Issues and Concerns</b>	Off-site road improvements (county roads). Ring elevation/final real estate needs.
<b>Corrective Action</b>	Action: lead, placed with SSCL - Legal. Subsurface on hold pending final direction; change could affect land availability by months.
<b>Condition</b>	Green
<b>POC</b>	Richard Wiebe

**DATE:** September 11, 1991

**CONVENTIONAL CONSTRUCTION DIVISION  
West Campus (Injector) Infrastructure**

<b>Goal</b>	Provide necessary infrastructure to support BOD of each completed facility.
<b>WBS Elements</b>	<b>Description</b>
2.3.2	Infrastructure - Primary
2.3.3	Infrastructure - Secondary
<b>Accomplishments</b>	<p>Completed SSC Trip Generation Study and presented to TNRLC and SDHPT.</p> <p>Completed Pre-Title I Stormwater/Detention Cooling Pond Study.</p> <p>Completed Hydrology Report of existing conditions for the West Campus.</p> <p>Completed Draft Environmental Compliance Plan for LEB.</p> <p>Completed Preliminary Design Requirements for Water and Wastewater and furnished to TNRLC and TRA.</p> <p>Established Working Group to continue development of design requirements for Water and Wastewater Facilities.</p>
<b>Issues and Concerns</b>	Location of Solenoidal Detector Collaboration (SDC).
<b>Corrective Action</b>	Direction needed from PM on experimental program in order for infrastructure design to support requirements on schedule.
<b>Condition</b>	Green
<b>POC</b>	Richard Wiebe

**DATE:** September 11, 1991

**CONVENTIONAL CONSTRUCTION DIVISION  
Exploratory Shaft (IR1 Location)**

<b>Goal</b>	To provide large scale, in-situ, test input for the design of underground structures in Eagle Ford Shale rock strata and detector support systems.  To provide shaft access to the utility bypass and/or experimental facilities, at the IR1 location. Final function and finish-out to be determined.
<b>WBS Elements</b>	<b>Description</b>
2.1.6.26	Exploratory Shaft (IR1)
<b>Accomplishments</b>	Geotechnical Instrumentation subcontract negotiated and signed.  Instrument procurement underway.  Pilot hole complete. Widening of shaft underway.
<b>Issues and Concerns</b>	None.
<b>Corrective Action</b>	None.
<b>Condition</b>	Green
<b>POC</b>	Ed Crumpley

**DATE:** September 11, 1991

**CONVENTIONAL CONSTRUCTION DIVISION  
IR1 Experimental Facilities**

**Goal** To provide Physics Research Division with Experimental Hall and Surface Facilities.

**WBS Elements** **Description**

2.2.2.1 IR1 Underground Hall, Shaft Structures and Surface Facilities

**Accomplishments** New scheduling being input to IPS.

**Issues and Concerns** Significant scope and cost increases over baseline for Experimental Facilities.  
Delay beginning underground Title I until January 1992 pending GEM approval.  
Possible shift of GEM to IR4 or 5.

**Corrective Action** Cost and scope reconciliation action being planned.  
PB/MK developing comparative cost study.

**Condition** Yellow (Schedule)

**POC** Ed Crumpley

**DATE:** September 11, 1991

**CONVENTIONAL CONSTRUCTION DIVISION  
IR4 Experimental Facilities**

**Goal** To provide Physics Research Division (PRD) with Experimental Hall and Surface Facilities.

**WBS Elements** **Description**

2.2.2.1 IR4 Underground Hall Shaft Structures and Surface Facilities

**Accomplishments** Draft Conceptual Design Phase B-2 delivered by PB/MK.  
New scheduling being input to IPS.

**Issues and Concerns** Significant scope and cost increases over baseline for Experimental Facilities.  
Possible shift of Solenoidal Detector Collaboration (SDC) to IR1, 5 or 8.  
Delay beginning of underground Title I pending decision on shift of detector location.

**Corrective Action** Cost and scope reconciliation action being planned.  
PB/MK developing comparative cost study.

**Condition** Yellow (Spec and Schedule)

**POC** Ed Crumpley

**DATE:** September 11, 1991

**CONVENTIONAL CONSTRUCTION DIVISION  
Site Development (Master Plan)**

<b>Goal</b>	Develop a fully coordinated Site Development Plan to guide project planning and design.
<b>WBS Elements</b>	<b>Description</b>
2.5	Site Development Plan (Master Plan)
<b>Accomplishments</b>	PB/MK comments received September 5, 1991 for incorporation. Final draft to SSCL for approval September 20, 1991. Pending SSCL approval and printing.
<b>Issues and Concerns</b>	Schedule slippage. A-E/CM has suggested cost will exceed the NTP.
<b>Corrective Action</b>	Have A-E/CM estimate cost to complete including SSCL review and printing. Have A-E/CM provide current schedule to complete including printing.
<b>Condition</b>	Yellow (Schedule)
<b>POC</b>	Robert W. Sims

**DATE:** September 11, 1991

**CONVENTIONAL CONSTRUCTION DIVISION  
Major Project Milestones**

<b>WBS No.</b>	<b>Milestone</b>	<b>Milestone Level</b>	<b>Baseline Schedule</b>	<b>Current Projection</b>	<b>Condition Appraisal</b>
2.0	Start Civil Construction	1	March 1991	March 1991 <sup>A</sup>	Green
2.4.2.2	Magnet Development Lab BOD (High Bay)	2	April 1991	September 1991	Red
2.4.2.1	Magnet Test Lab BOD	2	June 1992	June 1992	Green*
2.1.2	Linac Construction Start	2	August 1991	February 1992	Red
2.1.6.25	ASST Construction Start	2	March 1991	May 1991 <sup>A</sup>	Green
2.1.6.25	ASST BOD	2	September 1991	October 1991	Green
2.1.6.2	N15 Magnet Shaft Construction Start	2	March 1991	September 1991	Red <sup>2</sup>
2.1.6.2	N15 to N20 Construction Basic Tunnel Start	2	October 1991	January 1992	Red <sup>2</sup>
2.1.6.2	N20 to N30 Construction Basic Tunnel Start	2	May 1992	April 1992	Green
2.1.6.2	N30 to N45 Construction Basic Tunnel Start	2	December 1992	April 1992	Green
2.1.3	LEB Construction Start	2	April 1992	June 1992	Red
2.1.4	MEB Construction Start	2	July 1992	January 1993	Red
2.3.2	Infrastructure, Campus Construction Start <sup>1</sup>	2	September 1992	April 1992	Green
2.3.2	Infrastructure, Injector Construction Start <sup>1</sup>	2	October 1991	December 1991	Green
2.2.2	Experimental Halls Construction Start	1	June 1992	April 1993	Green

<sup>1</sup> Accelerated schedule, dependent on approval of accelerated funding.

<sup>2</sup> Collider construction sequencing has been rescheduled. Approval and acceptance by PMO will eliminate red condition.

\* Change Control Action approved.

<sup>A</sup> Actual

**CONVENTIONAL CONSTRUCTION DIVISION  
FY91 Deliverables**

<b>WBS No.</b>	<b>Milestone</b>	<b>Baseline Schedule</b>	<b>Current Projection</b>	<b>Condition Appraisal</b>
2.4.2	MDL Completed (BOD - High Bay)	April 1991	September 1991	Red
2.1.6	ASST Construction Start	April 1991	May 1991 <sup>A</sup>	Green
2.1.6	ASST BOD	September 1991	October 1991	Green
2.3.3	Infrastructure and Utilities Construction Start	April 1991	March 1991 <sup>A</sup>	Green
2.4.2	MTL Construction Start	September 1991	September 1991	Green*
2.1.2	Linac Facility Construction Start	August 1991	February 1992	Red

\* Change Control Action approved.

<sup>A</sup> Actual

**CONVENTIONAL CONSTRUCTION DIVISION  
FY92 Deliverables**

<b>WBS No.</b>	<b>Milestone</b>	<b>Baseline Schedule</b>	<b>Current Projection</b>	<b>Condition Appraisal</b>
2.1.6	Collider-First Sector Construction Start	October 1991	January 1992 <sup>1</sup>	Red
2.3.3	N15 Roads Completed	October 1991	February 1992 <sup>2</sup>	Red
2.4.2	MTL Completed (BOD)	June 1992	June 1992	Green*
2.1.3	LEB Facility Construction Start	April 1992	June 1992	Red
2.1.4	MEB Facility Construction Start	July 1992	January 1993	Red
2.3.2	Infrastructure, Campus Construction Start	September 1992	April 1992	Green

<sup>1</sup> Collider construction sequencing has been rescheduled. Approval and acceptance by PMO will eliminate Red condition.

<sup>2</sup> Phased completion will support MDL, ASST, and MTL as each is completed.

\* Change Control Action approved.

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**PHYSICS RESEARCH DIVISION**

DIVISION PROJECT STATUS REPORT					
DESIGN	<input type="checkbox"/>	PRODUCTION	<input type="checkbox"/>		
CONSTRUCTION	<input type="checkbox"/>	RESEARCH & DEVELOPMENT	<input checked="" type="checkbox"/>	PART I	
1. IDENTIFIERS:					
1a.	PROJECT TITLE/NUMBER SUPERCONDUCTING SUPER COLLIDER LABORATORY	DE-AC02-89ER40486	1b.	REPORTING PERIOD August 1991	
1c.	MANAGING DIVISION  Physics Research Division		1f.	PERFORMING ORGANIZATION(S)  SSC Library Services Experimental Facilities Support Experimental Systems-Detector R&D Experimental Systems-Detectors Experimental Systems-Detector Computing SDC Collaboration--LBL GEM Collaboration	
1d.	DIVISION/OFFICE CONTACT  Newton Norman (ext. 6035)				
1e.	DIVISION MANAGER  Fred Gilman (ext. 6113)				
2. DIVISION MANAGER'S PERSONAL ASSESSMENT:					
2a. Summary Status					
	GROUP	TECHNICAL	COST	SCHEDULE	OVERALL
	SSC Library	Green	Green	Green	Green
	Experimental Facilities Support	Green	Green	Yellow	Green
	Experimental Systems-Detector R&D	Green	Green	Green	Green
	Experimental Systems-Detectors	Green	Green	Green	Green
	Experimental Systems-Detector Computing	Green	Green	Green	Green
	SDC Collaboration--LBL	Green	Yellow	Green	Green
	GEM Collaboration	Yellow	Yellow	Red	Red
	<i>OVERALL DIVISION ASSESSMENT</i>	Green	Green	Green	Green
	<i>PREVIOUS DIVISION ASSESSMENT</i>	Green	Green	Green	Green

## PHYSICS RESEARCH DIVISION

<b>Goal</b>	4.6.1 Develop distributed information access and delivery system to avoid duplication of resources in remote locations. 4.6.3 Develop functional requirements for the detector hall at IR4 for SDC and GEM. 5.1 Carry out detector R&D necessary to establish technologies for the initial SSC detectors.
<b>WBS Elements</b>	<b>Description</b>
4.6.1	Library and Information Services
4.6.3	Experimental Facilities Support
5.1	Detector R&D
<b>Accomplishments</b>	
4.6.1	Gross square footage requirements and functions were determined for the West Campus Library and submitted to PB/MK.
4.6.3	Detector Assembly and Installation schedules are being completed in LBL. Preliminary conceptual designs have been delivered to CCD for Title I for the SDC detector. Facility support for the detector subsystem concepts have been fixed for the SDC detector for the Technical Proposal. Preliminary designs for the Test Beam calibration Hall have been completed and are available. Cost estimates for a generic test beam setup are also available.
5.1	Continued discussions with the proponents of SSC Detector Subsystems R&D Proposal No. 200 (Precision Muon Chamber R&D) to arrive at a final budget. Finished the 31 other Detector R&D budgets and corresponding Memoranda of Understanding.
<b>Issues and Concerns</b>	
4.6.3	Uncertainty in detector locations will add time delay in meeting milestones. GEM detector work is lagging far behind.
<b>Corrective Action</b>	
4.6.3	Delivery of User Requirements will come after hall locations are fixed. Many new hires will be needed for the GEM work.
<b>Condition</b>	Green (overall)
<b>POC</b>	P. Kreitz/R. Stefanski/F. Gilman

DATE: September 11, 1991

**PHYSICS RESEARCH DIVISION  
Experimental Detectors**

<b>Goal</b>	Decide on initial experimental program and support the management, engineering, and design of SSC detectors.
<b>WBS Elements</b>	<b>Description</b>
5.2	Experimental Detectors
<b>Accomplishments</b>	<p>A draft document on setting up an interim SDC project management organization at the SSCL was drawn up and sent to DOE for comment. The GEM Collaboration began implementation of the organization. The Laboratory appointed an international panel to review the options for a baseline magnet design for GEM.</p> <p><i>Oak Ridge National Laboratory (ORNL):</i> Efforts were directed at updating the cost estimate for the Scintillating Fiber Outer Tracker. The Magnet and Central Tracker Resource Requirements Report and the Interface Control Document were revised to reflect current designs.</p> <p><i>Physical Sciences Laboratory (PSL) - Muon:</i> The muon chamber system cost estimates were reviewed and updated. A draft of the Muon barrel toroid conceptual design was completed.</p> <p><i>Physical Sciences Laboratory (PSL) - Trigger:</i> The overall structure of the trigger system has been developed. Simulation efforts are continuing to evaluate front-end electronics options.</p> <p><i>Fermi National Laboratory (FNAL):</i> Conceptual design efforts have continued on the superconducting solenoid. Construction methods for the inner and outer vacuum shells have been explored as well as options for the cold mass supports. Design and cost optimization work progressed on the scintillation tiles, the all-iron hadron plate lead EM calorimeter, and the calorimeter support system.</p> <p><i>Argonne National Laboratory (ANL):</i> The barrel and end cap calorimeter geometries were revised to reflect current cost/performance specs. Design options and finite element modeling of the barrel EM module is continuing. Plans are underway for evaluation in the FNAL test beam.</p>
<b>Issues and Concerns</b>	None.
<b>Corrective Action</b>	None.
<b>Condition</b>	Green
<b>POC</b>	F. Gilman

DATE: September 11, 1991

**PHYSICS RESEARCH DIVISION  
Experimental Detectors (Continued)**

<b>Goal</b>	Decide on initial experimental program and support the management, engineering, and design of SSC detectors.
<b>WBS Elements</b>	<b>Description</b>
5.2	Experimental Detectors
<b>Accomplishments</b>	<i>Westinghouse (WSTC):</i> This month efforts focused on developing cost and schedule information for the barrel calorimeter, the end-cap calorimeter and the straw tube tracker. <i>University of Michigan:</i> Work centered on triggering with super layers of straw tubes making use of application specific Integrated circuits. The effort includes chip fabrication and software simulation of the circuits as well as assembly of a cosmic ray test stand for system tests. <i>Los Alamos National Laboratory (LANL):</i> Cost and Schedule activities associated with the silicon tracking system (R&D, design, construction, assembly and test) have been developed into an integrated program plan. The specific design issues under study are forward region structural interfaces, alignments, and power cabling concepts. <i>Kaiser Engineers (KE):</i> Efforts focused on developing an overall SDC construction schedule. Monthly assembly sequence drawings were started. Preliminary design and cost estimates of a calorimeter lowering frame were prepared. <i>Lawrence Berkeley Laboratory (LBL):</i> A preliminary layout of mechanical utilities was created. New configurations of cables and electronic crates were developed. Both electrical and mechanical integration groups assisted in the overall cost estimating and provided the final roll-up and associated analysis. Martin Marietta is working with the LAC group to provide Cryostat and Module cost estimates. The Silicon Tracking effort produced revised costs and schedules. The Computing Systems work is exploring new database technologies. Prototype systems will be built to explore the new ideas.
<b>Issues and Concerns</b>	None.
<b>Corrective Action</b>	None.
<b>Condition</b>	Green
<b>POC</b>	F. Gilman

**DATE:** September 11, 1991

**PHYSICS RESEARCH DIVISION**  
**Experimental Computing**

**Goal**                      Develop computing resources to support SSC experimental physics requirements for detector simulation and data analysis.

**WBS Elements**            **Description**  
5.3                            Experimental Computing

**Accomplishments**        Utilization of Phase I of the PDSF continues to rise, while preparations for the next Phases are underway in all PRD computing groups. There are currently about 180 users on the 1000 VAX equivalent system. The RFQ for the next phase of the facility should be issued next month. Systems monitoring and data collection of systems statistics for the Facility have now become fairly mature. User support for applications and systems issues continues with growing efforts being focussed on the GEM collaboration and Experimental Physics in addition to the SDC.

**Issues and Concerns**    None.

**Corrective Action**        None.

**Condition**                Green

**POC**                      P. Leibold

**DATE:**    September 11, 1991

**PHYSICS RESEARCH DIVISION**  
**Major Project Milestones**

<b>WBS</b>	<b>Milestone</b>	<b>Baseline Schedule</b>	<b>Current Projection</b>	<b>Condition Appraisal</b>
4.6.3	Test beam configuration and coordination defined	February 1991	April 1991 <sup>A</sup>	Yellow (No impact on baseline expected)
4.6.3	Developed physics lab for detectors for test beam monitoring	February 1991	February 15, 1991 <sup>A</sup>	Green
4.6.3	Test beam optics defined.	April 1991	April 1991 <sup>A</sup>	Green
4.6.3	Resource requirements for LOI detectors defined.	December 1990	December 15, 1990 <sup>A</sup>	Green
4.6.3	Begin detector and support facilities design for proposal stage.	February 1991	February 1991 for SDCA December 1991 for GEM	Green Red (Could cause delays in proposal)
4.6.3	Develop detector assembly and installation schedules	September 1991	September 1991	Green
5.2	Letters of Intent submitted from the collaborations	November 1990	November 30, 1990 <sup>A</sup>	Green
5.2	PAC recommendations for large, general purpose detectors	December 1990	December 15, 1990 <sup>A</sup>	Green
5.2	Choose two large, general purpose detectors to be supported to full proposals	January 1991	SDC January 4, 1991 <sup>A</sup> GEM December (earliest)	Green Red (Could cause delays in defining overall experimental program)
5.2	Begin conceptual design reports for large detectors	February 1991	SDC February 1, 1991 <sup>A</sup> GEM December (earliest)	Green Red (Same as above)
5.2	Prepare preliminary construction schedules and drawings for detector subsystems	September 1991	September 1991	Green
5.3	Acquire and install 500 MIPS of distributed, UNIX-based computing hardware for detector simulation	March 1991	March 15, 1991 <sup>A</sup>	Green
5.3	Begin detector physics simulation work at SSCL	March 1991	March 15, 1991 <sup>A</sup>	Green

<sup>A</sup> Complete

**PHYSICS RESEARCH DIVISION  
FY91/92 Deliverables/Milestones**

<b>WBS</b>	<b>Milestone</b>	<b>Baseline Schedule</b>	<b>Current Projection</b>	<b>Condition Appraisal</b>
4.6.3	Test beam configuration and coordination defined	February 1991	April 1991 <sup>A</sup>	Yellow (No impact on baseline expected)
	Developed physics lab for detectors for test beam monitoring	February 1991	February 15, 1991 <sup>A</sup>	Green
	Test beam optics defined.	April 1991	April 1991 <sup>A</sup>	Green
	Resource requirements for LOI detectors defined.	December 1990	December 15, 1990 <sup>A</sup>	Green
	Begin detector and support facilities design for proposal stage.	February 1991	February 1991 for SDCA December 1991 for GEM (earliest)	Green Red (Could cause delays in proposal)
	Develop detector assembly and installation schedules	September 1991	September 1991	Green
	Start prototype detectors for test beams	October 1991	October 1991	Green
	Identify magnet alternatives for test beams	October 1991	October 1991	Green
	Establish compliance with ES&H design criteria	October 1991	October 1991	Green
	Have full operation of detector Technical Information Center	October 1991	October 1991	Green
	Test beam facility requirements set	January 1992	April 92	Green
	Complete detector and facility design for proposal stage	April 92	April 92	Green

<sup>A</sup> Complete

**PHYSICS RESEARCH DIVISION  
FY91/92 Deliverables/Milestones**

<b>WBS</b>	<b>Milestone</b>	<b>Baseline Schedule</b>	<b>Current Projection</b>	<b>Condition Appraisal</b>
5.1	Develop wire alignment and tensioning devices for muon chambers	April 1991	May 1991 <sup>A</sup> Prototype chambers constructed and gas mixtures tested	Yellow
	Develop prototype VLSI test subcircuits for front end electronic subsystems	June 1991	May 1991 • New design of time to voltage converter chip • Strawtube tracker chip for level 1 trigger	Green

<sup>A</sup> Complete

**PHYSICS RESEARCH DIVISION  
FY91/92 Deliverables/Milestones**

<b>WBS</b>	<b>Milestone</b>	<b>Baseline Schedule</b>	<b>Current Projection</b>	<b>Condition Appraisal</b>
5.1	Continue small test prototype calorimeter modules for beam and radiation damage tests	September 1991	September 1991 April 1991 <sup>A</sup> • BNL Liquid Argon module in BNL beam. • Scintillator-plate module made for Fermilab test.  May 1991 • Liquid Argon module assembled at SSCL, beam test at BNL in June.  June 1991 <sup>A</sup> • Beam test of Scintillator-plate module at Fermilab	Green
	Continue testing prototype straw tube, fiber and silicon tracking test devices	September 1991	September 1991 March 1991 • Successful test of photon yield with 4 meter scintillating fiber	Green

<sup>A</sup> Complete

**PHYSICS RESEARCH DIVISION  
FY91/92 Deliverables/Milestones**

<b>WBS</b>	<b>Milestone</b>	<b>Baseline Schedule</b>	<b>Current Projection</b>	<b>Condition Appraisal</b>
5.1	Start Large SSC calorimeter modules	April - September 1992	April - September 1992	Green
	Start prototype SSC detector tracking devices	January - September 1992	January - September 1992	Green
	Initiate procurement of tooling for prototype SSC detector construction	September 1992	September 1992	Green
	Develop VLSI circuits for front end electronics with radiation hard design	March - September 1992	March - September 1992	Green

A Complete

**PHYSICS RESEARCH DIVISION  
FY91/92 Deliverables/Milestones**

<b>WBS</b>	<b>Milestone</b>	<b>Baseline Schedule</b>	<b>Current Projection</b>	<b>Condition Appraisal</b>
5.2	Letters of Intent submitted from the collaborations	November 1990	November 30, 1990 <sup>A</sup>	Green
	PAC recommendations for large, general purpose detectors	December 1990	December 15, 1990 <sup>A</sup>	Green
	Choose two large, general purpose detectors to be supported to full proposals	January 1991	SDC January 4, 1991 <sup>A</sup> GEM December (earliest)	Green Red (Could cause delays in defining overall experimental program)
	Begin conceptual design reports for large detectors	February 1991	February 1, 1991 for SDCA GEM December (earliest)	Green Red (Same as above)
	Prepare preliminary construction schedules and drawings for detector subsystems	September 1991	September 1991	Green
	Complete conceptual design reports for large detectors which include: A. Establishment of detector hall rqmts. B. Establishment of facility rqmts.	November 1991	April 1992	Red (SDC proceeding; GEM could cause delays in defining overall experimental program)
	Complete PAC reviews for large detectors and associated facilities	February 1992	June 1992	Red (Same as above)
	Start procurement of magnet and steel for large detectors	March 1992	June 1992	Red (Same as above)
	Complete the detailed technical evaluation and review of large detector proposals	September 1992	September 1992	Green

<sup>A</sup> Complete

**PHYSICS RESEARCH DIVISION  
FY91/92 Deliverables/Milestones**

<b>WBS</b>	<b>Milestone</b>	<b>Baseline Schedule</b>	<b>Current Projection</b>	<b>Condition Appraisal</b>
5.3	Acquire and install 500 MIPS of distributed, UNIX-based computing hardware for detector simulation	March 1991	March 15, 1991 <sup>A</sup>	Green - More than 1000 MIPS on schedule and within budget
	Begin detector physics simulation work at SSCL	March 1991	March 15, 1991 <sup>A</sup>	Green
	Acquire and install up to 4000 MIPS of distributed, UNIX-based computing hardware for detector simulation	September 1992	September 1992	Green
	Establish full physics simulation effort at SSCL	September 1992	September 1992	Green

<sup>A</sup> Complete

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DIVISION PROJECT STATUS REPORT				
DESIGN	<input type="checkbox"/>	PRODUCTION	<input type="checkbox"/>	PART I
CONSTRUCTION	<input type="checkbox"/>	RESEARCH & DEVELOPMENT	<input type="checkbox"/>	
1. IDENTIFIERS:				
1a.	PROJECT TITLE/NUMBER	DE-AC02-89ER40486	1b.	REPORTING PERIOD
	SUPERCONDUCTING SUPER COLLIDER LABORATORY			August 1991
1c.	MANAGING DIVISION		1f..	PERFORMING ORGANIZATION(S)
	Laboratory Technical Services			TX- Technical Publications TH- Technical Support Management TJ- Facilities Engineering Services TK- Materiel & Logistics Services TL- Fabrication Shops TM- General Computing TN- Project Design Support TP- Communications TQ- Computer Operations TR- Engineering Standards/Support TS- Metrology & Calibration Labs TT- Protective Services TU- Staff Services TW- Technology Transfer
1d.	DIVISION/OFFICE CONTACT			
	Jerry Davis	(ext. 1788)		
1e.	DIVISION MANAGER			
	E. Jack Story	(ext. 5010)		
2. DIVISION MANAGER'S PERSONAL ASSESSMENT:				
2a.	Summary Status			
GROUP	TECHNICAL	COST	SCHEDULE	OVERALL
OVERALL DIVISION ASSESSMENT	Green	Green	Green	Green
PREVIOUS DIVISION ASSESSMENT	Green	Green	Green	Green

## LABORATORY TECHNICAL SERVICES (LTS) DIVISION

<b>Goal</b>	Provide high quality technical support services within approved manpower and budget guidelines.
<b>WBS Elements</b>	<b>Description</b>
4.4	Laboratory Technical Services
<b>Accomplishments</b>	<p>Occupants began moving into the Central Facility Phase II area the week of August 26. A Central Facility safety office has been established, an Emergency Preparedness Plan has been issued, and emergency procedures have been implemented in Phase II.</p> <p>The Magnet Test Laboratory power upgrade was completed August 10.</p> <p>The SSCL text and photographs for DOE's Technology '91 report were submitted.</p> <p>In accordance with DOE Order 4330.4A, the Operations and Maintenance Group submitted a plan for the implementation of the Maintenance Management Program.</p> <p>Fabrication shops continued support services to other divisions.</p> <p>Weekly meetings continued with PB/MK, CCD, FES, and Project Management personnel to develop standards for CAD operation and to exchange CADS operational information.</p> <p>Employee Immunization and Assistance Programs are being developed.</p>
<b>Issues and Concerns</b>	None.
<b>Corrective Action</b>	None.
<b>Condition</b>	Green
<b>POC</b>	Jerry Davis

**DATE:** September 13, 1991

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DIVISION PROJECT STATUS REPORT				
DESIGN	<input type="checkbox"/>	PRODUCTION	<input type="checkbox"/>	PART I
CONSTRUCTION	<input type="checkbox"/>	RESEARCH & DEVELOPMENT	<input type="checkbox"/>	
1. IDENTIFIERS:				
1a. PROJECT TITLE/NUMBER SUPERCONDUCTING SUPER COLLIDER LABORATORY		DE-AC02-89ER40486		
1b. REPORTING PERIOD		August 1991		
1c. MANAGING DIVISION  Project Management Office		1f. PERFORMING ORGANIZATION(S)  Project Management Office Cost/Scheduling Reporting Engineering Standards Environmental Affairs Systems Engineering		
1d. DIVISION/OFFICE CONTACT  Karen Clements (ext. 1143)				
1e. DIVISION MANAGER  Paul Reardon (ext. 5354)				
2. DIVISION MANAGER'S PERSONAL ASSESSMENT:				
2a. Summary Status				
GROUP	TECHNICAL	COST	SCHEDULE	OVERALL
3.1.1 Project Management Office	Green	Red	Green	Green
3.1.2/3.1.3 Cost/Scheduling Reporting	Red	Red	Red	Red
3.1.4 Engineering Standards	Green	Green	Green	Green
3.1.5 Environmental Affairs	Green	Red	Green	Green
3.2 Systems Engineering	Yellow	Green	Green	Green
<i>OVERALL DIVISION ASSESSMENT</i>	Green	Green	Green	Green
<i>PREVIOUS DIVISION ASSESSMENT</i>	Green	Green	Green	Green

## PROJECT MANAGEMENT DIVISION

### Goal

WBS Elements	Description
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3.2	Systems Engineering
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3.1.4	Engineering Standards
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### Accomplishments

3.2	Supported the System Design Review (SDR) of the Collider Dipole Magnet (CDM) at General Dynamics. Completed the ASST Concentric Recooler specification, including sign-off by the Mechanical Engineering Department Head. Signed off the High Energy Booster 3A specification. Completed the LEB Energy Storage Inductor (ESI) specification. Completed the ESI Preliminary Design Requirements Review action items.
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3.1.4	The first class of the Metric Rounding and Conversion course has been presented. An ASST exemption request for ASME codes has been drafted and is now being reviewed.
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Issues and Concerns	None.
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Corrective Action	N/A.
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Condition	Green
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POC	George Robertson
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DATE: September 13, 1991

## PROJECT MANAGEMENT DIVISION

<b>Goal</b>	1) Develop an Integrated Project Schedule (IPS) at Tier II detail by June 1991. 2) Develop and implement a new WBS by October 1991. 3) Implement Integrated Cost and Schedule Program (CS <sup>2</sup> ) by October 1991.
<b>WBS Elements</b>	<b>Description</b>
3.1.2, 3.1.3	Cost/Scheduling Reporting
<b>Accomplishments</b>	1) Submitted all schedules for IPS integration and initiated workshops to review and integrate all schedules. 2) Transmitted draft WBS to divisions for review and approval. 3) DPC submitted draft System Description.
<b>Issues and Concerns</b>	1) Schedule integration process is taking longer than planned (logic ties, activity numbers and code structure). 2) Final WBS to be issued and transmitted to DOE. Implementing new WBS by October will be a challenge. 3) The assignment of BCE to schedules restrained by finalization of schedules, and determining the level of detail in work packages. Draft System Description will require rework.
<b>Corrective Action</b>	1) Continue focus on integrating schedules. Forecast completion of IPS by September 27, 1991. 2) PMO is actively working with the Finance Department and Division to implement new WBS. 3) Start BCE assignment week ending September 20 and base complete by week ending December 20.
<b>Condition</b>	Red
<b>POC</b>	Larry Sluiter
	DATE: September 16, 1991



DIVISION PROJECT STATUS REPORT				
DESIGN <input type="checkbox"/>			PRODUCTION <input type="checkbox"/>	
CONSTRUCTION <input type="checkbox"/>			RESEARCH & DEVELOPMENT <input type="checkbox"/>	PART I
<b>1. IDENTIFIERS:</b>				
1a.	PROJECT TITLE/NUMBER SUPERCONDUCTING SUPER COLLIDER LABORATORY	DE-AC02-89ER40486	1b.	REPORTING PERIOD August 1991
1c.	MANAGING DIVISION  Directorate		1f.	PERFORMING ORGANIZATION(S)  Director's Office External Affairs Legal Counsel User's Office Environment, Safety & Health Planning International Coordination Education
1d.	DIVISION/OFFICE CONTACT  Neil Baggett (ext. 1067)			
1e.	DIVISION MANAGER  Raphael Kasper (ext. 1037)			
<b>2. DIVISION MANAGER'S PERSONAL ASSESSMENT:</b>				
<b>2a. Summary Status</b>				
GROUP	TECHNICAL	COST	SCHEDULE	OVERALL
Director's Office	Green	Green	Green	Green
External Affairs	Green	Green	Green	Green
Legal Counsel	Green	Green	Green	Green
User's Office	Green	Green	Green	Green
Environment, Safety & Health	Green	Green	Green	Green
Planning	Green	Green	Green	Green
International Coordination	Green	Green	Green	Green
Education	Green	Green	Green	Green
<i>OVERALL DIVISION ASSESSMENT</i>	Green	Green	Green	Green
<i>PREVIOUS DIVISION ASSESSMENT</i>	Green	Green	Green	Green

**DIRECTORATE DIVISION**

<b>Goal</b>	To oversee and direct Laboratory activities.		
<b>WBS Elements</b>	<b>Description</b>	<b>WBS Elements</b>	<b>Description</b>
4.5.6	ES&H	4.5.7	Planning
<b>Accomplishments</b>			
4.5.6	<p>Contracts are now in place for recycling non-hazardous waste oils, metals, and plastics and for disposal of infectious waste. The chemical inventory for all SSCL facilities has been entered into a computer database.</p> <p>The ES&amp;H Office continues to participate in ES&amp;H reviews of new facilities and operations before startup. Deficiencies will be noted and a follow-up made to see that they have been corrected. The ES&amp;H Office will make recommendations to the Associate Director or other appropriate level of line management responsible for the facility or operation. The Model Magnet Shell Welding Press, the turnover of a room at the Magnet Development Lab for "joint occupancy" Thyatron Test Stand, and CDF Drift Chamber Test Setup were reviewed this month.</p> <p>ES&amp;H staff participated in Accelerator Working Group projects for the Collider Finish Phase, Test Beams, Medium Energy Booster, and Linac.</p> <p>ES&amp;H staff attended a conference in Washington on health effects of electromagnetic fields, and the DOE Radiation Protection Conference in Knoxville, Tennessee.</p>		
4.5.7	<p>Installed flags on well casings to make them more easily seen after one was hit by an Ellis County farmer's compicker.</p> <p>Planning continued for the XXVI High Energy Physics Conference (ICHEP) to be held August 1992 on the campus of Southern Methodist University in Dallas. The Local Organizing Committee met twice and toured the campus. A full-time conference secretary was hired.</p> <p>Weekly meetings were held with PB/MK as a means of coordinating the design and construction program. Work continued with PB/MK's subcontractor CRSS with respect to the Site Development Plan (SDP). Additional information on population distribution was provided along with a correlation to the corresponding buildings. Talks were given to service groups about the SDP.</p>		
<b>Issues and Concerns</b>	None.		
<b>Corrective Action</b>	None.		
<b>Condition</b>	Green		
<b>POC</b>	Raphael Kasper		<b>DATE</b> September 13, 1991

**DIRECTORATE DIVISION - Continued**

<b>Goal</b>	To oversee and direct Laboratory activities.
<b>WBS Elements</b>	<b>Description</b>
4.5.9	Education Office
<b>Accomplishments</b>	<p>The Texas Higher Education Coordinating Board has awarded a Carl Perkins grant to Navarro College and Dallas County Community College District for a database that will list jobs, their required technical skills, and academic systems that offer courses appropriate to learn these skills. SSC education staff will participate as advisory board members for the project. An activity book for elementary students has been funded by the DOE's Office of University and Science Education Programs.</p> <p>SSC education staff met with Preston Pearson concerning the involvement of famous athletes in promoting science education with students.</p> <p>SSC staff met with officials from Indiana State University to discuss student involvement in SSC educational initiatives concerning safety.</p> <p>Curricula and interactive software development on the middle school level of the Adopt-A-Magnet Program was completed. Additional development is still needed for both curricula and software. Possible funding sources are being identified to allow the development team to continue working at the Lab.</p> <p>An Adopt-A-Magnet workshop was held at the 63rd annual conference of the National Technical Association (NTA). Advancement of African American achievements in science and technology is a primary goal of this organization.</p> <p>A teaching staff development workshop was held at the SSC for the Carrollton-Farmers Branch Independent School District.</p> <p>SSC education staff participated as state advisory committee members charged with redefining pre-college science essential elements.</p> <p>SSC education staff were appointed to the Honors Committee Advisory Board members for Eastfield College in Dallas, Texas. Students completing the honors program in science and technology receive recognition at graduation.</p> <p>SSC education staff participated in Tech-Prep planning meetings in Austin, Texas. Tech-Prep is a new Texas educational initiative designed to encourage students to stay in school and pursue at least two years of college.</p> <p>SSC education staff were selected by the office of Governor Ann Richards to serve as participants on a state working committee to develop and facilitate state-wide systemic initiatives in science education. A meeting was held in Austin.</p>
<b>Issues and Concerns</b>	None.
<b>Corrective Action</b>	None.
<b>Condition</b>	Green
<b>POC</b>	Raphael Kasper
	DATE September 13, 1991

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11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

