

NRC DISTRIBUTION FOR PART 50 DOCKET MATERIAL

| | | | | |
|---|--|--|------------|--|
| TO: Mr. Robert W. Reid | | FROM: Metropolitan Edison Company Reading, Pa. R. C. Arnold | | DATE OF DOCUMENT 7/21/76 |
| <input checked="" type="checkbox"/> LETTER <input checked="" type="checkbox"/> ORIGINAL <input type="checkbox"/> COPY | | <input type="checkbox"/> NOTORIZED <input checked="" type="checkbox"/> UNCLASSIFIED | PROP | DATE RECEIVED 7/24/76 |
| | | | INPUT FORM | NUMBER OF COPIES RECEIVED one signed 39 copies encl recvd. |

DESCRIPTION

Ltr. re our 2/18/76 ltr..trans the following:

APPENDIX I DISTRIBUTION AFTER ISSUANCE
OF A LICENSE

(1-P) (27-P)

Plant Name:

Three Mile Island #1

ENCLOSURE

Furnishing responses to questions raised in
enclosure 2 of the N.R.C.'s 2/18/76 ltr. to
TMI-1 concerning Appendix I.

FOR ACTION/INFORMATION 7/26/76

RJL

| | | |
|---------------------|---------|------------------|
| ASSIGNED AD: | | ASSIGNED AD: |
| ✓ BRANCH CHIEF: (3) | Reid | BRANCH CHIEF: |
| ✓ PROJECT MANAGER: | Bridges | PROJECT MANAGER: |
| ✓ LIC. ASST.: | Ingram | LIC. ASST.: |

INTERNAL DISTRIBUTION

| | | | |
|--------------------|----------------|------------------------|----------------|
| ✓ RES FILE | SYSTEMS SAFETY | PLANT SYSTEMS | ENVIRO TECH |
| ✓ NRC PDR | HEINEMAN | TEDESCO | ERMST |
| ✓ I & E (2) | SCHROEDER | BEMAROYA | ✓ BALLARD |
| ✓ OELD | | LAJNAS | SPANGLER |
| ✓ COSSICK & STAFF | ENGINEERING | IPPOLITO | |
| MIPC | MCCARY | | SITE TECH |
| CASE | KNIGHT | OPERATING REACTORS | ✓ GASHILL |
| HANAUER | STWELL | STELLO | STEPP |
| HARLESS | PAWLICKI | | ✓ HILMAN |
| | | OPERATING TECH | ✓ MARKER |
| PROJECT MANAGEMENT | REACTOR SAFETY | EISENHUT | SITE ANALYSIS |
| BOYD | ROSS | SHAO | VOLLNER |
| P COLLINS | NOVAK | BAER | BUNCH |
| HOUSTON | ROSZTOCZY | Butler | J. COLLINS (2) |
| PETERSON | CHECK | ✓ GRIMES | ✓ KREMER |
| MELTZ | | | ✓ VERDERY |
| HELTERMES | AT & I | SITE SAFETY & ENVIRO | |
| SKOVHOLT | SALTZMAN | ANALYSIS | |
| | RUTBERG | ✓ DENTON & MULLER - 44 | |

EXTERNAL DISTRIBUTION

CONTROL NUMBER

| | | | |
|---------------------------------|-------------|---------------------|------------------|
| ✓ LPDR:Harrisburg, Pa. | NATL LAB | FROCKHAVEN NATL LAB | 1469 511 7456 |
| ✓ TIC | REG. V-IE | ULRIKSON (ORNL) | |
| ✓ NSIC | LA PDR | | |
| ✓ ASLB | CONSULTANTS | | |
| ✓ ACNS 16 HOLDING/SENT : INGRAM | | | |



METROPOLITAN EDISON COMPANY

POST OFFICE BOX 542 READING, PENNSYLVANIA 19603

TELEPHONE 215 - 929-3601

July 21, 1976
GQL 0998



Director of Nuclear Reactor Regulation
Attn: Robert W. Reid, Chief
Operating Reactors Branch No. 4
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Reid:

Three Mile Island Nuclear Station Unit No. 1
Docket Number 50-289

Enclosed please find forty (40) copies of our response to Enclosure 2 of your letter of February 18, 1976 concerning Appendix I to 10 CFR Part 50. We have sent under separate cover six (6) copies of a document entitled, "Meteorological Information and Diffusion Estimates to Conform with Appendix I Requirements". This data was used to perform the Appendix I Analyses for both Three Mile Island Units 1 and 2.

It is our opinion that these submittals answer all outstanding questions with respect to Appendix I for Three Mile Island Unit 1.

Sincerely,

R. C. Arnold
Vice President

RCA:JJM:tas

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7458

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Errata Sheet to responses to questions raised in Enclosure 2
of the NRC's 2-18-76 letter to TMI-1 concerning Appendix I

The following changes should be made to the above
referenced document. These errors were inadvertently
over looked in the initial printing.

Question 2a - typo change "nearest mile cow...." to
"nearest milk cow...."

Responses to questions 3, 4, 5 and 7 indicate that
meteorological information is attached. This
information was sent under separate cover, GQL 0998.

1469 313

RESPONSES TO QUESTIONS RAISED IN ENCLOSURE 2

OF THE NRC'S 2-18-76 LETTER TO TMI-1

CONCERNING APPENDIX I

QUESTION 1

Provide the information requested in Appendix D of Draft Regulatory Guide 1.BB or 1.CC, as appropriate.

RESPONSE

The analysis submitted on 6/4/76 contains the necessary information required by Draft Regulatory Guide 1.BB.

QUESTION 2

Provide, in tabular form, the distances from the centerline of the first nuclear unit to the following for each of the 22-1/2 degree radial sectors centered on the 16 cardinal compass directions.

- a. Nearest milk cow (to a distance of 5 miles)
- b. Nearest meat animal (to a distance of 5 miles)
- c. Nearest milk goat (to a distance of 5 miles)
- d. Nearest residence (to a distance of 5 miles)
- e. Nearest vegetable garden greater than 500 ft² (to a distance of 5 miles)
- f. Nearest site boundary.

For radioactivity releases from stacks which qualify as elevated releases as defined in Draft Regulatory Guide 1.DD, identify the locations of all milk cows, milk goats, meat animals, residences, and vegetable gardens, in a similar manner, out to a distance of 3 miles for each radial sector.

RESPONSE

See attached Table 2-1.

QUESTION 3

Based on considerations in Draft Regulatory Guide 1.DD, provide estimates of relative concentration (X/Q) and deposition (D/Q) at locations specified in response to item 2 above for each release point specified in response to item 1 above.

RESPONSE

See Tables 1.3-11A to 1.3-14B of attached Meteorological Information for Three Mile Island Units 1 & 2.

1469 414

QUESTION 4

Provide a detailed description of the meteorological data, models and parameters used to determine the X/Q and D/Q values. Include information concerning the validity and accuracy of the models and assumptions for your site and the representativeness of the meteorological data used.

RESPONSE

See Sections 1.1, 1.1.1, 1.1.2, 1.1.3, 1.1.4, 1.2.1, 1.2.2, 1.2.3, 1.3, 1.3.2 & 1.3.3 and Tables 1.1-1, 1.1-4, 1.3-2, 1.3-3, 1.3-4 and 1.3-5 of attached Meteorological Information for Three Mile Island Units 1 & 2.

QUESTION 5

If an onsite program commensurate with the recommendations and intent of Regulatory Guide 1.23 exists:

- a. Provide representative annual and monthly, if available, joint frequency distributions of wind speed and direction by atmospheric stability class covering at least the most recent one year period of record, preferably two or more years of record. Wind speed and direction should be measured at levels applicable to release point elevations and stability should be determined from the vertical temperature gradient between measurement levels that represent conditions into which the effluent is released.
- b. Describe the representativeness of the available data with respect to expected long-term conditions at the site.

RESPONSE

- a. See Tables 1.1-2 and 1.1-3 of attached Meteorological Information for Three Mile Island Units 1 & 2.
- b. See Section 1.1-4 of attached Meteorological Information for Three Mile Island Units 1 & 2.

QUESTION 6

If recent onsite meteorological data are not available, or if the meteorological measurements program does not meet the recommendations and intent of Regulatory Guide 1.23:

- a. Provide the best available meteorological data in the format described in item 5,a above.
- b. Describe the representativeness of the available data with respect to onsite and near site atmospheric transport and diffusion conditions, and with respect to expected long term conditions at and near the site.

QUESTION 6 (Cont'd.)

- c. Provide a description of the meteorological measurements used for collection of the data presented. This description should include the location of the sensors with respect to the power plant(s) and other prominent topographic features (including buildings) and accuracy of the instrumentation.
- d. Provide a commitment to establish a program to meet the recommendations and intent of Regulatory Guide 1.23, or provide sufficient justification to allow the present program to remain unchanged.

RESPONSE

Since acceptable onsite meteorological data is available for Three Mile Island Unit 1, the Applicant will not respond to this question.

QUESTION 7

Describe airflow trajectory regimes of importance in transporting effluents to the locations for which dose calculations are made.

RESPONSE

See Sections 1.1.5, 1.2.2 and 1.2.3 of attached Meteorological Information for Three Mile Island Units 1 & 2.

QUESTION 8

Provide a map showing the detailed topographical features (as modified by the plant) on a large scale, within a 10-mile radius of the plant and a plot of the maximum topographic elevation versus distance from the center of the plant in each of the sixteen 22-1/2 degree cardinal compass point sectors (centered on true north), radiating from the center of the plant, to a distance of 10 miles.

RESPONSE

See attached Table 8-1 and Figures 8-1 through 8-16.

1469 316

QUESTION 9

Provide the dates and times of radioactivity releases from intermittent sources by source location based on actual plant operation and, if available, appropriate hourly meteorological data (i.e., wind direction and speed, and atmospheric stability) during each period of release.

RESPONSE

Since it is our understanding that the first full year of effluent release data is not considered representative, we are enclosing copies of the effluent release data contained in the Semi-Annual Reports for 1975 at Three Mile Island Unit 1.

1469 317

TABLE 2-1

THREE MILE ISLAND NUCLEAR GENERATING STATION

| <u>Sector</u> | <u>Milk</u> | | <u>Meat</u> | <u>Residence</u> | <u>Vegetable</u> | <u>Site</u> |
|---------------|-------------|-------------|---------------|------------------|------------------|-----------------|
| | <u>Cow</u> | <u>Goat</u> | <u>Animal</u> | | <u>Garden</u> | <u>Boundary</u> |
| 1. N | 2.00 | 1.02 | 1.02 | .94 | 1.0 | 1,248 |
| 2. NNE | 2.34 | 2.34 | 1.8 | .73 | .73 | 1,690 |
| 3. NE | 2.28 | 3.20 | 1.5 | .53 | .53 | 1,300 |
| 4. ENE | 1.05 | - | 1.05 | .45 | .45 | 1,105 |
| 5. E | 1.0 | - | .81 | .43 | .81 | 1,072 |
| 6. ESE | 2.33 | - | 2.2 | 1.32 | 1.32 | 1,105 |
| 7. SE | 1.2 | 4.62 | 1.0 | .79 | .79 | 1,241 |
| 8. SSE | - | - | 1.8 | .79 | .79 | 1,690 |
| 9. S | - | - | 3.2 | 2.26 | 2.26 | 1,690 |
| 10. SSW | 4.86 | 4.91 | 2.7 | .58 | .58 | 1,040 |
| 11. SW | - | - | 2.5 | .54 | .54 | 715 |
| 12. WSW | 4.03 | 4.40 | 3.3 | .45 | .45 | 585 |
| 13. W | - | - | 2.8 | .37 | .37 | 585 |
| 14. WNW | 2.68 | 3.23 | 2.0 | .37 | .37 | 585 |
| 15. NW | - | - | 2.5 | .42 | .42 | 650 |
| 16. NNW | - | - | 4.2 | .41 | .41 | 715 |

NOTE: All the above figures are in miles, except for site boundary, which is in feet.

1469 318

MAXIMUM TOPOGRAPHIC ELEVATIONS FOR

THREE MILE ISLAND UNITS 1 & 2

TABLE 8-1

| Sector | D I S T A N C E I N M I L E S | | | | | | | | | |
|--------|-------------------------------|-----|-----|-----|-----|-----|------|------|------|------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| N | 330 | 520 | 420 | 420 | 500 | 540 | 500 | 540 | 500 | 540 |
| NNE | 340 | 520 | 520 | 520 | 900 | 900 | 760 | 820 | 700 | 420 |
| NE | 360 | 500 | 540 | 560 | 760 | 760 | 820 | 760 | 540 | 660 |
| ENE | 360 | 420 | 480 | 440 | 440 | 560 | 520 | 500 | 560 | 550 |
| E | 360 | 400 | 440 | 560 | 640 | 640 | 600 | 580 | 620 | 620 |
| ESE | 380 | 460 | 540 | 560 | 640 | 640 | 640 | 540 | 460 | 450 |
| SE | 400 | 480 | 520 | 500 | 500 | 480 | 420 | 480 | 680 | 940 |
| SSZ | 380 | 500 | 480 | 380 | 440 | 540 | 580 | 660 | 700 | 1020 |
| S | 300 | 280 | 515 | 580 | 440 | 480 | 500 | 715 | 725 | 560 |
| SSW | 300 | 300 | 500 | 535 | 460 | 680 | 760 | 760 | 560 | 540 |
| SW | 300 | 460 | 545 | 760 | 645 | 740 | 1040 | 920 | 1040 | 1100 |
| WSW | 300 | 520 | 560 | 720 | 790 | 660 | 785 | 785 | 1000 | 1100 |
| W | 300 | 520 | 500 | 500 | 760 | 850 | 980 | 1050 | 840 | 940 |
| WNW | 300 | 480 | 615 | 830 | 965 | 880 | 825 | 1040 | 940 | 600 |
| NW | 300 | 480 | 600 | 700 | 680 | 590 | 550 | 510 | 515 | 490 |
| NNW | 300 | 505 | 320 | 360 | 540 | 580 | 590 | 620 | 520 | 520 |

1469 519

FIGURE 8-1

THREE MILE ISLAND UNITS 1 & 2

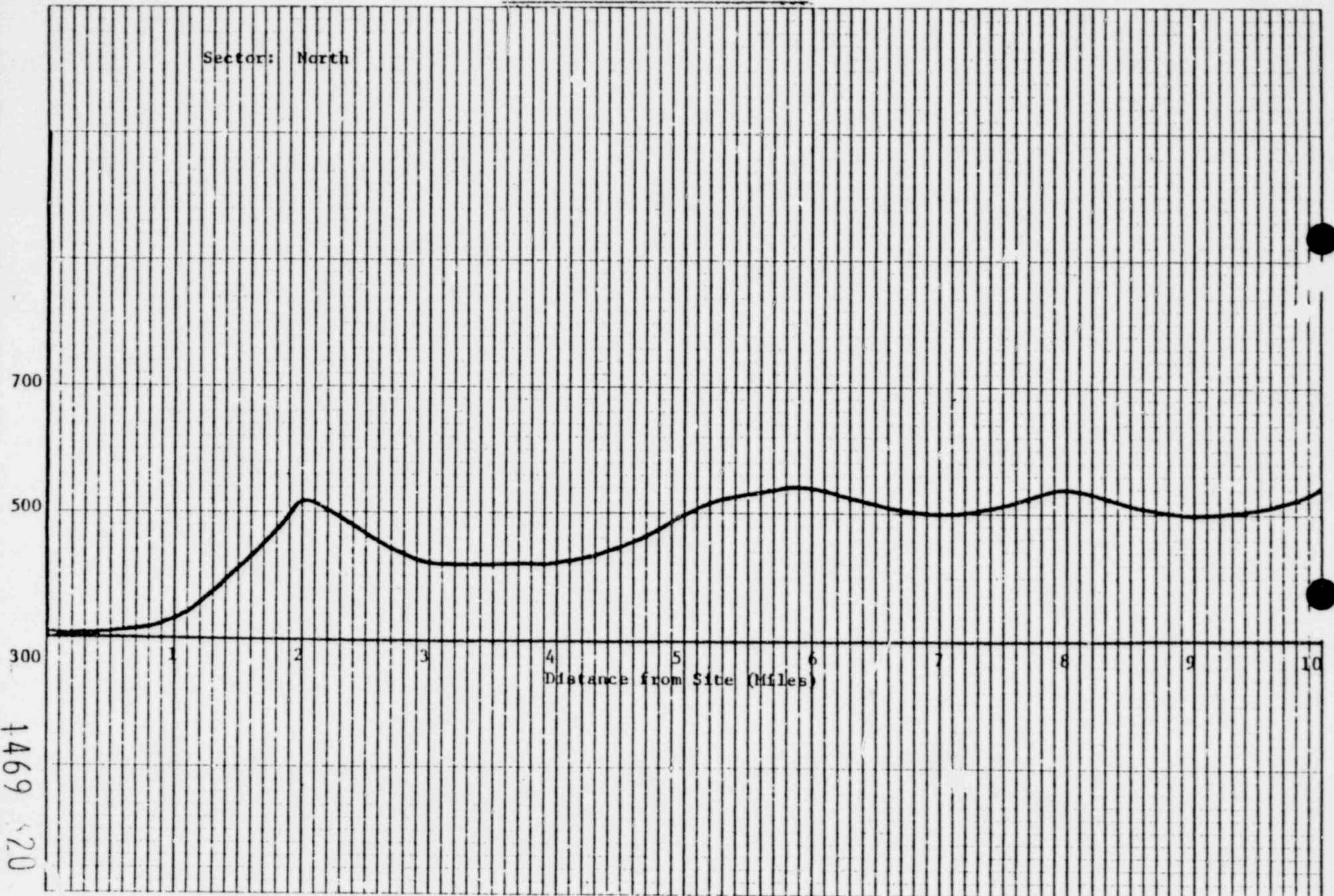


FIGURE 8-2
THREE MILE ISLAND UNITS 1 & 2

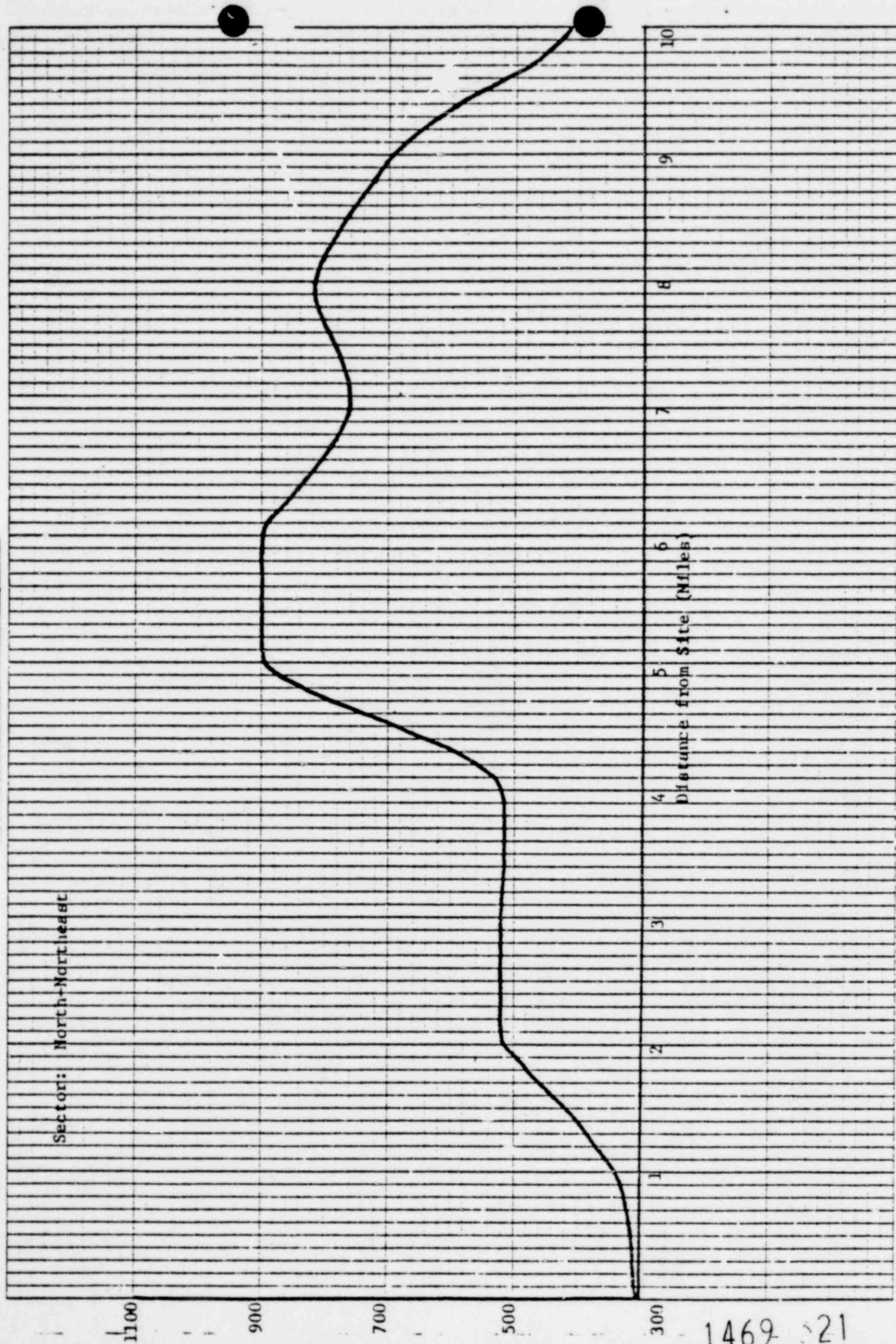


FIGURE 8-3

THREE MILE ISLAND UNITS 1 & 2

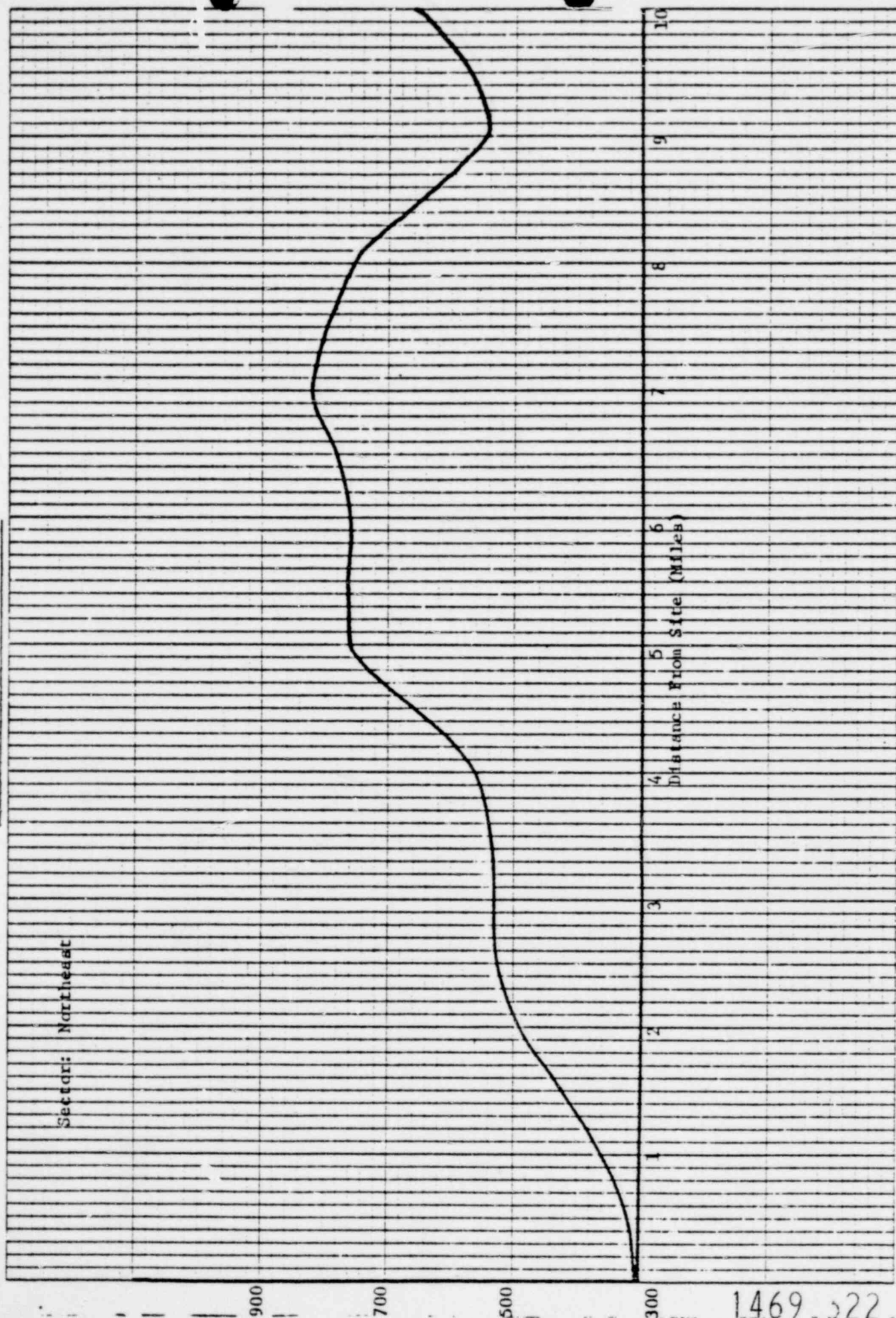
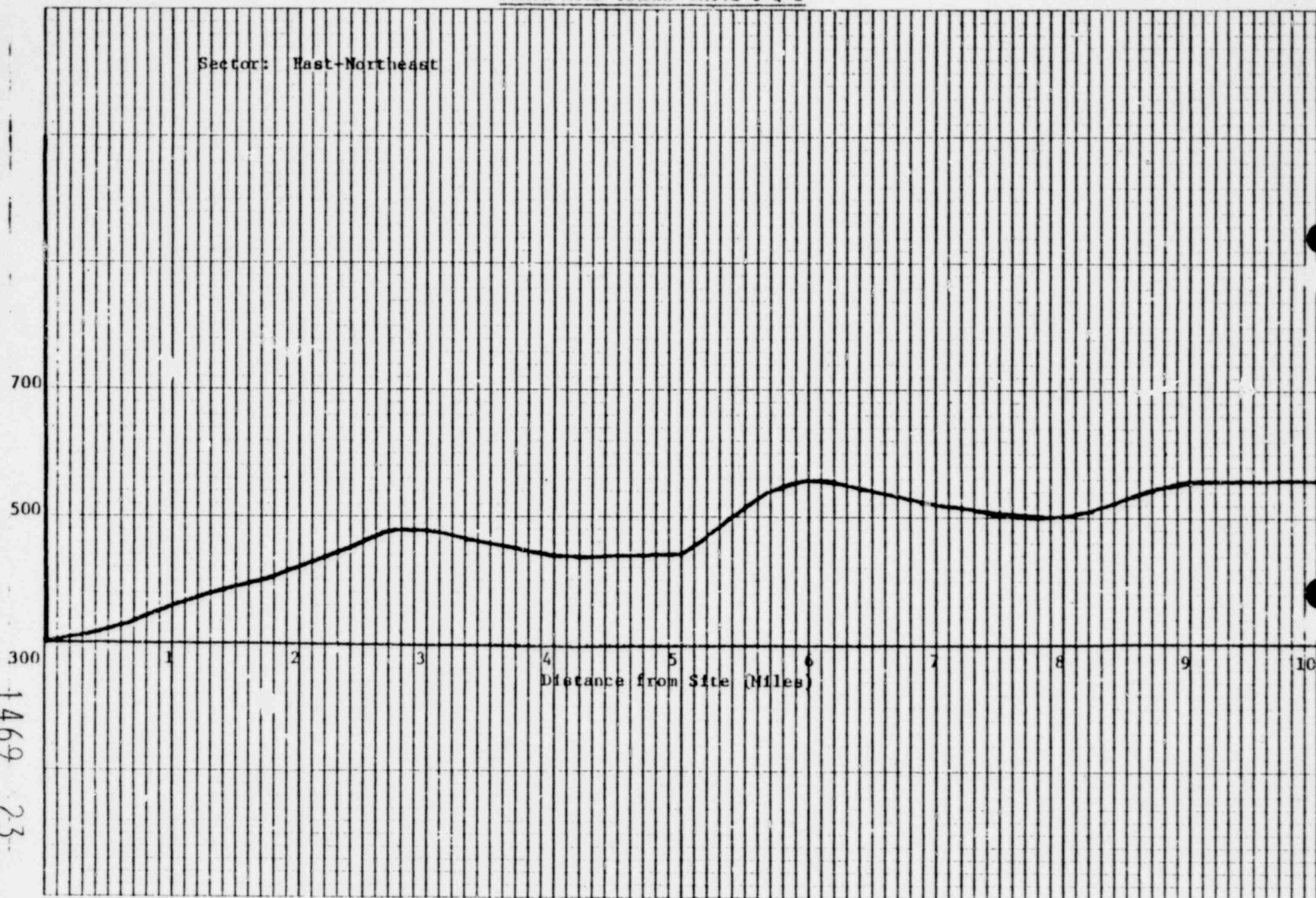


FIGURE 8-4

THREE MILE ISLAND UNITS 1 & 2

Sector: East-Northeast



1469 23

FIGURE 8-5

THREE MILE ISLAND UNITS 1 & 2

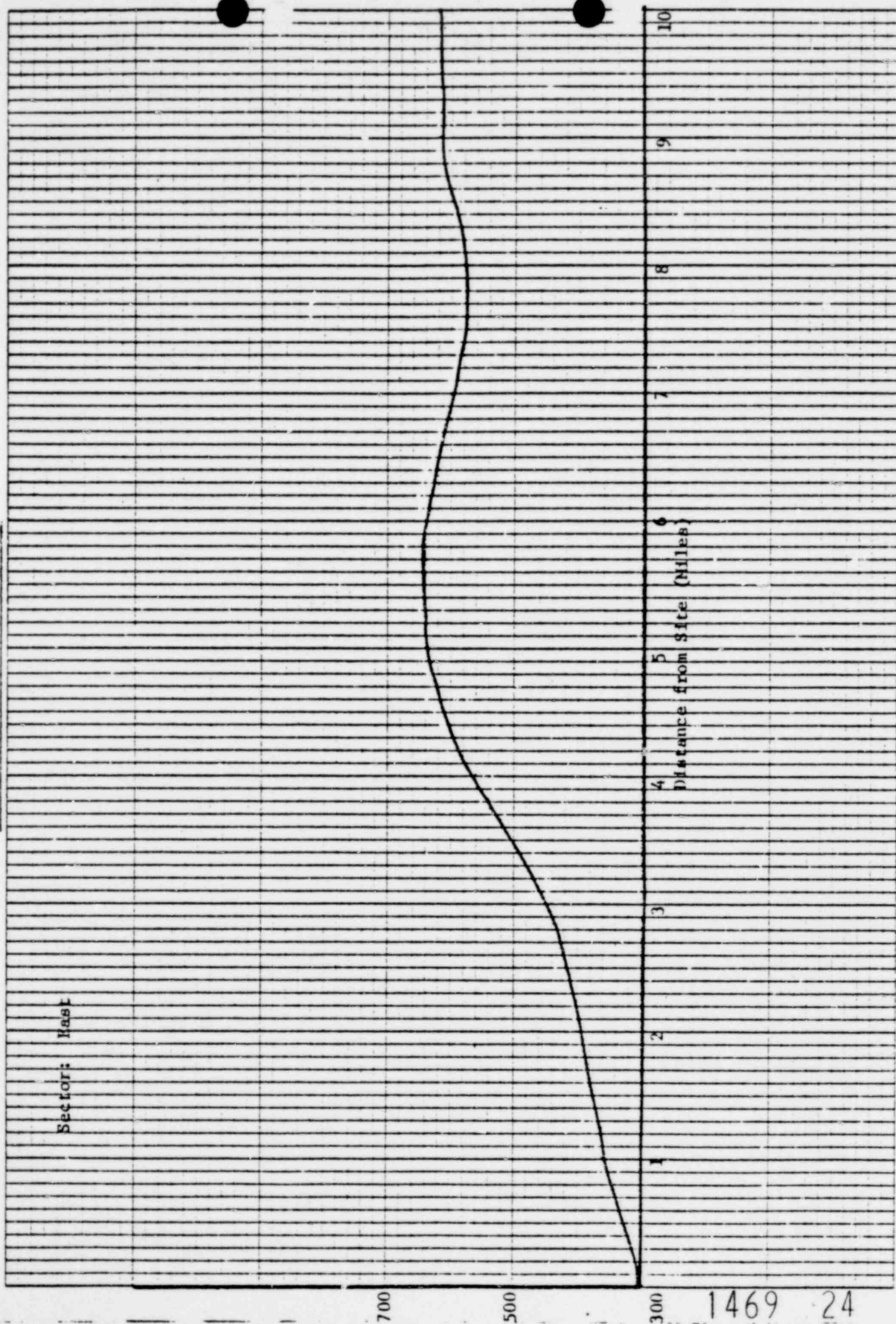


FIGURE 8-6

THREE MILE ISLAND UNITS 1 & 2

Sector: East-Southeast

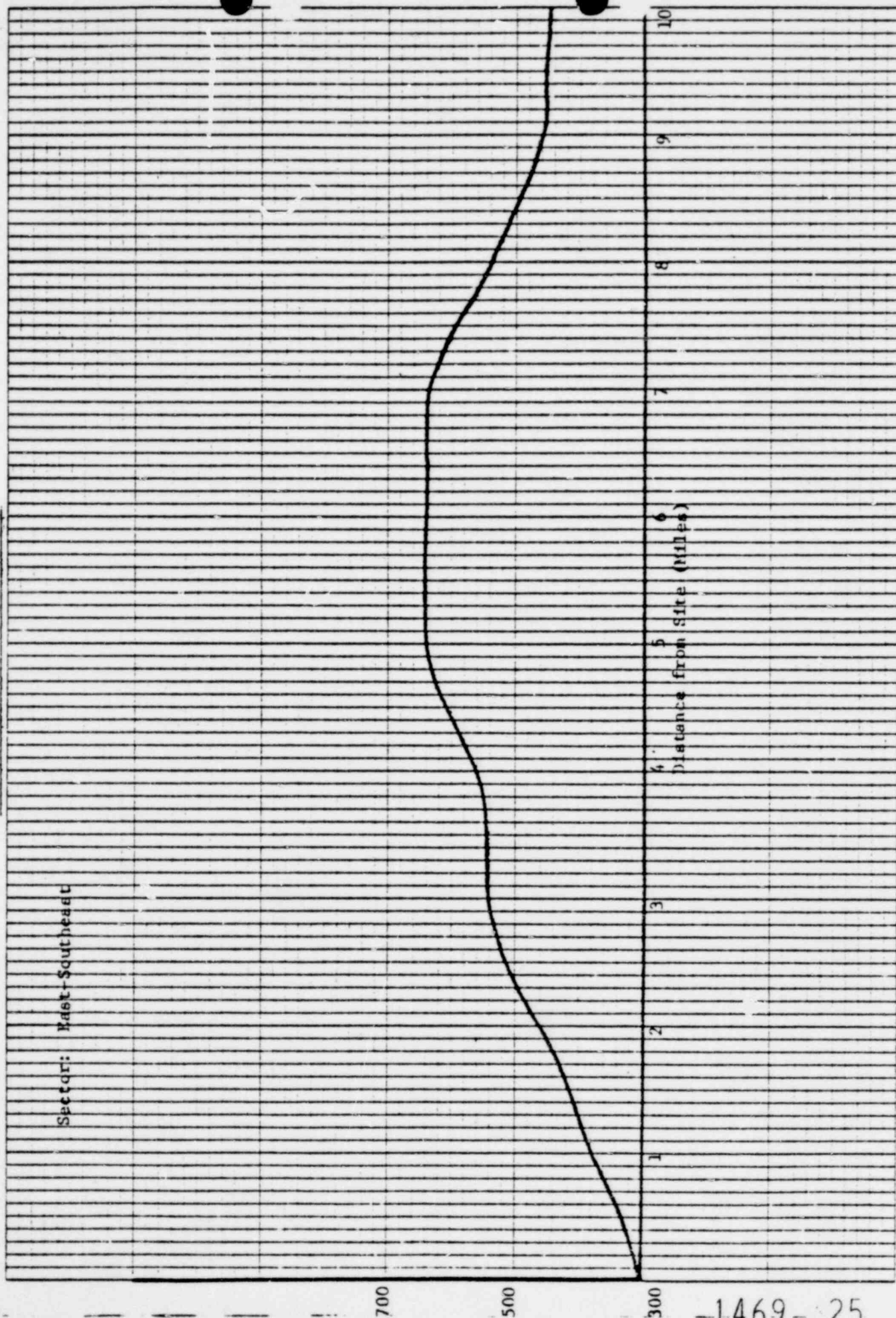


FIGURE 8-7

THREE MILE ISLAND UNITS 1 & 2

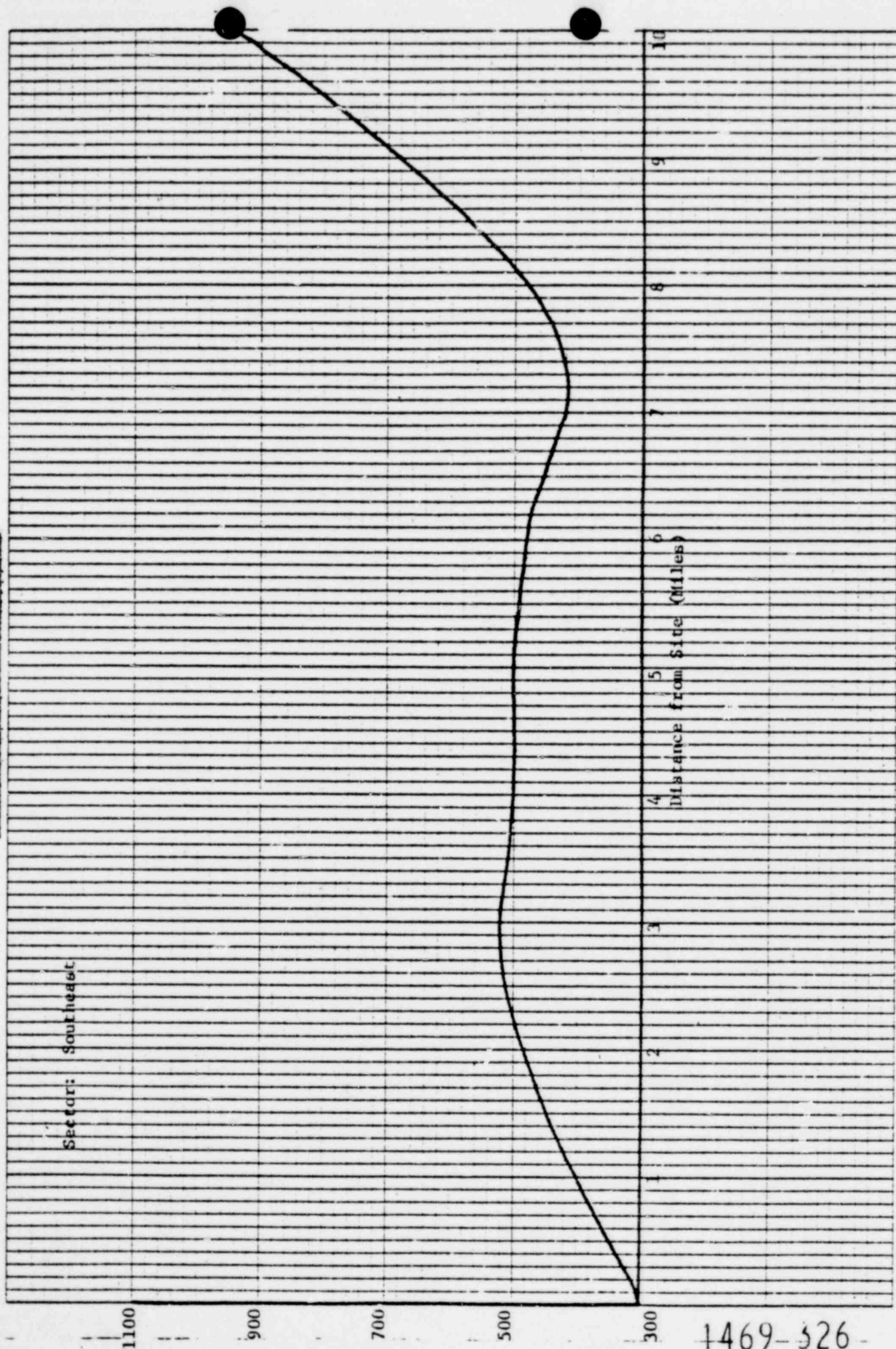
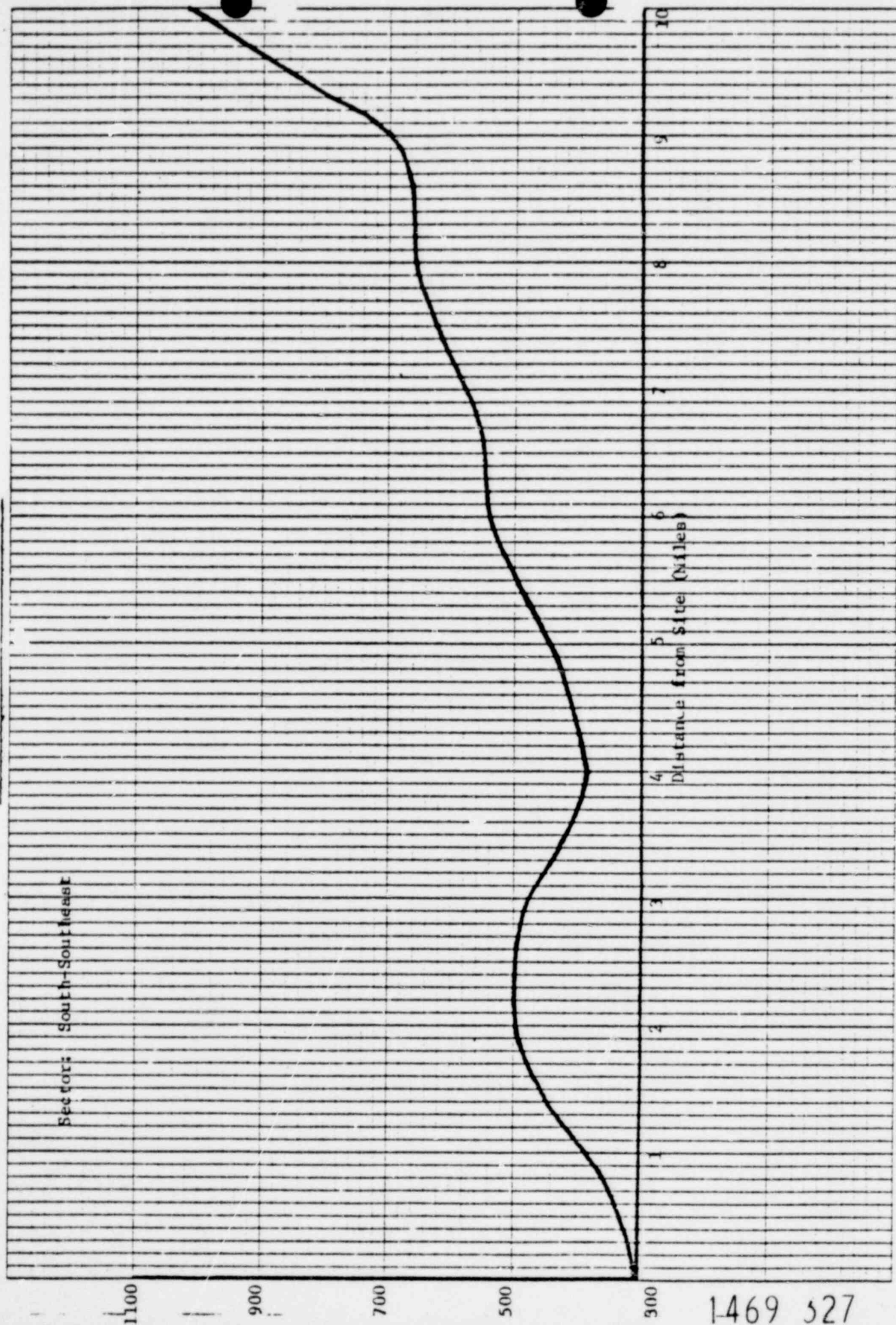


FIGURE 8-8

THREE MILE ISLAND UNITS 1 & 2



1469 527

FIGURE 8-9
THREE MILE ISLAND UNITS 1 & 2

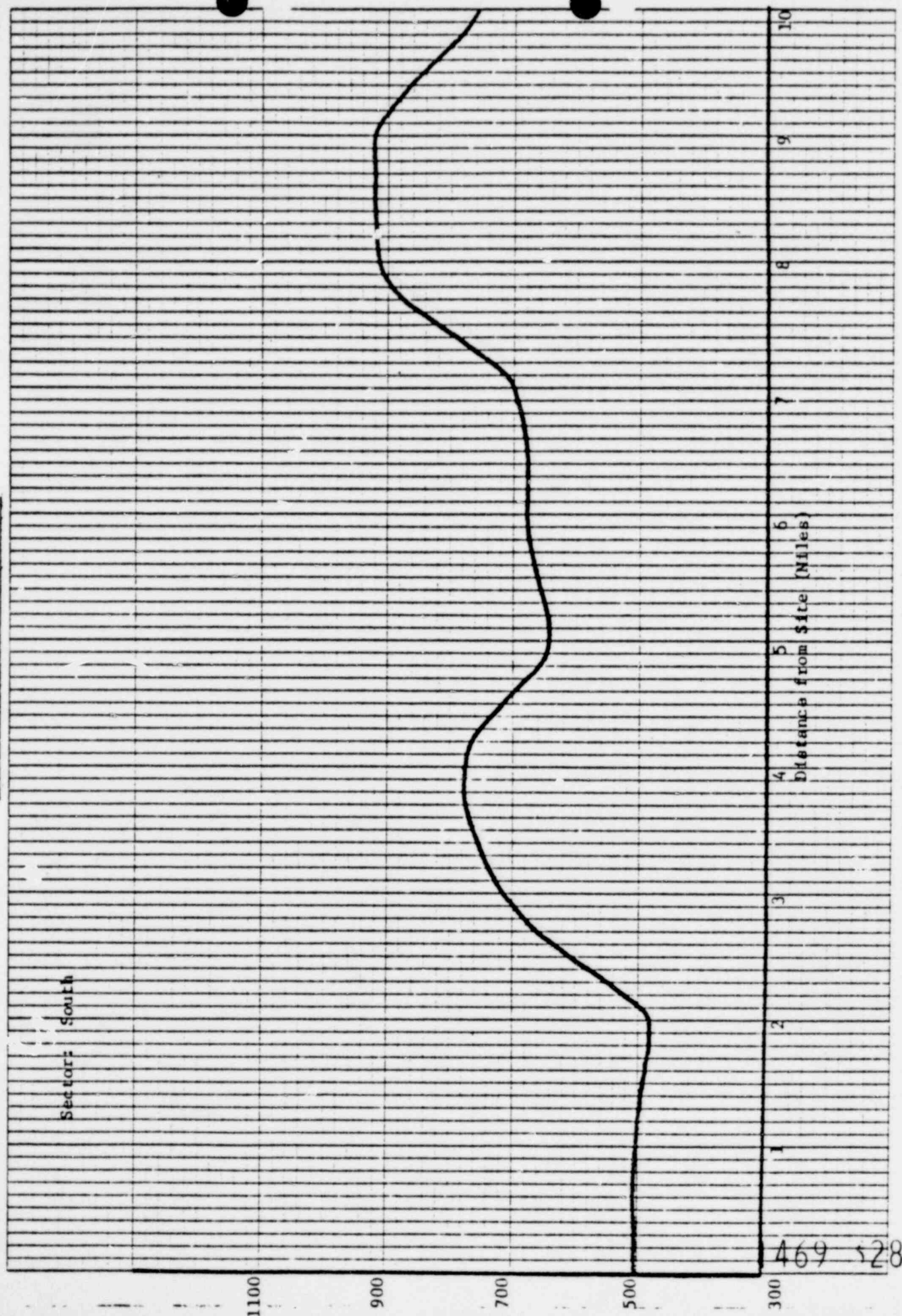


FIGURE 8-10

THREE MILE ISLAND UNITS 1 & 2

Sector: South-Southwest

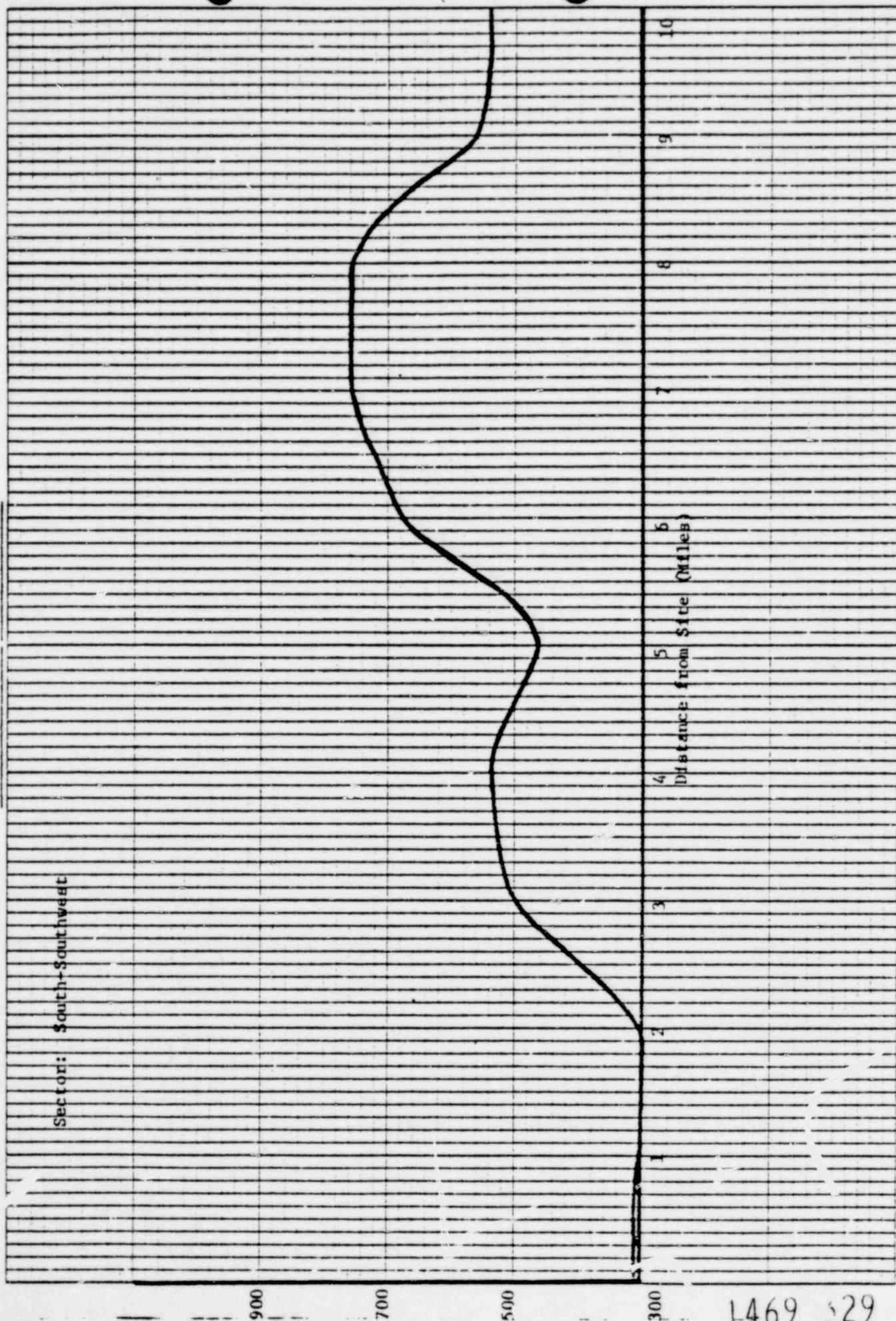


FIGURE 8-11
THREE MILE ISLAND UNITS 1 & 2

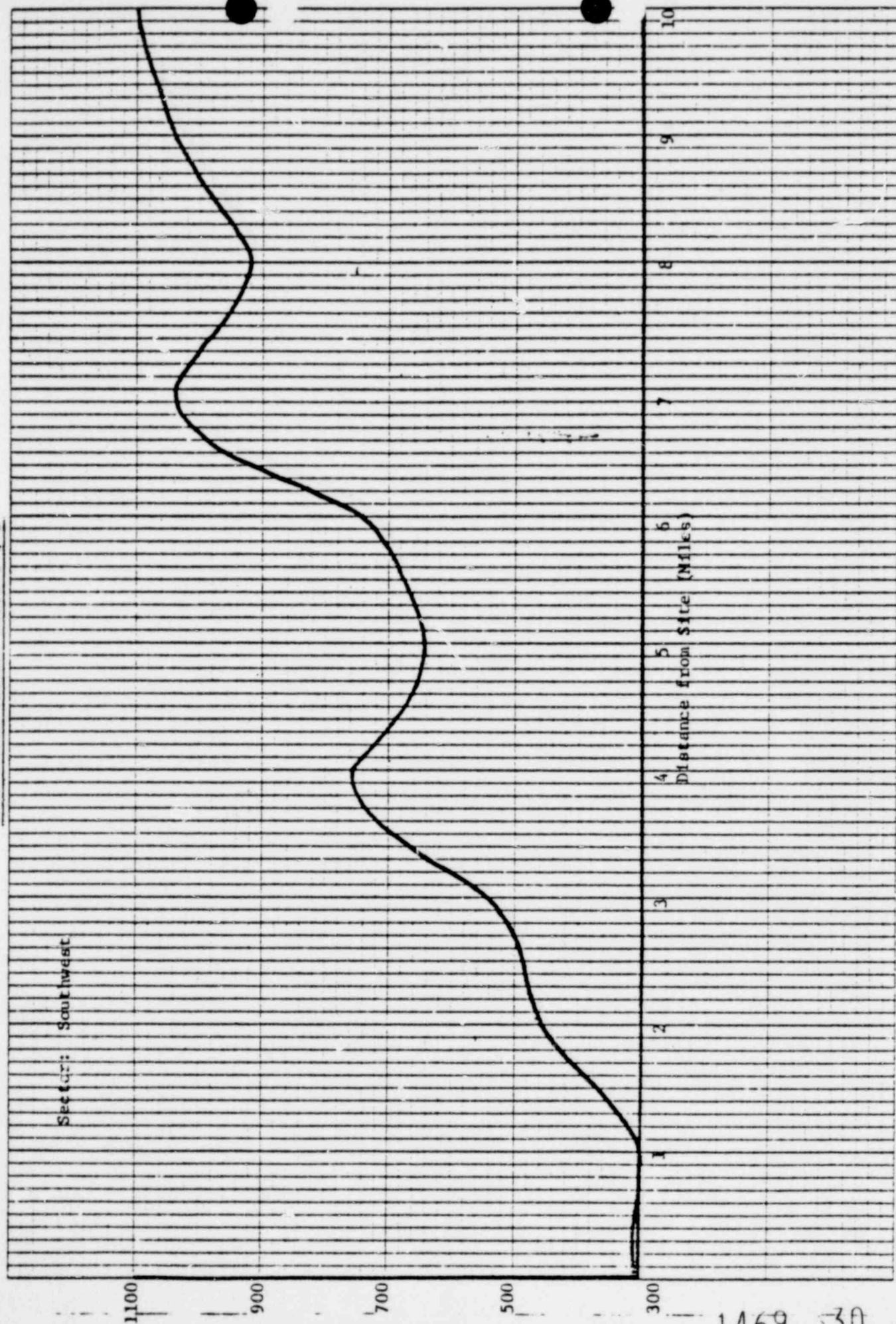


FIGURE 8-12
THREE MILE ISLAND UNITS 1 & 2

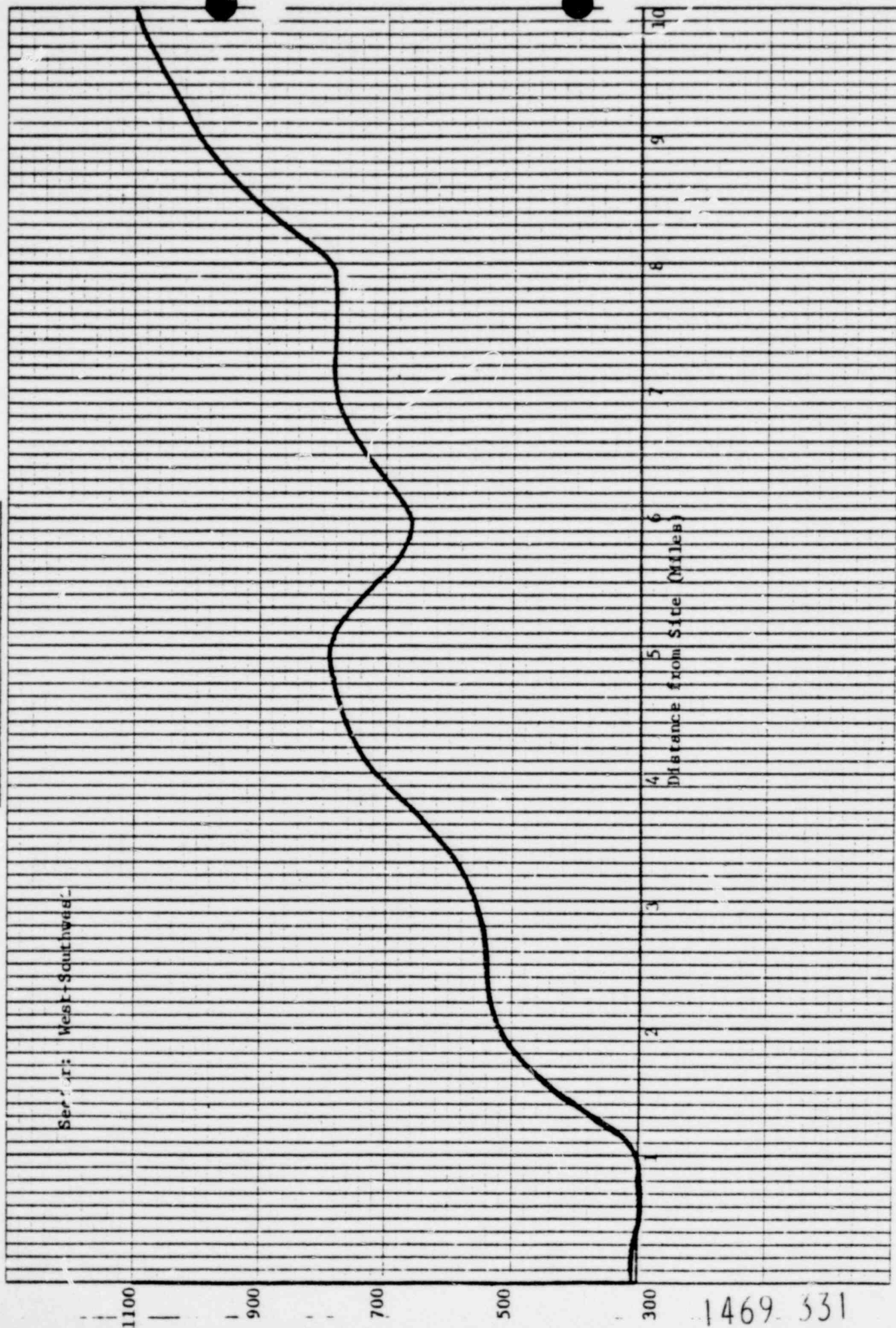


FIGURE 8-13

THREE MILE ISLAND UNITS 1 & 2

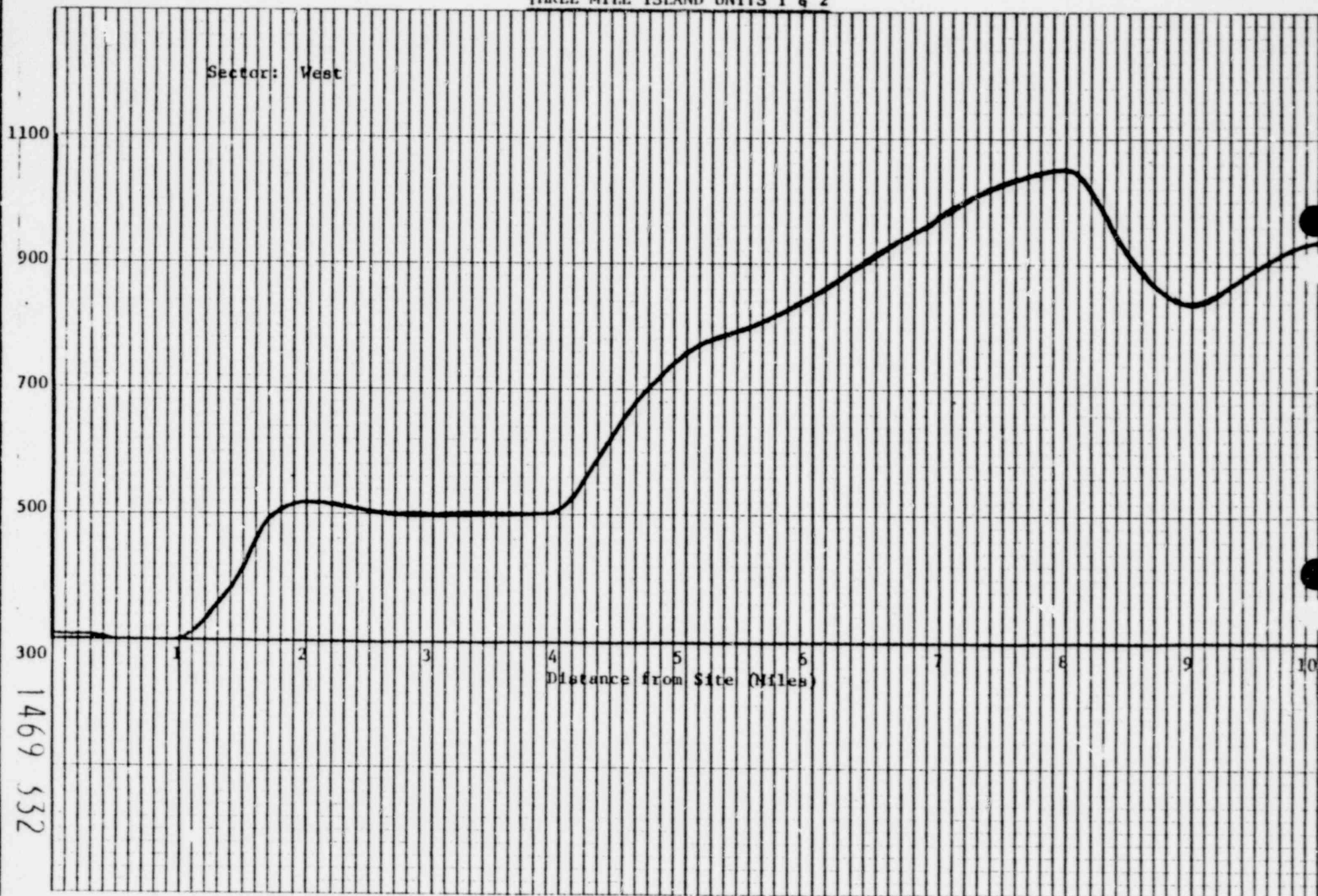


FIGURE 8-14

THREE MILE ISLAND UNITS 1 & 2

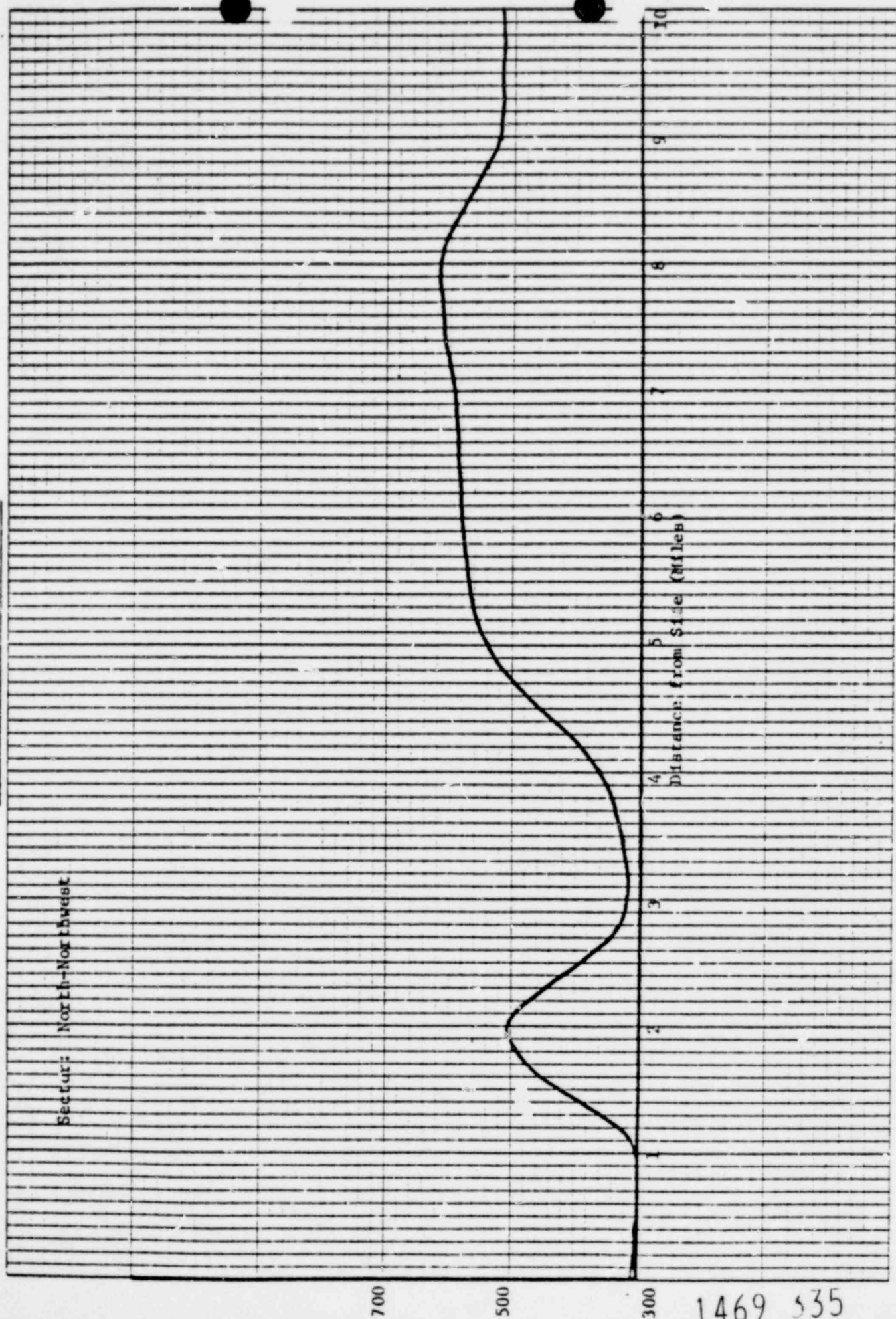


FIGURE 8-15

THREE MILE ISLAND UNITS 1 & 2



FIGURE 8-16
THREE MILE ISLAND UNITS 1 & 2



TMI Nuclear Station Unit #1
Year 1975

REPORTS OF RADIOACTIVE EFFLUENTS
(Table 6.1)

| I. LIQUID RELEASES | UNIT | MONTH | | | | | | | TOTAL |
|--|-------------------|----------|----------|-----------|----------|----------|----------|----------|-------|
| | | JULY | AUGUST | SEPTEMBER | OCTOBER | NOVEMBER | DECEMBER | | |
| 1. GROSS RADIOACTIVITY - (β,γ) (Includes Dissolved Noble Gases) | | | | | | | | | |
| a. Total Release | Curies | 5.89E-02 | 1.90E-01 | 2.29E-01 | 1.49E-01 | 1.83E-01 | 2.03E-01 | 1.01E+00 | |
| b. Average Concentration Released | $\mu\text{Ci/ml}$ | 2.31E-08 | 1.06E-07 | 5.47E-08 | 3.50E-08 | 4.29E-08 | 1.99E-07 | 5.58E-08 | |
| c. Maximum Concentration Released | $\mu\text{Ci/ml}$ | 6.65E-07 | 2.27E-07 | 3.27E-07 | 2.12E-07 | 1.21E-06 | 2.44E-07 | 1.21E-06 | |
| 2. TRITIUM - (Determined from measurement of each batch) | | | | | | | | | |
| a. Total Release | Curies | 2.25E+01 | 6.70E+01 | 4.28E+01 | 4.56E+01 | 1.54E+01 | 2.03E+01 | 2.14E+02 | |
| b. Average Concentration Released | $\mu\text{Ci/ml}$ | 8.82E-06 | 3.76E-05 | 1.02E-05 | 1.07E-05 | 3.61E-06 | 1.99E-05 | 1.18E-05 | |
| 3. DISSOLVED NOBLE GASES - (Determined from measurement of each batch) | | | | | | | | | |
| a. Total Release | Curies | 4.18E-02 | 1.85E-01 | 2.25E-01 | 1.41E-01 | 1.75E-01 | 1.94E-01 | 9.62E-01 | |
| b. Average Concentration Released | $\mu\text{Ci/ml}$ | 1.64E-08 | 1.04E-07 | 5.37E-08 | 3.32E-08 | 4.09E-08 | 1.90E-07 | 5.31E-08 | |
| 4. GROSS ALPHA RADIOACTIVITY - (Determined from measurement of monthly composite of all tanks) | | | | | | | | | |
| a. Total Release | Curies | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA | |
| b. Average Concentration Released | $\mu\text{Ci/ml}$ | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA | |
| 5. VOLUME OF LIQUID WASTE TO DISCHARGE CANAL | | | | | | | | | |
| | Liters | 2.24E+05 | 6.31E+05 | 4.37E+05 | 8.08E+05 | 5.16E+05 | 6.68E+05 | 3.28E+06 | |
| 6. VOLUME OF DILUTION WATER | | | | | | | | | |
| | Liters | 2.55E+09 | 1.78E+09 | 4.19E+09 | 4.25E+09 | 4.27E+09 | 1.02E+09 | 1.81E+10 | |

TMI Nuclear Station Unit #1
Year 1975

REPORTS OF RADIOACTIVE EFFLUENTS
(Table 6.1)

| I. LIQUID RELEASES | | UNIT | MONTH | | | | | | | TOTAL |
|--|--------|----------|----------|----------|-----------|----------|----------|----------|---------|-------|
| | | | JULY | AUGUST | SEPTEMBER | OCTOBER | NOVEMBER | DECEMBER | | |
| 7. ISOTOPES RELEASED - (Determined from measurement of each batch released except Sr-89 & Sr-90 which are determined from measurement of monthly composite of all tanks) | | | | | | | | | | |
| Ba-La-140 | Curies | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA | |
| Sr-89 | Curies | < MDA | 2.09E-05 | 2.89E-06 | 6.35E-06 | < MDA | 3.66E-04 | 3.96E-06 | | |
| Na-24 | Curies | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA | | |
| Sr-90 | Curies | < MDA | 3.90E-06 | < MDA | < MDA | < MDA | 1.09E-04 | 1.13E-04 | | |
| I-131 | Curies | 2.49E-04 | 1.33E-04 | 3.58E-04 | 1.04E-03 | 8.43E-04 | 1.00E-03 | 3.62E-03 | | |
| Xe-133 | Curies | 3.97E-02 | 1.80E-01 | 2.10E-01 | 1.38E-01 | 1.73E-01 | 1.87E-01 | 9.28E-01 | | |
| Xe-135 | Curies | 4.72E-04 | 3.48E-03 | 1.25E-02 | 1.45E-03 | 1.03E-03 | 4.81E-03 | 2.37E-02 | | |
| Cs-137 | Curies | 2.51E-05 | 1.23E-04 | 2.99E-04 | 1.03E-03 | 6.11E-04 | 8.24E-04 | 2.91E-03 | | |
| Cs-134 | Curies | < MDA | < MDA | < MDA | 1.84E-04 | < MDA | 1.10E-04 | 2.94E-04 | | |
| Mo-99 | Curies | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA | | |
| Co-60 | Curies | 2.37E-04 | 7.96E-05 | 1.00E-04 | 2.77E-04 | 2.43E-03 | 4.85E-04 | 3.61E-03 | | |
| Co-58 | Curies | 1.63E-02 | 3.38E-03 | 3.49E-03 | 5.01E-03 | 4.24E-03 | 6.14E-03 | 3.86E-02 | | |
| Zr-97 | Curies | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA | | |
| Cr-51 | Curies | < MDA | 6.67E-04 | < MDA | 1.93E-04 | 1.06E-04 | 1.02E-04 | 1.07E-03 | | |
| Mn-54 | Curies | 1.25E-04 | 8.67E-05 | 1.30E-04 | 2.25E-04 | 1.53E-04 | 3.47E-04 | 1.07E-03 | | |
| Zn-65 | Curies | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA | | |
| Cs-136 | Curies | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA | | |
| Fe-59 | Curies | 1.91E-04 | 1.07E-04 | 3.84E-05 | 2.93E-05 | < MDA | 6.37E-05 | 4.29E-06 | | |
| Zr-95 | Curies | < MDA | < MDA | < MDA | < MDA | < MDA | 1.52E-04 | 1.52E-04 | | |
| Nb-95 | Curies | < MDA | 2.49E-06 | < MDA | 2.44E-05 | 4.74E-05 | 3.09E-04 | 3.83E-04 | | |
| Xe-133m | Curies | 3.70E-04 | 1.77E-03 | 2.58E-03 | 1.15E-03 | 7.82E-04 | 1.85E-03 | 8.50E-03 | | |
| Kr-85 | Curies | 1.22E-03 | < MDA | < MDA | < MDA | < MDA | < MDA | 1.22E-03 | | |
| 8. PERCENT OF TECHNICAL SPECIFICATION LIMIT FOR TOTAL ACTIVITY RELEASED - (Exclude H-3 & Dissolved Noble Gases: Limit 10 Ci/QTR) | | | | | | | | | | |
| | % | | 1.7E-01 | 5.0E-02 | 4.0E-02 | 8.0E-02 | 8.0E-02 | 9.0E-02 | 5.8E-01 | |

TMI Nuclear Station Unit #1
Year 1975

REPORTS OF RADIOACTIVE EFFLUENTS
(Table 6.1)

| II. AIRBORNE RELEASES | UNIT | MONTH | | | | | | TOTAL |
|---|--------------------|----------|----------|-----------|----------|----------|----------|----------|
| | | JULY | AUGUST | SEPTEMBER | OCTOBER | NOVEMBER | DECEMBER | |
| 1. TOTAL NOBLE GASES | Curies | 2.10E+02 | 2.60E+02 | 3.77E+02 | 2.50E+02 | 5.88E+02 | 8.27E+02 | 2.51E+03 |
| 2. TOTAL HALOGENS | Curies | 2.14E-05 | 2.39E-10 | < MDA | 4.34E-05 | 9.97E-05 | 2.02E-04 | 3.67E-04 |
| 3. TOTAL PARTICULATE, GROSS RADIOACTIVITY (β, γ) | Curies | 1.71E-10 | 4.01E-09 | 1.61E-07 | 8.03E-05 | 1.19E-05 | < MDA | 9.22E-05 |
| 4. TOTAL TRITIUM | Curies | 3.98E+00 | 5.53E+00 | 8.34E+00 | 1.13E+00 | 1.63E+00 | 1.12E+00 | 2.17E+01 |
| 5. TOTAL PARTICULATE GROSS ALPHA RADIOACTIVITY | Curies | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA |
| 6. MAXIMUM NOBLE GAS RELEASE RATE | $\mu\text{Ci/sec}$ | 7.92E+03 | 1.60E+04 | 1.50E+04 | 7.85E+03 | 1.24E+04 | 4.68E+05 | 4.68E+05 |
| 7a. PERCENT OF APPLICABLE LIMIT FOR: Noble Gases (Limit: $\text{EQ}_1/\text{MPC}_1 - 4.8 \times 10^3 \text{ m}^3/\text{sec}$ avg over QTR) | % | 2.10E+00 | 2.67E+00 | 4.74E+00 | 4.29E+00 | 5.45E+00 | 9.46E+00 | N/A |
| 7b. PERCENT OF APPLICABLE LIMIT FOR: Halogens & Particulates (Limit: $0.024 \mu\text{Ci/sec}$ avg. over QTR) | % | 1.14E-02 | 2.25E-05 | 6.62E-02 | 5.98E-02 | 1.47E-03 | 1.06E-01 | N/A |
| 8a. ISOTOPE RELEASED: Particulates | | | | | | | | |
| Cs-137 | Curies | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA |
| Ba-La-140 | Curies | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA |
| Sr-90 - (Determined from monthly composite) | Curies | 9.78E-12 | < MDA | < MDA | < MDA | < MDA | < MDA | 9.78E-12 |
| Cs-134 | Curies | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA |
| Sr-89 - (Determined from monthly composite) | Curies | < MDA | < MDA | 1.61E-07 | < MDA | < MDA | < MDA | 1.61E-07 |

EMI Nuclear Station Unit #1
Year 1975

REPORTS OF RADIOACTIVE EFFLUENTS
(Table 6.1)

| II. AIRBORNE RELEASES | UNIT | MONTH | | | | | | TOTAL |
|-----------------------------------|--------|----------|----------|-----------|----------|----------|----------|----------|
| | | JULY | AUGUST | SEPTEMBER | OCTOBER | NOVEMBER | DECEMBER | |
| Co-60 | Curies | < MDA | 1.40E-09 | < MDA | < MDA | < MDA | < MDA | 1.40E-09 |
| Co-58 | Curies | 1.61E-10 | 4.99E-10 | < MDA | 8.03E-05 | 1.19E-05 | < MDA | 9.22E-05 |
| Cr-51 | Curies | < MDA | 1.64E-09 | < MDA | < MDA | < MDA | < MDA | 1.64E-09 |
| Mn-54 | Curies | < MDA | 4.67E-10 | < MDA | < MDA | < MDA | < MDA | 4.67E-10 |
| 8b. ISOTOPE RELEASED: Halogens | | | | | | | | |
| I-131 | Curies | 2.14E-05 | 2.39E-10 | < MDA | 4.34E-05 | 9.97E-05 | 2.02E-04 | 3.66E-04 |
| I-132 | Curies | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA |
| I-133 | Curies | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA |
| I-135 | Curies | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA |
| 8c. ISOTOPE RELEASED: Gases | | | | | | | | |
| Kr-85 | Curies | < MDA | 3.64E-02 | < MDA | < MDA | 1.62E-01 | 8.75E-02 | 2.86E-01 |
| Kr-85m | Curies | < MDA | 4.54E-01 | 6.30E-01 | 3.31E-01 | 4.29E-01 | 2.46E-01 | 2.09E+00 |
| Kr-87 | Curies | < MDA | < MDA | 2.11E-02 | < MDA | 2.52E-02 | < MDA | 4.63E-02 |
| Kr-88 | Curies | < MDA | < MDA | 2.22E-01 | 1.25E-01 | 1.34E-01 | 2.48E-02 | 5.06E-01 |
| Xe-131m | Curies | < MDA | 1.53E-02 | 5.39E-02 | 2.33E-01 | 5.93E-02 | 2.81E-01 | 6.42E-01 |
| Xe-133 | Curies | 1.99E+02 | 2.38E+02 | 3.24E+02 | 1.95E+02 | 5.78E+02 | 7.30E+02 | 2.26E+03 |
| Xe-133m | Curies | 2.92E+00 | 1.74E+00 | < MDA | 9.26E-01 | 1.44E+00 | 2.18E+00 | 9.21E+00 |
| Xe-135 | Curies | 6.49E+00 | 1.85E+01 | 4.37E+01 | 2.59E+01 | 6.57E+00 | 8.48E+01 | 1.86E+02 |
| Xe-135m | Curies | < MDA | < MDA | 1.75E+00 | < MDA | < MDA | < MDA | 1.75E+00 |
| Xe-138 | Curies | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA | < MDA |
| Ar-41 | Curies | 1.38E+00 | 1.01E+00 | 6.99E+00 | 2.71E+01 | 9.90E-01 | 9.50E+00 | 4.70E+01 |

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