



UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

March 3, 1971

Docket No. 50-155

Consumers Power Company
ATTN: Mr. Gerald J. Walke
Nuclear Fuel Management
Administrator
212 West Michigan Avenue
Jackson, Michigan 49201

Change No. 24
License No. DPR-6

Gentlemen:

We have reviewed your Proposed Change No. 24 dated December 21, 1970, to the Technical Specifications of Facility License No. DPR-6 for reactor operation with two new centermelt fuel bundles and five of the original six centermelt fuel bundles.

The new centermelt fuel bundles are different from the original centermelt assemblies in the following respects: 1) sheet metal corner angles have been eliminated, 2) removable cobalt targets have been placed in new stainless steel corner tubes, 3) there are fewer (16 compared with 29 and 36) high power fuel rods, and 4) rod-to-rod power gradients have been reduced. Before the five original centermelt fuel assemblies that were irradiated during April, May and June 1967 are returned to the Big Rock Point Nuclear Reactor, the crud accumulated during that irradiation period will be removed by chemical cleaning and eight of the high power rods in the outer rows will be replaced by low power rods. With two new centermelt fuel bundles in the core, there will be a total of 32 high power rods at or near centermelt conditions at rated power. When the five original centermelt fuel assemblies have been reconstituted and reinserted into the Big Rock Point core, the total number of high power rods will be 172 compared with 188 for the six centermelt fuel bundles as originally fabricated and irradiated in the Big Rock Point core in March 1967.

We have concluded that the proposed change does not present significant hazards considerations not described or implicit in Consumers' Safety Analysis Report and Proposed Change No. 13 dated May 26, 1967, and approved by DRL Amendment No. 1 to the Facility Operating License No. DPR-6 dated March 12, 1968. There is reasonable assurance that the health and safety of the public will not be endangered by operation of the Big Rock Point Nuclear Reactor in the manner described by Consumers

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Consumers Power Company

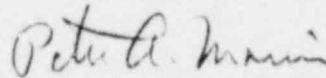
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Power Company with two new centermelt fuel bundles or with the two new centermelt fuel bundles and five of the original centermelt fuel bundles as proposed.

Accordingly, pursuant to Section 50.59 of 10 CFR Part 50, the Technical Specifications of Facility License No. DPR-6 are hereby changed as indicated in Attachment A to this letter.

Sincerely,



Peter A. Morris, Director
Division of Reactor Licensing

Enclosure:
Attachment A - Changes to
Technical Specifications

cc: George F. Trowbridge, Esquire

ATTACHMENT A

CHANGE NO. 24 TO TECHNICAL SPECIFICATIONS

FACILITY LICENSE NO. DPR-6

CONSUMERS POWER COMPANY

DOCKET NO. 50-155

1. Change the first paragraph of Section 8.1 to read:

"8.1 The general dimensions and configuration of the developmental fuel designs shall be as shown in Figures 8.1 through 8.7. Principal design features shall be essentially as shown in Table 8.1."

2. Section 8 - Figures:

Add Figure 8.6 - New Intermediate Performance Fuel Centermelt Assembly (8 x 8 Array) and Figure 8.7 - New Advanced Performance Fuel Centermelt Assembly (7 x 7 Array).

3. Delete Table 8.1 and insert the revised Table 8.1.

4. Table 8.2 - Change the number of centermelt fuel bundles to read:

<u>Number of Buniles</u>	<u>Centermelt</u>	
	<u>Intermediate</u>	<u>Advanced</u>
Pellet UO ₂	1	3
Powder UO ₂	1	2

5. Change Section 8.2.1(c) to read:

"(c) Fuel Examinations

Nondestructive examinations of selected fuel rods in the centermelt fuel bundles shall be performed during each core refueling period. Any rods displaying unexpected increases in diameter shall not be returned to the core.

Selected fuel rods shall be removed during each refueling period for destructive examinations. The bundles shall be reconstituted with replacement fuel rods and may be returned to the core for continued irradiation."

Footnotes to Table 8.1

- (1) Modified E-G and EEI $\text{UO}_2\text{-PuO}_2$ and new centermelt fuel bundles may contain (in the corner regions of the bundle) four Zr-2 tubes having encapsulated cobalt targets sealed within.
- (2) Modified E-G and EEI $\text{UO}_2\text{-PuO}_2$ fuel bundles have a special central fuel rod to which the bundle spacers are fixed. In addition, two of the interior bundle fuel rods are removable and may contain $\text{UO}_2\text{-PuO}_2$ fuel.
- (3) Special rods have depleted uranium.
- (4) Also has four gadolinia-containing rods.
- (5) With 3% dishing on selected rods.
- (6) $\text{UO}_2\text{-PuO}_2$ fuel rod stack density will vary from 74 to 92% theoretical by using annular, dished, or nondished pellets in selected rods.
- (7) Sixty-four $\text{UO}_2\text{-PuO}_2$ rods similar to standard UO_2 rods, four removable PuO_2 rods, eight gadolinia-containing rods, four cobalt corner rods and one empty (water-filled during operation) spacer rod.
- (8) Diameter of cobalt targets inside SS corner tubes.

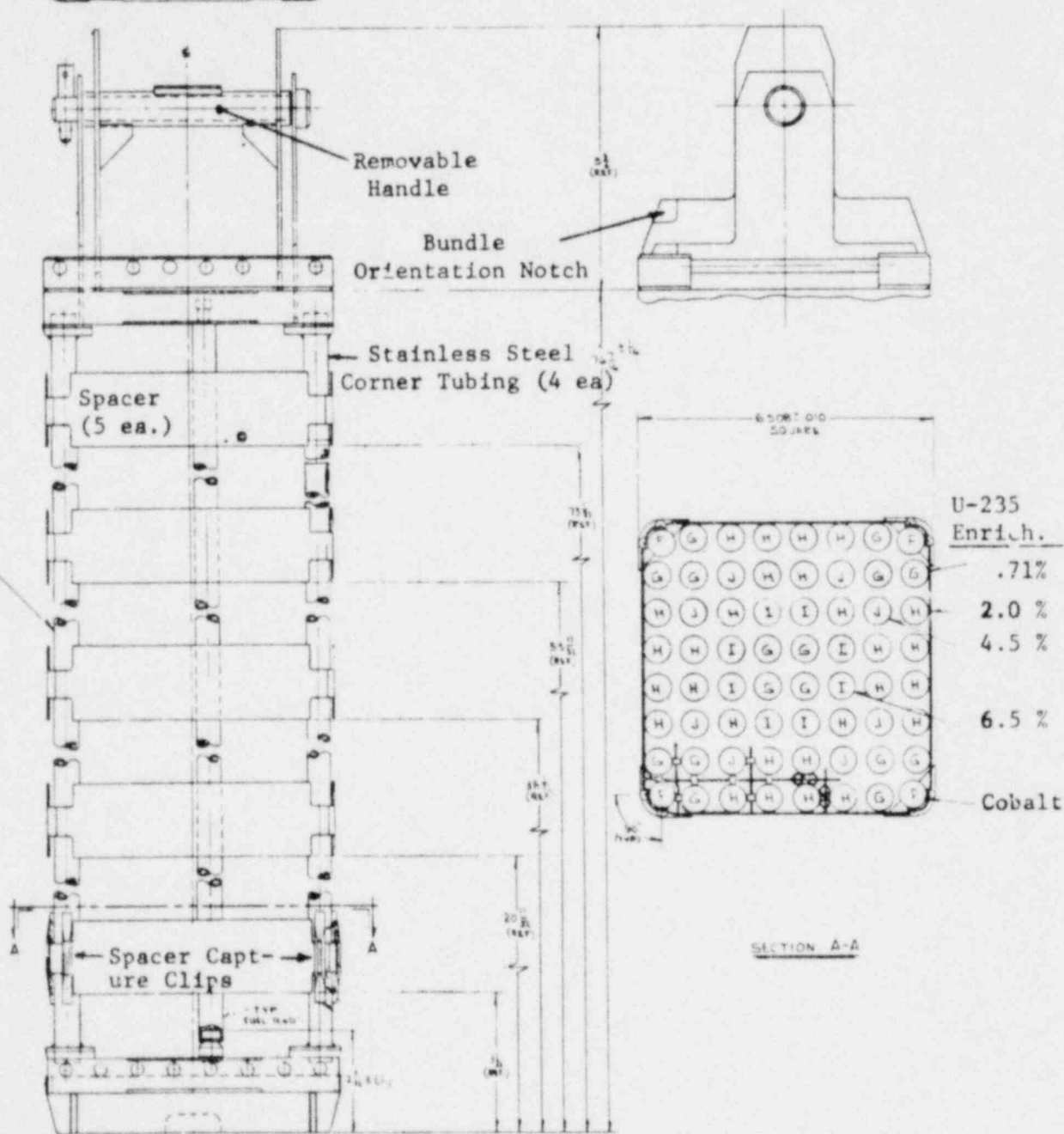
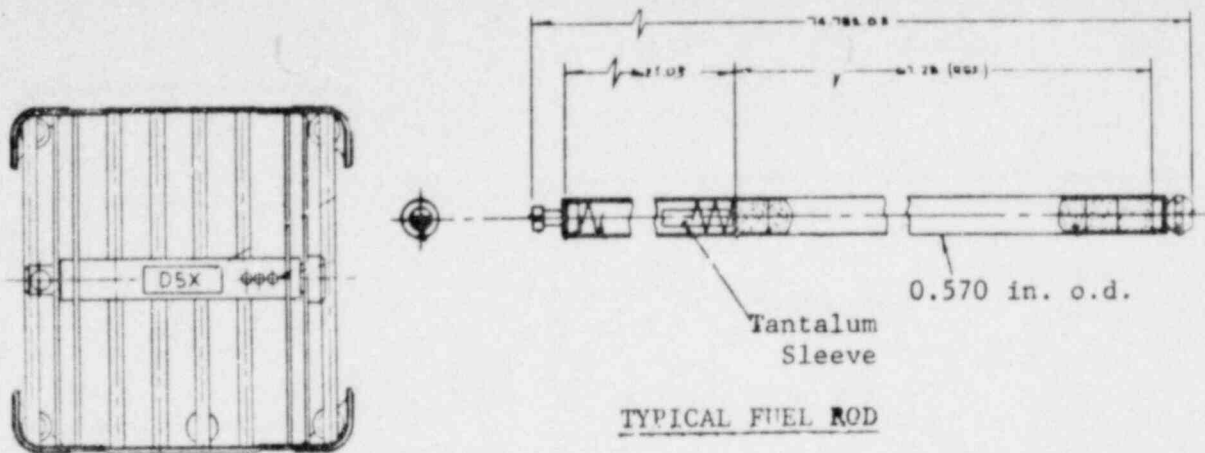


FIGURE 8.6 NEW INTERMEDIATE PERFORMANCE FUEL CENTERMELT ASSEMBLY (8x8 ARRAY)

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(Issued with Change No. 24 dated 3/3/71.)

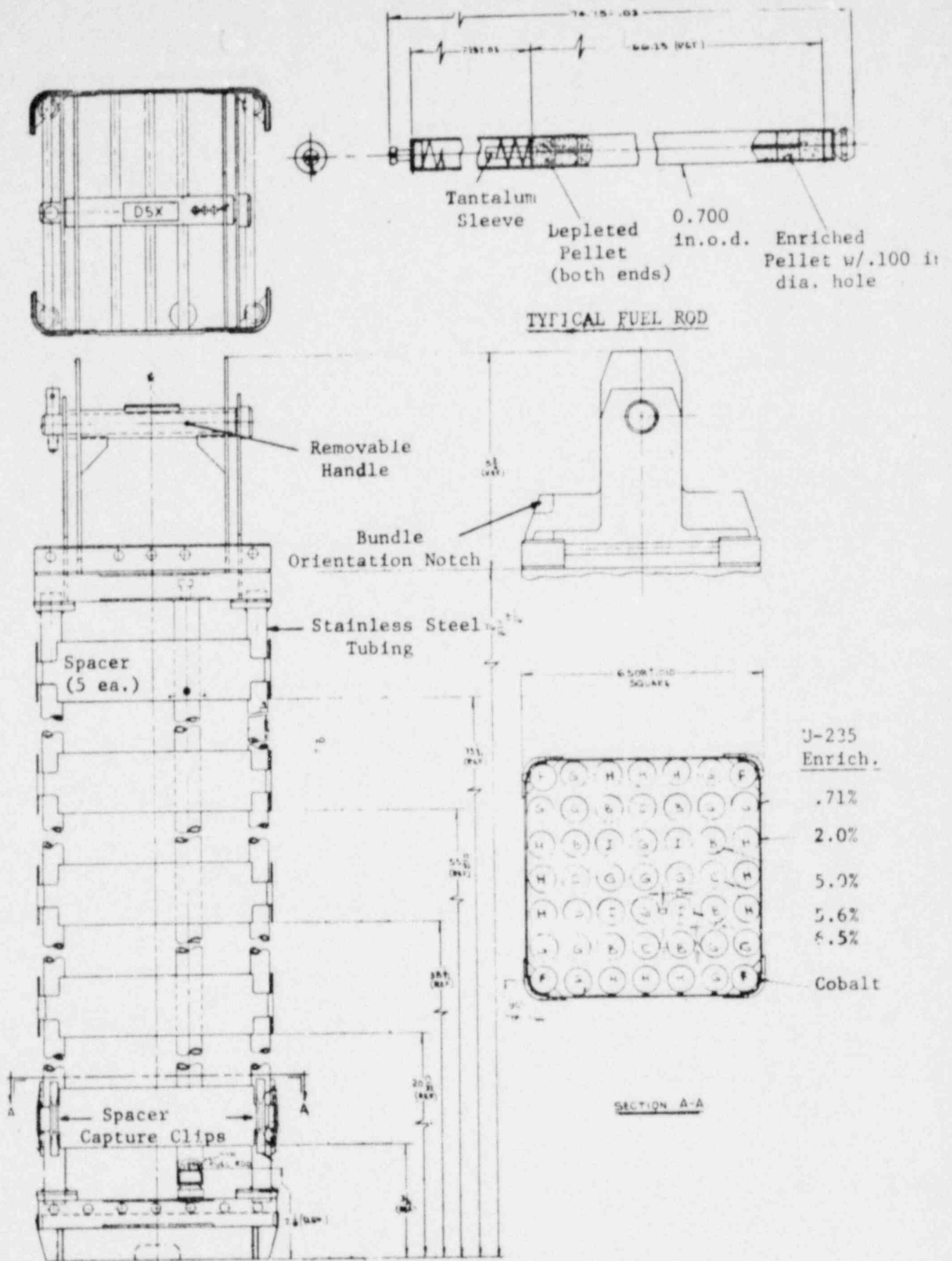


FIGURE 8.7 NEW ADVANCED PERFORMANCE FUEL CENTERMELT ASSEMBLY (7x7 ARRAY)