

U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.: 150-00009

Report Nos.: 150-00009/96-06, 150-00009/96-08

Organization: Larry M. Jacobs and Associates, Inc.

Locations: Pensacola, Florida (Main Office)
Fort Walton Beach, Florida (Satellite Office)

Dates: August 6-7, 1996

Inspector: Wade T. Loo, Health Physicist

Approved by: Charles M. Hosey, Chief
Materials Licensing/Inspection Branch 1
Division of Nuclear Materials Safety

Enclosure

EXECUTIVE SUMMARY

Larry M. Jacobs and Associates, Inc.
NRC Inspection Reports 150-00002/96-07 and 150-00009/96-08

This special, unannounced inspection was conducted to evaluate Larry M. Jacob and Associates, Inc.'s (LMJA's) radiation safety program for moisture density testing activities conducted in areas of exclusive federal jurisdiction. Through discussions with cognizant LMJA representatives, reviews of documents, and direct observations of LMJA equipment and instrumentation, the inspector found LMJA's overall radiation safety program to be adequate. The inspector also found however, that the company did not have a specific NRC licensee nor did the company file for reciprocity in accordance with 10 CFR 150.20 and thus, did not have a license to use byproduct materials in areas of exclusive Federal jurisdiction. Program areas discussed in this report include management oversight, organization and scope of the program, leak testing and inventory, training, retraining and instruction to workers, personnel radiation protection, transportation, and posting and labeling.

Management Oversight

- The inspector identified an apparent violation regarding LMJA's failure to file for reciprocity with the NRC prior to using radioactive materials for conducting moisture density testing at Eglin Air Force Base and Hurlburt Field, Florida, areas of exclusive Federal jurisdiction.

Organization and Scope of the Licensee Program

- LMJA had a State of Florida license to possess and use radioactive materials contained in portable moisture density gauges to measure properties of construction materials or soils. The use of byproduct radioactive materials was conducted at temporary job sites throughout the State of Florida including areas of exclusive Federal jurisdiction.

Leak Testing and Inventory

- LMJA's portable moisture density gauges were found to be properly maintained, inventoried, and leak tested.

Training, Retraining, and Instructions to Workers

- LMJA personnel were found to have been properly trained in LMJA's radiation safety program, and radiation workers had received instructions commensurate with their involvement in activities using byproduct material.

Personnel Radiation Protection

- LMJA's external radiation monitoring program was found to be adequate for monitoring personnel and no external radiation exposures exceeding regulatory limits were identified.

Transportation

- The inspector reviewed LMJA's transportation activities involving byproduct materials and found them to be in accordance with NRC and DOT regulatory requirements.

Posting and Labeling

- A portable moisture density gauge was available for inspection, observed by the inspector in LMJA's storage area, and found to be properly labeled to identify the radiation hazards present. In addition, LMJA's storage area was observed and found to be properly posted for the radioactive materials present at the facility.

Miscellaneous Issues

- During the onsite inspection, the inspector observed that one of LMJA's portable moisture density gauges was not secured from unauthorized removal. This matter will be referred to the State of Florida.

REPORT DETAILS

01. Management Oversight (87100)

10 CFR 30.3 requires in relevant part, that no person shall possess or use byproduct material except as authorized by a specific or general license issued by the NRC.

10 CFR 150.20(a) provides in part that any person who holds a specific license from an Agreement State is granted an NRC general license to conduct the same activity in non-Agreement States subject to the provisions of 10 CFR 150.20(b).

10 CFR 150.20(b)(1) requires, in part, that any person engaging in activities in non-Agreement States shall, at least 3 days before engaging in each such activity, file 4 copies of NRC Form 241, "Report of Proposed Activities in Non-Agreement States," with the Regional Administrator of the appropriate NRC regional office.

On August 6, 1996, the inspector reviewed the conduct of activities involving the use of byproduct material at Eglin Air Force Base (EAFB) and Hurlburt Field, Florida with cognizant Air Force representatives. From discussions and reviews of records for activities that involved moisture density testing, the inspector determined that LMJA had conducted moisture density testing at EAFB and Hurlburt Field in past years. However, the inspector only was able to verify the exact dates of use for some of those activities. This included 32 occasions between March 11 and June 19, 1996, for moisture density activities conducted at Hurlburt Field, Florida. For those activities conducted on other occasions in the past, the inspector was not able to verify the exact dates of use due to the volume of documents available for review.

On August 6, 1996, the inspector attempted to conduct an inspection of LMJA's Fort Walton Beach, Florida location but LMJA representatives were not available. On August 7, 1996, the inspector conducted an onsite inspection of LMJA's Pensacola, Florida location to verify and confirm that LMJA had conducted activities requiring an NRC license at EAFB and Hurlburt Field, Florida. The inspector discussed those activities with cognizant LMJA representatives and reviewed those LMJA records available at the time of the onsite inspection. From these discussions the inspector independently verified that LMJA had used PMDGs for moisture density testing purposes at EAFB and Hurlburt Field, Florida. LMJA representatives stated that the PMDGs had been used for moisture density testing at EAFB and Hurlburt Field, Florida on an average of two days a week for the last five years. However, the inspector was not able to verify the exact dates of use for activities in past years other than those previously identified by the inspector at Hurlburt Field. Activities conducted under LMJA's State of Florida radioactive materials license did not require them to maintain a utilization log. During discussions with the inspector, LMJA representatives could not recall the exact dates but only could estimate when the PMDGs had been used at EAFB and Hurlburt Field. LMJA representatives stated that they were

under the assumption that they had a State of Florida license which allowed them to conduct moisture density activities at temporary job sites in the State of Florida including EAFB and Hurlburt Field. LMJA representatives also stated that they were not aware of the requirement for filing reciprocity with the NRC. Based on those discussions with LMJA representatives, the inspector determined that LMJA had not filed for reciprocity to conduct activities requiring an NRC license at EAFB and Hurlburt Field, areas of exclusive Federal jurisdiction. Failure of LMJA to file for reciprocity for activities conducted in areas of exclusive Federal jurisdiction was identified as an apparent violation of 10 CFR 30.3.

02. Organization and Scope of the Licensee Program (87100)

Through discussions with cognizant LMJA representatives, the inspector determined that LMJA had two offices, each licensed by the State of Florida to possess and use radioactive materials contained in portable moisture density gauges (PMDGs). The main office was located in Pensacola, Florida, and the satellite office was located in Fort Walton Beach, Florida. Through discussions with cognizant LMJA representatives and from a review of records, the inspector determined that six individuals were trained to use the PMDGs under the State of Florida license; they included the secretary/treasurer, radiation safety officer and four technicians. LMJA representatives stated that company activities requiring the use of radioactive materials primarily involved soil testing. LMJA used the PMDGs at temporary job sites located throughout the State of Florida including areas of exclusive Federal jurisdiction.

03. Leak Tests and Inventories (83822)

The inspector reviewed leak test and inventory records from March 1990 to June 1996 and discussed those records with cognizant LMJA representatives. From those reviews and discussions, the inspector determined that LMJA conducted leak tests and inventories of the PMDGs on a semiannual frequency. LMJA utilized leak test kits supplied by the PMDG manufacturer authorized to conduct such tests. Upon completion of the leak test, LMJA sent the leak test samples to the PMDG manufacturer for analysis. From a review of those leak tests results, the inspector did not observe any sample results greater than 0.005 microcuries.

04. Training, Retraining, and Instructions to Workers (83822)

10 CFR 19.12 requires that individuals who are likely to receive in excess of 100 mrem a year in occupational exposure be trained in specific radiation protection topics. Through discussions with cognizant LMJA representatives and a review of training records, the inspector determined that LMJA personnel authorized to use the PMDGs had received appropriate radiation safety training from the PMDG manufacturers. The inspector noted that LMJA maintained the PMDG users' training certificates in LMJA's main office. The inspector reviewed and discussed LMJA's operating and emergency procedures with those LMJA

representatives available at the time of the onsite inspection. From those discussions and reviews, the inspector found those individuals to be knowledgeable in those procedures to ensure that appropriate and adequate actions be taken in the event of an emergency at a temporary job site.

05. Personnel Radiation Protection (83822)

10 CFR 20.1502 requires the monitoring of occupational exposures to radiation to demonstrate compliance with radiation dose limits specified in 10 CFR 20.1201, 20.1207, and 20.1208. The inspector reviewed external radiation dosimetry reports from January 1990 to December 1995 and discussed those reports with cognizant LMJA representatives. Through those discussions and reviews, the inspector determined that LMJA utilized external radiation dosimetry supplied by a National Voluntary Laboratory Accreditation Program approved vendor for monitoring personnel. LMJA exchanged the dosimetry on a monthly frequency. During review of those dosimetry reports, the inspector observed annual total effective dose equivalent radiation exposures ranging from 0 to 720 millirem. Based on those discussions and reviews, the inspector determined that LMJA had no external radiation exposures exceeding NRC regulatory limits. In addition, the inspector reviewed annual As Low As Reasonably Achievable audits from January 1994 to January 1996 and determined that LMJA was adequately reviewing radiation safety activities on an annual basis commensurate with those activities conducted by LMJA.

06. Transportation (86740)

10 CFR Part 71 requires that licensed materials be transported in accordance with specified requirements, including referenced Department of Transportation (DOT) regulations. Through discussions with cognizant LMJA representatives and a review of transportation records, the inspector determined that LMJA transported the PMDGs in the bed of company pickup trucks. LMJA representatives informed the inspector that when transporting the gauges individuals would chain and lock the PMDG transportation boxes to the beds of the pickup trucks. The inspector reviewed the LMJA's transportation records maintained for each PMDG and discussed those records with LMJA representatives. LMJA representatives informed the inspector that the transportation records were kept in the front of LMJA's vehicles within arms reach of the driver. From those discussions and reviews, the inspector determined that LMJA maintained appropriate documentation to ensure compliance to NRC and DOT regulatory requirements.

07. Posting and Labeling (83822)

10 CFR 20.1904 and 10 CFR 71.5 require that containers of licensed material contain certain information. 10 CFR 20.1402 requires that areas containing licensed materials be posted with warning signs. 10 CFR 20.1302 requires that radiation dose rates in unrestricted areas be limited. The inspector observed a PMDG that was available at the

time of the onsite inspection and independently verified that the PMDG was properly labeled to ensure compliance with NRC and DOT regulatory requirements. In addition, the inspector conducted independent radiation surveys of the PMDG and storage area with measurements ranging from 0.0 to 0.4 millirem/hour. Based on those independent measurements the inspector observed that LMJA adequately posted and labeled the storage area and PMDG in accordance with NRC and DOT regulatory requirements.

08. Miscellaneous Issues (87100)

08.1 State Inspections

Through discussions with LMJA representatives and from a review of records the inspector determined that LMJA's Fort Walton Beach, Florida location had previously been inspected by the State of Florida on September 30, 1993. During that inspection, LMJA was cited for one item of noncompliance in which LMJA had exceeded the intervals for conducting PMDG leak tests. At the time of the onsite inspection, the inspector did not identify any additional items similar to the findings of the state.

08.2 Storage and Security

10 CFR 20.1801 and 20.1802 require that licensed material be secured from unauthorized removal or be under constant surveillance. At the time of the onsite inspection, the inspector independently verified the identity of one PMDG used at temporary job sites. From those direct observations and reviews of records, the inspector determined that LMJA possessed three PMDGs containing millicurie quantities of cesium-137 and americium-241. The inspector determined that LMJA stored the gauges in the manufacturer's transportation boxes located in a storage room inside LMJA's workshop area. However, during the onsite inspection the inspector observed a PMDG in an unlocked storage room next to an open garage door of the workshop area. Upon identification of this inspection finding, LMJA immediately locked the storage room that contained the PMDG and counseled those LMJA employees available at the time of the inspection regarding securing the PMDGs at the facility from unauthorized removal. Based on those inspection findings, the inspector determined that LMJA had not secured a PMDG from unauthorized removal. The inspection findings associated with the security of the PMDG will be referred to the State of Florida.

EXIT MEETING SUMMARY

An exit meeting was held with a LMJA representative on August 7, 1996. Also, on August 15, 1996, a subsequent telephone conversation was held with the LMJA's Radiation Safety Officer to discuss the inspection findings. The overall findings from the inspection, including the apparent violation were discussed. No dissenting comments were received from LMJA, and LMJA did not specify any information reviewed during the inspection as proprietary in nature.

LIST OF PERSONS CONTACTED

Licensee

D. Henderson, Secretary/Treasurer
*R. Welch, Radiation Safety Officer

*Via telephone supplemental exit meeting on August 15, 1996

INSPECTION PROCEDURES USED

IP 87100: Licensed Materials Program
IP 83822: Radiation Protection
IP 86740: Inspection of Transportation Activities

ITEMS OPENED, CLOSED, AND DISCUSSED

OPENED

96-001 VIO FAILURE TO FILE RECIPROCITY WITH NRC RII OFFICE