MEMORANDUM

TS-SSC 91-239

TO: R. BOSSERT, J. CARSON, J. STRAIT, F. NOBREGA, E. G. PEWITT
M. WAKE, P. SCHMIDT, A. SPINDEL

FROM: R. E. SIMS

DATE: 12-05-91

SUBJECT: DETAILED 10-STACK EXPERIMENT PLAN (Revision 2)

OPERATION	DATE	INNER INSULATION OVERLAP, TYPE	OUTER INSULATION OVERLAP, TYPE	MOLD PRESSURE PSI	STACK LABEL ETC.
10-STACK MOLD RUN	11/7 - 11/15	50%, KAPTON H	BUTT, GLASS	10K - 4K	GT #6 (20% EPOXY)
		50%, KAPTON H	BUTT, GLASS	8K - 4K	GT #7 (10% EPOXY)
		50%, KAPTON H	BUTT, GLASS	6K - 3K	GT #4 (20% EPOXY)
		50%, KAPTON H	BUTT, GLASS	4K - 3K	GT #5 (20% EPOXY
		50%, KAPTON H	BUTT GLASS	10K PSI - CONST.	GT #8 (10% EPOXY)
		50%, KAPTON H	BUTT GLASS	6K PSI - CONST.	GT #9 (10% EPOXY)
		BARE CABLE		10K - 4K	BARE #1
		BARE CABLE		6K - 3K	BARE #3
		BARE CABLE		10K CONT.	BARE #2 (RE-TAKE)
		STEEL MASTER	HEAT RUN FOR FIXTURE CALIBRATION	10000 - 4K	SM #1
		66%, KAPTON H	50%, H+2290	10,000	H #1
		66%, KAPTON H	50%, H+2290	6,000	H #2
		50%, KAPTON H	BUTT, H+2290	10,000	
		50%, KAPTON H	BUTT, H+2290	6,000	
		STEEL MASTER		6,000	SM
2-HOUR CREEP MEASUREMENTS	11/25 - 12/4	ALL ABOVE STACKS			
	11/21 - 12/02	50%, KAPTON HA	BUTT, KAPTON LT	10,000	HA 50-1, HA 50-2
		50%, KAPTON HA	BUTT, KAPTON LT	6,000	HA 50-3
		66%, KAPTON HA	BUTT, KAPTON LT	10,000	HA #2 (HA #1, BAD)
		66%, KAPTON HA	BUTT, KAPTON LT	6,000	HA #3
2-HOUR CREEP MEASUREMENTS	12/4 - 12/10	ABOVE 4 STACKS			
REVIEW DATA	12/12	CHOOSE "OPTIMIZED" KAPTON SYSTEM			
10-STACK MOLD RUNS	12/10 - 12/26	50%, APICAL AV	BUTT, APICAL NP+2290	10,000	
		50%. APICAL AV	BUTT,APICAL NP+2290	6,000	
		50%, APICAL AV	BUTT,APICAL NP +CRYORAD	10,000	
		50%,APICAL AV	BUTT, APICAL NP +CRYORAD	6,000	
	OPTIONAL	66%, APICAL AV	BUTT, APICAL NP +CRYORAD	10,000	
	OPTIONAL	66% APICAL AV	BUTT, APICAL NP +CRYORAD	6,000	
2-HOUR CREEP MEASUREMENTS	12/9 - 12/11	ALL ABOVE STACKS WITH APICAL			
EVALUATE ALL ABOVE RESULTS	12/12 - 12/20	POSSIBLY RUN OTHER STACKS AS A RESULT OF EVALUATION			

*** COMPARE TO BNL, RUN RCI 10-STACKS**

****ADD HI TEMP. POLYIMIDE ADHESIVE 10-STACKS**

10-STACK CURING AND MEASURING PROCEDURE

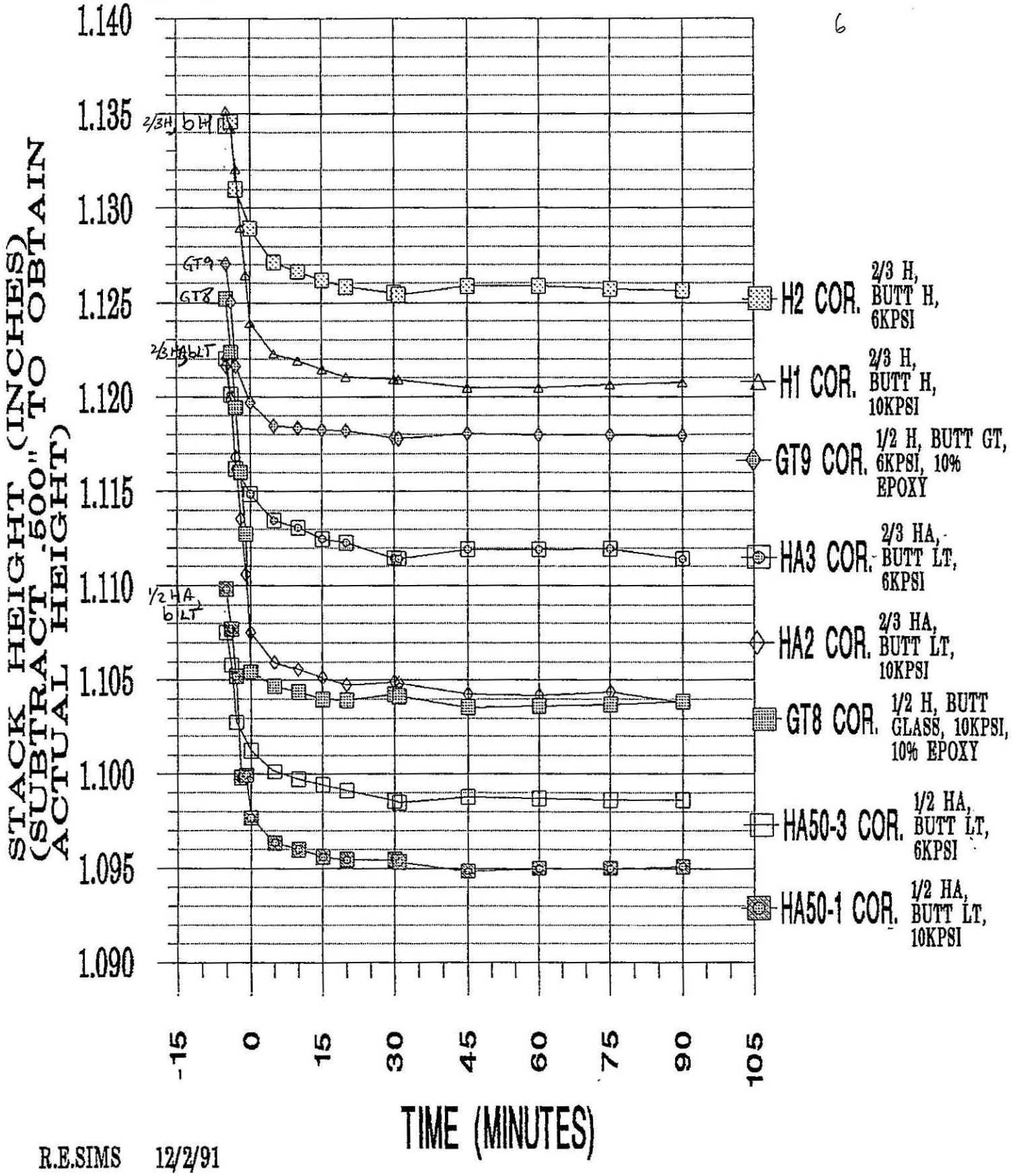
STACK #	DATE:	BY:

DESCRIPTION OF STACKS

OPERATION	TEMPERATURE F	LINE PRESSURE PSI	RECORD DISPLACEMENT (INCHES)
Place Steel Master in press,			
Raise pressure & zero the probe.	Room	1627 (3000)	"1.0000"
Raise pressure & Record	Room	2170 (4000)	
Raise pressure & Record	Room	3254 (6000)	
Raise pressure & Record	Room	4340 (8000)	
Raise pressure & Record	Room	5424 (10,000)	
Raise pressure & Record	Room	6508 (12,000)	
Drop pressure & Remove Steel Master			
Place 10-Stack in Press			
Raise Pressure & Record	Room	1627 (3000)	- 5 sec
Raise Temperature & Record	180 F (82C)		
Raise Pressure & Record		2170 (4000)	-4 sec
*Optional: Raise Pressure & Record		3254 (6000)	-3 sec
*Optional: Raise Pressure & Record		4340 (8000)	-2 sec
*Optional: Raise Pressure & Record		5424 (10,000)	-1 sec
*Optional: Raise Pressure & Record		6504 (12,000)	
Start counting "Cure Time" when temp. exceeds 237 F	(114C)		
Continue Raising temp. to	265 F (129C) (275F(135C) 280F(138C))		0 sec
Displacement as follows: 5 Minutes			
10 Minutes			
15 Minutes			
20 Minutes			
30 Minutes			
31 Minutes/Lower Pressure			
45 Minutes			
60 Minutes			
75 Minutes			
90 Minutes			
105 Minutes/Heater off, Cooler on			
120 Minutes			
135 Minutes			
150 Minutes			

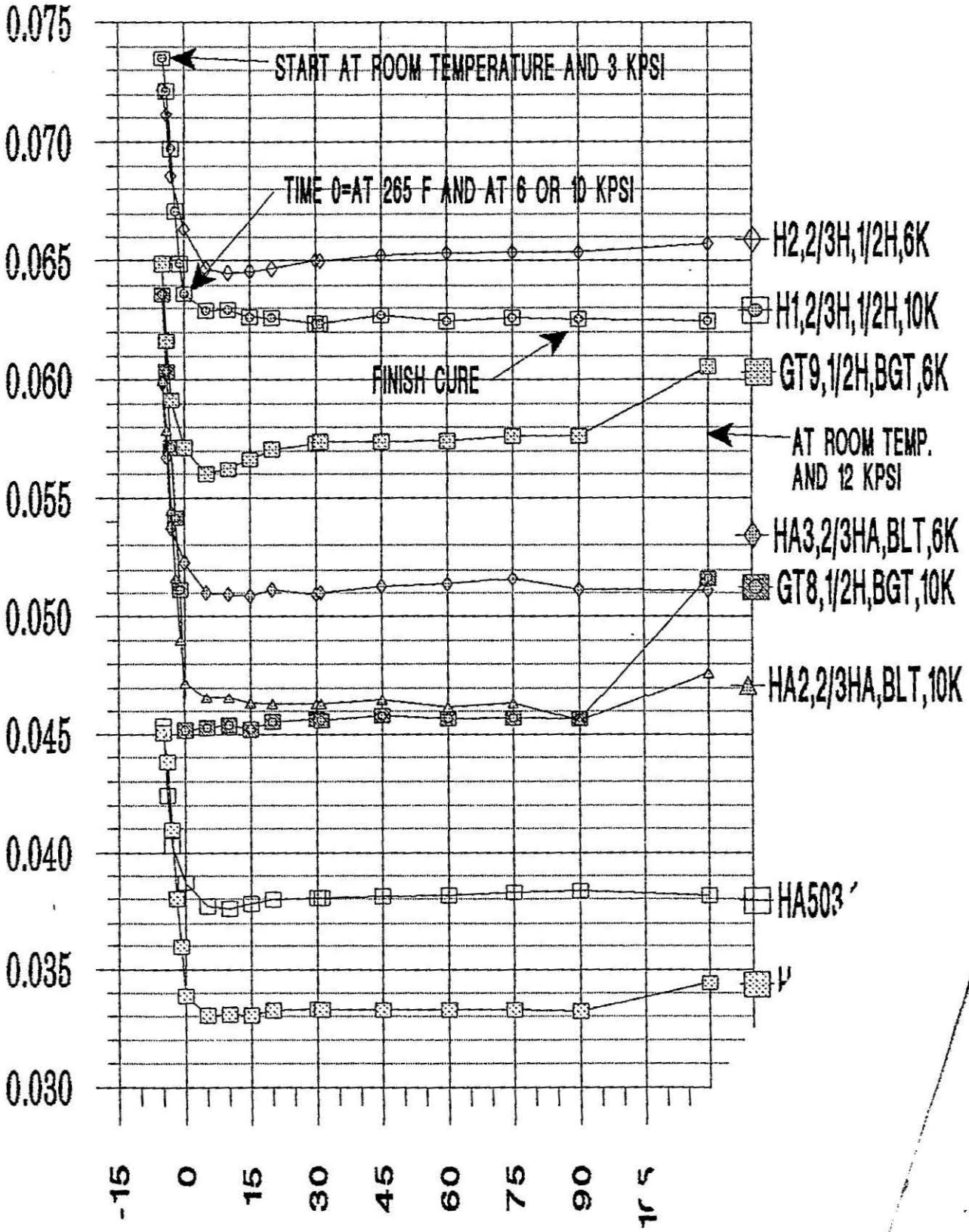
ALLOW TEMPERATURE TO LOWER TO BELOW 120 F AND RELEASE PRESSURE. REMOVE 10-STACK AND MARK THE STACK WITH

THE HEIGHT (RELATIVE TO A .500" STEEL MASTER) OF 50 mm SSC INNER CABLE 10 STACKS WHILE BEING CURED WITH VARIOUS INSULATIONS



R.E.SIMS 12/2/91

INSULATION THICKNESS DURING AND AFTER CURING OF 50mm INNER CABLE TEN STACKS



from 'GT2.CGD'
SIMS 12-5-91
SCYCLE.CGG

TIME

50 mm INNER CABLE TEN STACKS

PRELIMINARY

Axis Label MODULUS OF ELASTICITY (PSI)
400000
500000
600000
700000
GT#6
GT#7
GT#4
GT#5
GT#8
GT#9
BARE#2
H#1
H#2
HA50-1
HA50-2
HA50-3
HA#2
HA#3
½H, BUTT GLASS, 10K→4K, 20% EPOXY
8K-4K, 10% EPOXY
6K-4K 20% EPOXY
4K-3K 20% EPOXY
10K CONST., 10% EPOXY
6K CONST., 10% EPOXY
CABLE
⅔H, ½H, 10K
⅔H, ½H, 6K
½ HA, BUTT LT, 10K
½ HA, BUTT LT, 10K
½ HA, BUTT LT, 6K
⅔ HA, BUTT LT, 10K
⅔ HA, BUTT LT, 6K
M.O.E. TAKEN A FEW SECONDS AFTER REACHING PRESSURE
M.O.E. TAKEN AFTER 60 SEC.
THIS OFFSET IN BARE CABLE IS APPROX. THE SAME AT MOST TEN STACK DATA POINTS - SUGGESTS CABLE IS MAJOR STRESS RELAXATION ELEMENT.
PRELIMINARY
M.O.E.
Data from 'STKMOE.CGD'
EFFECTS OF INSULATION TYPE - AND CURING PRESSURE ON MODULUS OF ELASTICITY