

PALO VERDE NUCLEAR GENERATING STATION
UNIT 2 STEAM GENERATOR EDDY CURRENT EXAMINATION

2ND REFUELING OUTAGE

APRIL 1990

ARIZONA NUCLEAR POWER PROJECT
P. O. BOX 52034
PHOENIX, AZ 85072

PREPARED BY: J. B. STRICKLER DATE: 6-15-90
REVIEWED BY: Alan Monow DATE: 6-26-90
APPROVED BY: DBH DATE: 6-26-90

COMMERCIAL SERVICE DATE: 9/19/86
REPORT DATE: 6/15/90

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.

101

INDEX

1.0 Summary

2.0 Examination Results

3.0 Examination Techniques and Equipment

APPENDIX A - Summary Data Sheets

APPENDIX B - Tubesheet Maps

APPENDIX C - Form NIS-1

APPENDIX D - Personnel Certifications

APPENDIX E - Equipment Certifications

APPENDIX F - Calibration Standards Certifications

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100

UNIT 2 STEAM GENERATOR EDDY CURRENT EXAMINATION

1.0 Summary

On February 22, 1990, Unit 2 was shut down for its second refueling outage. The initial examination plan for steam generator 21 included 4860 tubes or 44% of the total tubes and for steam generator 22 included 9023 tubes or 82% of the total tubes. The tubes were examined full length with the exception of some row 1 and row 2 tubes which were examined to the U-bend.

The initial results fell into category C-2 in both steam generators. An additional sample of approximately 670 tubes were tested in each steam generator and all the results of this expanded sample fell into category C-1. A total of 5534 tubes (50%) of the tubing in steam generator 21 and 10,932 tubes (100%) of the tubing in steam generator 22 was examined.

2.0 Examination Results

The examination results are characterized and summarized in Table 1 on Page 2 of this report. In addition, the summary data sheets in Appendix A list all tubes identified in both steam generators with thru wall indications from 0 - 100%.

The examination revealed additional indications of wear at several locations in each of the steam generators. Several tubes with wear were noted at the lower eggcrate on the cold leg side of steam generator 22 in the low row corner of the tube bundle. Also, both steam generators have tubes with wear indications at other eggcrate locations with the majority being at the 07, 08, or 09 eggcrate. A few tubes were also noted as having wear at the flow distribution baffle plate (01C and 01H). The locations of these supports are shown on a diagram contained in Appendix A.

As can be seen from the numbers identified in Table 1, the majority of the wear indications were located at the batwing and vertical strap locations. A secondary side inspection with Combustion Engineering and Arizona Public Service engineering personnel was performed later in the outage to verify the integrity of the supporting mechanisms. The inspection was performed on steam generator 22 and did verify that the upper supports, batwing, and vertical strap locations were acceptable and that no degradation had occurred. The inspections were very limited and will be documented in detail under a separate report written by Combustion Engineering.

Possible loose part (PLP) indications were observed in both steam generators. Of the two tubes identified in each steam generator, none were noted with PLP's in previous examinations. Only one tube in steam generator 21 had wear indications associated with the PLP. This tube was staked and plugged. The other tubes did not exhibit wear associated with the PLP's. These tubes will be rescheduled for examination during the next eddy current examination.

Numerous tubes were identified in each steam generator as having minor dings and dents. The majority of these indications were identified either during previous outages or the baseline examination. No significant changes were observed.

TABLE 1

| INDICATION CATEGORY | STEAM GENERATOR 21 | STEAM GENERATOR 22 |
|--|--------------------|--------------------|
| Corner Eggcrate Wear
<20%
≥20% | 0
0 | 0
2 |
| Eggcrate Wear
<20%
≥20% | 3
3 | 13
79 |
| Flow Dist Plate Wear
<20%
≥20% | 1
0 | 3
1 |
| Batwing Wear
<20%
≥20% | 5
18 | 11
71 |
| Vertical Strap Wear
<20%
≥20% | 18
69 | 25
116 |
| Possible Loose Part
With Wear
Without Wear | 1
1 | 0
2 |
| Misc & Baseline | 0 | 7 |

Sludge profiling was also performed during the examination and was found to be relatively minor. Steam generator 21 had 138 tubes and steam generator 22 had 96 tubes with sludge indications. Two tubes in steam generator 22 had sludge indications at the first support and the balance of the sludge indications in both steam generators were at the tubesheet. The average depth of sludge is less than one inch and the maximum depth is less than two inches.

The examination resulted in plugging an additional eighteen tubes in steam generator 21 and eighty-seven tubes in steam generator 22 (see Table 2). In addition to these plugs, two tubes in steam generator 21 and three tubes in steam generator 22 were inadvertently reamed and plugged in error. The tubesheet maps in Appendix B show the total tubes plugged to date. Material Nonconformance Report (MNCR) numbers 90-RC-12, 90-RC-13, and 90-RC-14 and Engineering Evaluation Request (EER) numbers 90-RC-66 and 90-RC-78 were initiated to track the examination results and subsequent plugging. The NIS-1 form in Appendix C lists each of the tubes, by row and line, plugged as a result of this examination.

2000

TABLE 2

| | | |
|---------------------|----------|-----------|
| Previous Plugged | SG 21 79 | SG 22 80 |
| Plugged This Outage | SG 21 20 | SG 22 90 |
| Total Plugged | SG 21 99 | SG 22 170 |

3.0 Examination Techniques and Equipment

The eddy current data acquisition was performed by Conam Nuclear Corporation using Zetec MIZ-18A digital data acquisition systems. The following test frequencies were used during the examination:

550 kHz differential and absolute
990 kHz differential and absolute
100 kHz differential and absolute
20 kHz differential and absolute

All tubing was tested with Zetec manufactured bobbin coil style probes, either 0.610 inch or 0.590 inch diameter. A rotating pancake probe was used to characterize indications at various locations. Data acquisition was facilitated by using SM-10 "no entry" probe positioning fixtures in both hot and cold leg plenums.

The eddy current data analysis was performed using CDS automated data screening and MIZ-18 digital data analysis systems. Conam Nuclear provided the primary data analysis and Combustion Engineering performed secondary analysis.

2010

10

APPENDIX A

SUMMARY
DATA
SHEETS

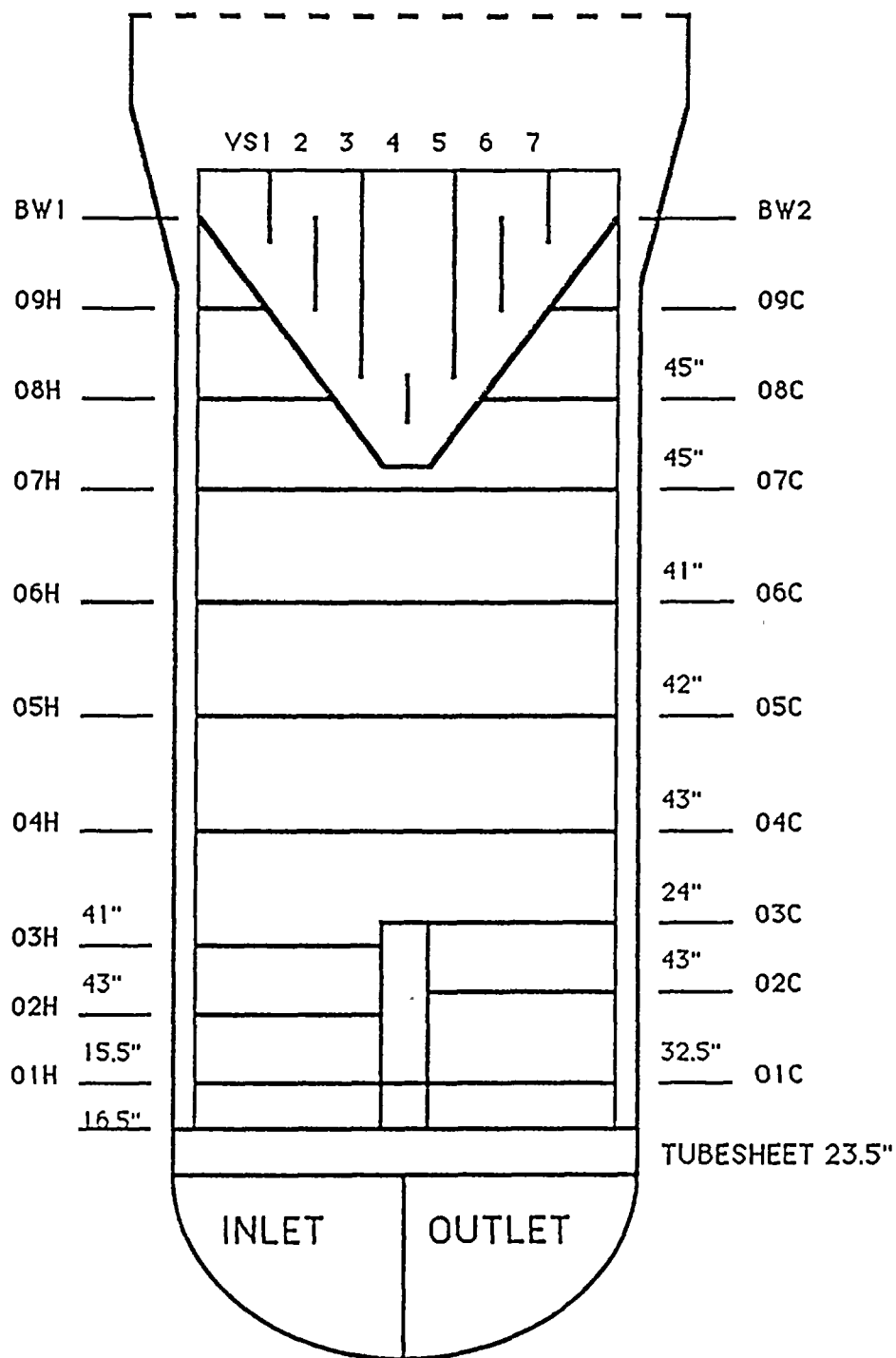
LEGEND

- ROW: Indicates the row number of a given tube.
- LIN: Indicates the column number of a given tube.
- LEG: Indicates the tube leg from which the examination was performed; either the hot (H) leg or cold (C) leg.
- EXTENT REQ: Indicates the tube length required to be examined, i.e., F/L = full length, 07H = the seventh support on hot leg side.
- EXTENT TST: Indicates the tube length actually examined.
- REM: Remarks column used for comments relating to examination, i.e., RIT = Rerun - ID Tube.
- REEL: Indicates reel number data was recorded on.
- PROBE: Indicates probe diameter and style used for examination.
- LOCATION: Gives indication location relative to known landmarks such as supports and batwings. Location are as follows:
- VS1 - #1 Vertical Support Strap
 - BW1 - #1 Batwing
 - 01H - #1 Support Plate in Hot Leg
 - 07C - #7 Support Plate in Cold Leg
 - TSH - Top of the Tubesheet in Hot Leg
 - TSC - Top of the Tubesheet in Cold Leg
 - TEH - Tube End Hot Leg
 - TEC - Tube End Cold Leg
- VOLTS: Indicates the peak-to-peak voltage of a given indication response.
- DEG: The measured phase angle of a given indication response.
- %: The percent through the tube wall of a given indication based on the measured phase angle/amplitude and the calibration curve established for that particular channel, or analysis comment codes, e.g., PLP = Possible Loose Part, etc.
- CH: Indicates the channel used to measure and evaluate a given indication.

12-1-74

1-1-74

CE SYSTEM 80 STEAM GENERATOR TUBE SUPPORT DIAGRAM



CUMULATIVE REPORT
03/90, A.P.S., PALO VERDE, UNIT 2

STEAM GENERATOR: 21

LOCATION: ALL

CRITERIA: ALL INDICATIONS (0% TO 100%, DNI, DRI, DTI, EPI, UDI, MBM, DSI, PID, BLI)

PAGE: 1 OF 4

DATE: 04/17/90

TIME: 08:23:13

| ROW | LIN | HEAT# | LEG | EXAM PROGRAM | EXTENT ACTUAL | REM | REEL | PROBE | LOCATION | VOLTS | CURRENT MIL | DEG | % | CH |
|-----|-----|-------|-----|--------------|---------------|-----|------|-------|-----------|-------|-------------|-----|-----|----|
| 43 | 12 | | H | TEH-TEC | TEH-TEC | | 092 | 610UL | VS4- 0.93 | 0.7 | | 0 | 18 | 18 |
| 72 | 27 | | H | TEH-TEC | TEH-TEC | | 083 | 610UL | VS3+ 0.76 | 0.6 | | 0 | 20 | 18 |
| 73 | 28 | | H | TEH-TEC | TEH-TEC | | 082 | 610UL | VS3+ 0.88 | 1.8 | | 0 | 32 | 18 |
| 82 | 31 | | H | TEH-TEC | TEH-TEC | | 081 | 610UL | VS3- 0.97 | 1.1 | | 0 | 22 | 18 |
| 65 | 32 | | H | TEH-TEC | TEH-TEC | | 079 | 610UL | VS3- 0.77 | 1.7 | | 0 | 32 | 18 |
| 83 | 32 | | H | TEH-TEC | TEH-TEC | | 081 | 610UL | VS3+ 0.92 | 1.0 | | 0 | 28 | 18 |
| 83 | 38 | | H | TEH-TEC | TEH-TEC | RPI | 074 | 610UL | VS3+ 0.79 | 3.4 | | 0 | 43 | 18 |
| | | | C | TEC-08H | TEC-08H | | 098 | 590SM | VS3+ 0.87 | 5.7 | | 0 | PID | 18 |
| 91 | 38 | | H | TEH-TEC | TEH-TEC | | 074 | 610UL | VS2+ 0.83 | 1.1 | | 0 | 29 | 18 |
| 76 | 39 | | H | TEH-TEC | TEH-TEC | | 074 | 610UL | VS3+ 0.85 | 0.8 | | 0 | 25 | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 074 | 610UL | VS5+ 0.88 | 0.9 | | 0 | 25 | 18 |
| 96 | 39 | | H | TEH-TEC | TEH-TEC | | 074 | 610UL | VS2+ 0.87 | 1.3 | | 0 | 32 | 18 |
| 99 | 42 | | H | TEH-TEC | TEH-TEC | | 069 | 610UL | VS2- 0.64 | 1.1 | | 0 | 29 | 18 |
| 86 | 43 | | H | TEH-TEC | TEH-TEC | | 067 | 610UL | VS3+ 0.82 | 1.4 | | 0 | 27 | 18 |
| 70 | 45 | | H | TEH-TEC | TEH-TEC | | 065 | 610UL | VS3+ 0.73 | 0.8 | | 0 | 19 | 18 |
| 71 | 46 | | H | TEH-TEC | TEH-TEC | | 063 | 610UL | VS3+ 0.82 | 0.7 | | 0 | 19 | 18 |
| 79 | 46 | | H | TEH-TEC | TEH-TEC | | 063 | 610UL | VS3+ 0.92 | 1.1 | | 0 | 24 | 18 |
| 70 | 47 | | H | TEH-TEC | TEH-TEC | | 063 | 610UL | VS3+ 0.96 | 1.4 | | 0 | 29 | 18 |
| 78 | 47 | | H | TEH-TEC | TEH-TEC | | 063 | 610UL | VS3+ 1.08 | 1.5 | | 0 | 29 | 18 |
| 82 | 47 | | H | TEH-TEC | TEH-TEC | | 063 | 610UL | VS3+ 1.15 | 0.8 | | 0 | 20 | 18 |
| 98 | 47 | | H | TEH-TEC | TEH-TEC | | 063 | 610UL | VS3+ 0.74 | 1.6 | | 0 | 31 | 18 |
| 75 | 48 | | H | TEH-TEC | TEH-TEC | | 061 | 610UL | VS3+ 0.82 | 1.4 | | 0 | 25 | 18 |
| 95 | 48 | | H | TEH-TEC | TEH-TEC | | 061 | 610UL | VS3- 0.91 | 2.2 | | 0 | 34 | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 061 | 610UL | VS3+ 1.06 | 3.0 | | 0 | 39 | 18 |
| 68 | 49 | | H | TEH-TEC | TEH-TEC | | 061 | 610UL | VS3+ 0.98 | 1.4 | | 0 | 27 | 18 |
| 74 | 49 | | H | TEH-TEC | TEH-TEC | | 061 | 610UL | 08H+ 0.92 | 0.6 | | 0 | 16 | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 061 | 610UL | VS3- 0.72 | 1.0 | | 0 | 22 | 18 |
| 76 | 49 | | H | TEH-TEC | TEH-TEC | | 061 | 610UL | VS3- 0.92 | 1.2 | | 0 | 25 | 18 |
| 64 | 51 | | H | TEH-TEC | TEH-TEC | | 058 | 610UL | VS5+ 0.79 | 0.6 | | 0 | 18 | 18 |
| 72 | 51 | | H | TEH-TEC | TEH-TEC | | 058 | 610UL | VS3- 0.92 | 0.6 | | 0 | 18 | 18 |
| 140 | 51 | | H | TEH-TEC | TEH-TEC | | 027 | 610UL | 04H+ 0.00 | 0.9 | | 0 | 20 | 18 |
| 65 | 52 | | H | TEH-TEC | TEH-TEC | | 058 | 610UL | VS3+ 0.91 | 0.7 | | 0 | 21 | 18 |
| 83 | 52 | | H | TEH-TEC | TEH-TEC | | 056 | 610UL | VS3+ 0.70 | 1.5 | | 0 | 30 | 18 |
| 60 | 53 | | H | TEH-TEC | TEH-TEC | | 056 | 610UL | VS3+ 0.39 | 1.3 | | 0 | 29 | 18 |
| 64 | 53 | | H | TEH-TEC | TEH-TEC | | 056 | 610UL | VS3+ 0.48 | 1.0 | | 0 | 25 | 18 |
| 68 | 53 | | H | TEH-TEC | TEH-TEC | | 056 | 610UL | 08H+ 0.91 | 0.5 | | 0 | 13 | 18 |
| 72 | 53 | | H | TEH-TEC | TEH-TEC | | 056 | 610UL | VS3+ 0.86 | 0.7 | | 0 | 19 | 18 |
| 74 | 53 | | H | TEH-TEC | TEH-TEC | | 056 | 610UL | VS3+ 0.71 | 1.6 | | 0 | 33 | 18 |
| 75 | 54 | | H | TEH-TEC | TEH-TEC | | 057 | 610UL | VS3+ 0.64 | 1.8 | | 0 | 33 | 18 |
| 81 | 54 | | H | TEH-TEC | TEH-TEC | | 057 | 610UL | 08H+ 0.97 | 1.6 | | 0 | 31 | 18 |
| 83 | 54 | | C | TEC-08H | TEC-08H | | 098 | 590SM | VS3- 0.90 | 6.7 | | 0 | PID | 18 |
| | | | H | TEH-TEC | TEH-TEC | RPI | 057 | 610UL | VS3+ 0.85 | 3.4 | | 0 | 43 | 18 |
| 101 | 54 | | H | TEH-TEC | TEH-TEC | | 057 | 610UL | VS2- 0.95 | 2.0 | | 0 | 34 | 18 |
| 121 | 54 | | H | TEH-TEC | TEH-TEC | | 057 | 610UL | VS2- 1.10 | 0.9 | | 0 | 21 | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 057 | 610UL | VS2+ 0.93 | 1.4 | | 0 | 27 | 18 |

CUMULATIVE REPORT
03/90, A.P.S., PALO VERDE, UNIT 2

STEAM GENERATOR: 21

LOCATION: ALL

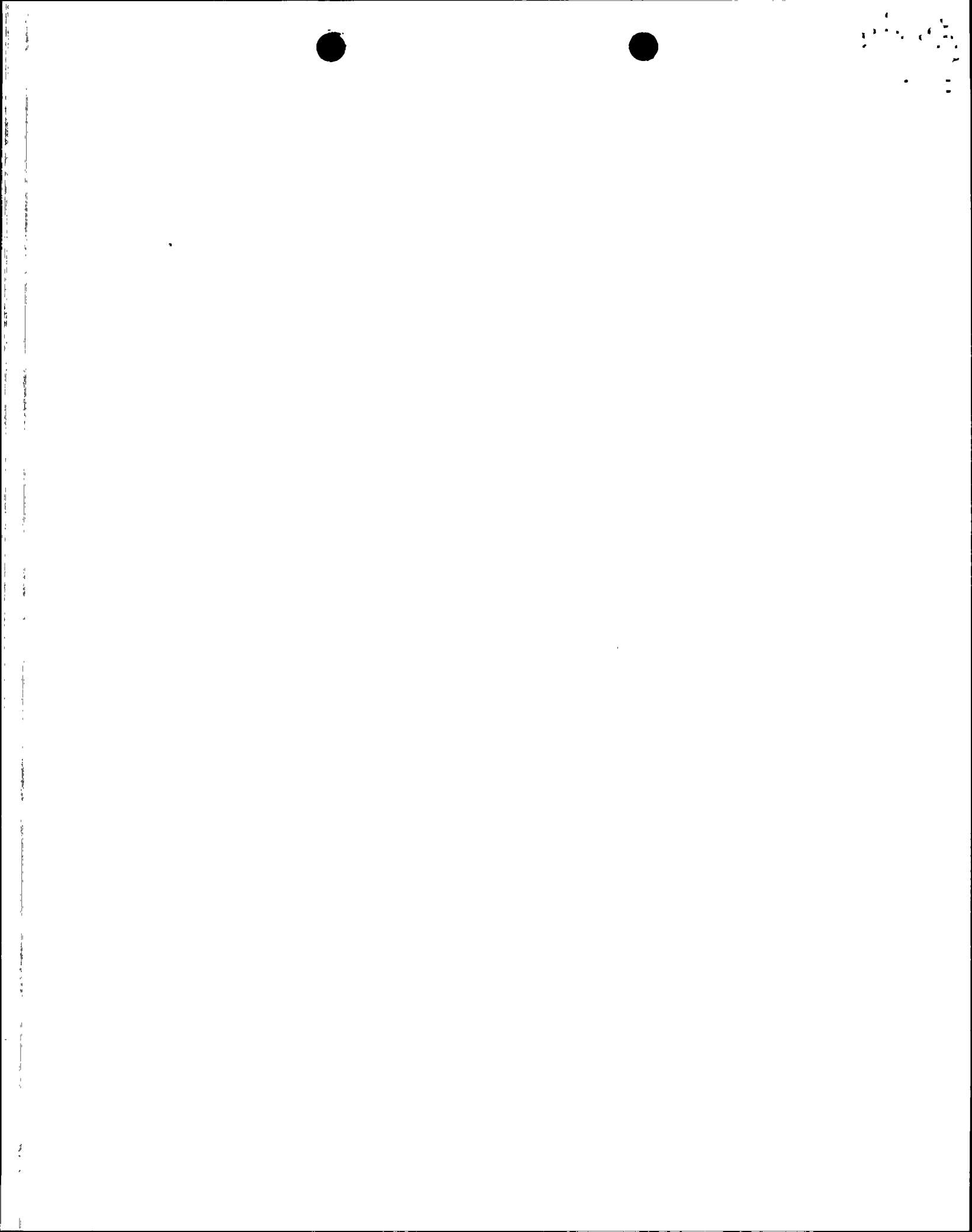
CRITERIA: ALL INDICATIONS (0% TO 100%, DNI, DRI, DTI, EPI, UDI, MBM, DSI, PID, BLI)

PAGE: 2 OF 4

DATE: 04/17/90

TIME: 08:23:13

| ROW | LIN | HEAT# | LEG | EXAM PROGRAM | EXTENT ACTUAL | REM | REEL | PROBE | LOCATION | VOLTS | CURRENT MIL | DEG | % | CH |
|-----|-----|-------|-----|--------------|---------------|-----|------|-------|-----------|-------|-------------|-----|-----|----|
| 121 | 54 | | H | TEH-TEC | TEH-TEC | | 057 | 610UL | VS5+ 0.96 | 1.0 | | 0 | 22 | 18 |
| 78 | 55 | | H | TEH-TEC | TEH-TEC | RPI | 057 | 610UL | VS3- 1.05 | 3.2 | | 0 | 41 | 18 |
| | | | C | TEC-08H | TEC-08H | | 098 | 590SM | VS3- 1.01 | 8.8 | | 0 | PID | 18 |
| 94 | 55 | | H | TEH-TEC | TEH-TEC | | 057 | 610UL | VS3+ 0.76 | 0.8 | | 0 | 19 | 18 |
| 75 | 56 | | H | TEH-TEC | TEH-TEC | | 053 | 610UL | VS3- 0.88 | 1.2 | | 0 | 20 | 18 |
| 62 | 59 | | H | TEH-TEC | TEH-TEC | | 048 | 610UL | VS3- 0.79 | 0.9 | | 0 | 24 | 18 |
| 72 | 59 | | H | TEH-TEC | TEH-TEC | | 048 | 610UL | VS3+ 0.91 | 1.7 | | 0 | 33 | 18 |
| 97 | 60 | | H | TEH-TEC | TEH-TEC | | 047 | 610UL | BW1- 1.09 | 0.8 | | 0 | 18 | 18 |
| 60 | 61 | | H | TEH-TEC | TEH-TEC | | 047 | 610UL | VS3+ 0.98 | 1.2 | | 0 | 26 | 18 |
| 98 | 61 | | H | TEH-TEC | TEH-TEC | | 047 | 610UL | BW1+ 1.73 | 1.6 | | 0 | 31 | 18 |
| 74 | 63 | | H | TEH-TEC | TEH-TEC | | 044 | 610UL | VS3+ 0.79 | 1.6 | | 0 | 29 | 18 |
| 98 | 63 | | H | TEH-TEC | TEH-TEC | | 044 | 610UL | VS2+ 1.11 | 1.4 | | 0 | 27 | 18 |
| 118 | 63 | | H | TEH-TEC | TEH-TEC | | 044 | 610UL | VS2+ 0.60 | 0.9 | | 0 | 20 | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 044 | 610UL | VS3+ 0.68 | 0.9 | | 0 | 20 | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 044 | 610UL | VS6- 0.65 | 1.1 | | 0 | 30 | 18 |
| 43 | 64 | | H | TEH-TEC | TEH-TEC | | 092 | 610UL | VS4+ 1.00 | 0.7 | | 0 | 33 | 18 |
| 83 | 64 | | H | TEH-TEC | TEH-TEC | | 043 | 610UL | VS5+ 0.99 | 0.9 | | 0 | 15 | 18 |
| 109 | 64 | | H | TEH-TEC | TEH-TEC | | 043 | 610UL | VS2- 0.75 | 2.3 | | 0 | 32 | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 043 | 610UL | VS3- 0.93 | 1.5 | | 0 | 23 | 18 |
| 76 | 65 | | H | TEH-TEC | TEH-TEC | | 043 | 610UL | VS3+ 1.08 | 1.3 | | 0 | 27 | 18 |
| 80 | 65 | | H | TEH-TEC | TEH-TEC | | 043 | 610UL | VS3- 1.28 | 1.7 | | 0 | 26 | 18 |
| 84 | 65 | | H | TEH-TEC | TEH-TEC | | 043 | 610UL | VS3- 1.04 | 1.5 | | 0 | 24 | 18 |
| 76 | 69 | | H | TEH-TEC | TEH-TEC | | 037 | 610UL | VS5+ 0.77 | 2.4 | | 0 | 37 | 18 |
| 138 | 71 | | H | TEH-TEC | TEH-TEC | | 034 | 610UL | VS2+ 0.86 | 1.4 | | 0 | 29 | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 034 | 610UL | VS3+ 1.19 | 1.8 | | 0 | 33 | 18 |
| 108 | 73 | | C | TEC-TEH | TEC-TEH | | 066 | 610UL | VS2- 1.27 | 1.9 | | 0 | 31 | 18 |
| 109 | 80 | | C | TEC-TEH | TEC-TEH | | 068 | 610UL | BW1+ 1.93 | 0.6 | | 0 | 13 | 18 |
| 32 | 83 | | H | TEH-TEC | TEH-TEC | | 016 | 610UL | VS4+ 0.66 | 3.1 | | 0 | 34 | 18 |
| 111 | 84 | | C | TEC-TEH | TEC-TEH | | 070 | 610UL | BW1+ 1.11 | 2.9 | | 0 | 37 | 18 |
| 121 | 84 | | C | TEC-TEH | TEC-TEH | | 070 | 610UL | VS5- 0.98 | 0.8 | | 0 | 21 | 18 |
| 144 | 85 | | H | TEH-TEC | TEH-TEC | | 028 | 610UL | VS3- 0.84 | 1.2 | | 0 | 25 | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 028 | 610UL | VS3+ 0.91 | 1.6 | | 0 | 30 | 18 |
| 35 | 86 | | H | TEH-TEC | TEH-TEC | | 016 | 610UL | VS4- 0.41 | 1.7 | | 0 | 22 | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 016 | 610UL | BW2- 1.30 | 3.1 | | 0 | 34 | 18 |
| 39 | 86 | | H | TEH-TEC | TEH-TEC | | 016 | 610UL | VS4- 0.41 | 2.2 | | 0 | 27 | 18 |
| 107 | 88 | | C | TEC-TEH | TEC-TEH | | 071 | 610UL | BW1+ 1.88 | 1.1 | | 0 | 22 | 18 |
| 108 | 89 | | C | TEC-TEH | TEC-TEH | | 071 | 610UL | BW1+ 1.76 | 1.4 | | 0 | 25 | 18 |
| 37 | 90 | | H | TEH-TEC | TEH-TEC | | 021 | 610UL | BW1- 0.96 | 1.5 | | 0 | 32 | 18 |
| 109 | 90 | | C | TEC-TEH | TEC-TEH | | 071 | 610UL | BW1+ 1.93 | 1.7 | | 0 | 29 | 18 |
| 111 | 90 | | C | TEC-TEH | TEC-TEH | | 071 | 610UL | BW1+ 1.86 | 1.1 | | 0 | 22 | 18 |
| 113 | 90 | | C | TEC-TEH | TEC-TEH | | 071 | 610UL | BW1+ 1.95 | 0.7 | | 0 | 15 | 18 |
| 158 | 93 | | H | TEH-TEC | TEH-TEC | RPI | 026 | 610UL | VS3+ 0.45 | 4.1 | | 0 | 44 | 18 |
| | | | H | TEH-TEC | TEH-TEC | RPI | 026 | 610UL | VS5+ 1.11 | 4.1 | | 0 | 44 | 18 |
| 159 | 94 | | H | TEH-TEC | TEH-TEC | RPI | 021 | 610UL | BW2- 0.50 | 3.3 | | 0 | 43 | 18 |
| | | | C | TEC-BW1 | TEC-BW1 | | 098 | 590SM | BW2- 0.60 | 4.6 | | 0 | PID | 18 |



CUMULATIVE REPORT
03/90, A.P.S., PALO VERDE, UNIT 2

STEAM GENERATOR: 21

LOCATION: ALL

CRITERIA: ALL INDICATIONS (0% TO 100%, DNI, DRI, DTI, EPI, UDI, MBM, OSI, PID, BLI)

PAGE: 3 OF
DATE: 04/17/9
TIME: 08:23:1

| ROW | LIN | HEAT# | LEG | EXAM EXTENT | | REM | REEL | PROBE | LOCATION | CURRENT | | | | |
|-----|-----|-------|-----|-------------|---------|-----|------|-------|------------|---------|-----|-----|-----|----|
| | | | | PROGRAM | ACTUAL | | | | | VOLTS | MIL | DEG | % | CH |
| 159 | 94 | | H | TEH-TEC | TEH-TEC | RPI | 026 | 610UL | BW2- 0.80 | 3.5 | | 0 | 41 | 18 |
| 116 | 97 | | C | TEC-TEH | TEC-TEH | | 076 | 610UL | BW1+ 1.68 | 2.2 | | 0 | 34 | 18 |
| 138 | 99 | | C | TEC-TEH | TEC-TEH | | 062 | 610UL | VS1- 0.74 | 1.2 | | 0 | 22 | 18 |
| 159 | 100 | | C | TEC-TEH | TEC-TEH | | 064 | 610UL | BW2- 1.52 | 2.7 | | 0 | 36 | 18 |
| 36 | 103 | | H | TEH-TEC | TEH-TEC | | 093 | 610UL | BW2- 2.00 | 1.1 | | 0 | 23 | 18 |
| 132 | 103 | | C | TEC-TEH | TEC-TEH | | 062 | 610UL | VS1+ 0.83 | 1.0 | | 0 | 19 | 18 |
| 41 | 104 | | H | TEH-TEC | TEH-TEC | | 093 | 610UL | VS4- 0.79 | 1.0 | | 0 | 21 | 18 |
| 136 | 105 | | C | TEC-TEH | TEC-TEH | | 062 | 610UL | VS3+ 0.83 | 1.7 | | 0 | 28 | 18 |
| 152 | 107 | | H | TEH-TEC | TEH-TEC | | 096 | 610UL | VS3+ 0.91 | 1.5 | | 0 | 28 | 18 |
| 115 | 108 | | C | TEC-TEH | TEC-TEH | | 080 | 610UL | BW1+ 1.78 | 1.8 | | 0 | 32 | 18 |
| 140 | 109 | | C | TEC-TEH | TEC-TEH | | 060 | 610UL | VS1- 0.47 | 1.3 | | 0 | 24 | 18 |
| 99 | 126 | | C | TEC-TEH | TEC-TEH | | 045 | 610UL | BW1+ 2.33 | 1.5 | | 0 | 26 | 18 |
| 96 | 127 | | C | TEC-TEH | TEC-TEH | | 038 | 610UL | BW1+ 2.06 | 1.2 | | 0 | 25 | 18 |
| 75 | 128 | | C | TEC-TEH | TEC-TEH | | 038 | 610UL | VS3+ 0.70 | 1.0 | | 0 | 22 | 18 |
| 96 | 129 | | C | TEC-TEH | TEC-TEH | | 036 | 610UL | VS3+ 0.71 | 1.6 | | 0 | 25 | 18 |
| 83 | 132 | | C | TEC-TEH | TEC-TEH | | 035 | 610UL | BW1+ 1.76 | 0.4 | 243 | | 12 | 18 |
| 62 | 133 | | C | TEC-TEH | TEC-TEH | | 035 | 610UL | 07H+ 13.88 | 0.7 | 122 | | 27 | 21 |
| 76 | 133 | | C | TEC-TEH | TEC-TEH | | 035 | 610UL | BW1+ 1.68 | 2.0 | | 0 | 32 | 18 |
| 84 | 133 | | C | TEC-TEH | TEC-TEH | | 035 | 610UL | BW1+ 1.93 | 2.4 | | 0 | 36 | 18 |
| | | | C | TEC-TEH | TEC-TEH | | 035 | 610UL | VS3+ 0.71 | 1.7 | | 0 | 30 | 18 |
| 86 | 133 | | C | TEC-TEH | TEC-TEH | | 035 | 610UL | BW1+ 1.76 | 1.4 | | 0 | 27 | 18 |
| 81 | 134 | | C | TEC-TEH | TEC-TEH | | 033 | 610UL | 08H- 0.76 | 1.1 | | 0 | 16 | 18 |
| 73 | 136 | | C | TEC-TEH | TEC-TEH | | 031 | 610UL | VS3+ 0.18 | 1.2 | | 0 | 21 | 18 |
| 79 | 136 | | C | TEC-TEH | TEC-TEH | | 033 | 610UL | BW1+ 1.84 | 0.7 | | 0 | 15 | 18 |
| 81 | 136 | | C | TEC-TEH | TEC-TEH | | 033 | 610UL | VS3- 0.83 | 1.3 | | 0 | 19 | 18 |
| | | | C | TEC-TEH | TEC-TEH | | 033 | 610UL | VS3+ 1.04 | 1.9 | | 0 | 25 | 18 |
| 83 | 136 | | C | TEC-TEH | TEC-TEH | | 033 | 610UL | VS3- 0.86 | 0.9 | | 0 | 14 | 18 |
| 76 | 137 | | C | TEC-TEH | TEC-TEH | | 031 | 610UL | VS3+ 1.01 | 2.7 | | 0 | 35 | 18 |
| | | | C | TEC-TEH | TEC-TEH | | 031 | 610UL | VS5+ 0.59 | 0.5 | | 0 | 11 | 18 |
| 61 | 138 | | C | TEC-TEH | TEC-TEH | | 029 | 610UL | VS5- 0.78 | 1.0 | | 0 | 21 | 18 |
| 121 | 140 | | C | TEC-TEH | TEC-TEH | | 029 | 610UL | VS2- 0.63 | 3.0 | | 0 | 38 | 18 |
| 62 | 141 | | C | TEC-TEH | TEC-TEH | | 013 | 610UL | VS3+ 1.07 | 0.7 | | 0 | 10 | 18 |
| 79 | 142 | | C | TEC-TEH | TEC-TEH | | 024 | 610UL | VS5- 0.59 | 1.1 | | 0 | 18 | 18 |
| 83 | 146 | | C | TEC-TEH | TEC-TEH | | 022 | 610UL | 01H+ 0.81 | 0.3 | 148 | | 2 | 19 |
| 66 | 147 | | C | TEC-TEH | TEC-TEH | | 013 | 610UL | VS3- 0.41 | 1.6 | | 0 | 26 | 18 |
| 109 | 148 | | C | TEC-TEH | TEC-TEH | | 020 | 610UL | VS2+ 1.06 | 1.2 | | 0 | 24 | 18 |
| 126 | 149 | | H | TEH-TEC | TEH-TEC | | 099 | 610UL | VS3- 0.66 | 1.3 | | 0 | 26 | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 099 | 610UL | VS3+ 0.73 | 0.8 | | 0 | 19 | 18 |
| 124 | 151 | | C | TEC-TEH | TEC-TEH | | 019 | 610UL | VS2+ 0.00 | 0.4 | | 0 | 7 | 18 |
| 126 | 151 | | C | TEC-TEH | TEC-TEH | | 019 | 610UL | VS3+ 1.00 | 0.7 | | 0 | 10 | 18 |
| 63 | 152 | | C | TEC-TEH | TEC-TEH | | 012 | 610UL | VS3- 0.38 | 1.7 | | 0 | 26 | 18 |
| 50 | 157 | | C | TEC-TEH | TEC-TEH | | 010 | 610UL | VS4+ 0.51 | 1.5 | | 0 | 24 | 18 |
| 84 | 161 | | H | TEH-TEC | TEH-TEC | RPI | 099 | 610UL | VS3+ 0.63 | 3.0 | | 0 | PID | 18 |
| | | | C | TEC-TEH | TEC-TEH | RPI | 015 | 610UL | VS3+ 0.67 | 4.5 | | 0 | 45 | 18 |
| 70 | 169 | | C | TEC-TEH | TEC-TEH | | 007 | 610UL | VS3+ 0.83 | 1.1 | | 0 | 18 | 18 |

CUMULATIVE REPORT
03/90, A.P.S., PALO VERDE, UNIT 2

STEAM GENERATOR: 21

LOCATION: ALL

CRITERIA: ALL INDICATIONS (0% TO 100%, ONI, DRI, DTI, EPI, UDI, MBM, DSI, PID, BLI)

PAGE: 4 OF 4

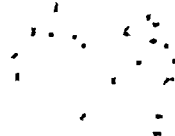
DATE: 04/17/90

TIME: 08:23:13

| ROW | LIN | HEAT# | LEG | EXAM EXTENT | | REM | REEL | PROBE | LOCATION | CURRENT | | | | |
|-----|-----|-------|-----|-------------|---------|-----|------|-------|-----------|---------|-----|-----|----|----|
| | | | | PROGRAM | ACTUAL | | | | | VOLTS | MIL | DEG | % | CH |
| 86 | 169 | | C | TEC-TEH | TEC-TEH | | 007 | 610UL | VS3+ 0.00 | 0.7 | | 0 | 15 | 18 |
| 70 | 171 | | C | TEC-TEH | TEC-TEH | | 007 | 610UL | VS3+ 1.08 | 0.6 | | 0 | 14 | 18 |
| 74 | 171 | | C | TEC-TEH | TEC-TEH | | 007 | 610UL | VS3+ 1.00 | 0.8 | | 0 | 18 | 18 |
| 70 | 179 | | C | TEC-TEH | TEC-TEH | | 005 | 610UL | 04C+ 0.83 | 1.2 | | 0 | 24 | 18 |
| 60 | 181 | | C | TEC-TEH | TEC-TEH | | 005 | 610UL | 04C+ 0.79 | 0.7 | | 0 | 15 | 18 |

NUMBER OF TUBES SELECTED FROM CURRENT OUTAGE: 118

NO TREND ANALYSIS REQUESTED



CUMULATIVE REPORT
03/90, A.P.S., PALO VERDE, UNIT 2

STEAM GENERATOR: 22

LOCATION: ALL

CRITERIA: ALL INDICATIONS (0% TO 100%,MBM,PID,BLI,DNI,DRI,DTI,EPI,UDI,
DSI)

PAGE: 1 OF 10

DATE: 04/17/90

TIME: 17:55:05

| ROW | LIN | HEAT# | LEG | EXAM EXTENT | | REM | REEL | PROBE | LOCATION | VOLTS | CURRENT | | | |
|-----|-----|-------|-----|-------------|---------|-----|------|-------|-----------|-------|---------|-----|-----|----|
| | | | | PROGRAM | ACTUAL | | | | | | MIL | DEG | % | CH |
| 44 | 5 | | C | TEC-TEH | TEC-TEH | | 147 | 610UL | VS4- 0.88 | 1.9 | | 0 | 31 | 18 |
| 51 | 6 | | C | TEC-TEH | TEC-TEH | | 147 | 610UL | VS4- 0.76 | 1.9 | | 0 | 30 | 18 |
| 1 | 8 | | C | TEC-BW1 | TEC-07C | | 144 | 590SM | 02C- 0.61 | 2.0 | | 0 | 33 | 18 |
| 49 | 12 | | C | TEC-TEH | TEC-TEH | | 149 | 610UL | VS4- 0.86 | 1.0 | | 0 | 21 | 18 |
| 63 | 12 | | C | TEC-TEH | TEC-TEH | | 149 | 610UL | BW1+ 2.07 | 0.9 | | 0 | 21 | 18 |
| 1 | 16 | | C | TEC-07C | TEC-07C | RPI | 144 | 590UL | 03C- 0.67 | 3.8 | | 0 | 44 | 18 |
| | | | C | TEC-07C | TEC-07C | RPI | 175 | 610UL | 03C- 0.80 | 3.0 | | 0 | PID | 18 |
| | | | C | TEC-07C | TEC-05C | RPI | 181 | 610UL | 03C- 0.92 | 2.7 | | 0 | PID | 18 |
| 31 | 18 | | C | TEC-TEH | TEC-TEH | | 152 | 610UL | VS4- 0.77 | 2.0 | | 0 | 33 | 18 |
| 28 | 19 | | H | TEH-TEC | TEH-TEC | | 157 | 610UL | 01H+ 0.03 | 1.1 | 134 | | 12 | 17 |
| 58 | 19 | | C | TEC-TEH | TEC-TEH | | 154 | 610UL | VS3- 0.56 | 1.0 | | 0 | 21 | 18 |
| 81 | 20 | | H | TEH-TEC | TEH-TEC | | 141 | 610UL | VS5- 1.00 | 2.1 | | 0 | 34 | 18 |
| 99 | 22 | | H | TEH-TEC | TEH-TEC | RPI | 140 | 610UL | BW1+ 1.42 | 6.1 | | 0 | 49 | 18 |
| | | | C | TEC-TEH | TEC-TEH | | 180 | 610UL | BW1+ 2.14 | 5.0 | | 0 | PID | 18 |
| 10 | 23 | | H | TEH-TEC | TEH-TEC | | 155 | 610UL | 01H+ 0.00 | 1.0 | 142 | | 19 | 17 |
| 30 | 23 | | C | TEC-TEH | TEC-TEH | | 156 | 610UL | VS4- 0.74 | 1.0 | | 0 | 21 | 18 |
| 103 | 24 | | H | TEH-TEC | TEH-TEC | | 140 | 610UL | BW1+ 1.42 | 1.3 | | 0 | 26 | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 140 | 610UL | VS2+ 0.82 | 0.6 | | 0 | 14 | 18 |
| 66 | 25 | | C | TEC-TEH | TEC-TEH | | 158 | 610UL | 08C+ 0.80 | 0.9 | | 0 | 21 | 18 |
| 72 | 29 | | H | TEH-TEC | TEH-TEC | | 134 | 610UL | VS3+ 0.98 | 1.1 | | 0 | 35 | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 134 | 610UL | VS5+ 0.92 | 1.0 | | 0 | 33 | 18 |
| 110 | 29 | | H | TEH-TEC | TEH-TEC | | 137 | 610UL | VS3+ 0.79 | 1.3 | | 0 | 24 | 18 |
| 23 | 30 | | C | TEC-TEH | TEC-TEH | | 167 | 610UL | VS4+ 0.73 | 1.1 | | 0 | 19 | 18 |
| 51 | 30 | | C | TEC-TEH | TEC-TEH | | 167 | 610UL | VS4+ 1.19 | 1.0 | | 0 | 17 | 18 |
| 83 | 30 | | H | TEH-TEC | TEH-TEC | | 134 | 610UL | VS3+ 0.83 | 1.5 | | 0 | 28 | 18 |
| 111 | 30 | | H | TEH-TEC | TEH-TEC | | 134 | 610UL | 03C- 0.52 | 1.3 | | 0 | 26 | 18 |
| 113 | 30 | | C | TEC-TEH | TEC-TEH | | 180 | 610UL | VS3+ 0.62 | 4.1 | | 0 | PID | 18 |
| | | | H | TEH-TEC | TEH-TEC | RPI | 134 | 610UL | VS3+ 0.92 | 3.8 | | 0 | 43 | 18 |
| 95 | 32 | | H | TEH-TEC | TEH-TEC | | 130 | 610UL | VS2+ 0.69 | 1.9 | | 0 | 29 | 18 |
| 45 | 34 | | C | TEC-TEH | TEC-TEH | | 171 | 610UL | VS4- 0.95 | 1.6 | | 0 | 30 | 18 |
| 99 | 34 | | C | TEC-TEH | TEC-TEH | | 180 | 610UL | VS2+ 0.51 | 1.1 | | 0 | 25 | 18 |
| 72 | 37 | | H | TEH-TEC | TEH-TEC | | 127 | 610UL | VS3+ 0.85 | 0.6 | | 0 | 14 | 18 |
| 59 | 38 | | C | TEC-TEH | TEC-TEH | | 177 | 610UL | VS3- 0.48 | 0.7 | | 0 | 12 | 18 |
| 89 | 38 | | H | TEH-TEC | TEH-TEC | | 127 | 610UL | VS6- 1.56 | 1.8 | | 0 | 30 | 18 |
| 30 | 39 | | C | TEC-TEH | TEC-TEH | | 177 | 610UL | VS4- 0.97 | 1.0 | | 0 | 22 | 18 |
| 51 | 40 | | C | TEC-TEH | TEC-TEH | | 123 | 610UL | VS4- 0.93 | 1.3 | | 0 | 29 | 18 |
| 127 | 40 | | H | TEH-TEC | TEH-TEC | | 122 | 610UL | 04C+ 0.68 | 1.1 | | 0 | 26 | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 122 | 610UL | 03C- 0.51 | 2.3 | | 0 | 38 | 18 |
| 57 | 42 | | C | TEC-TEH | TEC-TEH | | 123 | 610UL | VS3+ 0.66 | 0.6 | | 0 | 17 | 18 |
| 86 | 43 | | C | TEC-TEH | TEC-TEH | | 180 | 610UL | VS3+ 0.79 | 3.5 | | 0 | PID | 18 |
| | | | H | TEH-TEC | TEH-TEC | RPI | 116 | 610UL | VS3+ 0.91 | 3.2 | | 0 | 41 | 18 |
| 112 | 43 | | H | TEH-TEC | TEH-TEC | | 116 | 610UL | VS2- 0.73 | 2.0 | | 0 | 34 | 18 |
| 47 | 44 | | C | TEC-TEH | TEC-TEH | | 162 | 610UL | VS4- 0.73 | 1.2 | | 0 | 25 | 18 |
| 73 | 44 | | H | TEH-TEC | TEH-TEC | | 116 | 610UL | VS5+ 0.74 | 1.2 | | 0 | 25 | 18 |
| 87 | 44 | | H | TEH-TEC | TEH-TEC | | 116 | 610UL | VS3- 1.21 | 2.4 | | 0 | 36 | 18 |

CUMULATIVE REPORT
03/90, A.P.S., PALO VERDE, UNIT 2

STEAM GENERATOR: 22

LOCATION: ALL

CRITERIA: ALL INDICATIONS (0% TO 100%,MBM,PID,BLI,DNI,DRI,DTI,EPI,UDI,
DSI)

PAGE: 2 OF 10

DATE: 04/17/90

TIME: 17:55:05

| ROW | LIN | HEAT# | LEG | EXAM PROGRAM | EXTENT ACTUAL | REM | REEL | PROBE | LOCATION | VOLTS | CURRENT MIL | DEG | % | CH |
|-----|-----|-------|-----|--------------|---------------|-----|------|-------|------------|-------|-------------|-----|-----|----|
| 113 | 44 | | H | TEH-TEC | TEH-TEC | | 116 | 610UL | VS2- 0.61 | 1.5 | | 0 | 28 | 18 |
| 96 | 45 | | H | TEH-TEC | TEH-TEC | | 114 | 610UL | BW1+ 1.30 | 1.1 | | 0 | 22 | 18 |
| 49 | 46 | | C | TEC-TEH | TEC-TEH | | 162 | 610UL | VS4- 0.61 | 1.1 | | 0 | 23 | 18 |
| 77 | 46 | | H | TEH-TEC | TEH-TEC | | 114 | 610UL | VS3- 0.93 | 1.8 | | 0 | 31 | 18 |
| 83 | 46 | | C | TEC-VS3 | TEC-TEH | RPI | 180 | 610UL | VS3- 1.05 | 5.5 | | 0 | PID | 18 |
| | | | H | TEH-TEC | TEH-TEC | RPI | 114 | 610UL | VS3- 0.99 | 3.0 | | 0 | 40 | 18 |
| 4 | 47 | | H | TEH-TEC | TEH-TEC | | 150 | 610UL | 07H+ 8.82 | 1.4 | 135 | | 18 | 20 |
| 24 | 47 | | H | TEH-TEC | TEH-TEC | | 150 | 610UL | 05H+ 35.26 | 0.4 | 139 | | 27 | 1 |
| 50 | 47 | | C | TEC-TEH | TEC-TEH | | 124 | 610UL | VS4+ 0.53 | 1.3 | | 0 | 20 | 18 |
| 72 | 47 | | H | TEH-TEC | TEH-TEC | | 112 | 610UL | VS3+ 0.75 | 0.8 | | 0 | 15 | 18 |
| 76 | 47 | | H | TEH-TEC | TEH-TEC | | 112 | 610UL | 08H+ 0.69 | 0.8 | | 0 | 16 | 18 |
| 98 | 47 | | H | TEH-TEC | TEH-TEC | | 112 | 610UL | BW1+ 1.15 | 0.6 | | 0 | 13 | 18 |
| 75 | 48 | | H | TEH-TEC | TEH-TEC | | 112 | 610UL | 08H+ 0.73 | 0.9 | | 0 | 18 | 18 |
| 91 | 48 | | H | TEH-TEC | TEH-TEC | | 112 | 610UL | BW1+ 1.14 | 2.1 | | 0 | 33 | 18 |
| 93 | 48 | | H | TEH-TEC | TEH-TEC | | 112 | 610UL | 03C+ 16.49 | 0.6 | 146 | | 19 | 1 |
| 97 | 48 | | H | TEH-TEC | TEH-TEC | | 112 | 610UL | BW1+ 0.99 | 1.5 | | 0 | 27 | 18 |
| 99 | 48 | | H | TEH-TEC | TEH-TEC | | 112 | 610UL | BW1+ 1.31 | 0.9 | | 0 | 17 | 18 |
| 101 | 48 | | H | TEH-TEC | TEH-TEC | | 112 | 610UL | VS3- 0.79 | 0.9 | | 0 | 19 | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 112 | 610UL | VS3+ 0.86 | 1.8 | | 0 | 30 | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 112 | 610UL | VS5- 0.22 | 1.0 | | 0 | 20 | 18 |
| 74 | 49 | | H | TEH-TEC | TEH-TEC | | 108 | 610UL | 08H+ 0.78 | 1.5 | | 0 | 27 | 18 |
| 80 | 49 | | H | TEH-TEC | TEH-TEC | | 108 | 610UL | 08H+ 0.79 | 0.7 | | 0 | 13 | 18 |
| 84 | 49 | | H | TEH-TEC | TEH-TEC | | 108 | 610UL | VS3- 0.88 | 1.0 | | 0 | 20 | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 108 | 610UL | VS5+ 0.75 | 1.0 | | 0 | 19 | 18 |
| 100 | 49 | | H | TEH-TEC | TEH-TEC | | 108 | 610UL | BW1+ 1.25 | 1.8 | | 0 | 29 | 18 |
| 77 | 50 | | H | TEH-TEC | TEH-TEC | | 108 | 610UL | 08H+ 0.74 | 1.5 | | 0 | 27 | 18 |
| 91 | 50 | | H | TEH-TEC | TEH-TEC | | 108 | 610UL | BW1+ 1.28 | 2.3 | | 0 | 33 | 18 |
| 78 | 51 | | H | TEH-TEC | TEH-TEC | | 074 | 610UL | 08H+ 0.75 | 2.4 | | 0 | 34 | 18 |
| 80 | 51 | | H | TEH-TEC | TEH-TEC | | 074 | 610UL | VS3+ 0.69 | 2.0 | | 0 | 31 | 18 |
| 82 | 51 | | H | TEH-TEC | TEH-TEC | | 074 | 610UL | VS3+ 0.88 | 1.1 | | 0 | 21 | 18 |
| 90 | 51 | | H | TEH-TEC | TEH-TEC | | 074 | 610UL | BW1+ 1.96 | 2.7 | | 0 | 36 | 18 |
| 92 | 51 | | H | TEH-TEC | TEH-TEC | | 074 | 610UL | BW1+ 1.35 | 2.6 | | 0 | 35 | 18 |
| 130 | 51 | | C | TEC-TEH | TEC-TEH | | 181 | 610UL | VS2+ 0.55 | 0.9 | | 0 | 19 | 18 |
| 25 | 52 | | C | TEC-TEH | TEC-TEH | | 178 | 610UL | VS4- 0.83 | 1.6 | | 0 | 28 | 18 |
| 49 | 52 | | C | TEC-TEH | TEC-TEH | | 178 | 610UL | VS4- 0.88 | 1.6 | | 0 | 28 | 18 |
| 77 | 52 | | C | 09H-TEH | TEC-TEH | RPI | 180 | 610UL | 08H+ 0.51 | 3.8 | | 0 | PID | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 074 | 610UL | 08H+ 0.84 | 3.7 | | 0 | 41 | 18 |
| 79 | 52 | | H | TEH-TEC | TEH-TEC | | 074 | 610UL | 08H+ 0.81 | 1.8 | | 0 | 28 | 18 |
| 89 | 52 | | H | TEH-TEC | TEH-TEC | | 074 | 610UL | BW1+ 2.34 | 3.2 | | 0 | 39 | 18 |
| 91 | 52 | | H | TEH-TEC | TEH-TEC | | 074 | 610UL | BW1+ 1.64 | 2.2 | | 0 | 32 | 18 |
| 78 | 53 | | H | TEH-TEC | TEH-TEC | | 073 | 610UL | 08H- 0.68 | 1.1 | | 0 | 24 | 18 |
| 80 | 53 | | H | TEH-TEC | TEH-TEC | | 073 | 610UL | BW1+ 1.79 | 2.7 | | 0 | 39 | 18 |
| 84 | 53 | | H | TEH-TSC | TEH-TEC | | 073 | 610UL | VS3+ 0.81 | 5.8 | | 0 | 49 | 18 |
| | | | C | VS4-TEH | TEC-TEH | RPI | 180 | 610UL | VS3+ 0.87 | 5.2 | | 0 | PID | 18 |
| 142 | 53 | | H | TEH-TEC | TEH-TEC | | 074 | 610UL | 03C- 1.09 | 1.3 | | 0 | 24 | 18 |

CUMULATIVE REPORT
03/90, A.P.S., PALO VERDE, UNIT 2

STEAM GENERATOR: 22

LOCATION: ALL

CRITERIA: ALL INDICATIONS (0% TO 100%,MBM,PID,BLI,DNI,DRI,DTI,EPI,UDI,
DSI)

PAGE: 3 OF 10

DATE: 04/17/90

TIME: 17:55:05

| ROW | LIN | HEAT# | LEG | EXAM EXTENT | | REM | REEL | PROBE | LOCATION | VOLTS | CURRENT | | | |
|-----|-----|-------|-----|-------------|---------|-----|------|-------|------------|-------|---------|-----|-----|----|
| | | | | PROGRAM | ACTUAL | | | | | | MIL | DEG | % | CH |
| 69 | 54 | | C | TEC-TEH | TEC-TEH | | 103 | 610UL | 08H+ 0.69 | 0.9 | | 0 | 21 | 18 |
| 89 | 54 | | H | TEH-TEC | TEH-TEC | | 073 | 610UL | VS2+ 0.71 | 1.9 | | 0 | 33 | 18 |
| 101 | 54 | | H | TEH-TEC | TEH-TEC | | 073 | 610UL | VS3+ 0.00 | 0.7 | | 0 | 18 | 18 |
| 143 | 54 | | H | TEH-TEC | TEH-TEC | | 072 | 610UL | 03C- 1.07 | 1.2 | | 0 | 20 | 18 |
| 36 | 55 | | C | TEC-TEH | TEC-TEH | | 179 | 610UL | VS4+ 0.83 | 1.5 | | 0 | 29 | 18 |
| | | | C | TEC-TEH | TEC-TEH | | 179 | 610UL | VS4- 0.69 | 1.8 | | 0 | 32 | 18 |
| 68 | 55 | | C | TEC-TEH | TEC-TEH | | 103 | 610UL | VS3+ 0.53 | 1.9 | | 0 | 31 | 18 |
| 70 | 55 | | H | TEH-TEC | TEH-TEC | | 072 | 610UL | VS3+ 1.03 | 2.2 | | 0 | 30 | 18 |
| 72 | 55 | | H | TEH-TEC | TEH-TEC | | 072 | 610UL | VS3+ 0.79 | 4.3 | | 0 | 43 | 18 |
| | | | C | VS4-TEH | TEC-TEH | RPI | 180 | 610UL | VS3+ 0.91 | 5.4 | | 0 | PID | 18 |
| 74 | 55 | | H | TEH-TEC | TEH-TEC | | 072 | 610UL | 08H+ 1.09 | 1.1 | | 0 | 18 | 18 |
| 78 | 55 | | H | TEH-TEC | TEH-TEC | | 072 | 610UL | 07H+ 1.00 | 2.0 | | 0 | 28 | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 072 | 610UL | 08H+ 1.12 | 2.6 | | 0 | 33 | 18 |
| 82 | 55 | | H | TEH-TEC | TEH-TEC | | 072 | 610UL | VS3+ 0.74 | 1.1 | | 0 | 18 | 18 |
| 86 | 55 | | H | TEH-TEC | TEH-TEC | | 072 | 610UL | 08H+ 1.03 | 2.5 | | 0 | 32 | 18 |
| 90 | 55 | | H | TEH-TEC | TEH-TEC | | 072 | 610UL | 08H+ 1.00 | 1.4 | | 0 | 22 | 18 |
| 144 | 55 | | H | TEH-TEC | TEH-TEC | | 072 | 610UL | VS1+ 0.77 | 1.7 | | 0 | 25 | 18 |
| 41 | 56 | | C | TEC-TEH | TEC-TEH | | 179 | 610UL | VS4- 0.64 | 0.8 | | 0 | 15 | 18 |
| 45 | 56 | | C | TEC-TEH | TEC-TEH | | 179 | 610UL | VS4- 0.96 | 1.2 | | 0 | 23 | 18 |
| 61 | 56 | | C | TEC-TEH | TEC-TEH | | 103 | 610UL | VS3+ 16.30 | 4.0 | | 4 | 10 | 1 |
| 69 | 56 | | C | TEC-TEH | TEC-TEH | | 103 | 610UL | VS3- 0.65 | 1.8 | | 0 | 29 | 18 |
| 79 | 56 | | H | TEH-TEC | TEH-TEC | | 072 | 610UL | 08H+ 1.00 | 3.2 | | 0 | 37 | 18 |
| 97 | 56 | | H | TEH-TEC | TEH-TEC | | 072 | 610UL | BW1+ 2.01 | 2.0 | | 0 | 29 | 18 |
| 80 | 57 | | H | TEH-TEC | TEH-TEC | | 069 | 610UL | VS3+ 0.84 | 1.8 | | 0 | 27 | 18 |
| 84 | 57 | | H | TEH-TEC | TEH-TEC | | 069 | 610UL | BW1+ 1.81 | 2.4 | | 0 | 33 | 18 |
| 98 | 57 | | H | TEH-TEC | TEH-TEC | | 071 | 610UL | BW1+ 1.75 | 1.6 | | 0 | 25 | 18 |
| 142 | 57 | | H | TEH-TEC | TEH-TEC | | 071 | 610UL | VS1+ 0.74 | 2.0 | | 0 | 30 | 18 |
| 144 | 57 | | H | TEH-TEC | TEH-TEC | | 071 | 610UL | VS1- 0.65 | 3.0 | | 0 | 37 | 18 |
| 93 | 58 | | H | TEH-TEC | TEH-TEC | | 069 | 610UL | BW1+ 1.94 | 0.9 | | 0 | 17 | 18 |
| 95 | 58 | | H | TEH-TEC | TEH-TEC | | 069 | 610UL | VS2+ 0.90 | 1.9 | | 0 | 29 | 18 |
| 99 | 58 | | H | TEH-TEC | TEH-TEC | | 069 | 610UL | BW1+ 1.76 | 2.3 | | 0 | 33 | 18 |
| 101 | 58 | | H | TEH-TEC | TEH-TEC | | 069 | 610UL | BW1+ 1.77 | 1.4 | | 0 | 23 | 18 |
| 30 | 59 | | C | TEC-TEH | TEC-TEH | RPI | 183 | 610UL | 07H+ 6.64 | 3.7 | | 0 | 43 | 18 |
| 76 | 59 | | H | TEH-TEC | TEH-TEC | | 067 | 610UL | VS3- 0.86 | 2.2 | | 0 | 34 | 18 |
| 91 | 60 | | H | TEH-TEC | TEH-TEC | | 067 | 610UL | 08H+ 0.77 | 1.0 | | 0 | 27 | 18 |
| 82 | 63 | | H | TEH-TEC | TEH-TEC | | 063 | 610UL | VS3+ 1.00 | 2.9 | | 0 | 38 | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 063 | 610UL | VS5+ 0.94 | 1.2 | | 0 | 22 | 18 |
| 84 | 63 | | H | TEH-TEC | TEH-TEC | | 063 | 610UL | VS3- 0.79 | 1.3 | | 0 | 24 | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 063 | 610UL | VS3+ 0.97 | 3.0 | | 0 | 38 | 18 |
| 87 | 64 | | C | TEH-TEC | TEH-TEC | | 061 | 610UL | 06C- 0.15 | 4.2 | | 0 | 45 | 18 |
| | | | C | 05C-TEH | TEC-TEH | RPI | 180 | 610UL | 06C- 0.38 | 5.3 | | 0 | PID | 18 |
| 121 | 64 | | H | TEH-TEC | TEH-TEC | | 061 | 610UL | VS1- 0.84 | 3.5 | | 0 | 42 | 18 |
| | | | C | VS1-TEH | TEC-TEH | RPI | 180 | 610UL | VS1- 0.79 | 5.1 | | 0 | PID | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 061 | 610UL | VS7- 0.96 | 1.3 | | 0 | 26 | 18 |
| 149 | 64 | | H | TEH-TEC | TEH-TEC | | 061 | 610UL | VS1- 0.72 | 1.4 | | 0 | 28 | 18 |

CUMULATIVE REPORT
03/90, A.P.S., PALO VERDE, UNIT 2

STEAM GENERATOR: 22

LOCATION: ALL

CRITERIA: ALL INDICATIONS (0% TO 100%,MBM,PID,BLI,DNI,DRI,DTI,EPI,UDI,
DSI)

PAGE: 4 OF 10

DATE: 04/17/90

TIME: 17:55:05

| ROW | LIN | HEAT# | LEG | EXAM EXTENT | | REM | REEL | PROBE | LOCATION | CURRENT | | | | |
|-----|-----|-------|-----|-------------|---------|-----|------|-------|------------|---------|-----|-----|-----|----|
| | | | | PROGRAM | ACTUAL | | | | | VOLTS | MIL | DEG | % | CH |
| 86 | 65 | | H | TEH-TEC | TEH-TEC | | 058 | 610UL | VS3+ 0.78 | 1.6 | | 0 | 31 | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 058 | 610UL | VS5+ 0.81 | 1.6 | | 0 | 31 | 18 |
| 121 | 66 | | H | TEH-TEC | TEH-TEC | | 058 | 610UL | VS5- 0.44 | 2.2 | | 0 | 36 | 18 |
| 78 | 67 | | H | TEH-TEC | TEH-TEC | | 052 | 610UL | VS3+ 0.79 | 1.6 | | 0 | 30 | 18 |
| 90 | 67 | | H | TEH-TEC | TEH-TEC | | 052 | 610UL | 08H+ 20.44 | 0.3 | | 124 | 20 | 17 |
| 25 | 68 | | C | TEC-TEH | TEC-TEH | | 109 | 610UL | 02C+ 22.01 | 0.6 | | 149 | 14 | 20 |
| 110 | 69 | | H | TEH-TEC | TEH-TEC | | 046 | 610UL | BW1+ 1.85 | 2.2 | | 0 | 34 | 18 |
| 112 | 69 | | H | TEH-TEC | TEH-TEC | | 046 | 610UL | BW1+ 1.57 | 2.3 | | 0 | 35 | 18 |
| 114 | 69 | | H | TEH-TEC | TEH-TEC | | 046 | 610UL | BW1+ 1.33 | 1.4 | | 0 | 27 | 18 |
| 39 | 70 | | C | TEC-TEH | TEC-TEH | | 110 | 610UL | 07C+ 0.83 | 1.6 | | 0 | 30 | 18 |
| 113 | 70 | | H | TEH-TEC | TEH-TEC | | 046 | 610UL | BW1+ 1.74 | 1.8 | | 0 | 31 | 18 |
| 72 | 71 | | H | TEH-TEC | TEH-TEC | | 041 | 610UL | VS3+ 0.00 | 1.2 | | 0 | 26 | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 041 | 610UL | 08C- 0.40 | 1.5 | | 0 | 29 | 18 |
| 138 | 71 | | H | TEH-TEC | TEH-TEC | | 042 | 610UL | VS7+ 0.61 | 1.5 | | 0 | 27 | 18 |
| 112 | 73 | | C | TEC-TEH | TEC-TEH | | 180 | 610UL | 8W1+ 1.89 | 1.5 | | 0 | 31 | 18 |
| | | | C | TEC-TEH | TEC-TEH | | 180 | 610UL | VS3- 0.97 | 0.8 | | 0 | 19 | 18 |
| 116 | 73 | | H | TEH-TEC | TEH-TEC | | 037 | 610UL | BW1+ 1.50 | 1.1 | | 0 | 25 | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 037 | 610UL | VS3- 0.41 | 1.9 | | 0 | 33 | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 037 | 610UL | VS5- 0.41 | 1.9 | | 0 | 33 | 18 |
| 113 | 74 | | H | TEH-TEC | TEH-TEC | | 035 | 610UL | BW1+ 1.79 | 1.5 | | 0 | 30 | 18 |
| 116 | 75 | | H | TEH-TEC | TEH-TEC | | 029 | 610UL | 09H+ 0.94 | 1.5 | | 0 | 27 | 18 |
| 155 | 76 | | H | TEH-TEC | TEH-TEC | | 027 | 610UL | VS5- 1.00 | 0.8 | | 0 | 16 | 18 |
| 48 | 77 | | C | TEC-TEH | TEC-TEH | | 115 | 610UL | VS4- 0.83 | 1.0 | | 0 | 25 | 18 |
| 116 | 77 | | H | TEH-TEC | TEH-TEC | | 025 | 610UL | 09H+ 0.02 | 1.8 | | 0 | 31 | 18 |
| 119 | 78 | | H | TEH-TEC | TEH-TEC | | 025 | 610UL | 09H- 0.15 | 0.5 | | 0 | 13 | 18 |
| 117 | 80 | | H | TEH-TEC | TEH-TEC | | 024 | 610UL | 09H+ 0.00 | 1.1 | | 0 | 22 | 18 |
| 149 | 80 | | H | TEH-TEC | TEH-TEC | | 022 | 610UL | VS3- 0.47 | 2.5 | | 0 | 37 | 18 |
| 82 | 81 | | H | TEH-TEC | TEH-TEC | | 022 | 610UL | VS3+ 0.69 | 3.1 | | 0 | 40 | 18 |
| | | | C | VS4-TEH | TEC-TEH | RPI | 181 | 610UL | VS3+ 0.69 | 3.7 | | 0 | PID | 18 |
| 116 | 81 | | H | TEH-TEC | TEH-TEC | | 022 | 610UL | 09H- 0.28 | 1.6 | | 0 | 30 | 18 |
| 152 | 81 | | H | TEH-TEC | TEH-TEC | | 022 | 610UL | VS5- 1.00 | 1.2 | | 0 | 25 | 18 |
| 83 | 82 | | H | TEH-TEC | TEH-TEC | | 022 | 610UL | VS3+ 0.80 | 1.4 | | 0 | 28 | 18 |
| 89 | 82 | | H | TEH-TEC | TEH-TEC | | 022 | 610UL | 07C+ 33.83 | 4.8 | | 11 | 28 | 1 |
| 114 | 83 | | H | TEH-03C | TEH-TEC | | 020 | 610UL | 08H- 1.04 | 2.6 | | 0 | 36 | 18 |
| | | | C | 09H-TEH | TEC-TEH | RPI | 181 | 610UL | 08H+ 0.56 | 2.5 | | 0 | PID | 18 |
| | | | H | TEH-03C | TEH-TEC | | 020 | 610UL | 08H+ 1.04 | 3.5 | | 0 | 41 | 18 |
| 116 | 83 | | C | 09H-TEH | TEC-TEH | RPI | 181 | 610UL | 09H- 0.95 | 3.4 | | 0 | PID | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 020 | 610UL | 09H- 0.38 | 4.4 | | 0 | 45 | 18 |
| 118 | 83 | | H | TEH-TEC | TEH-TEC | | 020 | 610UL | 08H+ 0.86 | 3.5 | | 0 | 42 | 18 |
| | | | C | 09H-TEH | TEC-TEH | RPI | 181 | 610UL | 08H+ 0.86 | 1.8 | | 0 | PID | 18 |
| 33 | 84 | | C | TEC-TEH | TEC-TEH | | 119 | 610UL | BW1- 2.15 | 2.9 | | 0 | 37 | 18 |
| | | | C | TEC-TEH | TEC-TEH | | 119 | 610UL | VS4- 1.01 | 1.9 | | 0 | 31 | 18 |
| 117 | 84 | | C | BW1-TEH | TEC-TEH | RPI | 181 | 610UL | 09H- 0.13 | 7.3 | | 0 | PID | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 019 | 610UL | 09H+ 0.13 | 8.5 | | 0 | 53 | 18 |
| 34 | 85 | | C | TEC-TEH | TEC-TEH | | 119 | 610UL | BW1+ 2.28 | 4.1 | | 0 | 44 | 18 |

45

1. The first part of the document is a list of names and addresses of the members of the committee. The names are listed in alphabetical order, and the addresses are listed below each name. The list is as follows:

| Name | Address |
|--------------|---|
| Mr. A. B. C. | 123 Main St., New York, N.Y. |
| Mr. D. E. F. | 456 Elm St., New York, N.Y. |
| Mr. G. H. I. | 789 Broadway, New York, N.Y. |
| Mr. J. K. L. | 1010 Fifth Ave., New York, N.Y. |
| Mr. M. N. O. | 1111 Sixth Ave., New York, N.Y. |
| Mr. P. Q. R. | 1212 Seventh Ave., New York, N.Y. |
| Mr. S. T. U. | 1313 Eighth Ave., New York, N.Y. |
| Mr. V. W. X. | 1414 Ninth Ave., New York, N.Y. |
| Mr. Y. Z. A. | 1515 Tenth Ave., New York, N.Y. |
| Mr. B. C. D. | 1616 Eleventh Ave., New York, N.Y. |
| Mr. E. F. G. | 1717 Twelfth Ave., New York, N.Y. |
| Mr. H. I. J. | 1818 Thirteenth Ave., New York, N.Y. |
| Mr. K. L. M. | 1919 Fourteenth Ave., New York, N.Y. |
| Mr. N. O. P. | 2020 Fifteenth Ave., New York, N.Y. |
| Mr. Q. R. S. | 2121 Sixteenth Ave., New York, N.Y. |
| Mr. T. U. V. | 2222 Seventeenth Ave., New York, N.Y. |
| Mr. W. X. Y. | 2323 Eighteenth Ave., New York, N.Y. |
| Mr. Z. A. B. | 2424 Nineteenth Ave., New York, N.Y. |
| Mr. C. D. E. | 2525 Twentieth Ave., New York, N.Y. |
| Mr. F. G. H. | 2626 Twenty-first Ave., New York, N.Y. |
| Mr. I. J. K. | 2727 Twenty-second Ave., New York, N.Y. |
| Mr. L. M. N. | 2828 Twenty-third Ave., New York, N.Y. |
| Mr. O. P. Q. | 2929 Twenty-fourth Ave., New York, N.Y. |
| Mr. R. S. T. | 3030 Twenty-fifth Ave., New York, N.Y. |
| Mr. U. V. W. | 3131 Twenty-sixth Ave., New York, N.Y. |
| Mr. X. Y. Z. | 3232 Twenty-seventh Ave., New York, N.Y. |
| Mr. A. B. C. | 3333 Twenty-eighth Ave., New York, N.Y. |
| Mr. D. E. F. | 3434 Twenty-ninth Ave., New York, N.Y. |
| Mr. G. H. I. | 3535 Thirtieth Ave., New York, N.Y. |
| Mr. J. K. L. | 3636 Thirty-first Ave., New York, N.Y. |
| Mr. M. N. O. | 3737 Thirty-second Ave., New York, N.Y. |
| Mr. P. Q. R. | 3838 Thirty-third Ave., New York, N.Y. |
| Mr. S. T. U. | 3939 Thirty-fourth Ave., New York, N.Y. |
| Mr. V. W. X. | 4040 Thirty-fifth Ave., New York, N.Y. |
| Mr. Y. Z. A. | 4141 Thirty-sixth Ave., New York, N.Y. |
| Mr. B. C. D. | 4242 Thirty-seventh Ave., New York, N.Y. |
| Mr. E. F. G. | 4343 Thirty-eighth Ave., New York, N.Y. |
| Mr. H. I. J. | 4444 Thirty-ninth Ave., New York, N.Y. |
| Mr. K. L. M. | 4545 Fortieth Ave., New York, N.Y. |
| Mr. N. O. P. | 4646 Forty-first Ave., New York, N.Y. |
| Mr. Q. R. S. | 4747 Forty-second Ave., New York, N.Y. |
| Mr. T. U. V. | 4848 Forty-third Ave., New York, N.Y. |
| Mr. W. X. Y. | 4949 Forty-fourth Ave., New York, N.Y. |
| Mr. Z. A. B. | 5050 Forty-fifth Ave., New York, N.Y. |
| Mr. C. D. E. | 5151 Forty-sixth Ave., New York, N.Y. |
| Mr. F. G. H. | 5252 Forty-seventh Ave., New York, N.Y. |
| Mr. I. J. K. | 5353 Forty-eighth Ave., New York, N.Y. |
| Mr. L. M. N. | 5454 Forty-ninth Ave., New York, N.Y. |
| Mr. O. P. Q. | 5555 Fiftieth Ave., New York, N.Y. |
| Mr. R. S. T. | 5656 Fifty-first Ave., New York, N.Y. |
| Mr. U. V. W. | 5757 Fifty-second Ave., New York, N.Y. |
| Mr. X. Y. Z. | 5858 Fifty-third Ave., New York, N.Y. |
| Mr. A. B. C. | 5959 Fifty-fourth Ave., New York, N.Y. |
| Mr. D. E. F. | 6060 Fifty-fifth Ave., New York, N.Y. |
| Mr. G. H. I. | 6161 Fifty-sixth Ave., New York, N.Y. |
| Mr. J. K. L. | 6262 Fifty-seventh Ave., New York, N.Y. |
| Mr. M. N. O. | 6363 Fifty-eighth Ave., New York, N.Y. |
| Mr. P. Q. R. | 6464 Fifty-ninth Ave., New York, N.Y. |
| Mr. S. T. U. | 6565 Sixtieth Ave., New York, N.Y. |
| Mr. V. W. X. | 6666 Sixty-first Ave., New York, N.Y. |
| Mr. Y. Z. A. | 6767 Sixty-second Ave., New York, N.Y. |
| Mr. B. C. D. | 6868 Sixty-third Ave., New York, N.Y. |
| Mr. E. F. G. | 6969 Sixty-fourth Ave., New York, N.Y. |
| Mr. H. I. J. | 7070 Sixty-fifth Ave., New York, N.Y. |
| Mr. K. L. M. | 7171 Sixty-sixth Ave., New York, N.Y. |
| Mr. N. O. P. | 7272 Sixty-seventh Ave., New York, N.Y. |
| Mr. Q. R. S. | 7373 Sixty-eighth Ave., New York, N.Y. |
| Mr. T. U. V. | 7474 Sixty-ninth Ave., New York, N.Y. |
| Mr. W. X. Y. | 7575 Seventieth Ave., New York, N.Y. |
| Mr. Z. A. B. | 7676 Seventy-first Ave., New York, N.Y. |
| Mr. C. D. E. | 7777 Seventy-second Ave., New York, N.Y. |
| Mr. F. G. H. | 7878 Seventy-third Ave., New York, N.Y. |
| Mr. I. J. K. | 7979 Seventy-fourth Ave., New York, N.Y. |
| Mr. L. M. N. | 8080 Seventy-fifth Ave., New York, N.Y. |
| Mr. O. P. Q. | 8181 Seventy-sixth Ave., New York, N.Y. |
| Mr. R. S. T. | 8282 Seventy-seventh Ave., New York, N.Y. |
| Mr. U. V. W. | 8383 Seventy-eighth Ave., New York, N.Y. |
| Mr. X. Y. Z. | 8484 Seventy-ninth Ave., New York, N.Y. |
| Mr. A. B. C. | 8585 Eightieth Ave., New York, N.Y. |
| Mr. D. E. F. | 8686 Eighty-first Ave., New York, N.Y. |
| Mr. G. H. I. | 8787 Eighty-second Ave., New York, N.Y. |
| Mr. J. K. L. | 8888 Eighty-third Ave., New York, N.Y. |
| Mr. M. N. O. | 8989 Eighty-fourth Ave., New York, N.Y. |
| Mr. P. Q. R. | 9090 Eighty-fifth Ave., New York, N.Y. |
| Mr. S. T. U. | 9191 Eighty-sixth Ave., New York, N.Y. |
| Mr. V. W. X. | 9292 Eighty-seventh Ave., New York, N.Y. |
| Mr. Y. Z. A. | 9393 Eighty-eighth Ave., New York, N.Y. |
| Mr. B. C. D. | 9494 Eighty-ninth Ave., New York, N.Y. |
| Mr. E. F. G. | 9595 Ninetieth Ave., New York, N.Y. |
| Mr. H. I. J. | 9696 Ninety-first Ave., New York, N.Y. |
| Mr. K. L. M. | 9797 Ninety-second Ave., New York, N.Y. |
| Mr. N. O. P. | 9898 Ninety-third Ave., New York, N.Y. |
| Mr. Q. R. S. | 9999 Ninety-fourth Ave., New York, N.Y. |

CUMULATIVE REPORT
03/90, A.P.S., PALO VERDE, UNIT 2

STEAM GENERATOR: 22

LOCATION: ALL

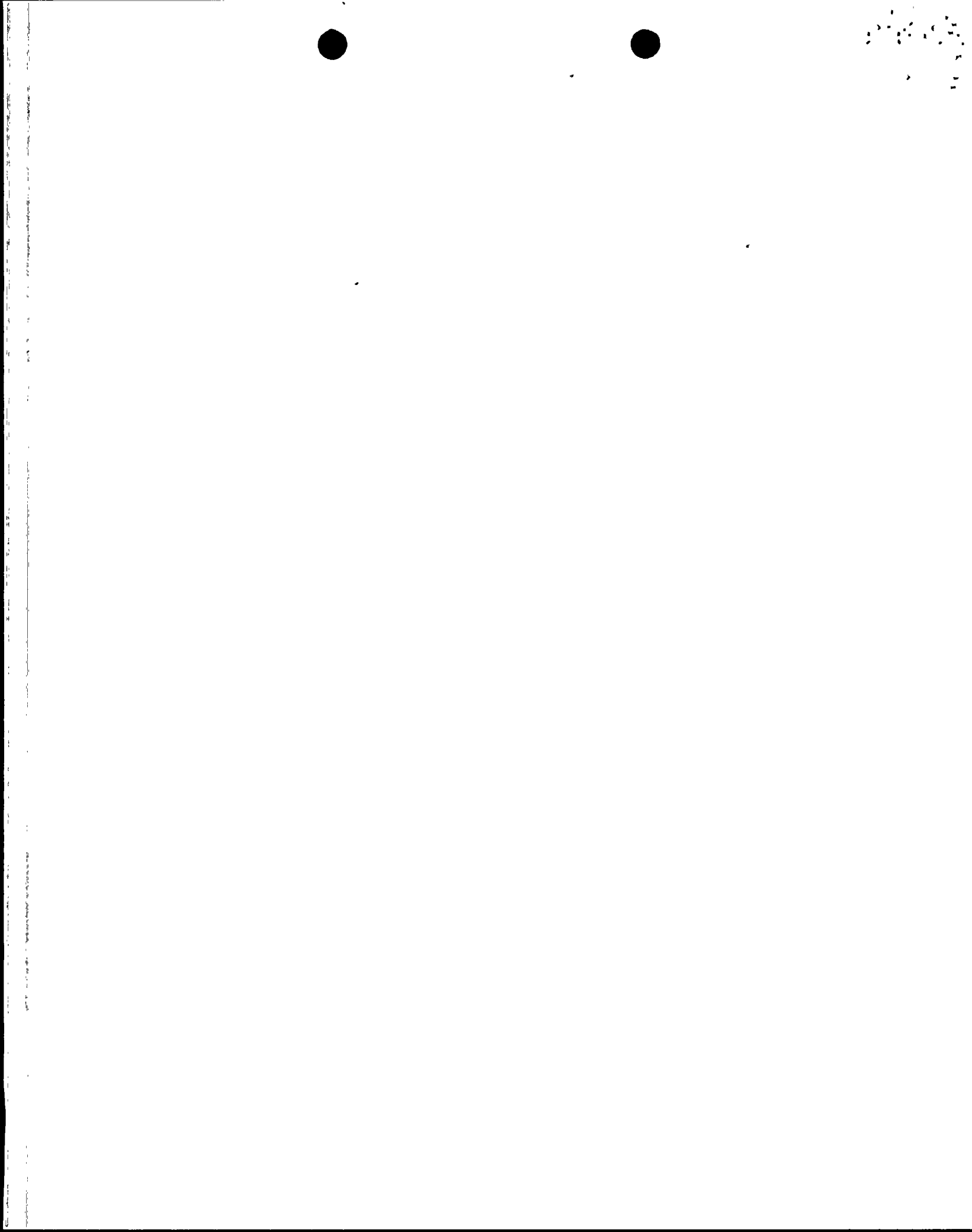
CRITERIA: ALL INDICATIONS (0% TO 100%,MBM,PID,BLI,DNI,DRI,DTI,EPI,UDI,
DSI)

PAGE: 5 OF 10

DATE: 04/17/90

TIME: 17:55:05

| ROW | LIN | HEAT# | LEG | EXAM EXTENT | | REM | REEL | PROBE | LOCATION | CURRENT | | | | |
|-----|-----|-------|-----|-------------|---------|-----|------|-------|-----------|---------|-----|-----|-----|----|
| | | | | PROGRAM | ACTUAL | | | | | VOLTS | MIL | DEG | % | CH |
| 34 | 85 | | H | TEH-BWI | TEH-TEC | RPI | 182 | 610UL | BW1+ 2.28 | 3.8 | | 0 | PID | 18 |
| | | | C | TEC-TEH | TEC-TEH | | 119 | 610UL | VS4+ 0.76 | 1.8 | | 0 | 30 | 18 |
| | | | C | TEC-TEH | TEC-BW2 | | 175 | 610UL | BW2- 1.50 | 7.4 | | 0 | PID | 18 |
| | | | H | TEH-8W1 | TEH-TEC | RPI | 182 | 610UL | BW2- 1.50 | 6.7 | | 0 | PID | 18 |
| | | | C | TEC-TEH | TEC-TEH | | 119 | 610UL | BW2- 1.74 | 7.1 | | 0 | 52 | 18 |
| 110 | 85 | | H | TEH-TEC | TEH-TEC | | 017 | 610UL | BW1+ 1.08 | 1.8 | | 0 | 31 | 18 |
| 114 | 85 | | H | TEH-TEC | TEH-TEC | | 017 | 610UL | BW1+ 0.81 | 2.9 | | 0 | 39 | 18 |
| 116 | 85 | | H | TEH-TEC | TEH-TEC | | 017 | 610UL | 09H- 1.00 | 2.0 | | 0 | 33 | 18 |
| 113 | 86 | | H | TEH-TEC | TEH-TEC | | 017 | 610UL | 08H- 0.15 | 1.2 | | 0 | 26 | 18 |
| | | | H | TEH-TEC | TEH-TEC | | 017 | 610UL | 08H+ 0.93 | 2.2 | | 0 | 35 | 18 |
| 115 | 86 | | H | TEH-TEC | TEH-TEC | | 017 | 610UL | 08H+ 0.92 | 2.6 | | 0 | 37 | 18 |
| 117 | 86 | | C | TEH-TEC | TEH-TEC | | 017 | 610UL | 08H- 0.46 | 1.7 | | 0 | 31 | 18 |
| 38 | 87 | | C | TEC-TEH | TEC-TEH | | 119 | 610UL | VS4- 0.70 | 0.6 | | 0 | 12 | 18 |
| 112 | 87 | | C | TEC-TEH | TEC-TEH | | 181 | 610UL | VS2- 0.54 | 1.2 | | 0 | 24 | 18 |
| 120 | 87 | | H | TEH-TEC | TEH-TEC | | 015 | 610UL | 09H+ 0.55 | 1.4 | | 0 | 24 | 18 |
| 117 | 88 | | H | TEH-TSC | TEH-TEC | | 015 | 610UL | 09H+ 0.09 | 4.2 | | 0 | 43 | 18 |
| | | | C | TEC-TSC | TEC-07H | RPI | 181 | 610UL | 09H+ 0.09 | 4.1 | | 0 | PID | 18 |
| 149 | 88 | | H | TEH-TEC | TEH-TEC | | 011 | 610UL | VS1- 1.00 | 2.7 | | 0 | 36 | 18 |
| 159 | 88 | | H | TEH-TEC | TEH-TEC | | 011 | 610UL | 02C- 0.94 | 1.7 | | 0 | 28 | 18 |
| 114 | 89 | | H | TEH-TEC | TEH-TEC | | 011 | 610UL | BW1+ 1.53 | 3.4 | | 0 | 39 | 18 |
| 116 | 89 | | H | TEH-TEC | TEH-TEC | | 011 | 610UL | 09H+ 1.47 | 2.0 | | 0 | 34 | 18 |
| 37 | 90 | | C | TEC-TEH | TEC-07H | | 175 | 610UL | BW1- 2.40 | 9.7 | | 0 | PID | 18 |
| | | | C | TEC-TEH | TEC-TEH | | 121 | 610UL | BW1- 2.04 | 9.8 | | 0 | 55 | 18 |
| | | | H | TEH-09H | TEH-TEC | RPI | 182 | 610UL | BW1- 2.04 | 10.4 | | 0 | PID | 18 |
| 117 | 90 | | H | TEH-TEC | TEH-TEC | | 009 | 610UL | 09H+ 0.0 | 1.8 | | 0 | 28 | 18 |
| 159 | 90 | | H | TEH-TEC | TEH-TEC | | 009 | 610UL | BW2+ 2.00 | 1.7 | | 0 | 28 | 18 |
| 38 | 91 | | C | TEC-TEH | TEC-TEH | | 121 | 610UL | BW1- 1.88 | 3.6 | | 0 | 43 | 18 |
| | | | C | TEC-TEH | TEC-06H | PID | 175 | 610UL | BW1- 1.88 | 3.1 | | 0 | PID | 18 |
| 84 | 91 | | C | TEC-TEH | TEC-TEH | | 133 | 610UL | VS3- 0.81 | 1.4 | | 0 | 23 | 18 |
| 116 | 91 | | C | TEC-TEH | TEC-TEH | | 136 | 610UL | BW1- 0.76 | 2.8 | | 0 | 37 | 18 |
| 146 | 91 | | C | TEC-TEH | TEC-TEH | | 139 | 610UL | VS3- 0.82 | 2.5 | | 0 | 37 | 18 |
| 158 | 91 | | H | TEH-TEC | TEH-TEC | | 009 | 610UL | 02C- 0.80 | 2.4 | | 0 | 34 | 18 |
| 48 | 93 | | C | TEC-TEH | TEC-TEH | | 123 | 610UL | VS4- 0.66 | 1.2 | | 0 | 28 | 18 |
| 86 | 93 | | C | TEC-TEH | TEC-TEH | | 133 | 610UL | VS5+ 0.84 | 1.3 | | 0 | 19 | 18 |
| 114 | 93 | | C | TEC-TEH | TEC-TEH | | 136 | 610UL | BW1+ 2.14 | 1.3 | | 0 | 28 | 18 |
| 142 | 93 | | C | TEC-TEH | TEC-TEH | | 139 | 610UL | BW1+ 1.87 | 0.8 | | 0 | 16 | 18 |
| 39 | 94 | | C | TEC-TEH | TEC-TEH | | 123 | 610UL | BW2- 1.75 | 1.5 | | 0 | 32 | 18 |
| 113 | 94 | | C | TEC-TEH | TEC-TEH | | 136 | 610UL | BW1+ 1.04 | 0.8 | | 0 | 20 | 18 |
| 129 | 94 | | C | TEC-TEH | TEC-TEH | | 100 | 610UL | 09H+ 0.81 | 1.1 | | 0 | 25 | 18 |
| | | | C | TEC-TEH | TEC-TEH | | 100 | 610UL | BW1+ 1.01 | 3.4 | | 0 | 43 | 18 |
| | | | H | TEH-BWI | TEH-TEC | RPI | 182 | 610UL | BW1+ 1.09 | 3.1 | | 0 | PID | 18 |
| 153 | 94 | | H | TEH-TEC | TEH-TEC | | 009 | 610UL | VS7- 1.00 | 1.5 | | 0 | 26 | 18 |
| 159 | 94 | | H | TEH-TEC | TEH-TEC | | 009 | 610UL | BW2+ 2.00 | 2.8 | | 0 | 36 | 18 |
| 126 | 95 | | C | TEC-TEH | TEC-TEH | | 100 | 610UL | BW1+ 2.53 | 1.3 | | 0 | 29 | 18 |
| 152 | 95 | | C | TEC-TEH | TEC-TEH | | 100 | 610UL | VS5+ 0.77 | 2.0 | | 0 | 35 | 18 |



CUMULATIVE REPORT
03/90, A.P.S., PALO VERDE, UNIT 2

STEAM GENERATOR: 22

LOCATION: ALL

CRITERIA: ALL INDICATIONS (0% TO 100%, MBM, PID, BLI, DNI, DRI, DTI, EPI, UDI, DSI)

PAGE: 6 OF 10

DATE: 04/17/90

TIME: 17:55:05

| ROW | LIN | HEAT# | LEG | EXAM PROGRAM | EXTENT ACTUAL | REM | REEL | PROBE | LOCATION | VOLTS | CURRENT MIL | DEG | % | CH |
|-----|-----|-------|-----|--------------|---------------|-----|------|-------|----------|-------|-------------|-----|-----|----|
| 152 | 95 | | C | TEC-TEH | TEC-TEH | | 100 | 610UL | 09C+ | 0.71 | 2.0 | 0 | 35 | 18 |
| 153 | 96 | | C | TEC-TEH | TEC-TEH | | 100 | 610UL | VS1- | 0.91 | 2.8 | 0 | 41 | 18 |
| | | | H | TEH-BW1 | TEH-TEC | RPI | 182 | 610UL | VS1- | 0.69 | 3.0 | 0 | PID | 18 |
| 40 | 97 | | C | TEC-TEH | TEC-TEH | | 064 | 610UL | VS4- | 0.66 | 1.5 | 0 | 24 | 18 |
| 158 | 97 | | H | TEH-BW1 | TEH-TEC | RPI | 182 | 610UL | BW1+ | 1.86 | 5.3 | 0 | PID | 18 |
| | | | C | TEC-TEH | TEC-TEH | | 100 | 610UL | BW1+ | 1.88 | 6.2 | 0 | 50 | 18 |
| | | | C | TEC-TEH | TEC-TEH | | 100 | 610UL | BW2- | 1.97 | 2.3 | 0 | 38 | 18 |
| | | | C | TEC-TEH | TEC-TEH | | 100 | 610UL | 09C- | 1.06 | 3.2 | 0 | 42 | 18 |
| | | | H | TEH-BW1 | TEH-TEC | RPI | 182 | 610UL | 09C- | 1.06 | 2.6 | 0 | PID | 18 |
| | | | C | TEC-TEH | TEC-BW2 | | 175 | 610UL | 09C- | 1.11 | 2.3 | 0 | PID | 18 |
| 41 | 98 | | C | TEC-TEH | TEC-TEH | | 064 | 610UL | BW1- | 2.17 | 1.7 | 0 | 30 | 18 |
| 113 | 98 | | C | TEC-TEH | TEC-TEH | | 136 | 610UL | BW1+ | 1.79 | 1.3 | 0 | 28 | 18 |
| 155 | 98 | | C | TEC-TEH | TEC-TEH | | 100 | 610UL | VS5- | 0.79 | 2.4 | 0 | 39 | 18 |
| 159 | 98 | | H | TEH-BW1 | TEH-TEC | RPI | 182 | 610UL | BW1+ | 1.41 | 2.8 | 0 | PID | 18 |
| | | | C | TEC-TEH | TEC-TEH | | 100 | 610UL | BW1+ | 2.37 | 2.9 | 0 | 41 | 18 |
| | | | C | TEC-TEH | TEC-TEH | | 100 | 610UL | VS1+ | 0.00 | 2.8 | 0 | 41 | 18 |
| | | | H | TEH-BW1 | TEH-TEC | RPI | 182 | 610UL | VS1+ | 0.77 | 2.8 | 0 | PID | 18 |
| | | | C | TEC-TEH | TEC-TEH | | 100 | 610UL | VS7+ | 0.82 | 1.9 | 0 | 34 | 18 |
| | | | C | TEC-TEH | TEC-BW2 | | 175 | 610UL | BW2- | 1.32 | 2.3 | 0 | 35 | 18 |
| | | | C | TEC-TEH | TEC-TEH | | 100 | 610UL | BW2- | 1.75 | 2.2 | 0 | 37 | 18 |
| 74 | 99 | | C | TEC-TEH | TEC-TEH | | 129 | 610UL | VS5- | 0.78 | 1.2 | 0 | 23 | 18 |
| 114 | 99 | | C | TEC-TEH | TEC-TEH | | 136 | 610UL | BW1+ | 2.71 | 1.4 | 0 | 29 | 18 |
| 39 | 100 | | C | TEC-TEH | TEC-TEH | | 066 | 610UL | VS4+ | 0.87 | 1.8 | 0 | 32 | 18 |
| 117 | 100 | | H | TEH-TEC | TEH-TEC | | 101 | 610UL | 09H- | 0.34 | 1.7 | 0 | 32 | 18 |
| 155 | 100 | | C | TEC-TEH | TEC-TEH | | 099 | 610UL | VS5- | 0.95 | 0.9 | 0 | 19 | 18 |
| 157 | 100 | | C | TEC-TEH | TEC-TEH | | 099 | 610UL | VS7- | 0.18 | 1.8 | 0 | 30 | 18 |
| | | | C | TEC-TEH | TEC-TEH | | 099 | 610UL | VS7- | 0.76 | 1.1 | 0 | 21 | 18 |
| | | | C | TEC-TEH | TEC-TEH | | 099 | 610UL | BW2+ | 1.00 | 3.0 | 0 | 39 | 18 |
| 159 | 100 | | C | TEC-TEH | TEC-TEH | | 099 | 610UL | VS7+ | 0.77 | 1.8 | 0 | 30 | 18 |
| | | | C | TEC-TEH | TEC-TEH | | 099 | 610UL | VS7- | 0.03 | 1.5 | 0 | 27 | 18 |
| | | | C | TEC-TEH | TEC-TEH | | 099 | 610UL | VS7- | 0.89 | 2.9 | 0 | 38 | 18 |
| | | | C | TEC-TEH | TEC-TEH | | 099 | 610UL | BW2+ | 1.33 | 1.3 | 0 | 24 | 18 |
| 116 | 101 | | H | TEH-TEC | TEH-TEC | | 097 | 610UL | 09H- | 1.50 | 2.2 | 0 | 33 | 18 |
| 132 | 101 | | C | TEC-TEH | TEC-TEH | | 099 | 610UL | VS3+ | 0.30 | 1.5 | 0 | 32 | 18 |
| 156 | 101 | | C | TEC-TEH | TEC-TEH | | 099 | 610UL | VS5- | 0.94 | 2.2 | 0 | 33 | 18 |
| | | | C | TEC-TEH | TEC-TEH | | 099 | 610UL | VS7- | 0.83 | 2.1 | 0 | 33 | 18 |
| 158 | 101 | | C | TEC-TEH | TEC-TEH | | 099 | 610UL | BW1+ | 1.88 | 1.2 | 0 | 28 | 18 |
| 113 | 102 | | H | TEH-TEC | TEH-TEC | | 097 | 610UL | 09H+ | 1.08 | 1.7 | 0 | 29 | 18 |
| 36 | 103 | | C | TEC-TEH | TEC-TEH | | 068 | 610UL | BW2- | 1.02 | 1.9 | 0 | 33 | 18 |
| 40 | 103 | | C | TEC-TEH | TEC-TEH | | 068 | 610UL | VS4- | 0.96 | 2.3 | 0 | 36 | 18 |
| 108 | 103 | | H | TEH-TEC | TEH-TEC | | 094 | 610UL | BW1+ | 1.88 | 0.9 | 0 | 18 | 18 |
| 114 | 103 | | H | TEH-TEC | TEH-TEC | | 094 | 610UL | BW1+ | 1.64 | 1.5 | 117 | 25 | 18 |
| 146 | 103 | | C | TEC-TEH | TEC-TEH | | 098 | 610UL | VS3- | 0.90 | 1.9 | 0 | 33 | 18 |
| 41 | 104 | | C | TEC-TEH | TEC-TEH | | 068 | 610UL | VS4+ | 0.72 | 1.1 | 0 | 24 | 18 |
| 82 | 105 | | C | TEC-TEH | TEC-TEH | | 068 | 610UL | VS5+ | 0.53 | 1.4 | 0 | 27 | 18 |

Conam Nuclear

CUMULATIVE REPORT
03/90, A.P.S., PALO VERDE, UNIT 2

STEAM GENERATOR: 22

LOCATION: ALL

CRITERIA: ALL INDICATIONS (0% TO 100%, MBM, PID, BLI, DNI, DRI, DTI, EPI, UDI, DSI)

PAGE: 7 OF 10

DATE: 04/17/90

TIME: 17:55:05

| ROW | LIN | HEAT# | LEG | PROGRAM | EXAM EXTENT | | REM | REEL | PROBE | LOCATION | VOLTS | CURRENT | | | |
|-----|-----|-------|-----|---------|-------------|-----|-----|------|-------|-----------|-------|---------|-----|-----|----|
| | | | | | ACTUAL | | | | | | | MIL | DEG | % | CH |
| 81 | 106 | | C | TEC-TEH | TEC-TEH | | | 068 | 610UL | VS5- 0.80 | 1.5 | | 0 | 29 | 18 |
| 149 | 106 | | C | TEC-TEH | TEC-TEH | | | 096 | 610UL | VS3- 0.66 | 1.2 | | 0 | 25 | 18 |
| 86 | 107 | | H | TEH-TEC | TEH-TEC | | | 094 | 610UL | VS5+ 0.83 | 1.9 | | 0 | 29 | 18 |
| 140 | 109 | | C | TEC-TEH | TEC-TEH | | | 095 | 610UL | BW1+ 2.13 | 1.3 | | 0 | 28 | 18 |
| 31 | 110 | | C | TEC-TEH | TEC-TEH | | | 176 | 610UL | VS4- 0.83 | 1.0 | | 0 | 26 | 18 |
| 42 | 111 | | H | TEH-TEC | TEH-TEC | | | 146 | 610UL | VS4- 0.21 | 1.0 | | 0 | 18 | 18 |
| 117 | 112 | | H | TEH-TEC | TEH-TEC | | | 089 | 610UL | 09H- 1.39 | 1.1 | | 0 | 22 | 18 |
| 153 | 112 | | C | TEC-TEH | TEC-TEH | | | 091 | 610UL | BW2+ 1.29 | 1.6 | | 0 | 29 | 18 |
| 157 | 112 | | C | TEC-TEH | TEC-TEH | | | 091 | 610UL | BW2- 1.41 | 0.7 | | 0 | 17 | 18 |
| 154 | 113 | | C | TEC-TEH | TEC-TEH | | | 091 | 610UL | BW2- 1.49 | 0.6 | | 0 | 16 | 18 |
| 156 | 113 | | C | TEC-TEH | TEC-TEH | | | 091 | 610UL | BW2- 1.68 | 2.1 | | 0 | 36 | 18 |
| | | | C | TEC-TEH | TEC-TEH | | | 091 | 610UL | 09C- 1.00 | 1.6 | | 0 | 29 | 18 |
| 149 | 114 | | C | TEC-TEH | TEC-TEH | | | 090 | 610UL | VS1- 0.79 | 0.9 | | 0 | 22 | 18 |
| 57 | 118 | | C | TEC-TEH | TEC-TEH | | | 062 | 610UL | VS3+ 0.87 | 0.6 | | 0 | 16 | 18 |
| 24 | 121 | | C | TEC-TEH | TEC-TEH | | | 034 | 610UL | VS4- 0.78 | 1.2 | | 0 | 26 | 18 |
| 61 | 122 | | C | TEC-TEH | TEC-TEH | | | 060 | 610UL | BW1- 3.73 | 5.6 | | 0 | 49 | 18 |
| | | | C | TEC-TEH | BW1-TEH | | | 176 | 610UL | BW1- 3.73 | 3.5 | | 0 | PID | 18 |
| | | | C | TEC-TEH | TEC-TEH | | | 060 | 610UL | BW1- 2.54 | 2.6 | | 0 | 39 | 18 |
| | | | C | TEC-TEH | BW1-TEH | | | 176 | 610UL | BW1- 2.54 | 1.4 | | 0 | PID | 18 |
| | | | H | TEH-TEC | TEH-TEC | RPI | | 145 | 610UL | BW1- 2.28 | 1.6 | | 0 | PID | 18 |
| 150 | 125 | | C | TEC-TEH | TEC-TEH | | | 079 | 610UL | VS1- 0.98 | 1.4 | | 0 | 25 | 18 |
| 83 | 126 | | C | TEC-TEH | TEC-TEH | | | 059 | 610UL | VS3- 0.91 | 0.8 | | 0 | 19 | 18 |
| 142 | 127 | | C | TEC-TEH | TEC-TEH | | | 079 | 610UL | VS5+ 0.70 | 2.3 | | 0 | 34 | 18 |
| 81 | 128 | | C | TEC-TEH | TEC-TEH | | | 059 | 610UL | VS3- 0.24 | 1.2 | | 0 | 27 | 18 |
| 88 | 129 | | H | TEH-TEC | TEH-TEC | | | 083 | 610UL | 08H+ 0.70 | 2.2 | | 0 | 31 | 18 |
| 90 | 129 | | H | TEH-TEC | TEH-TEC | | | 083 | 610UL | 08H+ 0.85 | 3.1 | | 0 | 38 | 18 |
| 96 | 129 | | H | TEH-TEC | TEH-TEC | | | 083 | 610UL | 08H+ 0.82 | 2.0 | | 0 | 29 | 18 |
| 87 | 130 | | H | TEH-TEC | TEH-TEC | | | 083 | 610UL | 07H+ 0.79 | 1.5 | | 0 | 23 | 18 |
| 89 | 130 | | H | TEH-TEC | TEH-TEC | | | 083 | 610UL | 08H+ 0.70 | 1.2 | | 0 | 22 | 18 |
| 95 | 130 | | H | TEH-TEC | TEH-TEC | | | 083 | 610UL | BW1- 1.64 | 1.1 | | 0 | 20 | 18 |
| 97 | 130 | | H | TEH-TEC | TEH-TEC | | | 083 | 610UL | 08H+ 0.91 | 1.8 | | 0 | 26 | 18 |
| 103 | 130 | | H | TEH-TEC | TEH-TEC | | | 083 | 610UL | BW1+ 1.90 | 1.3 | | 0 | 21 | 18 |
| 84 | 131 | | C | TEC-TEH | TEC-TEH | | | 040 | 610UL | 08H+ 0.68 | 1.1 | | 0 | 27 | 18 |
| 92 | 131 | | H | TEH-TEC | TEH-TEC | | | 083 | 610UL | 08H+ 0.82 | 2.9 | | 0 | 36 | 18 |
| 94 | 131 | | H | TEH-TEC | TEH-TEC | | | 083 | 610UL | BW1+ 1.81 | 3.5 | | 0 | 39 | 18 |
| 96 | 131 | | H | TEH-TEC | TEH-TEC | | | 083 | 610UL | 08H+ 0.97 | 2.6 | | 0 | 33 | 18 |
| 67 | 132 | | C | TEC-TEH | TEC-TEH | | | 043 | 610UL | 07C- 1.73 | 2.9 | | 0 | 41 | 18 |
| | | | C | TEC-TEH | 07C-TEH | PID | | 176 | 610UL | 07C- 1.73 | 1.7 | | 0 | PID | 18 |
| 79 | 132 | | C | TEC-TEH | TEC-TEH | | | 043 | 610UL | 08H+ 0.98 | 2.4 | | 0 | 39 | 18 |
| 91 | 132 | | H | TEH-TEC | TEH-TEC | | | 081 | 610UL | 08H+ 1.04 | 3.3 | | 0 | 39 | 18 |
| 101 | 132 | | H | TEH-TEC | TEH-TEC | | | 081 | 610UL | 08H- 0.22 | 0.7 | | 0 | 14 | 18 |
| 84 | 133 | | C | TEC-TEH | TEC-TEH | | | 043 | 610UL | VS3+ 0.94 | 1.0 | | 0 | 23 | 18 |
| | | | C | TEC-TEH | TEC-TEH | | | 043 | 610UL | VS5+ 0.92 | 1.7 | | 0 | 32 | 18 |
| 86 | 133 | | C | TEC-TEH | TEC-TEH | | | 043 | 610UL | 08H+ 0.85 | 1.2 | | 0 | 25 | 18 |
| 92 | 133 | | H | TEH-TEC | TEH-TEC | | | 081 | 610UL | 08H- 0.06 | 1.5 | | 0 | 25 | 18 |

10/10/10



CUMULATIVE REPORT
03/90, A.P.S., PALO VERDE, UNIT 2

STEAM GENERATOR: 22

LOCATION: ALL

CRITERIA: ALL INDICATIONS (0% TO 100%,MBM,PID,BLI,DNI,DRI,DTI,EPI,UDI,
DSI)

PAGE: 8 OF 10

DATE: 04/17/90

TIME: 17:55:05

| ROW | LIN | HEAT# | LEG | EXAM PROGRAM | EXTENT ACTUAL | REM | REEL | PROBE | LOCATION | VOLTS | CURRENT MIL | DEG | % | CH |
|-----|-----|-------|-----|--------------|---------------|-----|------|-------|-----------|-------|-------------|-----|-----|----|
| 92 | 133 | | H | TEH-TEC | TEH-TEC | | 081 | 610UL | 08H+ 1.10 | 2.5 | | 0 | 34 | 18 |
| 63 | 134 | | C | TEC-TEH | TEC-TEH | | 043 | 610UL | VS3- 0.71 | 0.8 | | 0 | 19 | 18 |
| 67 | 134 | | C | TEC-TEH | TEC-TEH | | 176 | 610UL | BW1- 2.25 | 1.8 | | 0 | 36 | 18 |
| 69 | 134 | | C | TEC-TEH | TEC-TEH | | 043 | 610UL | 08H+ 0.82 | 2.6 | | 0 | 40 | 18 |
| | | | C | TEC-TEH | BW1-TEH | PID | 176 | 610UL | 08H+ 0.82 | 0.8 | | 0 | PID | 17 |
| 73 | 134 | | C | TEC-TEH | TEC-TEH | | 043 | 610UL | 08H+ 1.08 | 2.3 | | 0 | 38 | 18 |
| 77 | 134 | | C | TEC-TEH | TEC-TEH | | 043 | 610UL | 07H+ 0.79 | 1.4 | | 0 | 28 | 18 |
| 89 | 134 | | C | TEC-TEH | TEC-TEH | | 043 | 610UL | BW1+ 1.99 | 4.3 | | 0 | 46 | 18 |
| | | | C | TEC-TEH | 08C-TEH | PID | 176 | 610UL | BW1+ 1.99 | 3.9 | | 0 | PID | 18 |
| 93 | 134 | | H | TEH-TEC | TEH-TEC | | 081 | 610UL | 08H+ 1.01 | 2.3 | | 0 | 33 | 18 |
| 95 | 134 | | H | TEH-TEC | TEH-TEC | | 081 | 610UL | BW1+ 1.58 | 2.4 | | 0 | 33 | 18 |
| 117 | 134 | | H | TEH-TEC | TEH-TEC | | 081 | 610UL | 09H- 1.22 | 1.0 | | 0 | 19 | 18 |
| 62 | 135 | | C | TEC-TEH | TEC-TEH | | 043 | 610UL | BW1+ 1.96 | 0.6 | | 0 | 15 | 18 |
| 66 | 135 | | C | TEC-TEH | TEC-TEH | | 043 | 610UL | 08H- 1.50 | 1.1 | | 0 | 25 | 18 |
| 70 | 135 | | C | TEC-TEH | TEC-TEH | | 043 | 610UL | 08H+ 0.94 | 2.4 | | 0 | 38 | 18 |
| 72 | 135 | | C | TEC-TEH | TEC-TEH | | 043 | 610UL | BW1- 1.68 | 1.6 | | 0 | 32 | 18 |
| 74 | 135 | | C | TEC-TEH | TEC-TEH | | 043 | 610UL | 08H- 0.87 | 1.6 | | 0 | 32 | 18 |
| 76 | 135 | | C | TEC-TEH | TEC-TEH | | 043 | 610UL | 08H+ 0.91 | 3.4 | | 0 | 43 | 18 |
| | | | C | TEC-TEH | 08C-TEH | PID | 176 | 610UL | 08H+ 0.91 | 4.1 | | 0 | PID | 18 |
| 80 | 135 | | C | TEC-TEH | TEC-TEH | | 043 | 610UL | VS3+ 0.80 | 1.1 | | 0 | 25 | 18 |
| 90 | 135 | | C | TEC-TEH | TEC-TEH | | 043 | 610UL | BW1+ 2.12 | 3.8 | | 0 | 45 | 18 |
| | | | C | TEC-TEH | 08C-TEH | PID | 176 | 610UL | BW1+ 2.12 | 4.0 | | 0 | PID | 18 |
| 96 | 135 | | H | TEH-TEC | TEH-TEC | | 081 | 610UL | BW1+ 1.70 | 2.3 | | 0 | 33 | 18 |
| 67 | 136 | | C | TEC-TEH | TEC-TEH | | 044 | 610UL | 07H- 0.40 | 1.4 | | 0 | 21 | 18 |
| 71 | 136 | | C | TEC-TEH | TEC-TEH | RPI | 044 | 610UL | 08H+ 0.87 | 3.7 | | 0 | 40 | 18 |
| 79 | 136 | | C | TEC-TEH | TEC-TEH | | 044 | 610UL | VS3+ 0.89 | 2.1 | | 0 | 28 | 18 |
| 87 | 136 | | C | TEC-TEH | TEC-TEH | | 043 | 610UL | BW1+ 1.67 | 2.3 | | 0 | 38 | 18 |
| 62 | 137 | | C | TEC-TEH | TEC-TEH | | 044 | 610UL | VS3- 0.38 | 1.3 | | 0 | 19 | 18 |
| 66 | 137 | | C | TEC-TEH | TEC-TEH | | 044 | 610UL | 08H- 1.00 | 3.0 | | 0 | 35 | 18 |
| 72 | 137 | | C | TEC-TEH | TEC-TEH | | 044 | 610UL | 08H+ 0.89 | 2.3 | | 0 | 29 | 18 |
| | | | C | TEC-TEH | TEC-TEH | | 044 | 610UL | VS3- 0.31 | 1.3 | | 0 | 19 | 18 |
| 74 | 137 | | C | TEC-TEH | TEC-TEH | | 044 | 610UL | 08H- 0.26 | 1.1 | | 0 | 12 | 18 |
| 76 | 137 | | C | TEC-TEH | TEC-TEH | | 044 | 610UL | BW1+ 1.30 | 4.7 | | 0 | 38 | 18 |
| 78 | 137 | | C | TEC-TEH | TEC-TEH | | 044 | 610UL | 08H+ 0.95 | 2.6 | | 0 | 25 | 18 |
| 67 | 138 | | C | TEC-TEH | TEC-TEH | | 044 | 610UL | 08H- 0.60 | 1.6 | | 0 | 16 | 18 |
| 69 | 138 | | C | TEC-TEH | TEC-TEH | | 044 | 610UL | 08H+ 0.91 | 1.3 | | 0 | 14 | 18 |
| 77 | 138 | | C | TEC-TEH | TEC-TEH | | 044 | 610UL | 08H+ 0.93 | 3.7 | | 0 | 32 | 18 |
| 30 | 139 | | H | TEC-TEH | TEH-TEC | | 186 | 610UL | VS4+ 0.00 | 1.9 | | 0 | 29 | 18 |
| 74 | 139 | | H | TEH-TEC | TEH-TEC | RPI | 173 | 610UL | 08H- 0.16 | 3.2 | | 0 | PID | 18 |
| | | | C | TEC-TEH | TEC-TEH | RPI | 176 | 610UL | 08H- 0.11 | 2.4 | | 0 | 40 | 18 |
| | | | C | TEC-TEH | TEC-TEH | | 176 | 610UL | 08H+ 0.85 | 1.8 | | 0 | 36 | 18 |
| 76 | 139 | | C | TEC-TEH | TEC-TEH | | 176 | 610UL | 07H- 0.83 | 0.8 | | 0 | 23 | 18 |
| | | | H | TEH-TEC | TEH-TEC | RPI | 173 | 610UL | 08H+ 0.92 | 4.1 | | 0 | PID | 18 |
| | | | C | TEC-TEH | TEC-TEH | RPI | 176 | 610UL | 08H+ 0.93 | 3.0 | | 0 | 43 | 18 |
| 69 | 140 | | C | TEC-TEH | TEC-TEH | | 176 | 610UL | VS3- 0.77 | 0.9 | | 0 | 24 | 18 |

CUMULATIVE REPORT
03/90, A.P.S., PALO VERDE, UNIT 2

STEAM GENERATOR: 22

LOCATION: ALL

CRITERIA: ALL INDICATIONS (0% TO 100%,MBM,PID,BLI,ONI,DRI,DTI,EPI,UDI,
DSI)

PAGE: 9 OF 10

DATE: 04/17/90

TIME: 17:55:05

| ROW | LIN | HEAT# | LEG | EXAM | EXTENT | PROGRAM | ACTUAL | REM | REEL | PROBE | LOCATION | VOLTS | CURRENT
MIL | DEG | % | CH |
|-----|-----|-------|-----|---------|---------|---------|--------|-----|------|-------|-----------|-------|----------------|-----|-----|----|
| 77 | 140 | | C | TEC-TEH | TEC-TEH | | | | 176 | 610UL | VS3- 0.08 | 1.6 | | 0 | 35 | 18 |
| 85 | 140 | | C | TEC-TEH | TEC-TEH | | | | 176 | 610UL | 08H- 0.08 | 1.8 | | 0 | 36 | 18 |
| | | | H | TEH-TEC | TEH-TEC | | | RPI | 173 | 610UL | BW1+ 1.90 | 2.1 | | 0 | PID | 18 |
| | | | C | TEC-TEH | TEC-TEH | | | RPI | 176 | 610UL | BW1+ 2.08 | 2.3 | | 0 | 40 | 18 |
| 103 | 140 | | C | TEC-TEH | TEC-TEH | | | | 176 | 610UL | 08C+ 0.91 | 1.5 | | 0 | 33 | 18 |
| 107 | 140 | | H | TEH-TEC | TEH-TEC | | | | 076 | 610UL | 09H- 1.65 | 1.0 | | 0 | 21 | 18 |
| 139 | 140 | | C | TEC-TEH | TEC-TEH | | | | 075 | 610UL | VS3+ 0.98 | 1.0 | | 0 | 18 | 18 |
| 66 | 141 | | C | TEC-TEH | TEC-TEH | | | RPI | 176 | 610UL | 08H+ 0.08 | 4.4 | | 0 | 47 | 18 |
| | | | H | TEH-TEC | TEH-TEC | | | RPI | 173 | 610UL | 08H+ 1.03 | 4.1 | | 0 | PID | 18 |
| 70 | 141 | | C | TEC-TEH | TEC-TEH | | | | 176 | 610UL | BW1- 1.55 | 1.2 | | 0 | 29 | 18 |
| 76 | 141 | | C | TEC-TEH | TEC-TEH | | | | 175 | 610UL | 08H+ 0.83 | 1.8 | | 0 | 36 | 18 |
| | | | C | TEC-TEH | TEC-TEH | | | | 175 | 610UL | VS3- 0.72 | 0.8 | | 0 | 15 | 18 |
| 61 | 142 | | C | TEC-TEH | TEC-TEH | | | | 048 | 610UL | VS3- 0.79 | 1.6 | | 0 | 29 | 18 |
| 69 | 142 | | C | TEC-TEH | TEC-TEH | | | | 048 | 610UL | BW1- 1.68 | 1.7 | | 0 | 29 | 18 |
| 73 | 142 | | C | TEC-TEH | TEC-TEH | | | | 048 | 610UL | BW1- 1.66 | 1.6 | | 0 | 28 | 18 |
| 81 | 142 | | H | TEH-TEC | TEH-TEC | | | | 173 | 610UL | VS3- 0.62 | 1.9 | | 0 | 29 | 18 |
| | | | H | TEH-TEC | TEH-TEC | | | | 173 | 610UL | VS5- 0.62 | 1.7 | | 0 | 27 | 18 |
| 87 | 142 | | H | TEH-TEC | TEH-TEC | | | RPI | 173 | 610UL | BW1+ 1.18 | 4.2 | | 0 | 44 | 18 |
| | | | C | TEC-TEH | TEC-TEH | | | RPI | 188 | 590UL | BW1+ 1.71 | 3.8 | | 0 | PID | 18 |
| 95 | 142 | | H | TEH-TEC | TEH-TEC | | | | 173 | 610UL | VS6+ 0.79 | 2.3 | | 0 | 33 | 18 |
| 113 | 142 | | H | TEH-TEC | TEH-TEC | | | | 076 | 610UL | VS2+ 0.80 | 2.5 | | 0 | 37 | 18 |
| 58 | 143 | | H | TEH-TEC | TEH-TEC | | | | 118 | 610UL | BW1+ 1.79 | 1.1 | | 0 | 23 | 18 |
| 60 | 143 | | H | TEH-TEC | TEH-TEC | | | | 118 | 610UL | BW1+ 1.32 | 1.3 | | 0 | 25 | 18 |
| 66 | 143 | | C | TEC-TEH | TEC-TEH | | | | 048 | 610UL | 08H- 1.17 | 0.8 | | 0 | 17 | 18 |
| 70 | 143 | | C | TEC-TEH | TEC-TEH | | | | 048 | 610UL | BW1- 2.07 | 0.9 | | 0 | 19 | 18 |
| 72 | 143 | | C | TEC-TEH | TEC-TEH | | | | 048 | 610UL | BW1- 2.00 | 0.9 | | 0 | 18 | 18 |
| 74 | 143 | | C | TEC-TEH | TEC-TEH | | | | 048 | 610UL | VS3- 0.83 | 0.9 | | 0 | 18 | 18 |
| | | | C | TEC-TEH | TEC-TEH | | | | 048 | 610UL | VS5+ 0.77 | 0.9 | | 0 | 19 | 18 |
| 76 | 143 | | C | TEC-TEH | TEC-TEH | | | | 048 | 610UL | BW1- 2.00 | 1.8 | | 0 | 30 | 18 |
| 82 | 143 | | C | TEC-TEH | TEC-TEH | | | | 048 | 610UL | 08H- 0.23 | 1.9 | | 0 | 31 | 18 |
| | | | C | TEC-TEH | TEC-TEH | | | | 048 | 610UL | VS3+ 1.00 | 2.5 | | 0 | 36 | 18 |
| 63 | 144 | | C | TEC-TEH | TEC-TEH | | | | 049 | 610UL | VS3- 0.58 | 1.2 | | 0 | 26 | 18 |
| 79 | 144 | | C | TEC-TEH | TEC-TEH | | | | 048 | 610UL | 08H+ 0.93 | 0.7 | | 0 | 14 | 18 |
| 81 | 144 | | C | TEC-TEH | TEC-TEH | | | | 048 | 610UL | VS3- 0.76 | 1.6 | | 0 | 28 | 18 |
| 60 | 145 | | C | TEC-TEH | TEC-TEH | | | | 031 | 610UL | VS3- 0.23 | 1.1 | | 0 | 28 | 18 |
| 80 | 145 | | C | TEC-TEH | TEC-TEH | | | | 049 | 610UL | VS3- 0.78 | 2.0 | | 0 | 35 | 18 |
| 63 | 146 | | C | TEC-TEH | TEC-TEH | | | | 175 | 610UL | VS3- 0.67 | 1.0 | | 0 | 19 | 18 |
| 80 | 147 | | C | TEC-TEH | TEC-TEH | | | | 050 | 610UL | VS3+ 0.93 | 1.6 | | 0 | 32 | 18 |
| 101 | 150 | | C | TEC-TEH | TEC-TEH | | | | 051 | 610UL | VS2- 0.74 | 1.2 | | 0 | 25 | 18 |
| 127 | 150 | | C | TEC-TEH | TEC-TEH | | | | 051 | 610UL | 01C+ 0.60 | 1.6 | | 120 | 20 | 17 |
| 24 | 151 | | H | TEC-TEH | TEH-TEC | | | | 184 | 610UL | VS4- 0.68 | 1.2 | | 0 | 22 | 18 |
| 81 | 152 | | C | TEC-TEH | TEC-TEH | | | | 053 | 610UL | VS3- 0.80 | 2.3 | | 0 | 38 | 18 |
| 46 | 155 | | H | TEC-TEH | TEH-TEC | | | | 170 | 610UL | VS4- 1.03 | 1.6 | | 0 | 28 | 18 |
| 73 | 156 | | C | TEC-TEH | TEC-TEH | | | | 055 | 610UL | VS5- 0.89 | 1.1 | | 0 | 23 | 18 |
| 65 | 158 | | C | TEC-TEH | TEC-TEH | | | | 026 | 610UL | VS3+ 0.03 | 1.4 | | 0 | 27 | 18 |

44



CUMULATIVE REPORT
03/90, A.P.S., PALO VERDE, UNIT 2

STEAM GENERATOR: 22

LOCATION: ALL

CRITERIA: ALL INDICATIONS (0% TO 100%,MBM,PID,BLI,DNI,DRI,DTI,EPI,UOI,
DSI)

PAGE: 10 OF 10

DATE: 04/17/90

TIME: 17:55:05

| ROW | LIN | HEAT# | LEG | EXAM EXTENT | | REM | REEL | PROBE | LOCATION | VOLTS | CURRENT | | % CH |
|-----|-----|-------|-----|-------------|---------|-----|------|-------|------------|-------|---------|-----|--------|
| | | | | PROGRAM | ACTUAL | | | | | | MIL | DEG | |
| 84 | 159 | | C | TEC-TEH | TEC-TEH | | 055 | 610UL | VS3+ 0.49 | 1.6 | | 0 | 31 18 |
| 37 | 160 | | H | TEC-TEH | TEH-TEC | | 168 | 610UL | VS4+ 0.78 | 2.0 | | 0 | 31 18 |
| 107 | 160 | | C | TEC-TEH | TEC-TEH | | 056 | 610UL | VS5- 0.95 | 2.4 | | 0 | 31 18 |
| 22 | 163 | | H | TEC-TEH | TEH-TEC | | 164 | 610UL | 01H+ 0.06 | 0.4 | | 146 | 18 17 |
| 92 | 163 | | C | TEC-TEH | TEC-TEH | RPI | 057 | 610UL | 02H+ 17.84 | 0.6 | | 91 | 76 1 |
| | | | H | TEH-TEC | TEH-TEC | RPI | 173 | 610UL | 02H+ 17.97 | 0.7 | | 93 | PID 17 |
| 77 | 164 | | C | TEC-TEH | TEC-TEH | | 026 | 610UL | VS3+ 0.66 | 0.8 | | 0 | 19 18 |
| 101 | 164 | | C | TEC-TEH | TEC-TEH | | 057 | 610UL | VS2- 0.69 | 1.0 | | 0 | 21 18 |
| | | | C | TEC-TEH | TEC-TEH | | 057 | 610UL | VS3+ 0.81 | 1.9 | | 0 | 33 18 |
| | | | C | TEC-TEH | TEC-TEH | | 057 | 610UL | VS5- 0.87 | 1.6 | | 0 | 30 18 |
| 102 | 165 | | C | TEC-TEH | TEC-TEH | | 057 | 610UL | VS3- 0.78 | 0.9 | | 0 | 19 18 |
| 51 | 166 | | C | TEC-TEH | TEC-TEH | | 023 | 610UL | VS4- 1.00 | 0.6 | | 0 | 15 18 |
| 82 | 171 | | C | TEC-TEH | TEC-TEH | | 142 | 610UL | VS3+ 0.89 | 1.7 | | 0 | 25 18 |
| 78 | 175 | | C | TEC-TEH | TEC-TEH | | 013 | 610UL | BW2- 2.45 | 0.7 | | 0 | 10 18 |
| 53 | 180 | | C | TEC-TEH | TEC-TEH | | 010 | 610UL | VS4+ 0.84 | 1.0 | | 0 | 16 18 |

NUMBER OF TUBES SELECTED FROM CURRENT OUTAGE: 327

NO TREND ANALYSIS REQUESTED

APPENDIX B

TUBESHEET
MAPS

03/90, A.P.S., PALO VERDE, UNIT 2

STEAM GENERATOR: 21

DATE: 06/07/90

LOCATION: ALL

TIME: 13:58:37

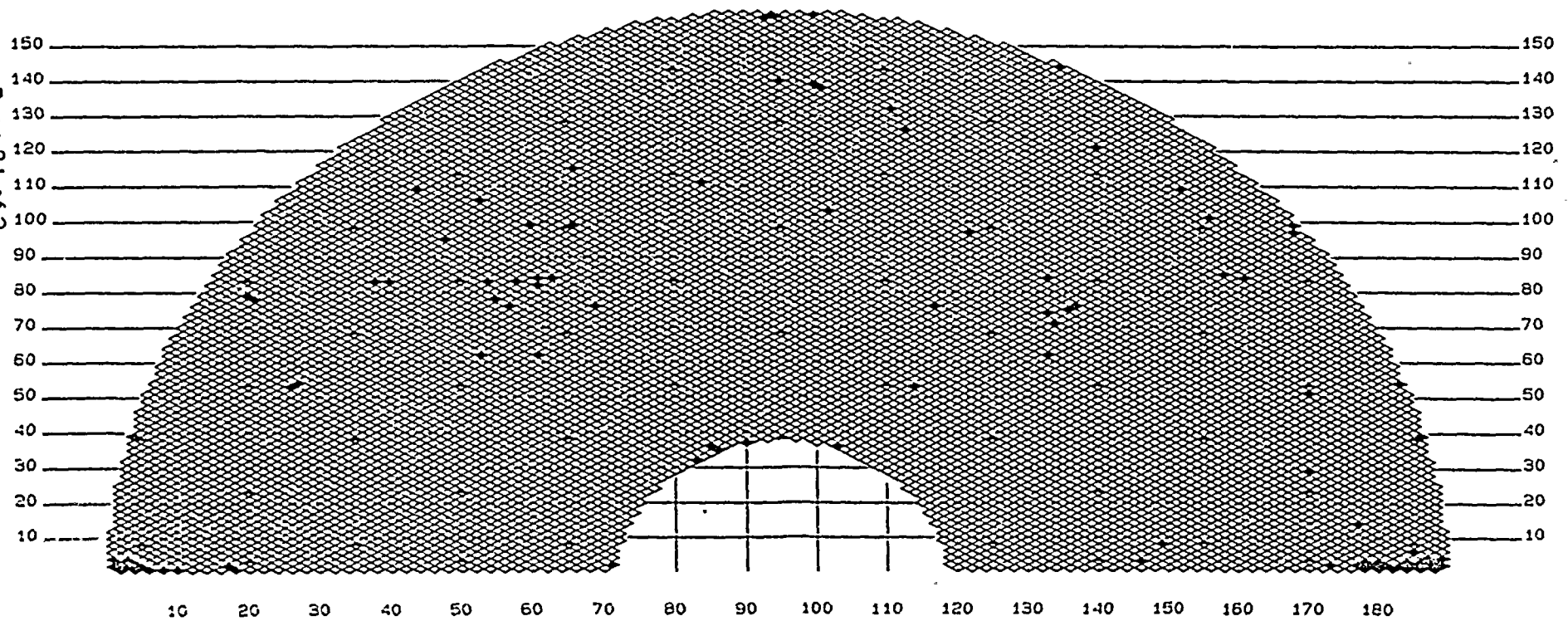
CRITERIA: PLG

PLG

99

STAYS

Page 81 of 2



CONEC Nuclear

STEAM GENERATOR: 22

03/90, A.P.S., PALO VERDE, UNIT 2

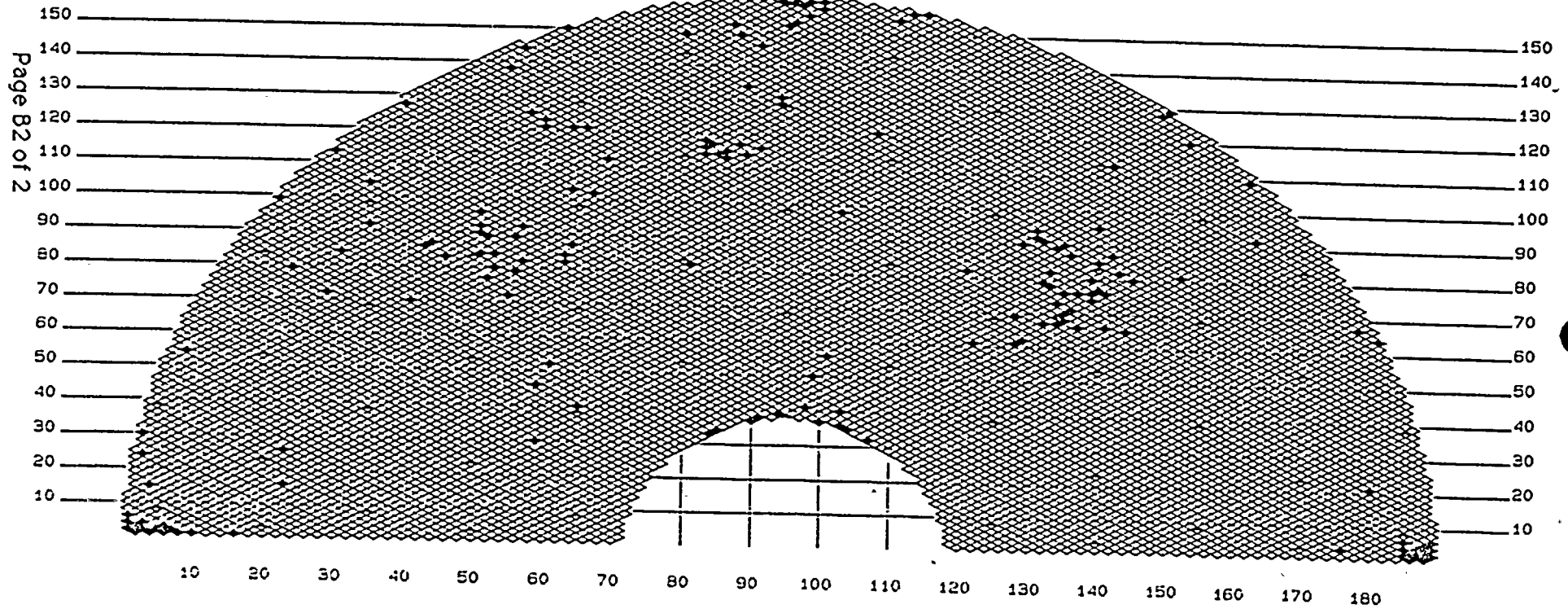
LOCATION: ALL
CRITERIA: PLG

DATE: 06/07/90
TIME: 14: 09: 44

STAYS

PLG

170



APPENDIX C

FORM
NIS-1

22
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100

ANPP

NIS-1 FORM

OWNERS' DATA REPORT FOR INSERVICE INSPECTIONS

1. OWNER ARIZONA PUBLIC SERVICE COMPANY, ET AL
ADDRESS P.O. BOX 53999 PHOENIX, ARIZONA
2. PLANT PALO VERDE NUCLEAR GENERATING PLANT UNIT 2
ADDRESS 4 MILES SOUTH WINTERSBURG, ARIZONA
3. UNIT NUMBER: 2
4. OWNERS CERTIFICATE OF AUTHORIZATION NONE
5. COMMERCIAL SERVICE DATE: 9/19/86
6. COMPONENTS INSPECTED:

| COMPONENT OR APPURTENANCE | MANUFACTURER OR INSTALLER | SERIAL NUMBER | STATE OR PROVINCE | NATIONAL BOARD NO |
|---|---------------------------|---------------|-------------------|-------------------|
| 2MRCEE01A
Steam Generator 21
Tubing | Combustion
Engineering | 79273-1 | N/A | 22478 |
| 2MRCEE01B
Steam Generator 22
Tubing | Combustion
Engineering | 79273-2 | N/A | 22479 |

ANPP

NIS-1 BACK

OWNERS' DATA REPORT FOR INSERVICE INSPECTIONS

7. EXAM DATES 4/2/90 TO 4/17/90 ** Common Interval Date
8. INSPECTION INTERVAL FROM 9/19/86 TO 3/17/97 **
9. ABSTRACT OF EXAMINATIONS. INCLUDE A LIST OF EXAMINATIONS AND A STATEMENT CONCERNING STATUS OF WORK REQUIRED FOR CURRENT INTERVAL.

A total of 5534 (50%) tubes were examined in S/G 21 and 10,932 (100%) of the tubing in steam generator 22 was examined. Several degraded/defective tubes were observed. These are documented in Appendix A of this report. The tubes identified on the following page were plugged and/or staked as a result of this examination.

WE CERTIFY THAT THE STATEMENTS MADE IN THIS REPORT ARE CORRECT AND THE EXAMINATIONS AND CORRECTIVE MEASURES TAKEN CONFORM TO THE RULES OF THE ASME CODE, SECTION XI.

DATE 6-26-90 SIGNED: ARIZONA PUBLIC SERVICE COMPANY BY DBT Howe

CERTIFICATE OF INSERVICE INSPECTION

I, THE UNDERSIGNED, HOLDING A VALID COMMISSION ISSUED BY THE NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS AND THE STATE OR PROVINCE OF ARIZONA EMPLOYED BY HARTFORD STEAM BOILER INSPECTION AND INSURANCE COMPANY OF HARTFORD, CONNECTICUT HAVE INSPECTED THE COMPONENTS DESCRIBED IN THIS OWNERS REPORT DURING THE PERIOD 4-2-90 TO 4-17-90, AND STATE THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE OWNER HAS PERFORMED EXAMINATIONS AND TAKEN CORRECTIVE MEASURES DESCRIBED IN THIS OWNERS REPORT IN ACCORDANCE WITH THE REQUIREMENTS OF THE ASME CODE, SECTION XI. BY SIGNING THIS CERTIFICATE NEITHER THE INSPECTOR NOR HIS EMPLOYER MAKES ANY WARRANTY, EXPRESSED OR IMPLIED, CONCERNING THE EXAMINATIONS AND CORRECTIVE MEASURES DESCRIBED IN THIS OWNERS REPORT. FURTHERMORE, NEITHER THE INSPECTOR NOR HIS EMPLOYER SHALL BE LIABLE IN ANY MANNER FOR ANY PERSONAL INJURY OR PROPERTY DAMAGE OR A LOSS OF ANY KIND ARISING FROM OR CONNECTED WITH THIS INSPECTION.

INSPECTOR Robert L. Forstner COMMISSIONS NS 9685 "N" "I" Az. 264
DATE 6-29-90 NAT'L BOARD, STATE, PROVINCE

OWNERS' DATA REPORT FOR INSERVICE INSPECTIONS

STEAM GENERATOR 21.

| ROW - LINE | ROW - LINE |
|------------|------------|
| *79-20 | 37-90 |
| *53-26 | 158-93 |
| 83-38 | 159-94 |
| 95-48 | 159-100 |
| 83-54 | 36-103 |
| 78-55 | 62-133 |
| 76-69 | 84-133 |
| 32-83 | 76-137 |
| 111-84 | 121-140 |
| 35-86 | 84-161 |

STEAM GENERATOR 22

| ROW - LINE | ROW - LINE | ROW - LINE | ROW - LINE | ROW - LINE | ROW - LINE |
|------------|------------|------------|------------|------------|------------|
| 1-8 | 80-53 | 116-83 | 39-94 | 90-129 | 66-137 |
| 1-16 | 84-53 | 118-83 | 129-94 | 92-131 | 76-137 |
| 99-22 | 72-55 | 33-84 | 159-94 | 94-131 | 74-139 |
| 72-29 | 79-56 | 117-84 | 152-95 | 67-132 | 76-139 |
| 113-30 | 144-57 | 34-85 | 153-96 | 79-132 | 77-140 |
| *84-31 | 30-59 | 114-85 | 158-97 | 91-132 | 85-140 |
| 127-40 | 82-63 | 113-86 | 41-98 | 67-134 | *95-140 |
| 86-43 | 84-63 | 115-86 | 155-98 | 69-134 | 66-141 |
| 87-44 | 87-64 | 117-88 | 159-98 | 73-134 | 76-141 |
| 83-46 | 121-64 | 149-88 | 157-100 | 89-134 | 87-142 |
| 90-51 | 121-66 | 114-89 | 159-100 | 70-135 | 113-142 |
| 92-51 | 112-69 | 37-90 | 36-103 | 76-135 | 82-143 |
| *96-51 | 149-80 | 38-91 | 40-103 | 90-135 | 80-145 |
| 77-52 | 82-81 | 116-91 | 156-113 | 71-136 | 81-152 |
| 89-52 | 114-83 | 146-91 | 61-122 | 87-136 | 92-163 |

*THESE TUBES WERE INADVERTENTLY REAMED
AND/OR PLUGGED IN ERROR.

