

U. S. NUCLEAR REGULATORY COMMISSION
REGION II

Docket No.: 70-3020

Report No.: 70-3020/96-01

Licensee: Nuclear Assurance Corporation

Locations: Buffalo, New York
Norcross, Georgia
Aiken, South Carolina

Date: December 12-14, and 16, 1996

Inspectors: William J. Tobin, Senior Safeguards Inspector
Anthony Dimitriadis, Health Physicist (Region I)

Approved by: Edward J. McAlpine, Chief
Fuel Facilities Branch
Division of Nuclear Materials Safety

EXECUTIVE SUMMARY

Safeguards/Security

- Prior notification to the NRC and to the States was in accordance with the regulations.
- The licensee complied with NRC criteria relative to armed escorts, training, redundant communications capabilities, immobilization equipment and procedures.
- The inspector noted particular attention was given to the protection of Safeguards Information.
- This Shipment was inspected at the Point of Entry and upon reaching the Savannah River Facility.

Radiological Controls

- The shipment was conducted in accordance with NRC and Department of Transportation requirements.

Attachments:

1. Persons Contacted and Exit Meeting
2. Region I Inspection Field Notes

REPORT DETAILS

II. SAFEGUARDS

S2. Physical Protection of Shipments of Irradiated Fuel (IP 81310)

a. Inspection Scope

The inspector reviewed the licensee's program, performance, and procedures for adherence to the requirements of 10 CFR Part 73.37, titled, "Requirements for Physical Protection of Irradiated Reactor Fuel in Transit."

b. Observations and Findings

By letter dated December 5, 1996, the licensee notified the NRC and the designated representatives of the Governor of five states of the impending shipment of irradiated fuel originating in Canada and ending at the Savannah River Facility. This "Safeguards Information" document disclosed the schedule, description of the cargo, anticipated route, and the security arrangements for shipping through six heavily populated areas.

Additional correspondence dated November 4, 1996, to the NRC requested a survey of a portion of the route prior to subsequent approval. That survey was completed on December 3-4, 1996.

Prior to departure of the shipment, the inspector visited the licensee's corporate office on December 12 to review procedures and training. Emergency and contingency procedures addressed such events as vehicle accidents, rerouting, hostage attempts, and other appropriate topics. These procedures were later determined to be adequately known to the escorts. Safeguards Information was well protected in a secured room and locked container.

The shipment entered the United States at approximately 3:00 a.m. on December 13 and arrived at the Savannah Site at about 6:20 a.m. on December 14. The inspector verified communications equipment, telephone logs, and the presence of emergency instructions known to the driver/escort. Locks of the outer cask were also verified as being intact.

c. Conclusion

The shipment was conducted in compliance with NRC criteria. Safeguards Information documentation was well marked and secured as appropriate.

ATTACHMENT 1

1. Persons Contacted

1.1 Licensee Personnel

E. Davis, President
*H. Smith, Vice President, Quality Control
T. Thompson, Vice President, Cask Operations
*J. Viebrock, Senior Vice President
*B. Williams, Transportation Manager

1.2 Other Personnel

M. Beckum, Westinghouse, Coordinator
J. Fields, Tri-State, Driver
D. Fields, Tri-State, Driver
R. Ledford, Tri-State, Manager

1.3 NRC Personnel

A. Dimitriadis, Health Physicist, Region I
*W. Tobin, Senior Safeguards Inspector

*Denotes those in attendance at the telephonic Exit Meeting.

2. Exit Meeting

The Exit Meeting was held telephonically on December 16, 1996, with those so noted above in attendance. The inspector summarized the scope and findings of this inspection. No dissenting comments were expressed.

ATTACHMENT 2

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Spent Fuel Shipment

Point of Origin

Inspection Field Notes

Date: December 13, 1996

| | | | |
|------------------------|--------------------------------|--------------------|------------|
| <u>Origin:</u> | McMaster University | <u>Tractor No.</u> | 4321 |
| <u>Destination:</u> | Savannah River, South Carolina | <u>Trailer No.</u> | 237902 |
| <u>Transportation:</u> | Tri-State Motors | <u>Cask No.</u> | NALU 85001 |

Inspect at Shipment Point of Origin

1. ☒ Verify there is at least one driver and one escort in truck, or one driver in truck and two escorts in a separate vehicle.
2. ☒ Verify that a transport vehicle safety check has been performed and review results.
3. ☒ Verify seal numbers and that seals are intact. ** - seals were not accessible on the open vehicle. (cask open)*
4. ☒ Verify communications equipment is installed and operable.
 - ☒ a. A CB Radio in each vehicle *No CB on NY State Police vehicle*
 - ☒ b. A radiotelephone or equivalent in the transport escort vehicle.
5. ☒ Review DOE radiation/contamination surveys.
6. ☒ Verify radiation/contamination surveys by independent measurements.
 - ☒ a. 200 mR/hr on contact with cask-open vehicle or outside surface of closed vehicle
Radiation levels at contact: 0.4 mR/hr.
 - b. 1,000 mR/hr on contact with cask-closed vehicle. (Vehicle was open)

- c. 10 mR/hr at 6 feet from surface of cask or surface of closed vehicle.

Radiation levels at 6 feet: 0.06 mR/hr.

- d. 2 mR/hr in cab truck; Radiation levels in cab: 0.02

- e. 220 dpm/100 cm removable alpha contamination on any surface of cask. (See attached for results)

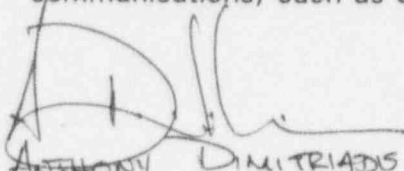
- f. 2200 dpm/100 cm removable beta/gamma contamination on any surface of cask. (See attached for results)

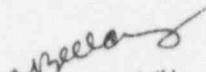
7. ✓ Review shipping papers for completeness
8. ✓ Review cask loading checklist. (Note any problems identified).
9. ✓ Review certificate of compliance required Testing and Maintenance Records.
10. ✓ Verify vehicle is placarded "Radioactive" on both sides, front and rear of trailer.
11. (*) Verify that two (2) Radioactive Yellow III labels are on the cask.
*--This could not be verified because the container containing the cask was locked.
12. ✓ Verify driver and escorts have been trained concerning radiation protection during accidents, security enroute, response to safeguards or radiological contingencies, and the two hour status call-in requirement.

Spent Fuel Shipment

1. ☒ Verify that the licensee who transports or delivers irradiated reactor fuel to a carrier for shipment has established and implemented a physical protection system.
2. ☒ Verify that the physical protection system provides for the early detection of unauthorized access to the shipment.
3. ☒ Verify that the physical protection system implements procedures for coping with attempts of deliberate damage to irradiated fuel and for other safeguards emergencies that may threaten shipments.
4. ☒ Verify that procedures have been developed on how to assess threats to shipments, how to summon LLEA aid, and how to identify and handle other safeguards emergencies.
 - a. Verify that all persons serving as escorts have been trained to implement the above procedures.
5. ☒ Verify by interview and observation that the licensee has established and maintains a communications center to be manned continuously during shipments.
6. ☒ Verify that shipments have been planned to minimize intermediate stops.
7. ☒ Verify that at least one escort maintains visual surveillance of the shipment when a vehicle is stopped.
8. ☒ Verify by interviews and by review of records that individuals (other than members of LLEA) serving as escorts have successfully completed a training course.
9. ☒ Verify that shipments traveling through heavily populated areas have at least two individuals, one of whom serves as escort, in the transport vehicle and are escorted by an armed member of the LLEA in a mobile unit, or that the transport is led and trailed by armed escorts in separate vehicles.
10. ☒ Verify that for shipments not within heavily populated areas, the transport vehicle is occupied by one driver and one escort or occupied by one driver with two escorts accompanying the transport vehicle in a separate vehicle.
11. ☒ Verify that the transport vehicle is equipped with NRC approved operable features that allow for immobilizing the cab or cargo-carrying portion of the vehicle.

12. ☒ Verify that the driver of the transport vehicle is capable of implementing the immobilization features, communications, and other security procedures needed for transport.
13. ☒ Verify by reviewing records that the licensee notified the NRC by mail and telephone at least seven days in advance of the irradiated fuel shipment.
14. ☒ Verify that shipment status calls are made every two hours to the communications center.
15. ☒ Verify that the vehicle has the capability of communicating with the communications center and LLEA along the route.
16. ☒ Verify that a CB radio is available and operational in each transport and escort vehicle. A CB radio was not available in the NY State Police vehicle
17. ☒ Verify that a radiotelephone or other NRC approved means of two-way voice communications is available in the transport or escort vehicle committed to travel the entire route.
18. ☒ Verify that if escort or guard service is provided by LLEA, in addition to normal LLEA radio communications, the LLEA mobile unit is equipped to communicate with the transport vehicle via two-way electronic communications, such as CB radios, walkie-talkies, etc.


ANTHONY DIMITRIADIS
Region I.


14/24/96