VOLUME 15

CNP UNITS 1 AND 2
IMPROVED TECHNICAL
SPECIFICATIONS CONVERSION

ITS CHAPTER 4.0
DESIGN FEATURES

Revision 0

LIST OF ATTACHMENTS

1. ITS Chapter 4.0

ATTACHMENT 1

ITS Chapter 4.0, Design Features

Current Technical Specification (CTS) Markup and Discussion of Changes (DOCs)

A.1

ITS

4.0 **5.0 DESIGN FEATURES**

4.1 **5.1 SITE**

EXCLUSION AREA

4.1.1 5.1.1 The exclusion area shall be as shown in Figure 5.1-1.

LOW POPULATION ZONE

4.1.2 5.1.2 The low population zone shall be as shown in Figure 5.1-2.

all the land within a circle centered on the reactor containment structures and a radius of 2 miles

A.2

Site Boundary For Gaseous and Liquid Effluents

4.1.1 5.1.3 The SITE BOUNDARY for gaseous and liquid effluents shall be as shown in Figure 5.1-3.

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 = 115 feet.

b. Nominal inside height = 160 feet.*

c. Minimum thickness of concrete walls = 3'6".

d. Minimum thickness of concrete roof = 2'6".

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

f. Nominal thickness of steel liner, side and dome = 3/8 inches.

g. Nominal thickness of steel liner, bottom = 1/4 inch.

h. Net free volume = 1.24 x 10^6 cubic feet.

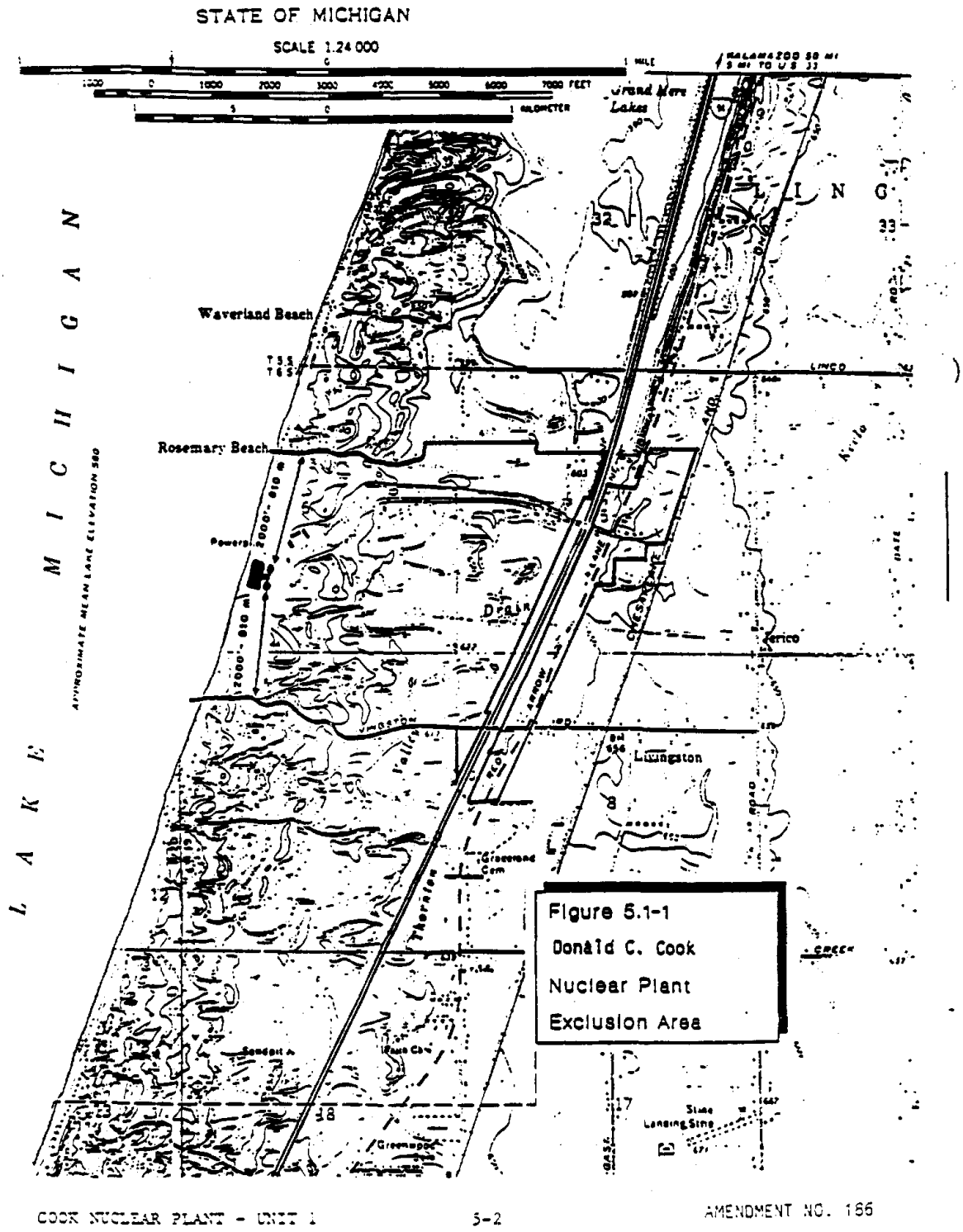
LA.1

*From grade (Elev. 608') to inside of dome.

A.1

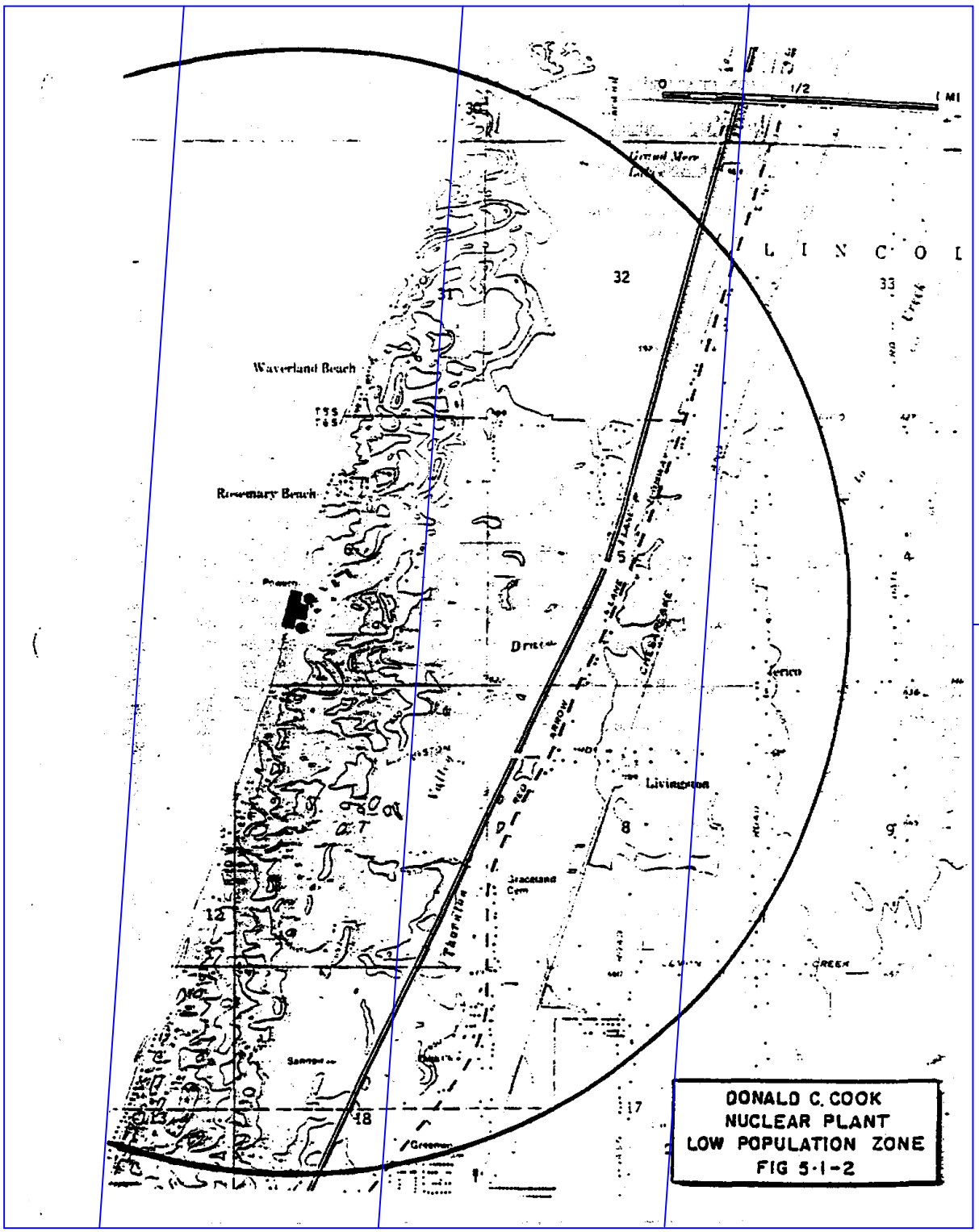
ITS

Figure 4.1-1



A.1

ITS



A.2

D. C. COOK-UNIT 1 5-3 Amendment No. 73

ITS 4.0

A.1

ITS

5.0 DESIGN FEATURES

5.2 CONTAINMENT (Continued)

DESIGN PRESSURE AND TEMPERATURE

5.2.2 The reactor containment building is designed and shall be maintained in accordance with the original design provisions contained in Section 5.2.2 of the FSAR.

LA.1

PENETRATIONS

5.2.3 Penetrations through the reactor containment building are designed and shall be maintained in accordance with the original design provisions contained in Section 5.4 of the FSAR with allowance for normal degradation pursuant to the applicable Surveillance Requirements.

4.2

5.3 REACTOR CORE

FUEL ASSEMBLIES

consisting of a matrix of

4.2.1

5.3.1 The reactor core shall contain 193 fuel assemblies with each fuel assembly containing 204 fuel rods clad with Zircaloy-4 or ZIRLO, except that limited substitutions of zirconium alloy or stainless steel filler rods, in accordance with NRC-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 analysis 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 non-limiting core regions. Each fuel rod shall have a nominal active fuel length of 144 inches. The initial core loading shall have a maximum enrichment of 3.35 weight percent U-235. Reload fuel shall be similar in physical design to the initial core loading and shall have a maximum nominal enrichment of 4.95 weight percent U-235.

fuel rods with an initial composition of natural or slightly enriched UO_2 as fuel material

4.3.1.1.a

LA.2

CONTROL ROD ASSEMBLIES

4.2.2

5.3.2 The reactor core shall contain 53 full length and no part length control rod assemblies. The full length control rod assemblies shall contain a nominal 142 inches of absorber material. The nominal values of absorber material shall be 80 percent silver, 15 percent indium and 5 percent cadmium. All control rods shall be clad with stainless steel tubing.

The control material shall be silver indium cadmium, as approved by the NRC.

LA.3

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A.1

ITS

5.0 DESIGN FEATURES

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 4.1.6 of the FSAR, with allowance for normal degradation pursuant to the applicable Surveillance Requirements,

b. For a pressure of 2485 psig, and

c. For a temperature of 650°F, except for the pressurizer which is 680°F.

LA.4

5.5 EMERGENCY CORE COOLING SYSTEMS

5.5.1 The emergency core cooling systems are designed and shall be maintained in accordance with the original design provisions contained in Section 6.2 of the FSAR with allowance for normal degradation pursuant to the applicable Surveillance Requirements, with one exception. This exception is the CVCS boron makeup system and the BIT.

LA.5

4.3 **5.6 FUEL STORAGE**

4.3.1 **CRITICALITY – SPENT FUEL**

4.3.1.1 5.6.1.1 The spent fuel storage racks are designed and shall be maintained with:

4.3.1.1.b a. A k_{eff} equivalent to less than 0.95 when flooded with unborated water.

4.3.1.1.c b. A nominal 8.97 inch center-to-center distance between fuel assemblies placed in the storage racks.

See ITS 3.7.16

4.3.1.1.d, 4.3.1.1.e c. The fuel assemblies will be classified as acceptable for Region 1, Region 2, or Region 3 storage based upon their assembly average burnup versus initial nominal enrichment. Cells acceptable for Region 1, Region 2, and Region 3 assembly storage are indicated in Figures 5.6-1 and 5.6-2. Assemblies that are acceptable for storage in Region 1, Region 2, and Region 3 must meet the design criteria that define the regions as follows:

See ITS 3.7.16

A.1

ITS

5.0 DESIGN FEATURES

5.6 FUEL STORAGE (Continued)

4.3.1.1.a, 4.3.1.1.d

1. Region 1 is designed to accommodate new fuel with a maximum nominal enrichment of 4.95 wt% U-235, or spent fuel regardless of the discharge fuel burnup.

4.3.1.1.e

2. Region 2 is designed to accommodate fuel of 4.95% initial nominal enrichment burned to at least 50,000 MWD/MtU, or fuel of other enrichments with equivalent reactivity.

3. Region 3 is designed to accommodate fuel of 4.95% initial nominal enrichment burned to at least 38,000 MWD/MtU, or fuel of other enrichments with equivalent reactivity.

The equivalent reactivity criteria for Region 2 and Region 3 is defined via the following equations:

See ITS 3.7.16

For Region 2 Storage

Minimum Assembly Average Burnup in MWD/MTU =

$$-22{,}670 + 22{,}220\,E - 2{,}260\,E^2 + 149\,E^3$$

For Region 3 Storage

Minimum Assembly Average Burnup in MWD/MTU =

$$-26{,}745 + 18{,}746\,E - 1{,}631\,E^2 + 98.4\,E^3$$

Where E = Initial Peak Enrichment

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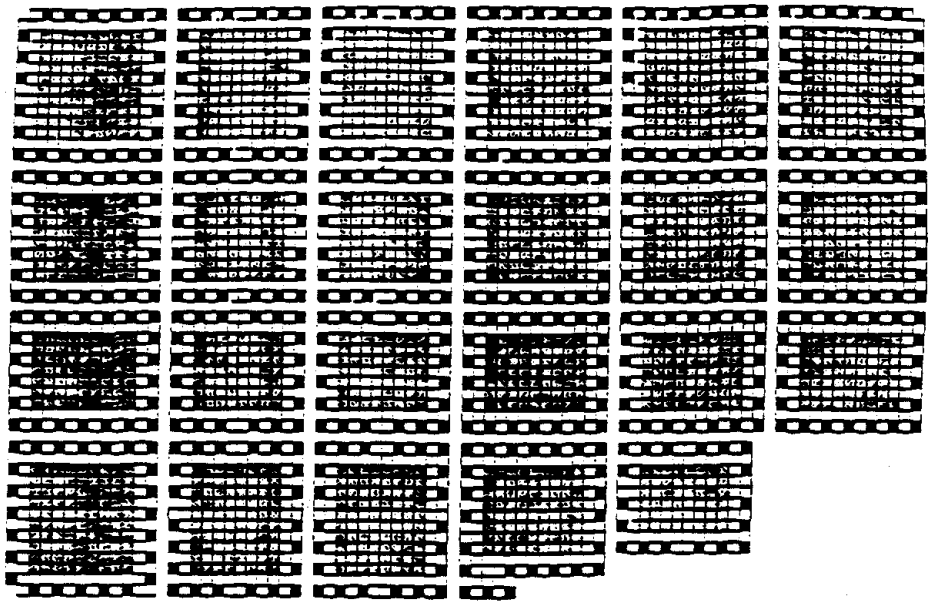
A.1

ITS

Figure 4.3-1

FIGURE 5.6-1: Normal Storage Pattern (Mixed Three Zone)



A.3

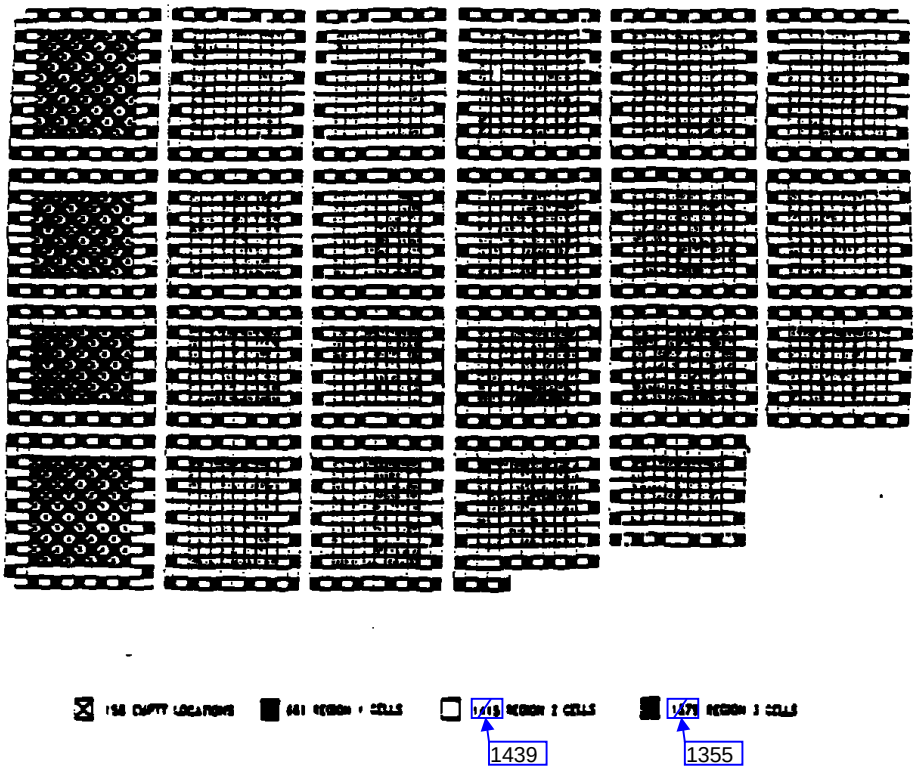
COOK NUCLEAR PLANT - UNIT 1 5-7 AMENDMENT NO. 163, 169

A.1

ITS

Figure 4.3-2

Figure 5.6-2: Interim Storage Pattern (Checkerboard)



A.3

COOK NUCLEAR PLANT - UNIT 1 5-7a AMENDMENT NO. 169

A.1

ITS

Figure 5.6-3 intentionally deleted.

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A.1

ITS

5.0 DESIGN FEATURES

5.6 FUEL STORAGE (Continued)

CRITICALITY - NEW FUEL

4.3.1.2 **5.6.2 The new fuel storage racks are designed and shall be maintained with:**

4.3.1.2.a **a. Westinghouse fuel assemblies having either a maximum enrichment of 4.55 weight % U-235, or an enrichment between 4.55 and 4.95 weight % U-235 with greater than or equal to the minimum number of integral fuel burnable absorber pins as shown on Figure 5.6-4(interpolation of the Boron-10 loading between 1.0X and 1.5X and between 1.5X and 2.0X is acceptable);**

4.3.1.2.b **b. $k_{eff} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.7 of the UFSAR;**

4.3.1.2.c **c. $k_{eff} \leq 0.98$ if moderated by aqueous foam, which includes an allowance for uncertainties as described in Section 9.7 of the UFSAR; and**

4.3.1.2.d **d. A nominal 21 inch center to center distance between fuel assemblies placed in the storage racks.**

DRAINAGE

4.3.2 **5.6.3 The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 629'4".**

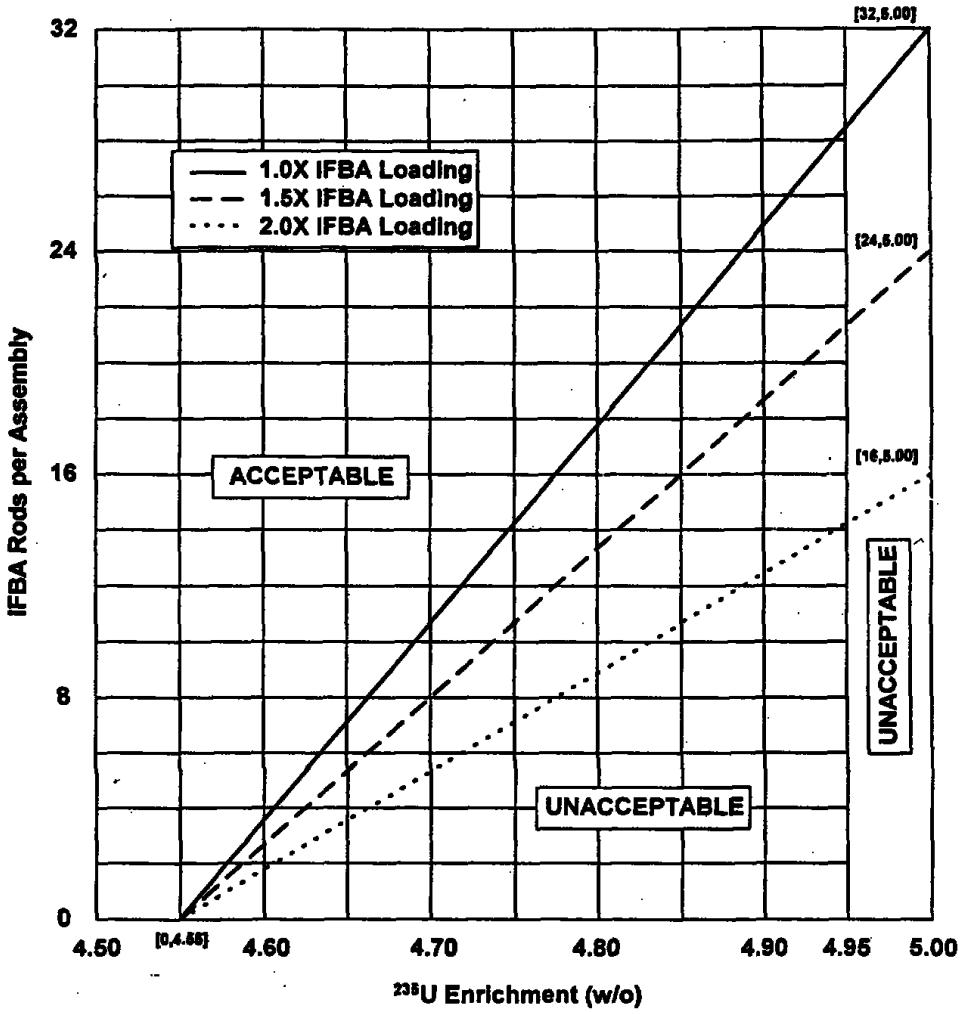
ITS 4.0

A.1

ITS

Figure 4.3-3

Figure 5.6-4: New Fuel Storage Rack Integral Fuel Burnable Absorber (IFBA) Requirements



A.1

ITS

5.0 DESIGN FEATURES

5.6 FUEL STORAGE (Continued)

CAPACITY

4.3.3

5.6.4 The fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 3613 fuel assemblies.

5.7 SEISMIC CLASSIFICATION

5.7.1 Those structures, systems and components identified as Category I Items in the FSAR shall be designed and maintained to the original design provisions contained in the FSAR with allowance for normal degradation pursuant to the applicable Surveillance Requirements.

LA.6

5.8 METEOROLOGICAL TOWER LOCATION

5.8.1 The meteorological tower shall be located as shown on Figure 5.1-3.

LA.7

ITS 4.0

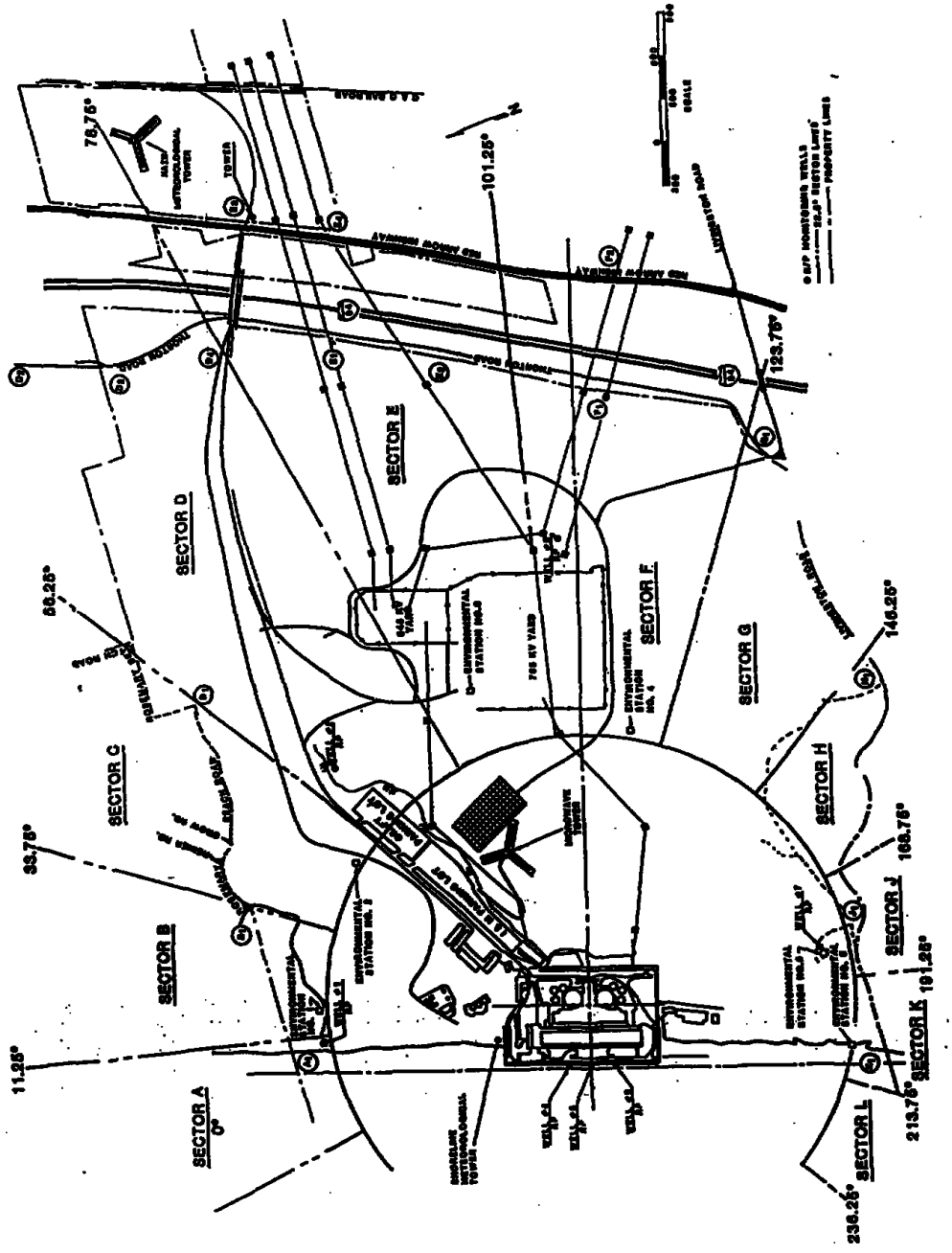
A.1

ITS

Figure 4.1-1

5.0 DESIGN FEATURES

FIGURE 5.1-3: SITE BOUNDARY FOR LIQUID AND GASEOUS EFFLUENTS



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A.1

ITS

4.0 **5.0 DESIGN FEATURES**

4.1 **5.1 SITE**

Exclusion Area

4.1.1 **5.1.1 The exclusion area shall be as shown in Figure 5.1-1.**

Low Population Zone

4.1.2 **5.1.2 The low population zone shall be ~~as shown in Figure 5.1-2.~~** all the land within a circle centered on the reactor containment structures and a radius of 2 miles

A.2

Site Boundary For Gaseous and Liquid Effluents

4.1.1 **5.1.3 The SITE BOUNDARY for gaseous and liquid effluents shall be as shown in Figure 5.1-3.**

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 = 115 feet.

b. Nominal inside height = 160 feet.

c. Minimum thickness of concrete walls = 3'6".

d. Minimum thickness of concrete roof = 2'6".

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

f. Nominal thickness of steel liner = 3/8 inches.

g. Net free volume = 1.24×10^6 cubic feet.

LA.1

DESIGN PRESSURE AND TEMPERATURE

5.2.2 The reactor containment building is designed and shall be maintained in accordance with the original design provisions contained in Section 5.2.2 of the FSAR.

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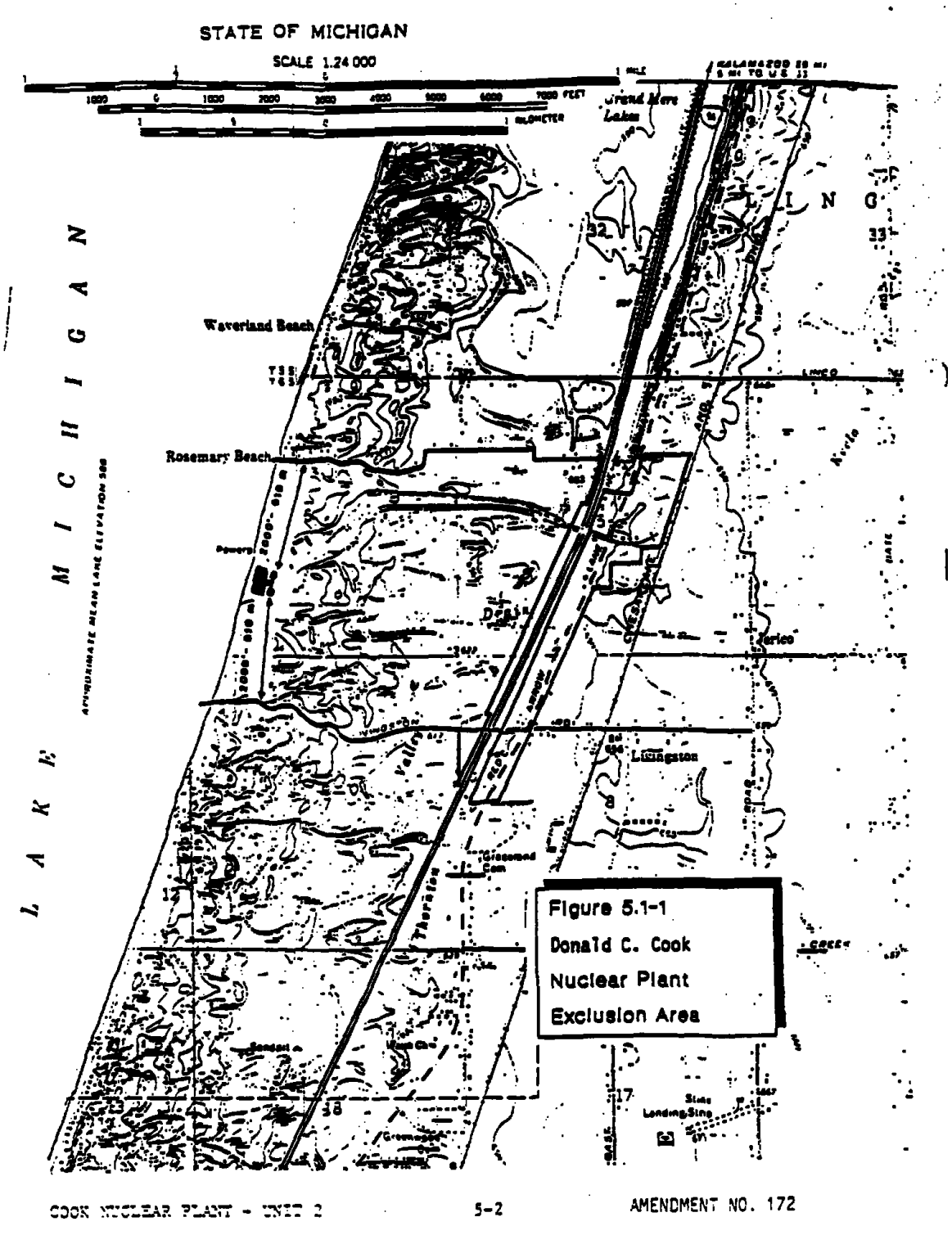
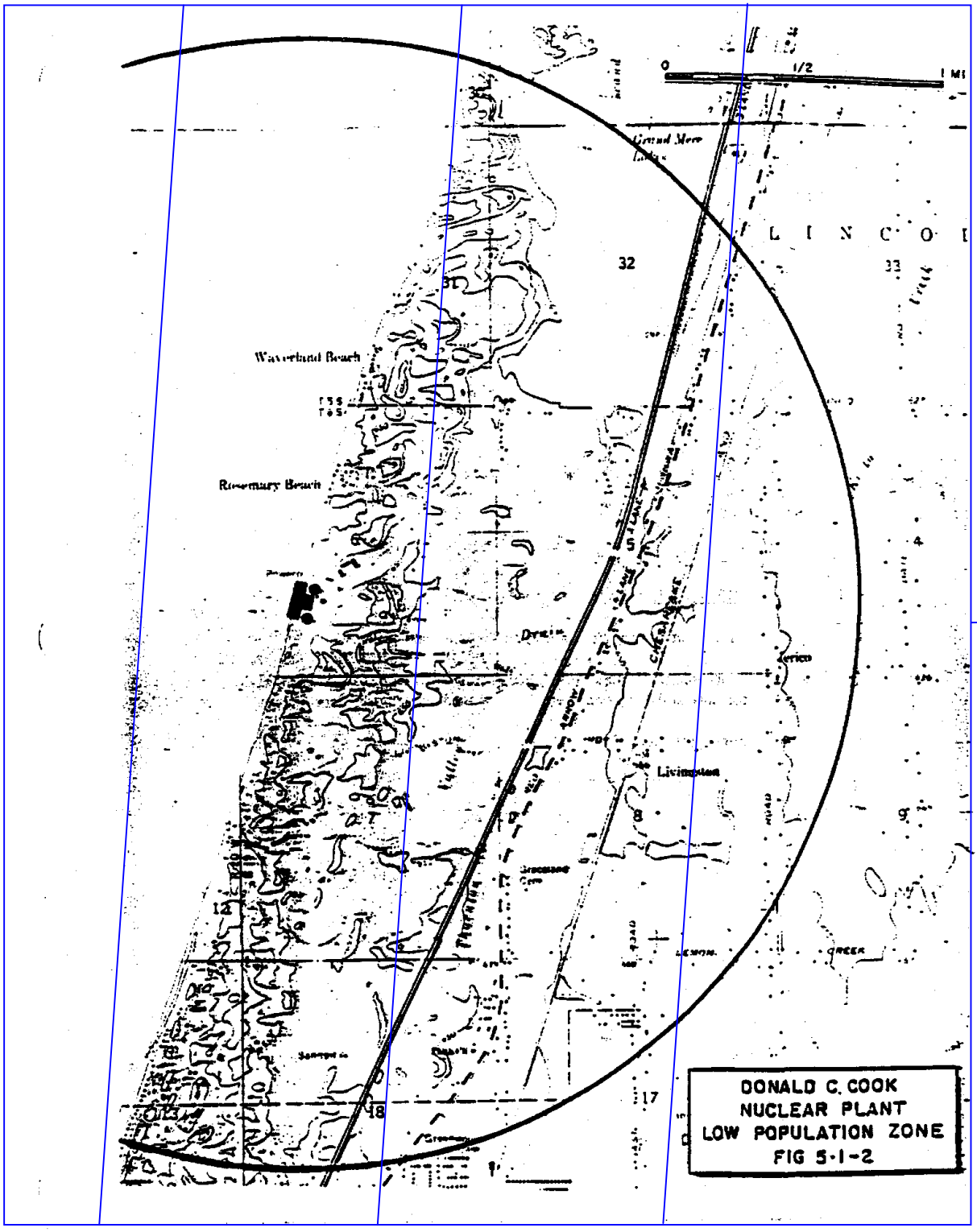
ITS

Figure 4.1-1



A.1

ITS


0
1/2
1 MI
Ground Mere
L I N C O L
32
33
Waverland Beach
Rosemary Beach
Drain
Livingston
DONALD C. COOK
NUCLEAR PLANT
LOW POPULATION ZONE
FIG 5-1-2

A.2

ITS 4.0

A.1

ITS

5.0 DESIGN FEATURES

4.2

5.3 REACTOR CORE

FUEL ASSEMBLIES

consisting of a matrix of

4.2.1

5.3.1 The reactor core shall contain 193 fuel assemblies with each fuel assembly containing 264 fuel rods clad with Zircaloy-4 or ZIRLO, except that limited substitutions of zirconium alloy or stainless steel filler rods, in accordance with NRC-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 non-limiting core regions. Each fuel rod shall have a nominal active fuel length of 144 inches. The initial core loading shall have a maximum enrichment of 3.3 weight percent U-235. Reload fuel shall be similar in physical design to the initial core loading and may be nominally enriched up to 4.95 weight percent U-235.

fuel rods with an initial composition of natural or slightly enriched UO_2 as fuel material

4.3.1.1.a

LA.2

CONTROL ROD ASSEMBLIES

4.2.2

5.3.2 The reactor core shall contain 53 full length and no part length control rod assemblies. The full length control rod assemblies shall contain a nominal 142 inches of absorber material. The nominal values of absorber material shall be 80 percent silver, 15 percent indium and 5 percent cadmium. All control rods shall be clad with stainless steel tubing.

The control material shall be silver indium cadmium, as approved by the NRC.

LA.3

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 4.1.6 of the FSAR, with allowance for normal degradation pursuant to the applicable Surveillance Requirements.

b. For a pressure of 2485 psig, and

c. For a temperature of 650°F, except for the pressurizer which is 680°F.

LA.4

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A.1

ITS

5.0 DESIGN FEATURES

5.5 METEOROLOGICAL TOWER LOCATION

5.5.1 The meteorological tower shall be located as shown on Figure 5.1-3.

LA.7

4.3 5.6 FUEL STORAGE

4.3.1 CRITICALITY – SPENT FUEL

4.3.1.1 5.6.1.1 The spent fuel storage racks are designed and shall be maintained with:

4.3.1.1.b a. A K_{eff} equivalent to less than 0.95 when flooded with unborated water,

4.3.1.1.c b. A nominal 8.97-inch center-to-center distance between fuel assemblies, placed in the storage racks.

See ITS 3.7.16

4.3.1.1.d, 4.3.1.1.e c. The fuel assemblies will be classified as acceptable for Region 1, Region 2, or Region 3 storage based upon their assembly burnup versus initial nominal enrichment. Cells acceptable for Region 1, Region 2, and Region 3 assembly storage are indicated in Figures 5.6-1 and 5.6-2. Assemblies that are acceptable for storage in Region 1, Region 2, and Region 3 must meet the design criteria that define the regions as follows:

See ITS 3.7.16

4.3.1.1.a, 4.3.1.1.d 1. Region 1 is designed to accommodate new fuel with a maximum nominal enrichment of 4.95 wt% U-235, or spent fuel regardless of the discharge fuel burnup.

4.3.1.1.e 2. Region 2 is designed to accommodate fuel of 4.95% initial nominal enrichment burned to at least 50,000 MWD/MTU, or fuel of other enrichments with equivalent reactivity.

3. Region 3 is designed to accommodate fuel of 4.95% initial nominal enrichment burned to at least 38,000 MWD/MTU, or fuel of other enrichments with equivalent reactivity.

See ITS 3.7.16

A.1

ITS

4.3.1.1.e

5.6 FUEL STORAGE (Continued)

CRITICALITY - SPENT FUEL (Continued)

The equivalent reactivity criteria for Region 2 and Region 3 is defined via the following equations:

For Region 2 Storage

Minimum Assembly Average Burnup in MWD/MTU =

$- 22{,}670 + 22{,}220\ E - 2{,}260\ E^2 + 149\ E^3$

For Region 3 Storage

Minimum Assembly Average Burnup in MWD/MTU =

$- 26{,}745 + 18{,}746\ E - 1{,}631\ E^2 + 98.4\ E^3$

Where E = Initial Peak Enrichment

See ITS 3.7.16

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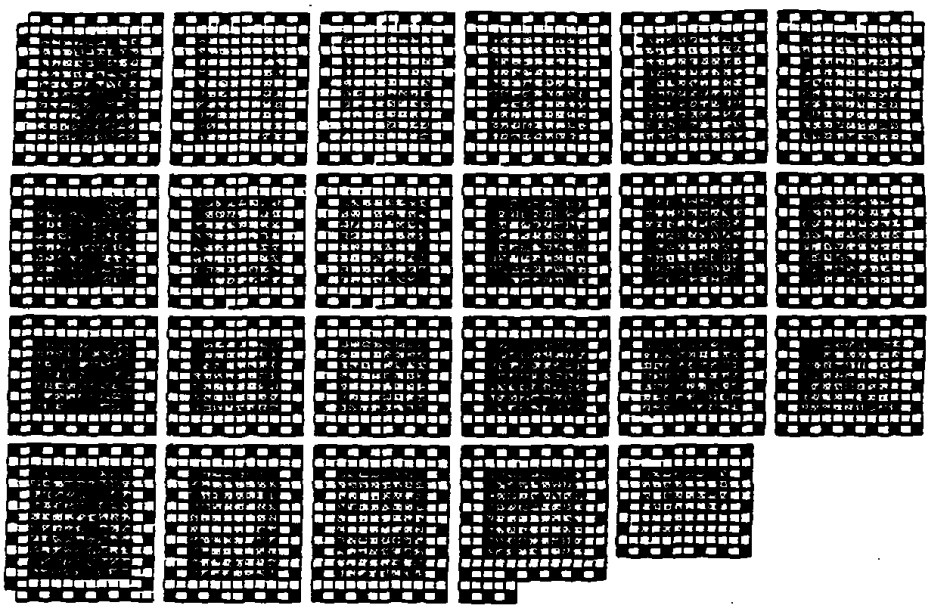
A.1

ITS

Figure 4.3-1

FIGURE 5.6-1: Normal Storage Pattern (Mixed Three Zone)



A.3

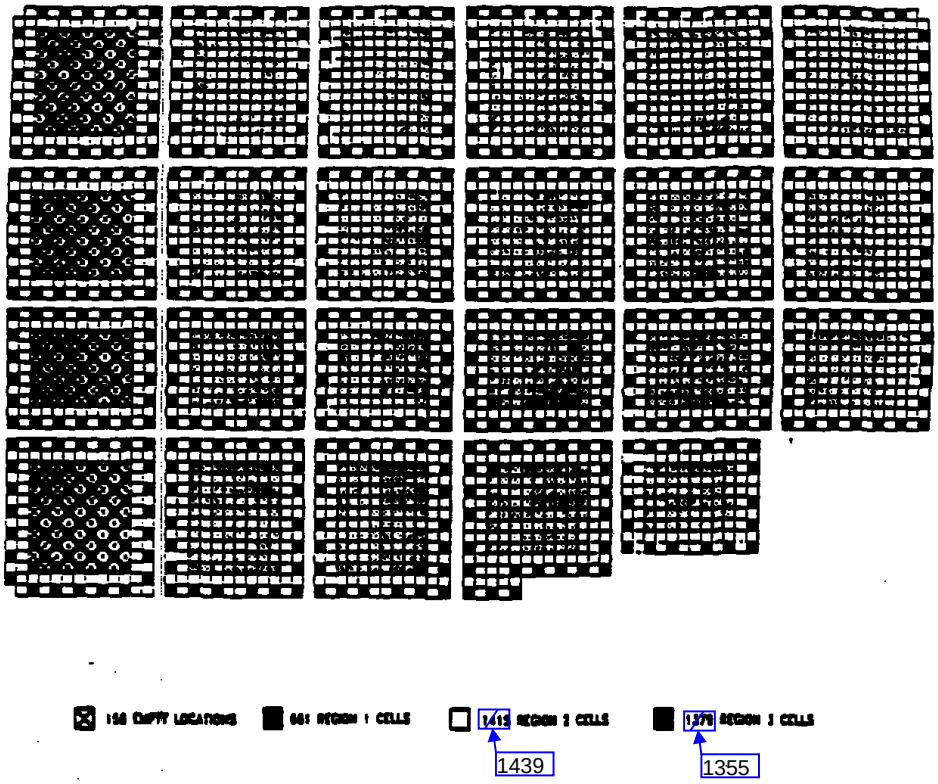
COOK NUCLEAR PLANT - UNIT 2 5-7 AMENDMENT NO. 147, 152

A.1

ITS

Figure 4.3-2

Figure 5.6-2: Interim Storage Pattern (Checkerboard)



A.3

COOK NUCLEAR PLANT - UNIT 2 5-7a AMENDMENT NO.152

A.1

ITS

Figure 5.6-3 intentionally deleted.

A.1

ITS

5.0 ADMINISTRATIVE CONTROLS

5.6 FUEL STORAGE (Continued)

4.3.1.2 5.6.2 The new fuel storage racks are designed and shall be maintained with:

4.3.1.2.a a. Westinghouse fuel assemblies having either a maximum enrichment of 4.55 weight % U-235, or an enrichment between 4.55 and 4.95 weight % U-235 with the minimum number of integral fuel burnable absorber pins as shown on Figure 5.6-4 (interpolation of the Boron-10 loading between 1.0X and 1.5X and 2.0X is acceptable);

4.3.1.2.b b. $k_{eff} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.7 of the UFSAR;

4.3.1.2.c c. $k_{eff} \leq 0.98$ if moderated by aqueous foam, which includes an allowance for uncertainties as described in Section 9.7 of the UFSAR; and

4.3.1.2.d d. A nominal 21 inch center to center distance between fuel assemblies placed in the storage racks.

DRAINAGE

4.3.2 5.6.3 The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 629'4".

CAPACITY

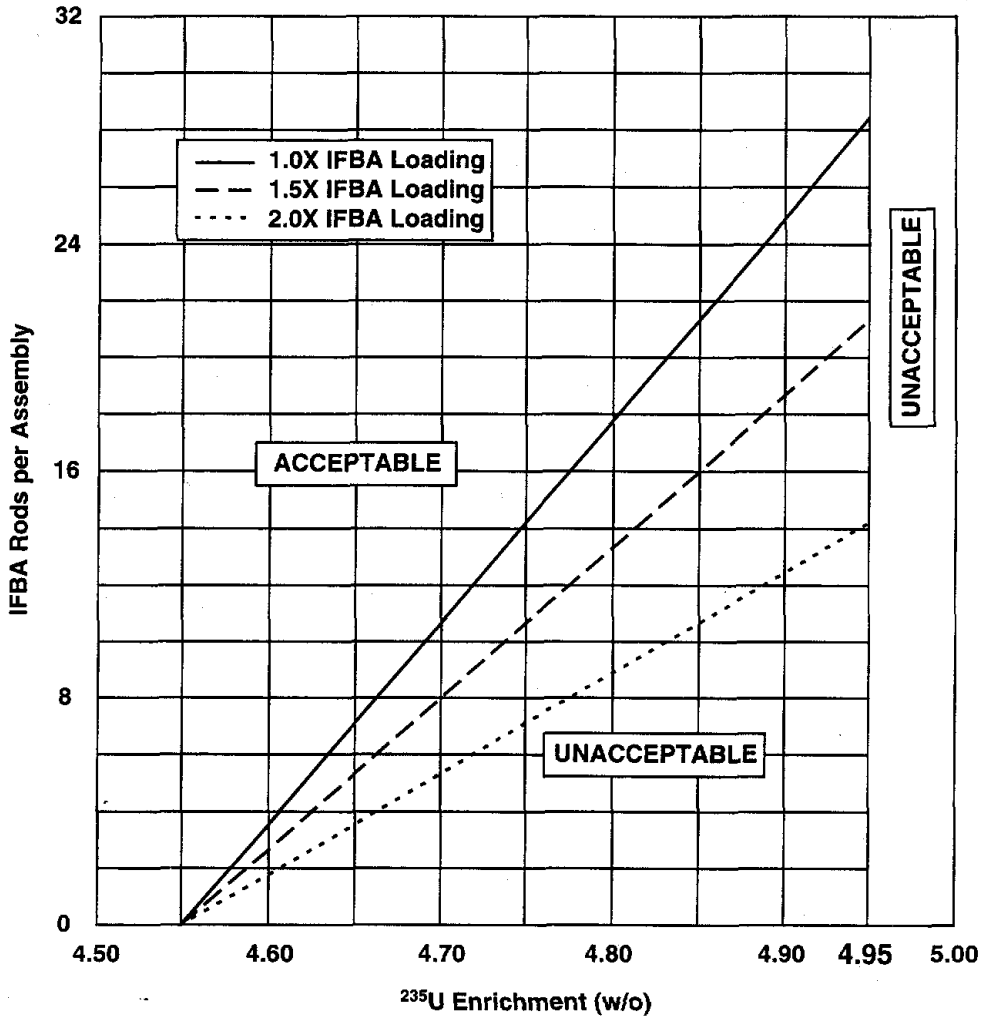
4.3.3 5.6.4 The spent fuel storage pool is designed and shall me maintained with a storage capacity limited to no more than 3613 fuel assemblies.

A.1

ITS

Figure 4.3-3

Figure 5.6-4: New Fuel Storage Rack Integral Fuel Burnable Absorber (IFBA) Requirements

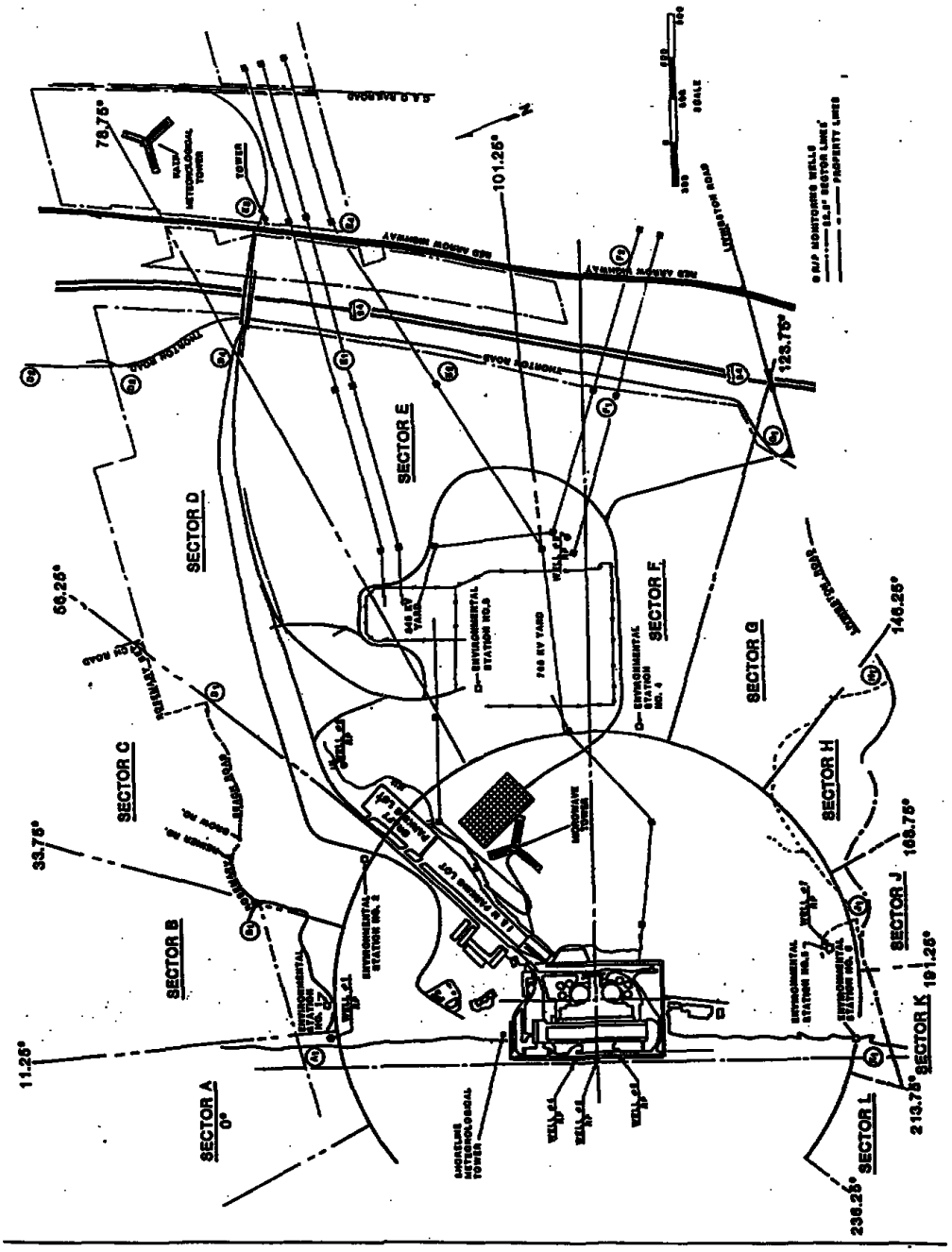


A.1

ITS

Figure 4.1-1

FIGURE 5.1-3: SITE BOUNDARY FOR LIQUID AND GASEOUS EFFLUENTS



DISCUSSION OF CHANGES
ITS CHAPTER 4.0, DESIGN FEATURES

ADMINISTRATIVE CHANGES

A.1 In the conversion of the CNP Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

A.2 CTS 5.1.2 states "The low population zone shall be as shown in Figure 5.1-2." CTS Figure 5.1-2 provides a map depicting the low population zone. ITS 4.1.2 provides a description of the low population zone; a figure is not provided. This changes the CTS by providing a word description of the low population zone instead of a map.

This change is acceptable since it does not change the current requirements. A description is provided consistent with the current map in the figure. This change is designated as administrative because it does not result in a technical change to the Technical Specifications.

A.3 CTS Figures 5.6-1 and 5.6-2 provide drawings that depict the various regions of the spent fuel storage pool racks for a normal storage pattern (mixed three zone) and for an interim storage pattern (checkerboard). The key at the bottom of the figures identifies the total number of cells for the various regions. The CTS Figure 5.6-1 key identifies, in part, that there are 1415 Region 2 cells and 1694 Region 3 cells, and the CTS Figure 5.6-2 key identifies, in part, that there are 1415 Region 2 cells and 1379 Region 3 cells. The ITS Figure 4.3-1 key identifies that there are 1439 Region 2 cells and 1670 Region 3 cells, and the ITS Figure 4.3-2 key identifies that there are 1439 Region 2 cells and 1355 Region 3 cells. This changes the keys to clearly identify the actual number of cells depicted in each region.

This change is acceptable since it does not change the current requirements. The number of cells listed in the keys for the ITS Figures is consistent with the actual number of cells depicted by the Figures. This change is considered administrative because it does not result in a technical change to the Technical Specifications.

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

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DISCUSSION OF CHANGES
ITS CHAPTER 4.0, DESIGN FEATURES

REMOVED DETAIL CHANGES

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 5.2 describes the various design features of the reactor containment building. The ITS does not contain this information. This changes the CTS by moving the description of the reactor containment building to the UFSAR.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains requirements on containment OPERABILITY in ITS 3.6.1. Also, this change is acceptable because the removed information will be adequately controlled in the UFSAR. Any changes to the UFSAR are made under 10 CFR 50.59 or 10 CFR 50.71(e), which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.2 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 5.3.1 contains details of fuel assembly design, such as number of fuel rods per fuel assembly, the fuel rod nominal active fuel length, and the initial core loading maximum enrichment. The ITS does not contain these details, but provides a general statement that, “Each assembly shall consist of a matrix of Zircaloy or ZIRLO fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material." This changes the CTS by moving the detailed description of the fuel assemblies to the UFSAR.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains requirements on fuel assembly enrichment in ITS 4.2.1. In addition, core power distribution requirements, which are dependant upon fuel assembly design, are described in ITS Section 3.2. Also, this change is acceptable because the removed information will be adequately controlled in the UFSAR. Any changes to the UFSAR are made under 10 CFR 50.59 or 10 CFR 50.71(e), which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.3 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 5.3.2 contains details of control rod design, such as the nominal length of absorber material, percentage of each absorber material, and control rod cladding material. The ITS does not contain these details, but provides a general statement that, “The control material shall be silver indium cadmium, as approved by the NRC.” This changes the CTS by moving the detailed description of the control rod assemblies to the UFSAR.

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DISCUSSION OF CHANGES
ITS CHAPTER 4.0, DESIGN FEATURES

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains requirements on the control rod material in ITS 4.2.2 and on control rod OPERABILITY in ITS Section 3.1. Also, this change is acceptable because the removed information will be adequately controlled in the UFSAR. Any changes to the UFSAR are made under 10 CFR 50.59 or 10 CFR 50.71(e), which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.4 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 5.4 describes the Reactor Coolant System. The ITS does not contain this information. This changes the CTS by moving the description of the Reactor Coolant System to the UFSAR.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains requirements on Reactor Coolant System OPERABILITY in ITS Section 3.4. Also, this change is acceptable because the removed information will be adequately controlled in the UFSAR. Any changes to the UFSAR are made under 10 CFR 50.59 or 10 CFR 50.71(e), which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.5 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* (Unit 1 only) Unit 1 CTS 5.5 describes the Emergency Core Cooling Systems (ECCS). The ITS does not contain this information. This changes the Unit 1 CTS by moving the description of the ECCS to the UFSAR.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains requirements on ECCS OPERABILITY in ITS Section 3.5. Also, this change is acceptable because the removed information will be adequately controlled in the UFSAR. Any changes to the UFSAR are made under 10 CFR 50.59 or 10 CFR 50.71(e), which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.6 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* (Unit 1 only) Unit 1 CTS 5.7 describes certain general Seismic Classification requirements. The ITS does not contain this information. This changes the Unit 1 CTS by moving the description of these general Seismic Classification requirements to the UFSAR.

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DISCUSSION OF CHANGES
ITS CHAPTER 4.0, DESIGN FEATURES

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains requirements for various Category I structures, systems, and components. Also, this change is acceptable because the removed information will be adequately controlled in the UFSAR. Any changes to the UFSAR are made under 10 CFR 50.59 or 10 CFR 50.71(e), which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.7 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 5.8.1 (Unit 1) and CTS 5.5.1 (Unit 2) describes the location of the meteorological tower. The ITS does not contain this information. This changes the CTS by moving the location of the meteorological tower to the UFSAR.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. 10 CFR 50.36(c)(4) states "Design features to be included are those features of the facility such as materials of construction and geometric arrangements, which, if altered or modified, would have a significant effect on safety and are not covered in categories described in paragraphs (c)(1), (2), and (3) of this section." These paragraphs provide the criteria for safety limits, limiting safety system settings, and limiting control settings; limiting conditions for operation; and surveillance requirements to be included in the Technical Specifications, respectively. The location of the meteorological tower does not meet any of these requirements. Also, this change is acceptable because the removed information will be adequately controlled in the UFSAR. Any changes to the UFSAR are made under 10 CFR 50.59 or 10 CFR 50.71(e), which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

None

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Improved Standard Technical Specifications (ISTS) Markup and Justification for Deviations (JFDs)

CTS

4.0 DESIGN FEATURES

4.1 Site Location

5.1.1, 5.1.2, 5.1.3

[Text description of site location.] ← INSERT 1

4.2 Reactor Core

5.3.1

4.2.1 Fuel Assemblies

The reactor shall contain 157 193 fuel assemblies. Each assembly shall consist of a matrix of Zircalloy or ZIRLO 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 core regions.

5.3.2

4.2.2 Control Rod Assemblies

The reactor core shall contain 48 53 full length control rod assemblies. The control material shall be silver indium cadmium, boron carbide, or hafnium metal as approved by the NRC.

4.3 Fuel Storage

5.6

5.6.1.1

4.3.1 Criticality

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

5.3.1, 5.6.1.1.c.1

a. Fuel assemblies having a maximum U-235 enrichment of 4.5 4.95 weight percent; Nominal

5.6.1.1.a

b. $k_{eff} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.1 of the FSAR; and 7.2

5.6.1.1.b

c. A nominal 9.15 8.97 inch center to center distance between fuel assemblies placed in the high density fuel storage racks; and

[d. A nominal [10.95] inch center to center distance between fuel assemblies placed in [low density fuel storage racks],]

1 **INSERT 1**

4.1.1 Site and Exclusion Area Boundaries

The site area and exclusion area boundaries are as shown in Figure 4.1-1.

4.1.2 Low Population Zone

The low population zone is all the land within a circle centered on the reactor containment structures and a radius of 2 miles.

CTS

4.0 DESIGN FEATURES

4.3 Fuel Storage (continued)

d. New or partially spent fuel assemblies with any discharge burnup in the "acceptable range" of Figure [3.7.17-1] may be allowed unrestricted storage in either fuel storage rack(s), and INSERT 2

e. New or partially spent fuel assemblies with a discharge burnup in the "unacceptable range" of Figure [3.7.17-1] will be stored in compliance with the NRC approved [specific document containing the analytical methods, title, date, or specific configuration or figure]. INSERT 3

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

a. Westinghouse fuel assemblies having either a maximum U-235 enrichment of 4.55 weight percent, INSERT 4

b. k_{eff} ≤ 0.95 if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.7 of the FSAR;

c. k_{eff} ≤ 0.98 if moderated by aqueous foam, which includes an allowance for uncertainties as described in Section 9.7 of the FSAR; and

d. A nominal 21 inch center to center distance between fuel assemblies placed in the storage racks.

4.3.2 Drainage

The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 629 ft 4 inches.

4.3.3 Capacity

The spent fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 3613 fuel assemblies.

INSERT 5

INSERT 6

INSERT 7

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1 **INSERT 2**

Region 1 of Figure 4.3-1 or Figure 4.3-2;

1 **INSERT 3**

Regions 2 and 3 of Figure 4.3-1 or Figure 4.3-2 meeting the initial enrichment and burnup requirements of LCO 3.7.16.

3 **INSERT 4**

or a maximum U^{235} enrichment within the Acceptable Region of Figure 4.3-3 not to exceed 4.95 weight percent. Linear interpolation of the B^{10} integral fuel burnable absorber (IFBA) loading curves between 1.0X and 1.5X and between 1.5X and 2.0X is acceptable;

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4.0

1 **INSERT 5**

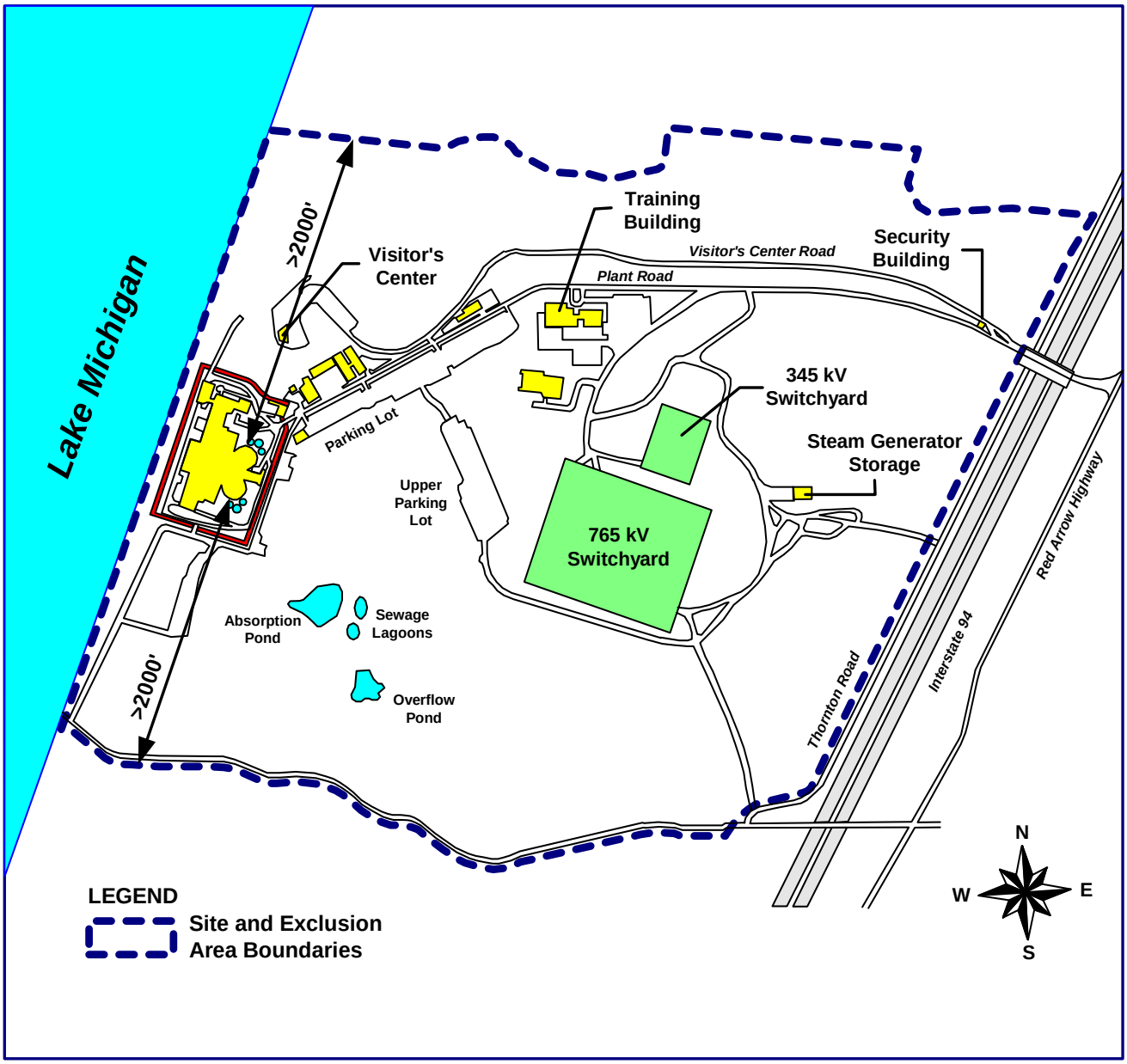

Figure 4.1-1 (Page 1 of 1)
Site and Exclusion Area Boundaries

Insert Page 4.0-2b

4.0

1 **INSERT 6**

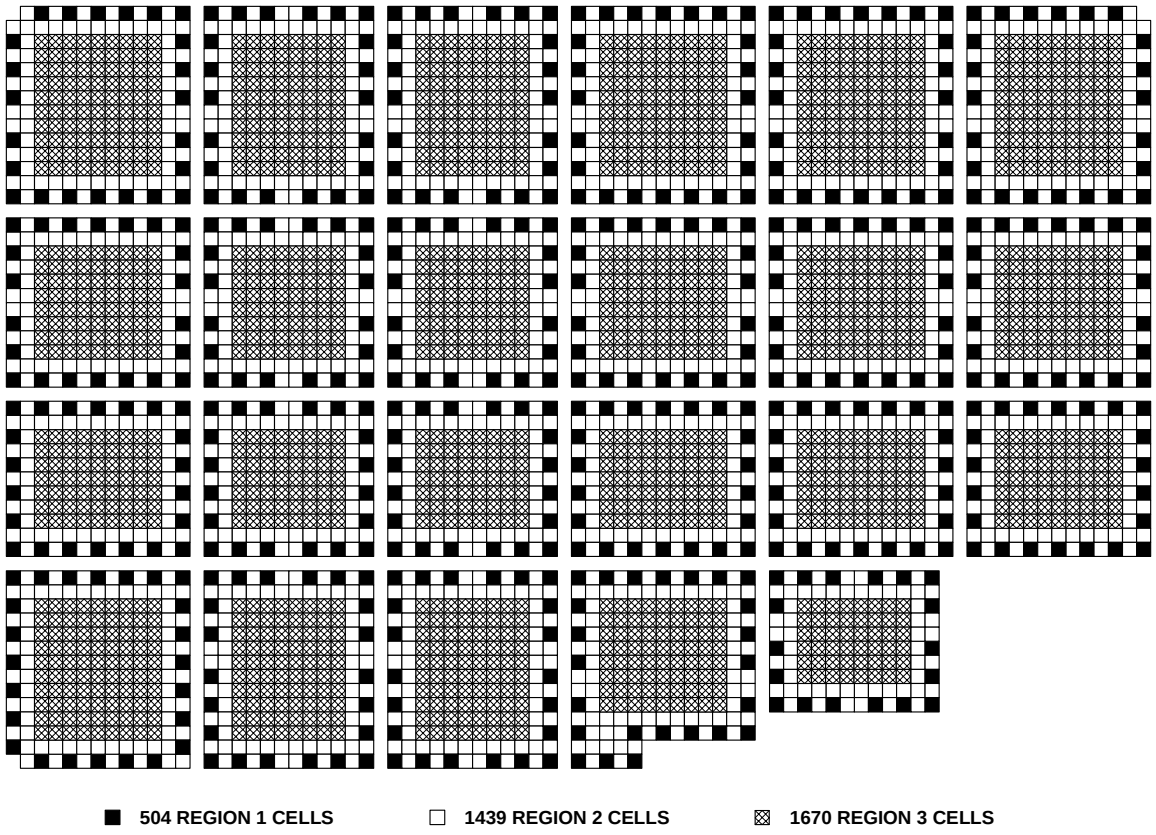

Figure 4.3-1 (Page 1 of 1)
Normal Storage Pattern (Mixed Three Zone)

Insert Page 4.0-2c

1 **INSERT 6 (continued)**

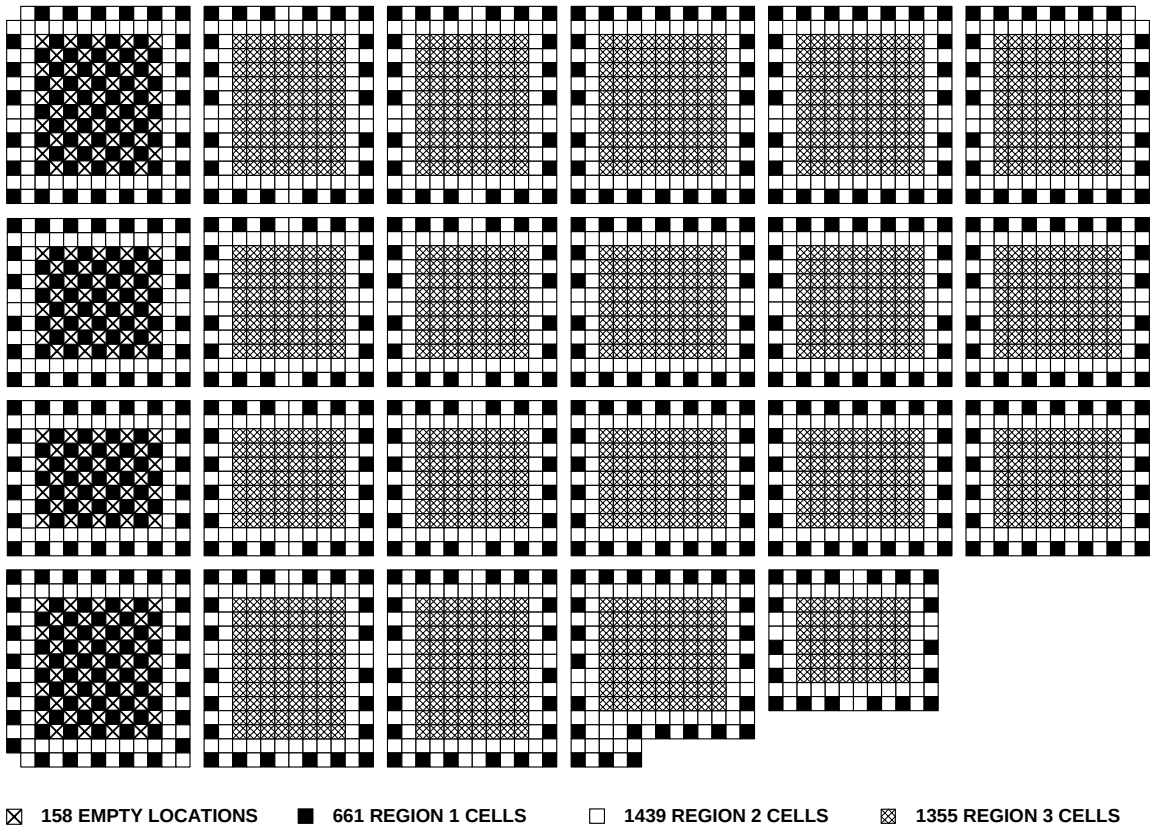

Figure 4.3-2 (Page 1 of 1)
Interim Storage Pattern (Checkerboard)

Insert Page 4.0-2d

4.0

3

INSERT 7

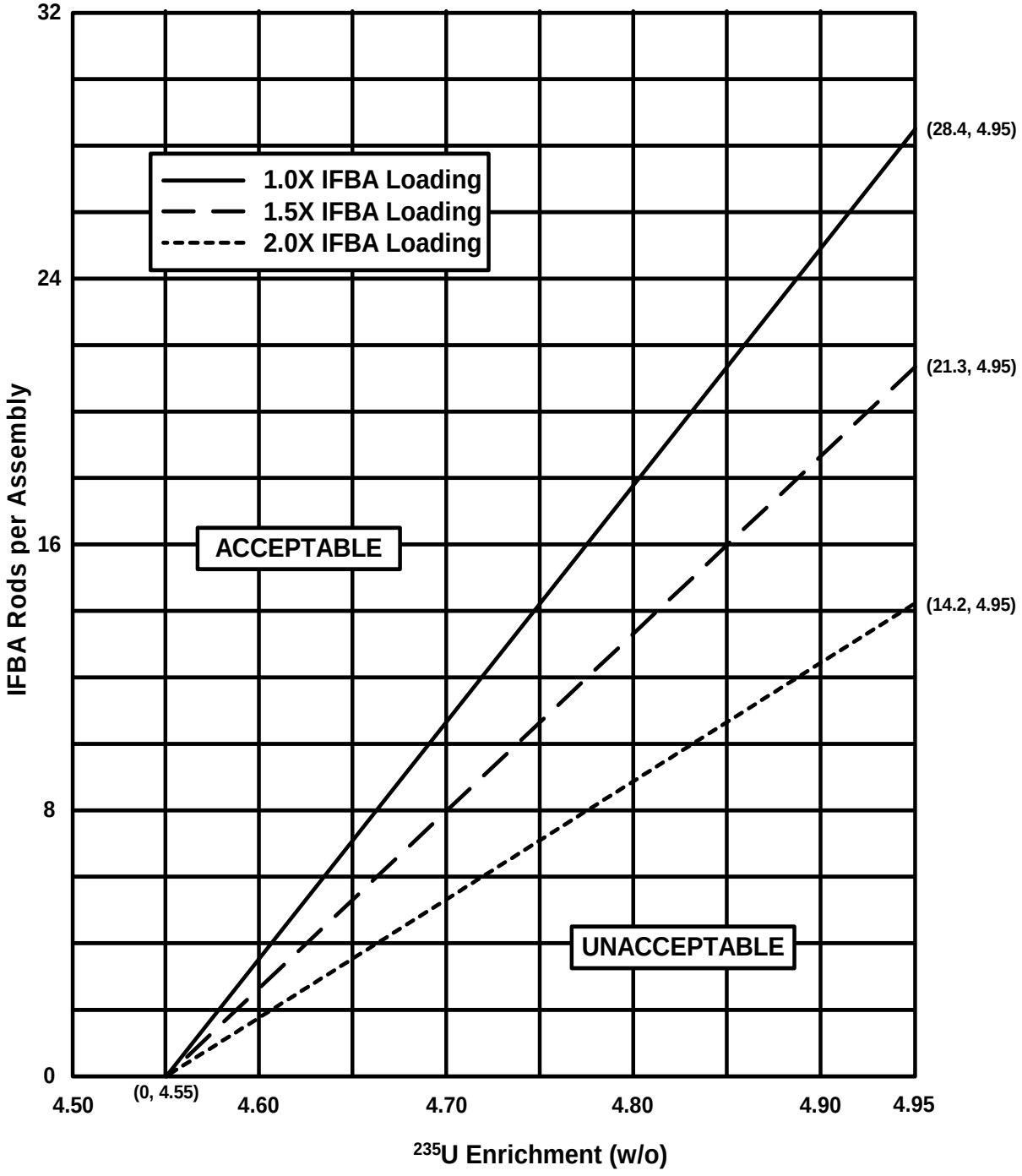

Figure 4.3-3 (Page 1 of 1)
New Fuel Storage Rack Integral Fuel Burnable Absorber (IFBA) Requirements

Insert Page 4.0-2e

JUSTIFICATION FOR DEVIATIONS
ITS CHAPTER 4.0, DESIGN FEATURES

1. The brackets are removed and the proper plant specific information/value has been provided.

2. These punctuation corrections have been made consistent with the Writer's Guide for the Improved Standard Technical Specifications, NEI 01-03, Section 5.1.3.

3. Changes are made (additions, deletions, and/or changes) to the ISTS which reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.

4. ISTS 4.3.1.1.d, a bracketed requirement, has not been included in the ITS because low density fuel racks are not used in the CNP spent fuel storage pool. Subsequent Specifications have been renumbered, as appropriate, due to this deletion.

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Specific No Significant Hazards Considerations (NSHCs)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS CHAPTER 4.0, DESIGN FEATURES

There are no specific NSHC discussions for this Chapter.

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