ATTACHMENT 1

UNIT 1
TECHNICAL SPECIFICATION
REVISED PAGES

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DESIGN FEATURES

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5.0 DESIGN FEATURES

5.1 SITE

MAP DEFINING THE SITE BOUNDARY AND EFFLUENT RELEASE POINTS

5.1.1 A map of the Calvert Cliffs Nuclear Power Plant site identifying the major plant structures as well as defining the radioactive effluent release points and the **SITE BOUNDARY** is shown in Figure 5.1-1.

LOW POPULATION ZONE

5.1.2 The low population zone shall be as shown in Figure 5.1-2.

5.2 CONTAINMENT

CONFIGURATION

5.2.1 The reactor containment building is a steel lined, reinforced concrete building of cylindrical shape, with a dome roof and having the following design features:

a. Nominal inside diameter = 130 feet.

b. Nominal inside height = 181 2/3 feet.

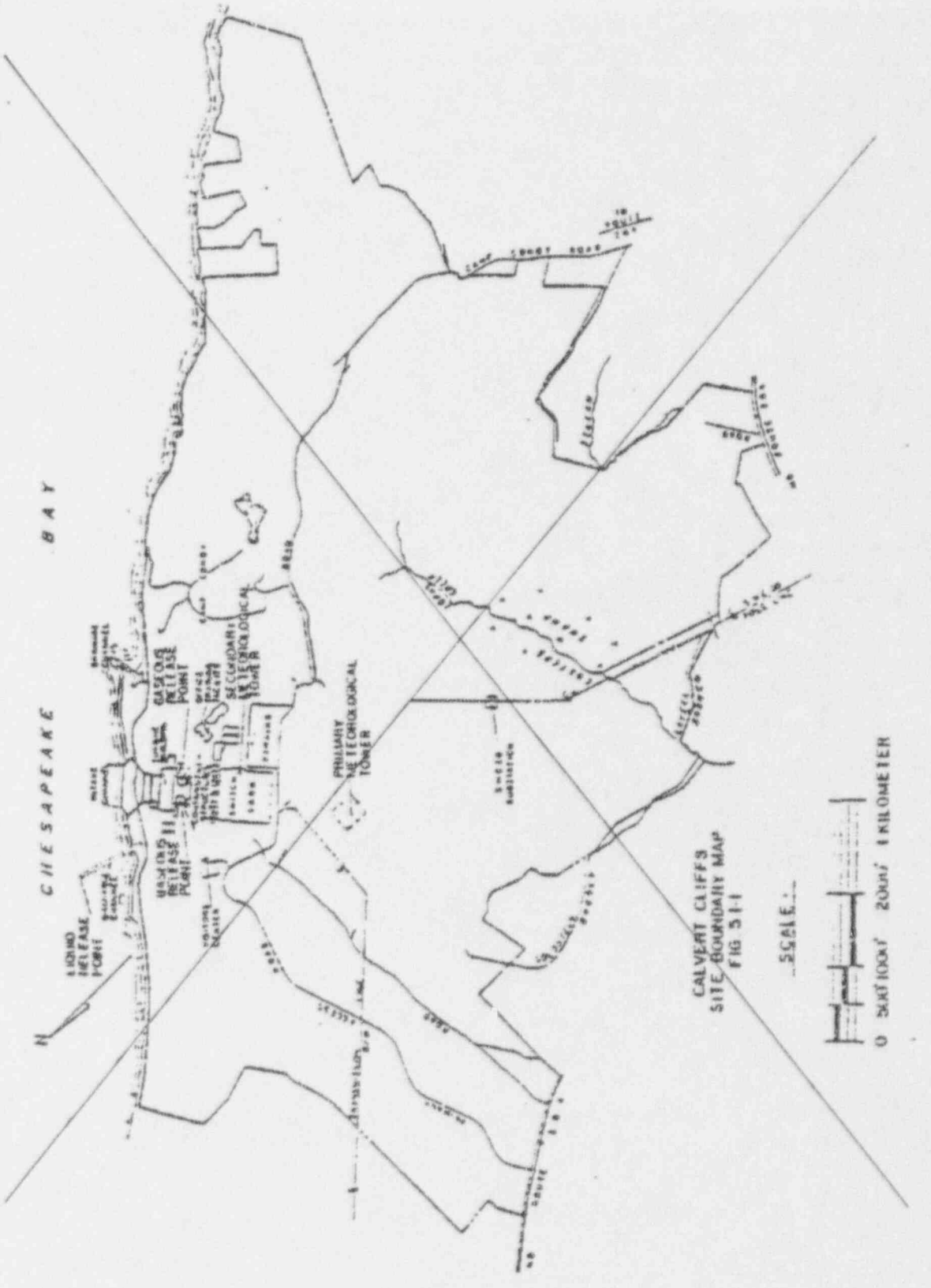
c. Minimum thickness of concrete walls = 3 3/4 feet.

d. Minimum thickness of concrete roof = 3 1/4 feet.

e. Minimum thickness of concrete floor pad = 10 feet.

f. Nominal thickness of steel liner = 1/4 inches.

g. Net free volume = 2×10^6 cubic feet.


CHESAPEAKE BAY
LIQUID RELEASE POINT
GASEOUS RELEASE POINT
PRIMARY METEOROLOGICAL TOWER
CALVERT CLIFFS SITE BOUNDARY MAP FIG 5.1-1
SCALE:
0 .5KILOMETER 1KILOMETER

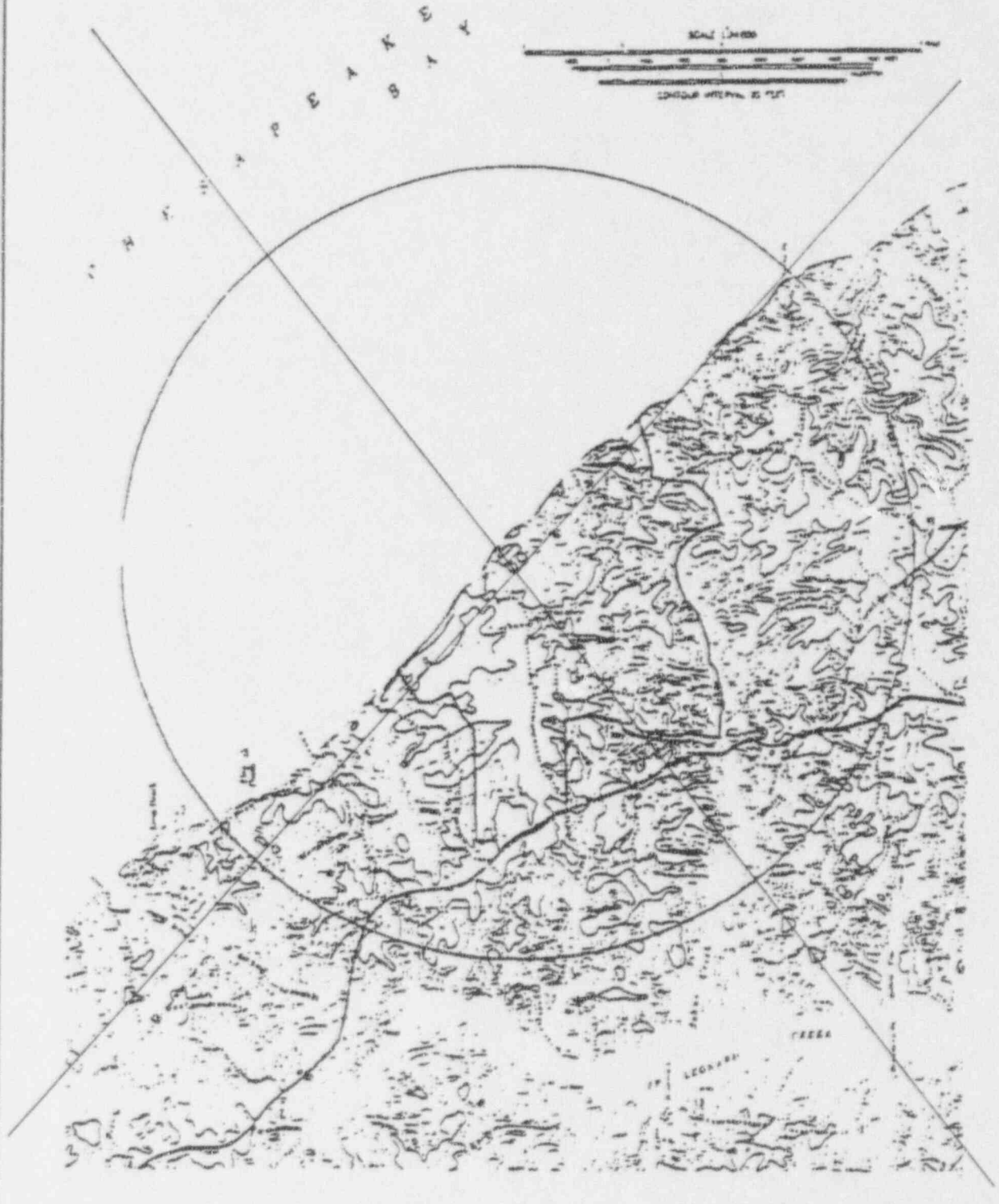


FIGURE 5.1-2

LOW POPULATION ZONE

DESIGN PRESSURE AND TEMPERATURE

5.2.2 The reactor containment building is designed and shall be maintained for a maximum internal pressure of 50 psig and a temperature of 276°F.

5.3 REACTOR CORE

FUEL ASSEMBLIES

5.3.1 The reactor core shall contain 217 fuel assemblies with each fuel assembly containing a maximum of 176 fuel rods clad with Zircaloy-4. Each fuel rod shall have a nominal active fuel length of 136.7 inches and contain a maximum total weight of 3000 grams uranium. The initial core loading shall have a maximum enrichment of 2.99 weight percent U-235. Reload fuel shall be similar in physical design to the initial core loading and shall have a maximum enrichment of 4.35 weight percent U-235.

5.3.2 Except for special test as authorized by the NRC, all fuel assemblies under control element assemblies shall be sleeved with a sleeve design previously approved by the NRC.

CONTROL ELEMENT ASSEMBLIES

5.3.3 The reactor core shall contain 77 full length and no part length control element assemblies.

5.4 REACTOR COOLANT SYSTEM

DESIGN PRESSURE AND TEMPERATURE

5.4.1 The Reactor Coolant System is designed and shall be maintained:

a. In accordance with the code requirements specified in Section 4.2 of the FSAR with allowance for normal degradation pursuant of the applicable Surveillance Requirements,

b. For a pressure of 2500 psia, and

c. For a temperature of 650°F, except for the pressurizer which is 700°F.

VOLUME

5.4.2 The total water and steam volume of the Reactor Coolant System is 10,614 ± 460 cubic feet at a nominal T_{avg} of 532°F.

5.5 METEOROLOGICAL TOWER LOCATION

5.5.1 The meteorological tower shall be located as shown on Figure 5.1-1.

5.6 FUEL STORAGE

CRITICALITY - SPENT FUEL

5.6.1 The spent fuel storage racks are designed and shall be maintained with a minimum 10 3/32" x 10 3/32" center-to-center distance between fuel assemblies placed in the storage racks to ensure a k_{eff} of ≤ 0.95 with the storage pool filled with unborated water. The k_{eff} of ≤ 0.95 includes the conservative allowances for uncertainties described in Section 9.7.2 of the FSAR. The maximum fuel enrichment to be stored in the fuel pool will be 4.52 weight percent. *

CRITICALITY - NEW FUEL

5.6.2 The new fuel storage racks are designed and shall be maintained with a nominal 18 inch center-to-center distance between new fuel assemblies such that k_{eff} will not exceed 0.95 when fuel having a maximum enrichment of 5.0 weight percent U-235 is in place and various densities of unborated water are assumed including aqueous foam moderation and full flood conditions. The k_{eff} of ≤ 0.95 includes the conservative allowance for uncertainties described in Section 9.7.2 of the FSAR.

DRAINAGE

5.6.3 The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 63 feet.

CAPACITY

5.6.4 The fuel storage pool is designed and shall be maintained with a combined storage capacity, for both Units 1 and 2, limited to no more than 1830 fuel assemblies.

5.7 COMPONENT CYCLIC OR TRANSIENT LIMITS

5.7.1 The components identified in Table 5.7-1 are designed and shall be maintained within the cyclic or transient limits of Table 5.7-1.

TABLE 5.7-1

COMPONENT CYCLIC OR TRANSIENT LIMITS

COMPONENT	CYCLIC OR TRANSIENT LIMIT	DESIGN CYCLE OR TRANSIENT
Reactor Coolant System	500 heatup and cooldown cycles	70°F to 532°F to 70°F
	400 reactor trip cycles	100% to 0% RATED THERMAL POWER
	10 Primary Hydrostatic Tests	3125 psia and 60°F > NDTT
	320 Primary Leak Tests	2500 psia and 60°F > NDTT
Steam Generator	10 Secondary Hydrostatic Tests	1250 psia Secondary Side and temperature $\geq$ 100°F
	320 Secondary Leak Tests	1000 psia Secondary Side With Primary - Secondary Δp of 820 psi and shell side temperature between 100°F and 200°F

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5.1 SITE LOCATION

The site for the Calvert Cliffs Nuclear Power Plant is located on the western shore of the Chesapeake Bay in Calvert County, Maryland about 10-1/2 miles southeast of Prince Frederick, Maryland. The site is approximately 45 miles southwest of Washington, D.C. and 60 miles south of Baltimore, Maryland.

5.2 REACTOR CORE

The reactor shall contain 217 fuel assemblies. Each assembly shall consist of a matrix of zirconium alloy fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material. Limited substitutions of zirconium alloy or stainless steel filler rods for fuel rods, in accordance with approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff approved codes and methods and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in nonlimiting regions.

5.3 FUEL STORAGE

5.3.1 CRITICALITY

5.3.1.1 The spent fuel storage racks are designed and shall be maintained with:

a. Fuel assemblies having a maximum U-235 enrichment of 4.52 weight percent;

b. $k_{eff} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.7.2 of the UFSAR;

c. A nominal 10-3/32-inch center-to-center distance between fuel assemblies.

5.3.1.2 The new fuel storage racks are designed and shall be maintained with:

a. Fuel assemblies having a maximum U-235 enrichment of 5.0 weight percent;

b. $k_{eff} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.7.1 of the UFSAR;

c. $k_{eff} \leq 0.95$ if moderated by aqueous foam, which includes an allowance for uncertainties as described in Section 9.7.1 of the UFSAR; and

d. A nominal 18-inch center-to-center distance between fuel assemblies placed in the storage racks.

5.3.2 CAPACITY

The spent fuel storage pool is designed and shall be maintained with a combined storage capacity, for both Units 1 and 2, limited to no more than 1830 fuel assemblies.

ATTACHMENT 2

UNIT 2
TECHNICAL SPECIFICATION
REVISED PAGES

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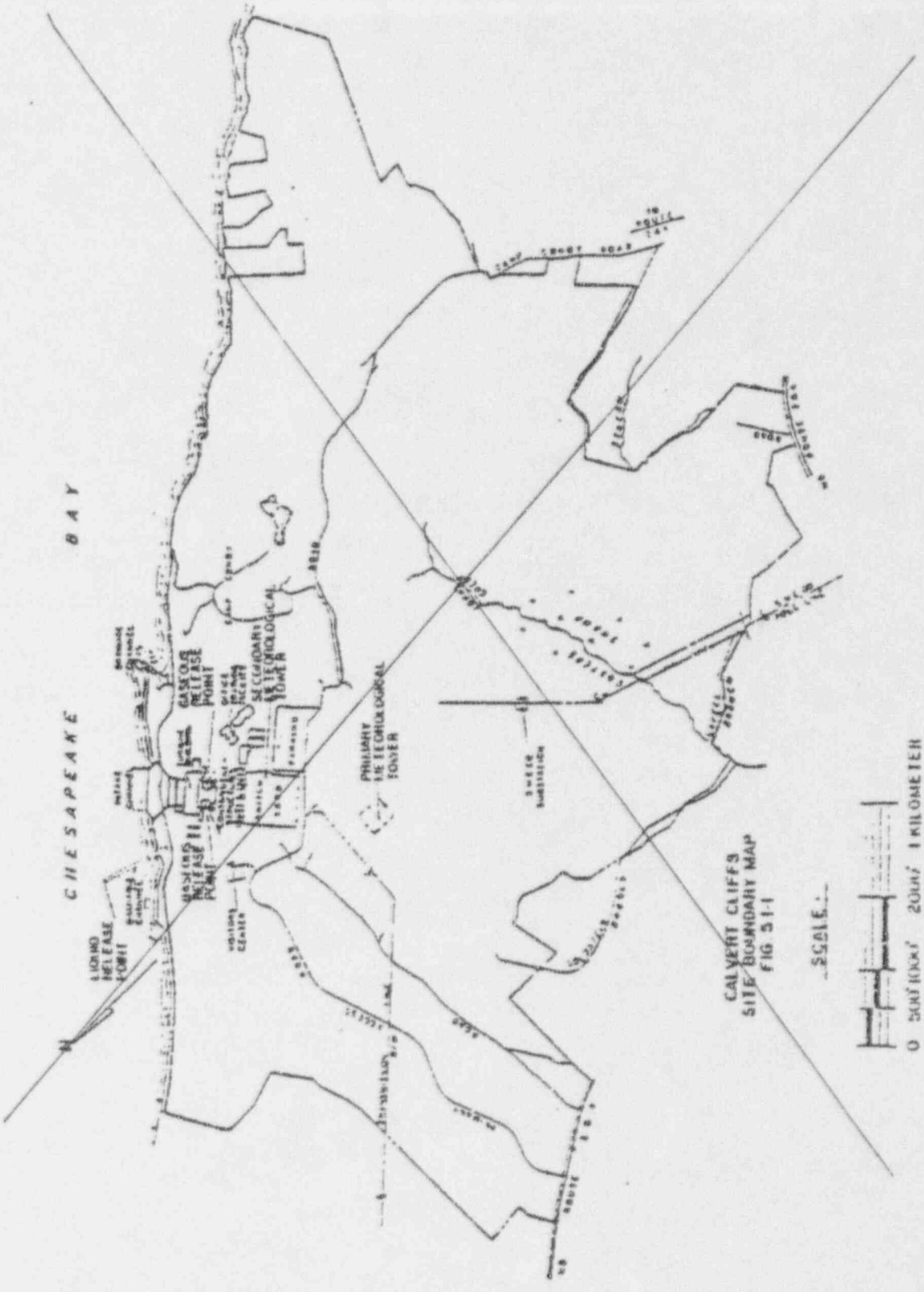
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SCALE:
0 500 1000 2000 1 KILOMETER

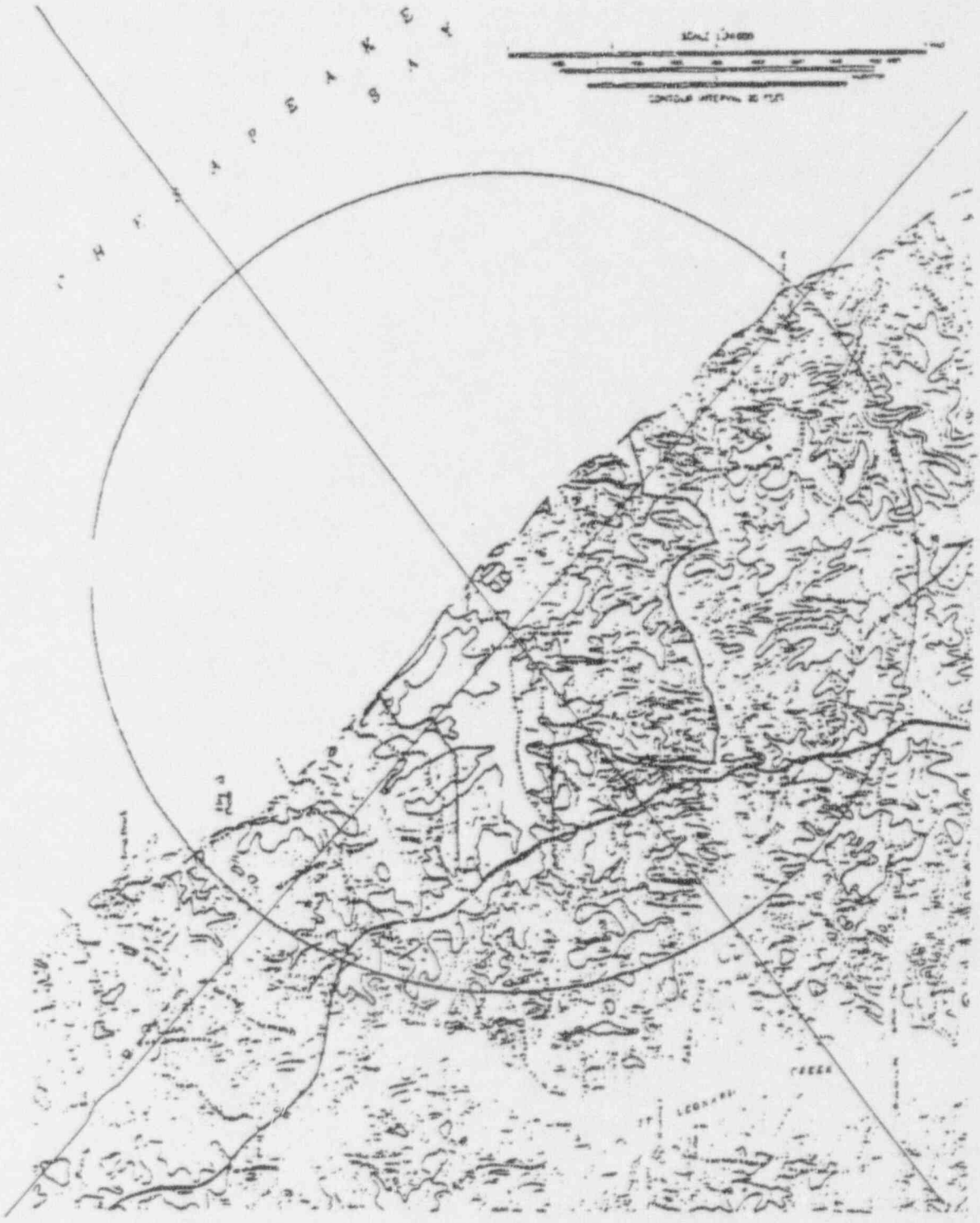

FIGURE 5.1-2

LOW POPULATION ZONE

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