



71-9309

**Global Nuclear Fuel**

A Joint Venture of GE, Toshiba, &amp; Hitachi

Global Nuclear Fuel - Americas, LLC  
Castle Hayne Road, Wilmington, NC 28401

November 29, 2004

Mr. E. William Brach, Director  
Spent Fuel Project Office, M/S O-13D13  
Office of Nuclear Material Safety and Safeguards  
U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Subject: Correction to Table 6-2

- References:
- (1) Docket Number 71-9309
  - (2) Application for Approval of the RAJ-II Package Dated 3/31/04
  - (3) Request for Revision to the Application for the RAJ-II Package Dated 4/22/04
  - (4) NRC Request for Addition Information for Model No. RAJ-II Package Dated 7/19/04
  - (5) Response to RAI Letter and Revisions for the RAJ-II Package Dated 09/03/04
  - (6) Modification to the 9/3/04 Application for the RAJ-II Package Dated 9/16/04
  - (7) Modification to the 9/16/04 Application for the RAJ-II Package Dated 10/28/04
  - (8) Updated Information for the Model RAJ-II Package Application Dated 11/8/04

Dear Mr. Brach:

Global Nuclear Fuel - Americas, L.L.C. (GNF-A) facility in Wilmington, North Carolina, hereby provides a correction to a typographical error in Table 6-2, page 6-3 of the SAR. The Fuel Rod OD for the Type 10X10 should be shown as  $\geq 1.00$  cm. The current table shows this as  $\geq 1.10$  cm. We have marked this change with a vertical line in the right hand column and identified the enclosed page change as Revision 2, dated 11/29/04. Because this is a double-sided page, page 6-4 is provided on the back of page 6-3. This page should be inserted as a replacement in the SAR.

NMS01

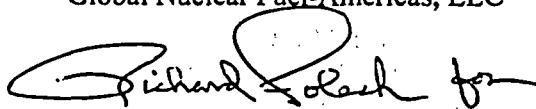
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Six copies are provided for your use.

Please contact me on (910) 675-5656 or Rick Foleck on (910) 675-6299 if you have any questions or would like to discuss the matter further.

Sincerely,

Global Nuclear Fuel-Americas, LLC

A handwritten signature in black ink, appearing to read "Richard Foleck for". The signature is written in a cursive style with a large initial "R".

Charles M. Vaughan, Manager  
Facility Licensing

Attachment

cc: CMV-04-050

Cylindrical fuel rods containing unirradiated UO<sub>2</sub>, enriched to 5 wt. percent U-235, are analyzed within the RAJ-II inner container in 5-inch stainless steel pipe, protective case or bundled together. The fuel rod loading criteria, determined from the criticality evaluation for the RAJ-II shipping container, are shown in Table 6-2 RAJ-II Fuel Rod Loading Criteria.

**Table 6-2 RAJ-II Fuel Rod Loading Criteria**

Parameter	Units	Type	Type	Type
Fuel Assembly Type		8x8	9x9	10x10
UO <sub>2</sub> Density		≤ 98% Theoretical	≤ 98% Theoretical	≤ 98% Theoretical
Allowable number of fuel rods per container compartment	#			
Configured loose		≤ 25	≤ 25	≤ 25
Configured in 5-inch SS Pipe/Protective Case		≤ 22	≤ 26	≤ 30
Configured strapped together		≤ 25	≤ 25	≤ 25
Fuel Rod OD	cm	≥ 1.10	≥ 1.02	≥ 1.00
Fuel Pellet OD	cm	≤ 1.05	≤ 0.96	≤ 0.90
Cladding Type		Zirc Alloy	Zirc Alloy	Zirc Alloy
Cladding ID	cm	≤ 1.10	≤ 1.02	≤ 1.00
Cladding Thickness	cm	≥ 0.00	≥ 0.00	≥ 0.00
Active fuel length	cm	≤ 381	≤ 381	≤ 385
Maximum U-235 Pellet Enrichment	wt%	≤ 5.0	≤ 5.0	≤ 5.0
Maximum Average Fuel Rod Enrichment	wt%	≤ 5.0	≤ 5.0	≤ 5.0

## 6.1.1 Design Features

### 6.1.1.1 Packaging

A general discussion of the RAJ-II container design is provided in Section 1.2, Package Description. A detailed set of licensing drawings for the RAJ-II container is provided in Appendix 1.4.1 RAJ-II General Arrangement Drawings. Components important to criticality safety are described below.

The RAJ-II is comprised of two primary components: 1) an inner stainless steel container, and 2) an outer stainless steel container.

The inner stainless steel container is 468.6 cm (184.49 in) in length, 45.9 cm (18.07 in) in width, and 28.6 cm (11.26 in) in height, and provides containment for the uranium inside the cylindrical zirconium alloy tubes. The fuel rods are located inside one of two compartments within the inner container. The compartments are fabricated from 18-gauge (0.122 cm thick) stainless steel, 456.7 cm (179.8 in) in length, 17.6 cm (6.93 in) in width and height. Each compartment is lined with 1.8 cm (0.71 in) thick polyethylene foam and separated from each other by the compartment walls. A 5 cm (1.97 in) thick alumina silicate fiber surrounds the compartments to provide thermal insulation, and a 16-gauge (0.15 cm thick) stainless steel sheet surrounds the insulator. The inner container lid consists of an alumina silicate layer encased in a 16-gauge (0.15 cm

thick) stainless steel sheet. The lid width and length are consistent with the inner container and the overall height is 5.25 cm (2.07 in).

The outer container is 506.8 cm (199.53 in) in length, 72.0 cm (28.35 in) in width, and 64.2 cm (25.28 in) in height (with the skids attached the height is 74.2 cm (29.21 in)). The inner container is held rigidly within the outer stainless steel container by four evenly spaced stainless steel fixture assemblies. Shock absorbers, fabricated from a phenol impregnated cardboard material, are placed at six locations above and below the inner container, and twelve locations on either side of the inner container. The wall for the outer container is fabricated from 14-gauge (0.2 cm thick) stainless steel.