

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
REGION IV

Report of Investigation

IE Investigation Report No. 76-18

Subject: Arkansas Power and Light Company (AP&L)
Ninth and Louisiana Streets
Little Rock, Arkansas
(ANO-1)

Docket No. 50-313

Investigation of apparent violation of shipping regulations by
the licensee.

Period of Investigation: December 6, 1976

Investigator:

R. J. Everett
R. J. Everett, Radiation Specialist

12/15/76
Date

Reviewed by:

Glen D. Brown
Glen D. Brown, Branch Chief,
Fuel Facility and Material Safety

12/15/76
Date

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REASON FOR INVESTIGATION

Request by IE:HDQS to investigate the circumstances of a liquid radioactive waste shipment from AP&L on October 19, 1976 to the Nuclear Engineering Company (NECO), Beatty, Nevada. The radiation levels of the shipment, as measured by NECO upon receipt, were found to be in excess of levels set by the Department of Transportation (DOT), regulation 49 CFR 173.393(j).

SCOPE OF INVESTIGATION

Review shipment and survey records pertaining to the shipment in question, conduct discussions with licensee management as to radioactive waste shipment practices.

CONCLUSIONS

The external radiation levels of the shipment in question were measured by the licensee prior to the transfer of the shipment to the carrier. The levels were less than the limits specified in 49 CFR 173.393(j). Settling of insolubles in the liquid waste during transport apparently caused the radiation levels to increase and were in excess of 49 CFR 173.393(j) levels upon arrival at Beatty, Nevada.

SUMMARY OF FACTS

The licensee has made approximately 50 shipments of low specific activity (concentrations) liquids since June of 1976. These shipments were made to NECO and the Southwest Nuclear Company, Galveston, Texas, using tankers on loan from these companies. The tankers were hauled by common carriers. (See Details, paragraph D.)

The liquid waste shipment in question was stored on site for about two months prior to shipment due to excessive external radiation levels. The survey performed by the licensee on October 19, 1976, indicated that radiation levels were within 49 CFR 173.393(j) limits. (See Details, paragraph E.)

The liquid waste shipment in question was received by NECO on October 21, 1976. NECO's survey on that date indicated radiation levels in excess of 49 CFR 173.393(j) limits. (See Details, paragraph E.)

DETAILS

A. General

Region IV was requested to conduct an investigation of the circumstances surrounding the shipment of licensed material from AP&L Nuclear Power station at Russellville, Arkansas to the NECO disposal site in Beatty, Nevada. The shipment was in apparent violation of DOT requirements.

A Region IV Radiation Specialist visited the licensee (AP&L, Russellville, Arkansas) on December 6, 1976, for the purpose of obtaining the facts surrounding the shipment in question.

B. Persons Contacted (AP&L)

Mr. J. W. Anderson, Plant Superintendent
Mr. C. H. Halbert, Technical Support Engineer
Mr. M. M. Nichols, Health Physics Foreman

C. Management Interview

At the conclusion of the investigation, the findings were discussed with Mr. C. H. Halbert and Mr. J. W. Anderson. The investigator stated that the investigation findings would be reviewed upon his return to the Region IV office. In a subsequent telephone call to Mr. Halbert on December 8, 1976, and to Mr. Anderson on December 13, 1976, the investigator stated that the investigation findings would be sent to DOT for their disposition. (See paragraph F.).

D. Licensee Waste Disposal Practices

The licensee stated that the contamination of a sodium thiosulfate tank on June 13, 1976, necessitated the processing of the tank via the rad waste system. Solute concentrations in the tank rapidly exhausted the rad waste demineralizers. Therefore, rather than overload the rad waste system a decision was made to ship certain low level liquid wastes to NECO, Beatty, Nevada, and to the Southwest Nuclear Company, Galveston, Texas. Approximately fifty shipments have been made since June, 1976. The tankers are supplied by the disposal companies and were transported by common carrier. The licensee stated that tanker loads are surveyed prior to release to the carrier and a radioactive shipment and disposal record is completed. This disposal record certifies that all applicable regulations of the Department of Transportation have been met and the shipment is ready for release to the carrier. The investigator reviewed approximately 20 survey and shipment records and all were found to be in order and in compliance with DOT regulations.

E. Liquid Waste Shipment of October 19, 1976

The licensee stated that the tanker in question was stored on-site for about two months since external radiation levels were too high to meet shipping requirements. Portions of the tanker content were removed and clean water added. On October 19, 1976, the tanker was surveyed and levels were found to be within 49 CFR 173.393(j) limits. A disposal record was generated and the tanker released to the carrier on the same day. (See attachment for the licensee's record of survey and disposal.)

The shipment in question was received by NECO on October 21, 1976. A survey by NECO revealed radiation levels of 1000 MR/hour at contact and 5 MR/hour in the truck sleeper. NECO contacted the State of Nevada who then contacted the office of State Programs, USNRC. NECO noted also that only 2200 gallons could be withdrawn from the tanker while the shipper indicated 3400 gallons. The licensee stated that the difference was largely foam from a detergent that they had added in an attempt to clean up the tanker. (See attachment for NECO's survey record.) The investigator stated that since both surveys in question appeared to be valid, it must be concluded that solid materials in the liquid waste settled during transport and therefore caused higher radiation levels. The licensee stated that radiation levels were less than 40 CFR 173.393(j) limits when the shipment left the site on October 19, 1976.