[redacted]

SANDIA SYSTEMATIC DECLASSIFICATION REVIEW
1st Review Date: 7/6/98
Reviewer: ADD
1st Review Date: 7/13/98
Reviewer: ADD
Name: W Loyne
Determination (Circle Number(s))
1 Classification Retained
2 Classification Changed to: UNCL
3 Contains No DOE Classified Information
4 Concurrence With:
5 Contains UCNI?
6 Comments:

0058

Case No. 639.00
Project No. ST-1945-A

UNCLASSIFIED

To: DISTRIBUTION

Re: Temperature Test of TX-15 (TRA-D1), Project No. ST-1945-A, dated August 16, 1954

A further interpretation of Project No. ST-1945-A test data has been requested by Division 1241. Although Division 1241's responsibility in the thermal test of TXN 15 1-1 was only the reading of gages mounted by the 5000 organization, the strain gage data embodied in the above-mentioned report has been subject to some amount of interpretation controversy. The following remarks are made concerning this data.

Comparing the strain gage curves and the temperature curves of the three test runs in general the following information becomes apparent. The load curves plotted in the figures appear as a function of change in temperature and not of magnitude to temperature; hence, during the early stages of temperature stabilization, we see the maximum peaks in the load curves. As the temperatures begin to stabilize, the load curves level out and appear to be asymptotically approaching a constant value as expected. The maximum loads appearing at that time when the temperature gradient is a maximum.

In determining the best idea of maximum loads from this test data, the following points are to be remembered: (1) The maximum peak in the load-temperature curves mentioned above are subject to error because of the possibility of lag in the compensating gages. (2) The final load readings that approach constant value may be subject to greater error since they depend on calibration records made at room temperature only. With these points in mind, it is felt that the best information concerning the maximum load is to be found in the final near-constant load readings occurring at temperature stabilization.

It is also to be noted that these constant load readings represent only the change in load from the readings at the beginning of the test. In stations 1-8 (suspension cylinder) we assume a zero load at the beginning of the test (that is our zero at the beginning of run I); hence, the readings shown in Table I represent the maximum change in load value occurring during each run. In stations 9-20 (spokes) there was an initial preload of 20,000 psi tension (approximately 4000 pounds load); therefore, when a final load on the report curve reads 9750 pounds compression, we have subtracted this from the 4000 pounds initial tension and arrived at an adjusted figure of 5750 pounds compression representing the final change in load for the spoke at temperature stabilization.

All spoke readings have been adjusted accordingly. Finally, one additional column of information has been included. In the new assembly procedure, the spokes are preloaded to only 5000 psi tension (1500 pounds). An estimation has been made on the basis of this test data concerning the change in loads that might be expected in a test with this smaller preload.

SANDIA SYSTEMATIC DECLASSIFICATION REVIEW DOWNGRADING OR DECLASSIFICATION STAMP	
CLASSIFICATION CHANGED TO: U	AUTHORITY: W.C. Loyne
Emilda Seph 7/20/98	
PERSON CHANGING MARKING & DATE: WC Loyne 7/22/98	RECORD ID: 98SN2952
PERSON VERIFYING MARKING & DATE	DATED: 7/13/98

[redacted]

UNCLASSIFIED

[redacted]

TO: DISTRIBUTION

Project No. 67-1345-A

UNCLASSIFIED

It might be noted that with information obtained in this test the following study is underway in the current D-4 instrumentation problem (being done by Division 1611): (1) All compensating gages are being placed on the member being instrumented in the immediate vicinity of the measuring gage. (2) Calibration is being carried out at both -65°F and at room temperature and in both tension and compression.

Test Conducted by R. S. HOOPER - 1611-4

Original Signed By
D. WILLIAMS

Approved by D. WILLIAMS, JR - 1611-4

RSH:1611:rd

Encl: Table I

Copy to:
R. L. Brin, 1241
T. B. Morse, 1610
G. C. McDonald, 1630
R. L. Wagar, 1611
W. E. Calder, 5533
G. H. Byrne, 1922-2
F. G. Hale, 1925-2 Attn: Tech Reference File

UNCLASSIFIED

[redacted]

TABLE I

Maximum Change in Load Readings Recorded in Project No. ET-1945A, Dated August 16, 1954

Recorded Load (pounds)		Adjusted Load (pounds) 600 pound preload		1500 pound preload	
COMPRESSION	TENSION	COMPRESSION	TENSION	COMPRESSION	TENSION
Run -I- Room Temperature to -65°F					
1. 3,000					
2. 10,000					
3. 14,500					
4. 12,500					
	5. 1,000				
6. 17,500					
7. 16,500					
8. 20,000					
9. 9,750		3,750		8,250	
10. 15,250		9,250		13,750	
11. 12,250		6,250		10,750	
12. 11,700		5,700		10,200	
13. 7,150		1,150		5,650	
14. 15,250		9,250		13,750	
15. 12,750		6,750		11,250	
16. 10,500		4,500		9,000	
17. 6,500		500		5,000	
18. 17,500		11,500		16,000	
19. 10,500		4,500		9,000	
20. 10,500		4,500		9,000	
Run -II- Room Temperature to +165°F					
	1. 10,200				
	2. 4,250				
3. 1,250					
4. 5,500					
	5. 15,700				
6. 6,400					
	7. 6,500				
8. 2,250					
	9. 1,400		7,400		2,900
	10. 5,750		11,750		7,250
	11. 4,750		10,750		6,250
	12. 3,500		9,500		5,000
	13. 1,600		7,600		3,100
	14. 6,000		12,000		7,500
	15. 5,750		11,750		7,250
	16. 2,500		8,500		4,000
	17. 2,250		8,250		3,750
	18. 7,500		13,500		9,000
	19. 4,000		10,000		5,500
	20. 3,250		9,250		4,750