2D11-1992

D. IF any of the monitored cells have bent or broken sample tubes, or broken thermometer parts in the cell, THEN record the cell number in the space provided below, and notify the Electrical Maintenance Supervisor.
IF NOT,
THEN mark this step N/A.

Supervisor Remarks:

N/A 19.1

E. IF any cell temperature deviates more than 3°C (5°F) from the other cells during inspection, THEN notify the Electrical Maintenance Supervisor,
IF NOT,
THEN mark this step N/A.

Supervisor Remarks: Within Tech. Spec. / As-found Data.

gs 19.1

F. Calculate and record on Attachment 1 the average cell temperature of the monitored cells listed on Attachment 1.

gs 19.1

8.3 Battery Performance Discharge Test

8.3.1 Connect any remaining battery load test set control wiring needed for load monitoring or control.

KB 19-1

8.3.2 Determine and record below the discharge current correction factor (K Factor) based upon the average cell temperature obtained in Step 8.2.1 and the Table on Attachment 1.

(K Factor) Discharge Current Correction Factor: 0.968

KB 19-1

SECOND PERSON VERIFIER

A Second Person Verifier shall determine and record below the discharge current correction factor (K Factor) based upon the average cell temperature obtained in Step 8.2.1 and the Table on Attachment 1.

(K Factor) Discharge Current Correction Factor: 0.968

Second Person Verifier — Date 19-1

8.3.3 Calculate the actual discharge current by dividing 258 by the K Factor from Step 8.3.2.

258 amps (Rated discharge current) ÷ 0.968 (K Factor) = 267 (Actual discharge current)

258 Amps / (K) = 267 Amps

KB 19-17

SECOND PERSON VERIFIER

A Second Person Verifier is to calculate the actual discharge current by dividing 258 by the K Factor from Step 8.3.2 and record below.

258 amps (Rated discharge current) ÷ 0.968 (K Factor) = 267 (Actual discharge current)

258 Amps / (K) = 267 Amps

Ray Yates 19-17
Second Person Verifier Date

8.3.4 Set up the load tester to 267 amps calculated in Steps 8.3.3 and 9 hours of discharge. KB 19-17

SECOND PERSON VERIFIER

A Second Person Verifier shall verify that the load tester is set up correctly for a 9 hour discharge at the current value calculated in Step 8.3.3.

Ray Yates 19-17
Second Person Verifier Date

8.3.5 Cognizant Supervisor shall verify calculations are correct and has granted permission to start the test.

William McCallum 19-17-9
Cognizant Supervisor Date

8.3.6 Close 2D51 disconnect switch. KB 19-17-9

8.3.7 Start the discharge test. KB 19-17-9

8.3.8 Record the Start time on Data Sheet 2 and Attachment 3.

8.3.9 Adjust and maintain current throughout the test to the calculated value + 1% of setpoint, + 1 Amp. (i.e., Displayed Value may vary from setpoint by + 1%, then an additional + 1 Amp.)

KB 19-17-9

NOTE

Extra data may be taken and attached for the following test. The discharge rate and the battery voltage should be monitored from start to stop.

NOTE

The print out from the Albers unit may be attached to this procedure to accompany the following step.

8.3.10 Monitor and record the discharge rate and the battery voltage at intervals established in Data Sheet 2.

8.3.11 IF the discharge is stopped for any reason other than a low voltage cell,
THEN record the stop and restart times below.
IF NOT,
THEN mark this step N/A. KB 19

Stop time 1515 + 1740 Restart time 1523 + 1755

Reason for discharge stop Lost of AC Power to the BCT-002.

8.3.12 IF an individual cell or cells are approaching 1.0 volts
THEN record the cell(s) number below and notify the Cognizant Supervisor immediately, continue the test closely monitoring the cell voltage to verify that no cell goes below 0.75 vdc,
If NOT,
THEN mark this step N/A:
Cell number:_____ Volts:_____
Cell number:_____ Volts:_____
Cell number:_____ Volts:_____ N/A /

8.3.13 IF at any time during the test a cell(s) voltage drops below 0.75 vdc,
THEN stop the discharge immediately, contact the Cognizant Supervisor and record the stop time below and on Attachment 3, and go to Attachment 2,
If NOT,
THEN mark this step N/A:
Discharge Stop Time:_____ N/A /

NOTE

The final readings need to be rapidly taken as the decaying overall battery voltage approaches and goes below the 105 VDC voltage level.

8.3.14 Read the individual cell voltages and battery terminal voltage (rapidly) when the battery approaches 105 VDC, and record below and in the last column of Data Sheet 2.
Final Battery readings recorded: 105.7 GS 9.17

8.3.15 Decrease the test load to "0" when the overall battery voltage is 105 VDC. GS 9.17

8.3.16 Turn off test load. GS 9.17

8.3.17 Record the Stop Time above the last column on Data Sheet 2, and on Attachment 3.

8.3.18 Open 2D51 disconnect switch. GS 9.17

8.3.19 De-energize load tester. GS 9.17

WARNING
2D01 side of fuse connections are energized. Contact should be avoided when disconnecting cables.

8.3.20 Unbolt and remove the load test cables from the fuse cabinet. GS 9.17

8.3.21 Disconnect any remaining battery load test set control or monitoring cables connected to the battery. GS 9.17

8.4 Restore Battery 2D11 to service with the help of operations.

WARNING
The Battery side of the fuse connections are energized. Avoid contact when installing the fuses.

8.4.1 Install the pin indicating fuses in 2D41. GS 9.17

WARNING
2D01 side of fuse connections are energized. Contact should be avoided when installing fuses.

8.4.2 Install the 1800 AMP fuses. GS 9.17

8.4.3 Close the Battery 2D51 Disconnect Switch. GS 9.17

8.4.4 Verify that the electrical lineup is restored and the charger is working properly. JS 19

8.4.5 Record below the charger being used:

Charger used: 2D31 JS 19

8.4.6 Place the battery on an equalize charge; after the battery bank voltage is equal to the charger set point of 135.2 to 138 volts then start the 72 hour equalize charge. JS 19

BKR IN at 2320 122.19 VDC

NOTE

Steps 8.5 may be performed at any time after Step 8.4.6 has been accomplished.

8.4.7 Record below the Equalizing start time and voltage.

0525 / 9-18-92 / 135.46
Start time Date Voltage

8.4.8 Record below the equalize voltage at the battery after 15 hours from the start of equalization

137.15 VDC Battery Terminal Voltage

Measuring and Test Equipment number: Dmm-077

Calibration due date: 2-20-93 JS 19

8.4.9 Record below the Equalizing stop time and voltage.

0528 / 9/20/92 / ~~134.3~~ 134.3
Stop time Date Voltage 9/21/92

8.4.10 Place the charger on float after completing 72 hours of equalizing charge. JS 19

NOTE

124.7 VDC is the Tech Spec value (lower limit) for a 58 cell bank's float voltage. However, the as left float voltage should be 127.6 to 130.5 when measured at the battery terminal.

8.4.11 Record the float voltage measured at the battery below:

Voltage 129.3 [illegible]

ACCEPTANCE CRITERION

IF the float voltage "is not" within 127.6 to 130.5 volts,
THEN notify the Electrical Supervisor and/or S/S for an evaluation of the problem.
IF the float voltage is below 124.7 VDC,
THEN "immediately" notify the Electrical Supervisor and S/S that a possible Tech Spec violation exists.

8.5 Battery Capacity Calculation

8.5.1 IF Attachment 2 was used,
THEN use the new calculated T_A from step 15 of Attachment 2,
If NOT,
THEN obtain T_A from Data Sheet 2,
(Start Time - Stop Time) [illegible]

8.5.2 IF the discharge was stopped in step 8.2.11,
THEN the time that the discharge was stopped (from data in 8.2.11) must be subtracted from the T_A to obtain the actual length of the test (T_A) for step 8.5.3.

IF NOT,
THEN mark this step N/A N/A

8.5.3 Determine the capacity of the battery by completing the following equation:

% capacity at 77°F = (T_A / T_S) x 100

T_A = Actual time of the test to specified terminal voltage 105 volts if no cells were jumpered in minutes (See Data Sheet 2).

T_S = Rated time to specified terminal voltage in minutes (8hrs. or 480 minutes)

T_A (minutes) 558 / 480 minutes x 100 = ~~116.95~~ 116.25 % capacity AHB 9/21/92

AHB 9/21/92

SECOND PERSON VERIFIER

A Second Person Verifier shall repeat the calculations for determining the capacity of the battery.

T_A (minutes) 558 / 480 minutes x 100 = 116.25 % capacity

Allen Rudolph 9-21-
Second Person Verifier Date

8.5.4 IF the capacity calculated is less than 90%, THEN notify maintenance engineer for evaluation, IF the capacity is greater than or equal to 90% THEN mark this step N/A. N/A

8.6 Battery Maintenance

NOTE

When tightening the terminal connectors, two insulated wrenches should be used, applying one as counter-torque to prevent damage to the terminal post. If just checking the torque of a 5/16 inch stainless bolt connection that was not disassembled then 125 in/lb is the proper value. If the connection was loosened or disassembled then torque to 165 in/lbs. Step 8.6.1 through 8.6.7 may be accomplished at any time after Step 8.4.6 has been accomplished. Steps 8.6.8 through 8.6.10 may be accomplished after equalize charge current diminishes to a low enough level such that charge current does not affect resistance readings.

8.6.1 Verify that all battery connections are tight by torquing each intercell/intertier connection to 125 in/lbs BP, 9-21

DATA SHEET 2

Performance Discharge Test
Battery Bank and Cell Voltages

Battery Bank 2D11
Start Time 10:44

Cell No.	30 Min.	1 Hour	1 Hour 30 Min.	2 Hours	2 Hours 30 Min.	3 Hours	3 Hours 30 Min.	4 Hours	4 Hours 30 Min.
1	2.00	2.00	2.00	1.99	1.99	1.98	1.97	1.97	1.96
2	2.00	2.00	1.99	1.99	1.98	1.98	1.97	1.96	1.95
3	2.00	2.00	1.99	1.99	1.98	1.98	1.97	1.96	1.95
4	2.00	1.99	1.99	1.99	1.98	1.97	1.97	1.96	1.95
5	2.00	2.00	1.99	1.99	1.98	1.97	1.97	1.96	1.95
6	2.00	1.99	1.99	1.98	1.98	1.97	1.96	1.96	1.95
7	2.00	1.99	1.99	1.98	1.98	1.97	1.96	1.96	1.95
8	2.00	2.00	1.99	1.99	1.98	1.97	1.97	1.96	1.95
9	1.99	1.99	1.99	1.98	1.97	1.97	1.96	1.95	1.95
10	2.00	1.99	1.99	1.99	1.98	1.97	1.97	1.96	1.95
11	2.00	2.00	1.99	1.99	1.98	1.97	1.97	1.96	1.95
12	1.99	1.99	1.99	1.98	1.98	1.97	1.96	1.96	1.95
13	2.00	2.00	1.99	1.99	1.98	1.97	1.97	1.96	1.95
14	1.99	1.99	1.99	1.98	1.97	1.97	1.96	1.95	1.94
15	2.00	2.00	1.99	1.99	1.98	1.98	1.97	1.96	1.95
16	2.00	2.00	1.99	1.99	1.98	1.97	1.97	1.96	1.95
17	2.00	1.99	1.99	1.98	1.98	1.97	1.96	1.96	1.95
18	2.00	1.99	1.99	1.99	1.98	1.97	1.97	1.96	1.95
19	1.99	1.98	1.98	1.97	1.97	1.96	1.95	1.95	1.94
20	2.00	1.99	1.99	1.98	1.98	1.97	1.96	1.96	1.95
21	1.99	1.99	1.98	1.98	1.97	1.96	1.96	1.95	1.94
22	1.99	1.99	1.99	1.98	1.97	1.97	1.96	1.95	1.94
23	2.00	2.00	1.99	1.99	1.98	1.97	1.97	1.96	1.95
24	2.00	2.00	1.99	1.99	1.98	1.97	1.97	1.96	1.95
25	2.01	2.01	2.00	2.00	1.99	1.98	1.98	1.97	1.96
26	2.00	2.00	1.99	1.99	1.98	1.97	1.96	1.96	1.95
27	2.00	1.99	1.99	1.99	1.98	1.97	1.96	1.96	1.95
28	2.00	1.99	1.99	1.98	1.98	1.97	1.96	1.96	1.95
29	2.00	1.99	1.99	1.98	1.98	1.97	1.96	1.96	1.95
30	2.00	1.99	1.99	1.98	1.98	1.97	1.96	1.96	1.95
31	2.00	1.99	1.99	1.98	1.98	1.97	1.96	1.95	1.95
32	2.00	2.00	1.99	1.99	1.98	1.97	1.97	1.96	1.95
Bank Volts	115.9	115.8	115.6	115.3	115.0	114.6	114.2	113.8	113.4

Performed by [illegible] 19-2-07
Signature Date

DATA SHEET 2

Performance Discharge Test
Battery Bank and Cell Voltages

Battery Bank 2D11

Cell No.	30 Min.	1 Hour	1 Hour 30 Min.	2 Hours	2 Hours 30 Min.	3 Hours	3 Hours 30 Min.	4 Hours	4 Hours 30 Min.
33	2.00	1.99	1.99	1.98	1.98	1.97	1.96	1.96	1.95
34	2.00	1.99	1.99	1.98	1.98	1.97	1.96	1.96	1.96
35	1.99	1.99	1.99	1.98	1.97	1.97	1.96	1.95	1.94
36	1.99	1.99	1.99	1.98	1.97	1.98	1.96	1.95	1.95
37	2.00	1.99	1.99	1.98	1.97	1.98	1.96	1.95	1.95
38	2.00	2.00	1.99	1.98	1.98	1.97	1.96	1.96	1.95
39	1.99	1.99	1.99	1.98	1.97	1.96	1.96	1.95	1.95
40	1.99	1.99	1.99	1.98	1.97	1.97	1.96	1.95	1.94
41	1.99	1.99	1.98	1.98	1.97	1.97	1.96	1.95	1.94
42	1.99	1.99	1.99	1.98	1.97	1.97	1.96	1.95	1.95
43	1.99	1.99	1.99	1.98	1.97	1.97	1.96	1.95	1.95
44	2.00	1.99	1.99	1.98	1.98	1.97	1.96	1.95	1.95
45	1.99	1.99	1.98	1.98	1.97	1.96	1.96	1.95	1.94
46	1.99	1.99	1.99	1.98	1.98	1.97	1.96	1.95	1.95
47	1.99	1.99	1.99	1.98	1.97	1.97	1.96	1.95	1.95
48	1.99	1.99	1.99	1.98	1.97	1.97	1.96	1.95	1.95
49	1.99	1.99	1.99	1.98	1.97	1.97	1.96	1.95	1.95
50	1.99	1.99	1.98	1.98	1.97	1.97	1.96	1.95	1.94
51	1.99	1.99	1.99	1.98	1.97	1.97	1.96	1.95	1.95
52	2.00	1.99	1.99	1.98	1.98	1.97	1.96	1.95	1.95
53	1.99	1.99	1.99	1.98	1.97	1.97	1.96	1.95	1.94
54	1.99	1.99	1.99	1.98	1.97	1.97	1.96	1.95	1.95
55	1.99	1.99	1.99	1.98	1.97	1.97	1.96	1.95	1.95
56	2.00	1.99	1.99	1.98	1.97	1.97	1.96	1.95	1.95
57	2.00	1.99	1.99	1.98	1.98	1.97	1.96	1.95	1.95
58	2.00	1.99	1.99	1.98	1.97	1.97	1.96	1.95	1.95
Disch Rate (Amps)	266	268	268	268	268	266	266	269	265

Performed by [signature] 12-12-92
Signature Date

Test Equip: Bct-002 Cal. Due: 10-22-92

DATA SHEET 2

Performance Discharge Test
Battery Bank and Cell Voltages

Battery Bank 2D11

Cell No.	5 Hours	5 Hours 30 Min.	6 Hours	6 Hours 30 Min.	7 Hours	7 Hours 30 Min.	8 Hours	8 Hours 30 Min.	9 Hours
1	1.95	1.94	1.93	1.92	1.91	1.89	1.88	1.86	1.83
2	1.95	1.94	1.92	1.91	1.90	1.89	1.87	1.85	1.81
3	1.95	1.94	1.93	1.92	1.91	1.89	1.87	1.85	1.82
4	1.94	1.93	1.92	1.91	1.90	1.89	1.87	1.85	1.82
5	1.94	1.93	1.92	1.91	1.90	1.89	1.87	1.85	1.82
6	1.94	1.93	1.92	1.91	1.90	1.88	1.86	1.84	1.81
7	1.94	1.93	1.92	1.91	1.90	1.88	1.87	1.84	1.81
8	1.94	1.93	1.92	1.91	1.90	1.88	1.87	1.85	1.82
9	1.94	1.93	1.92	1.90	1.90	1.88	1.86	1.84	1.81
10	1.94	1.93	1.92	1.91	1.90	1.89	1.87	1.85	1.82
11	1.94	1.93	1.92	1.91	1.90	1.89	1.87	1.85	1.82
12	1.94	1.93	1.92	1.91	1.90	1.88	1.87	1.84	1.82
13	1.94	1.94	1.93	1.91	1.90	1.88	1.87	1.85	1.82
14	1.94	1.93	1.92	1.90	1.89	1.87	1.86	1.83	1.80
15	1.95	1.94	1.93	1.92	1.91	1.89	1.87	1.85	1.83
16	1.95	1.94	1.93	1.92	1.91	1.89	1.87	1.85	1.83
17	1.94	1.93	1.92	1.91	1.90	1.88	1.87	1.85	1.82
18	1.94	1.93	1.92	1.91	1.90	1.89	1.87	1.86	1.82
19	1.93	1.92	1.91	1.90	1.89	1.87	1.85	1.83	1.80
20	1.94	1.93	1.92	1.91	1.90	1.88	1.87	1.85	1.82
21	1.93	1.93	1.91	1.90	1.89	1.87	1.85	1.83	1.79
22	1.94	1.93	1.92	1.90	1.89	1.88	1.86	1.83	1.80
23	1.94	1.93	1.92	1.91	1.90	1.88	1.87	1.85	1.82
24	1.95	1.94	1.92	1.91	1.90	1.89	1.87	1.85	1.83
25	1.96	1.95	1.94	1.92	1.92	1.90	1.89	1.87	1.85
26	1.94	1.93	1.92	1.91	1.90	1.89	1.87	1.85	1.82
27	1.94	1.93	1.92	1.91	1.90	1.88	1.87	1.85	1.82
28	1.94	1.93	1.92	1.91	1.90	1.88	1.87	1.85	1.82
29	1.94	1.93	1.92	1.91	1.90	1.88	1.87	1.85	1.82
30	1.94	1.93	1.92	1.91	1.90	1.88	1.87	1.85	1.82
Bank Volts	113.0	112.4	[illegible].8	111.1	110.6	109.6	108.7	107.4	105.7

Performed by [signature] Smith 9-17-92
Signature Date

NOTE
Terminal voltage of 105 volts may be reached before a hour or ½ hour reading can be taken. Indicate the number of minutes past the hour or half hour above the column where the last reading was taken at test completion.

DATA SHEET 2

Performance Discharge Test
Battery Bank and Cell Voltages

Battery Bank 2D11

Bank Voltage: 105.7
Start Time: 1044
Stop Time: 2025

Cell No.	5 Hours	5 Hours 30 Min.	6 Hours	6 Hours 30 Min.	7 Hours	7 Hours 30 Min.	8 Hours	8 Hours 30 Min.	9 Hours
31	1.94	1.93	1.92	1.91	1.90	1.88	1.87	1.84	1.81
32	1.94	1.94	1.92	1.91	1.90	1.89	1.87	1.85	1.83
33	1.94	1.93	1.92	1.91	1.90	1.88	1.87	1.85	1.82
34	1.94	1.93	1.92	1.91	1.90	1.88	1.87	1.85	1.82
35	1.94	1.93	1.92	1.90	1.89	1.88	1.86	1.84	1.81
36	1.94	1.93	1.92	1.91	1.90	1.88	1.86	1.84	1.81
37	1.94	1.93	1.92	1.91	1.90	1.88	1.86	1.84	1.81
38	1.94	1.93	1.92	1.91	1.90	1.89	1.87	1.85	1.82
39	1.94	1.93	1.91	1.90	1.89	1.88	1.86	1.84	1.80
40	1.94	1.93	1.92	1.91	1.90	1.88	1.86	1.84	1.81
41	1.94	1.93	1.92	1.91	1.90	1.88	1.86	1.84	1.81
42	1.94	1.93	1.92	1.91	1.90	1.88	1.87	1.84	1.82
43	1.94	1.93	1.92	1.91	1.90	1.88	1.86	1.84	1.81
44	1.94	1.93	1.92	1.91	1.90	1.88	1.87	1.84	1.82
45	1.93	1.93	1.91	1.90	1.89	1.87	1.86	1.84	1.80
46	1.94	1.93	1.92	1.91	1.90	1.88	1.87	1.85	1.82
47	1.94	1.93	1.92	1.91	1.90	1.88	1.87	1.85	1.82
48	1.94	1.93	1.92	1.91	1.90	1.88	1.87	1.85	1.81
49	1.94	1.93	1.92	1.91	1.90	1.88	1.87	1.85	1.82
50	1.94	1.93	1.92	1.91	1.90	1.88	1.86	1.84	1.81
51	1.94	1.93	1.92	1.91	1.90	1.88	1.86	1.84	1.82
52	1.94	1.93	1.92	1.91	1.90	1.88	1.87	1.85	1.82
53	1.94	1.93	1.92	1.90	1.90	1.88	1.86	1.84	1.81
54	1.94	1.93	1.92	1.91	1.90	1.88	1.86	1.84	1.82
55	1.94	1.93	1.92	1.91	1.90	1.88	1.86	1.84	1.81
56	1.94	1.93	1.92	1.91	1.90	1.88	1.87	1.84	1.81
57	1.94	1.93	1.92	1.91	1.90	1.88	1.87	1.85	1.82
58	1.94	1.93	1.92	1.91	1.90	1.88	1.86	1.84	1.81
Disch Rate (Amps)	267	269	267	266	266	265	264	267	267

Performed by Jeff Smith 1 2030
Signature Time

NOTE

Terminal voltage of 105 volts may be reached before a hour or ½ hour reading can be taken. Indicate the number of minutes past the hour or half hour above the column where the last reading was taken at test completion.

9.6 Verify that all cell-to-cell and terminal connections are less than or equal to 150 mocro-ohms. KB 19

9.7 Verify that the battery log book has been updated to include the following:

9.7.1 Date this procedure was performed. KB 19

9.7.2 Time this procedure was started. KB 19

9.7.3 Time this procedure was completed. KB 19

9.7.4 Any problems encountered and corrective action taken. KB 19

9.7.5 Performer of this procedure. KB 19

9.8 Notify the Unit 2 Operations S/S that 2D11 Performance Discharge Test is complete. KB 19

9.9 Perform post test check of torque wrenches on Torque Tester and record the following:

Equip. No. TW-595 Cal. Due Date 10/19/92

Equip. No. TW-637 Cal. Due Date 10/25/92 WM 19

9.10 All setpoints and tolerances in this procedure have been checked and are verified to be within the limits herein specified and any exceptions are noted.

Wallace McCalley 19
Maintenance Supervisor D

10.0 ATTACHMENTS AND FORMS

10.1 Attachments

10.1.1 Attachment 1 - Discharge Current Correction K Factor For Temperature

10.1.2 Attachment 2 - Jumpering Low Voltage Cells

10.1.3 Attachment 3 - Calculation for Total Down Time

10.1.4 Data Sheet 1 - "As Found" Resistance

10.1.5 Data Sheet 2 - Performance Discharge Test Battery Bank Voltage

10.1.6 Data Sheet 3 - "As Left" Resistance

10.2 Forms

10.2.1 None

ATTACHMENT 1

DISCHARGE CURRENT CORRECTION FACTOR K FOR TEMPERATURE

Temperature (F)	Factor K

Cell No.	Temp. (F)
1	81
6	81.8
12	81.2
18	81.2
24	86.8
30	88.4
36	87.4
43	82
48	81.6
54	81.6

Temp. Total for 10 cells = 83.3

Temp. Total for 10 cells / 10 = Avg. Temp.

Average Temp. = 83.3 °F

Req. Factor K = 0.968

Average Temp. (F)	Factor K
62	1.098
63	1.092
64	1.086
65	1.080
66	1.072
67	1.064
68	1.056
69	1.048
70	1.040
71	1.034
72	1.029
73	1.023
74	1.017
75	1.011
76	1.006
77	1.000
78	0.994
79	0.987
80	0.980
81	0.976
82	0.972
83	0.968
84	0.964
85	0.960
86	0.956
87	0.952
88	0.948
89	0.944
90	0.940
91	0.938
92	0.936

Test Equip. # DT 026 Cal. Due: 1-16-93

John Sedons — Performed By — 9/17/92 Date

Thomas G Miller — Second Person Verifier — 9/17/92 Date