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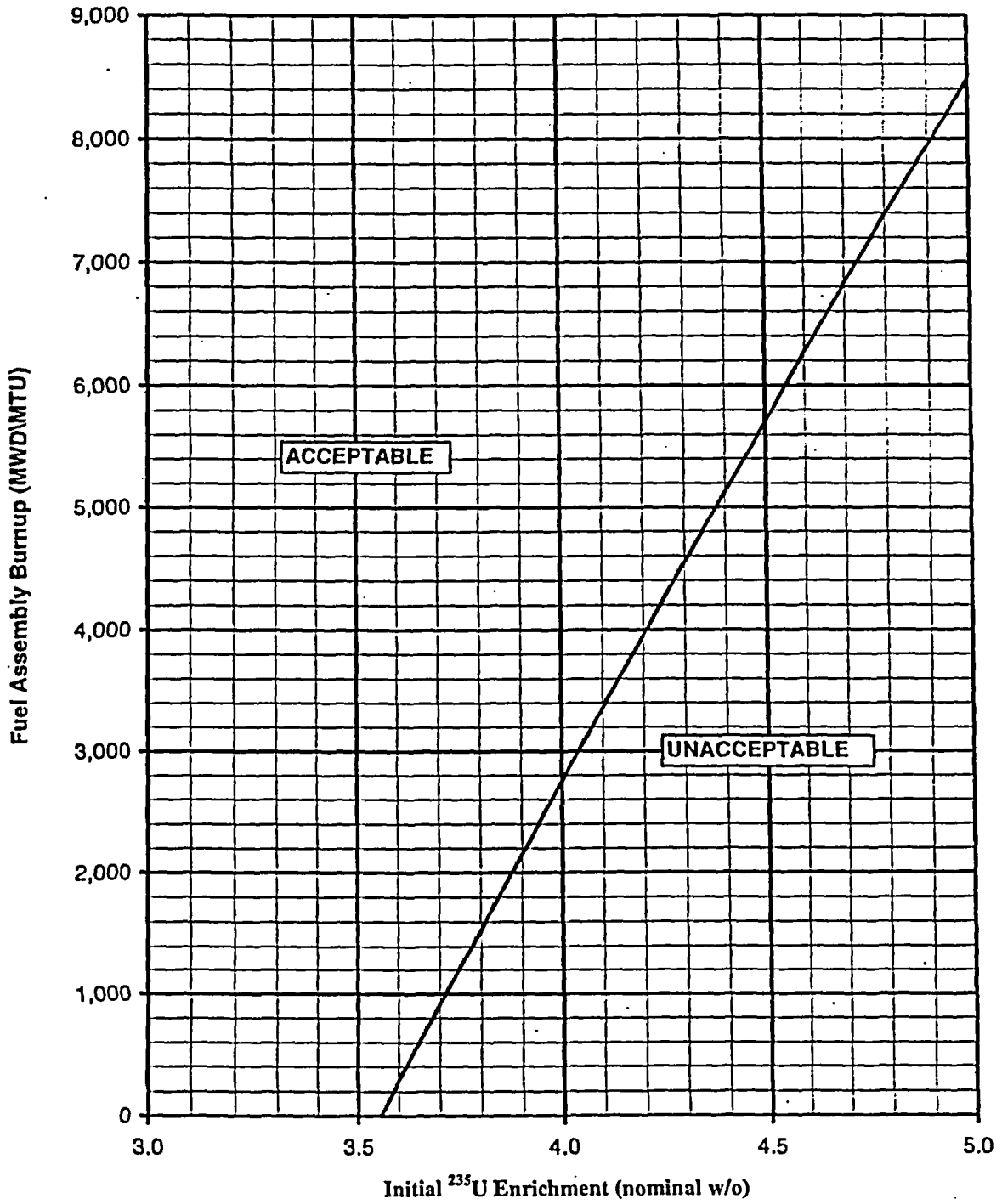


Figure 3.7.18-1 Vogtle Unit 1 Burnup Credit Requirements for All Cell Storage

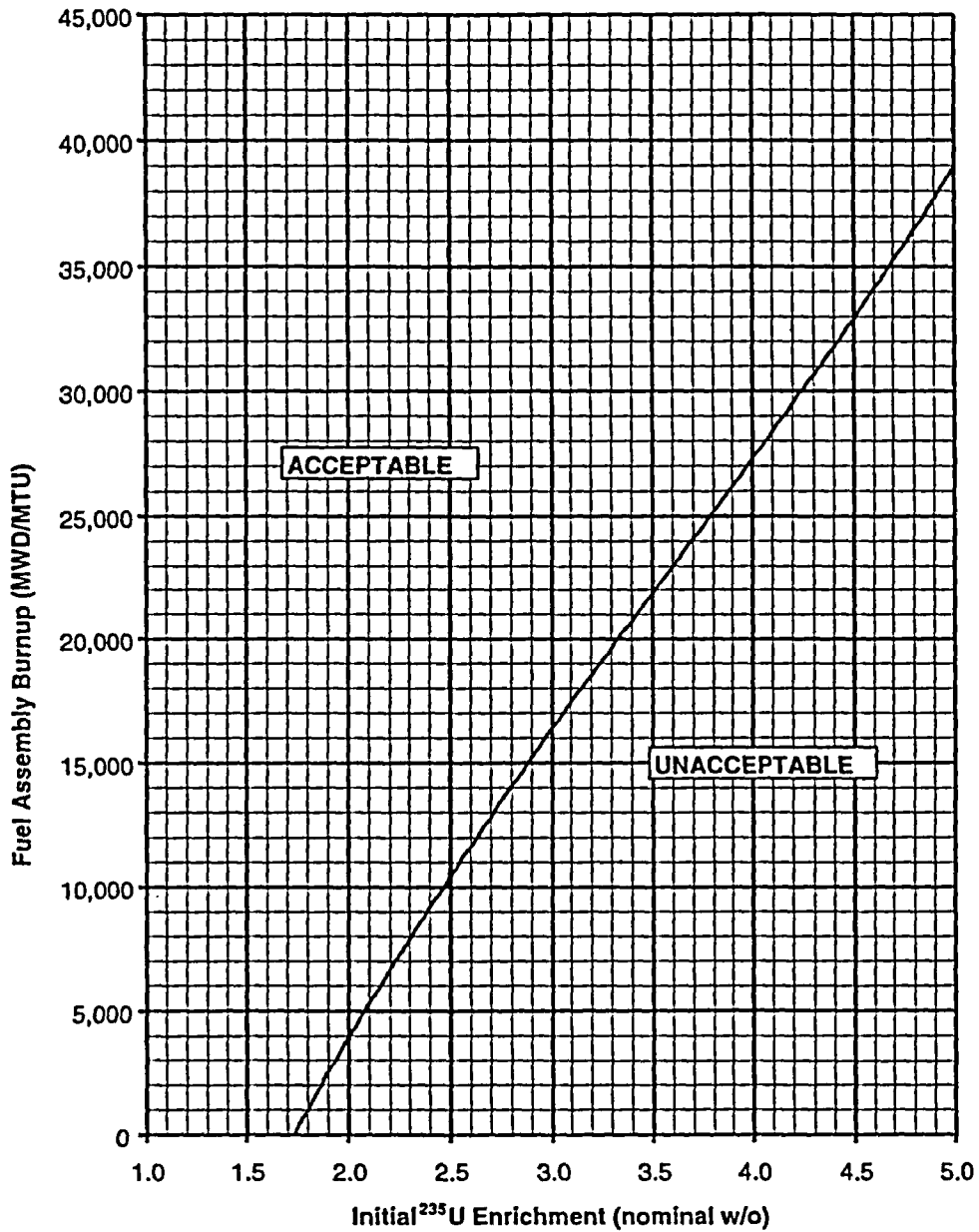


Figure 3.7.18-2 Vogtle Unit 2 Burnup Credit Requirements for All Cell Storage

4.0 DESIGN FEATURES (continued)

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4.3 Fuel Storage

4.3.1 Criticality

(Unit 1) 4.3.1.1 The spent fuel storage racks are designed and shall be maintained with:

- a. Fuel assemblies having a maximum U-235 enrichment of 5.0 weight percent;
- b.  $K_{eff} < 1.0$  when fully flooded with unborated water which includes an allowance for uncertainties as described in Section 4.3 of the FSAR.
- c.  $K_{eff} \leq 0.95$  when fully flooded with water borated to 511 ppm, which includes an allowance for uncertainties as described in Section 4.3 of the FSAR;
- d. New or partially spent fuel assemblies with a combination of burnup and initial nominal enrichment in the "acceptable burnup domain" of Figures 3.7.18-1 or satisfying a minimum Integral Fuel Burnable Absorber (IFBA) requirement as shown in Figure 4.3.1-7 may be allowed unrestricted storage in the Unit 1 fuel storage pool.
- e. New or partially spent fuel assemblies with a maximum initial enrichment of 5.0 weight percent U-235 may be stored in the Unit 1 fuel storage pool in a 3-out-of-4 checkerboard storage configuration as shown in Figure 4.3.1-1.

Interfaces between storage configurations in the Unit 1 fuel storage pool shall be in compliance with Figure 4.3.1-3. "A" assemblies are new or partially spent fuel assemblies with a combination of burnup and initial nominal enrichment in the "acceptable burnup domain" of Figure 3.7.18-1, or which satisfy a minimum IFBA requirement as shown in Figure 4.3.1-7. "B" assemblies are assemblies with initial enrichments up to a maximum of 5.0 weight percent U-235.

(continued)

## 4.0 DESIGN FEATURES

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### 4.3 Fuel Storage (continued)

- f. A nominal 10.25 inch center to center pitch in the Unit 1 high density fuel storage racks.
- (Unit 2) 4.3.1.2 The spent 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.  $K_{eff} < 1.0$  when fully flooded with unborated water which includes an allowance for uncertainties as described in Section 4.3 of the FSAR.
  - c.  $K_{eff} \leq 0.95$  when fully flooded with water borated to 394 ppm, which includes an allowance for uncertainties as described in Section 4.3 of the FSAR;
  - d. New or partially spent fuel assemblies with a combination of burnup and initial nominal enrichment in the "acceptable burnup domain" of Figure 3.7.18-2 may be allowed unrestricted storage in the Unit 2 fuel storage pool.
  - e. New or partially spent fuel assemblies with a combination of burnup and initial nominal enrichment in the "acceptable burnup domain" of Figure 4.3.1-8 may be stored in the Unit 2 fuel storage pool in a 3-out-of-4 checkerboard storage configuration as shown in Figure 4.3.1-1.
- New or partially spent fuel assemblies with a maximum initial enrichment of 5.0 weight percent U-235 may be stored in the Unit 2 fuel storage pool in a 2-out-of-4 checkerboard storage configuration as shown in Figure 4.3.1-1.
- New or partially spent fuel assemblies with a combination of burnup, decay time, and initial nominal enrichment in the "acceptable burnup domain" of Figure 4.3.1-10 may be stored

(continued)

## 4.0 DESIGN FEATURES

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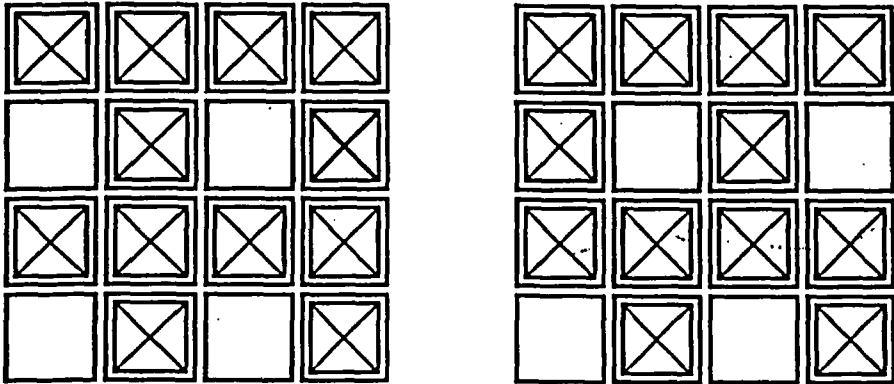
### 4.3 Fuel Storage (continued)

in the Unit 2 fuel storage pool as "low enrichment" fuel assemblies in the 3x3 checkerboard storage configuration as shown in Figure 4.3.1-2. New or partially spent fuel assemblies with initial nominal enrichments less than or equal to 3.20 weight percent U-235 or which satisfy a minimum IFBA requirement as shown in Figure 4.3.1-9 for higher initial enrichments may be stored in the Unit 2 fuel storage pool as "high enrichment" fuel assemblies in the 3x3 checkerboard storage configuration as shown in Figure 4.3.1-2.

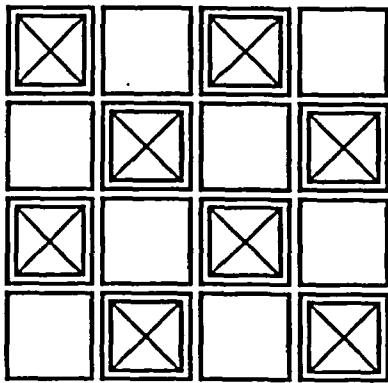
Interfaces between storage configurations in the Unit 2 fuel storage pool shall be in compliance with Figures 4.3.1-3, 4.3.1-4, 4.3.1-5, and 4.3.1-6. "A" assemblies are new or partially spent fuel assemblies with a combination of burnup and initial nominal enrichment in the "acceptable burnup domain" of Figure 3.7.18-2. "B" assemblies are new or partially spent fuel assemblies with a combination of burnup and initial nominal enrichment in the "acceptable burnup domain" of Figure 4.3.1-8. "C" assemblies are assemblies with initial enrichments up to a maximum of 5.0 weight percent U-235. "L" assemblies are new or partially spent fuel assemblies with a combination of burnup, decay time, and initial nominal enrichment in the "acceptable burnup domain" of Figure 4.3.1-10. "H" assemblies are new or partially spent fuel assemblies with initial nominal enrichments less than or equal to 3.20 weight percent U-235 or which satisfy a minimum IFBA requirement as shown in Figure 4.3.1-9 for higher initial enrichments.

- f. A nominal 10.58-inch center to center pitch in the north-south direction and a nominal 10.4-inch center to center pitch in the east-west direction in the Unit 2 high density fuel storage racks.

(continued)



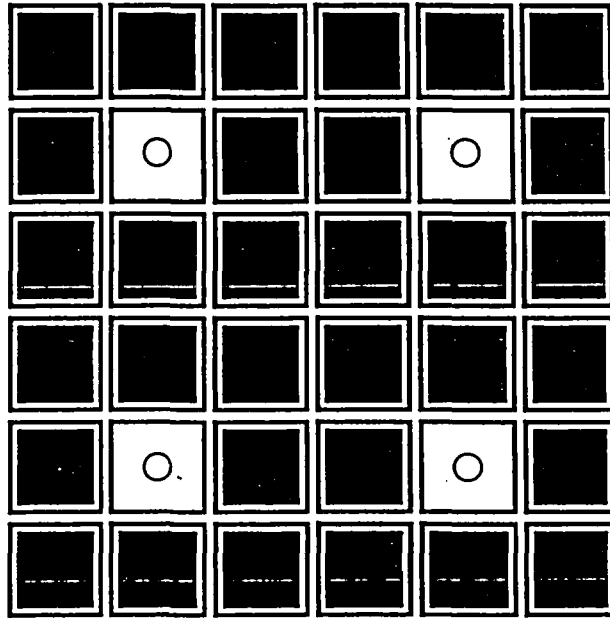
**3-out-of-4 Checkerboard Storage (Units 1 and 2)**



**2-out-of-4 Checkerboard Storage (Unit 2)**



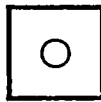
Figure 4.3.1-1 Vogtle Units 1 and 2 Empty Cell Checkerboard Storage Configurations



**3x3 Checkerboard Storage**



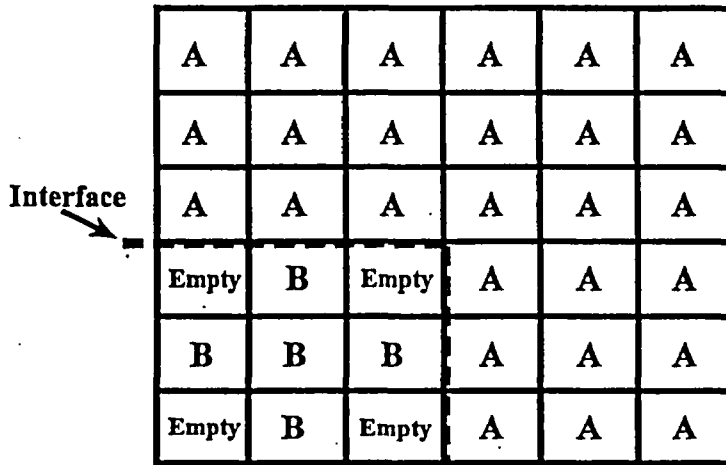
**Low Enrichment Fuel  
Assembly in Storage Cell**



**High Enrichment Fuel  
Assembly in Storage Cell**

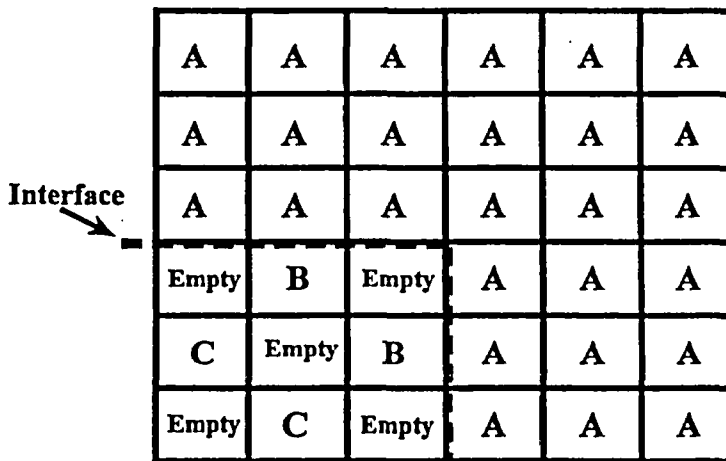
Figure 4.3.1-2 Vogtle Unit 2 3x3 Checkerboard Storage Configuration





Note:  
A = All Cell  
Enrichment  
B = 3-Out-Of-4  
Enrichment  
Empty = Empty Cell

**Boundary Between All Cell Storage and 3-out-of-4 Storage (Units 1 and 2)**



Note:  
A = All Cell  
Enrichment  
B = 3-Out-Of-4  
Enrichment  
C = 2-Out-Of-4  
Enrichment  
Empty = Empty Cell

**Boundary Between All Cell Storage and 2-out-of-4 Storage (Unit 2)**

**Note:**

1. A row of empty cells can be used at the interface to separate the configurations.
2. It is acceptable to replace an assembly with an empty cell.

Figure 4.3.1-3 Vogtle Units 1 and 2 Interface Requirements (All Cell to Checkerboard Storage)

	B	Empty	B	Empty	B	Empty
	B	B	B	B	B	B
Interface	B	Empty	B	Empty	B	Empty
	Empty	C	Empty	B	B	B
	C	Empty	C	Empty	B	Empty
	Empty	C	Empty	B	B	B

Note:  
 B = 3-Out-Of-4  
 Enrichment  
 C = 2-Out-Of-4  
 Enrichment  
 Empty = Empty Cell

Boundary Between 2-out-of-4 Storage and 3-out-of-4 Storage

	Empty	B	Empty	B	B	B
	B	B	B	B	Empty	B
Interface	Empty	B	Empty	B	B	B
	C	Empty	C	Empty	B	Empty
	Empty	C	Empty	B	B	B
	C	Empty	C	Empty	B	Empty

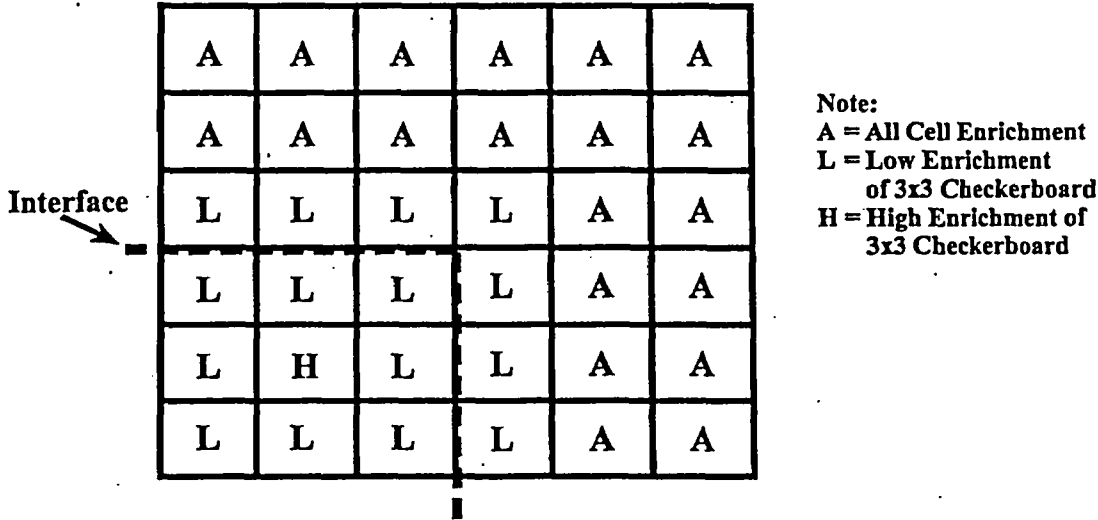
Note:  
 B = 3-Out-Of-4  
 Enrichment  
 C = 2-Out-Of-4  
 Enrichment  
 Empty = Empty Cell

Boundary Between 2-out-of-4 Storage and 3-out-of-4 Storage

Note:

1. A row of empty cells can be used at the interface to separate the configurations.
2. It is acceptable to replace an assembly with an empty cell.

Figure 4.3.1-4 Vogtle Unit 2 Interface Requirements (Checkerboard Storage Interface)



- Note:
1. A row of empty cells can be used at the interface to separate the configurations.
  2. It is acceptable to replace an assembly with an empty cell.

Figure 4.3.1-5 Vogtle Unit 2 Interface Requirements (3x3 Checkerboard to All Cell Storage)

	B	B	B	B	B	B*
	Empty	B	Empty	B	Empty	B
Interface	L	L	L	L	B	B
	L	L	L	L	Empty	B
	L	H	L	L	B	B
	L	L	L	L	Empty	B

Note:  
 B = 3-Out-Of-4  
 Enrichment  
 L = Low Enrichment  
 of 3x3 Storage  
 H = High Enrichment of  
 3x3 Storage  
 Empty = Empty Cell

Boundary Between 3x3 Storage and 3-out-of-4 Storage

	C	Empty	C	Empty	C	Empty
	Empty	B	Empty	B	Empty	C
Interface	L	L**	L	L**	B	Empty
	L	L	L	L	Empty	C
	L	H	L	L**	B	Empty
	L	L	L	L	Empty	C

Note:  
 B = 3-Out-Of-4  
 Enrichment  
 L = Low Enrichment  
 of 3x3 Storage  
 H = High Enrichment of  
 3x3 Storage  
 C = 2-Out-Of-4  
 Enrichment  
 Empty = Empty Cell

Boundary Between 3x3 Storage and 2-out-of-4 Storage

Note:

1. A row of empty cells can be used at the interface to separate the configurations.
2. It is acceptable to replace an assembly with an empty cell.
3. For the 3-out-of-4 configuration, the row beyond the Low enrichment can swap empty and B assemblies, however the next outer row must change the indicated assembly (\*) to an empty cell.
4. For the 2-out-of-4 configuration, the row beyond the Low enrichment can swap empty and B assemblies, however the next outer row of empty and C assemblies must also swap locations.
5. If empty cells are in indicated locations (\*\*), then the face adjacent B assemblies can be C assemblies.

Figure 4.3.1-6 Vogtle Unit 2 Interface Requirements (3x3 to Empty Cell Checkerboard Storage)

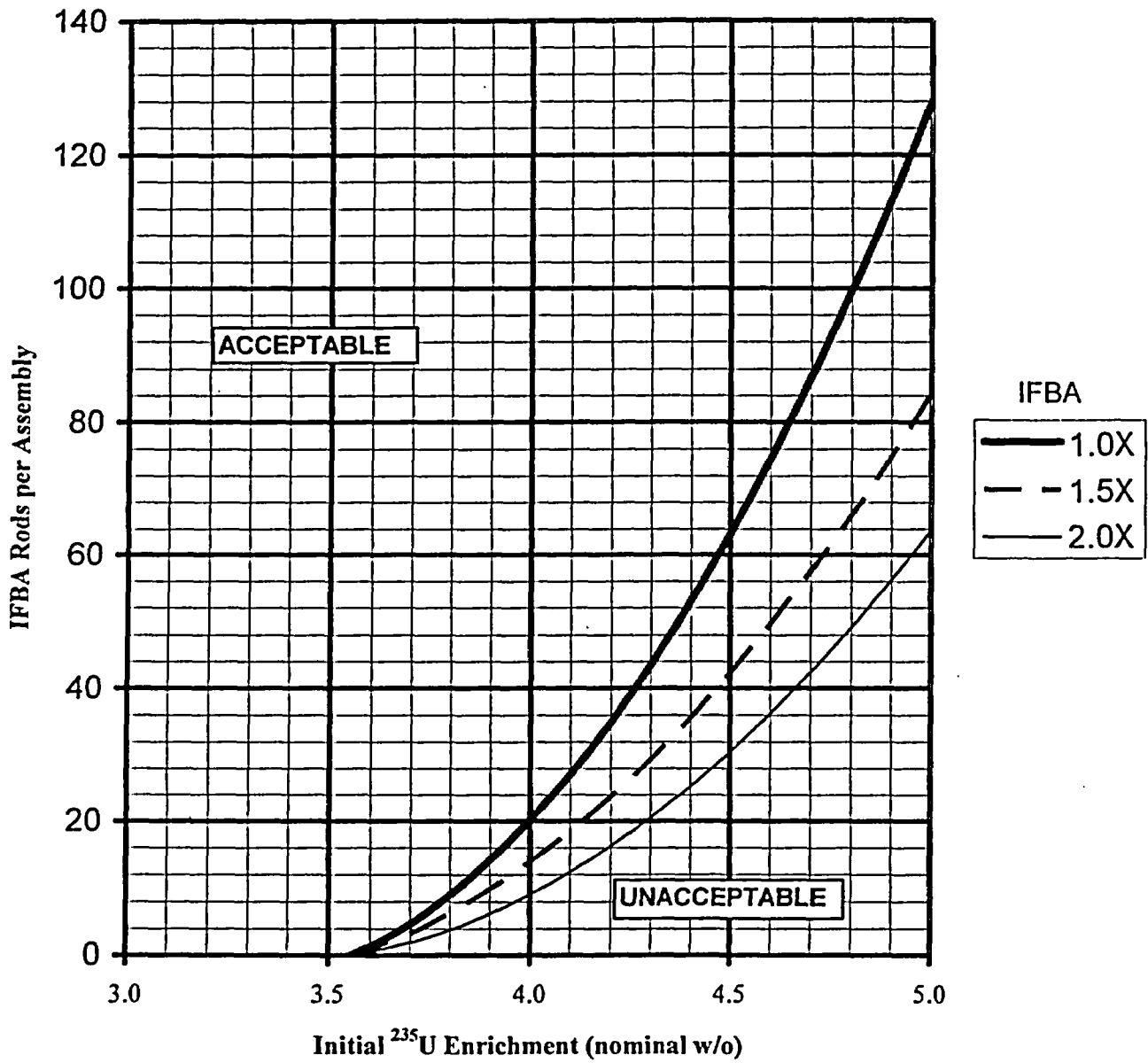


Figure 4.3.1-7 Vogtle Unit 1 IFBA Credit Requirements for All Cell Storage

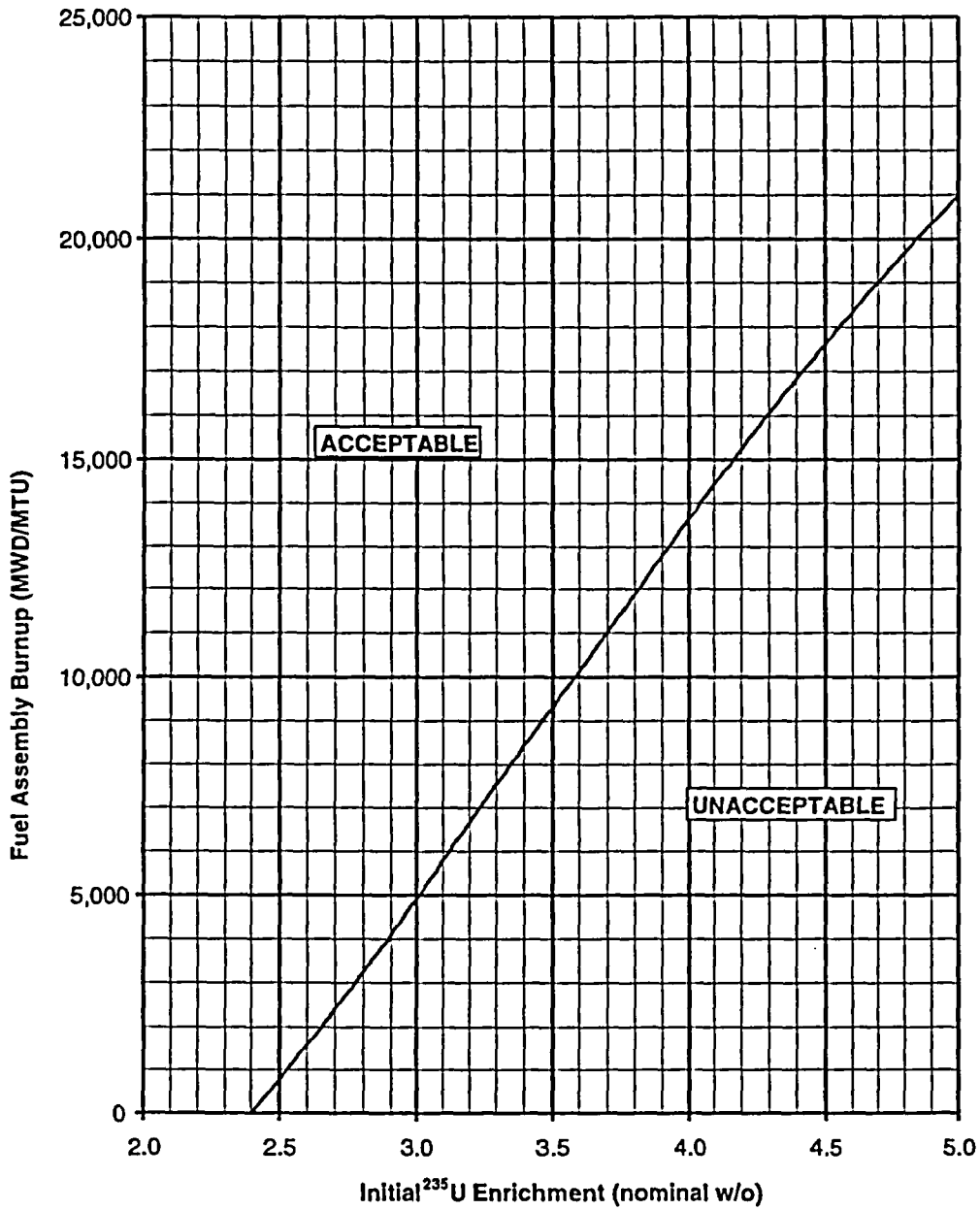


Figure 4.3.1-8 Vogtle Unit 2 Burnup Credit Requirements for 3-out-of-4 Storage

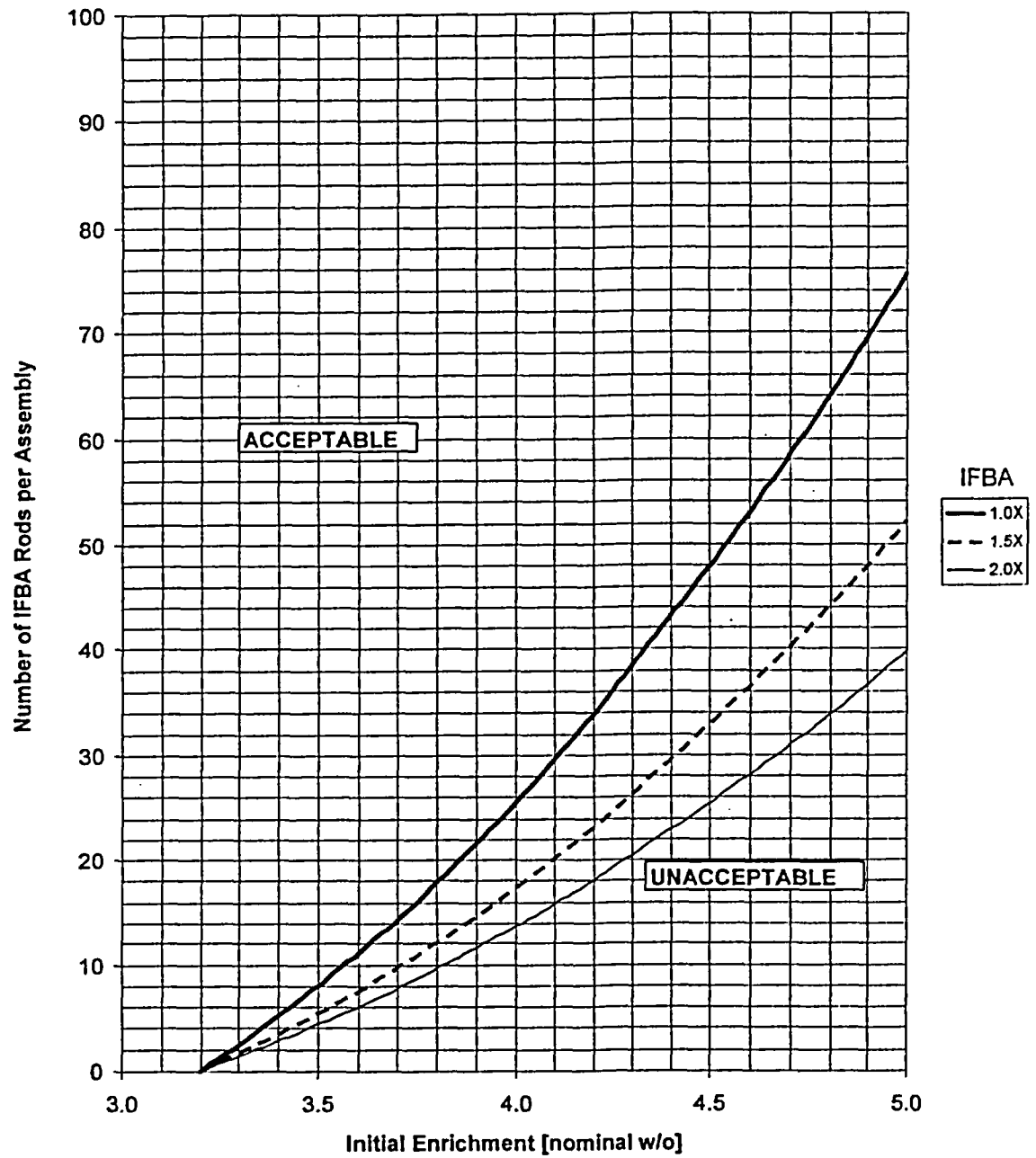


Figure 4.3.1-9 Vogtle Unit 2 IFBA Credit Requirements for Center Assembly for 3x3 Storage

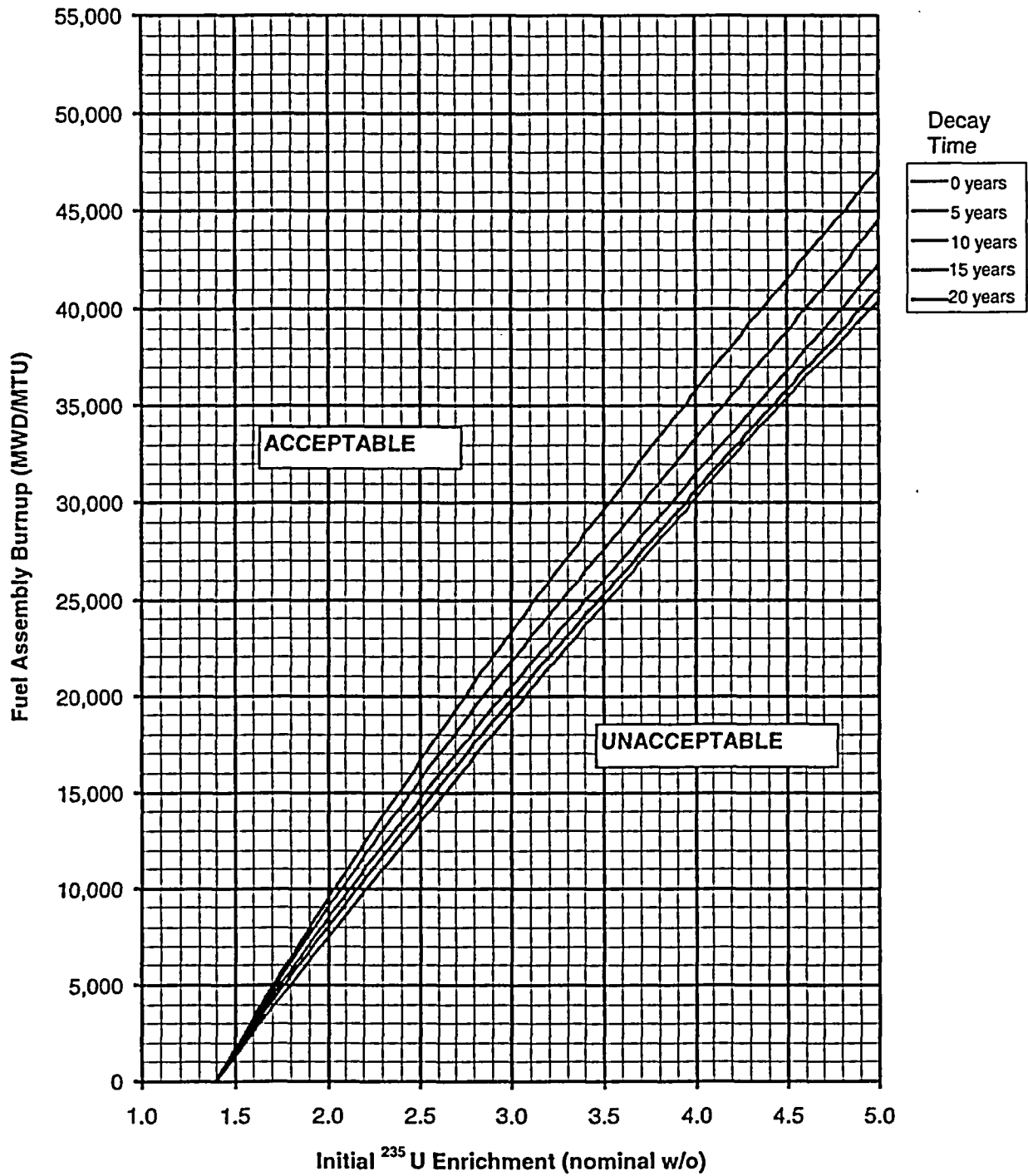


Figure 4.3.1-10 Vogtle Unit 2 Burnup Credit Requirements for Peripheral Assemblies for 3x3 Storage