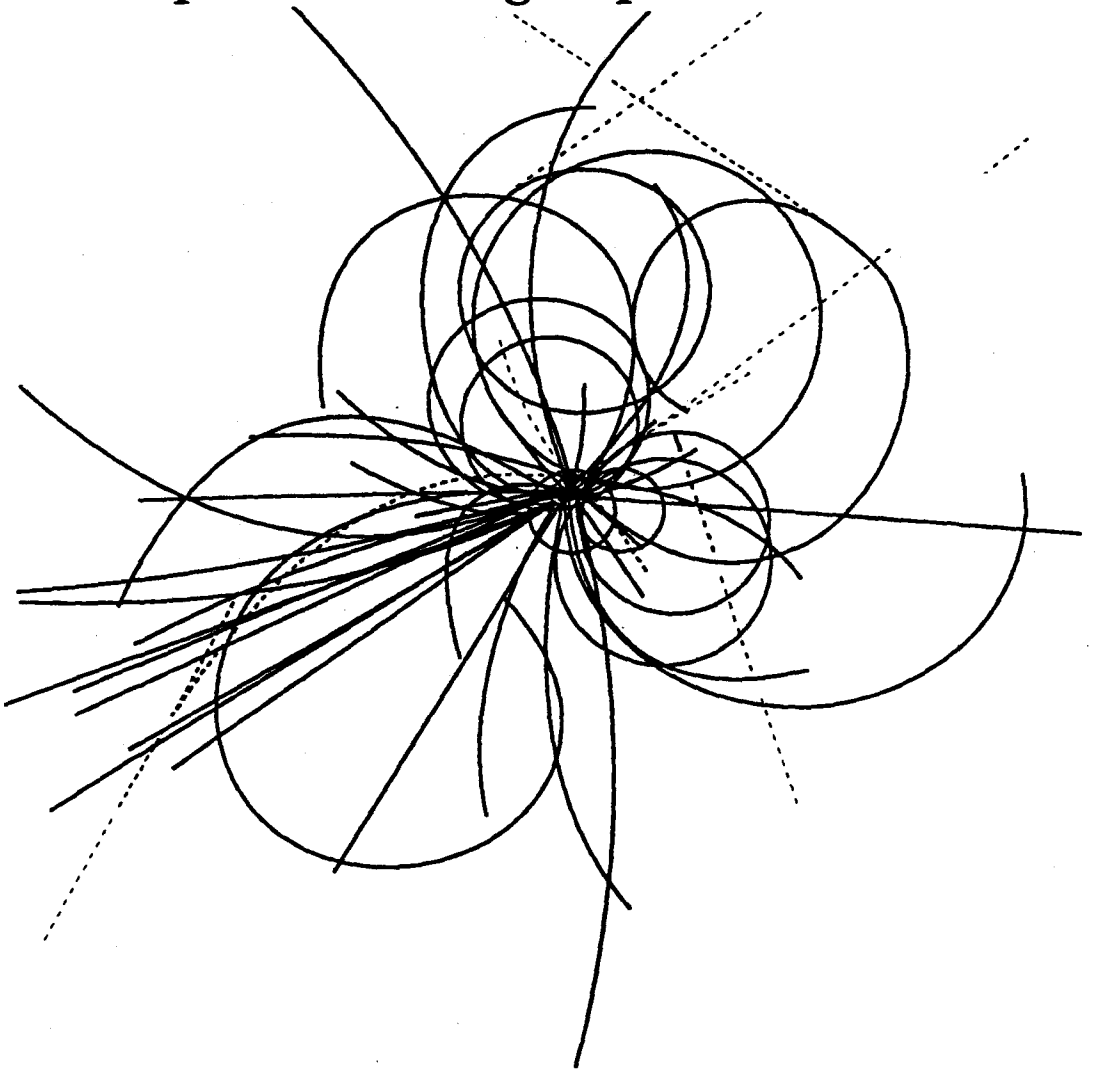
SSCL-327

Superconducting Super Collider Laboratory



SSC Project
Monthly Progress Report

November 1990

INTRODUCTION

and

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INTRODUCTION

The November 1990 Monthly Progress Report continues the implementation of the 'divisional status' format, similar to the Project Manager's Progress Reports. These divisional status reports will include: Division Identifiers, Summary Status, Narrative Highlights, *Significant Problems, Variance Analysis, Milestone Log, and Technical* Parameters as they are being implemented.

The Cost Performance Report for November 1990 will include actuals only, due to the fact that in Fiscal Year 1991 there is no official cost/schedule baseline approved from DOE as of the date of this report.

Technical Performance Parameters have been generated by some of the Divisions and are being reviewed by the Technical Directors prior to inclusion in the Monthly Progress Report.

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- Accelerator Systems Division
- Accelerator Design and Operations Division
- Conventional Construction Division
- Physics Research Division
- Laboratory Technical Services Division
- Directorate Division
- Administration Division

PROJECT MANAGEMENT

PROGRESS REPORTS

PROJECT MANAGER'S PROGRESS REPORT
PART I

1. IDENTIFIERS:

1a. PROJECT TITLE/NUMBER
Superconducting Super Collider Laboratory DE-AC02-89ER40486

1b. REPORTING PERIOD
November 1, 1990 - November 30, 1990

1c. MANAGING DOE FIELD LOCATION

SSC Project Office
2550 Beckleymeade Ave., MS1020
Dallas, Texas 75237

1d. PROJECT SPONSOR/PROGRAM OFFICE CONTACT

Joseph R. Cipriano

1e. PROJECT MANAGER

Paul Reardon

1f. PERFORMING ORGANIZATION(S)

Universities Research Association, Inc.
1111 19th St. N.W., Suite 400
Washington, D.C. 20036

2a. SUMMARY STATUS

Green	Yellow	Red
G	Y	R

	LAST PERIOD	THIS PERIOD
COST	G	G
SCHEDULE	G	G
TECHNICAL	G	G
OVERALL PROJECT	G	G

DCormell/9/19/90

PROJECT MANAGER'S PROGRESS REPORT PART I	PROJECT TITLE: Superconducting Super Collider Laboratory

2b. PROJECT MANAGER'S NARRATIVE HIGHLIGHTS AND KEY ISSUES (See item 5 for details on problems and variances)

- Provided safety inputs to the Drift Tube Linac (DTL) Statement of Work (SOW) and Prime Item Development Specification and to the Element specification Level IIIB for the Collider System. (WBS 3.2.1)
- Revised the LINAC specifications to eliminate DTL Prime Item Development Specification. Initiated a specification for tanks at level 4 for procurement RFP. (WBS 3.2.2)
- A requirements review for the ASST and E1 Service Area was successfully conducted. The Work Authorization was signed, released through document control, and forwarded to the subcontractor. (WBS 3.2.2)
- Initiated work on the reliability prediction for Fermilab quench protection system to help establish confidence in prediction methodology to be used at the SSCL. (WBS 3.2.2)
- A Fermilab string test magnet requirements and design parameters document was compiled and distributed for comments. (WBS 3.2.3)
- Updated Magnet Development Lab Functional Requirements Document and released it to MSD Management for review. (WBS 3.2.3)
- Prepared outlines for facility specifications for L-Star and EMPACT/TEXAS, Collaborations for Detector Design. (WBS 3.2.4)
- Functional specifications for the Above Ground Magnet String Test and E1 Service Area were completed and integrated into the Work Authorization Package. (WBS 3.2.5)
- A meeting was held November 1, 1990 among DOE and ANL personnel to review progress to date in finalizing the SEIS and to examine the schedule and process for completing the document.
- The SEIS Working Group meeting was held at Argonne November 12-14, 1990, to finalize comment responses and text changes to the SEIS.
- Work continues on the Mitigation Action Plan (MAP). We are committed to delivering a draft Mitigation Action Plan (MAP) fifteen days before the scheduled Record of Decision (ROD) signature date which is estimated to be January 28. The target date for MAP approval and signature is February 15.
- Completed a draft report on 15 meter CDM manufacturing flow plan estimate.
- A Schedule, Summary Schedule and Funding Profile were finalized and presented to DOE.

PROJECT MANAGER'S PROGRESS REPORT PART I	PROJECT TITLE: Superconducting Super Collider Laboratory		
5. SIGNIFICANT PROBLEMS/VARIANCE ANALYSIS			
5a. PROBLEMS, IMPACT ON PROJECT, CORRECTIVE ACTION			RESPONSIBLE GROUP
PROBLEM IDENTIFICATION	IMPACT	CORRECTIVE ACTION	
FY92 Budget: Federal Funding Guidance	Project cost, schedule, and technical planning.	Continue planning based on latest DOE guidance.	SSCL/PMO
Revised Baseline Schedule Approval	Ensure schedule performance measurement against the same baseline briefed to OMB vs October 1990 baseline. (New milestones added by DOE/OPO.)	SSCL PMO prepares Change Control Request for DOE approval and signoff.	SSCL/PMO
5b. ITEMS REQUIRING SSCL/CUSTOMER ACTION			
Complete Project Management Plan	Common understanding of management approach, project objectives, and cost, schedule, and technical approval authorities.	DOE/OPO and SSCL/PM draft 12/18/90 in internal review. Coordinate with TNRLC 12/21/90. Discussion issues to be resolved first week in January 1991. Plan complete by end of January 1991.	DOE/OPO, SSCL/PMO
Complete Configuration Management Plan	Implementation of change control and document management process.	Dependent upon approval of approval authority described in Project Management Plan (PMP). To be complete within three weeks after PMP approval/discussion issues resolved.	SSCL/PMO
SEIS ROD approval and signature; MAP approval and signature	Holds up all construction starts except MDL. Could put the String Test, Linac and Collider installations at schedule risk.	Continue top SSCL/DOE management attention to complete on schedule.	DOE/OPO, DOE/OSSC, SSCL/PMO

DCormell/9/19/90

Superconducting Super Collider

COMPARATIVE BARCHART

Baseline Master Schedule: Ver. 12, Rev. 6

REVIEW SUMMARY BY WBS

PROJECT SUMMARY LEVEL

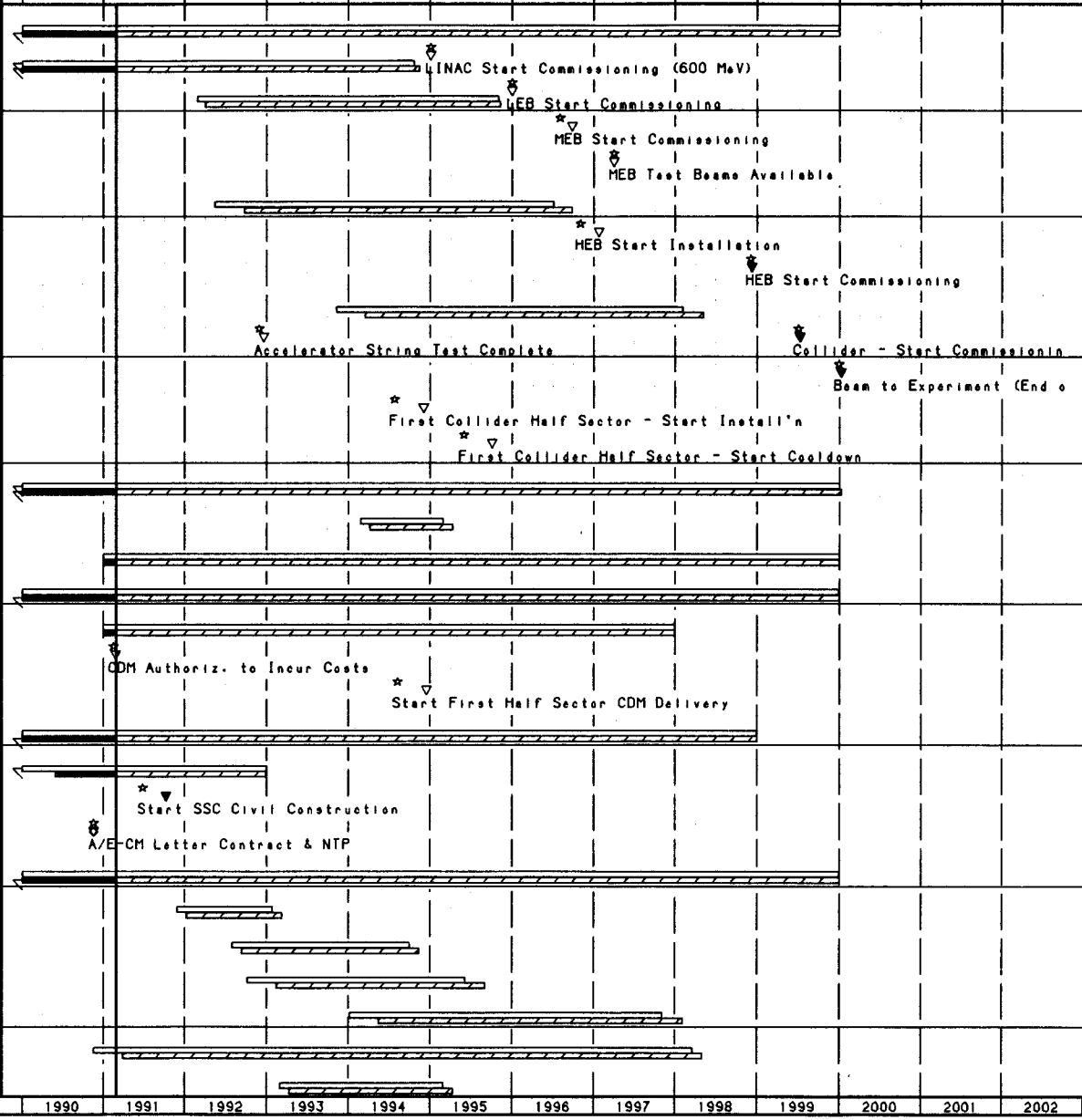
PRJSUMM1

Current Date: 19DEC90

(Calendar is in Fiscal Years)

Network Status Date: 26NOV90

WBS CODE	WBS DESCRIPTION	BASELINE FINISH	PROJECTED FINISH
1.01.01	MANAGEMENT/SUPPORT	30SEP99	30SEP99
1.01.02	LINAC SYSTEM	21JUL94	15AUG94
1.01.03	LEB SYSTEM	01AUG95	09AUG95
1.01.04	MEB SYSTEM	01AUG95	09AUG95
1.01.04	MEB SYSTEM	01AUG95	09AUG95
1.01.04	MEB SYSTEM	02APR96	26JUN96
1.01.05	HEB SYSTEM	02APR96	26JUN96
1.01.05	HEB SYSTEM	02APR96	26JUN96
1.01.05	HEB SYSTEM	03NOV97	03FEB98
1.01.06	COLLIDER SYSTEM	30SEP99	30SEP99
1.01.06	COLLIDER SYSTEM	30SEP99	30SEP99
1.01.06	COLLIDER SYSTEM	30SEP99	30SEP99
1.01.06	COLLIDER SYSTEM	30SEP99	30SEP99
1.01.06	COLLIDER SYSTEM	30SEP99	08OCT99
1.01.07	TEST BEAMS	28NOV94	09JAN95
1.01.08	GLOBAL ACCELERATOR SYSTEM	30SEP99	30SEP99
1.02.01	SYSTEM MANAGEMENT	30SEP99	30SEP99
1.02.02	HEB MAGNET PRODUCTION	30SEP97	30SEP97
1.02.03	COLLIDER RING (CR) MAGNET PRODUCTION	30SEP97	30SEP97
1.02.03	COLLIDER RING (CR) MAGNET PRODUCTION	30SEP97	30SEP97
1.02.03	COLLIDER RING (CR) MAGNET PRODUCTION	30SEP98	30SEP98
1.02.04	SSCL EQUIPMENT/TOOLING	29SEP92	29SEP92
2.01.01	CONVENTIONAL CONSTRUCTION ADMINISTRATION	29SEP92	29SEP92
2.01.01	CONVENTIONAL CONSTRUCTION ADMINISTRATION	29SEP92	29SEP92
2.01.01	CONVENTIONAL CONSTRUCTION ADMINISTRATION	30SEP99	30SEP99
2.01.02	LINAC	27OCT92	08DEC92
2.01.03	LEB	30JUN94	11AUG94
2.01.04	MEDIUM ENERGY BOOSTER (MEB)	07MAR95	31MAY95
2.01.05	HEB	04AUG97	04NOV97
2.01.06	COLLIDER	17DEC97	29JAN98
2.01.07	TEST BEAM	28NOV94	09JAN95



-BASELINE ACTIVITY -ACTUAL ACTIVITY -Proj. Critical Act. -Orig. Critical MS -Actual Critical MS -Proj. Critical MS

-Orig. Critical Act. -PROJECTED ACTIVITY -BASELINE MILESTONE -ACTUAL MILESTONE -PROJECTED MILESTONE

Superconducting Super Collider

COMPARATIVE BARCHART

Baseline Master Schedule: Ver. 12, Rev. 6

REVIEW SUMMARY BY WBS

PROJECT SUMMARY LEVEL

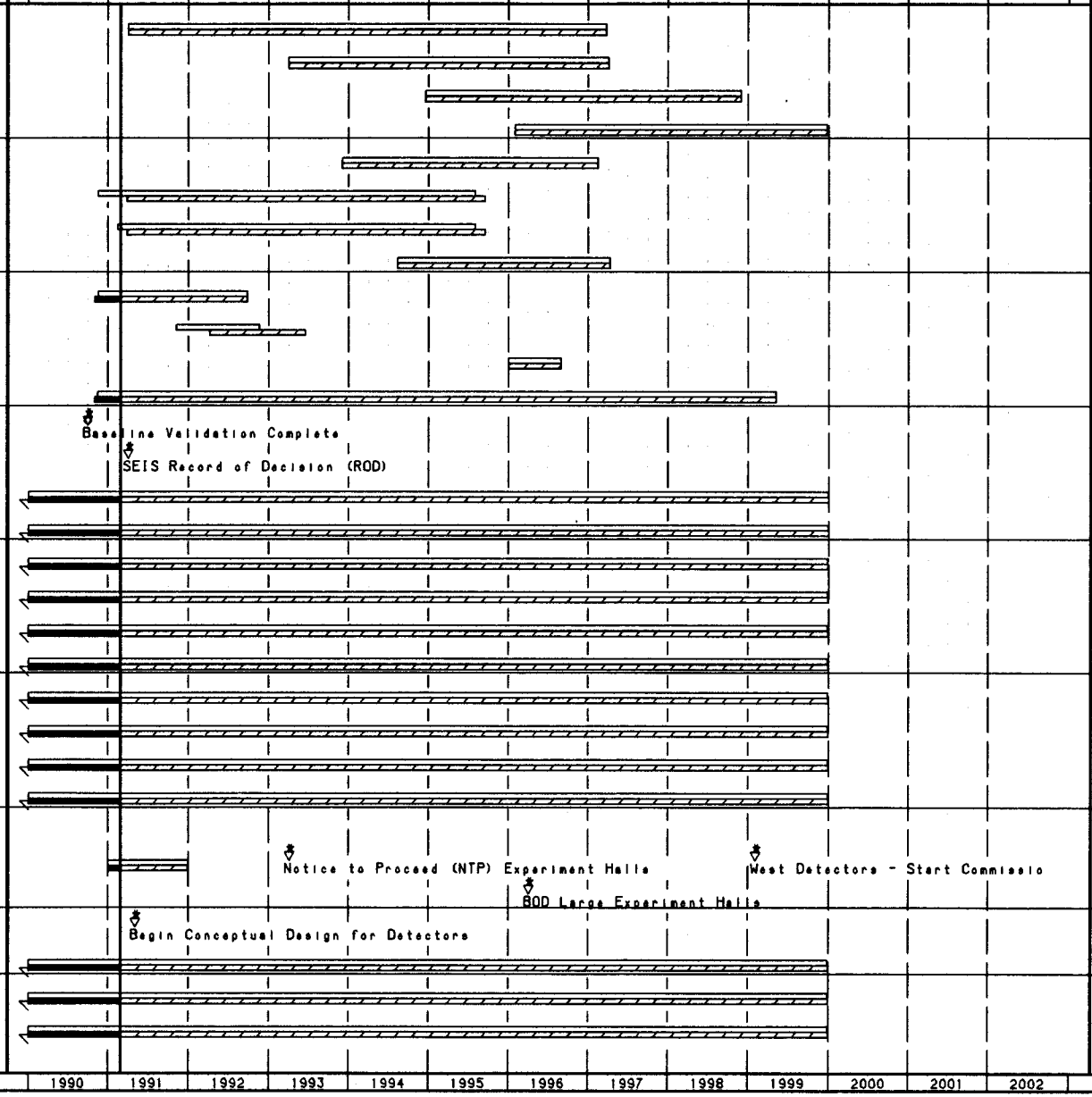
(Calendar is in Fiscal Years)

PRJSUMM2

Current Date: 19DEC90

Network Status Date: 26NOV90

WBS CODE	WBS DESCRIPTION	BASELINE FINISH	PROJECTED FINISH
2.02.01	WN REGION	24DEC96	24DEC96
2.02.02	WS REGION	02JAN97	02JAN97
2.02.03	EN REGION	31AUG98	31AUG98
2.02.04	ES REGION	22SEP99	22SEP99
2.02.05	SUPPORT FUNCTIONS	14NOV96	14NOV96
2.03.02	PRIMARY SYSTEMS - ON-SITE	02MAY95	14JUN95
2.03.03	SECONDARY SYSTEMS - ON-SITE	02MAY95	14JUN95
2.04.01	CENTRAL LAB/OFFICE AREA	07JAN97	07JAN97
2.04.02	MAGNET LABORATORY	25JUN92	25JUN92
2.04.03	ACCELERATOR FACILITIES	18AUG92	16MAR93
2.04.04	ENVIRONMENTAL HEALTH FACILITIES	30MAY96	30MAY96
2.05.01	ARCHITECTURAL ENGINEERING	04FEB99	04FEB99
3.01.01	PROJECT MANAGEMENT OFFICE	04FEB99	04FEB99
3.01.01	PROJECT MANAGEMENT OFFICE	04FEB99	04FEB99
3.01.01	PROJECT MANAGEMENT OFFICE	30SEP99	30SEP99
3.02.01	SYSTEMS ENGINEERING	30SEP99	30SEP99
4.01	ACCELERATOR PRE-OPERATIONS	28SEP99	28SEP99
4.02.01	ACCELERATOR R&D	28SEP99	28SEP99
4.02.02	MAGNET R&D	28SEP99	28SEP99
4.03	LAB ADMINISTRATIVE SERVICES	28SEP99	28SEP99
4.04	LAB TECHNICAL SUPPORT	28SEP99	28SEP99
4.05	LAB DIRECTORATE	28SEP99	28SEP99
4.06	LAB EXPERIMENTAL SUPPORT	28SEP99	28SEP99
4.07	PRIME CONTRACTOR'S FEES	28SEP99	28SEP99
4.08	FY88 & FY89 COSTS	28SEP89	30SEP88
5	EXPERIMENTAL SYSTEMS	30SEP91	30SEP91
5	EXPERIMENTAL SYSTEMS	30SEP91	30SEP91
5.00	EXPERIMENTAL SYSTEMS	30SEP91	30SEP91
5.01	EXPERIMENTAL SYSTEM R&D	28SEP99	28SEP99
5.02	DETECTORS	28SEP99	28SEP99
5.03	EXPERIMENTAL SYSTEM COMPUTERS	28SEP99	28SEP99
5.04	FY88 & FY89 COSTS	28SEP89	30SEP88



-BASELINE ACTIVITY -ACTUAL ACTIVITY -Proj. Critical Act. -Orig. Critical MS -Actual Critical MS -Proj. Critical MS

-Orig. Critical Act. -PROJECTED ACTIVITY *-BASELINE MILESTONE ◇-ACTUAL MILESTONE ▽-PROJECTED MILESTONE

PROJECT MANAGER'S PROGRESS REPORT PART II	PROJECT TITLE: Superconducting Super Collider Laboratory	
8. MILESTONE LOG		
SIGNIFICANT MILESTONES ACCOMPLISHED SINCE LAST REPORT	BASELINE DATE	ACTUAL DATE
CDM Authorization to Incur Cost	11 Nov 90	30 Oct 90
SIGNIFICANT MILESTONES OPEN	BASELINE DATE	FORECAST DATE
KEY MILESTONES UPCOMING - NEXT THREE MONTHS	BASELINE DATE	FORECAST DATE
SEIS Record of Decision (ROD)	31 Dec 90	28 Jan 91
Mitigation Action Plan (MAP)	15 Feb 91	15 Feb 91

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SSC Laboratory Project Management

Baseline Schedule (Nov 90)
Major Project Milestones

WBS	Description	10-Year Rev 6
3.0	Baseline Validation Complete	JUL-90
2.5.1	A-E/CM Letter Contract & NTP	AUG-90
1.2	CDM Authorization to Incur Costs	NOV-90
3.0	SEIS Record of Decision (ROD)	JAN-91
5.0	Begin Conceptual Design for Detectors	FEB-91
2.1.1	Start SSC Civil Construction	MAR-91
5.0	Notice to Proceed (NTP) Experiment Halls	JUN-92
1.1.8.8.23	Accelerator String Test Complete	OCT-92
1.2	Full-rate Production Decision on Magnets	APR-94
1.2	Start First Half Sector CDM Delivery	APR-94
1.1.6	First Collider Half Sector - Start Installation	APR-94
1.1.2	LINAC Start Commissioning (600 MeV)	OCT-94
1.1.6	First Collider Half Sector - Start Cooldown	MAR-95
1.1.3	LEB Start Commissioning	OCT-95
5.0	Beneficial Occupancy of Large Experiment Halls	JAN-96
1.1.4	MEB Start Commissioning	JUN-96
1.1.5	HEB Start Installation	AUG-96
1.1.4	MEB Test Beams Available	SEP-96
1.1.5	HEB Start Commissioning	SEP-98
5.0	West Detectors - Start Commissioning	MAR-99
1.1.6	Collider - Start Commissioning (beam)	MAR-99
1.1.6	Beam to Exp. (End of Project/Begin Op)	SEP-99

COST PERFORMANCE REPORTS

CONTRACTOR: SSC LABORATORY LOCATION: DALLAS, TX RDT&E [X] PRODUCTION [ ]	COST PERFORMANCE REPORT - WORK BREAKDOWN STRUCTURE			SIGNATURE,TITLE & DATE	FORM APPROVED OMB NUMBER 22R0280
	CONTRACT TYPE/NO:	PROGRAM NAME/NUMBER:	REPORT PERIOD From: 29-OCT-90 To: 25-NOV-90	01-NOV-90	
	DE-AC02-89ER40486				

QUANTITY	NEG COST	EST COST AUTH UNPR	TARGET PROFIT/FEE	EST PRICE	TGT PRICE	SHARE RATIO	CONTR CEILING	EST CEILING
0	$0	$0	$0/ 0.00%	$0	$0	0	$0	$0

ITEM	CURRENT PERIOD					CUMULATIVE TO DATE					AT COMPLETION		
	BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGET	LATEST REVISED EST	VAR
	Work Sched	Work Perf		Sched	Cost	Work Sched	Work Perf		Sched	Cost			
PROJECT TOTALS	0	0	13790	0	-13790	0	0	29922	0	-29922	0	0	0
LABOR	0	0	3629	0	-3629	0	0	7556	0	-7556	0	0	0
OTHER DIRECT COSTS	0	0	10161	0	-10161	0	0	22366	0	-22366	0	0	0
1 TECHNICAL SYSTEM	0	0	1816	0	-1816	0	0	4046	0	-4046	0	0	0
2 CONVENTIONAL CONSTRUCTION	0	0	2249	0	-2249	0	0	5973	0	-5973	0	0	0
3 PROJECT MANAGEMENT & SUPPORT FUNCTION	0	0	322	0	-322	0	0	630	0	-630	0	0	0
4 R&D & PRE-OPERATIONS	0	0	8153	0	-8153	0	0	17231	0	-17231	0	0	0
5 EXPERIMENTAL SYSTEMS	0	0	900	0	-900	0	0	1698	0	-1698	0	0	0
6 LAB OPERATIONS SUPPORT	0	0	0	0	0	0	0	0	0	0	0	0	0
COST OF MONEY						CONTINUED							
GEN AND ADMIN (NON ADD)													
UNDISTRIBUTED BUDGET													
SUBTOTAL													
MANAGEMENT RESERVE													
TOTAL													

CONTRACTOR: SSC LABORATORY LOCATION: DALLAS, TX RDT&E [X] PRODUCTION [ ]	COST PERFORMANCE REPORT - WORK BREAKDOWN STRUCTURE			SIGNATURE,TITLE & DATE	FORM APPROVED OMB NUMBER 22R0280
	CONTRACT TYPE/NO: DE-AC02-89ER40486	PROGRAM NAME/NUMBER:	REPORT PERIOD From: 29-OCT-90 To: 25-NOV-90	01-NOV-90	

QUANTITY	NEG COST	EST COST AUTH UNPR	TARGET PROFIT/FEE	EST PRICE	TGT PRICE	SHARE RATIO	CONTR CEILING	EST CEILING
0	$0	$0	$0/ 0.00%	$0	$0	0	$0	$0

ITEM	CURRENT PERIOD					CUMULATIVE TO DATE					AT COMPLETION		
	BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGET	LATEST REVISED EST	VAR
	Work Sched	Work Perf		Sched	Cost	Work Sched	Work Perf		Sched	Cost			
7 ESCALATION & CONTING ENCY	0	0	0	0	0	0	0	0	0	0	0	0	0
99	0	0	338	0	-338	0	0	338	0	-338	0	0	0
8	0	0	11	0	-11	0	0	6	0	-6	0	0	0
COST OF MONEY	0	0	0	0	0	0	0	0	0	0	0	0	0
GEN AND ADMIN (NON ADD)	0	0	0	0	0	0	0	0	0	0	0	0	0
UNDISTRIBUTED BUDGET											0	0	
SUBTOTAL	0	0	13790	0	-13790	0	0	29922	0	-29922	0	0	0
MANAGEMENT RESERVE											0	0	0
TOTAL	0	0	13790	0	-13790	0	0	29922	0	-29922	0	0	0

ITEM	CURRENT PERIOD					CUMULATIVE TO DATE					AT COMPLETION		
	BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGET	LATEST REVISED EST	VAR
	Work Sched	Work Perf		Sched	Cost	Work Sched	Work Perf		Sched	Cost			
1													
TECHNICAL SYSTEM	0	0	1816	0	-1816	0	0	4046	0	-4046	0	0	0
LABOR	0	0	576	0	-576	0	0	1319	0	-1319	0	0	0
OTHER DIRECT COSTS	0	0	1241	0	-1241	0	0	2727	0	-2727	0	0	0
1.1													
ACCELERATOR SYSTEMS	0	0	-22	0	22	0	0	920	0	-920	0	0	0
LABOR	0	0	90	0	-90	0	0	180	0	-180	0	0	0
OTHER DIRECT COSTS	0	0	-112	0	112	0	0	740	0	-740	0	0	0
1.1.1													
MANAGEMENT/SUPPORT	0	0	561	0	-561	0	0	799	0	-799	0	0	0
LABOR	0	0	80	0	-80	0	0	164	0	-164	0	0	0
OTHER DIRECT COSTS	0	0	481	0	-481	0	0	634	0	-634	0	0	0
1.1.2													
LINAC SYSTEM	0	0	103	0	-103	0	0	104	0	-104	0	0	0
LABOR	0	0	3	0	-3	0	0	4	0	-4	0	0	0
OTHER DIRECT COSTS	0	0	100	0	-100	0	0	100	0	-100	0	0	0
1.1.6													
COLLIDER SYSTEM	0	0	-698	0	698	0	0	2	0	-2	0	0	0
LABOR	0	0	2	0	-2	0	0	2	0	-2	0	0	0
1.1.8													
GLOBAL ACCELERATOR S YSTEM	0	0	13	0	-13	0	0	16	0	-16	0	0	0
LABOR	0	0	5	0	-5	0	0	10	0	-10	0	0	0
OTHER DIRECT COSTS	0	0	7	0	-7	0	0	5	0	-5	0	0	0
1.2													
MAGNET SYSTEMS	0	0	1838	0	-1838	0	0	3126	0	-3126	0	0	0
LABOR	0	0	486	0	-486	0	0	1139	0	-1139	0	0	0
OTHER DIRECT COSTS	0	0	1352	0	-1352	0	0	1987	0	-1987	0	0	0
1.2.1													
SYSTEM MANAGEMENT	0	0	566	0	-566	0	0	1174	0	-1174	0	0	0
LABOR	0	0	311	0	-311	0	0	661	0	-661	0	0	0
OTHER DIRECT COSTS	0	0	255	0	-255	0	0	513	0	-513	0	0	0

ITEM	CURRENT PERIOD					CUMULATIVE TO DATE					AT COMPLETION		
	BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGET	LATEST REVISED EST	VAR
	Work Sched	Work Perf		Sched	Cost	Work Sched	Work Perf		Sched	Cost			
1.2.2													
HIGH ENERGY BOOSTER (HEB) MAGNET PRODUCT	0	0	0	0	0	0	0	4	0	-4	0	0	0
LABOR	0	0	0	0	0	0	0	4	0	-4	0	0	0
OTHER DIRECT COSTS	0	0	0	0	0	0	0	-1	0	1	0	0	0
1.2.3													
COLLIDER RING (CR) MAGNET PRODUCTION	0	0	277	0	-277	0	0	640	0	-640	0	0	0
LABOR	0	0	140	0	-140	0	0	399	0	-399	0	0	0
OTHER DIRECT COSTS	0	0	137	0	-137	0	0	242	0	-242	0	0	0
1.2.4													
SSCL EQUIPMENT/TOOLING	0	0	996	0	-996	0	0	1308	0	-1308	0	0	0
LABOR	0	0	35	0	-35	0	0	75	0	-75	0	0	0
OTHER DIRECT COSTS	0	0	961	0	-961	0	0	1233	0	-1233	0	0	0
2													
CONVENTIONAL CONSTRUCTION	0	0	2249	0	-2249	0	0	5973	0	-5973	0	0	0
LABOR	0	0	64	0	-64	0	0	134	0	-134	0	0	0
OTHER DIRECT COSTS	0	0	2185	0	-2185	0	0	5839	0	-5839	0	0	0
2.1													
CONVENTIONAL CONSTRUCTION ACCELERATOR	0	0	100	0	-100	0	0	217	0	-217	0	0	0
LABOR	0	0	42	0	-42	0	0	42	0	-42	0	0	0
OTHER DIRECT COSTS	0	0	58	0	-58	0	0	175	0	-175	0	0	0
2.1.1													
CONVENTIONAL CONSTRUCTION ADMINISTRATION	0	0	100	0	-100	0	0	217	0	-217	0	0	0
LABOR	0	0	42	0	-42	0	0	42	0	-42	0	0	0
OTHER DIRECT COSTS	0	0	58	0	-58	0	0	175	0	-175	0	0	0
2.3													
SITE & INFRASTRUCTURE	0	0	0	0	-0	0	0	0	0	-0	0	0	0
OTHER DIRECT COSTS	0	0	0	0	-0	0	0	0	0	-0	0	0	0

ITEM	CURRENT PERIOD					CUMULATIVE TO DATE					AT COMPLETION		
	BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGET	LATEST REVISED EST	VAR
	Work Sched	Work Perf		Sched	Cost	Work Sched	Work Perf		Sched	Cost			
2.3.3													
SECONDARY SYSTEMS - ON-SITE	0	0	0	0	-0	0	0	0	0	-0	0	0	0
OTHER DIRECT COSTS	0	0	0	0	-0	0	0	0	0	-0	0	0	0
2.4													
CAMPUS	0	0	251	0	-251	0	0	323	0	-323	0	0	0
LABOR	0	0	0	0	-0	0	0	0	0	-0	0	0	0
OTHER DIRECT COSTS	0	0	251	0	-251	0	0	323	0	-323	0	0	0
2.4.2													
MAGNET LABORATORY	0	0	251	0	-251	0	0	323	0	-323	0	0	0
LABOR	0	0	0	0	-0	0	0	0	0	-0	0	0	0
OTHER DIRECT COSTS	0	0	251	0	-251	0	0	323	0	-323	0	0	0
2.5													
AE/CM	0	0	1898	0	-1898	0	0	5433	0	-5433	0	0	0
LABOR	0	0	21	0	-21	0	0	92	0	-92	0	0	0
OTHER DIRECT COSTS	0	0	1876	0	-1876	0	0	5341	0	-5341	0	0	0
2.5.1													
ARCHITECTURAL ENGINE ERING	0	0	1456	0	-1456	0	0	4586	0	-4586	0	0	0
OTHER DIRECT COSTS	0	0	1456	0	-1456	0	0	4586	0	-4586	0	0	0
2.5.2													
CONSTRUCTION MANAGEM ENT	0	0	442	0	-442	0	0	847	0	-847	0	0	0
LABOR	0	0	21	0	-21	0	0	92	0	-92	0	0	0
OTHER DIRECT COSTS	0	0	420	0	-420	0	0	755	0	-755	0	0	0
3													
PROJECT MANAGEMENT & SUPPORT FUNCTION	0	0	322	0	-322	0	0	630	0	-630	0	0	0
LABOR	0	0	155	0	-155	0	0	296	0	-296	0	0	0
OTHER DIRECT COSTS	0	0	167	0	-167	0	0	333	0	-333	0	0	0
3.1													
PROJECT MANAGEMENT	0	0	219	0	-219	0	0	390	0	-390	0	0	0
LABOR	0	0	152	0	-152	0	0	291	0	-291	0	0	0
OTHER DIRECT COSTS	0	0	66	0	-66	0	0	100	0	-100	0	0	0

ITEM	CURRENT PERIOD					CUMULATIVE TO DATE					AT COMPLETION		
	BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGET	LATEST REVISED EST	VAR
	Work Sched	Work Perf		Sched	Cost	Work Sched	Work Perf		Sched	Cost			
3.1.1													
PROJECT MANAGEMENT O FFICE	0	0	63	0	-63	0	0	88	0	-88	0	0	0
LABOR	0	0	44	0	-44	0	0	66	0	-66	0	0	0
OTHER DIRECT COSTS	0	0	18	0	-18	0	0	22	0	-22	0	0	0
3.1.2													
PLANNING	0	0	40	0	-40	0	0	83	0	-83	0	0	0
LABOR	0	0	36	0	-36	0	0	78	0	-78	0	0	0
OTHER DIRECT COSTS	0	0	4	0	-4	0	0	5	0	-5	0	0	0
3.1.3													
PMRS	0	0	55	0	-55	0	0	113	0	-113	0	0	0
LABOR	0	0	42	0	-42	0	0	86	0	-86	0	0	0
OTHER DIRECT COSTS	0	0	13	0	-13	0	0	27	0	-27	0	0	0
3.1.4													
ENGINEERING STANDARD S	0	0	41	0	-41	0	0	85	0	-85	0	0	0
LABOR	0	0	28	0	-28	0	0	57	0	-57	0	0	0
OTHER DIRECT COSTS	0	0	13	0	-13	0	0	28	0	-28	0	0	0
3.1.5													
ENVIRONMENTAL AFFAIR S	0	0	20	0	-20	0	0	22	0	-22	0	0	0
LABOR	0	0	2	0	-2	0	0	4	0	-4	0	0	0
OTHER DIRECT COSTS	0	0	18	0	-18	0	0	18	0	-18	0	0	0
3.2													
Projects Systems Eng ineering	0	0	103	0	-103	0	0	239	0	-239	0	0	0
LABOR	0	0	3	0	-3	0	0	6	0	-6	0	0	0
OTHER DIRECT COSTS	0	0	101	0	-101	0	0	234	0	-234	0	0	0
3.2.1	0	0	0	0	0	0	0	15	0	-15	0	0	0
OTHER DIRECT COSTS	0	0	0	0	0	0	0	15	0	-15	0	0	0
3.2.2	0	0	9	0	-9	0	0	42	0	-42	0	0	0
OTHER DIRECT COSTS	0	0	9	0	-9	0	0	42	0	-42	0	0	0

ITEM	CURRENT PERIOD					CUMULATIVE TO DATE					AT COMPLETION		
	BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGET	LATEST REVISED EST	VAR
	Work Sched	Work Perf		Sched	Cost	Work Sched	Work Perf		Sched	Cost			
3.2.3	0	0	22	0	-22	0	0	54	0	-54	0	0	0
OTHER DIRECT COSTS	0	0	22	0	-22	0	0	54	0	-54	0	0	0
3.2.5	0	0	39	0	-39	0	0	42	0	-42	0	0	0
OTHER DIRECT COSTS	0	0	39	0	-39	0	0	42	0	-42	0	0	0
3.2.6	0	0	0	0	0	0	0	-2	0	2	0	0	0
OTHER DIRECT COSTS	0	0	0	0	0	0	0	-2	0	2	0	0	0
3.2.7	0	0	0	0	0	0	0	-3	0	3	0	0	0
OTHER DIRECT COSTS	0	0	0	0	0	0	0	-3	0	3	0	0	0
3.2.8	0	0	0	0	0	0	0	-1	0	1	0	0	0
OTHER DIRECT COSTS	0	0	0	0	0	0	0	-1	0	1	0	0	0
3.2.10	0	0	0	0	0	0	0	-1	0	1	0	0	0
OTHER DIRECT COSTS	0	0	0	0	0	0	0	-1	0	1	0	0	0
3.2.14	0	0	35	0	-35	0	0	94	0	-94	0	0	0
LABOR	0	0	3	0	-3	0	0	6	0	-6	0	0	0
OTHER DIRECT COSTS	0	0	32	0	-32	0	0	88	0	-88	0	0	0
4													
R&D & PRE-OPERATIONS	0	0	8153	0	-8153	0	0	17231	0	-17231	0	0	0
LABOR	0	0	2633	0	-2633	0	0	5393	0	-5393	0	0	0
OTHER DIRECT COSTS	0	0	5520	0	-5520	0	0	11838	0	-11838	0	0	0
4.2													
RESEARCH & DEVELOPME NT	0	0	5514	0	-5514	0	0	12029	0	-12029	0	0	0
LABOR	0	0	1304	0	-1304	0	0	2584	0	-2584	0	0	0
OTHER DIRECT COSTS	0	0	4210	0	-4210	0	0	9445	0	-9445	0	0	0
4.2.1													
ACCELERATOR R&D	0	0	2459	0	-2459	0	0	4578	0	-4578	0	0	0
LABOR	0	0	946	0	-946	0	0	1969	0	-1969	0	0	0
OTHER DIRECT COSTS	0	0	1513	0	-1513	0	0	2609	0	-2609	0	0	0
4.2.2													
MAGNET R&D	0	0	3056	0	-3056	0	0	7451	0	-7451	0	0	0
LABOR	0	0	358	0	-358	0	0	615	0	-615	0	0	0
OTHER DIRECT COSTS	0	0	2698	0	-2698	0	0	6836	0	-6836	0	0	0
4.3													
LAB ADMINISTRATION S ERVICES & SUPPORT	0	0	899	0	-899	0	0	1687	0	-1687	0	0	0
LABOR	0	0	423	0	-423	0	0	897	0	-897	0	0	0
OTHER DIRECT COSTS	0	0	476	0	-476	0	0	789	0	-789	0	0	0

ITEM	CURRENT PERIOD					CUMULATIVE TO DATE					AT COMPLETION		
	BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGET	LATEST REVISED EST	VAR
	Work Sched	Work Perf		Sched	Cost	Work Sched	Work Perf		Sched	Cost			
4.3.1													
LAB ADMINISTRATION S ERVICES & SUPP OFFIC	0	0	367	0	-367	0	0	649	0	-649	0	0	0
LABOR	0	0	14	0	-14	0	0	30	0	-30	0	0	0
OTHER DIRECT COSTS	0	0	353	0	-353	0	0	619	0	-619	0	0	0
4.3.2													
LAB ACCOUNTING & FIN ANCE	0	0	128	0	-128	0	0	271	0	-271	0	0	0
LABOR	0	0	111	0	-111	0	0	237	0	-237	0	0	0
OTHER DIRECT COSTS	0	0	17	0	-17	0	0	34	0	-34	0	0	0
4.3.3													
LAB PROCUREMENT & CO NTRACTS	0	0	179	0	-179	0	0	343	0	-343	0	0	0
LABOR	0	0	141	0	-141	0	0	295	0	-295	0	0	0
OTHER DIRECT COSTS	0	0	38	0	-38	0	0	48	0	-48	0	0	0
4.3.5													
LAB HUMAN RESOURCES	0	0	195	0	-195	0	0	375	0	-375	0	0	0
LABOR	0	0	133	0	-133	0	0	288	0	-288	0	0	0
OTHER DIRECT COSTS	0	0	62	0	-62	0	0	86	0	-86	0	0	0
4.3.7													
LAB MINORITY PROGRAM S	0	0	30	0	-30	0	0	49	0	-49	0	0	0
LABOR	0	0	23	0	-23	0	0	47	0	-47	0	0	0
OTHER DIRECT COSTS	0	0	7	0	-7	0	0	3	0	-3	0	0	0
4.4													
LAB TECHNICAL SUPPOR T	0	0	832	0	-832	0	0	2058	0	-2058	0	0	0
LABOR	0	0	562	0	-562	0	0	1195	0	-1195	0	0	0
OTHER DIRECT COSTS	0	0	270	0	-270	0	0	863	0	-863	0	0	0
4.4.1													
LAB TECHNICAL SUPPOR T MANAGEMENT	0	0	115	0	-115	0	0	234	0	-234	0	0	0
LABOR	0	0	97	0	-97	0	0	211	0	-211	0	0	0
OTHER DIRECT COSTS	0	0	19	0	-19	0	0	23	0	-23	0	0	0

ITEM	CURRENT PERIOD					CUMULATIVE TO DATE					AT COMPLETION		
	BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGET	LATEST REVISED EST	VAR
	Work Sched	Work Perf		Sched	Cost	Work Sched	Work Perf		Sched	Cost			
4.4.2													
LAB FACILITIES ENGIN EERING SERVICES	0	0	133	0	-133	0	0	266	0	-266	0	0	0
LABOR	0	0	68	0	-68	0	0	144	0	-144	0	0	0
OTHER DIRECT COSTS	0	0	65	0	-65	0	0	122	0	-122	0	0	0
4.4.3													
MATERIAL & LOGISTIC SERVICES	0	0	17	0	-17	0	0	111	0	-111	0	0	0
LABOR	0	0	46	0	-46	0	0	98	0	-98	0	0	0
OTHER DIRECT COSTS	0	0	-28	0	28	0	0	14	0	-14	0	0	0
4.4.4													
LAB FABRICATION SHOP S	0	0	23	0	-23	0	0	257	0	-257	0	0	0
LABOR	0	0	15	0	-15	0	0	32	0	-32	0	0	0
OTHER DIRECT COSTS	0	0	8	0	-8	0	0	225	0	-225	0	0	0
4.4.5													
LAB GENERAL COMPUTER SERVICES	0	0	162	0	-162	0	0	319	0	-319	0	0	0
LABOR	0	0	107	0	-107	0	0	229	0	-229	0	0	0
OTHER DIRECT COSTS	0	0	56	0	-56	0	0	91	0	-91	0	0	0
4.4.6													
DESIGN SUPPORT	0	0	41	0	-41	0	0	165	0	-165	0	0	0
LABOR	0	0	32	0	-32	0	0	73	0	-73	0	0	0
OTHER DIRECT COSTS	0	0	8	0	-8	0	0	92	0	-92	0	0	0
4.4.7													
LAB COMMUNICATIONS	0	0	132	0	-132	0	0	261	0	-261	0	0	0
LABOR	0	0	65	0	-65	0	0	139	0	-139	0	0	0
OTHER DIRECT COSTS	0	0	66	0	-66	0	0	122	0	-122	0	0	0
4.4.8													
ENGINEERING SUPPORT	0	0	17	0	-17	0	0	33	0	-33	0	0	0
LABOR	0	0	15	0	-15	0	0	29	0	-29	0	0	0
OTHER DIRECT COSTS	0	0	2	0	-2	0	0	4	0	-4	0	0	0

ITEM	CURRENT PERIOD					CUMULATIVE TO DATE					AT COMPLETION		
	BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGET	LATEST REVISED EST	VAR
	Work Sched	Work Perf		Sched	Cost	Work Sched	Work Perf		Sched	Cost			
4.4.9													
METROLOGY LABORATORY	0	0	39	0	-39	0	0	87	0	-87	0	0	0
LABOR	0	0	14	0	-14	0	0	31	0	-31	0	0	0
OTHER DIRECT COSTS	0	0	25	0	-25	0	0	55	0	-55	0	0	0
4.4.10													
PROTECTIVE SERVICES	0	0	12	0	-12	0	0	21	0	-21	0	0	0
LABOR	0	0	8	0	-8	0	0	16	0	-16	0	0	0
OTHER DIRECT COSTS	0	0	5	0	-5	0	0	5	0	-5	0	0	0
4.4.11													
STAFF SERVICES	0	0	98	0	-98	0	0	219	0	-219	0	0	0
LABOR	0	0	60	0	-60	0	0	119	0	-119	0	0	0
OTHER DIRECT COSTS	0	0	38	0	-38	0	0	100	0	-100	0	0	0
4.4.12	0	0	6	0	-6	0	0	12	0	-12	0	0	0
LABOR	0	0	6	0	-6	0	0	12	0	-12	0	0	0
OTHER DIRECT COSTS	0	0	-0	0	0	0	0	0	0	-0	0	0	0
4.4.13	0	0	37	0	-37	0	0	72	0	-72	0	0	0
LABOR	0	0	29	0	-29	0	0	62	0	-62	0	0	0
OTHER DIRECT COSTS	0	0	7	0	-7	0	0	10	0	-10	0	0	0
4.5													
LAB DIRECTORATE	0	0	263	0	-263	0	0	401	0	-401	0	0	0
LABOR	0	0	186	0	-186	0	0	391	0	-391	0	0	0
OTHER DIRECT COSTS	0	0	77	0	-77	0	0	10	0	-10	0	0	0
4.5.1													
LAB DIRECTOR'S OFFIC E	0	0	102	0	-102	0	0	169	0	-169	0	0	0
LABOR	0	0	76	0	-76	0	0	153	0	-153	0	0	0
OTHER DIRECT COSTS	0	0	26	0	-26	0	0	16	0	-16	0	0	0
4.5.2													
LAB EXTERNAL AFFAIRS	0	0	37	0	-37	0	0	25	0	-25	0	0	0
LABOR	0	0	21	0	-21	0	0	47	0	-47	0	0	0
OTHER DIRECT COSTS	0	0	15	0	-15	0	0	-22	0	22	0	0	0
4.5.3													
LAB LEGAL SERVICES	0	0	40	0	-40	0	0	73	0	-73	0	0	0
LABOR	0	0	31	0	-31	0	0	67	0	-67	0	0	0
OTHER DIRECT COSTS	0	0	9	0	-9	0	0	7	0	-7	0	0	0

ITEM	CURRENT PERIOD					CUMULATIVE TO DATE					AT COMPLETION		
	BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGET	LATEST REVISED EST	VAR
	Work Sched	Work Perf		Sched	Cost	Work Sched	Work Perf		Sched	Cost			
4.5.5													
LAB USERS' OFFICE	0	0	15	0	-15	0	0	10	0	-10	0	0	0
LABOR	0	0	8	0	-8	0	0	26	0	-26	0	0	0
OTHER DIRECT COSTS	0	0	7	0	-7	0	0	-16	0	16	0	0	0
4.5.6													
LAB ENVIRONMENT HEAL TH & SAFETY	0	0	43	0	-43	0	0	83	0	-83	0	0	0
LABOR	0	0	31	0	-31	0	0	63	0	-63	0	0	0
OTHER DIRECT COSTS	0	0	12	0	-12	0	0	19	0	-19	0	0	0
4.5.7													
LAB PLANNING OFFICE	0	0	26	0	-26	0	0	42	0	-42	0	0	0
LABOR	0	0	19	0	-19	0	0	36	0	-36	0	0	0
OTHER DIRECT COSTS	0	0	7	0	-7	0	0	6	0	-6	0	0	0
4.6													
EXPERIMENTAL FACILIT IES SUPPORT	0	0	370	0	-370	0	0	557	0	-557	0	0	0
LABOR	0	0	158	0	-158	0	0	327	0	-327	0	0	0
OTHER DIRECT COSTS	0	0	212	0	-212	0	0	231	0	-231	0	0	0
4.6.1													
PHYSICS LIBRARY SERV ICE	0	0	62	0	-62	0	0	113	0	-113	0	0	0
LABOR	0	0	35	0	-35	0	0	74	0	-74	0	0	0
OTHER DIRECT COSTS	0	0	28	0	-28	0	0	39	0	-39	0	0	0
4.6.2													
TECHNICAL INFORMATIO N & PUBLICATIONS	0	0	66	0	-66	0	0	141	0	-141	0	0	0
LABOR	0	0	38	0	-38	0	0	81	0	-81	0	0	0
OTHER DIRECT COSTS	0	0	29	0	-29	0	0	60	0	-60	0	0	0
4.6.3													
EXPERIMENTAL FACILIT IES ADMINISTRATION	0	0	242	0	-242	0	0	303	0	-303	0	0	0
LABOR	0	0	86	0	-86	0	0	172	0	-172	0	0	0
OTHER DIRECT COSTS	0	0	156	0	-156	0	0	132	0	-132	0	0	0

ITEM	CURRENT PERIOD					CUMULATIVE TO DATE					AT COMPLETION		
	BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGET	LATEST REVISED EST	VAR
	Work Sched	Work Perf		Sched	Cost	Work Sched	Work Perf		Sched	Cost			
4.7													
LAB PRIME CONTRACTOR FEES	0	0	275	0	-275	0	0	500	0	-500	0	0	0
OTHER DIRECT COSTS	0	0	275	0	-275	0	0	500	0	-500	0	0	0
4.7.1	0	0	275	0	-275	0	0	500	0	-500	0	0	0
OTHER DIRECT COSTS	0	0	275	0	-275	0	0	500	0	-500	0	0	0
5													
EXPERIMENTAL SYSTEMS	0	0	900	0	-900	0	0	1698	0	-1698	0	0	0
LABOR	0	0	201	0	-201	0	0	413	0	-413	0	0	0
OTHER DIRECT COSTS	0	0	699	0	-699	0	0	1285	0	-1285	0	0	0
5.2													
DETECTORS	0	0	45	0	-45	0	0	97	0	-97	0	0	0
LABOR	0	0	21	0	-21	0	0	22	0	-22	0	0	0
OTHER DIRECT COSTS	0	0	25	0	-25	0	0	76	0	-76	0	0	0
5.2.1	0	0	45	0	-45	0	0	97	0	-97	0	0	0
LABOR	0	0	21	0	-21	0	0	22	0	-22	0	0	0
OTHER DIRECT COSTS	0	0	25	0	-25	0	0	76	0	-76	0	0	0
5.3													
EXPERIMENTAL SYSTEMS COMPUTERS	0	0	23	0	-23	0	0	76	0	-76	0	0	0
OTHER DIRECT COSTS	0	0	23	0	-23	0	0	76	0	-76	0	0	0
5.3.1	0	0	23	0	-23	0	0	76	0	-76	0	0	0
OTHER DIRECT COSTS	0	0	23	0	-23	0	0	76	0	-76	0	0	0
5.4	0	0	0	0	0	0	0	-57	0	57	0	0	0
OTHER DIRECT COSTS	0	0	0	0	0	0	0	-57	0	57	0	0	0
5.4.1DX	0	0	-57	0	57	0	0	-57	0	57	0	0	0
OTHER DIRECT COSTS	0	0	-57	0	57	0	0	-57	0	57	0	0	0
5.2DX	0	0	696	0	-696	0	0	1301	0	-1301	0	0	0
LABOR	0	0	106	0	-106	0	0	240	0	-240	0	0	0
OTHER DIRECT COSTS	0	0	590	0	-590	0	0	1061	0	-1061	0	0	0
5.3DX	0	0	108	0	-108	0	0	253	0	-253	0	0	0
LABOR	0	0	74	0	-74	0	0	151	0	-151	0	0	0
OTHER DIRECT COSTS	0	0	34	0	-34	0	0	102	0	-102	0	0	0

ITEM	CURRENT PERIOD					CUMULATIVE TO DATE					AT COMPLETION		
	BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGET	LATEST REVISED EST	VAR
	Work Sched	Work Perf		Sched	Cost	Work Sched	Work Perf		Sched	Cost			
5.1DX	0	0	8	0	-8	0	0	8	0	-8	0	0	0
OTHER DIRECT COSTS	0	0	8	0	-8	0	0	8	0	-8	0	0	0
5.2DE	0	0	3	0	-3	0	0	3	0	-3	0	0	0
OTHER DIRECT COSTS	0	0	3	0	-3	0	0	3	0	-3	0	0	0
5.3DE	0	0	16	0	-16	0	0	16	0	-16	0	0	0
OTHER DIRECT COSTS	0	0	16	0	-16	0	0	16	0	-16	0	0	0
6 LAB OPERATIONS SUPPORT	0	0	0	0	0	0	0	0	0	0	0	0	0
OTHER DIRECT COSTS	0	0	0	0	0	0	0	0	0	0	0	0	0
6.1 PHYSICS PROGRAM SUPPORT	0	0	0	0	0	0	0	0	0	0	0	0	0
OTHER DIRECT COSTS	0	0	0	0	0	0	0	0	0	0	0	0	0
6.1.1 PHYSICS ADMIN AND SUPPORT	0	0	0	0	0	0	0	0	0	0	0	0	0
OTHER DIRECT COSTS	0	0	0	0	0	0	0	0	0	0	0	0	0
7 ESCALATION & CONTING ENCY	0	0	0	0	0	0	0	0	0	0	0	0	0
OTHER DIRECT COSTS	0	0	0	0	0	0	0	0	0	0	0	0	0
7.1 ESCALATION: 1/2/3	0	0	0	0	0	0	0	0	0	0	0	0	0
OTHER DIRECT COSTS	0	0	0	0	0	0	0	0	0	0	0	0	0
7.2 ESCALATION: 4/5/6	0	0	0	0	0	0	0	0	0	0	0	0	0
OTHER DIRECT COSTS	0	0	0	0	0	0	0	0	0	0	0	0	0
7.3 CONTINGENCY	0	0	0	0	0	0	0	0	0	0	0	0	0
OTHER DIRECT COSTS	0	0	0	0	0	0	0	0	0	0	0	0	0

ITEM	CURRENT PERIOD					CUMULATIVE TO DATE					AT COMPLETION		
	BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGET	LATEST REVISED EST	VAR
	Work Sched	Work Perf		Sched	Cost	Work Sched	Work Perf		Sched	Cost			
99	0	0	338	0	-338	0	0	338	0	-338	0	0	0
OTHER DIRECT COSTS	0	0	338	0	-338	0	0	338	0	-338	0	0	0
99.1	0	0	261	0	-261	0	0	261	0	-261	0	0	0
OTHER DIRECT COSTS	0	0	261	0	-261	0	0	261	0	-261	0	0	0
99.1.1	0	0	249	0	-249	0	0	249	0	-249	0	0	0
OTHER DIRECT COSTS	0	0	249	0	-249	0	0	249	0	-249	0	0	0
99.1.2	0	0	12	0	-12	0	0	12	0	-12	0	0	0
OTHER DIRECT COSTS	0	0	12	0	-12	0	0	12	0	-12	0	0	0
99.2	0	0	77	0	-77	0	0	77	0	-77	0	0	0
OTHER DIRECT COSTS	0	0	77	0	-77	0	0	77	0	-77	0	0	0
99.2.1	0	0	17	0	-17	0	0	17	0	-17	0	0	0
OTHER DIRECT COSTS	0	0	17	0	-17	0	0	17	0	-17	0	0	0
99.2.2	0	0	60	0	-60	0	0	60	0	-60	0	0	0
OTHER DIRECT COSTS	0	0	60	0	-60	0	0	60	0	-60	0	0	0
8	0	0	11	0	-11	0	0	6	0	-6	0	0	0
OTHER DIRECT COSTS	0	0	11	0	-11	0	0	6	0	-6	0	0	0
8.1	0	0	11	0	-11	0	0	6	0	-6	0	0	0
OTHER DIRECT COSTS	0	0	11	0	-11	0	0	6	0	-6	0	0	0
8.1.1	0	0	11	0	-11	0	0	6	0	-6	0	0	0
OTHER DIRECT COSTS	0	0	11	0	-11	0	0	6	0	-6	0	0	0

CONTRACTOR: SSC LABORATORY LOCATION: DALLAS, TX RDT&E [X] PRODUCTION [ ]	COST PERFORMANCE REPORT - FUNCTIONAL CATEGORIES			SIGNATURE,TITLE & DATE	FORM APPROVED OMB NUMBER 22R0280
	CONTRACT TYPE/NO:	PROGRAM NAME/NUMBER:	REPORT PERIOD From: 29-OCT-90 To: 25-NOV-90	01-NOV-90	
	DE-AC02-89ER40486				

QUANTITY	NEG COST	EST COST AUTH UNPR	TARGET PROFIT/FEE	EST PRICE	TGT PRICE	SHARE RATIO	CONTR CEILING	EST CEILING
0	$0	$0	$0/ 0.00%	$0	$0	0	$0	$0

ORGANIZATIONAL OR FUNCTIONAL CATEGORY	CURRENT PERIOD					CUMULATIVE TO DATE					AT COMPLETION		
	BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGETED COST		ACTUAL COST WORK PERF	VARIANCE		BUDGET	LATEST REVISED EST	VAR
	Work Sched	Work Perf		Sched	Cost	Work Sched	Work Perf		Sched	Cost			
DIRECTORATE	0	0	263	0	-263	0	0	401	0	-401	0	0	0
PROJECT MANAGEMENT	0	0	322	0	-322	0	0	630	0	-630	0	0	0
ACCELERATOR SYSTEMS	0	0	2437	0	-2437	0	0	5498	0	-5498	0	0	0
CONVENTIONAL CONSTR	0	0	2249	0	-2249	0	0	5973	0	-5973	0	0	0
TECHNICAL SERVICES	0	0	832	0	-832	0	0	2058	0	-2058	0	0	0
ADMINISTRATIVE SRVC	0	0	899	0	-899	0	0	1687	0	-1687	0	0	0
PHYSICS RESEARCH	0	0	1199	0	-1199	0	0	2058	-0	-2058	0	0	0
MAGNET SYSTEMS	0	0	4894	0	-4894	0	0	10577	0	-10577	0	0	0
PHYSICS INDIRECT	0	0	129	0	-129	0	0	254	0	-254	0	0	0
WRK FOR OTHRS	0	0	261	0	-261	0	0	261	0	-261	0	0	0
WRK FOR OTHRS EXC OH	0	0	77	0	-77	0	0	77	0	-77	0	0	0
LAB GENERAL INDIRECT	0	0	275	0	-275	0	0	500	0	-500	0	0	0
LAB GENERAL DIRECT	0	0	-46	0	46	0	0	-51	0	51	0	0	0
SUBTOTAL	0	0	13790	0	-13790	0	0	29922	-0	-29922	0	0	0
COST OF MONEY	0	0	0	0	0	0	0	0	0	0	0	0	0
GEN AND ADMIN (NON ADD)	0	0	0	0	0	0	0	0	0	0	0	0	0
UNDISTRIBUTED BUDGET											0	0	
SUBTOTAL	0	0	13790	0	-13790	0	0	29922	-0	-29922	0	0	0
MANAGEMENT RESERVE											0	0	0
TOTAL	0	0	13790	0	-13790	0	0	29922	-0	-29922	0	0	0

CPR Format 2

DOLLARS IN THOUSANDS

DIVISION REPORTS

MAGNET DIVISION

DIVISION PROJECT STATUS REPORT

DESIGN
CONSTRUCTION
PRODUCTION
RESEARCH & DEVELOPMENT

PART I

1. IDENTIFIERS:

1a. PROJECT TITLE/NUMBER
SUPERCONDUCTING SUPER COLLIDER LABORATORY

1b. REPORTING PERIOD
30 November 90

1c. MANAGING DIVISION

Magnet Systems Division

1d. DIVISION/OFFICE CONTACT

Roosevelt Baker, Jr. X 2084

1e. DIVISION MANAGER

Tom Bush X 2023

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

2 DIVISION MANAGER'S PERSONAL ASSESSMENT:

2a. Summary Status

Green	Yellow	Red
G	Y	R

	LAST PERIOD	THIS PERIOD
COST	G	G
SCHEDULE	G	G
TECHNICAL	G	G
OVERALL DIVISION	G	G

DCormell/10/3/90
DIVISIONAL

DIVISION PROJECT STATUS REPORT PART I	PROJECT TITLE:

2b. NARRATIVE HIGHLIGHTS AND KEY ISSUES (See item 5 for details on problems and variances)

WBS 1.2.1 Program Management: Completed fact-finding with General Dynamics and Westinghouse and began negotiation for the CDM contract. Continued development of critical path schedules.

WBS 1.2.2 HEB Magnets: The Acquisition Strategy is under review. Supporting a KEK initiative to review effects of ramp induced heating and smaller filament size. Begin a 50mm aperture study.

WBS 1.2.3 Collider Ring Magnets: Continued efforts on the technology transfer to industry plan. Conducted fact finding and discussions with both General Dynamics, leader, and Westinghouse, follower prepatory to receipt of updated price proposals and start of negotiations for the Collider Dipole Magnet product development phase. Collider Quadrupole Magnet RFP is under review and is scheduled for release Jan. 14, 1991.

WBS 1.2.4 Magnet Facilities Equipment and Tooling: Requisitions and orders are being written for equipment and tooling to support MDL operations. This equipment and tooling will start arriving in April of 1991 and we expect to have it completely installed by the end of December 1991.

WBS 4.2.2 MAGNET R&D:

FNAL: Continued test program for DD0028. Assembly has started on the first practice magnet. All tooling has been received for the short 50mm magnets. Coil assembly and collaring of DC0303 has been completed. Tests of DS0311 have been completed.

LBL: Three runs of SSC cable (30-strand "outer layer type") were completed this month. The 1m model QSC-403 coils are assembled and collared. Collaring of the QCC-401 model is complete. Coil fabrication for QCC-402 is complete.

Superconducting Cable: Evaluating vendor proposals for Vendor Qualification Program. Conductor and cable deliveries continue to meet requirements.

DIVISION PROJECT STATUS REPORT PART II	REPORTING DIVISION: Magnet System Division	
8. MILESTONE LOG		
SIGNIFICANT MILESTONES ACCOMPLISHED SINCE LAST REPORT	BASELINE DATE	ACTUAL DATE
• Issued authorization to incur cost letter to the CDM contractors	11 Nov 90	30 Oct 90
• Release Preliminary Draft CQM RFP	31 Oct 90	31 Oct 90
• Hosted an Industry Technology Familiarization conference at LBL	31 Oct 90	31 Oct 90
SIGNIFICANT MILESTONES OPEN	BASELINE DATE	FORECAST DATE
• Release of Draft CQM RFP	30 Nov 90	4 Jan 91
KEY MILESTONES UPCOMING - NEXT THREE MONTHS	BASELINE DATE	FORECAST DATE
• Release CQM RFP	17 Dec 90	18 Jan 91
• MTL Power Supply Vendor Selection	26 Oct 90	11 Dec 90
• CDM Vendor Team mobilized at FNAL	31 Dec 90	1 Mar 91
• Select vendor for superconducting wire	9 Nov 90	2 Jan 91
• Select vendor for HEB Industrialization program		1 Mar 91
• Complete 50mm aperture study for HEB Magnets	15 Jan 91	15 Jan 91
• Release HEB Magnets RFP	15 Feb 91	15 Feb 91

DCormell/10/3/90
DIVISIONAL

DIVISION PROJECT STATUS REPORT PART II	REPORTING DIVISION: Magnet System Division

9. TECHNICAL PERFORMANCE PARAMETERS

ITEM	BASELINE DESCRIPTION				FORECAST			
Dipole Vendor	F	L	A	Prod. Qty.	F	L	A	Prod. Qty
CDM 15m	6.6T	15.17	50	7956	6.6T	15.17	50	7956
CDM 13m	6.6T	12.64	50	504	6.6T	12.64	50	504
BV2+	6.6T	12.64	50	48	6.6T	12.64	50	48
BV1+	4.4079T	5.00	75-100	32	4.4079T	5.00	75-100	32
BV2-	6.6T	12.64	50	24	6.6T	12.64	50	24
BV1-	4.4079T	5.00	75-100	32	4.4079T	5.00	75-100	32
Quadrupole Vendor								
206 T/m Design								
CQM (QF)	**204 T/m**	**5.20**	**40**	**1664**	**211 T/m**	**5.07**	**40**	**1664**
QSD/QSF	**204 T/m**	**7.05**	**40**	**72**	**211 T/m**	**6.87**	**40**	**72**
QSD1/QSF1	**204 T/m**	**6.12**	**40**	**48**	**211 T/m**	**5.97**	**40**	**48**
180 T/m Design								
M-1 (QVF-QVD)	180 T/m	14.25	50	64	180.01 T/m	14.25	50	64
HEB Vendor								
HEBDM	6.39T	15.17	50	432	6.39 T	15.17	5	432
HEBQM (short)	200 T/m	1.23	50	234	200 T/m	1.23	50	234
HEBQM (long)	200 T/m	3.64	50	44	200 T/m	3.64	50	44
SSCL								
230 T/m Design								
QL1	**230 T/m**	**15.14**	**40**	**4**	**208.60 T/m**	**15.14**	**40**	**4**
QL2	223.6 T/m	11.22	40	8	223.55 T/m	11.22	40	8
QL4	**230 T/m**	**11.22**	**40**	**8**	**218.05 T/m**	**11.22**	**40**	**8**
QM3	**230 T/m**	**11.22**	**40**	**4**	**225.08 T/m**	**11.22**	**40**	**4**
QM4	**230 T/m**	**11.22**	**40**	**8**	**212.71 T/m**	**11.22**	**40**	**8**
QL3	**218.6 T/m**	**12.96**	**40**	**4**	**230.86 T/m**	**12.96**	**40**	**4**
QM1	188.2 T/m	8.5	40	4	188.23 T/m	8.5	40	4
QM2	219.6 T/m	8.5	40	8	219.61 T/m	8.5	40	8
204 T/m Design								
QU3	**206 T/m**	**7.05**	**40**	**8**	**211 T/m**	**6.87**	**40**	**8**
QU4	**204 T/m**	**7.05**	**40**	**8**	**211 T/m**	**6.87**	**40**	**8**
QL6	**158.5 T/m**	**4.896**	**40**	**8**	**162.35 T/m**	**4.78**	**40**	**8**
QM6	**151.8 T/m**	**4.896**	**40**	**8**	**155.48 T/m**	**4.78**	**40**	**8**
180 T/m Design								
QL5	**89.8**	**14.25**	**50**	**8**	**162.14 T/m**	**14.25**	**50**	**8**
QM5	**97.7 T/m**	**14.25**	**50**	**8**	**151.31 T/m**	**14.25**	**50**	**8**
QU1	180 T/m	6.76	50	8	180.01 T/m	6.76	50	8
QU2	180 T/m	6.76	50	8	180.01 T/m	6.76	50	8

ACCELERATOR SYSTEMS DIVISION

DIVISION PROJECT STATUS REPORT

DESIGN	X	PRODUCTION	
CONSTRUCTION		RESEARCH & DEVELOPMENT	X

PART I

1. IDENTIFIERS:

1a. PROJECT TITLE/NUMBER
SUPERCONDUCTING SUPER COLLIDER LABORATORY

1b. REPORTING PERIOD
October 29, 1990 thru November 26, 1990

1c. MANAGING DIVISION
Accelerator Systems Division

1d. DIVISION/OFFICE CONTACT
Steve McNiel
Ext. 6070

1e. DIVISION MANAGER
Ted Kozman
Ext.1049

1f. PERFORMING ORGANIZATION(S)
Mechanical Engineering
Electrical Engineering
Instrumentation Diagnostics
RF
Cryogenics
Controls
Business Operations
Technical Systems Management

2 DIVISION MANAGER'S PERSONAL ASSESSMENT:

2a. Summary Status

Green	Yellow	Red
G	Y	R

	LAST PERIOD	THIS PERIOD
COST	G	G
SCHEDULE	G	Y
TECHNICAL	G	G
OVERALL DIVISION	G	G

DCormell/10/3/90
DIVISIONAL

DIVISION PROJECT STATUS REPORT PART I	REPORTING DIVISION:

2b. DIVISION MANAGER'S NARRATIVE HIGHLIGHTS **(PAGE ONE)** (See item 5 for details on problems and variances)

Mechanical Engineering

Spool Pieces--The Power-Test-Leads (PTL) and the PTL vessel have been received from Ability Engineering. The Vacuum Barrier (VB) and the VB test vessel are being rebid; bid evaluation begins 12/3/90. Computer modeling of the VB showed that the design doesn't meet specification yet. A stress analysis is in progress. Drawings for the Recooler were received from CTS and approved; vendor construction begins 12/3/90. A design for the "flower-pot" corrector power lead interface was completed. Final Assembly drawing for the cold pipe and outer vacuum vessels were completed. Thermal and stress analysis need to be done. The location of the intersection of the safety leads and the quench stopper rib cage was determined.

Corrector Magnets--The first dipole corrector cross section was assembled from laser-cut laminations. Awards were made to Cryoindustries and other companies for corrector-magnet-test-facilites components. Space has been found in Bldg.3 for the Corrector Lab. Over 76 km of superconducting wire was received. It will be used to build prototype magnets at TAC, LBL, Caldwell Electric and SSCL over the next six months. The TAC Quad#6.1 was tested with good results. It meets minimum requirement for industrialization. Additional testing is underway.

Collider Magnet Installation Equipment--First draft of performance specifications was completed and a procurement package was prepared. A 2.5 M$ bid has been received. In addition, we have a preliminary estimate of 11 k$/pair for dollies for the subsurface transportation of the magnets.

Collider Stands--A PR has been issued for prototype cantilever-style magnet stands. Drawings for box-style stands have also been upgraded.

Collider Vacuum--There is concern that hydrogen might be released from the walls of the vacuum chamber. A test of a hydrogen removal system is being undertaken. The vacuum chamber for the hydrogen-pumping test has been assembled and successfully leak-checked.

Linac Facilities Requirements Documents--Working meetings with CCD, ADOD, RF Engineering, Instrumentation & Diagnostics, and Electrical Engineering have resulted in modifications to the klystron wave guides, rearrangement of the klystron power supplies, and increased number of equipment racks-per-klystron. Serious consideration is being given to making the steering magnets part of the quadrupoles.

R&D Cooling Water System--The water piping is complete. One cooling tower has been checked. Installation of instrumentation and air-pressure control system for the valves is nearly complete. The system will be complete before it is needed.

Cryogenic Engineering

Interaction with Vendors--The entire week of Nov. 12th was spent in the first P&ID review with Koch Process Systems (KPS), the vendor for the ASST/E1 cryogenic plant. KPS's technical activities remain on schedule , and the momentum is high. The request for extension of the letter of contract has been approved by DOE. An ad has been placed in the Commerce Business Daily (CBD) seeking a support contractor for the Cryogenics Group.

DIVISION PROJECT STATUS REPORT PART I	REPORTING DIVISION:

2b. DIVISION MANAGER'S NARRATIVE HIGHLIGHTS (PAGE TWO) (See item 5 for details on problems and variances)

Fermilab ER String Test--The magnet string has operated at liquid helium temperatures throughout the month. Evaluation of the cryogenic instrumentation is complete. The next stage is power-testing of the magnets by increasing currents.

Collider Cryogenic System Design--Work is complete on the design of a process for operating the collider at a temperature of 3 K. This is practical using two stages of cold compression similar to that employed at CEBAF. The overall efficiency would be about 22% of the Carnot efficiency of 100 watts/watt. A plant of this kind could be constructed to begin operation at 4 K and subsequently be modified for 3 K operation. This work has provided an adequate basis for costing.

Electrical Engineering

ASST Systems--Specification of the ASST uninterruptible power supply (UPS) is complete. An internal design review of the ER/ASST isolation amplifier design was held, resulting in simplifications. Procurement of parts and construction of circuits for the first prototype is underway. A review of electrical power supply space requirements was completed for the PBMK work-package statement. The Technical Selection Statement for ASST/MTL power supplies was completed and forwarded to procurement. Definition of test procedures for high-voltage testing the of the ASST quench protection Heater Firing Units (HFUs) was completed.

LINAC Systems--The electrical distribution requirements have been defined. A review of the Ion Source Gas Valve Driver design was completed. A spare valve driver was completed. The design of the Ion Source extraction cone pulser was finished, fabrication completed and partially tested.

Main Magnet Power Supplies(MMPS)--A simulation model of the Collider AC power distribution system was developed and voltage drops under various conditions are under study using the code EMTP. A reevaluation of the LEB MMPS operating conditions and cost was completed, based on the latest lattice and reflecting the requirement for both 1 Hz linear control operation along with 10 Hz resonant operation. The various Collider magnet loads have been identified; each sector is slightly different.

Quench Protection--Definition of the control system for the Quench Protection Monitor/Collider Excitation Control and Regulation (QPM/CECAR) has started. Prototype circuits for quench-voltage-monitoring isolation amplifiers are being tested in an environmental chamber.

Kicker Magnet Power Supplies--Design has started on the spark-gap switch for the Kicker Magnet Test Stand (KMTS). The gas control panel design for the KMTS is finished. Preliminary drawings of the LEB extraction kicker magnet have been checked; the design is progressing well. Conceptual designs of the other kickers systems throughout the accelerator system has started.

EE Design/Drafting--Simplified models of the LEB power supply network have been simulated with the code SPICE; more sophisticated simulations must be done with the code EMTP. Requirements for the Electronics Computer-Aided Engineering and Electrical Computer-Aided Design (ECAE/ECAD) system are nearly complete and acquisition strategy has started.

Electronics Support--Started selection of instrumentation for LINAC cavity measurements (bead pulls).
Two voltage-to-frequency converter (VFC) designs were evaluated, and a revised calibration technique was chosen.

DIVISION PROJECT STATUS REPORT PART I	REPORTING DIVISION:

2b. DIVISION MANAGER'S NARRATIVE HIGHLIGHTS (PAGE THREE) (See item 5 for details on problems and variances)

RF Engineering

RF Test Stand--Test rf-cavity and associated equipment arrived from LANL. The cavity is being installed (minus ferrite tuner and center conductor) to test the vacuum system. A programmable controller for the Test Stand has been fabricated and is ready for installation into the control rack. A temporary 208 V AC power feed was installed to allow preliminary checkout without waiting for Facilities to make the final 208 V AC installation.

LINAC--Preliminary calculations were completed on DTL, CCL and CCL/LEB Buncher modulator/power supplies. Procurement specifications are in progress. A written description of various LINAC reference-frequency distribution methods was generated.

LEB--The LEB schedule was reworked to allow time to use the RF Test Stand as the test-bed for a liquid-cooled tuner.

Collider--A draft SOW was generated as the first step in reevaluating the Collider RF-System requirements based on comments made during the June DOE review. Part of this SOW is to consider changes needed for an eventual upgrade of the beam current by a factor of 10. The tunnel configuration is also being reconsidered based on not locating cavities in the upper ring immediately over the cavities in the lower ring to facilitate maintenance. Furthermore the manufacturer is recommending that the klystrons be installed horizontally.

Instrumentation & Diagnostics

Instrumentation--LINAC instrumentation (Faraday cup and current-measuring toroids) was tested on the Ion Source. Work continued on specification of instrumentation between LINAC modules and tanks. There are now drawings of instrument locations. The VXI system and associated computer are being evaluated for use in beam diagnostics work. Contact has been made with Ohio State Univ. for collaborating on radiation effects measurements on fiber optics. One concept for synchronizing beam transfers between booster rings is to program the rate of acceleration. Fabrication of circuitry to demonstrate programmed synchronization has begun. New methods of data acquisition from Beam Position Monitors (BPMs) is being explored. Circuit board for 4 channel VME digitizer card with deep on-board memory being developed in conjunction with Fermilab in final layout stages, with prototype boards expected by January. The Actel system for programming and simulating Actel programmable integrated circuits is now operational in the Instrumentation Lab.

LEB Simulations--One way of avoiding possible longitudinal emittance growth during ramping of the LEB is to increase the transition-gamma of the lattice. Computer simulations to determine the dynamic beam aperture in high gamma-t lattices are continuing, but the results so far show that dynamic aperture is degraded. These simulations did not include alignment errors and steering correctors. New simulations have begun which include these effects.

DIVISION PROJECT STATUS REPORT PART I	REPORTING DIVISION:

2b. DIVISION MANAGER'S NARRATIVE HIGHLIGHTS (PAGE FOUR) (See item 5 for details on problems and variances)

Collider Simulations--The specifications for the steering corrector magnets in the Collider limit the integrated field to 2.2 Tesla-meters. Simulations this month showed that these corrector strengths were quite adequate to handle expected alignment errors. Simulations will continue to explore larger alignment errors and the effects of non-functioning BPMs.

Code Development--A code called TEAPOT is the main code used to simulate the operation of the Collider rings. Work has started to bring the two versions of TEAPOT together and place them under configuration management. Also, planning and designing the algorithms necessary to include ramping in TEAPOT have begun.

Computer Support--The I&D Group supports all computer acquisition and installation within ASD and ADOD. The computer budget for the year has been prepared. Meetings were held with vendors concerning hardware/software upgrades for ADUWN. Several CAD and scientific workstations were installed and configured. Software installation on servers was done. Software was developed to convert files from PC to Unix workstations. An ECAD package was installed on the RF Unix workstation.

Business Office

Budget & Cost Control--Detail reviews were held with each Group Leader to discuss budget requirement vs projected budget allocations. Budget projections were revised based on the Group Leaders input to reflect critical needs for FY1991.

Schedule Control--Detailed planning for November has focused on the ER String Test at Fermilab, the ASST and the LINAC. Detailed schedules to support the design, procurement and fabrication of the ER spool pieces were constructed. The spool pieces are on schedule and anticipated to arrive at Fermilab mid June 1991. The ASST program held a milestone review conference 11/13/90. The ASST scheduling network diagrams were statused as of 11/26/90. The program is currently on schedule with some minor slippages on work items that had the float to accomodate them. The critical path for ASST currently runs through the magnet design, development and installation sequences. Detailed schedules have been developed for the RF system components of the LINAC program (its critical path). Schedules were statused as of 11/26/90 and are well ahead of schedule. Scheduling continues on the balance of the LINAC program and should be completed in January.

Personnel Planning--The number of people-on-board for the past two months, since the Systems Integration Group became ADOD, are:

	AS D	ADOD	Total
Oct 31:	166	38	204
Nov 30:	181	50	231

The Personnel Planning Section assists both Divisions in recruiting. Hiring plans for FY1991 have been formulated, but are waiting on final approval of Division budgets.

DIVISION PROJECT STATUS REPORT PART I	REPORTING DIVISION:

2b. DIVISION MANAGER'S NARRATIVE HIGHLIGHTS **(PAGE FIVE)** (See item 5 for details on problems and variances)

Systems Engineering--Completed functional specifications and requirements for the ASST/E1 service area infrastructure. Generated the "grounding and bonding" section for the spool piece specification. Converted engineering specifications for cleaning high vacuum components into a Laboratory Practices document for the spool pieces. Prepared a critical-item-development specification for the spool piece corrector magnets. In the area of reliability engineering we continued work on reliability prediction for the Fermilab quench protection system, to establish confidence in prediction methodology to be used at the SSCL. Evaluated the Navy's TIGER reliability engineering software. It will be applicable to the SSC. Identified and hired a configuration manager to support ASD and ADOD. Worked as part of the team to finalize the ASST/E1 Service Area WORK AUTHORIZATION PACKAGE, and to put together the RFP and SOW for the DTL procurement. Completed SOWs for Vacuum Barrier Test Vessel and the Vacuum Barrier itself. Prepared a procedure standardizing technical reviews within ASD. Completed a major update to the ASST Spool Piece Project plan.

Safety--Draft Safe Operating Procedures (SOPs) for the "Chemical Pump Experiments," and the "R&D Cooling Water System" have been written and issued for review. Forklift training certification for ASD personnel has been scheduled and will be conducted shortly. The Safety Coordination Committee has issued 10 procedures for AD approval. Work has started on writing the SSCL Emergency Preparedness Plan.

Quality Assurance--The Quality Implementation Plan is in development and a final draft will be ready for review by the end of December. The contract for the ASST/MTL Cryogenic System was reviewed from the QA point of view.

DIVISION PROJECT STATUS REPORT PART I	REPORTING DIVISION:

5. SIGNIFICANT PROBLEMS/VARIANCE ANALYSIS			
5a. PROBLEMS, IMPACT ON PROJECT, CORRECTIVE ACTION			RESPONSIBLE GROUP
PROBLEM IDENTIFICATION	IMPACT	CORRECTIVE ACTION	
The machine shop is overloaded.	Delay in prototyping spool pieces, etc.	More help is being hired.	ASD
Response of Procurement .	Procurement is driving the schedule. Decreased productivity of the staff. Lowered morale.	Increase size of procurement staff and simplify procedures both being done.	ASD/ADMIN
SSC VAX computer is overloaded.	Delay in analysis of spool pieces and corrector magnets. Decreased productivity of staff.	Increase capacity of VAX System. Increase use of Unix workstations. Buy commercial computer time.	ASD/LTS
Cannot do layout of ASST electrical buswork.	Schedule slip.	Finalize ASST building design.	ASD/CCD
5b. ITEMS REQUIRING PMO/DIRECTORATE/DOE ACTION			
Need for separate Kicker Development Laboratory.	Delays in kicker prototype work. Present space is needed for new technicians.	Either identify existing space or rent new space.	ASD/PMO
Need for additional office space.	New staffing arriving in January can not be assigned offices.	Either identify existing space or rent new space.	ASD/LTS/ DOE

DIVISION PROJECT STATUS REPORT PART II	REPORTING DIVISION: Accelerator Systems Division	
8. MILESTONE LOG		
SIGNIFICANT MILESTONES ACCOMPLISHED SINCE LAST REPORT	BASELINE DATE	ACTUAL DATE
SIGNIFICANT MILESTONES OPEN	BASELINE DATE	FORECAST DATE
KEY MILESTONES UPCOMING - NEXT THREE MONTHS	BASELINE DATE	FORECAST DATE
Power Supply PDR	11-30-90	11-30-90
Power Supply Contract Award	11-30-90	11-30-90
Spool Pieces PDRR	11-30-90	01-15-91
Control Systems PDR	12-10-90	01-15-91
Cryo 4K Plant FDR	12-17-90	12-17-90
Dump Heaters Electron PDR	01-04-91	01-09-91
Interconnect Vacuum Equipment PDR	01-11-91	01-11-91
Power Supply Regulators/Transductors PDR	01-15-91	01-15-91
Linac PDR	01-29-91	01-29-91
Quench Monitor PDR	01-30-91	01-30-91
Spool Piece End Box PDR	01-30-91	01-30-91
Installation System FDR	02-01-91	02-01-91
Cable Trays & Racks Detailed Design Complete	02-11-91	02-11-91
Spool Piece PDR	02-14-91	02-14-91
Spool Piece SPA/SPR PDR\	02-14-91	02-14-91
Cryo 4K Plant Final Submittal of P&ID's	02-15-91	02-15-91
Spool Piece HSPRF Initial Design Review	02-22-91	02-22-91
Installation Equipment FDR	02-28-90	02-28-90
Interconnect & Vacuum Equipment Leak Detectors & Turbos FDR	02-28-91	02-28-91

ACCELERATOR DESIGN
AND
OPERATIONS DIVISION

DIVISION PROJECT STATUS REPORT

DESIGN	q	PRODUCTION	q	
CONSTRUCTION	q	RESEARCH & DEVELOPMENT	q	**PART I**

1. IDENTIFIERS:

1a. PROJECT TITLE/NUMBER
SUPERCONDUCTING SUPER COLLIDER LABORATORY

1b. REPORTING PERIOD
November 1, 1990 - November 30, 1990

1c. MANAGING DIVISION

Accelerator Design and Operations Division

1d. DIVISION/OFFICE CONTACT

Don Edwards

1e. DIVISION MANAGER

Don Edwards

1f. PERFORMING ORGANIZATION(S)

Collider
HEB
LEB
MEB
Beamlines
Linac

Division structure is not yet approved by directorate

2 DIVISION MANAGER'S PERSONAL ASSESSMENT:

2a. Summary Status

Not Applicable

	Green	Yellow	Red	LAST PERIOD	THIS PERIOD
COST					
SCHEDULE					
TECHNICAL					
OVERALL DIVISION					

DIVISION PROJECT STATUS REPORT PART I	REPORTING DIVISION: ADOD

HEB

Work continued on the examination of HEB options, with primary emphasis on increasing the magnet aperture from 5 to 6 cm, in order to increase the injection-field dynamic aperture and to facilitate the magnet design. The present 5cm magnet does not have a sufficiently large dynamic aperture at injection when realistic injection errors are considered to ensure successful operation, and the magnet design is limited in ramp rate by cooling considerations due to lace of space for helium flow. The SCDR design requires the use of 2.5m filaments in order to achieve the desired ramp rate. This cooling problem is greatly reduced by going to a 6 cm aperture.

The 6cm option currently under study used the same amount of superconductor as the 5cm design and reduces the top operating field from 6.4 to 5.8 telsa. This design has the same cold-mass size as the present design and so does not require an increase in the cryostat, which is now the same as that of the collider. The lower operating field equates to a reduction in the peak energy of the HEB from 2 to 1.8 TeV. The implications of this energy reduction on collider injection are currently being examined.

Members of the High Energy Booster group have been assisting the Physics Research Division in a design study for test beams from the MEB, with options for future beams from the HEB. A summary of the studies is given below.

Two options for test beams at the SSCL, other than the SCDR design, were proposed. Option 1 details the use of three, 200 GeV beams only, with civil construction (tunnels) for future installation of technical components for one, 2 TeV beam. Future upgrades would allow for a total of six, 200 GeV beams and tow, 2 TeV beams. This option "comes in" under the SCDR cost as it has no extracted HEB beam initially. Option 2 differs from the above only by including the technical components for one HEB slow extracted beam now and future upgrades as above. It costs about the same as the SCDR Design.

Particle fluxes and muon backgrounds still need to be calculated for these two options. Secondary beam optics have been designed and primary beam optics and splitting stations are nearly finished.

MEB

Lattice design has been static during the month of November as other issues have been explored based on the new design. Among the issues looked at were: longitudinal matching, corrector strength estimates, beamline design, and changes to the rf curves based on the reduction in the number of main power supplies and the correspondingly lower ramping rate.

Magnet design work has proceeded on the correction sextupole, and design work on the main quadrupoles has begun.

LEB

During the last month, significant effort with respect to the LEB has been in the evaluation of a specific high g_{tr} ($\approx$20) lattice design. In particular, tracking studies under the condition of a perturbed (misaligned, mispowered, and with multipoles) lattice have been initiated to determine the sensitivity to errors. The present circumference of the LEB remains at the SCDR value (540m). In conjunction with this activity, the lattice drift space requirements necessary for belows, flanges, pumps, sextupoles, and corrective elements were investigated. Engineering analysis of the 100 Hz vacuum chamber, the multipole contributions due to eddy currents within this chamber, and the lamination designs for dipoles, quadrupoles, and sextupoles have been initiated.

During the week of December 3, there was an injector workshop. Efforts with respect to the LEB were evaluation of LEB $\sqrt{\sim}$ MEB transfer schemes both in terms of timing and longitudinal phase space matching, general consideration of high g_{tr} lattices, and the evaluation of space charge induced tune shifts. All studies resulted in parameter considerations commensurate with those chosen.

DIVISION PROJECT STATUS REPORT PART II	REPORTING DIVISION: ADOD

Linac-LEB Beam-line:

The Linac-LEB transport optics is being studied to investigate the sensitivity to component misalignment and magnetic field strength error. Specifications for beam-line are being submitted to the Linac Conventional Construction Working Group.

Linac-MEB Beam-line:

No Report

MEB-HEB Beam-line:

No Report

HEB-Collider Beam-line:

Several optics configurations for the HEB-Collider transfer lines have been studied. Geologic and conventional construction cons iderations required study of transport systems for vertical separation of 14m (SCDR value), 17m, and 20m between the HEB and collider. The use of superconducting as well as warm magnets was considered. Designs with satisfactory optics were found using warm magnets for the 14m case and superconducting magnets for the 20m case. Due to beam-line length constraints a satisfactory design using warm magnets has not been found for the 20m configuration. Pending a decision on the separation we are beginning to investigate the sensitivity to component misalignment and magnetic field strength error for the two satisfactory cases.

Linac:

The magnetron H^- source successfully reached its design current and operating voltage of 30 mA at 35 KV. The pulse length was 100 ms at 10 Hz. The current exceeds collider-filling requirements by a factor of 5. The source could now provide MEB test-beam bunches exceeding 5×10^{11}. The transverse emittance-measuring apparatus is now in fabrication. The einzel-lens LEBT is on schedule for delivery in the first week of December. The mechanical design of the RFQ is now in progress at LANL. The rf systems' specifications have been drafted and are under review. The draft procurement package for the klystrons will be reviewed in early December. The preliminary design review for the linac is now scheduled for January 29. The linac facilities requirements are presently being formulated by a working group composed of representatives of the linac, the engineering groups, and CCD. The goal is to start Title I for the linac buildings by the end of January.

Collider:

Further development of a synchrotron radiation intercept design continued this month. Studies of the effects on corrector designs for a possible increased spool piece aperture (50 mm) were initiated. Numerical studies were also started to investigate the effects of field errors in the interaction region quadrupoles. Work continued on the energy deposition analysis: various collimation configurations near the IR quads are being investigated, placement of scraper elements for emittance control is being studied, and alternative beam dump optional systems are being developed.

DIVISION PROJECT STATUS REPORT PART I	REPORTING DIVISION: ADOD

5. SIGNIFICANT PROBLEMS/VARIANCE ANALYSIS

5a. PROBLEMS, IMPACT ON PROJECT, CORRECTIVE ACTION

PROBLEM IDENTIFICATION	IMPACT	CORRECTIVE ACTION	RESPONSIBLE GROUP
Optics configurations for the HEB-Collider transfer lines have been studied.	Geologic and conventional construction considerations required study of transport systems for vertical separation of 14m (SCDR value), 17m, and 20m between the HEB and collider	The use of superconducting as well as warm magnets was considered. Designs with satisfactory optics were found using warm magnets for the 14m case and superconducting magnets for the 20m case.	Beam-Lines
Due to beam-line length constraints a satisfactory design using warm magnets has not been found for the 20m configuration.	Sensitivity to component misalignment and magnetic field strength error for the two satisfactory cases.		Beam-Lines
Tracking studies under the condition of a perturbed LEB lattice have been initiated to determine the sensitivity to errors.	The present circumference of the LEB remains at the SCDR value (540m).	In conjunction with this activity, the lattice drift space requirement necessary for belows, flanges, pumps, sextupoles, and corrective elements were investigated	Beam-Lines
Beam-transfer simulations include alignment errors, excitation errors, kicker misfires, etc. have started in order to estimate the injection mismatched tolerances and to compare them to the emittance dilution budget.	An examination of the power requirements for the lines was begun and specifications and power supply regulation requirements are being established.	Ramping the power supplies would greatly reduce the power consumption, but very tight ramp reproducibility requirements need to be achieved. These requirements are being developed.	Beam-Lines

5b. ITEMS REQUIRING PMO/DIRECTORATE/DOE ACTION

CONVENTIONAL CONSTRUCTION DIVISION

DIVISION PROJECT STATUS REPORT

DESIGN ☒ PRODUCTION ☐
CONSTRUCTION ☒ RESEARCH & DEVELOPMENT ☐ **PART I**

1. IDENTIFIERS:

1a. PROJECT TITLE/NUMBER
SUPERCONDUCTING SUPER COLLIDER LABORATORY

1b. REPORTING PERIOD
November 1—30, 1990

1c. MANAGING DIVISION

Conventional Construction Division

1d. DIVISION/OFFICE CONTACT

Robin Scott, ext. 4001

1e. DIVISION MANAGER

Jon R. Ives, ext. 4028

1f. PERFORMING ORGANIZATION(S)
- Conventional Construction Division
- The PB/MK Team (A-E/CM subcontractor)

2 DIVISION MANAGER'S PERSONAL ASSESSMENT:

2a. Summary Status

Green	Yellow	Red
G	Y	R

	LAST PERIOD	THIS PERIOD
COST	G	G
SCHEDULE	G	G
TECHNICAL	G	G
OVERALL DIVISION	G	G

DCormell/10/3/90
DIVISIONAL

DIVISION PROJECT STATUS REPORT PART I	REPORTING DIVISION: Conventional Construction Division

2b. DIVISION MANAGER'S NARRATIVE HIGHLIGHTS (See item 5 for details on problems and variances)

WBS 2.1
- Commenced Title I design of Accelerator Systems String Test Facility (ASST).
- Continued defining requirements and configuration for E1 shaft, first tunnel sector, and Linac. Established the Linac Working Group
- Supported DOE review of definitized PB/MK subcontract.
- PB/MK submitted proposed FY91 work plan.
- Land acquisition and turnover to DOE/SSC is being coordinated with TNRLC and is proceeding well. No problems are anticipated.

WBS 2.3
- Continued site planning for E1 site and developing Design Requirements Document for E1 infrastructure. Drafted Work Authorization Package.
- Coordinated with TNRLC on roads.
- Began review of service areas for site acquisition.

WBS 2.4
- Completed Design Requirements Document for Magnet Test Lab (MTL).
- Commenced MDL building steel fabrication off-site and continued construction (foundations and site work) for Magnet Development Lab.
- Began developing requirements document for Accelerator Shop Building (ASB).

WBS 2.5
- Commenced Site Development Plan.
- Commenced conceptual studies for method of construction for Interaction Halls at WN and WS.

DIVISION PROJECT STATUS REPORT PART I	REPORTING DIVISION: Conventional Construction Division

5. SIGNIFICANT PROBLEMS/VARIANCE ANALYSIS

5a. PROBLEMS, IMPACT ON PROJECT, CORRECTIVE ACTION

PROBLEM IDENTIFICATION	IMPACT	CORRECTIVE ACTION	RESPONSIBLE GROUP
(1) CCD staff shortfalls	(1) Design Requirements Documents preparation behind schedule.	(1) CCD organizational review completed; Head of CCD has approved personnel requisitions for the hiring of seven additional employees.	CCD
(2) FY91 budgeted activities	(2) Unable to establish firm milestone dates through FY91.	(2) Develop a coordinated, approved FY91 work plan.	CCD, PMO, and Directorate Planning

5b. ITEMS REQUIRING PMO/DIRECTORATE/DOE ACTION

(1) Approved Project Master Schedule needed	(1) Unable to set firm milestone dates through FY91	(1) Issue approved Project Master Schedule	PMO

DCormell/10/3/90
DIVISIONAL

DIVISION PROJECT STATUS REPORT PART II	REPORTING DIVISION: Conventional Construction Division	
8. MILESTONE LOG		
SIGNIFICANT MILESTONES ACCOMPLISHED SINCE LAST REPORT	BASELINE DATE	ACTUAL DATE
• WBS 2.1: Commenced ASST design (level 2)	November 1990	November 1990
• WBS 2.5: Commenced Site Development Plan (level 2)	November 1990	November 1990
SIGNIFICANT MILESTONES OPEN	BASELINE DATE	FORECAST DATE
• WBS 2.5: Award A-E/CM definitized contract (level 1)	March 1990	January 31, 1991
KEY MILESTONES UPCOMING - NEXT THREE MONTHS	BASELINE DATE	FORECAST DATE
Level		
0 • none		
1 • ASST: advertise for construction bids	January 1991	March 1991
2 • MDL Partial BOD	February 1991	April 1991

DCormell/10/3/90
DIVISIONAL

PHYSICS RESEARCH DIVISION

DIVISION PROJECT STATUS REPORT

DESIGN	q	PRODUCTION	q
CONSTRUCTION	q	RESEARCH & DEVELOPMENT	q

PART I

1. IDENTIFIERS:

1a. PROJECT TITLE/NUMBER
SUPERCONDUCTING SUPER COLLIDER LABORATORY

1b. REPORTING PERIOD
November 1-30, 1990

1c. MANAGING DIVISION
Physics Research Division

1d. DIVISION/OFFICE CONTACT
Newton Norman ext. 6035

1e. DIVISION MANAGER
Fred Gilman ext. 6113

1f. PERFORMING ORGANIZATION(S)
SDC Collaboration -- LBL
L* Collaboration -- MIT
EMPACT/TEXAS Collaboration -- SUNY

2a. DIVISION MANAGER'S PERSONAL ASSESSMENT
The Physics Research Division appears to be on the specified baseline with respect to cost, schedule and technical accomplishments.

Green	Yellow	Red
G	Y	R

	LAST PERIOD	THIS PERIOD
COST	G	G
SCHEDULE	G	G
TECHNICAL	G	G
OVERALL DIVISION	G	G

DCormell/10/3/90
DIVISIONAL

DIVISION PROJECT STATUS REPORT PART I	PROJECT TITLE: PHYSICS RESEARCH DIVISION

2b. NARRATIVE HIGHLIGHTS AND KEY ISSUES (See item 5 for details on problems and variances)

•WBS 4.6.3 Experimental Facilities

The Experimental Facilities Group presented its Quality Implementation Plan to the Laboratory for the Quality Assurance Audit. Work will continue on the Plan.

A review of the test beam design effort is being carried out with a presentation of the results scheduled for Dec 11. The effort involves exploration of different options to determine the most cost effective beams for the program. New ideas are also being explored for the design of the Calibration Hall.

Work is in progress on the development of Safety Guidelines for the Research Division and for detector design. The schedules for completion are in the second and third quarters of FY 91.

Work continued with the detector collaborations on developing costs and schedules for detector facilities.

•WBS 5.1 Experimental Systems, Detector R&D

Each of the collaborations that submitted a detector subsystem R&D proposal was contacted with regard to the recommendation of the Laboratory's Detector R&D Committee for or against funding. Twenty-four proposals were recommended for some level of support. Two of the collaborations were asked to submit revised proposals by the beginning of December. Definite funding levels await actions with respect to the large detectors.

•WBS 5.2 Experimental Systems, Detector Engineering

There was ongoing liaison of SSCL staff with the collaborations preparing Letters of Intent through the month with a coordinating engineer assigned to each of them. Information on costing methodology for the detectors was communicated from the SSCL. Magnet engineers from each collaboration were in residence at the SSCL.

All three (SDC, L*, and EMPACT/TEXAS) submitted Letters of Intent on the deadline date of November 30th describing downscoped detectors. Members of the staff of the Research Division began detailed examination of these documents, with meetings with each of the collaborations set for the first week in December with the primary aim of achieving a detailed understanding of the cost estimates. During that same period there will be internal Laboaratory meetings evaluating the LOI's as a whole. All of this activity leads up to the meeting of the Program Advisory Committee on December 13 - 15, 1990 at which there will be public presentations of the Letters of Intent and review by the Committee with the aim of arriving at a recommendation on the two major detectors that will be supported to move toward proposals.

•WBS 5.3 Detector Computing

Silicon Graphics has been selected as the vendor to provide the Batch Ranch for the Physics Detector Simulation Facility (PDSF). Delivery of the components of the Batch Ranch is expected in January. The revised Request for Proposal for the Front-End workstations for the PDSF has been placed with the potential vendors. Delivery is expected in February and full operation of the 500 MIPS computiing resource is still scheduled for March, 1991.

DIVISION PROJECT STATUS REPORT PART I	REPORTING DIVISION: PHYSICS RESEARCH

5. SIGNIFICANT PROBLEMS/VARIANCE ANALYSIS

5a. PROBLEMS, IMPACT ON PROJECT, CORRECTIVE ACTION

PROBLEM IDENTIFICATION	IMPACT	CORRECTIVE ACTION	RESPONSIBLE GROUP
WBS 5.2 FY91 Funding uncertainties have caused delays in commiting funds to the Detector Collaborations involved in submitting Letters of Intent	The impact on the collaborations is not evident. The Letters of Intent were submitted on schedule as they are assuming funding for this work in the near future.	FY91 Funding is needed at the earliest possible date.	PRD/PMO

5b. ITEMS REQUIRING PMO/DIRECTORATE/DOE ACTION

Resolution of funding issues.	Delays in commitment of proper funding levels.	Commitment of Texas and DOE funds.	PRD/PMO

DCormell/9/19/90

DIVISION PROJECT STATUS REPORT PART II	PROJECT TITLE: PHYSICS RESEARCH DIVISION	
8. MILESTONE LOG		
SIGNIFICANT MILESTONES ACCOMPLISHED SINCE LAST REPORT	BASELINE DATE	ACTUAL DATE
•WBS 5.2 Experimental Systems, Detector Development Submittal of the Letters of Intent by the three Collaborations.	November 30, 1990	November 30, 1990
SIGNIFICANT MILESTONES OPEN	BASELINE DATE	FORECAST DATE
KEY MILESTONES UPCOMING - NEXT THREE MONTHS	BASELINE DATE	FORECAST DATE
• WBS 5.2 Experimental Systems, Detector Development Program Advisory Committee Meeting Decision on Large Detectors going forward to proposals. •WBS 5.3 Experimental Systems, Detector Computing Delivery of 500 MIPs computing capability	December 13-15, 1990 January 1991	December 13-15, 1990 January 1991 First quarter 1991

DCormell/10/3/90
DIVISIONAL

LABORATORY TECHNICAL SERVICES DIVISION

November, 1990

DIVISION PROJECT STATUS REPORT

DESIGN ❑ PRODUCTION ❑
CONSTRUCTION ❑ RESEARCH & DEVELOPMENT ❑ **PART I**

1. IDENTIFIERS:

1a. PROJECT TITLE/NUMBER
SUPERCONDUCTING SUPER COLLIDER LABORATORY

1b. REPORTING PERIOD
November, 1990

1c. MANAGING DIVISION

Laboratory Technical Services

1d. DIVISION/OFFICE CONTACT

David L. Pells

1e. DIVISION MANAGER

E. Jack Story

1f. PERFORMING ORGANIZATION(S)

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

2 DIVISION MANAGER'S PERSONAL ASSESSMENT:

2a. Summary Status

Green	Yellow	Red
G	Y	R

	LAST PERIOD	THIS PERIOD
COST	G	G
SCHEDULE	G	G
TECHNICAL	G	G
OVERALL DIVISION	G	G

DCormell/10/3/90
DIVISIONAL

DIVISION PROJECT STATUS REPORT PART I	REPORTING DIVISION: Laboratory Technical Services

2b. DIVISION MANAGER'S NARRATIVE HIGHLIGHTS **(See item 5 for details on problems and variances)**

Support to TNRLC, related to their facility in Ellis County, continued. Renovation of the SSCL Medical Center was completed. Installation of two modular offices in the SR3 warehouse began. A Welding Shop and an Accelerator Materials Storage building were constructed . Over 100 offices were reconfigured. The Magnet Division Manager's office was remodeled. Planning for the monitoring and maintenance of forty-two (42) wells in Ellis County began. Preparation of the LTS Safety Program and the SSCL Emergency Preparedness Plan continued. Three-hundred thirty (330) facilities service requests were processed in November. (WBS 4.4.2)

Two portable modules were installed in the SR#2 warehouses for protection of hi value equipment. The Parkerville warehouse is 90% full; additional space is needed for storage of magnet components and SSCL Furniture. A prototype Parts Control System requested by the Magnet Systems Division is being established for "kitting" during magnet and accelerator development. Controlled property at the SSCL now includes 6900 items, valued in excess of $21M. (WBS 4.4.3)

Twenty Seven (27) MIS service requests were completed, with 36 projects still in process. The FY91/92 Short Range ADP Plan was reviewed with DOE-Chicago and is being finalized. The Computer Protection Program Manager initiated lab-wide integration of database systems used at the SSCL, including both VAX and micro-based systems. Computer classes conducted in November included Apple applications, Deltek, Nike, Sybase, Excel Macros and UNIX. (WBS 4.4.5)

LTS design support management participated in the SSCL Industrial Technology Advisory Committee meeting with Navarro College and Texas State officials to review their Industrial technology degree program. A meeting was also held with Dallas County Community College District representative to discuss their CADD curriculum. Support was provided to the Physics Research and Conventional Construction Divisions related to workstation installation, software installation, data backup and various CAD operations. In house ANSI 14.5 geometric dimensioning and tolerance training is underway for all SSCL design support personnel. (WBS 4.4.6)

Meetings were held with PB/MK and CCD personnel to coordinate communications for the N-15 area infrastructure, MTL, MDL and other site facilities. One hundred eighty-four (184) reconfiguration and installation services calls were handled during November. The network operation center became operational. Upgrade and installation of the SSCNET, MicroVax and related software were completed. Conceptual design of the voice communications for Ellis County was begun. Visual Media Support was provided for documentation of ionization beam testing. Thirteen meetings / presentations were video taped. Thirty-eight (38) video telconferences were arranged. (WBS 4.47)

A draft of the Engineering Standards Management Plan was completed and submitted to Project Management. The Drawing Breakdown Structure and Engineering Change Notice (ECN) procedures were completed. Definition of an MRP system proceeded. LTS Division QA procedures, policies and standards required by NQA-1 were competed and reviewed by DOE. (WBS 4.4.8)

Interim Standard Operating Procedures (SOP's) for incoming inspection and the Calibration/Repair Lab were completed. Metrology Lab procedures and standards were completed. (WBS 4.4.9)

The new Security Operations officer is now on board. Alarm/Access Control Systems and burglar/fire alarm systems at Interim SSCL Facilities were checked out and refined. A meeting was held on Emergency Preparedness Planning with communities near the SSCL (ring) site, including fire and police support. Planning for E-1 site fire protection proceeded. Security specifications for the MDL building are being prepared. ES&H personnel conducted a safety inspection of the construction now underway in Ellis County. (WBS 4.4.10)

Work continued on the Central Files Policies and Procedures Manual. Approximately 2,350 documents have been coded and shelved. A system for tracking usage of GSA vehicles was established. Mailroom/courier service continued. Approximately forty (40) SSCL employees were relocated, with associated relocation of furniture and equipment. Procurement of office furniture continued. The SSCL Medical Director, Dr. Thomas Chester, reported to work on November 1, 1990. Development of SSCL Employee Assistance Program was initiated. Construction of the Medical Facility was completed. A proposal for a visitors center at the E-1 site was completed & submitted. (WBS 4.4.11)

A lecture on technology transfer from Federal Labs was presented at the University of Texas at Dallas. SSCL input was provided for the Resource Directory maintained by the Federal Laboratory Consortium for Technology Transfer (FLCTT) Disclosure information on an SSCL invention was obtained and forwarded to the SSCL Legal office. The SSCL Technical Transfer Office Manager attended the planning meeting of the D/FW Advanced Electronic Imaging Task Force and the 1990 fall meeting of the FLCTT. The feasibility of a local industry/SSCL/university E-mail network was investigated. (WBS 4.4.12)

Scientific computer systems utilization increased sharply in late November. The heavy analysis loads strained already saturated disk and CPU resources on the VAX 6420. Average CPU utilization in November was 81.56%. The three primary SSCL computer operating systems now have 1439 users. Draft computing documents in process now include the Computer Users Guide, Operations Manual, Detector Simulation Users Manual and Detector Simulation Training Manuals. (WBS 4.4.13)

Preparation of the proceedings from the Fort Worth Detector Symposium proceeded, with publication expected in early 1991. Nine (9) new scientific reports were received for editing, with six completed during November. Eight (8) new scientific reports were patent-cleared by DOE and published. Fourteen (14) new forms were completed. Reprographics processed 127 jobs; multiple slides, viewgraphs and prints were prepared for SSCL presentations. (WBS 4.4.14)

DIRECTORATE DIVISION

DIVISION PROJECT STATUS REPORT

DESIGN ❑ PRODUCTION ❑
CONSTRUCTION ❑ RESEARCH & DEVELOPMENT ❑ **PART I**

1. IDENTIFIERS:

1a. PROJECT TITLE/NUMBER
SUPERCONDUCTING SUPER COLLIDER LABORATORY

1b. REPORTING PERIOD
November 1, 1990 - November 30, 1990

1c. MANAGING DIVISION

Directorate

1d. DIVISION/OFFICE CONTACT

Neil Baggett

1e. DIVISION MANAGER

Raph Kasper

1f. PERFORMING ORGANIZATION(S)

Education/External Affairs
Environment, Safety, & Health
International Coordination
Legal Counsel
Planning
Users' Office

2 DIVISION MANAGER'S PERSONAL ASSESSMENT:

2a. Summary Status

Green	Yellow	Red
G	Y	R

	LAST PERIOD	THIS PERIOD
COST	G	G
SCHEDULE	G	G
TECHNICAL	G	G
OVERALL DIVISION	G	G

DCormell/10/3/90
DIVISIONAL

DIVISION PROJECT STATUS REPORT PART I	REPORTING DIVISION: Directorate

2b. DIVISION MANAGER'S NARRATIVE HIGHLIGHTS (See item 5 for details on problems and variances)

- Members of the Directorate participated in the *Atlanta Conference on the SSC*, a conference on scientific and industrial opportunities at the SSC, which was held in Decatur, Georgia on November 14-15.

- The Users' Office supported six meetings at the SSCL for research collaborations proposing experiments at the SSC, and continued issuing ID cards to visiting scientists (151 this month). It also conducted the first election of officers of the Users Organization of the SSC since the establishment of the Laboratory. This organization, established in 1987, has a membership of 5,000 people with a professional interest in the SSC. Robert Adair of Yale is the new Chairman-Elect, and will succeed David Cassel of Cornell as the next Chairman of UOSSC.

ADMINISTRATION DIVISION

DIVISION PROJECT STATUS REPORT
PART I

1. IDENTIFIERS:

1a. PROJECT TITLE/NUMBER
Superconducting Super Collider Laboratory DE-AC02-89ER40486

1b. REPORTING PERIOD
November 1, 1990 - November 30, 1990

1c. MANAGING DIVISION

ADMINISTRATION

1d. DIVISION / OFFICE CONTACT

JANICE WESTMORELAND

1e. DIVISION MANAGER

ROBERT L. VAN NESS

1f. PERFORMING ORGANIZATION(S)

PROCUREMENT
PERSONNEL
FINANCE
MINORITY AFFAIRS

2a. SUMMARY STATUS

Green	Yellow	Red
G	Y	R

	LAST PERIOD	THIS PERIOD
COST	NA	G
SCHEDULE	NA	G
TECHNICAL	NA	G
OVERALL PROJECT	NA	G

DCormell/9/19/90

DIVISION PROJECT STATUS REPORT PART I	REPORTING DIVISION:

2b. DIVISION MANAGER'S NARRATIVE HIGHLIGHTS (See item 5 for details on problems and variances)

PROCUREMENT

- Fact finding for the Collider Dipole Magnet work continued through November with both General Dynamics and Westinghouse with target date for completion of fact finding by 12/21/90.
- During November, Procurement made awards totalling $11,940,074 of which $2,721,136 was to Small Business and $1,068,7899 was to Small Disadvantaged Business as defined in Public Law 101-101.

PERSONNEL

- We coordinated 72 interviews with hiring managers this month. Thirty-nine new employees joined the Laboratory for a total employee population of 883 as of 11/30/90.
- Efforts were launched in implementing the Deltek Advanced Payroll system. This involves major data gathering and entry to meet January 1991 deadline.
- Relocation and house-hunting activity continue at a high level.
- Adopted new procedures for internal job application process (intra-Laboratory) and developed special job application form for this purpose.
- Attended several job fairs and outplacement meetings as a continuation of our recruiting efforts.
- Held a very successful Foreign Travel Seminar which included distribution of helpful information to travelers and travel arrangers at SSCL.

FINANCE

- Completed all year-end external audit requests.
- Tested updated 3.2 version of Deltek.
- Organized the presentation material for the first Laboratory Management Review (LMR) of the fiscal year.
- Delivered core set of Job Summary Reports to Management using Powerhouse rather than Deltek.

DCormell/10/3/90
DIVISIONAL

DIVISION PROJECT STATUS REPORT PART I	REPORTING DIVISION:

2b. DIVISION MANAGER'S NARRATIVE HIGHLIGHTS (See item 5 for details on problems and variances)

MINORITY AFFAIRS

- The Director of Minority Affairs conducted numerous meetings with potential vendors, internal SSC Procurement personnel, and participated as speaker at numerous functions including the Economic Development Center in Little Rock, AR, hosted by the Southern Arkansas University and the Economic Development Center. Participant at the Vendor Seminar at Northeast Louisiana State University in Monroe LA, sponsored by The Small Business Development Center of NE Louisiana. Speaker at the Atlanta, GA Conference, sponsored by the Southeastern Universities Research Association and the Southeastern Section of the American Physical Society. speaker at the "How to do Business with the SSC Lab" Seminar in Maine, New Hampshire, Connecticut, and Massachusetts, sponsored by The New England Council Parsons Brinckerhoff/Morrison Knudson and the SSC Lab.

- The Manager of EEO/AA participated in the American Indian Science and Engineering Society (AISES) Twelfth Annual Conference which was held in Buffalo N.Y., and along with the Director of Minority Affairs, participated in a meeting with Dr. Benjamin Hooks, President of the NAACP, and Mr. Ken Wilson, Special Assistant, to familiarize the NAACP with the operations and purpose of SSC Lab and seek participation from the NAACP.

- The Manager of EEO/AA participated in a meeting with Education Department, and Personnel staff and the Chief of Staff (Directorate) to complete the Co-op Program procedures and also met with Ms. Barbara Culmer and Mr. Ted Vermass, personnel from PB/MK, to discuss PB/MK EEO compliance requirements.

- The Manager of EEO/AA participated in an open house for technicians. Approximately 250 applicants attended and were screened and interviewed.

- The SADBU Manager, Director of Minority Affairs and Procurement Director participated in meetings with the Small Business Officer, Larry Thompson from the Chicago D.O.E. office, in preparation for submittal of the SSC FY91 SB/SDB Plan.

- The SADBU Manager and the Director of Minority Affairs reviewed and approved the PB/MK Small Business and Small Disadvantaged Business Subcontrating FY91 Plan submitted to the SSCL.

- The SADBU Manager participated as a speaker at the Third "Binding the Partnership" conference sponsored by the General Services Administration (GSA) held in Dallas, Texas.