



Research Reactor Center

University of Missouri-Columbia

Research Park
Columbia, MO 65211

PHONE (573) 882-4211
FAX (573) 882-6360

March 8, 2000

Ms. Gloria Bennington
Spent Fuel Project Office
U.S. NRC, MS OWFN 6 F-18
1 Whiteflint North Bldg.
11555 Rockville Pike
Rockville, MD 20852-2738

SUBJECT: Shipment of Spent Fuel: Radioactive Material, Fissile, N.O.S., UN2918, Highway
Route Controlled Quantity.

The enclosed envelope contains information regarding radioactive spent fuel shipments from the University of Missouri Research Reactor. This information has been classified as
as per 10CFR73.21(b)2. No person may have access to Safeguards Information unless the person has an established "need to know" for this information and is authorized per 10CFR73.21(c). Regulations prevent the disclosure of this information over unsecured telephone communications except that the reporting of schedule changes are permitted to be made by phone in the form of time deviations from the original schedule. Please deliver the enclosed envelope which contains Safeguards Information to the addressee on the envelope. If this person is no longer employed at your facility or will be absent for an extended period, please call (573) 882-5205 for the correct disposition of this material.

Armed escorts have been arranged for St. Louis, Nashville, Chattanooga, Atlanta, and Augusta, for these spent fuel shipments. Also, governors' designees of Missouri, Illinois, Kentucky, Tennessee, Georgia and South Carolina have been mailed notifications. All these shipments will be tracked by the Department of Energy's TRANSCOM tracking system.

The following information and the enclosed are supplied to comply with 10CFR73.37(f)(i)(ii)(iii).

Shipper: University of Missouri
Research Reactor Center
Columbia, MO 65211
Phone: (573) 882-5205
(Das Kutikkad)

Carrier: Tri-State Motor Transit Co
U.S. DOE Idaho Operations Office
785 DOE Place
Idaho Falls, ID 83403
Phone: (208) 526-2415
(Keith Nelson)

Receiver: Department of Energy
Westinghouse Savannah River Company
Savannah River Site
Building 105-L
Aiken, SC 29802
Phone: (803) 557-6087
(Paul Gambill)

49CFR172.202(a)(1)(2)(3)(4)

Proper shipping name, hazard class
identification number, gross weight

RQ radioactive material, fissile, n.o.s., 7, UN2918,
25,000 lbs.

172.203(c)

RQ (Reportable Quantity); 1.5 kg of fission products

Shipment 1: 4.73 kg U-235

Shipment 2: 4.70 kg U-235

49CFR172.203(d)(1)

(i) 173.435, radionuclides

MFP (Mixed Fission Products)

(ii) Physical and chemical form

Solid metallic, UAl_3 and Al mixed with fission products
trapped in this matrix. The UAl_x -Al-fission product
material is clad with aluminum as fuel plates of MTR-
type (Materials Testing Reactor) fuel elements.
Original fuel enrichment > 93%.

(iii) Activity

Shipment 1: 5,550.0 TBq (150,000 Ci)

Shipment 2: 11,322.0 TBq (306,000 Ci)

49CFR173.403

Greater than 27,000 Ci or $3,000 \times A_2$ (1,500 curies), so
highway route controlled quantity.

(iv) Label category

RADIOACTIVE YELLOW III because it is highway
route controlled quantity.

(v) Transport index

TI = 100 per BMI-1 shipping cask Certificate of
Compliance.

(vi) Fissile material,
controlled shipment

49CFR173.45(7)(b). This means by 49CFR173.457(b)(1)
that transport must be with exclusive use of shipper.

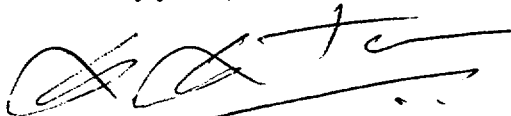
(vii) Package identification number

USA/5957/B()F (Model No. BMI-1)

Mode of transport

Highway truck, exclusive use. No transfer points.
Route enclosed as Safeguards Information.

Sincerely yours,



Das Kutikkad
Reactor Physicist

ROAD TRANSPORTATION ROUTE
UNIVERSITY OF MISSOURI, COLUMBIA, MISSOURI
TO
DOE SAVANNAH RIVER SITE, AIKEN, SOUTH CAROLINA

SHIPMENT ONE

MISSOURI STATE TIME SCHEDULE

Departure time from Columbia, Missouri	12:00 noon CST	21 March 2000
Arrival time at Missouri/Illinois state line	3:00 p.m. CST	21 March 2000

ILLINOIS STATE TIME SCHEDULE

Arrival time at Missouri/Illinois state line	3:00 p.m. CST	21 March 2000
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KENTUCKY STATE TIME SCHEDULE

Arrival time at Illinois/Kentucky state line	8:00 p.m. CST	21 March 2000
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TENNESSEE STATE TIME SCHEDULE

Arrival time at Kentucky/Tennessee state line	10:00 p.m. CST	21 March 2000
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GEORGIA STATE TIME SCHEDULE

Arrival time at Tennessee/Georgia state line	4:00 a.m. EST	22 March 2000
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SOUTH CAROLINA STATE TIME SCHEDULE

Arrival time at Georgia/South Carolina state line	10:00 a.m. EST	22 March 2000
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ESTIMATED ARRIVAL TIME AT SAVANNAH RIVER SITE

12:00 noon EST	22 March 2000
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The actual departure time may deviate from schedule by up to 4 (four) hours before or after 12:00 noon

NOTE: This fuel shipment schedule information must be protected in accordance with the provisions of 10CFR73.21 until 10 days after the shipment has entered or originated within the state. This estimated date for the states of Missouri, Illinois and Kentucky is 31 March 2000; this estimated date for the states of Tennessee, Georgia and South Carolina is 1 April 2000.

ROAD TRANSPORTATION ROUTE
UNIVERSITY OF MISSOURI, COLUMBIA, MISSOURI
TO
DOE SAVANNAH RIVER SITE, AIKEN, SOUTH CAROLINA

SHIPMENT TWO

MISSOURI STATE TIME SCHEDULE

Departure time from Columbia, Missouri	12:00 noon CST	12 April 2000
Arrival time at Missouri/Illinois state line	3:00 p.m. CST	12 April 2000

ILLINOIS STATE TIME SCHEDULE

Arrival time at Missouri/Illinois state line	3:00 p.m. CST	12 April 2000
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KENTUCKY STATE TIME SCHEDULE

Arrival time at Illinois/Kentucky state line	8:00 p.m. CST	12 April 2000
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TENNESSEE STATE TIME SCHEDULE

Arrival time at Kentucky/Tennessee state line	10:00 p.m. CST	12 April 2000
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GEORGIA STATE TIME SCHEDULE

Arrival time at Tennessee/Georgia state line	4:00 a.m. EST	13 April 2000
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SOUTH CAROLINA STATE TIME SCHEDULE

Arrival time at Georgia/South Carolina state line	10:00 a.m. EST	13 April 2000
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ESTIMATED ARRIVAL TIME AT SAVANNAH RIVER SITE

12:00 noon EST	13 April 2000
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The actual departure time may deviate from schedule by up to 4 (four) hours before or after 12:00 noon

NOTE: This fuel shipment schedule information must be protected in accordance with the provisions of 10CFR73.21 until 10 days after the shipment has entered or originated within the state. This estimated date for the states of Missouri, Illinois and Kentucky is 22 April 2000; this estimated date for the states of Tennessee, Georgia and South Carolina is 23 April 2000.

ROAD TRANSPORTATION ROUTE

UNIVERSITY OF MISSOURI, COLUMBIA, MISSOURI
TO
DOE SAVANNAH RIVER SITE, AIKEN, SOUTH CAROLINA

MISSOURI

1.	MO-163 north to MO-740*	0.5 mile
2.	MO-740 east to MO-63*	2.0 miles
3.	MO-63 north to I-70*	2.0 miles
4.	I-70 east to I-270	106.0 miles
5.	I-270 north and east to Illinois State line	<u>22.0 miles</u>
Subtotal		132.5 miles

ILLINOIS

6.	I-270/I-255 east and south to I-64	23.0 miles
7.	I-64 east to I-57	67.0 miles
8.	I-57 south to I-24	53.0 miles
9.	I-24 south to Kentucky State line	<u>35.0 miles</u>
Subtotal		178.0 miles

KENTUCKY

10.	I-24 southeast to Tennessee State line	<u>95.0 miles</u>
Subtotal		95.0 miles

TENNESSEE

11.	I-24 southeast to I-265	43.0 miles
12.	I-265 west to I-40	2.0 miles
13.	I-40 west to I-440	1.0 mile
14.	I-440 southeast to I-24	7.0 miles
15.	I-24 southeast to Georgia State line	<u>133.0 miles</u>
Subtotal		186.0 miles

GEORGIA

16.	I-75 southeast to I-285	93.0 miles
17.	I-285 east and south to I-20	26.0 miles
18.	I-20 to the South Carolina State line	<u>141.0 miles</u>
Subtotal		260.0 miles

SOUTH CAROLINA

19.	I-20 northeast to SC-19*	18.0 miles
20.	SC-19 south to New Ellenton	14.0 miles
21.	SC-19 south to Savannah River Plant*	<u>6.0 miles</u>
Subtotal		38.0 miles

GRAND TOTAL 889.5 miles

*Access to or exit from interstate system