

5.0 DESIGN FEATURES

5.1 SITE

EXCLUSION AREA

5.1.1 The exclusion area is ^{as defined in 10CFR Part 100.} ~~shown on Figure 5.1-1.~~

LOW POPULATION ZONE

5.1.2 The low population zone is ^{as defined in 10CFR Part 100.} ~~shown on Figure 5.1-2.~~

SITE BOUNDARY

5.1.3 The UNRESTRICTED AREA and SITE BOUNDARY for radioactive liquid effluents is shown on Figure 5.1-3. The UNRESTRICTED AREA and SITE BOUNDARY for radioactive gaseous effluents is shown on Figure 5.1-4. *are defined in Technical Specifications Section 1.0, Definitions.*

5.2 CONTAINMENT

CONFIGURATION

5.2.1 The containment structure is comprised of a steel containment vessel, having the shape of a right circular cylinder with a hemispherical dome and ellipsoidal bottom, surrounded by a reinforced concrete shield building.

5.2.1.1 CONTAINMENT VESSEL

- Nominal inside diameter = 130 feet.
- Nominal inside height = 285.5 feet.
- Net free volume = 2.834×10^6 cubic feet.
- Nominal thickness of vessel walls - 1 1/2 inches.
- Nominal thickness of vessel dome - 13/16 inches.
- Nominal thickness of vessel bottom - 1 1/2 inches.

5.2.1.2 SHIELD BUILDING

- Minimum annular space = 4.5 feet.
- Annulus nominal volume = 678,700 cubic feet.
- Nominal outside height (measured from top of foundation base to the top of the dome) = 279.5 feet.
- Nominal inside diameter = 139.25 feet.
- Cylinder wall minimum thickness = 2.5 feet.
- Dome minimum thickness = 2.0 feet.
- Dome inside radius = 125.29 feet.

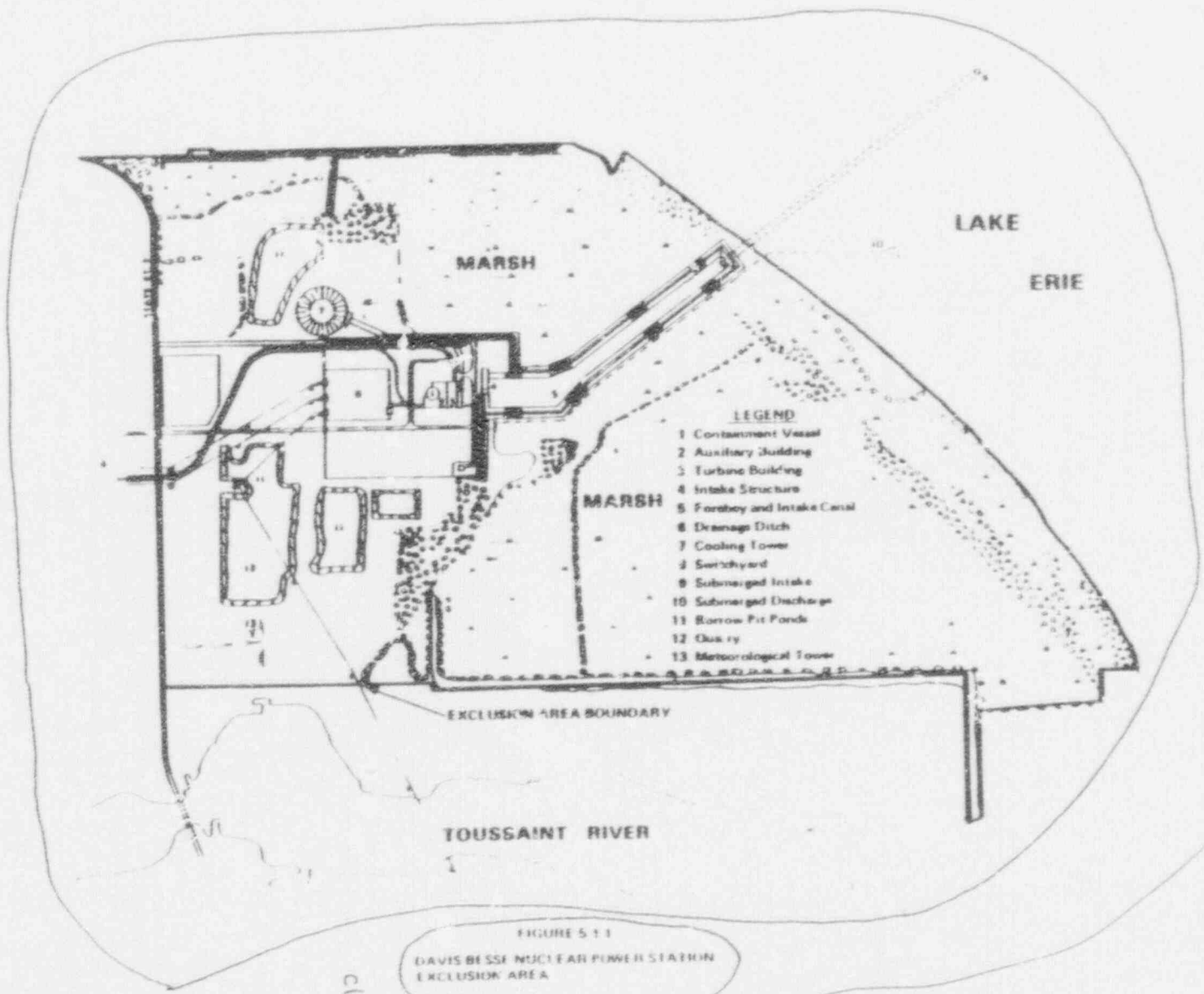
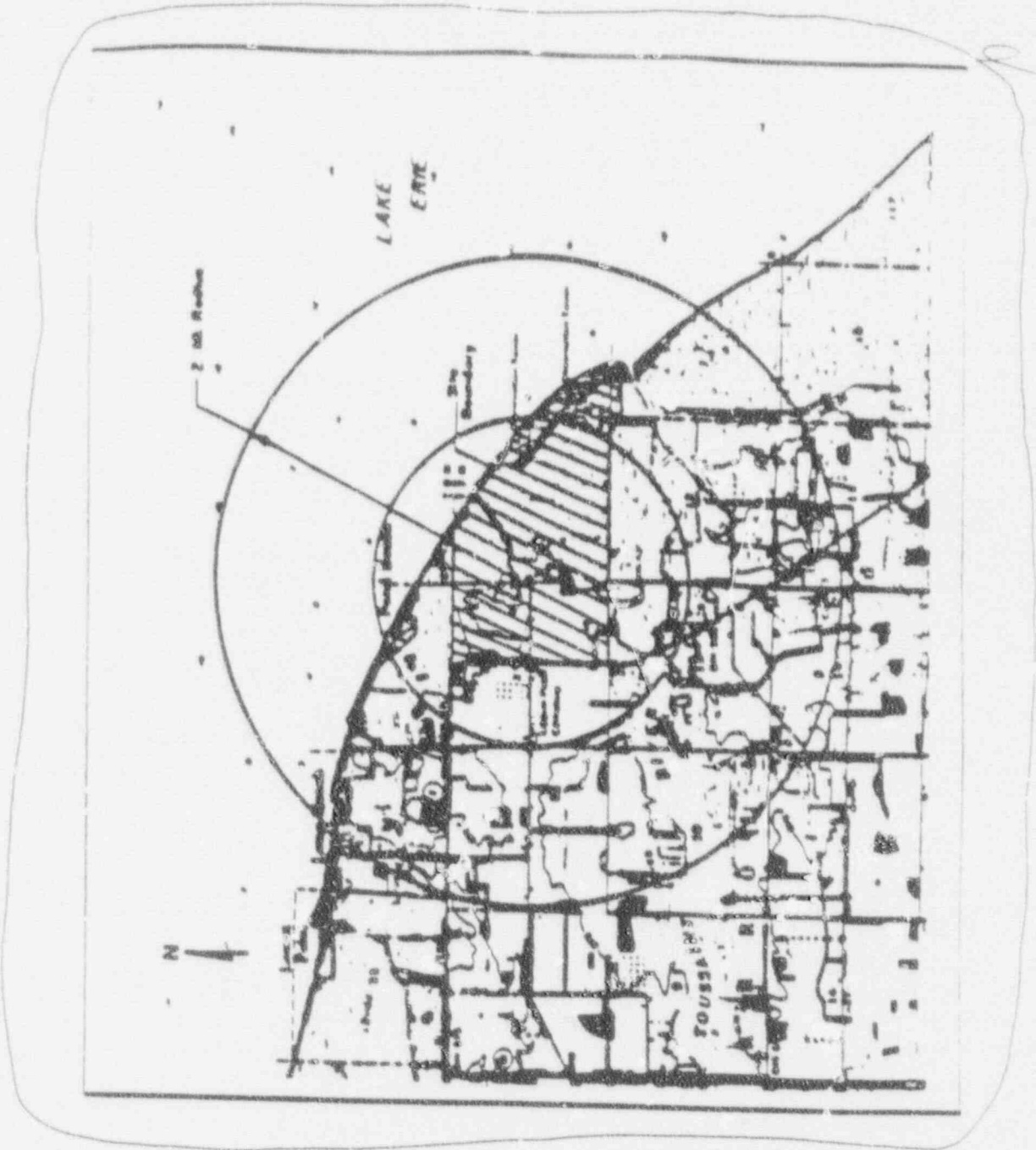


FIGURE 5-1
 DAVIS BESSE NUCLEAR POWER STATION
 EXCLUSION AREA

rotate
 90°
 clockwise

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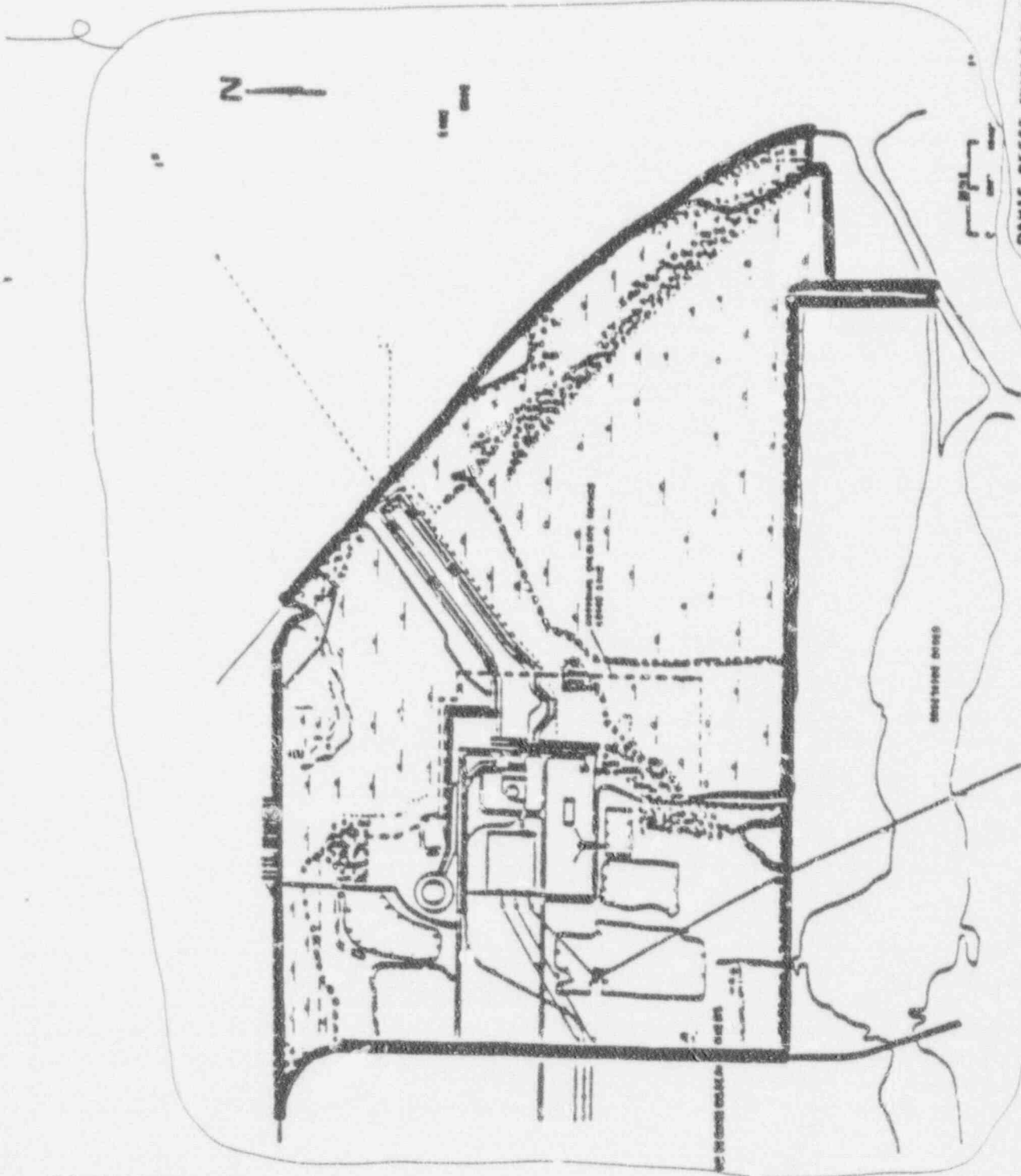


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DAVIS-BESSE NUCLEAR POWER STATION
LOW POPULATION ZONE

FIGURE 5.1-2

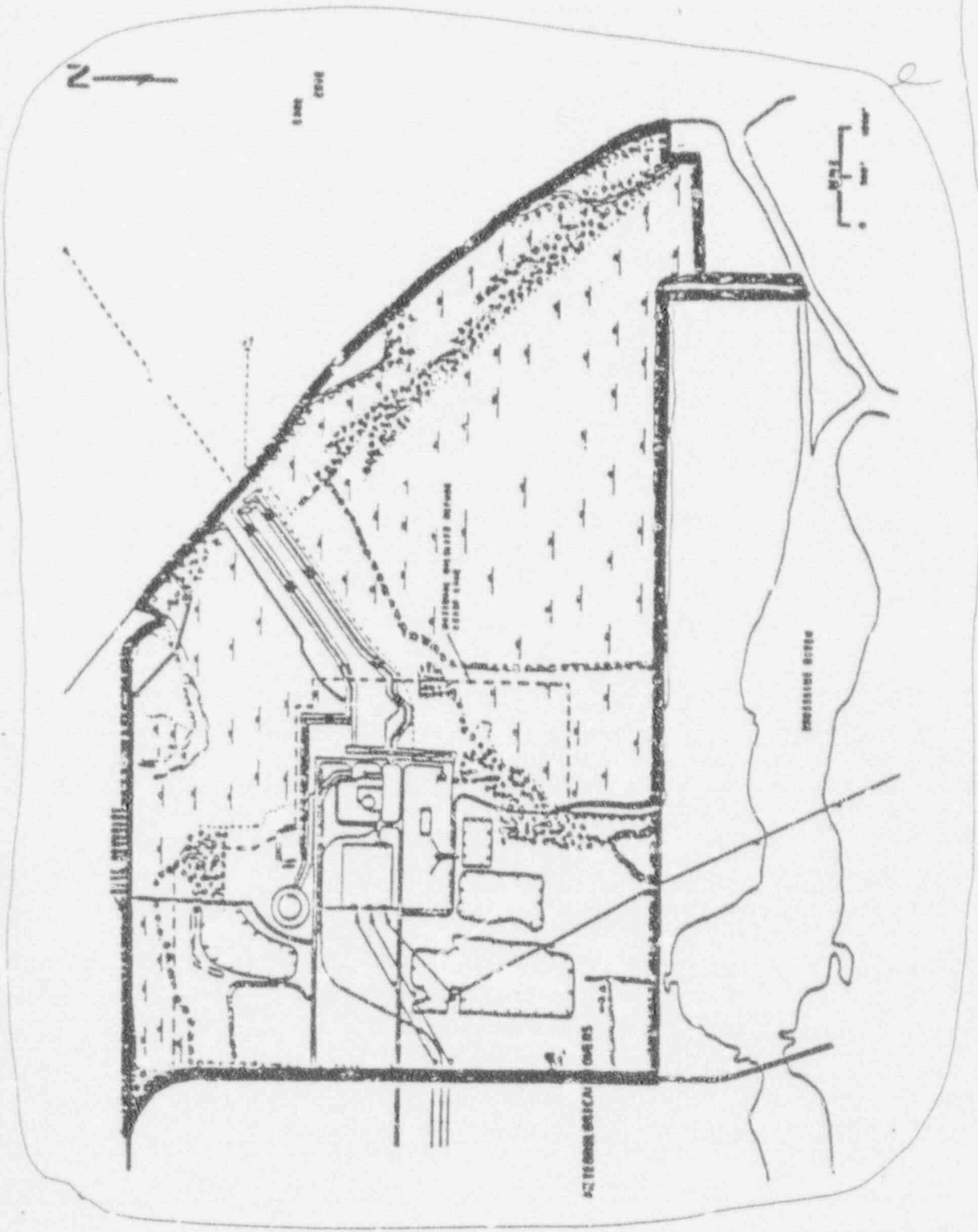
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DAVIS-BESSE NUCLEAR POWER STATION
UNRESTRICTED AREA
BOUNDARY FOR LIQUID EFFLUENTS
Fig. 5-1-3

rotate
90°
clockwise

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DAVIS-BESSE NUCLEAR POWER STATION
UNRESTRICTED AREA
BOUNDARY FOR GASEOUS EFFLUENTS
Fig. 5.1-4

rotate
90°
clockwise

DEFINITIONS

1.29 Deleted

PROCESS CONTROL PROGRAM

1.30 The PROCESS CONTROL PROGRAM (PCP) shall contain the current formulas, sampling, analyses, tests, and determinations to be made to ensure that processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Parts 20, 61, and 71, State regulations, burial ground requirements, and other requirements governing the disposal of solid radioactive waste.

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OFFSITE DOSE CALCULATION MANUAL (ODCM)

1.32 The OFFSITE DOSE CALCULATION MANUAL (ODCM) shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring Alarm/Trip Setpoints, and in the conduct of the Environmental Radiological Monitoring Program. The ODCM shall also contain (1) the Radioactive Effluent Controls and Radiological Environmental Monitoring Programs required by Section 6.8.4 and (2) descriptions of the information that should be included in the Annual Radiological Environmental Operating and Semianual Radioactive Effluent Release Reports required by Specifications 6.9.1.10 a 6.9.1.11.

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MEMBER(S) OF THE PUBLIC

1.37 MEMBER(S) OF THE PUBLIC shall include all persons who are not occupationally associated with the plant. This category does not include employees of the utility, its contractors or vendors. Also excluded from this category are persons who enter the site to service equipment or to make deliveries. This category does include persons who use portions of the site for recreational, occupational or other purposes not associated with the plant.

SITE BOUNDARY

1.38 The SITE BOUNDARY shall be that line beyond which the land is neither owned, nor leased, nor otherwise controlled by the licensee.

FOR INFORMATION ONLY

DEFINITIONS

UNRESTRICTED AREA

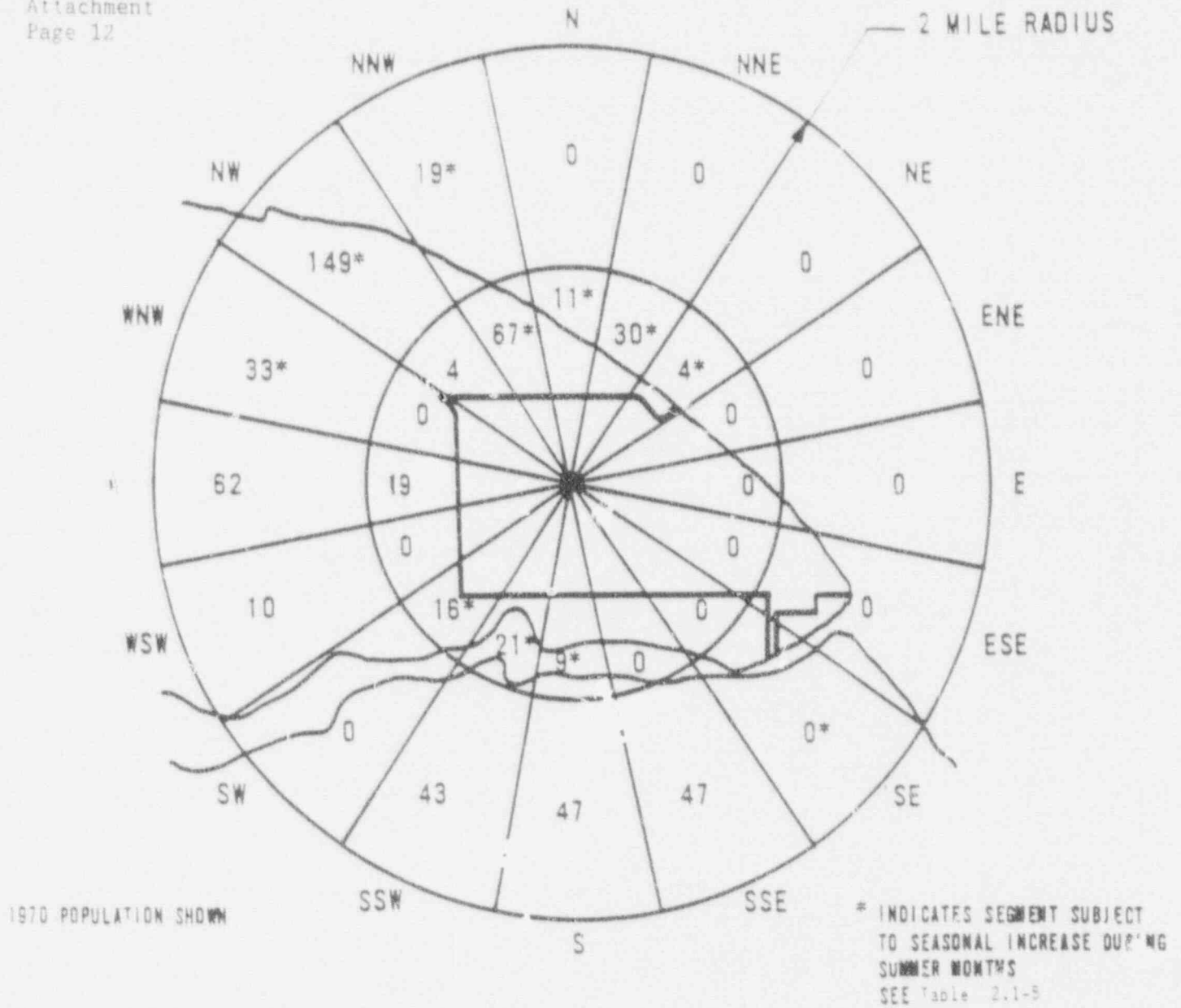
1.39 An UNRESTRICTED AREA shall be any area at or beyond the SITE BOUNDARY access to which is not controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials, or any area within the SITE BOUNDARY used for residential, quarters or for industrial, commercial, institutional, and/or recreational purposes. The definition of UNRESTRICTED AREA used in implementing the Radiological Effluent Technical Specifications has been expanded over that in 10 CFR 20.3(a)(17). The UNRESTRICTED AREA boundary may coincide with the exclusion (fenced) area boundary, as defined in 10 CFR 100.3(a), but the UNRESTRICTED AREA does not include areas over water bodies. The concept of UNRESTRICTED AREAS, established at or beyond the SITE BOUNDARY, is utilized in the LIMITING CONDITIONS FOR OPERATION to keep levels of radioactive materials in liquid and gaseous effluents as low as is reasonably achievable, pursuant to 10 CFR 50.36a.

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CORE OPERATING LIMITS REPORT

1.41 The CORE OPERATING LIMITS REPORT is the unit-specific document that provides core operating limits for the current reload cycle. These cycle-specific core operating limits shall be determined for each reload cycle in accordance with Specification 6.9.1.7. Plant operation within these core operating limits is addressed in individual specifications.

FOR INFORMATION ONLY



PERMANENT POPULATION PROJECTION

<u>ANNUAL TOTALS</u>	<u>1970</u>	<u>1980</u>	<u>1990</u>	<u>2000</u>	<u>2010</u>
0-1	181	181	181	211	277
1-2	410	410	410	471	506
TOTAL	591	591	591	682	733

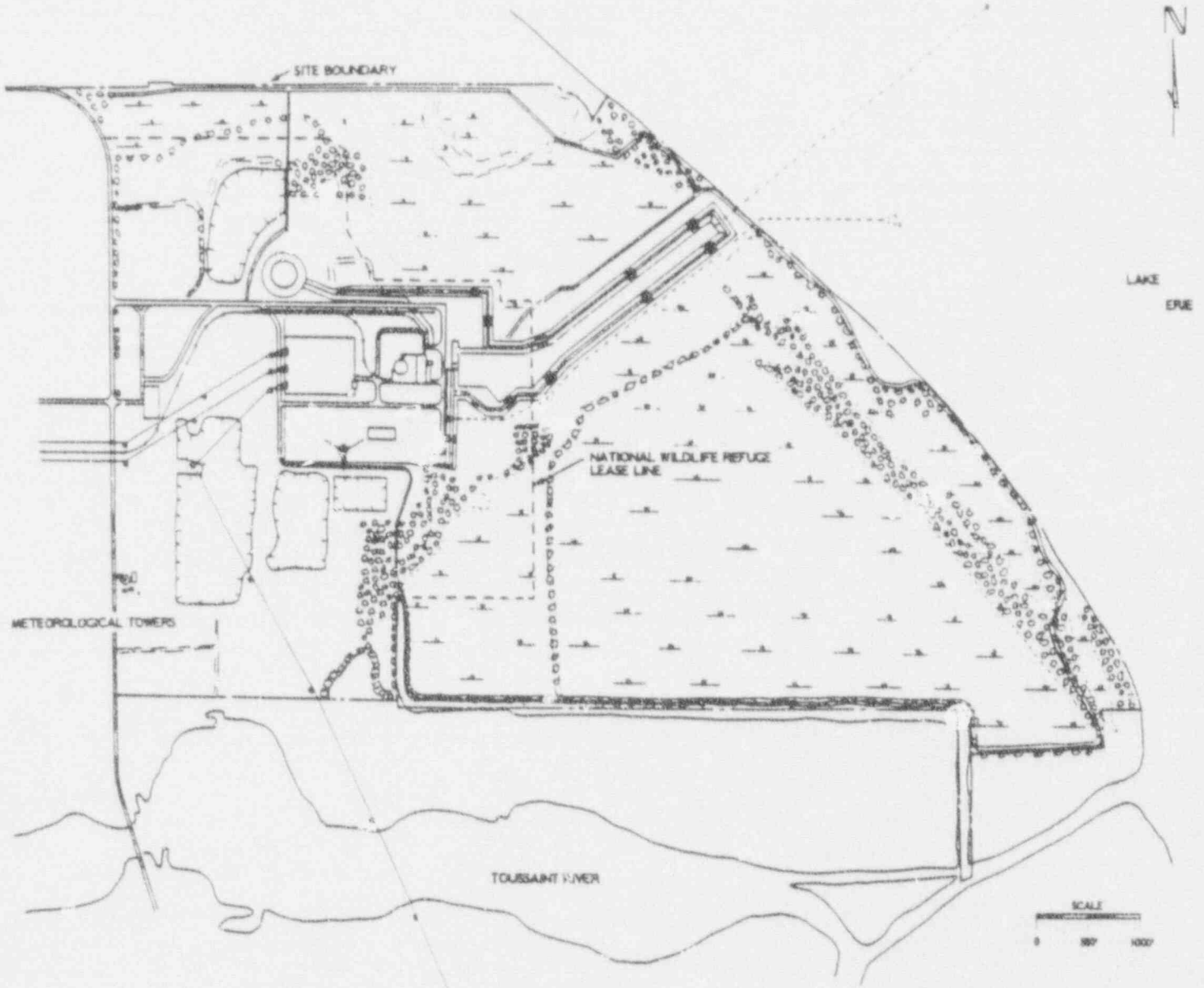
FOR SEGMENT DISTRIBUTION IN FUTURE YEARS SEE Table 2.1-2

FOR SEASONAL INCREASE IN RESIDENT POPULATION DURING SUMMER MONTHS SEE Table 2.1-5

DAVIS-BESSE NUCLEAR POWER STATION
 LOW POPULATION ZONE

FIGURE 2.1-7

FOR INFORMATION ONLY



DAVIS-BESSE NUCLEAR POWER STATION
SITE ARRANGEMENT
FIGURE 2.1-3