3.7 PLANT SYSTEMS

3.7.17 Spent Fuel Assembly Storage

LCO 3.7.17 Fuel assembly storage in the spent fuel pool shall be maintained such that:

a. In the permanent spent fuel storage racks any four cells shall be in a configuration as shown in Figure 3.7.17-1, and

b. In the cask pit storage rack, for Cycles 14 – 16, the fuel assemblies shall have:

1. An initial enrichment ≤ 4.1 wt% U-235;

2. A discharge burnup in the "acceptable" region of Figure 3.7.17-4; and

3. A minimum decay time of 10 years since being discharged from the reactor.

c. The total combined spent fuel pool capacity in the permanent and cask pit storage racks, for Cycles 14 – 16, is limited to no more than 1433 irradiated fuel assemblies. This limit does not apply for an emergency core offload.

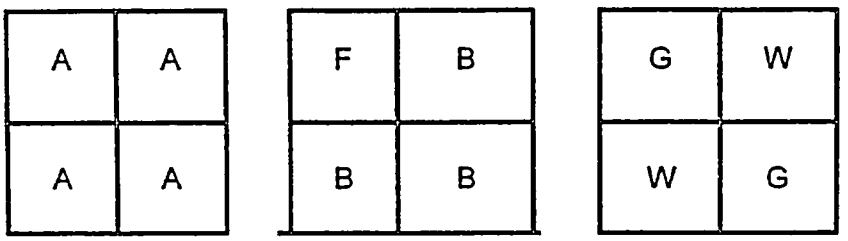
APPLICABILITY: Whenever any fuel assembly is stored in the spent fuel pool.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	A.1 ---------NOTE---------- LCO 3.0.3 is not applicable. ---------- Initiate action to move the noncomplying fuel assembly into an acceptable storage location.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.17.1	Verify by administrative means that the fuel assembly characteristics and its expected storage location is in accordance with LCO 3.7.17.	Prior to each fuel assembly move, when the assembly will be stored in the spent fuel pool.



All Cell Configuration | 2x2 Array Configuration | Checkerboard Configuration

All Cell:

A Fuel assembly with a discharge burnup in the "acceptable" region of Figure 3.7.17-2.

2x2 Array:

F (a) Fuel assembly with an initial enrichment ≤ 4.9 wt% U-235; or

(b) Fuel assembly with an initial enrichment ≤ 5.0 wt% U-235 and an IFBA loading equivalent to 16 rods each with 1.5 mg ^{10}B/in over 120 inches.

B Fuel assembly with a discharge burnup in the "acceptable" region of Figure 3.7.17-3.

Checkerboard:

G Fuel assembly with an initial enrichment ≤ 5.0 wt% U-235.

W Water cell – locations where fuel assemblies are not present, non-fissile components are permitted.

FIGURE 3.7.17-1
ALLOWABLE STORAGE CONFIGURATIONS
(ALL CELL, 2X2 ARRAY, CHECKERBOARD)
FOR THE PERMANENT SPENT FUEL POOL STORAGE RACKS

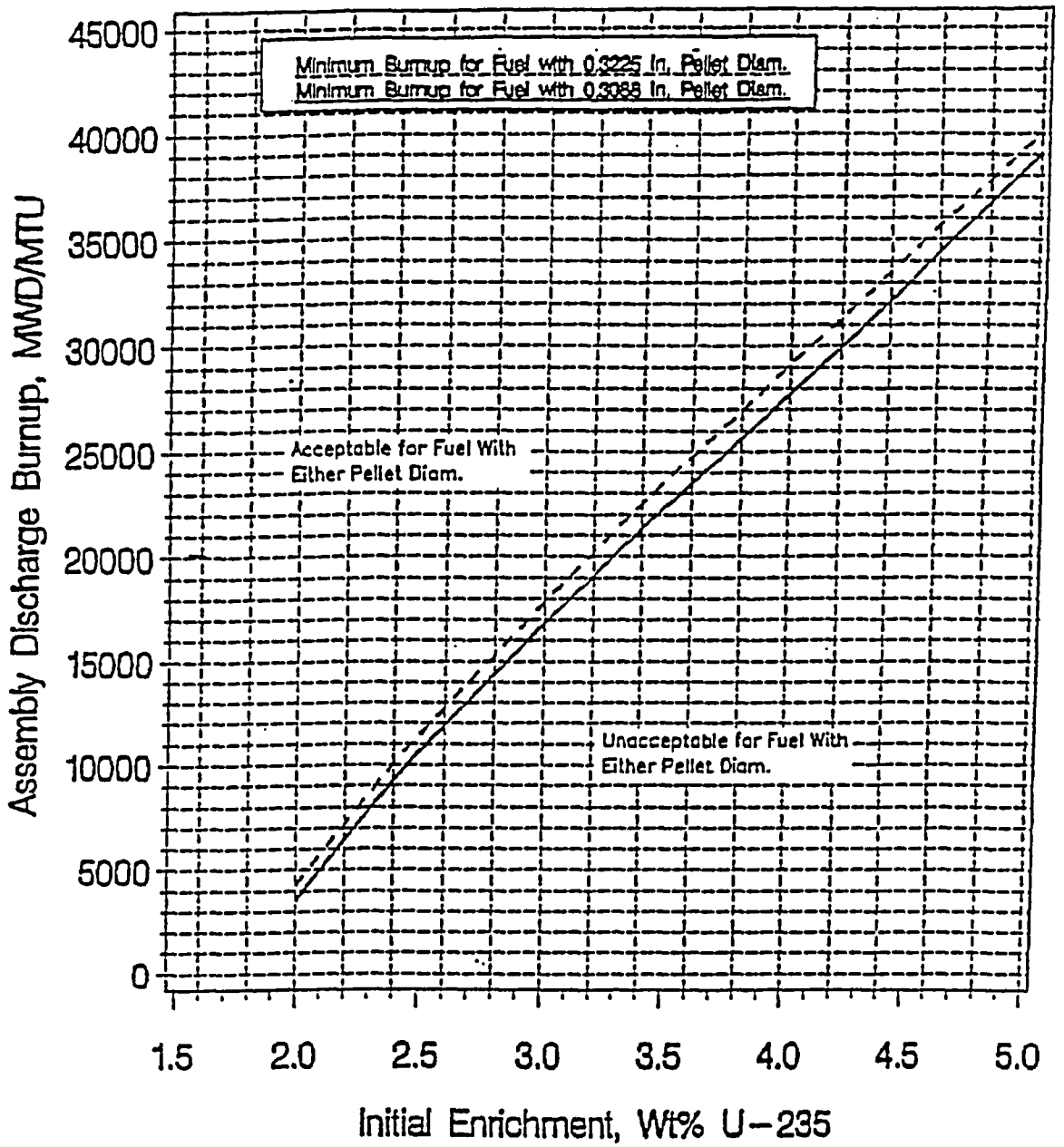


FIGURE 3.7.17-2
MINIMUM REQUIRED ASSEMBLY DISCHARGE BURNUP
AS A FUNCTION OF INITIAL ENRICHMENT AND FUEL PELLET DIAMETER
FOR AN ALL CELL STORAGE CONFIGURATION FOR THE PERMANENT SPENT
FUEL POOL STORAGE RACKS

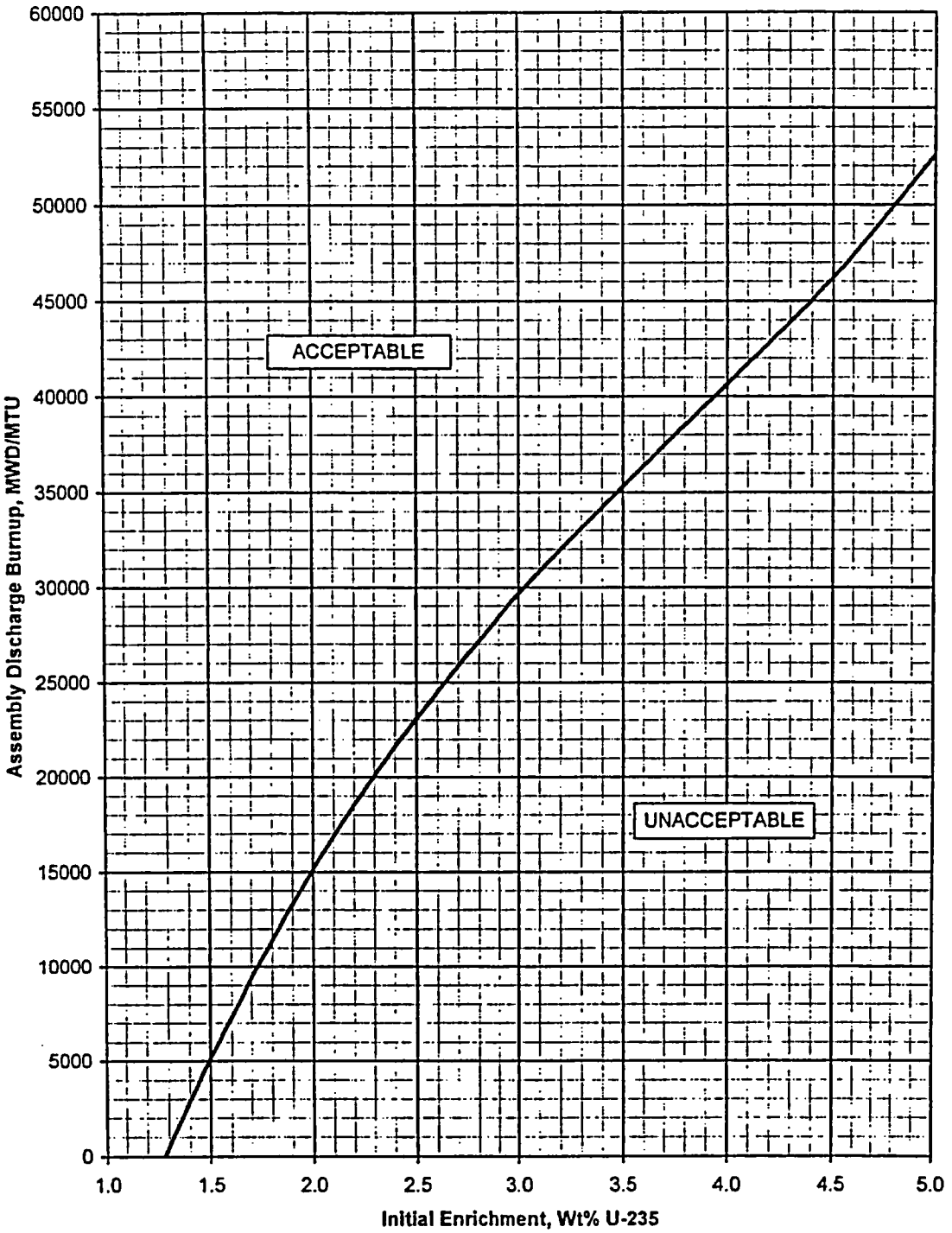


FIGURE 3.7.17-3
MINIMUM REQUIRED ASSEMBLY DISCHARGE BURNUP
AS A FUNCTION OF INITIAL ENRICHMENT
FOR A 2X2 ARRAY STORAGE CONFIGURATION FOR THE PERMANENT SPENT
FUEL POOL STORAGE RACKS

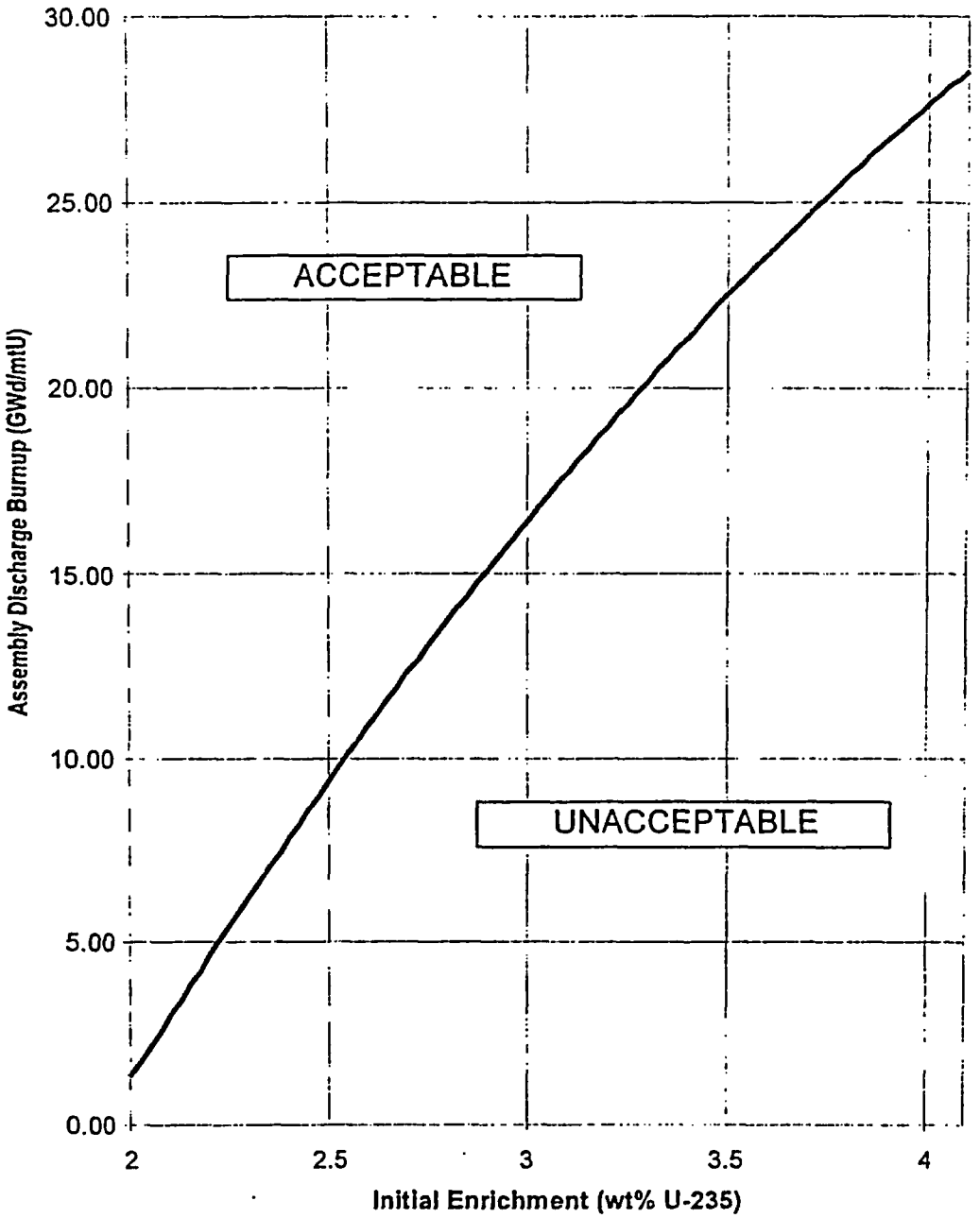


FIGURE 3.7.17-4
MINIMUM REQUIRED ASSEMBLY DISCHARGE BURNUP
AS A FUNCTION OF INITIAL ENRICHMENT
FOR SPENT FUEL STORAGE IN THE CASK PIT STORAGE RACK

NOTES:
1. INITIAL ENRICHMENT NOT TO EXCEED 4.1 WT %;
2. MINIMUM SPENT FUEL DECAY TIME OF 10 YEARS SINCE BEING DISCHARGED FROM THE REACTOR; AND
3. APPLICABLE DURING CYCLES 14 – 16 WITH CASK PIT RACK INSTALLED

4.0 DESIGN FEATURES

4.1 Site Location

The DCPP site consists of approximately 750 acres which are adjacent to the Pacific Ocean in San Luis Obispo County, California, and is approximately twelve (12) miles west-southwest of the city of San Luis Obispo.

4.2 Reactor Core

4.2.1 Fuel Assemblies

The reactor shall contain 193 fuel assemblies. Each assembly shall consist of a matrix of Zircalloy or ZIRLO clad 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 locations.

4.2.2 Control Rod Assemblies

The reactor core shall contain 53 control rod assemblies. The control rod material shall be silver, indium, and cadmium, as approved by the NRC.

4.3 Fuel Storage

4.3.1 Criticality

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

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

b. $k_{eff} < 1.0$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.1.2.3 of the FSAR;

c. $k_{eff} \leq 0.95$ if fully flooded with water borated to 806 ppm, which includes an allowance for uncertainties as described in Section 9.1.2.3 of the FSAR;

d. A nominal 11 inch center to center distance between fuel assemblies placed in the fuel storage racks;

(continued)

4.0 DESIGN FEATURES

4.3 Fuel Storage (continued)

e. Fuel assemblies with a discharge burnup in the "acceptable" region of Figure 3.7.17-2 for the all cell configuration as shown in Figure 3.7.17-1;

f. Fuel assemblies with a discharge burnup in the "acceptable" region of Figure 3.7.17-3 for the 2x2 array configuration as shown in Figure 3.7.17-1.

4.3.1.2 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 9.1.1.1 of the FSAR;

c. $k_{eff} \leq 0.98$ if moderated by aqueous foam, which includes an allowance for uncertainties as described in Section 9.1.1.1 of the FSAR; and

d. A nominal 22 inch center to center distance between fuel assemblies placed in the storage racks.

4.3.1.3 For cycles 14-16, the cask pit storage rack is designed and shall be maintained with:

a. Fuel assemblies having a maximum U-235 enrichment of 4.1 weight percent;

b. $k_{eff} < 1.0$ if fully flooded with unborated water, which includes an allowance for uncertainties;

c. $k_{eff} \leq 0.95$ if fully flooded with water borated to 800 ppm, which includes an allowance for uncertainties;

d. A nominal 9 inch center to center distance between fuel assemblies placed in the cask pit fuel storage rack;

e. Fuel assemblies with discharge burnup in the "acceptable" region of Figure 3.7.17-4;

f. Fuel assemblies having a 10 year minimum decay time since being discharged from the reactor; and

g. A neutron absorbing material (Metamic™) between the stored fuel assemblies.

(continued)

4.0 DESIGN FEATURES

4.3 Fuel Storage (continued)

4.3.2 Drainage

The spent fuel storage pools are designed and shall be maintained to prevent inadvertent draining of the pool below elevation 133 ft.

4.3.3 Capacity

The permanent spent fuel pool storage racks are designed and shall be maintained with a storage capacity limited to no more than 1324 fuel assemblies. For cycles 14-16, the cask pit storage rack is designed and shall be maintained with a storage capacity limited to no more than 154 fuel assemblies. For cycles 14-16, the total combined spent fuel pool capacity in the permanent and cask pit storage racks is limited to no more than 1478 fuel assemblies.