COST PERFORMANCE REPORT
FORMAT 1 - WORK BREAKDOWN STRUCTURE

DOLLARS IN Thousands

1. CONTRACTOR	2. CONTRACT	3. PROGRAM	4. REPORT PERIOD
a. NAME US LHC Accelerator Project Office	**a. NAME** US LHC	**a. NAME** US LHC Accelerator Project	**a. FROM** *(YYMMDD)* 990201
b. LOCATION *(Address and ZIP Code)* P.O. Box 500, MS 343, Batavia, IL 60510	**b. NUMBER** 1		**b. TO** *(YYMMDD)* 990228
	c. TYPE FPI / **d. SHARE RATIO** 100/0 100/0	**b. PHASE** *(X one)* x **RDT&E** x **PRODUCTION**	

5. CONTRACT DATA

a. QUANTITY	b. NEGOTIATED COST	c. EST. COST AUTH UNPRICED WORK	d. TARGET PROFIT/ FEE	e. TARGET PRICE	f. ESTIMATED PRICE	g. CONTRACT CEILING	h. ESTIMATED CONTRACT CEILING
0/0/0	89,417.8	0.0	0.0 / 0.0%	89,417.8	89,417.8	110,000.0	110,000.0

6. ESTIMATED COST AT COMPLETION

	MANAGEMENT ESTIMATE AT COMPLETION (1)	CONTRACT BUDGET BASE (2)	VARIANCE (3)
a. BEST CASE	89,417.8		
b. WORST CASE	89,417.8		
c. MOST LIKELY	89,417.8	89,417.8	0.0

7. AUTHORIZED CONTRACTOR REPRESENTATIVE

a. NAME *(Last, First, Middle Initial)* Jim Strait

b. TITLE US LHC Project Manager

c. SIGNATURE

d. DATE SIGNED *(YYMMDD)* 990323

8. PERFORMANCE DATA

ITEM		CURRENT PERIOD					CUMULATIVE TO DATE					REPROGRAMMING ADJUSTMENTS		AT COMPLETION		
		BUDGETED COST		ACTUAL	VARIANCE		BUDGETED COST		ACTUAL	VARIANCE						
		WORK SCHEDULED	WORK PERFORMED	COST WORK PERFORMED	SCHEDULE	COST	WORK SCHEDULED	WORK PERFORMED	COST WORK PERFORMED	SCHEDULE	COST	COST VARIANCE	BUDGET	BUDGETED	ESTIMATED	VARIANCE
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
a. WORK BREAKDOWN STRUCTURE ELEMENT																
1.1 - Interaction Regions	2	621.5	307.8	664.0	-313.7	-356.2	11,283.0	8,792.9	10,064.7	-2,490.1	-1,271.8			35,919.7	34,701.4	1,218.3
1.1.1 - Quadrupoles	3	439.5	228.5	535.2	-211.0	-306.7	7,983.0	6,777.6	7,761.3	-1,205.4	-983.7			21,904.7	21,682.9	221.8
1.1.1.1 - Tooling	4	109.6	21.3	36.3	-88.2	-15.0	1,070.8	917.8	1,018.4	-153.1	-100.6			1,606.4	1,554.0	52.4
1.1.1.2 - Cold Mass	4	17.3	21.8	240.4	4.5	-218.6	1,436.1	1,380.4	2,431.0	-55.8	-1,050.6			4,056.2	5,051.1	-994.9
1.1.1.3 - Cryostat	4	3.8	0.0	6.1	-3.8	-6.1	123.8	105.9	486.7	-17.9	-380.9			3,298.4	3,661.3	-362.9
1.1.1.4 - Magnet Testing	4	154.2	0.7	15.8	-153.5	-15.1	449.8	215.9	325.0	-233.9	-109.1			2,675.8	2,550.9	124.8
1.1.1.5 - Cable & Wedges	4	7.2	0.5	19.4	-6.7	-18.9	1,260.0	858.9	710.4	-401.1	148.4			1,483.7	934.2	549.5
1.1.1.6 - Shipping	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			380.9	380.9	0.0
1.1.1.7 - EDIA	4	147.4	184.1	217.2	36.7	-33.1	3,642.5	3,298.8	2,789.7	-343.7	509.1			8,403.4	7,550.6	852.8
1.1.2 - Dipoles	3	136.1	69.8	77.8	-66.3	-8.0	2,203.9	1,124.9	1,425.5	-1,079.1	-300.6			5,150.6	4,372.2	778.4
1.1.2.1 - Tooling	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.6	0.0	-18.6			158.8	177.4	-18.6
1.1.2.2 - D1 Production	4	46.9	15.6	22.4	-31.3	-6.9	375.6	191.8	324.3	-183.8	-132.5			684.9	633.6	51.3
1.1.2.3 - D2 Production	4	72.2	54.2	49.5	-18.0	4.7	1,690.9	844.0	1,015.4	-846.9	-171.4			2,453.9	1,778.4	675.5
1.1.2.4 - Magnet Testing	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			527.2	527.2	0.0
1.1.2.5 - EDIA	4	17.0	0.0	5.8	-17.0	-5.8	137.5	89.1	67.2	-48.4	21.9			1,325.9	1,255.6	70.3

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8. PERFORMANCE DATA

ITEM		CURRENT PERIOD					CUMULATIVE TO DATE					REPROGRAMMING ADJUSTMENTS		AT COMPLETION		
		BUDGETED COST		ACTUAL	VARIANCE		BUDGETED COST		ACTUAL	VARIANCE						
		WORK SCHEDULED	WORK PERFORMED	COST WORK PERFORMED	SCHEDULE	COST	WORK SCHEDULED	WORK PERFORMED	COST WORK PERFORMED	SCHEDULE	COST	COST VARIANCE	BUDGET	BUDGETED	ESTIMATED	VARIANCE
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
a. WORK BREAKDOWN STRUCTURE ELEMENT																
1.1.3 - Cryogenic Feedboxes	3	22.6	1.2	12.7	-21.4	-11.5	459.1	297.4	430.1	-161.7	-132.7			4,580.5	4,551.5	29.0
1.1.3.1 - Fabrication	4	0.0	0.0	0.0	0.0	0.0	104.5	0.0	0.0	-104.5	0.0			3,452.2	3,347.8	104.5
1.1.3.2 - Shipping	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			115.5	115.5	0.0
1.1.3.3 - EDIA	4	22.6	1.2	12.7	-21.4	-11.5	354.6	297.4	430.1	-57.2	-132.7			1,012.7	1,088.2	-75.4
1.1.4 - Absorbers	3	15.0	0.0	25.7	-15.0	-25.7	413.9	370.0	260.1	-43.9	109.9			3,288.2	3,134.4	153.8
1.1.4.1 - Fabrication	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			2,055.7	2,055.7	0.0
1.1.4.2 - Shipping	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			135.7	135.7	0.0
1.1.4.3 - EDIA	4	15.0	0.0	25.7	-15.0	-25.7	413.9	370.0	260.1	-43.9	109.9			1,096.8	943.0	153.8
1.1.5 - System Design	3	8.3	8.3	12.6	0.0	-4.3	223.1	223.1	187.8	0.0	35.2			995.7	960.4	35.2
1.2 - RF Region	2	464.4	368.8	246.0	-95.7	122.8	4,325.3	2,959.2	2,714.3	-1,366.1	244.9			11,685.9	10,074.9	1,611.0
1.2.1 - Dipoles	3	464.4	368.8	246.0	-95.7	122.8	4,325.3	2,959.2	2,714.3	-1,366.1	244.9			11,685.9	10,074.9	1,611.0
1.2.1.1 - Tooling	4	71.9	106.4	51.0	34.4	55.4	330.7	307.0	253.6	-23.7	53.4			861.8	784.8	77.0
1.2.1.2 - Prototypes	4	8.7	8.5	41.5	-0.2	-32.9	178.3	102.2	178.1	-76.0	-75.8			252.8	252.6	0.2
1.2.1.3 - D3 Production	4	244.3	47.0	38.9	-197.2	8.2	643.9	388.7	399.6	-255.2	-10.9			1,292.8	1,048.5	244.3
1.2.1.4 - D4 Production	4	33.5	70.8	26.7	37.3	44.1	1,168.9	630.8	748.0	-538.2	-117.2			1,791.8	1,370.9	421.0
1.2.1.5 - Magnet Testing	4	0.0	0.0	0.0	0.0	0.0	68.3	33.4	0.0	-34.9	33.4			941.0	872.7	68.3
1.2.1.6 - EDIA	4	106.0	136.0	88.0	30.0	48.1	1,935.3	1,497.2	1,135.0	-438.1	362.1			6,545.7	5,745.5	800.2
1.3 - Superconducting Wire & Cable	2	56.2	47.2	75.2	-9.0	-27.9	3,684.9	3,438.3	3,718.7	-246.7	-280.4			9,833.1	9,866.9	-33.8
1.3.1 - Superconductor Testing	3	47.5	45.0	71.1	-2.6	-26.2	2,936.6	2,750.9	2,930.6	-185.7	-179.7			8,854.1	8,848.1	6.0
1.3.1.1 - Tooling & Equipment	4	0.6	1.9	17.5	1.3	-15.6	695.0	612.3	724.0	-82.7	-111.7			695.0	724.0	-29.0
1.3.1.2 - Tests	4	21.9	16.8	25.0	-5.2	-8.2	591.4	481.7	396.2	-109.7	85.5			4,868.9	4,673.8	195.1
1.3.1.3 - EDIA	4	25.0	26.3	28.7	1.3	-2.4	1,124.7	1,131.3	1,284.8	6.7	-153.5			2,764.6	2,924.7	-160.1
1.3.1.4 - FY96 Actuals	4	0.0	0.0	0.0	0.0	0.0	525.6	525.6	525.6	0.0	0.00			525.6	525.6	0.00
1.3.2 - Cable Production Support	3	8.7	2.3	4.0	-6.4	-1.7	748.3	687.4	788.1	-60.9	-100.7			979.0	1,018.8	-39.8
1.3.2.1 - Dipole Cable R&D	4	3.7	2.3	2.8	-1.4	-0.5	254.3	251.8	66.1	-2.5	185.7			344.2	155.9	188.2
1.3.2.2 - Cable Measurement Support	4	1.2	0.0	0.0	-1.2	0.0	407.2	352.2	589.6	-55.1	-237.5			420.8	603.2	-182.4
1.3.2.3 - Cable Manufacturing Support	4	0.8	0.0	0.0	-0.8	0.0	31.0	29.5	0.0	-1.5	29.5			39.9	8.9	31.0
1.3.2.4 - EDIA	4	3.1	0.0	1.2	-3.1	-1.2	55.8	54.0	132.4	-1.8	-78.4			174.1	250.7	-76.6
1.4 - Accelerator Physics	2	35.2	35.2	65.4	0.0	-30.2	900.6	900.6	932.4	0.0	-31.8			3,809.4	3,841.2	-31.8
1.4.1 - BNL Accelerator Physics	3	17.5	17.5	23.1	0.0	-5.6	317.6	317.6	359.3	0.0	-41.8			1,705.8	1,747.6	-41.8
1.4.2 - FNAL Accelerator Physics	3	13.3	13.3	18.9	0.0	-5.6	324.2	324.2	298.5	0.0	25.8			1,196.5	1,170.7	25.8
1.4.3 - LBNL Accelerator Physics	3	4.4	4.4	23.4	0.0	-19.0	258.8	258.8	274.6	0.0	-15.8			907.0	922.9	-15.8
1.5 - Project Management	2	135.3	135.3	154.2	0.0	-18.9	2,950.8	2,950.8	2,819.9	0.0	130.9			12,261.4	12,130.4	130.9

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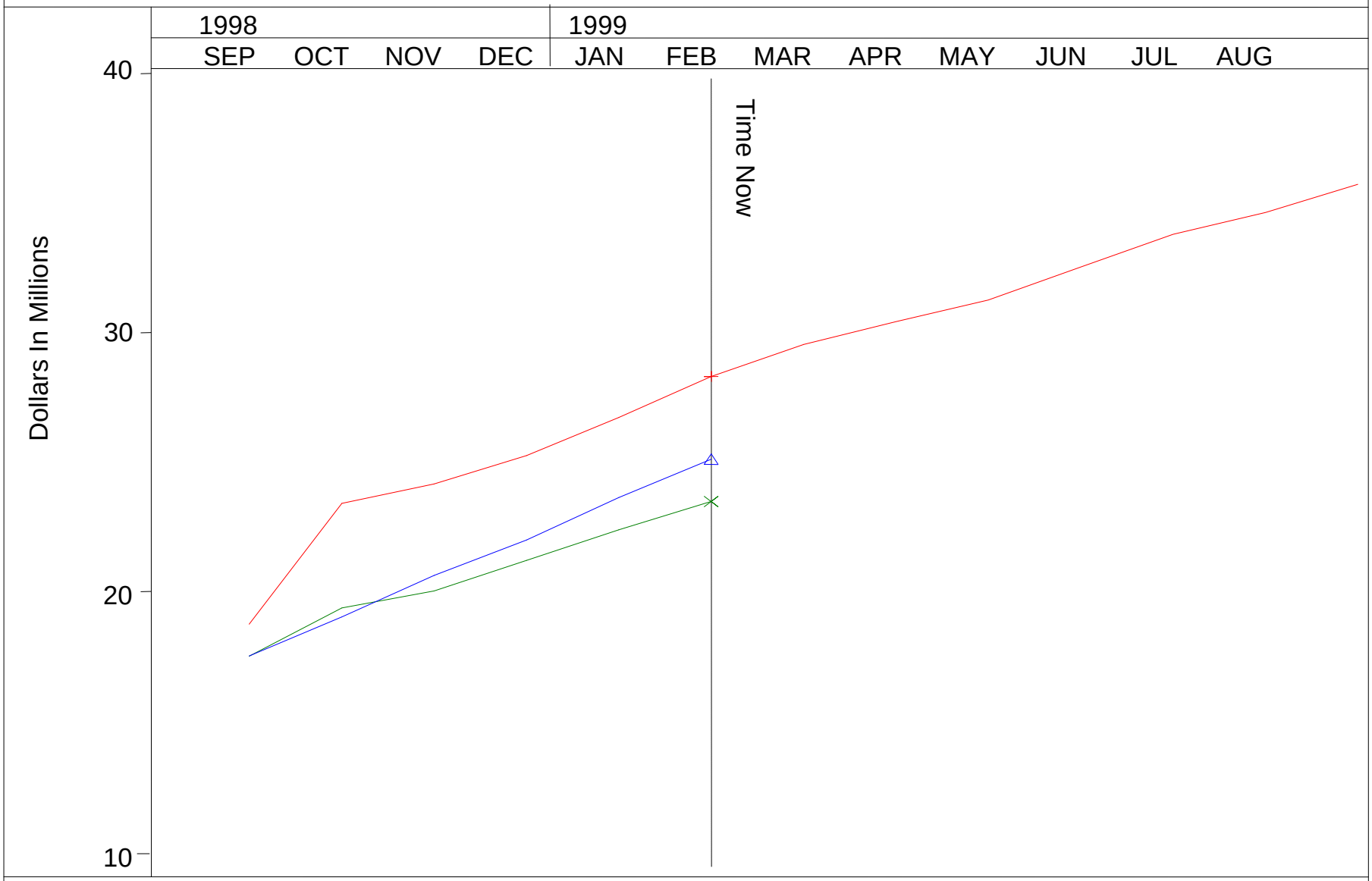
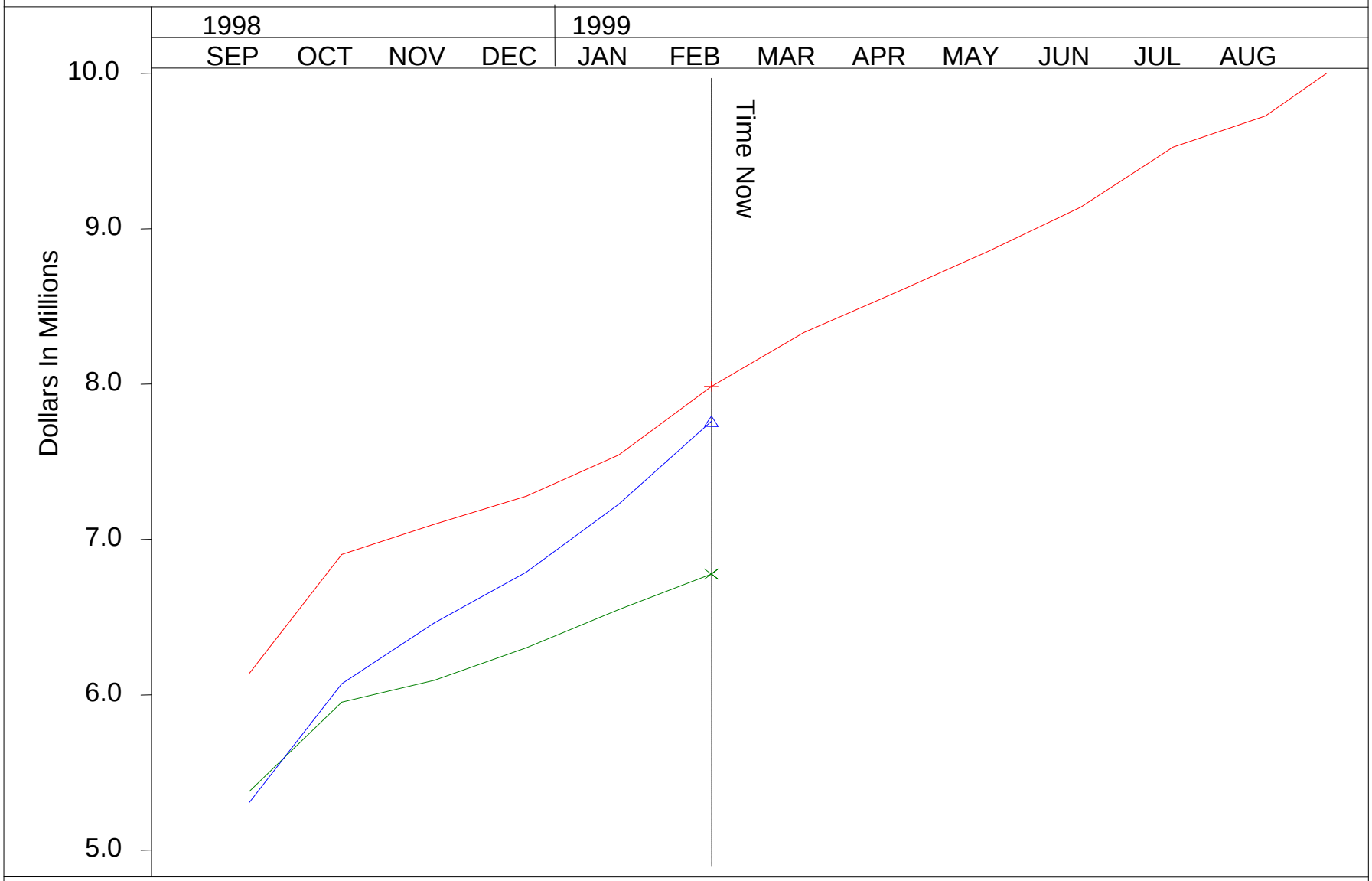
		BUDGETED COST		ACTUAL	VARIANCE		BUDGETED COST		ACTUAL	VARIANCE						
		WORK SCHEDULED	WORK PERFORMED	COST WORK PERFORMED	SCHEDULE	COST	WORK SCHEDULED	WORK PERFORMED	COST WORK PERFORMED	SCHEDULE	COST	COST VARIANCE	BUDGET	BUDGETED	ESTIMATED	VARIANCE
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
a. WORK BREAKDOWN STRUCTURE ELEMENT																
1.5.1 - US LHC Project Management	3	23.9	23.9	43.8	0.0	-19.9	532.6	532.6	721.8	0.0	-189.2			2,549.0	2,738.2	-189.2
1.5.1.1 - EDIA	4	19.8	19.8	35.3	0.0	-15.5	413.9	413.9	610.4	0.0	-196.5			2,089.4	2,285.8	-196.5
1.5.1.2 - Travel	4	2.9	2.9	4.6	0.0	-1.7	92.3	92.3	68.8	0.0	23.5			321.2	297.7	23.5
1.5.1.3 - Miscellaneous	4	1.2	1.2	3.9	0.0	-2.7	26.3	26.3	42.6	0.0	-16.3			138.4	154.7	-16.3
1.5.2 - BNL Project Management	3	77.0	77.0	56.6	0.0	20.4	1,504.3	1,504.3	1,459.5	0.0	44.8			6,028.5	5,983.8	44.8
1.5.2.1 - EDIA	4	16.7	16.7	19.8	0.0	-3.1	348.8	348.8	333.2	0.0	15.6			1,652.1	1,636.5	15.6
1.5.2.2 - Travel	4	6.7	6.7	6.3	0.0	0.4	153.5	153.5	140.2	0.0	13.3			607.6	594.4	13.3
1.5.2.3 - Generic Support	4	28.6	28.6	0.8	0.0	27.8	383.0	383.0	231.1	0.0	151.9			1,452.5	1,300.6	151.9
1.5.2.4 - Department Administration	4	24.9	24.9	29.7	0.0	-4.7	549.0	549.0	684.9	0.0	-135.9			2,246.3	2,382.3	-135.9
1.5.2.5 - FY96 Actuals	4	0.0	0.0	0.0	0.0	0.0	70.0	70.0	70.0	0.0	-0.00			70.0	70.0	-0.00
1.5.3 - FNAL Project Management	3	16.8	16.8	39.0	0.0	-22.2	397.2	397.2	298.5	0.0	98.7			1,808.4	1,709.8	98.7
1.5.3.1 - EDIA	4	11.1	11.1	24.9	0.0	-13.8	293.5	293.5	218.6	0.0	74.9			1,275.9	1,201.0	74.9
1.5.3.2 - Travel	4	5.7	5.7	14.1	0.0	-8.4	103.7	103.7	70.3	0.0	33.4			515.4	482.0	33.4
1.5.3.3 - Miscellaneous	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.6	0.0	-9.6			17.1	26.8	-9.6
1.5.4 - LBNL Project Management	3	17.6	17.6	14.8	0.0	2.8	516.8	516.8	340.0	0.0	176.7			1,875.4	1,698.7	176.7
1.5.4.1 - EDIA	4	9.8	9.8	10.1	0.0	-0.3	177.2	177.2	241.1	0.0	-63.9			945.9	1,009.8	-63.9
1.5.4.2 - Travel	4	7.5	7.5	4.3	0.0	3.2	136.2	136.2	79.1	0.0	57.1			703.5	646.4	57.1
1.5.4.3 - General Expenses	4	0.3	0.3	0.4	0.0	-0.1	203.3	203.3	19.8	0.0	183.5			225.9	42.4	183.5
OV - OVERHEAD	2	105.8	82.1	137.5	-23.8	-55.4	1,923.9	1,623.2	1,675.3	-300.7	-52.1			6,118.1	5,869.4	248.7
b. COST OF MONEY	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
c. GENERAL & ADMINISTRATIVE	2	159.3	119.0	143.7	-40.3	-24.7	3,225.3	2,804.6	3,177.9	-420.7	-373.3			9,790.2	9,742.9	47.3
d. UNDISTRIBUTED BUDGET	2													0.0	0.0	0.0
e. SUBTOTAL *(Performance Measurement Baseline)*		1,577.8	1,095.4	1,486.0	-482.4	-390.6	28,293.7	23,469.5	25,103.1	-4,824.2	-1,633.6	0.0	0.0	89,417.8	86,227.1	3,190.6
f. MANAGEMENT RESERVE	2												0.0	0.0		
g. TOTAL		1,577.8	1,095.4	1,486.0	-482.4	-390.6	28,293.7	23,469.5	25,103.1	-4,824.2	-1,633.6	0.0	0.0	89,417.8		
9. RECONCILIATION TO CONTRACT BUDGET BASE																
a. VARIANCE ADJUSTMENT										0.0	0.0					
b. TOTAL CONTRACT VARIANCE										-4,824.2	-1,633.6			89,417.8	86,227.1	3,190.6

WBS Element: 1 Cumulative Element Performance (with G&A) Name: US LHC Accelerator Project



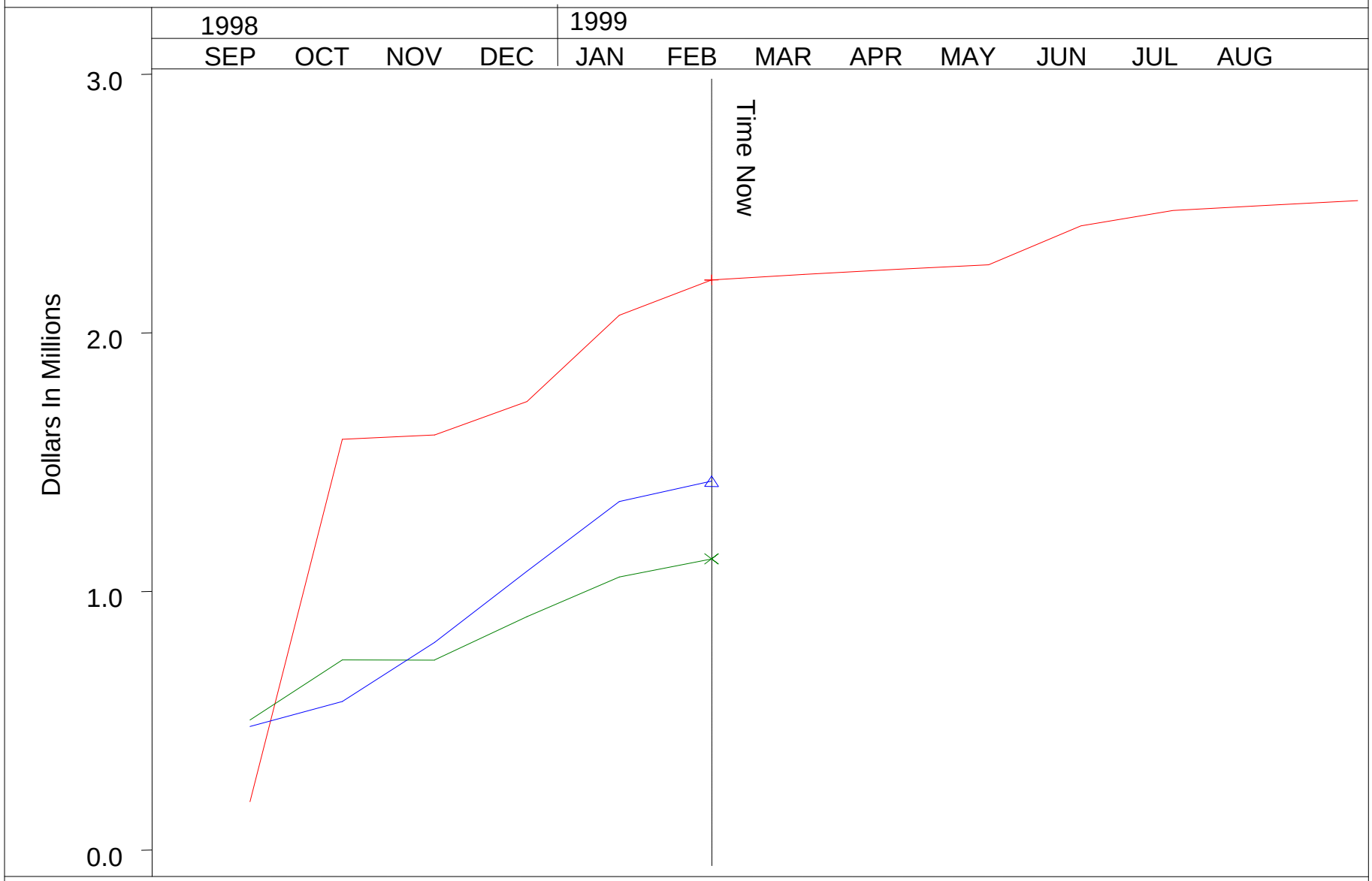
BCWS	18.7	23.4	24.1	25.2	26.7	28.3	29.5	30.4	31.3	32.5	33.8	34.6
BCWP	17.5	19.3	20.0	21.2	22.4	23.5						
ACWP	17.5	19.0	20.6	22.0	23.6	25.1						

WBS Element: 1.1.1 Cumulative Element Performance (w/o G&A) Name: IR Quadrupoles



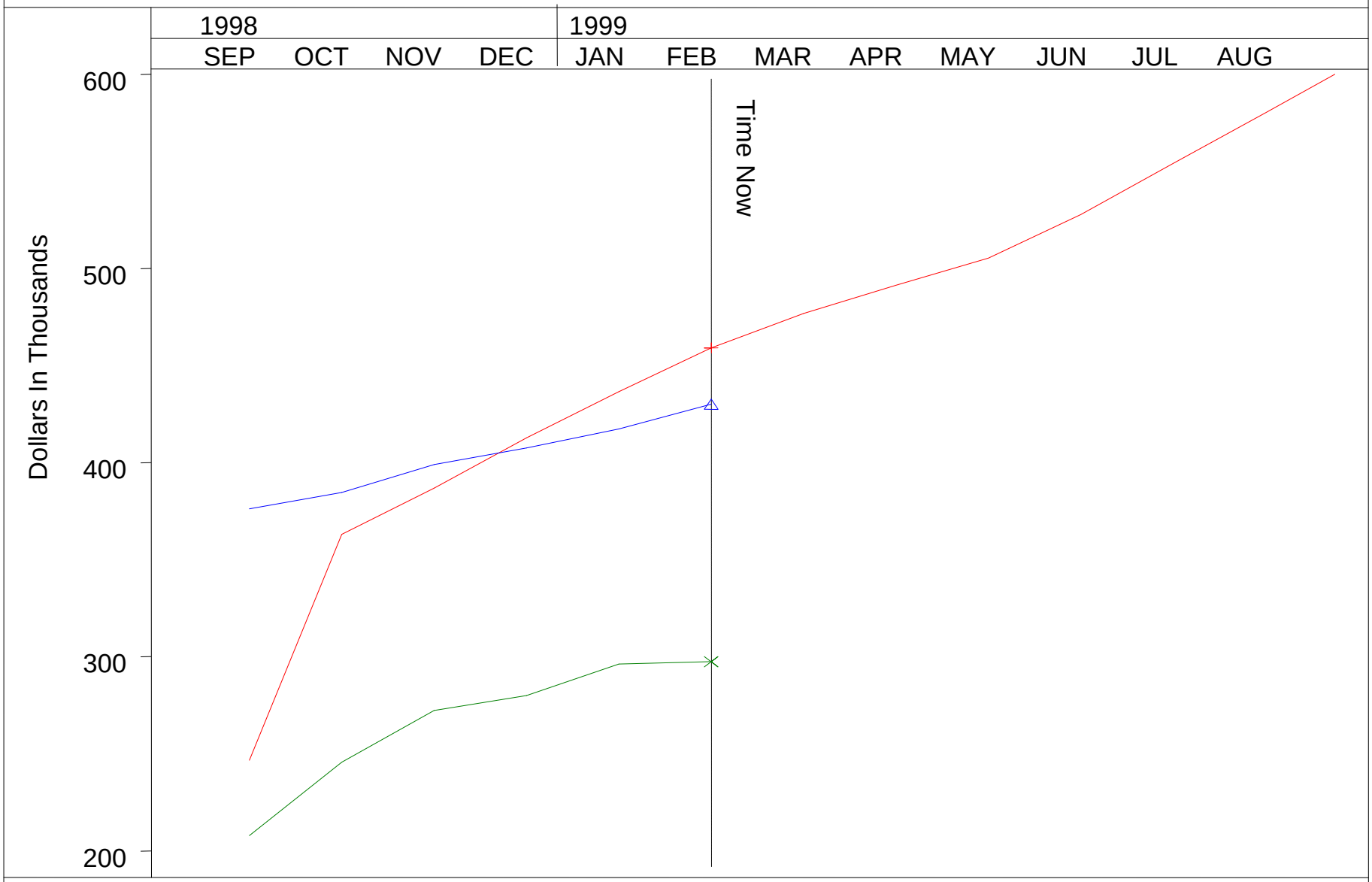
BCWS	6.1	6.9	7.1	7.3	7.5	8.0	8.3	8.6	8.9	9.1	9.5	9.7
BCWP	5.4	6.0	6.1	6.3	6.5	6.8						
ACWP	5.3	6.1	6.5	6.8	7.2	7.8						

WBS Element: 1.1.2 Cumulative Element Performance (w/o G&A) Name: IR Dipoles



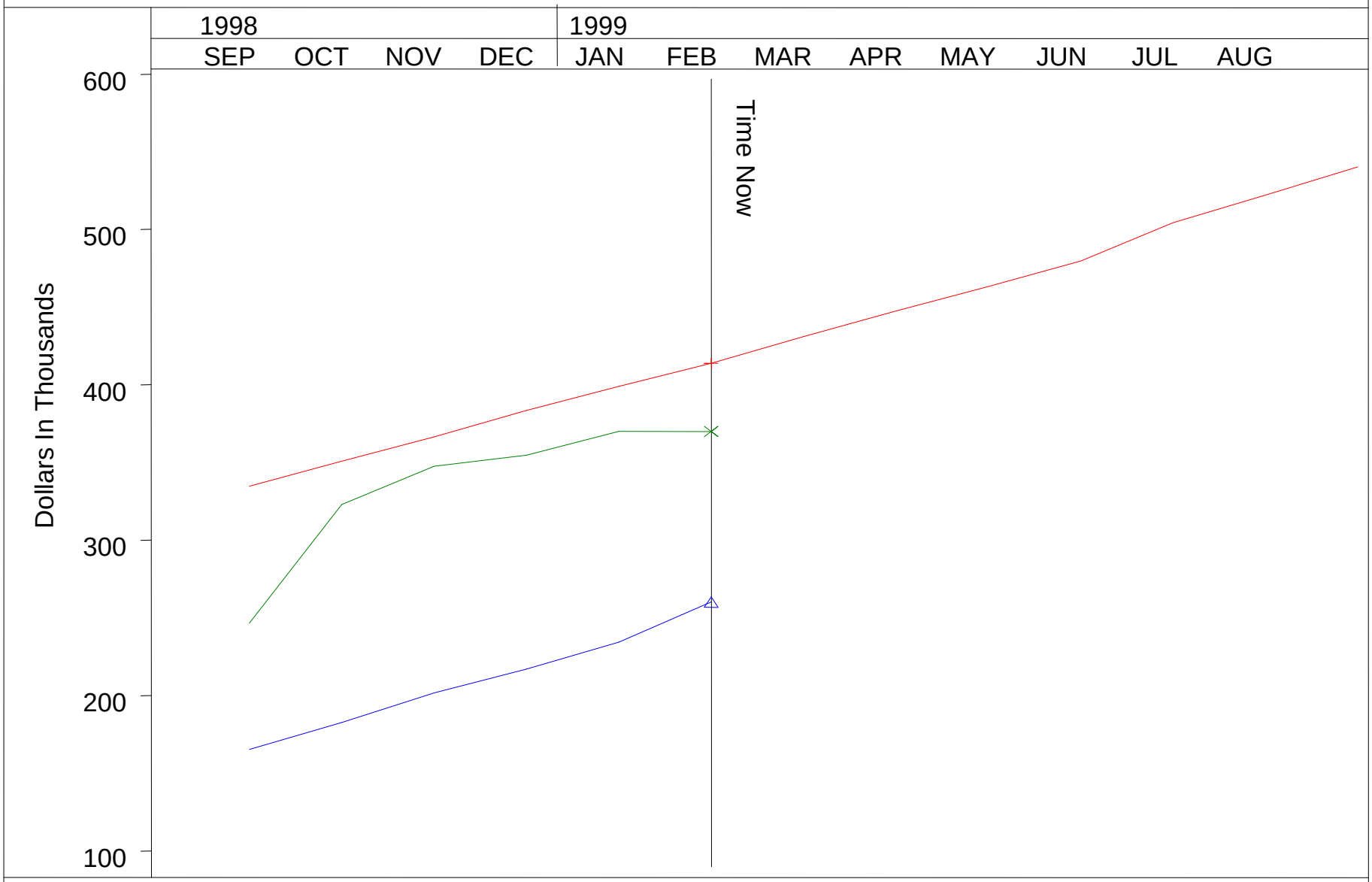
	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
BCWS	0.2	1.6	1.6	1.7	2.1	2.2	2.2	2.2	2.3	2.4	2.5	2.5
BCWP	0.5	0.7	0.7	0.9	1.1	1.1						
ACWP	0.5	0.6	0.8	1.1	1.3	1.4						

WBS Element: 1.1.3 Cumulative Element Performance (w/o G&A) Name: Cryogenic Feedboxes



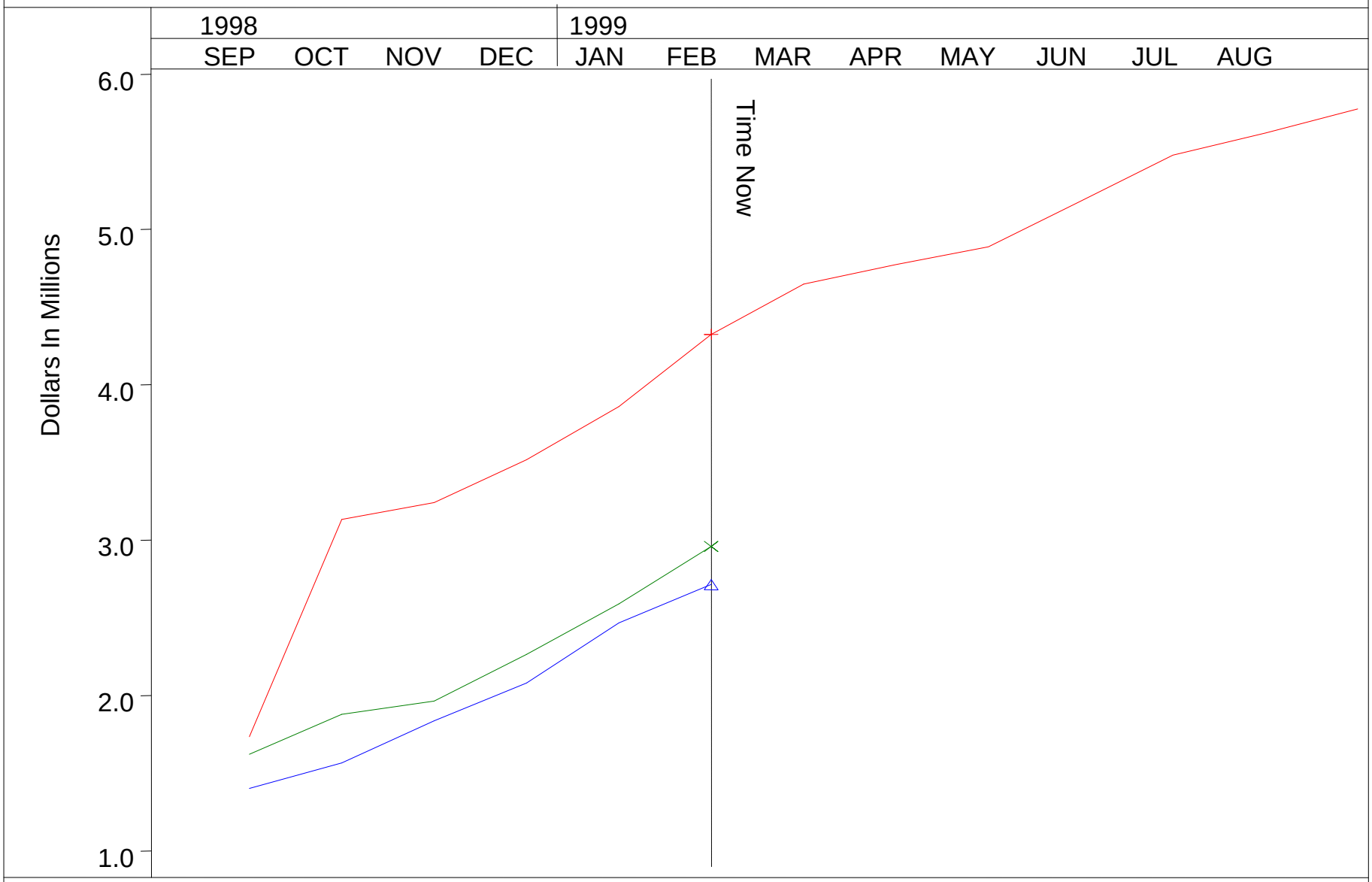
BCWS	246.8	363.1	386.8	412.8	436.5	459.1	476.7	491.3	505.3	527.7	554.0	580.2
BCWP	207.9	245.6	272.3	280.0	296.2	297.4						
ACWP	376.2	384.5	398.8	407.6	417.4	430.1						

WBS Element: 1.1.4 Cumulative Element Performance (w/o G&A) Name: Absorbers



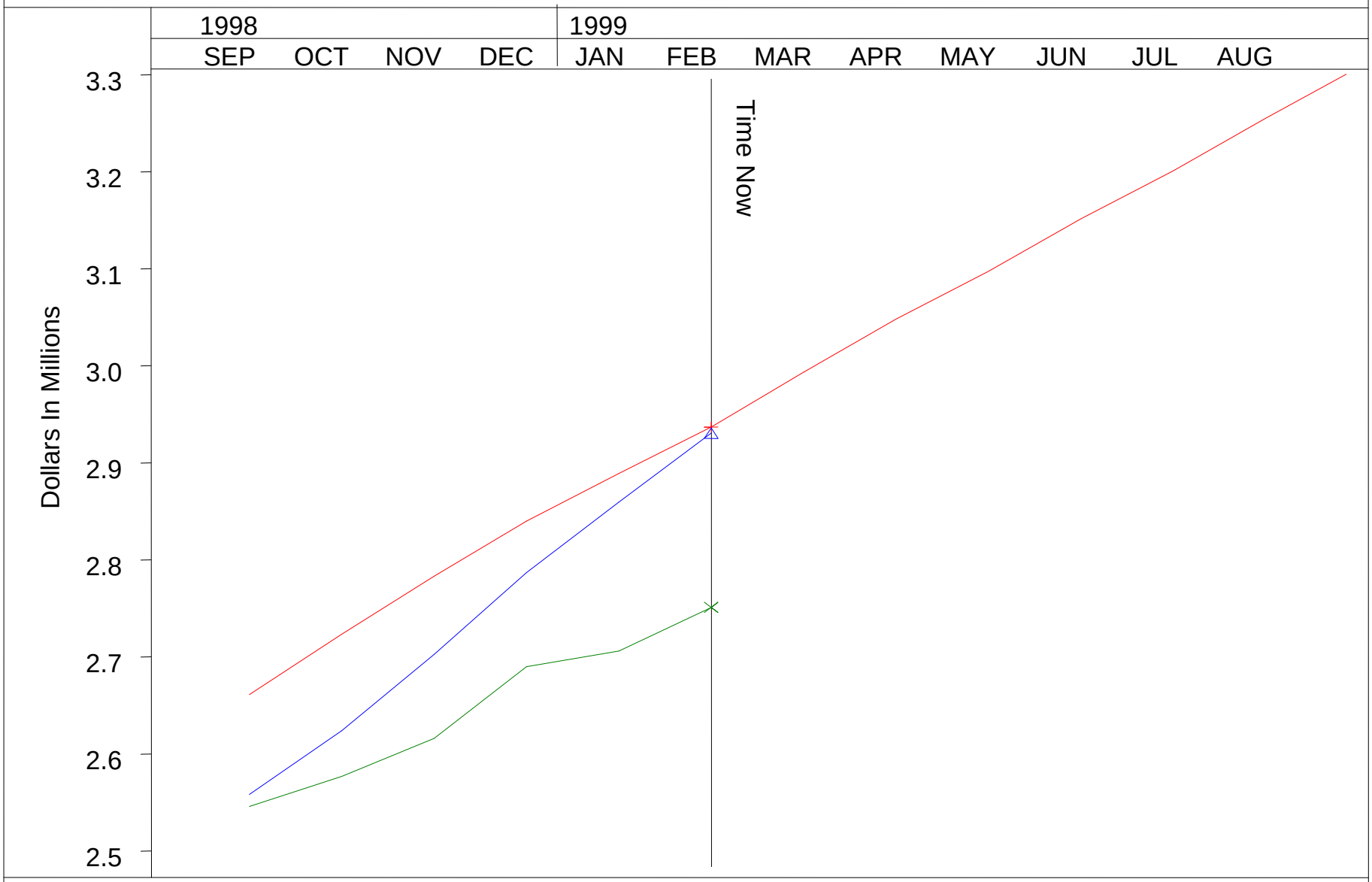
BCWS	334.6	350.9	366.4	383.4	398.9	413.9	431.1	447.5	463.2	479.7	504.2	522.2
BCWP	246.5	322.9	347.7	354.8	370.0	370.0						
ACWP	165.3	182.5	201.6	217.0	234.4	260.1						

WBS Element: 1.2.1 Cumulative Element Performance (w/o G&A) Name: RF Dipoles



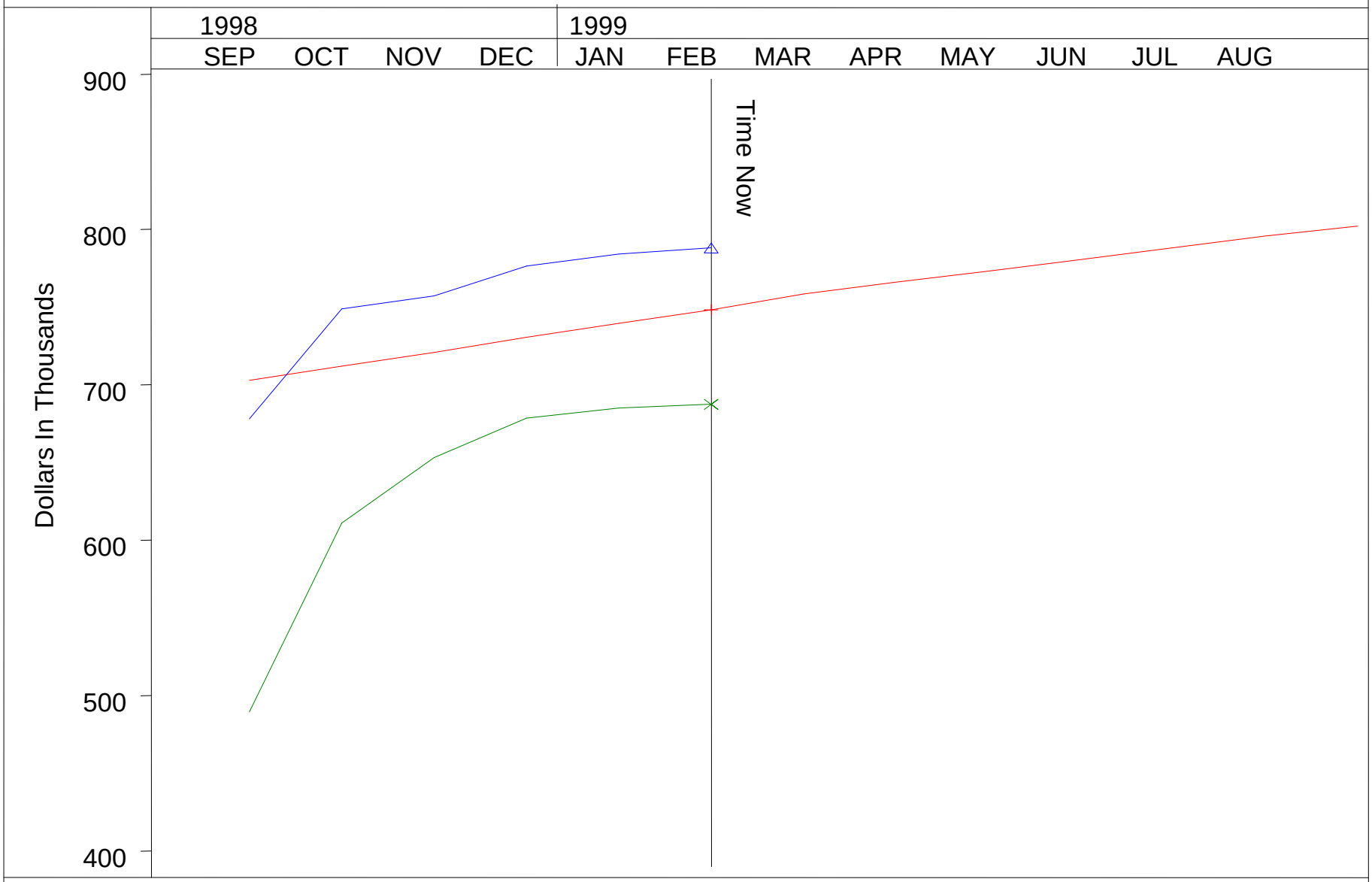
BCWS	1.7	3.1	3.2	3.5	3.9	4.3	4.6	4.8	4.9	5.2	5.5	5.6
BCWP	1.6	1.9	2.0	2.3	2.6	3.0						
ACWP	1.4	1.6	1.8	2.1	2.5	2.7						

WBS Element: 1.3.1 Cumulative Element Performance (w/o G&A) Name: SC Testing



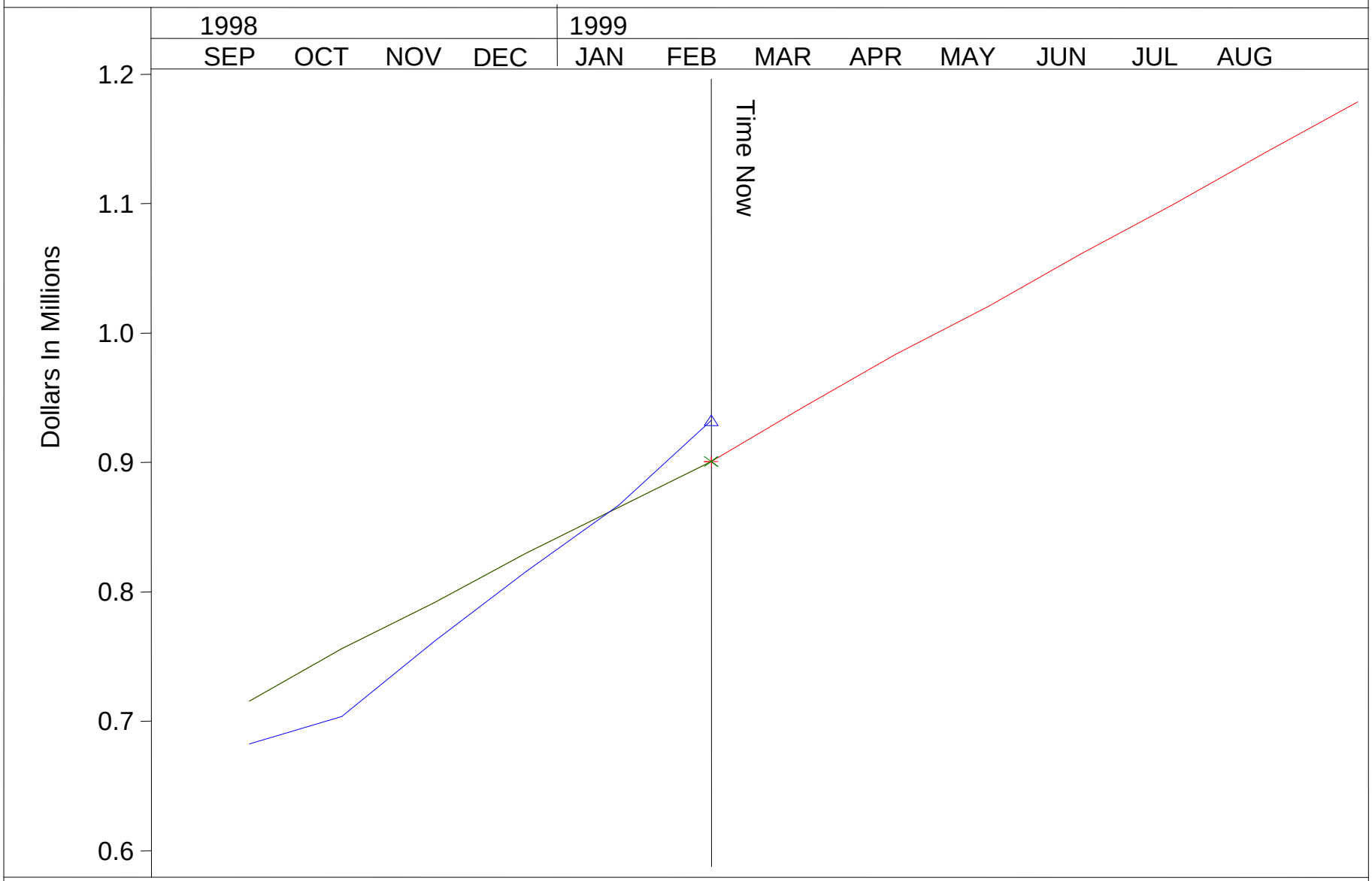
	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
BCWS	2.7	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.1	3.2	3.2	3.3
BCWP	2.5	2.6	2.6	2.7	2.7	2.8						
ACWP	2.6	2.6	2.7	2.8	2.9	2.9						

WBS Element: 1.3.2 Cumulative Element Performance (w/o G&A) Name: Cable Production Support



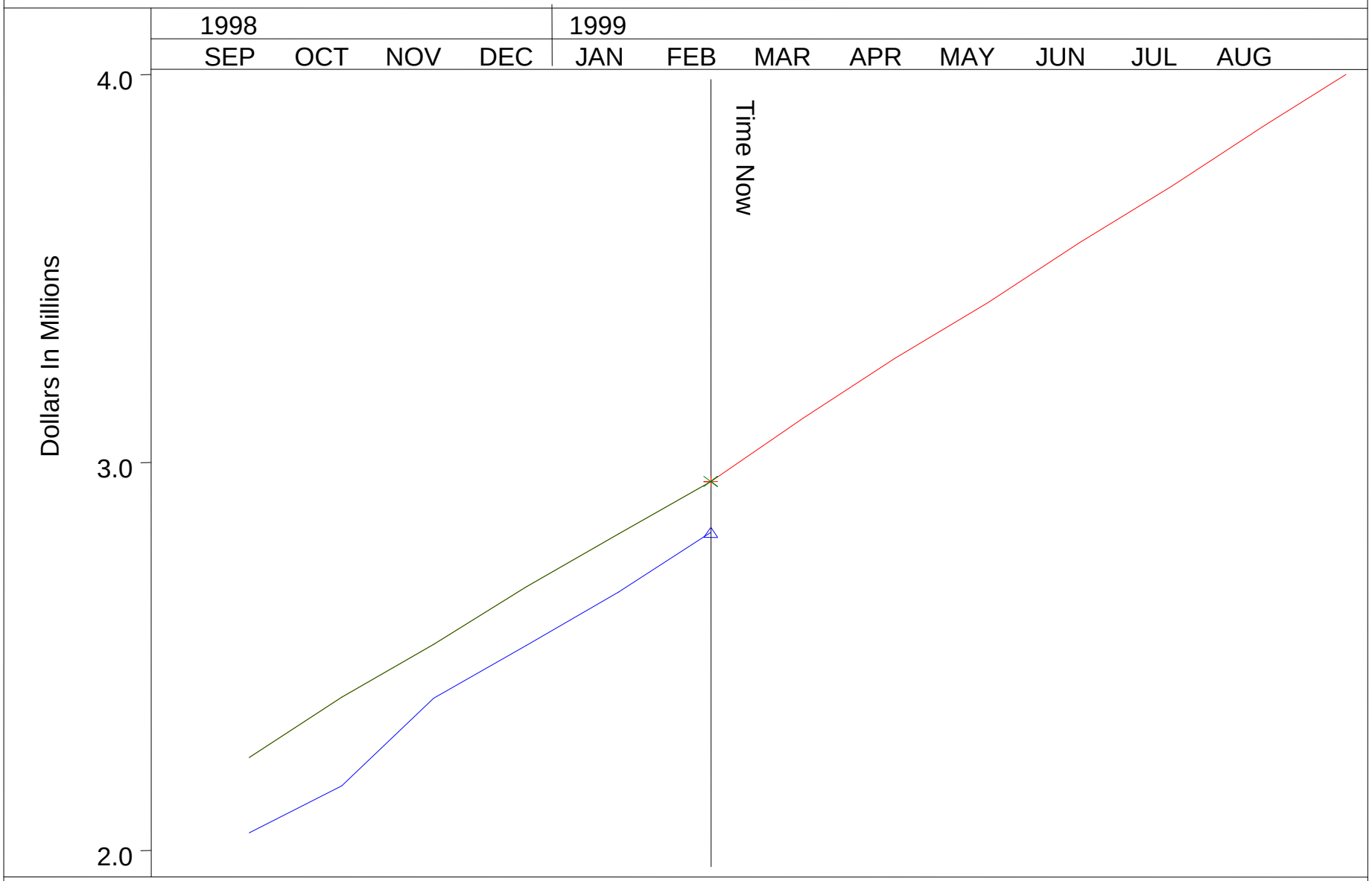
	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
BCWS	702.7	712.0	720.9	730.6	739.6	748.3	758.5	766.0	773.1	780.6	788.1	795.6
BCWP	489.5	611.0	653.2	678.6	685.1	687.4						
ACWP	678.0	748.9	757.2	776.3	784.1	788.1						

WBS Element: 1.4 | Cumulative Element Performance (w/o G&A) | Name: Accelerator Physics



	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
BCWS	0.7	0.8	0.8	0.8	0.9	0.9	0.9	1.0	1.0	1.1	1.1	1.1
BCWP	0.7	0.8	0.8	0.8	0.9	0.9						
ACWP	0.7	0.7	0.8	0.8	0.9	0.9						

WBS Element: 1.5 | Cumulative Element Performance (w/o G&A) | Name: Project Management



	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
BCWS	2.2	2.4	2.5	2.7	2.8	3.0	3.1	3.3	3.4	3.6	3.7	3.9
BCWP	2.2	2.4	2.5	2.7	2.8	3.0						
ACWP	2.0	2.2	2.4	2.5	2.7	2.8						