

ATTACHMENT NO. 1

SP 205.05

LINER PLATE SURVEILLANCE - REACTOR BUILDING

800 331 0552

LINER PLATE SURVEILLANCE

REACTOR BUILDING

1.0 PURPOSE

- .1 To verify that areas of local deformation of the liner plate are not subject to excessive stress.

2.0 REFERENCES

- .1 Rancho Seco Unit I Technical Specifications, Section 4.4.2.6.
- .2 Rancho Seco Unit I Structural Integrity Test Report, Appendix 2.

3.0 LIMITS AND PRECAUTIONS

- .1 Timely performance of this procedure is necessary to assure compliance with Reference 2.1.

4.0 SURVEILLANCE TEST PROCEDURE

- .1 Test Schedule: Liner Plate Surveillance shall be conducted in the last quarter of 1975. If corrective action is required, a follow-up surveillance program shall be developed. If no corrective action is required, the program shall be discontinued.

.2 METHOD

- .1 Displacement: Liner plate and liner plate anchor movements shall be measured with a dial depth gage and a short fixed chord at five locations on the liner plate. The fixed chord shall be approximately 5 feet long and span four anchor spaces at each location. Measurements shall be made and recorded as follows:

- .1 Record time, date, and exterior and interior temperature when measurements are made using Enclosure 6.2.
- .2 Record all dial depth gage readings using Enclosure 6.2.

NOTE:

The fixed chord and dial depth gage measurement system is shown in Enclosure 6.1.

4.0 SURVEILLANCE TEST PROCEDURE (Continued)

- .2 Strain: Four locations shall be surveyed for any indication of strain concentrations. Surveillance consists of removing any grease or foreign material and determining if any evidence of strain concentrations are present. Strain concentrations will be indicated by large deformations, liner cracking, and possibly paint cracking. Any indication of strain concentration shall be shown on a sketch of the area surveyed.

.3 LOCATIONS OF SURVEILLANCE

- .1 This procedure involves the survey of ten areas on the liner plate: six for displacement and 4 for strain.

Four of the areas for displacement measurement have an initial inward curvature between the liner anchors (i.e., two horizontal and two vertical) while the other two have a typical outward curvature.

Offset Measurement

- .1 Horizontal chords centered at:

El. 18'6" / Az. 187°30'
El. 65'6" / Az. 351°30'
El. 65'0" / Az. 225°10'

Vertical chords centered at:

El. 3'6" / Az. 23°30'
El. 63'6" / Az. 355°0'

Dome chords centered at:

3' North of center oriented east - west

NOTE:

The configuration of the fixed chords is illustrated in Enclosure 6.1. Offsets to the liner are measured with a dial depth gage.

- .2 Enter data in Enclosure 6.2.
- .2 The four areas for strain concentration survey are located where discontinuities occur. Enter observations in Enclosure 6.3.

4.0 SURVEILLANCE TEST PROCEDURE (Continued)

Observation Only

- .1 3 ft. above and below the horizontal centerline extending 10 ft. east of the east edge of the personnel lock.
- .2 2 ft. radius around electrical penetration No. 7.
- .3 Upper half of mechanical penetration No. 40 (main steam) extending from edge of penetration to 6 ft. out from edge.
- .4 2 ft. radius about mechanical penetration No. 20 (HP injection).

.4 REPORTS

All finding shall be documented in SP 205.05 and forwarded to the surveillance procedure files and the Generation Engineering Department within 7 days of test completion.

.5 EQUIPMENT

The following equipment and supplies are required:

- .1 One dial depth gage range 0" to 6" (Mitutoyo Mfg. Co., Ltd. Code No. 7212 or equal).
- .2 Lighting equipment as required.
- .3 Supplies and equipment to permanently mark the location measured by the dial depth gage.

5.0 ACCEPTANCE CRITERIA

- .1 The maximum movement of liner plate relative to the fixed chords shall not exceed .050" (point 7 on chord @ 65 ft/225° shall not exceed 0.150") Reference 2.2, Stru. Test. The areas surveyed for strain concentration should uncover no indication of excessive stress as evidenced by cracked or hazed paint or excessive corrosion.

6.0 ENCLOSURES

- .1 Drawings of Fixed Chord Measurement Devices.
- .2 Data Sheet for Strain Measurement.
- .3 Data Sheet for Observations.

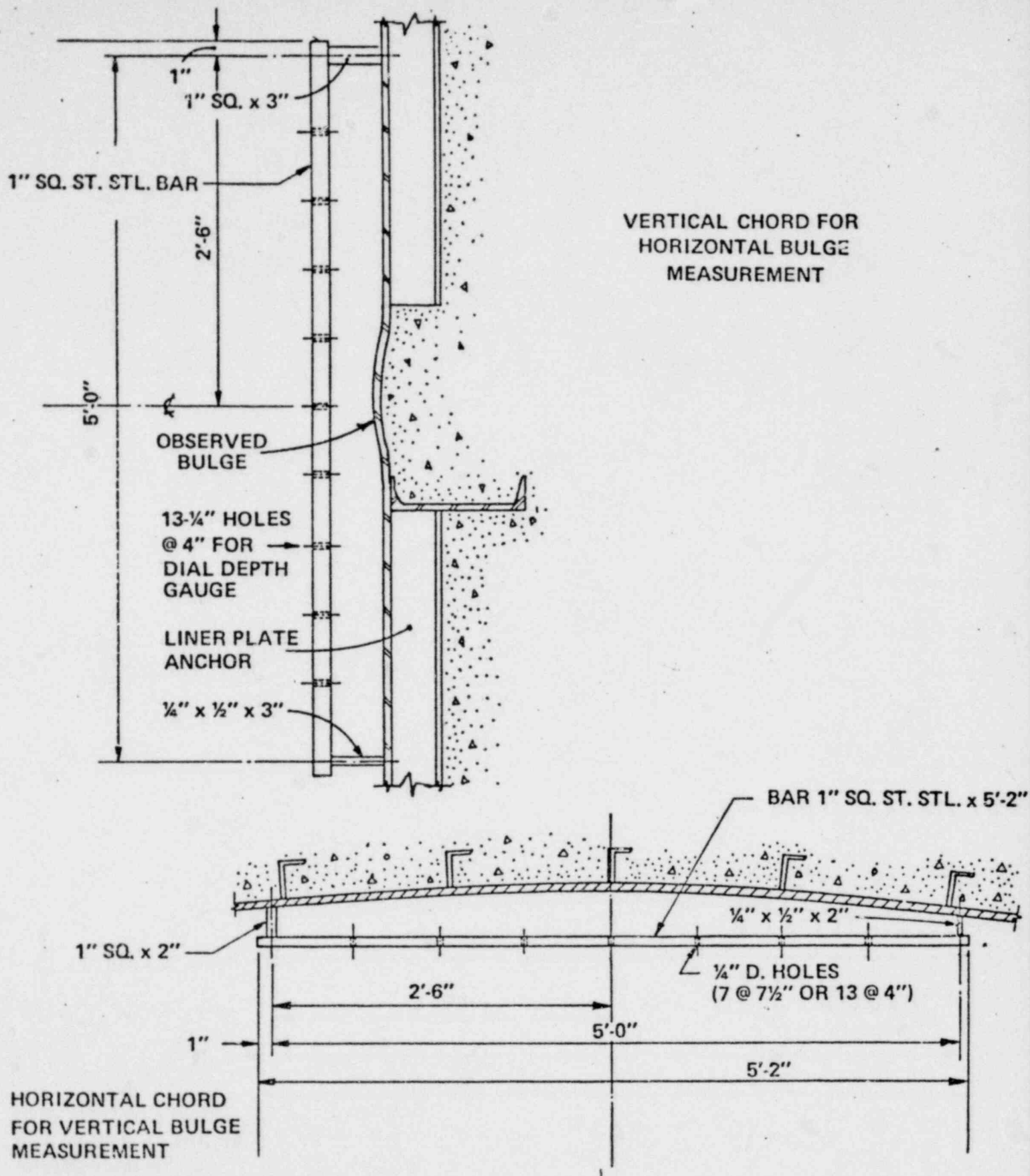


FIGURE 1

FIXED CHORD FOR LINER DEFORMATION MEASUREMENT

ENCLOSURE 6.2

DATA SHEET FOR DISPLACEMENT MEASUREMENT

POINT	18'6" / 187°30'			65'6" / 351°30'			65'6" / 225°10'			3'6" / 23°30'			63'6" / 355°0'			DOME		
	BL	F	D	BL	F	D	BL	F	D	BL	F	D	BL	F	D	BL	F	D
1	3.601			2.880			3.066			3.922			3.964			4.165		
2	3.472			3.322			3.268			3.876			3.942			4.211		
3	3.381			3.774			3.438			3.829			3.920			4.288		
4	3.179*			3.406			3.542			3.811			3.901			4.359		
5	2.885			2.965			3.370			3.778			3.860			4.378		
6	2.622			3.250			3.120			3.748			3.832			4.357		
7	2.526			3.178			2.936			3.935			3.934			4.287		
8	2.857									4.300			4.309			4.291*		
9	3.175									4.386			4.454			4.318		
10	3.412*									4.307			4.411			4.285		
11	3.667									4.260			4.338			4.246		
12	3.958									4.221			4.254			4.198		
13	4.223									4.180			4.160			4.157		
Exterior Temp. °F																		
Interior Temp. °F																		
Recorded By/ Date																		

(All values in inches - positive values indicate movement of liner into concrete ends.)

PT's number left to right & top to bottom. BL = Baseline, F = Final, D = Difference RESULTS ACCEPTABLE ☐ YES ☐ NO

TABLE 1 LINER PLATE DEFORMATIONS & OBSERVATIONS

Reviewed By: _____ Date: _____

Remarks: _____

ENCLOSURE 6.3

OBSERVATIONS

Recorded By:
Initial / Date

1.0 Section 4.3.2.1 3 ft. above and below the horizontal centerline
extending 10 ft. east of the east edge of the
personnel lock.

_____/____

2.0 Section 4.3.2.2 2 ft. radius around electrical penetration No. 7.

_____/____

3.0 Section 4.3.2.3 Upper half of mechanical penetration No. 40 (main
steam) extending from edge of penetration to 6 ft.
out from edge.

_____/____

4.0 Section 4.3.2.4 2 ft. radius about mechanical penetration No. 20
(HP injection).

_____/____

Results Acceptable? Yes/No Initial _____
Reviewed By/Date _____/_____

ATTACHMENT NO. 2

COMPLETE DATA SHEETS FOR
SP 205.05

SURVEILLANCE PERFORMED 11/20/75 THROUGH 12/16/75

ENCLOSURE 6.2

DATA SHEET FOR DISPLACEMENT MEASUREMENT

POINT	12'6" / 187°30'			65'6" / 351°30'			65'6" / 225°10'			3'6" / 230°30'			63'6" / 355°00'			DOME		
	BL	F	D	BL	F	D	BL	F	D	BL	F	D	BL	F	D	BL	F	D
1	3.601	3.640	.039	2.880	2.869	.011	3.066	3.041	.025	3.922	3.924	.002	3.964	3.988	.024	4.165	4.164	.001
2	3.472	3.434	.012	3.322	3.339	.017	3.268	3.275	.007	3.876	3.882	.006	3.942	3.953	.011	4.211	4.250	.039
3	3.381	3.397	.016	3.774	3.787	.013	3.438	3.439	.001	3.829	3.876	.047	3.920	3.941	.021	4.288	4.218	.030
4	3.179*	3.204	.029	3.406	3.413	.007	3.542	3.562	.020	3.811	3.825	.014	3.901	3.918	.017	4.359	4.380	.02
5	2.885	2.896	.011	2.965	2.950	.015	3.370	3.380	.012	3.778	3.765	.013	3.860	3.871	.011	4.378	4.365	.007
6	2.622	2.637	.015	3.250	3.259	.009	3.120	3.149	.029	3.748	3.728	.020	3.832	3.855	.023	4.357	4.363	.006
7	2.526	2.533	.004	3.178	3.195	.017	2.936	2.796	.140	3.935	3.939	.004	3.934	3.944	.010	4.287	4.304	.017
8	2.857	2.863	.006							4.300	4.281	.019	4.309	4.320	.011	4.291	4.305	.014
9	3.175	3.198	.023							4.386	4.365	.021	4.454	4.468	.014	4.318	4.364	.046
10	3.412*	3.435	.021							4.307	4.278	.029	4.411	4.417	.006	4.285	4.315	.030
11	3.667	3.704	.041							4.260	4.255	.005	4.338	4.345	.007	4.246	4.260	.01
12	3.958	3.974	.020							4.221	4.219	.002	4.254	4.265	.011	4.198	4.219	.02
13	4.223	4.455	.032							4.180	4.183	.003	4.160	4.165	.005	4.157	4.198	.041
Exterior Temp.	52.9			52.9			52.9			52.9			52.9			57		
Interior Temp.	85.1			85.1			85.1			85.1			85.1			85		
Recorded By/Date	J.R. Beckett 11-20-75			J.R. Beckett 11-20-75			J.R. Beckett 11-20-75			J.R. Beckett 11-20-75			J.R. Beckett 11-20-75			J.R. Beckett 11-20-75		

(All values in inches - positive values indicate movement of liner into concrete ends.)
PT's number left to right & top to bottom. BL = Baseline, F = Final, D = Difference

TAB 1 LINER PLATE DEFORMATIONS & OBSERVATIONS

Reviewed By: J.R. Beckett Date: 11/21/75
12-26-75

Remarks:

Recorded By:
Initial / Date

- 1.0 Section 4.3.2.1 3 ft. above and below the horizontal centerline extending 10 ft. east of the east edge of the personnel lock.

No abnormal conditions noted

JLH 12-16-75

- 2.0 Section 4.3.2.2 2 ft. radius around electrical penetration No. 7.

No abnormal conditions noted

JLH 12-16-75

- 3.0 Section 4.3.2.3 Upper half of mechanical penetration No. 40 (main steam) extending from edge of penetration to 6 ft. out from edge.

No abnormal conditions noted

JLH 12-16-75

- 4.0 Section 4.3.2.4 2 ft. radius about mechanical penetration No. 20 (HP injection).

No abnormal conditions noted

JLH 12-16-75

Results Acceptable? ☒ Yes ☐ No Initial

Reviewed By/Date

DA
JLH 12-16-75
Abbott

12-16-75