FARLEY NUCLEAR PLANT

ENGINEERING TECHNICAL PROCEDURE

FNP-0-ETP-4381

SERVICE WATER STORAGE POND PIEZOMETER WELL READINGS

SAFETY RELATED

Approved:

R Yance
Systems Performance Manager

Date Issued: 3/23/94

MSL ETP 11

SYSTEMS PERFORMANCE TEST RESULTS SUMMARY REPORT

Section I Test Description

Title: Piezometer Readings

Procedure Number: FNP-0-ETP-4381 Revision Number: 1

Start Date: _____ Completion Date: _____

Section II Test Results, Evaluation and Recommendations

☐ Test satisfactory (test results recommended for approval)

☐ Test unsatisfactory (explain below, as needed)

☐ All data sheets and other test data are attached.

☐ All test data steps and data sheets have been completed and signed off.

☐ Other disposition as recommended below.

Remarks:

Performed By: _____ Date _____

Section III Systems Performance Supervisor's Review

Comments: _____

Approved: _____ Date _____

PROVISIONS OF FNP-0-AP-24 ARE NOT APPLICABLE

MSL-ETP-11

FIGURE 1

LIST OF EFFECTIVE PAGES

PAGE NO.	REVISION NO.										
	0	1	2	3	4	5	6	7	8	9	10
1	X	X									
2	X	X									
3	X	X									
4	X	X									
5		X									
DATA SHEET 1											
1	X	X									
DATA SHEET 2											
2A of 4	X	X									
2B-of 4	X	X									
2C-of 4	X	X									
3 of 4	X	X									
4 of 4	X	X									

FARLEY NUCLEAR PLANT
ENGINEERING TECHNICAL PROCEDURE

SERVICE WATER STORAGE POND PIEZOMETER WELL READINGS

1.0 Purpose

This procedure specifies the testing required to obtain data for recording the water level in piezometer wells which are located at the Service Water Storage Pond. The provisions of FNP-0-AP-24 are not applicable.

2.0 Acceptance Criteria

2.1 The Data recorded on the Data Sheets are forwarded to PGS-Licensing and Regulatory Compliance for plotting and evaluation. In addition, results are evaluated by Southern Company Services. Their evaluation is normally submitted within 30 days of the completion of the testing. The evaluation letter includes recommendations for corrective action when appropriate. Any water levels that have a differential of +/-5 feet in comparison to the previous reading are tested again. Otherwise, no quantitative acceptance criteria exist.

3.0 References

3.1 DR-760A, Water Level Indicator Operating Instructions

3.2 51453, Water Level Indicator Operating Instructions

3.3 Figure 2B7-1 (Southern Services Inc. Drawing D-176980), Storage Pond General Arrangement and Stripping Plan

3.4 Figure 2B7-12 (Southern Services Inc. Drawing D-176981), Storage Pond Drainage Plan, Sections and Detail

3.5 Figure 2.4-23 (Alabama Power Co. Drawing 2.4-23), Natural Ground Water Conditions

4.0 Test Equipment, Special Tools and Materials

4.1 Soiltest Model No. DR-760A, Water Level Indicator to be supplied by PGTS-Civil.

4.2 Slope Indicator Model NO. 51453, Water Level Indicator to be supplied by PGTS-Civil.

4.3 Five (5) foot (minimum) tape measure to be supplied by PGTS-Civil.

4.4 1/10 ft^3 calibrated mold to be supplied by PGTS-Civil.

4.5 Data Sheets from previous test, supplied by PGTS-Civil.

PGTS 5.0 Precautions and Limitations

5.1 The water level indicators used are capable of measuring up to 300 feet (Model No. DP-760A) or 100 feet (Model No. 51453).

5.2 Approval of the Test Supervisor is required prior to performing procedure sections or steps out of sequential order. Supervisor approval shall be documented on the data sheet.

5.3 IF a procedural step that required documentation is purposely not performed, and is not required, THEN "N/A" (Not Applicable) shall be entered in the sign off space. IF the procedure or controlling work order does not provide specific instructions for "Not Applicable" steps, THEN the Test Supervisor will N/A the step not performed, document in the margin by the step the reason for the step being not applicable, and provide his signature and the date.

5.4 Steps of the procedure with a designator (described below) in the left margin denote the requirement for the individual performing the step to provide his signature and date on the data sheet.

5.4.1 Designator PGTS, APCO Power Generation Services.

5.4.2 Designator SP, Systems Performance.

SP/PGTS 6.0 Prerequisites and Initial Conditions

6.1 PGTS-Civil has coordinated work through the General Manager of Nuclear Support at Southern Nuclear.

6.2 Ensure that the data sheets from the previous test are attached to the procedure upon procedure closeout.

6.3 Performance of this procedure has been scheduled by FNP-SP.

6.4 Permission has been obtained from the Shift Supervisor to perform this procedure.

7.0 Instructions

7.1 Preparation

PGTS

7.1.1 Check the probe and battery to ensure that a positive response occurs when the probe comes in contact with water.

PGTS

7.1.2 Press the test button to check the condition of the battery.

PGTS

7.2 Testing

> NOTE: Signoffs for steps 7.2.2.1 thru 7.2.4 are located on Data Sheets 2A thru 4.

7.2.1 Turn the probe power switch "on".

7.2.2 Read the wire marker to determine the depth of the probe at the point of needle reflecting. A subsidiary scale is needed to measure the distance from the top of the riser to the next mark.

(Mark distance - subsidiary scale reading = Depth to Water)

7.2.2.1 (a) Record the current depth to water for each well on Data Sheet 2A, 2B, 2C or 3.

7.2.2.2 (b) For each well, note on Data Sheet 2A, 2B, 2C, or 3 any condition of deterioration, damage, missing parts, excessive vegetative growth, ant hills, animal burrows, or other unusual condition related to the well, the protective devices such as pipe frames and caps, or in the surrounding area. Conditions considered to be in need of immediate repair are to be brought to the attention of the appropriate site personnel before leaving the plant site.

7.2.2.2 Record the previous depth to water for each well and calculate the difference and record both readings on Data Sheet 2A, 2B, 2C or 3. Previous depth to water readings are obtained from data sheets which are supplied by PGTS.

(Current depth to water - Previous depth to water = Depth to water difference)

Acceptance Criteria: Depth to water difference is +/-5 feet.

7.2.2.3 IF the acceptance criteria was met, THEN proceed to Step 7.2.2.5.

7.2.2.4 IF the acceptance criteria was NOT met, THEN perform Steps 7.2.1 thru Step 7.2.2.2. Continue testing until 2 consecutive tests agree and record that depth (not to exceed 4 retests).

7.2.2.5 Record the water elevation on Data Sheet 2A, 2B, 2C or 3.

(Elev. Top of Riser - Depth to Water = Water Elevation)

7.2.3 Record (on Data Sheet 4) the time it takes to fill a $1/10^3$ ft. calibrated mold at the horizontal drain and right relief well. Record the time in minutes and seconds.

7.2.4 Calculate the discharge rates and record on Data Sheet 4.

$$\left(\frac{1}{10} \times \frac{1}{\text{Fill Time (Seconds)}} = \text{Discharge Rate (CFS)}\right)$$

7.3 Restoration

PGTS 7.3.1 Return the piezometer cap to the As Found position and engage lock if one is provided.

SP 7.3.2 Notify Shift Supervisor of job completion.

7.3.3 Notify appropriate site personnel of any conditions found in 7.2.2.1 (b) which are considered to require immediate repair before leaving the plant site.

OTC # _____
Sheet 1 of 4

Data Sheet 1

Piezometer Readings

Step	Description		Signature/Date
5.0	Precautions and limitations read and understood	PGTS	_____/_____
6.0	Prerequisites and initial conditions completed/satisfied	PGTS	_____/_____
		SP	_____/_____
7.1.1	Probe responds to water contact	PGTS	_____/_____
7.1.2	Battery is functioning correctly	PGTS	_____/_____
7.2.2	Measure from the top of the riser to next mark with subsidiary scale. (Mark distance-subsidiary scale reading = Depth to Water)	PGTS	_____/_____
7.3.1	Replace piezometer cap and lock where applicable.	PGT	_____/_____
7.3.2	Shift Supervisor notified of job completion	SP	_____/_____
7.3.3	Notify site personnel of any conditions needing repair.	PGT	_____/_____
		SP	_____/_____

Remarks: _____

_____

_____

OTC# _____
SHEET 2A OF 4

DATA SHEET 2A
FARLEY NUCLEAR PLANT OBSERVATION WELL REPORT

WELL NO	STATION NO	ELEV.TOP OF RISER	ELEV. TIP OF RISER	DEPTH TO WATER (CURRENT)	DEPTH TO WATER (PREVIOUS)	DEPTH DIFF.	ELEV. OF WATER	OBSERVED CONDITION
1	1+50	194.54	112.00					
2	4+25	188.25	112.00					
3	4+25	195.86	112.00					
4	5+75	187.20	112.00					
5	7+25	184.50	112.00					
6	7+25	195.99	112.00					
7	8+75	196.03	112.00					
8	8+75	179.11	112.00					
9	8+75	175.69	112.00					
10	10+25	196.30	112.00					
11	10+25	169.61	112.00					
12	10+25	168.73	112.00					
13	12+00	198.02	112.00					
14	12+00	197.45	112.00					
15	12+00	162.74	112.00					
16	12+00	157.59	112.00					
17A	13+50	198.31	112.00					
17B	13+50	187.58	154.13					
17C	13+50	167.28	153.00					
18	13+50	157.56	112.00					
19	15+00	198.03	112.00					
20	15+00	197.96	112.00					
21	15+00	169.65	112.00					
22	15+00	160.57	112.00					
23	16+75	176.49	112.00					
24	18+25	182.19	112.00					
25	19+75	183.57	112.00					

OBSERVER / DIAL _____ / _____

OTC# _____
SHEET 2B OF 4

DATA SHEET 2B
FARLEY NUCLEAR PLANT OBSERVATION WELL REPORT

WELL NO	STATION NO	ELEV.TOP OF RISER	ELEV. TIP OF RISER	DEPTH TO WATER (CURRENT)	DEPTH TO WATER (PREVIOUS)	DEPTH DIFF.	ELEV. OF WATER	OBSERVED CONDITION
26	21+25	196.17	112.00					
27	21+25	184.14	112.00					
28	21+25	183.57	112.00					
29	22+75	184.77	112.00					
30	24+25	195.72	112.00					
31	24+25	184.94	112.00					
32	24+25	180.03	112.00					
33	24+75	183.26	112.00					
34	27+25	195.45	112.00					
35	27+25	182.16	112.00					
36	27+25	177.87	112.00					
37	28+75	181.87	112.00					
38	30+25	195.97	112.00					
39	30+25	181.56	112.00					
40	30+25	181.63	112.00					
41	31+75	181.96	112.00					
42	34+50	188.64	112.00					
43	37+50	188.81	112.00					
44	41+50	192.01	112.00					
45	10+50	171.84	102.00					
46	16+50	170.84	102.00					
101		188386	162.64					
102		205.16	152.00					
103		218.54	168.00					
104		221.38	164.31					
102		198.21	158.97					
121	16+70	167.03	112.00					

OBSERVER / DIAL _____ / _____

OTC# _____
SHEET 2C OF 4

DATA SHEET 2C
FARLEY NUCLEAR PLANT OBSERVATION WELL REPORT

WELL NO	STATION NO	ELEV.TOP OF RISER	ELEV. TIP OF RISER	DEPTH TO WATER (CURRENT)	DEPTH TO WATER (PREVIOUS)	DEPTH DIFF.	ELEV. OF WATER	OBSERVED CONDITION
1	13+57.5	198.87	146.67					
2	13+42.5	198.80	109.40					
3	13+57.5	198.27	126.77					
4	13+42.5	198.16	77.86					
5	11+00	196.83	147.38					
6	15+75	196.98	148.43					

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OBSERVER / DIAL _____ / _____

DATA SHEET 3
FARLEY NUCLEAR PLANT OBSERVATION WELL REPORT

WELL NO	STATION NO	ELEV.TOP MAN HOLE	ELEV. TOP OF RISER	ELEV. TIP OF RISER	DEPTH TO WATER (CURRENT)	DEPTH TO WATER (PREVIOUS)	DEPTH DIFF.	ELEV. OF WATER	OBSERVED CONDITION
1	3+50	187.70	182.67	99.00					
2	5+00	185.99	180.99	98.80					
3	6+50	185.46	178.92	97.23					
4	8+00	180.63	176.30	98.12					
5	6+50	174.43	170.04	92.32					
6	10+30	169.89	165.09	93.70					
7	11+00	165.06	157.48	93.70					
8	11+90	158.63	144.63	93.67					
9	12+65	158.65	143.07	93.55					
10	13+40	158.95	141.54	95.41					
11	14+15	161.56	142.62	93.57					
12	14+90	166.37	144.00	94.50					
13	16+00	172.78	161.13	95.44					
14	16+60	176.09	164.38	97.09					
15	17+50	180.78	167.56	97.62					
16	19+00	181.43	169.58	97.00					
17	20+50	182.48	171.72	98.85					
18	22+00	183.59	172.59	98.50					
19	23+50	184.00	173.69	97.00					
20	25+00	183.93	174.79	95.49					
21	26+50	181.05	175.69	95.69					
22	28+00	181.05	176.93	94.50					
23	29+50	181.05	176.99	97.30					
24	31+00	181.09	176.82	97.69					
25	32+50	181.24	177.13	97.50					

OBSERVER / DIAL _____ / _____

DATA SHEET 4

HORIZONTAL DRAIN DISCHARGE

METHOD MEASURE TIME TO FILL 1/10 FT.^{3}
CALIBRATED MOLD

DATE_____ MIN.____ SEC. = ____ SEC.

RATE: $\frac{1}{10}$ X $\frac{1}{\text{_____ SEC.}}$ = ____ CFS

PGTS/DATE_____

RELIEF WELL DISCHARGE

METHOD MEASURE TIME TO FILL 1/10 FT.^{3}
CALIBRATED MOLD

DATE __ MIN._____

RATE: $\frac{1}{10}$ X $\frac{1}{\text{_____ SEC.}}$ = ____ CFS

PGTS/DATE_____