ENCLOSURE 2

VOLUME 15

TURKEY POINT NUCLEAR GENERATING STATION UNIT 3 AND UNIT 4

IMPROVED TECHNICAL SPECIFICATIONS CONVERSION

ITS CHAPTER 4.0 DESIGN FEATURES

Revision 1

LIST OF ATTACHMENTS

1. ITS Chapter 4.0 – Design Features

ATTACHMENT 1

ITS Chapter 4.0 – Design Features

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

4.0 # 5.0 DESIGN FEATURES

5.1 SITE

4.1 5.1.1 The site is approximately 25 miles south of Miami, 8 miles east of Florida City, and 9 miles southeast of Homestead, Florida

~~5.2 DELETED~~

4.2 ## 5.3 REACTOR CORE

FUEL ASSEMBLIES

4.2.1 5.3.1 The core shall contain 157 fuel assemblies with each fuel assembly containing ~~204 fuel rods clad with~~ Zircaloy-4, ZIRLO®, or Optimized ZIRLO™ ~~-~~except that replacement of fuel rods by filler rods consisting of stainless steel, or by vacant rod positions, may be made in fuel assemblies if justified by cycle-specific reload analysis using NRC-approved methodology. ~~The reactor core contains approximately 71 metric tons of uranium in the form of natural or slightly enriched uranium dioxide pellets. Each fuel rod shall have a nominal active fuel length of 144 inches.~~

LA01

CONTROL ROD ASSEMBLIES

4.2.2 5.3.2 The core shall contain 45 full-length control rod assemblies. ~~The full-length control rod assemblies shall contain a nominal 142 inches of absorber material.~~ The absorber material shall be silver, indium, and cadmium. ~~All control rods shall be clad with stainless steel tubing.~~

LA02

~~5.4 DELETED~~

4.3 5.5 FUEL STORAGE

4.3.1 5.5.1 CRITICALITY

4.3.1.1 5.5.1.1 The spent fuel storage racks are designed and shall be maintained with:

4.3.1.1.c a. A k_{eff} less than 1.0 when flooded with unborated water, which includes an allowance for biases and uncertainties as described in UFSAR Chapter 9.

4.3.1.1.b b. A k_{eff} less than or equal to 0.95 when flooded with water borated to 500 ppm, which includes an allowance for biases and uncertainties as described in UFSAR Chapter 9.

4.3.1.1.d 4.3.1.1.e 4.3.1.1.f c. A nominal 10.6 inch center-to-center distance for Region I and 9.0 inch center-to-center distance for Region II for the two region spent fuel pool storage racks. A nominal 10.1 inch center-to-center distance in the east-west direction and a nominal 10.7 inch center-to-center distance in the north-south direction for the cask area storage rack.

4.3.1.1.a d. A maximum enrichment loading for fuel assemblies of 5.0 weight percent of U-235.

~~e. No restriction on storage of fresh or irradiated fuel assemblies in the cask area storage rack.~~

~~f. Fresh or irradiated fuel assemblies not stored in the cask area storage rack shall be stored in accordance with Specification 5.5.1.3.~~

A03

~~g. The Metamic neutron absorber inserts shall have a minimum certified ^{10}B areal density greater than or equal to 0.015 grams $^{10}B/cm^2$.~~

LA03

4.3.1.2.c 5.5.1.2 The racks for new fuel storage are designed ~~to store fuel in a safe subcritical array~~ and shall be maintained with:

LA03

4.3.1.2.c 4.3.1.2.d a. A nominal 21 inch center-to-center spacing to assure k_{eff} equal to or less than 0.98 for optimum moderation conditions and equal to or less than 0.95 for fully flooded conditions.

with unborated water

A02

4.3.1.2.a 4.3.1.2.b b. Fuel assemblies placed in the New Fuel Storage Area shall contain no more than a nominal 4.5 weight percent of U-235 if the assembly contains no burnable absorber rods and no more than 5.0 weight percent of U-235 if the assembly contains at least 16 IFBA rods.

5.5.1.3 Credit for burnup and cooling time is taken in determining acceptable placement locations for spent fuel in the two-region spent fuel racks. Fresh or irradiated fuel assemblies in the Region I or Region II racks shall be stored in compliance with the following:

a. Any 2x2 array of Region I storage cells containing fuel shall comply with the storage patterns in Figure 5.5-1 and the requirements of Tables 5.5-1 and 5.5-2, as applicable. The reactivity rank of fuel assemblies in the 2x2 array (rank determined using Table 5.5-3) shall be equal to or less reactive than that shown for the 2x2 array.

b. Any 2x2 array of Region II storage cells containing fuel shall:

i. Comply with the storage patterns in Figure 5.5-2 and the requirements of Tables 5.5-1 and 5.5-2, as applicable. The reactivity rank of fuel assemblies in the 2x2 array (rank determined using Table 5.5-3) shall be equal to or less reactive than that shown for the 2x2 array,

ii. Have the same directional orientation for Metamic inserts in a contiguous group of 2x2 arrays where Metamic inserts are required, and

iii. Comply with the requirements of 5.5.1.3.c for cells adjacent to Region I racks.

c. Any 2x2 array of Region II storage cells that interface with Region I storage cells shall comply with the rules of Figure 5.5-3.

d. Any fuel assembly may be replaced with a fuel rod storage basket or non-fuel hardware.

e. Storage of Metamic inserts or RCCAs is acceptable in locations designated as empty (water-filled) cells.

See ITS 3.7.14

DRAINAGE

4.3.2 5.5.2 The spent fuel storage pit is designed and shall be maintained to prevent inadvertent draining of the pool below a level of 6 feet above the fuel assemblies in the storage racks.

CAPACITY

4.3.3 5.5.3 The spent fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 1535 fuel assemblies.

Table 5.5-1
Blanketed Fuel - Coefficients to Calculate the Minimum Required Fuel Assembly Burnup (Bu) as a Function of Enrichment (En) and Cooling Time (Ct)
See notes 1-6 for use of Table 5.5-1

Coeff.	Fuel Category						
	I-3	I-4	II-1	II-2	II-3	II-4	II-5
A1	5.66439153	-14.7363682	-7.74060457	-7.63345029	24.4656526	8.5452608	26.2860949
A2	-7.22610116	11.0284547	5.13978237	10.7798957	-20.3141124	-4.47257395	-18.0738662
A3	2.98646188	-1.80672781	-0.360186309	-2.81231555	6.53101471	2.09078914	5.8330891
A4	-0.287945644	0.119516492	0.0021681285	0.29284474	-0.581826027	-0.188280562	-0.517434342
A5	-0.558098618	0.0620559676	-0.0304713673	0.0795058096	-0.16567492	0.157548739	-0.0614152031
A6	0.476169245	0.0236575787	0.098844889	-0.0676341983	0.243843226	-0.0593584027	0.134626308
A7	-0.117591963	-0.0088144551	-0.0277584786	0.0335130877	-0.0712130368	0.0154678626	-0.0383060399
A8	0.0095165354	0.0008957348	0.0024057185	-0.0040803875	0.0063998706	-0.0014068318	0.0033419846
A9	-47.1782783	-20.2890089	-21.424984	14.6716317	-41.1150	-0.881964768	-12.1780
A10	33.4270029	14.7485847	16.255208	-10.0312224	43.9149156	9.69128392	23.6179517
A11	-6.11257501	-1.22889103	-1.77941882	5.62580894	-9.6599923	-0.18740168	-4.10815592
A12	0.490064351	0.0807808548	0.127321203	-0.539361868	0.836931842	0.0123398618	0.363908736

See ITS 3.7.14

Notes:

1. All relevant uncertainties are explicitly included in the criticality analysis. For instance, no additional allowance for burnup uncertainty or enrichment uncertainty is required. For a fuel assembly to meet the requirements of a Fuel Category, the assembly burnup must exceed the "minimum burnup" (GWd/MTU) given by the curve fit for the assembly "cooling time" and "initial enrichment." The specific minimum burnup required for each fuel assembly is calculated from the following equation:

   $$Bu = (A_1 + A_2*En + A_3*En^2 + A_4*En^3)* \exp [- (A_5 + A_6*En + A_7*En^2 + A_8*En^3)*Ct] + A_9 + A_{10}*En + A_{11}*En^2 + A_{12}*En^3$$

2. Initial enrichment, En, is the nominal central zone U-235 enrichment. Axial blanket material is not considered when determining enrichment. Any enrichment between 2.0 and 5.0 may be used.

3. Cooling time, Ct, is in years. Any cooling time between 0 years and 25 years may be used. An assembly with a cooling time greater than 25 years must use 25 years.

4. DELETED

5. DELETED

6. This Table applies for any blanketed fuel assembly.

Non-Blanketed Fuel - Coefficients to Calculate the Minimum Required Fuel Assembly Burnup (Bu) as a Function of Enrichment (En) and Cooling Time (Ct)

See notes 1-4 for use of Table 5.5-2

Coeff.	Fuel Category						
	I-3	I-4	II-1	II-2	II-3	II-4	II-5
A1	2.04088171	-27.6637884	-11.2686777	20.7284208	29.8862876	-83.5409405	35.5058622
A2	-4.83684164	26.1997193	2.0659501	11.9673275	-37.0771132	94.7973724	-30.1986997
A3	2.59801889	-7.2982252	2.66204924	-14.4072388	16.3986049	-31.9583373	11.0102438
A4	-0.300597247	0.723731768	-0.513334362	2.83623963	-2.1571669	3.55898487	-1.27269125
A5	-0.610041808	0.401332891	-0.0987986108	-1.49118695	1.02330848	0.299948492	1.34723758
A6	0.640497159	-0.418616707	-0.0724198633	1.75361041	-1.21889631	-0.312341996	-1.19871392
A7	-0.219000712	0.144304039	0.106248806	-0.659046438	0.467440882	0.107463895	0.352920811
A8	0.0252870451	-0.0154239536	-0.0197359109	0.080884618	-0.0560129443	-0.0108814287	-0.0325155213
A9	-4.48207836	-5.54507376	-1.34620551	-245.825283	12.1549	39.4975573	-5.2576
A10	-2.12118634	-5.76555416	-10.1728821	243.59979	-22.7755385	-50.5818253	10.1733379
A11	2.91619317	6.29118025	8.71968815	-75.7805818	14.3755458	23.3093829	0.369083041
A12	-0.196645176	-0.732079719	-1.14461356	8.10936356	-1.80803352	-2.69466612	0.0443577624

See ITS 3.7.14

Notes:

1. All relevant uncertainties are explicitly included in the criticality analysis. For instance, no additional allowance for burnup uncertainty or enrichment uncertainty is required. For a fuel assembly to meet the requirements of a Fuel Category, the assembly burnup must exceed the "minimum burnup" (GWd/MTU) given by the curve fit for the assembly "cooling time" and "initial enrichment." The specific minimum burnup required for each fuel assembly is calculated from the following equation:

   $$Bu = (A_1 + A_2*En + A_3*En^2 + A_4*En^3)* \exp [- (A_5 + A_6*En + A_7*En^2 + A_8*En^3)*Ct] + A_9 + A_{10}*En + A_{11}*En^2 + A_{12}*En^3$$

2. Initial enrichment, En, is the nominal U-235 enrichment. Any enrichment between 1.8 and 4.0 may be used.

3. Cooling time, Ct, is in years. Any cooling time between 15 years and 25 years may be used. An assembly with a cooling time greater than 25 years must use 25 years.

4. This Table applies only for pre-EPU non-blanketed fuel assemblies. If a non-blanketed assembly is depleted at EPU conditions, none of the burnup accrued at EPU conditions can be credited (i.e., only burnup accrued at pre-EPU conditions may be used as burnup credit).

Table 5.5-3

Fuel Categories Ranked by Reactivity
See notes 1-5 for use of Table 5.5-3

Region I	**I-1**	**High Reactivity**
	I-2	
	I-3	
	I-4	**Low Reactivity**
Region II	**II-1**	**High Reactivity**
	II-2	
	II-3	
	II-4	
	II-5	**Low Reactivity**

Notes:

1. Fuel Category is ranked by decreasing order of reactivity without regard for any reactivity-reducing mechanisms, e.g., Category I-2 is less reactive than Category I-1, etc. The more reactive fuel categories require compensatory measures to be placed in Regions I and II of the SFP, e.g., use of water filled cells, Metamic inserts, or full length RCCAs.

2. Any higher numbered fuel category can be used in place of a lower numbered fuel category from the same Region.

3. Category I-1 is fresh unburned fuel up to 5.0 wt% U-235 enrichment.

4. Category I-2 is fresh unburned fuel that obeys the IFBA requirements of Table 5.5-4.

5. All Categories except I-1 and I-2 are determined from Tables 5.5-1 and 5.5-2.

See ITS 3.7.14

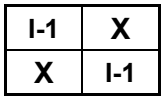
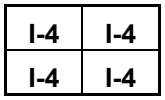
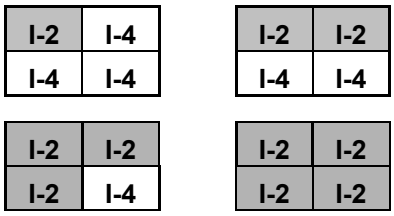
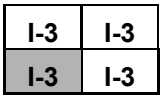
Table 5.5-4

IFBA Requirements for Fuel Category I-2

Nominal Enrichment (wt% U-235)	Minimum Required Number of IFBA Pins
Enr. ≤ 4.3	**0**
4.3 < Enr. ≤ 4.4	**32**
4.4 < Enr. ≤ 4.7	**64**
4.7 < Enr. ≤ 5.0	**80**

FIGURE 5.5-1

ALLOWABLE REGION I STORAGE ARRAYS
See notes 1-8 for use of Figure 5.5-1

DEFINITION	ILLUSTRATION
Array I-A Checkerboard pattern of Category I-1 assemblies and empty (water-filled) cells.	
Array I-B Category I-4 assembly in every cell.	
Array I-C Combination of Category I-2 and I-4 assemblies. Each assembly shall contain a full length RCCA.	 Category I-2
Array I-D Category I-3 assembly in every cell. One of every four contains a full length RCCA.	 assemblies

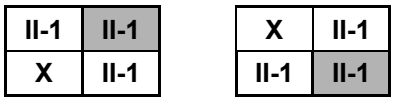
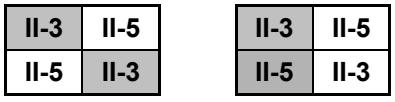
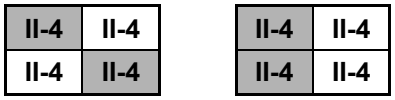
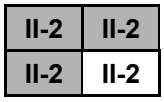
See ITS 3.7.14

Notes:

1. In all arrays, an assembly of lower reactivity can replace an assembly of higher reactivity.
2. Category I-1 is fresh unburned fuel up to 5.0 wt% U-235 enrichment.
3. Category I-2 is fresh unburned fuel that obeys the IFBA requirements in Table 5.5-4.
4. Categories I-3 and I-4 are determined from Tables 5.5-1 and 5.5-2.
5. Shaded cells indicate that the fuel assembly contains a full length RCCA.
6. **X** indicates an empty (water-filled) cell.
7. Attributes for each 2x2 array are as stated in the definition. Diagram is for illustrative purposes only.
8. An empty (water-filled) cell may be substituted for any fuel containing cell in all storage arrays.

FIGURE 5.5-2

ALLOWABLE REGION II STORAGE ARRAYS
See notes 1-6 for use of Figure 5.5-2

DEFINITION	ILLUSTRATION
Array II-A Category II-1 assembly in three of every four cells; one of every four cells is empty (water-filled); the cell diagonal from the empty cell contains a Metamic insert or full length RCCA.	
Array II-B Checkerboard pattern of Category II-3 and II-5 assemblies with two of every four cells containing a Metamic insert or full length RCCA.	
Array II-C Category II-4 assembly in every cell with two of every four cells containing a Metamic insert or full length RCCA.	
Array II-D Category II-2 assembly in every cell with three of every four cells containing a Metamic insert or full length RCCA.	

See ITS 3.7.14

Notes:

1. In all arrays, an assembly of lower reactivity can replace an assembly of higher reactivity.
2. Fuel categories are determined from Tables 5.5-1 and 5.5-2.
3. Shaded cells indicate that the cell contains a Metamic insert or the fuel assembly contains a full length RCCA.
4. **X** indicates an empty (water-filled) cell.
5. Attributes for each 2x2 array are as stated in the definition. Diagram is for illustrative purposes only.
6. An empty (water-filled) cell may be substituted for any fuel containing cell in all storage arrays.

FIGURE 5.5-3

INTERFACE RESTRICTIONS BETWEEN REGION I AND REGION II ARRAYS

See notes 1-8 for use of Figure 5.5-3

DEFINITION	ILLUSTRATION
Array II-A, as defined in Figure 5.5-2, when placed on the interface with Region I shall have the empty cell in the row adjacent to the Region I rack.	Region I Rack I-4 I-4 I-4 I-4 I-4 I-4 I-4 I-4 II-1 X II-1 X II-1 II-1 II-1 II-1 Array II-A
Arrays II-B, II-C and II-D, as defined in Figure 5.5-2, when placed on the interface with Region I shall have an insert in every cell in the row adjacent to the Region I rack.	Region I Rack / Region I Rack / Region I Rack I-4 I-4 I-4 I-4 / I-4 I-4 I-4 I-4 / I-4 I-4 I-4 I-4 I-4 I-4 I-4 I-4 / I-4 I-4 I-4 I-4 / I-4 I-4 I-4 I-4 II-3 II-5 II-3 II-5 / II-4 II-4 II-4 II-4 / II-2 II-2 II-2 II-2 II-5 II-3 II-5 II-3 / II-4 II-4 II-4 II-4 / II-2 II-2 II-2 II-2 Array II-B / Array II-C / Array II-D

See ITS 3.7.14

Notes:

1. In all arrays, an assembly of lower reactivity can replace an assembly of higher reactivity.
2. Fuel categories are determined from Tables 5.5-1 and 5.5-2.
3. Shaded cells indicate that the cell contains a Metamic insert or the fuel assembly contains a full length RCCA.
4. **X** indicates an empty (water-filled) cell.
5. Attributes for each 2x2 array are as stated in the definition. Diagram is for illustrative purposes only. Region I Array I-B is depicted as the example; however, any Region I array is allowed provided that
   a. For Array I-D, the RCCA shall be in the row adjacent to the Region II rack, and
   b. Array I-A shall not interface with Array II-D.
6. If no fuel is stored adjacent to Region II in Region I, then the interface restrictions are not applicable.
7. Figure 5.5-3 is applicable only to the Region I - Region II interface. There are no restrictions for the interfaces with the cask area rack.
8. An empty (water-filled) cell may be substituted for any fuel containing cell in all storage arrays.

DISCUSSION OF CHANGES
ITS CHAPTER 4.0, DESIGN FEATURES

ADMINISTRATIVE CHANGES

A01 In the conversion of the Turkey Point Nuclear Generating Station (PTN) Unit 3 and Unit 4, 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. 5.0, "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.

A02 CTS Section 5.5.1.2.a requires the racks for new fuel storage to be designed and maintained with a nominal 21-inch center-to-center spacing to assure K_{eff} equal to or less than 0.95 for fully flooded conditions. ITS Section 4.3.1.2.d requires equivalent requirements but requires the fully flooded conditions to be with unborated water. This changes the CTS by requiring the K_{eff} to be equal to or less than 0.95 when fully flooded with unborated water.

This change is acceptable because the addition of unborated water to the CTS adds a design requirement to the CTS that are already a design requirement specified in the Updated Final Safety Analysis Report (UFSAR). This change is considered administrative because it adds descriptive design information that is already inherent in the design of the new fuel storage racks.

A03 CTS Sections 5.5.1.1.e and 5.5.1.1.f discuss storage requirements for fuel assemblies in relation to cask area storage. ITS Section 4.3.1.1 does not contain this information. The requirements of CTS Sections 5.5.1.1.e and 5.5.1.1.f are redundant to the fuel assembly storage requirements contained in proposed PTN ITS 3.7.14, "Spent Fuel Storage." This changes the CTS by omitting these redundant requirements ITS Section 4.3.1.1.

This change is acceptable because the requirements are redundant to those contained in ITS Section 3.7, "Plant Systems." This change is considered administrative and is acceptable because the change does not result in technical changes to the CTS.

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 *(Type 1 – Removing Details of System Design and System Description Including Design Limits)* CTS 5.3.1 contains specific design features of the PTN fuel assemblies. ITS 4.2.1 does not contain all the specific design feature specified in the CTS, such as, the number of fuel rods in a fuel assembly, amount uranium dioxide in the core, and the active length of the fuel rods. This changes the CTS by removing specific design features of the fuel assemblies from the CTS and places these design features in the UFSAR.

The design details being removed from CTS will be located in a UFSAR, which is a licensee-controlled document. This removal of this information is acceptable because this type of information is not necessary to be included in the Technical Specifications to ensure these design details are adhered to. This information is not required to provide adequate design information protection of public health and safety. The ITS still retains adequate design feature information. Also, this change is acceptable because the removed information will be adequately controlled in the in the UFSAR. Changes to the UFSAR are controlled by the 10 CFR 50.59 program. This program provides for the evaluation of changes to ensure the UFSAR is properly controlled. This change is designated as a less restrictive removal of detail change because fuel assembly design feature information is being removed from the Technical Specifications.

LA02 *(Type 1 – Removing Details of System Design and System Description Including Design Limits)* CTS 5.3.2 contains specific design features of the PTN control rod assemblies. ITS 4.2.2 does not contain all the specific design feature specified in the CTS, such as the length of the length in inches of the absorber material and what the control rod cladding material. This changes the CTS by removing specific design features of the control rod assemblies from the CTS and places these design features in the UFSAR.

The design details being removed from CTS will be located in a UFSAR, which is a licensee-controlled document. This removal of this information is acceptable because this type of information is not necessary to be included in the Technical Specifications to ensure these design details are adhered to. This information is not required to provide adequate design information protection of public health and safety. The ITS still retains adequate design feature information. Also, this change is acceptable because the removed information will be adequately controlled in the in the UFSAR. In addition, changes to the UFSAR are controlled by the 10 CFR 50.59 program. This program provides for the evaluation of changes to ensure the UFSAR is properly controlled. This change is designated as a less restrictive removal of detail change because control rod assembly design feature information is being removed from the Technical Specifications.

LA03 *(Type 1 – Removing Details of System Design and System Description Including Design Limits)* CTS 5.5.1 contains specific design features of the PTN fuel storage (spent and new). ITS 4.3.1 does not contain all the specific design feature specified in the CTS, such as the amount of ^{10}B in the Metamic neutron absorber inserts for the spent fuel and that the new fuel storage area is designed

to store fuel in a safe subcritical array. This changes the CTS by removing specific design features of spent and new fuel storage from the CTS and places these design features in the UFSAR.

The design details being removed from CTS will be located in a UFSAR, which is a licensee-controlled document. This removal of this information is acceptable because this type of information is not necessary to be included in the Technical Specifications to ensure these design details are adhered to. This information is not required to provide adequate design information protection of public health and safety. The ITS still retains adequate design feature information. Also, this change is acceptable because the removed information will be adequately controlled in the in the UFSAR. In addition, changes to the UFSAR are controlled by the 10 CFR 50.59 program. This program provides for the evaluation of changes to ensure the UFSAR is properly controlled. This change is designated as a less restrictive removal of detail change because spent and new fuel storage design feature information is being removed from the Technical Specifications.

LESS RESTRICTIVE CHANGES

None

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

CTS

4.0 DESIGN FEATURES

4.1 Site Location

5.1

5.1.1 ~~[Text description of site location.]~~ The site is approximately 25 miles south of Miami, 8 miles east of Florida City and 9 miles southeast of Homestead, Florida. 1

4.2 Reactor Core

5.3

4.2.1 Fuel Assemblies

5.3.1

The reactor shall contain ~~[~~157~~]~~ 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.~~

Zircaloy-4, ZIRLO®, or Optimized ZIRLO™ 1

, or by vacant rod positions 2

2

4.2.2 ~~[~~Control Rod~~]~~ Assemblies

5.3.2

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

45 1

4.3 Fuel Storage

5.5

4.3.1 Criticality

5.5.1

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

5.5.1.1.d a. Fuel assemblies having a maximum U-235 enrichment of ~~[4.5]~~ weight percent,

5.0 1

5.5.1.1.b b. k_{eff} ≤ 0.95 if fully flooded with ~~un~~borated water, which includes an allowance for uncertainties as described in ~~[~~Section ~~9.1~~ of the FSAR~~]~~,

to 500 ppm 2

biases and 2 1

9.5

5.5.1.1.a

Insert 1

U

10.6

5.5.1.1.c

~~[c~~. A nominal ~~[9.15]~~ inch center to center distance between fuel assemblies placed in ~~[the high density~~ fuel storage racks~~]~~, ~~]~~

d 2

1

Region I of the

9.0

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

e 1

Insert 2

Region II of the

2

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CTS

INSERT 1 (2)

5.5.1.1.a c. $k_{eff} \leq 1.0$ if fully flooded with unborated water, which includes an allowance for biases and uncertainties as described in Section 9.5 of the UFSAR,

INSERT 2 (2)

5.5.1.1.c f. A nominal 10.1 inch center-to-center distance in the east-west direction and a nominal 10.7 inch center-to-center distance in the north-south direction for the cask area storage rack.

CTS

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4.3 Fuel Storage (continued)

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

~~[f. 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].]~~ 1

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

5.5.1.2.b

a. Fuel assemblies having a maximum U-235 enrichment of ~~[~~4.5~~]~~ weight percent~~,~~ 1 2

Insert 3

If the assemblies contain no burnable absorber rods.

~~b. k_{eff} ≤ 0.95 if fully flooded with unborated water, which includes an allowance for uncertainties as described in [Section 9.1 of the FSAR],~~ 2

~~c. k_{eff} ≤ 0.98 if moderated by aqueous foam, which includes an allowance for uncertainties as described in [Section 9.1 of the FSAR], and~~ 2

5.5.1.2.a

21

~~d~~. A nominal ~~[10.95]~~ inch center to center distance between fuel assemblies placed in the storage racks. 2 1

c

Insert 4

to assure K_{eff} ≤ 0.98 for optimum moderation conditions. 2

5.5.2 4.3.2 Drainage

The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below ~~elevation [23 ft]~~.

a level of 6 feet above the fuel assemblies in the storage racks. 1

5.5.3 4.3.3 Capacity

The spent fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than ~~[1737]~~ fuel assemblies.

1535 1

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CTS

INSERT 3 2

5.5.1.2.b b. Fuel assemblies having a maximum U-235 enrichment of 5.0 weight percent if the assemblies contain at least 16 integral fuel burnable absorber rods.

INSERT 4 2

5.5.1.2.a d. A nominal 21-inch center to center distance between fuel assemblies placed in the storage racks to assure $K_{eff} \leq 0.95$ for fully flooded conditions.

JUSTIFICATION FOR DEVIATIONS
ITS CHAPTER 4.0, DESIGN FEATURES

1. The Improved Standard Technical Specifications (ISTS) contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed, and the proper plant specific information/value is provided. This is acceptable since the information/value is changed to reflect the current licensing basis.

2. ISTS 4.0 has been changed to address Turkey Point Nuclear Generating Station site specific requirements for fuel assemblies, control rod assemblies, and fuel storage. This change is acceptable because it reflects the current licensing basis.

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

Specific No Significant Hazards Considerations (NSHCs)

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

There are no specific No Significant Hazards Considerations for this Specification.