

APPENDIX A

Technical Specification 3/4.7.13 (Current Version)

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PLANT SYSTEMS3/4.7.13 GROUNDWATER LEVEL - SERVICE WATER RESERVOIRLIMITING CONDITION FOR OPERATION

3.7.13 The groundwater level of the service water reservoir (shared by Units 1 and 2) shall not exceed the elevation at the locations listed in Table 3.7-6. The flow of groundwater from the drains beneath the pumphouse shall not exceed the values given in Table 3.7-6.

APPLICABILITY: ALL MODES.

ACTION:

- a. With the groundwater level of the service water reservoir or the groundwater flow rate exceeding any of the limits of Table 3.7-6, an engineering evaluation shall be performed by a Licensed Civil Engineer to determine the cause of the high ground water or flow rates and the influence on the stability of the service water reservoir and pumphouse. A Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.9.2 within 90 days, containing the results of the evaluation and any corrective action determined to be necessary.
- b. With the inability to obtain at least one measurement from each of the locations listed in SR 4.7.13.1, an engineering evaluation shall be performed by a Licensed Civil Engineer to determine the consequences of not meeting SR 4.7.13.1. A Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.9.2 within 90 days, containing the results of the evaluation and any corrective action determined to be necessary.
- c. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

- 4.7.13.1 At least once per six months verify the groundwater level within the dike of the service water reservoir does not exceed the value established in Table 3.7-6. The groundwater level shall be determined by measurement from each zone. At a minimum, at least one measurement shall be made at each zone listed below and the measurement shall be within the limits presented in Table 3.7-6:
 - service water pump house (Nos. 11, 14 or 20), and
 - south east end of the reservoir (Nos. 10, 15, 21 or 22), and
 - service water valve house (Nos. 18 or 19)
- 4.7.13.2 At least once per six months verify that the groundwater flow rate does not exceed the value established in Table 3.7-6. The groundwater flow rate shall be determined by measurements at the drain outlet gallery. A visual inspection of the clarity of the outflow from each drain shall be performed in conjunction with the flow monitoring effort.

PLANT SYSTEMSBASES

3/4.7.13 GROUNDWATER LEVEL - SERVICE WATER RESERVOIR

A program to monitor groundwater levels in the area of the service water reservoir has been established to ensure that the integrity of the service water reservoir embankments and pumphouse is maintained.

Groundwater threshold levels have been established based on historical groundwater data available in 1977. These levels are sufficiently conservative to ensure that the service water reservoir and pumphouse will perform their intended function. An engineering evaluation will be performed if these threshold values are exceeded, to determine if there is any substantive cause to believe that any aspect of the service water reservoir, dike, or pumphouse will not perform its intended function. A conclusion to this effect, and the appropriate corrective actions to be performed, will be reported to the Commission.

A minimum of one measurement device in each of the three zones is required to be OPERABLE in order to monitor the groundwater levels. The groundwater levels are periodically reviewed to determine whether a changing groundwater environment warrants a change in threshold levels.

APPENDIX B

Table 5 from Geotechnical Instrumentation Manual

TABLE 5

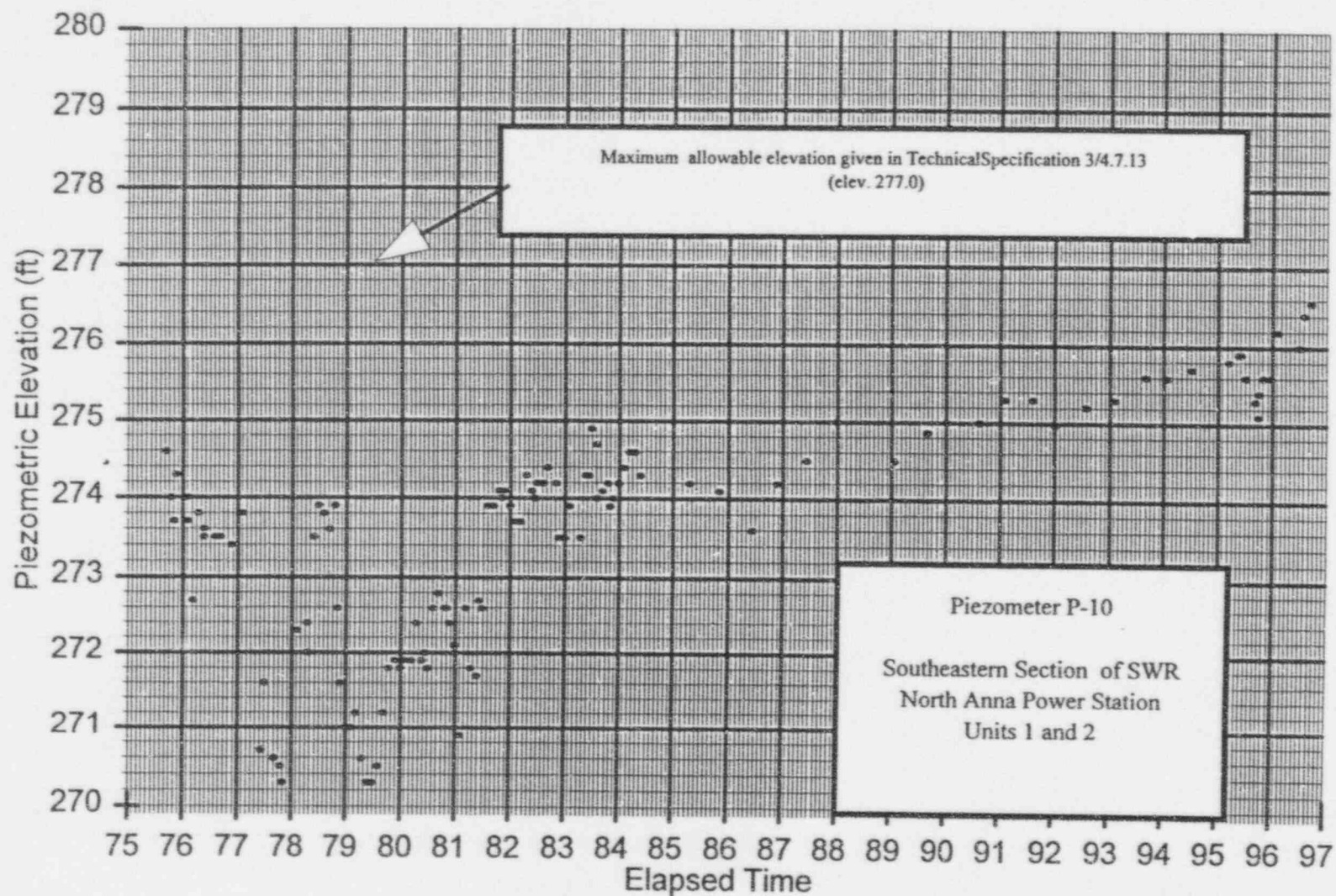
PIEZOMETERS AROUND SERVICE WATER RESERVOIR
(FROM GEOTECHNICAL INSTRUMENTATION MANUAL)

Piezometer No.	Location of Transducer		Transducer Serial Number	Transducer Elevation Ft	Anticip Piezome Elevati Ft
	Station Along Centerline	Offset From Centerline* Ft			
1	12 + 67	10 U	656	286.7	306
2	12 + 67	20 D	1098	283.5	293
3	12 + 67	48 D	2063	273.8	278
4	16 + 50	10 U	1094	290.9	308
5	16 + 50	14 D	667	288.4	298
6	16 + 50	40 D	2048	279.7	288
7	20 + 40	10 U	2064	300.1	309
8	20 + 40	20 D	2065	298.6	301
9	20 + 40	50 D	-	290.8	297
10	14 + 55	111 D	14451	258.7	274
11	21 + 60	7 D	14452	275.4	280
12	21 + 60	69 D	14450	268.2	275
13	21 + 56	10 U	-	243.9	280
14	20 + 75	29 U	-	244.3	275
15	14 + 72	10 U	14733	255.6	306
16	13 + 25	10 U	-	256.0	306
17	12 + 24	10 U	14734	256.0	306
18	26 + 36	30 U	14738	253.8	305

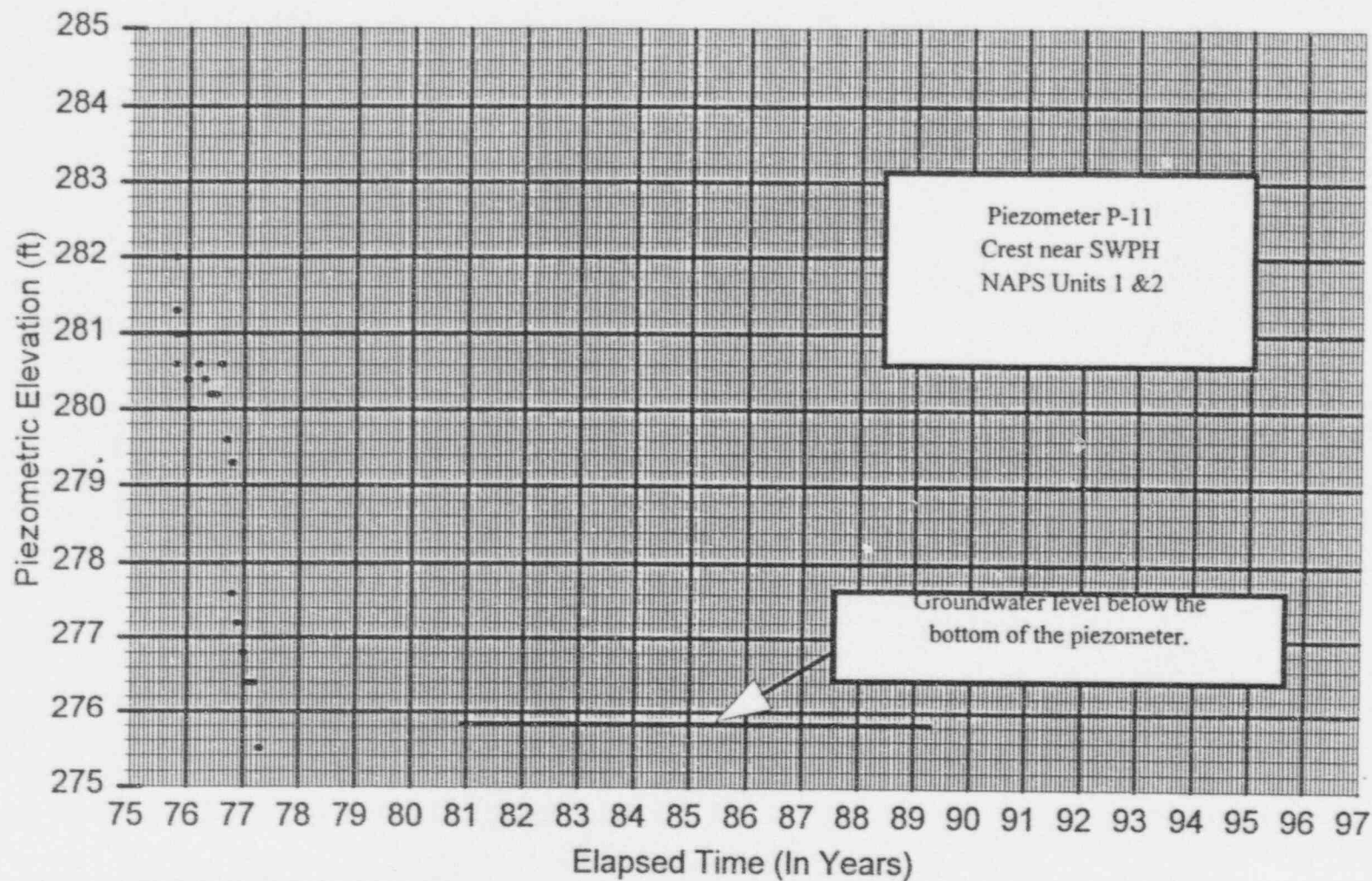
- upstream, D - downstream

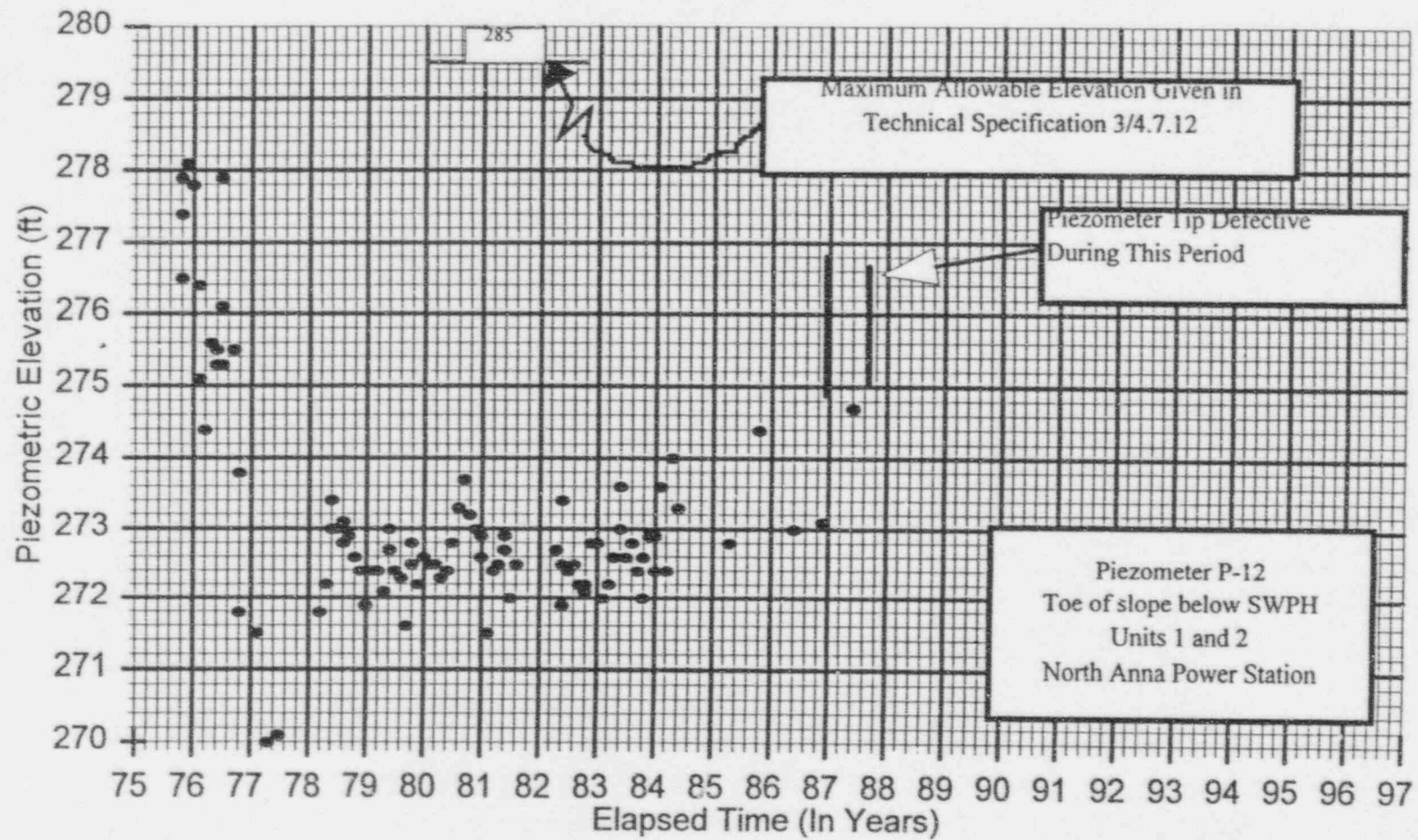
APPENDIX C

Plots of Piezometric Levels vs. Time



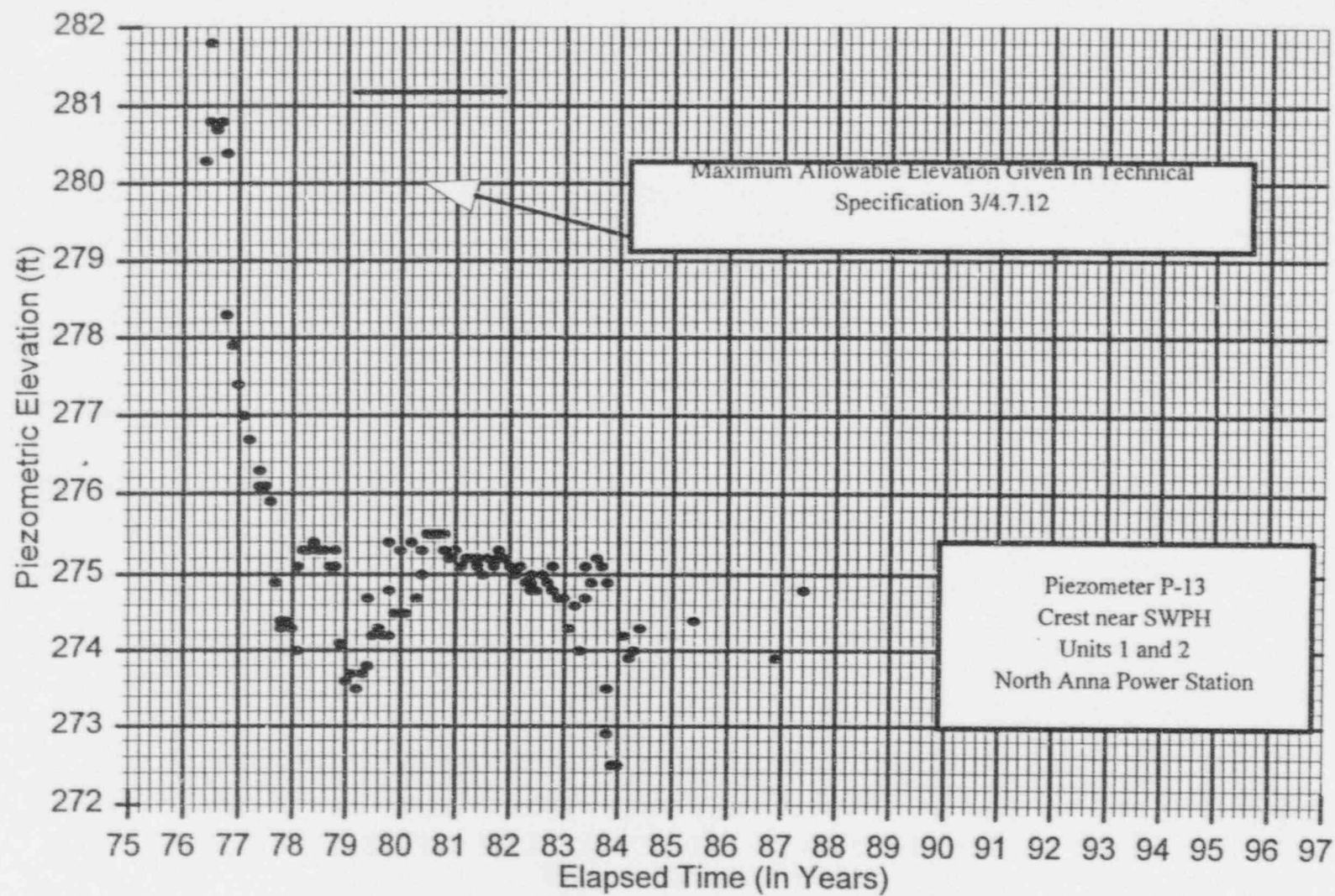
Piezometer P-10



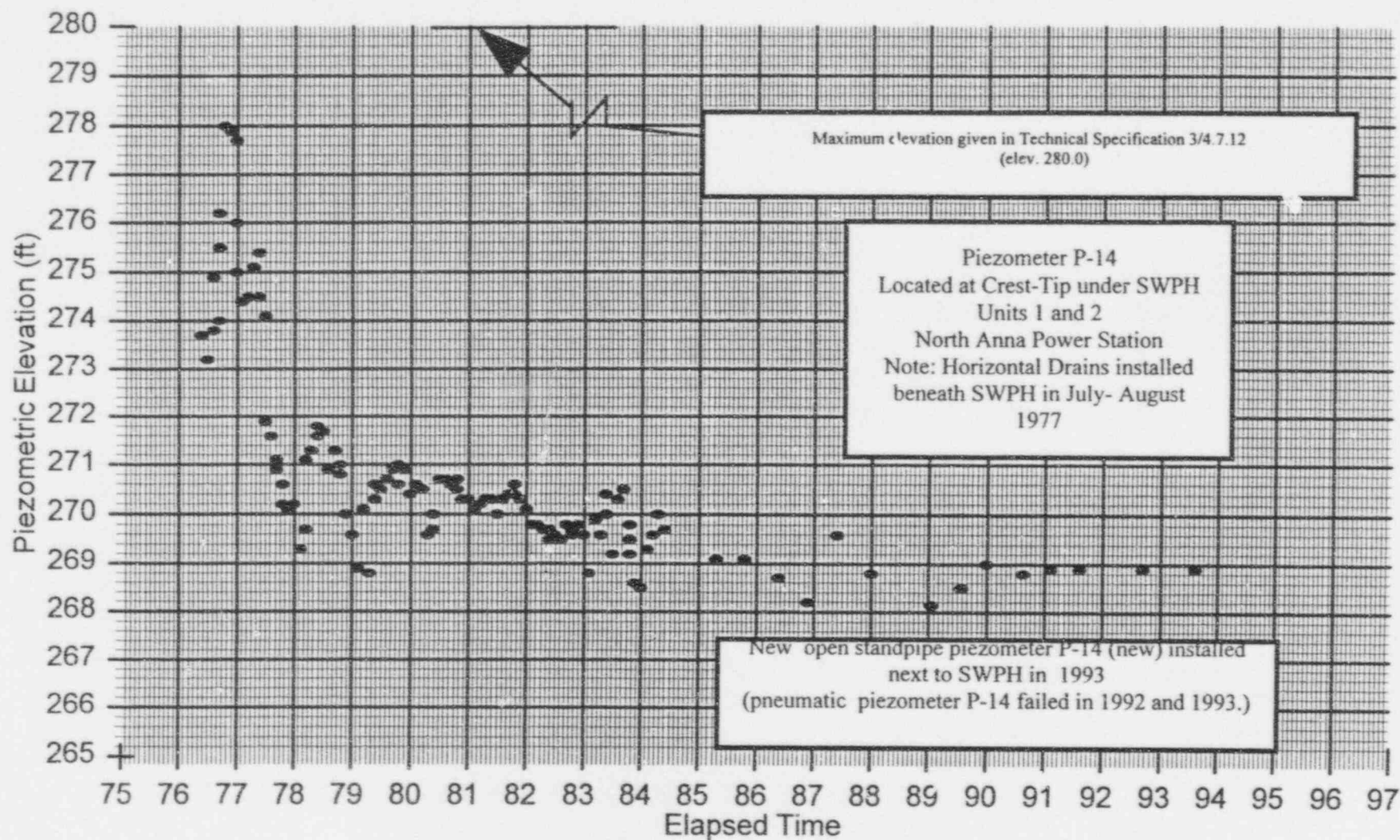


Note: Piezometer Inoperative On
Test Date 1-18-88

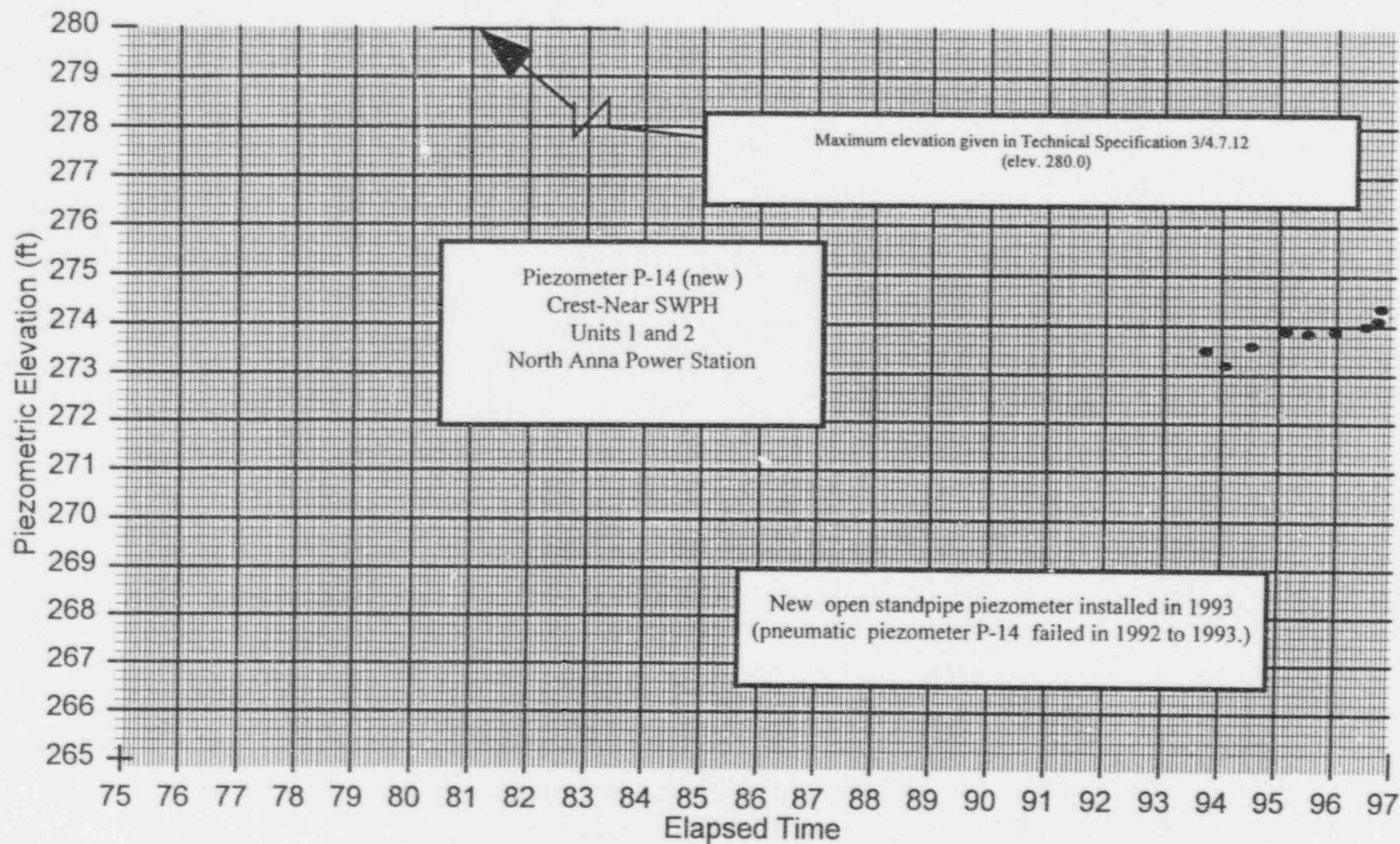
Piezometer P-12



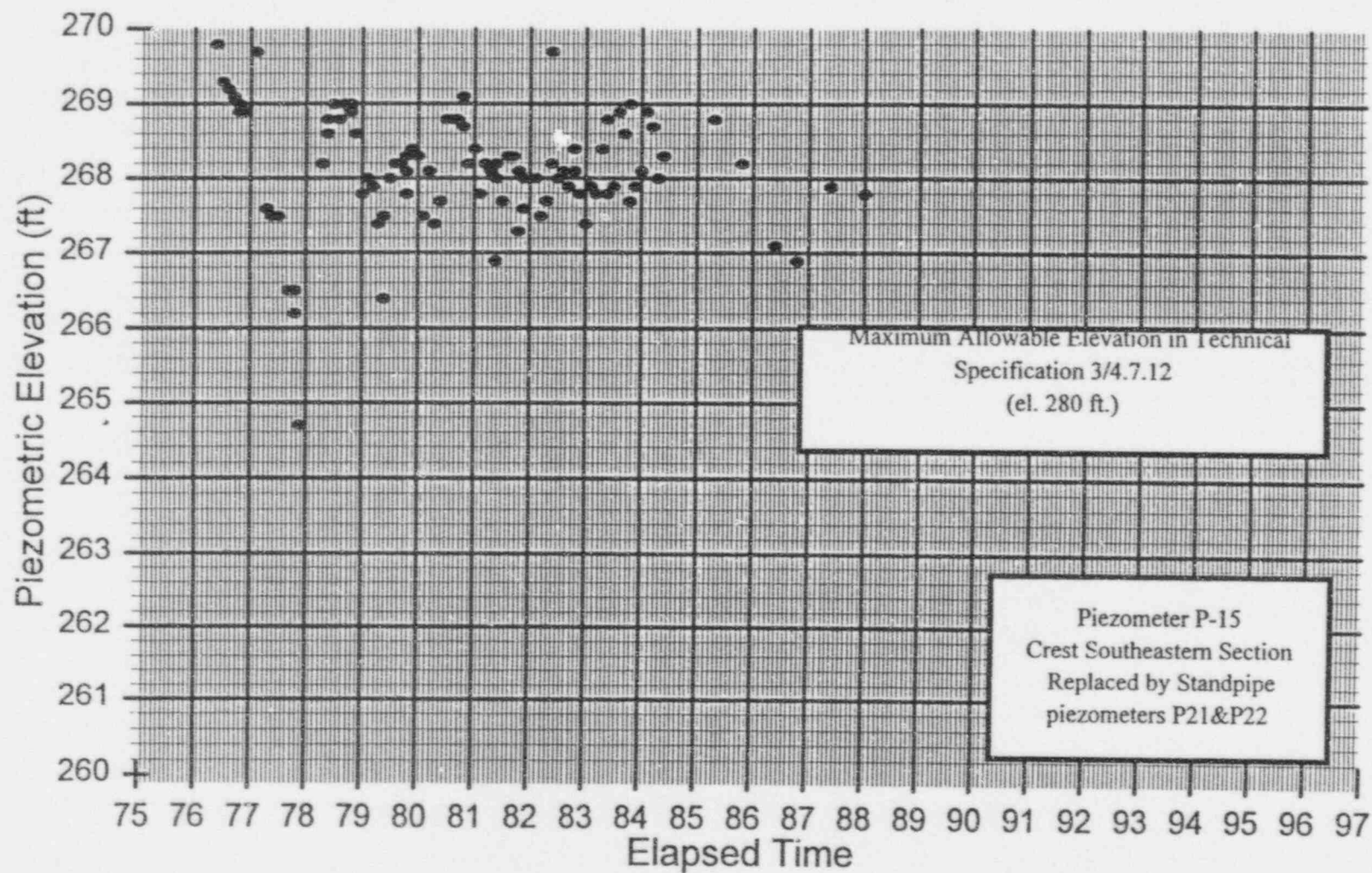
Piezometer P-13



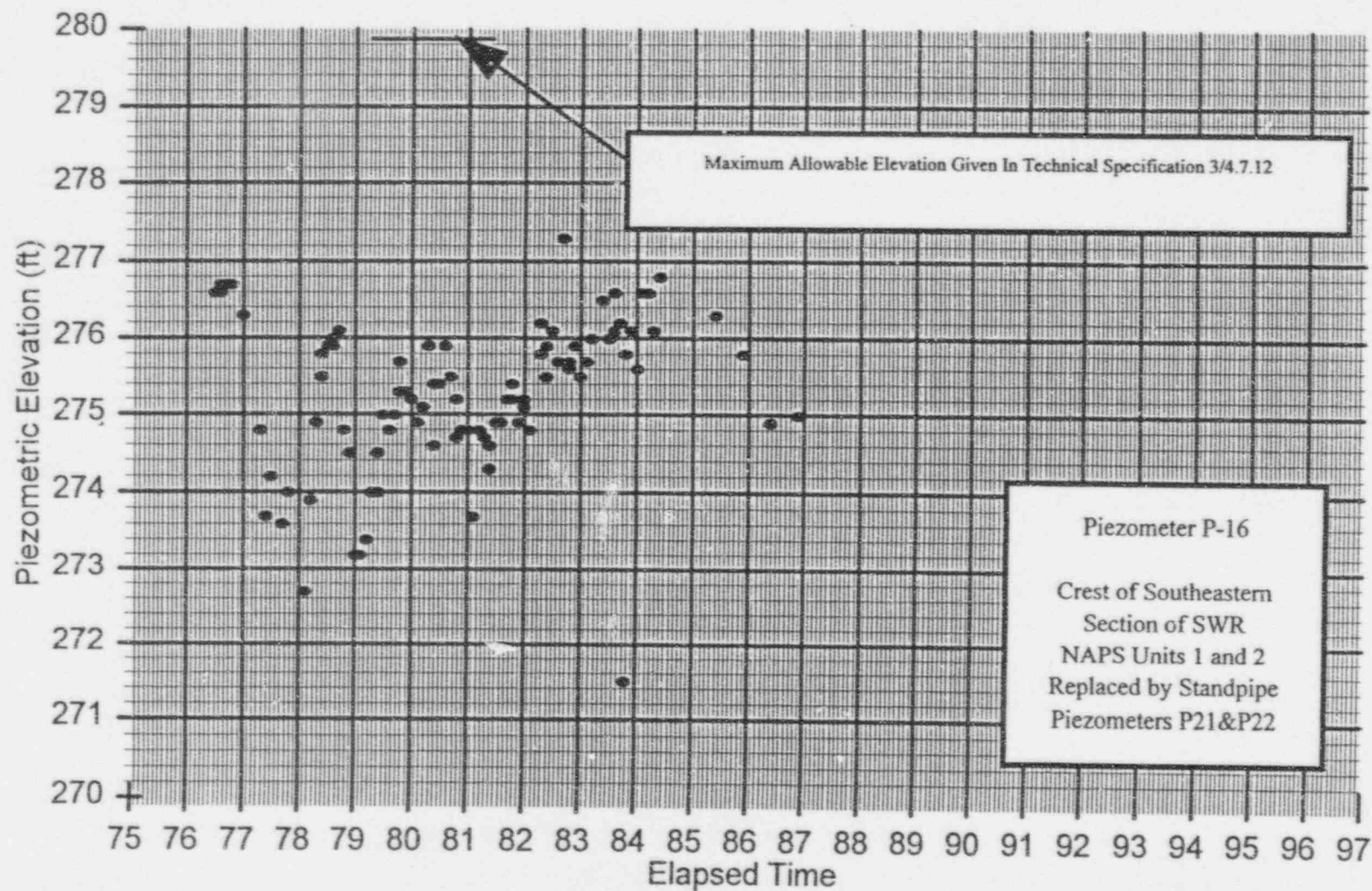
Piezometer P-14



Standpipe Piezometer P-14 (new)

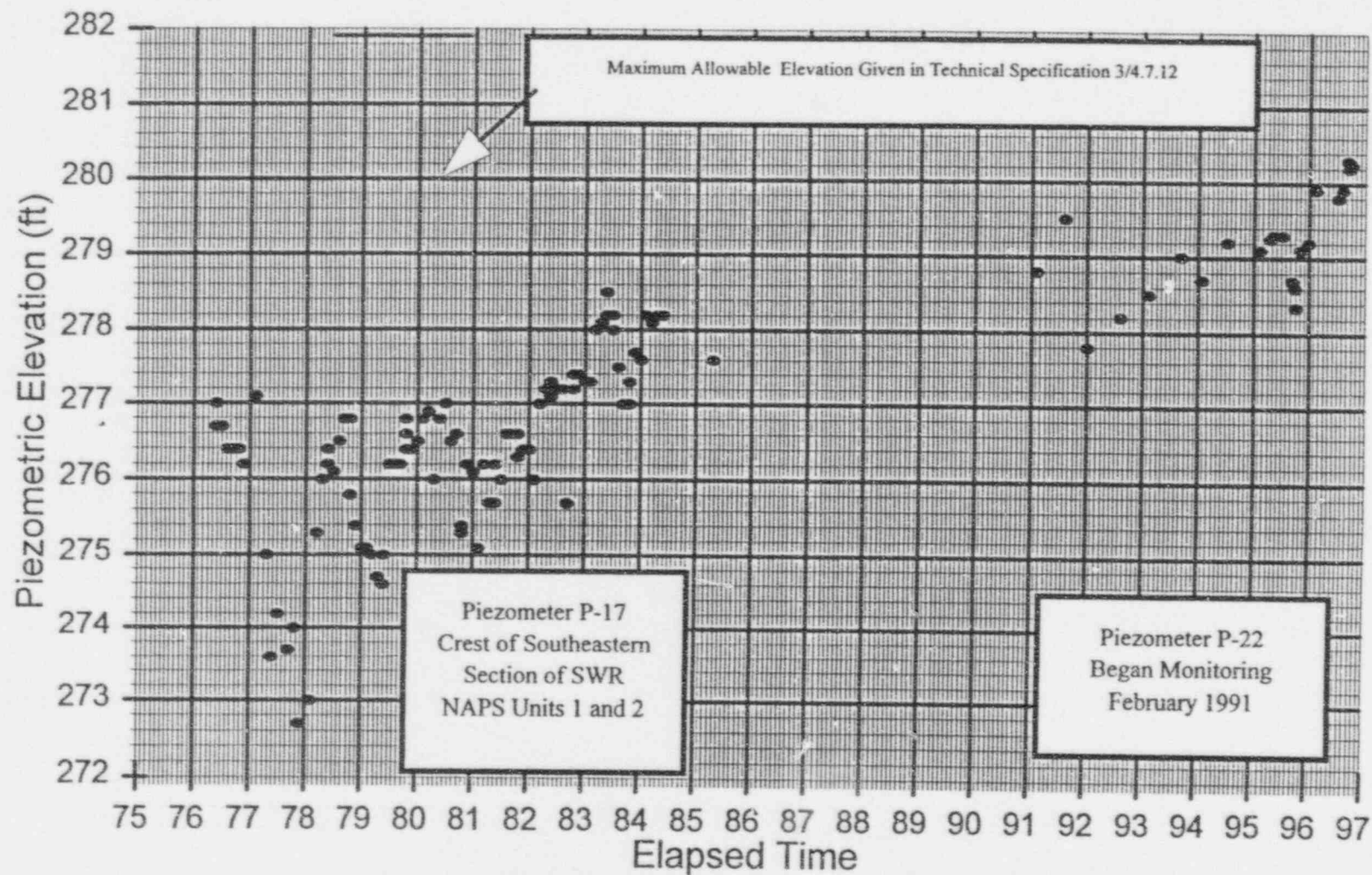


Piezometer P-15



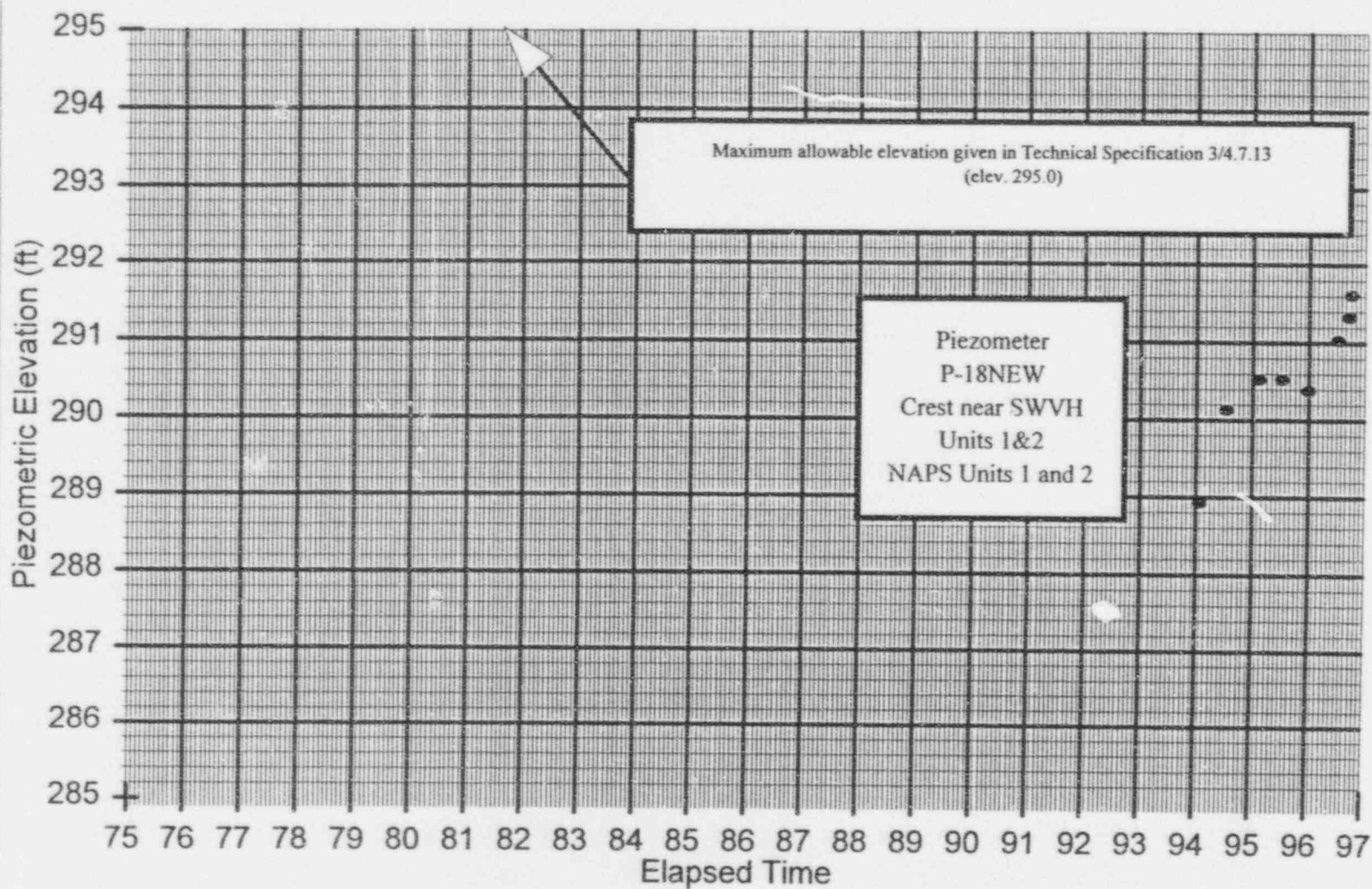
Note: Piezometer Inoperative On Test Dates
6-16-87 & 1-18-88

Piezometer P-16



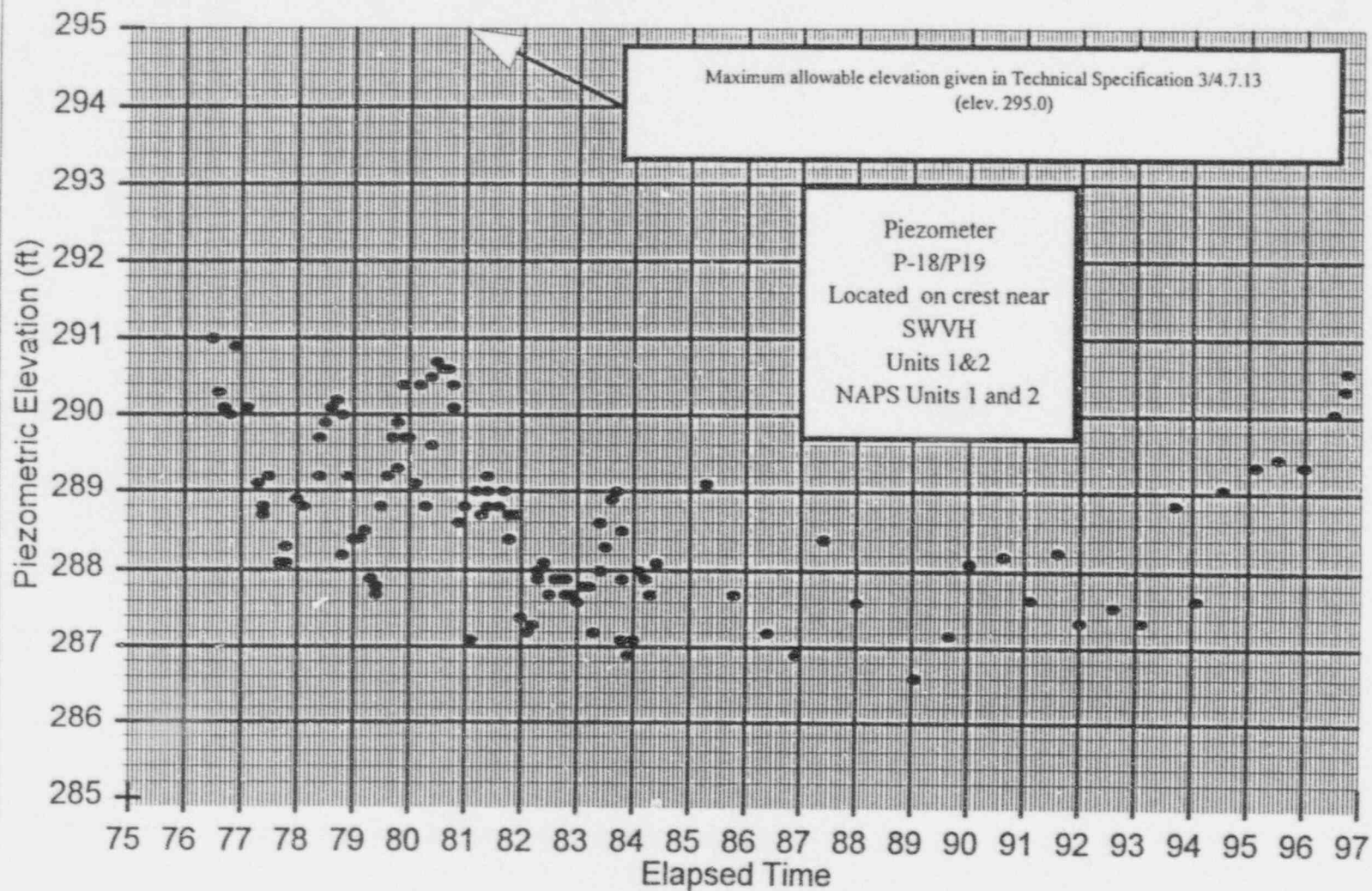
Note : Piezometer Inoperative On Test Dates
6-16-87 & 1-18-88. Standpipe
piezometer P22 replaced P17 in 1991

Piezometer P-17/P-22



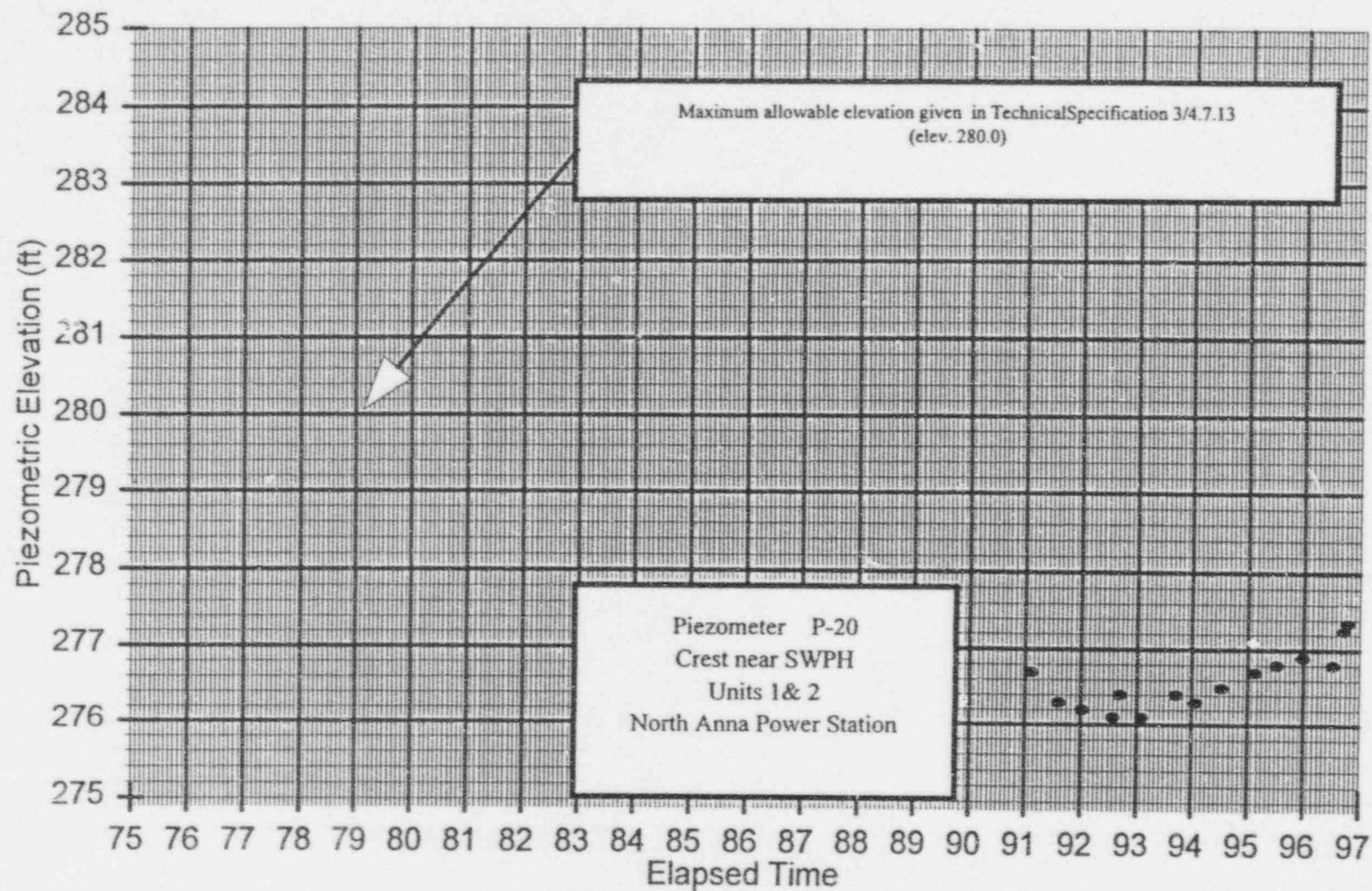
Standpipe Piezometer P-18 NEW was
installed in 1993 to provide redundancy

Piezometer P-18NEW

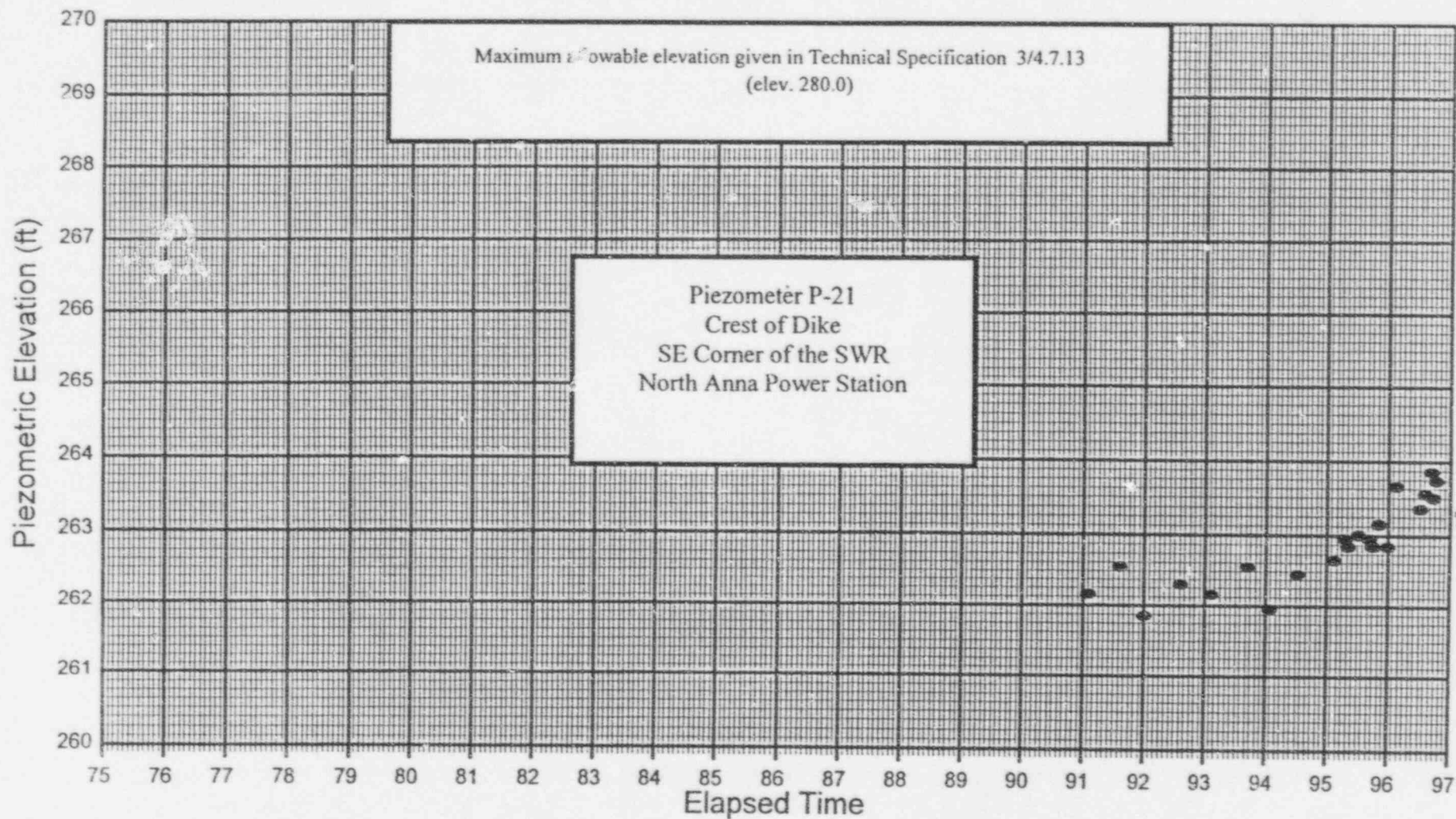


Piezometer P-18 was replaced with open
standpipe piezometer P19 in 1990.
Began reading P19 in Feb. 1991

Piezometer P-18/P19



Standpipe Piezometer P-20



Standpipe Piezometer P-21