U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.:	150-00009
Report No.:	150-00009/96-10
Organization:	Edward M. Chadbourne, Inc.
Location:	Pensacola, Florida
Dates:	August 8-9, 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

Edward M. Chadbourne, Inc.
NRC Inspection Report 150-00009/96-10

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

Management Oversight

- The inspector identified an apparent violation regarding EMCI's failure to file reciprocity with the NRC prior to using radioactive materials for conducting moisture density testing at Pensacola Naval Air Station, Florida, an area of exclusive Federal jurisdiction.

Organization and Scope of the Licensee Program

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

Leak Test and Inventory

- EMCI's portable moisture density gauges had been leak tested by a company authorized to conduct such tests on a semiannual basis. EMCI's Radiation Safety Officer conducted semiannual inventories of the gauges.

Training, Retraining, and Instructions to Workers

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

Personnel Radiation Protection

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

Posting and Labeling

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

Transportation

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

Miscellaneous Issues

- During the onsite inspection the inspector determined that EMCI's had previously been inspected by the State of Florida on two occasions with items of noncompliance being identified.

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 5, 1996, the inspector reviewed the conduct of activities involving the use of byproduct material at Pensacola Naval Air Station (PNAS), Florida with cognizant Navy representatives. From discussions and reviews of records for activities that involved moisture density testing, the inspector determined that EMCI had conducted asphalt paving at PNAS in past years. However, Naval representatives were not able to confirm if EMCI utilized portable moisture density gauges (PMDGs). Also, the inspector was unable to verify EMCI's use of PMDGs due to the volume of documents available for review. For those records sampled, the inspector was not able to determine if EMCI had conducted activities using PMDGs.

On August 8-9, 1996, the inspector conducted an onsite inspection of EMCI to determine if EMCI had conducted activities requiring an NRC licensee at PNAS, Florida. The inspector discussed those activities with EMCI representatives and reviewed those EMCI records available at the time of the onsite inspection. From those discussions and reviews, the inspector independently verified that EMCI had used a PMDG for moisture density testing purposes at PNAS, Florida. EMCI representatives stated that the last time the PMDG had been used at PNAS was on one hot day for approximately one half to one hour, probably during the summer of 1992 or 1993 at PNAS, Florida. However, the inspector was not able to determine the exact dates of use for those and other activities in past years. Activities conducted under EMCI's State of Florida radioactive materials license did not require them to maintain a utilization log. Furthermore, EMCI used the PMDGs for quality control purposes and was not required to document each time the PMDGs were used at PNAS. During discussions with the inspector< EMCI representatives could not recall the exact dates but only an estimate of when the PMDGs had been used at PNAS. EMCI representatives stated that they were under the assumption that they had a State of Florida radioactive materials license which allowed them to conduct moisture density activities at temporary job sites in the State of Florida

including PNAS. EMCI representatives also stated that they were not aware of the requirement for filing reciprocity with the NRC. Although the inspector could not independently verify the use of EMCI's PMDGs at PNAS, the inspector concluded based on those discussions with EMCI representatives that EMCI had not filed for reciprocity to conduct licensed activities at PNAS, areas of exclusive Federal jurisdiction. Failure of the licensee to file for reciprocity for licensed 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 licensee representatives, the inspector determined that EMCI was licensed by the State of Florida to possess and use radioactive materials contained in PMDGs. EMCI was authorized to possess and use the PMDGs for measuring properties of construction materials or soils. Through those discussions and from a review of records, the inspector determined that EMCI possessed and used three PMDGs that contained millicurie quantities of cesium-137 and americium-241. Also, the inspector determined that four individuals were trained to use the PMDGs; they included the Radiation Safety Officer (RSO) and three laboratory technicians. EMCI representatives stated that company activities primarily involved asphalt paving of roads. EMCI used the PMDGs at temporary job sites located throughout the State of Florida including areas of Federal exclusive jurisdiction. EMCI representatives stated that the PMDGs were used for quality control purposes at these temporary job sites. When conducting asphalt paving, EMCI was required to use an independent testing laboratory to verify the density of the materials tested.

03. Leak Tests and Inventories (83822)

The inspector reviewed leak test and inventory records from June 1990 to March 1996 and discussed those records with EMCI representatives. From those reviews and discussions, the inspector determined that EMCI conducted leak tests and inventories of the PMDGs on a semiannual frequency. EMCI utilized leak test kits supplied by a leak testing consultant authorized to conduct such tests. Upon completion of the leak test, EMCI sent the leak test samples to the consultant 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)

Through discussions with cognizant EMCI representatives and a review of training records, the inspector determined that EMCI personnel authorized to use the PMDGs had received appropriate radiation safety training from the PMDG manufacturer. The inspector noted that EMCI maintained each PMDG user's training certificates in the RSO's office. The inspector reviewed and discussed EMCI's operating and emergency procedures with those EMCI representatives available at the time of the onsite inspection. During those discussions and reviews, the inspector

found the 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 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 June 1996 and discussed those reports with cognizant EMCI representatives. Through those discussions and reviews, the inspector determined that EMCI utilized external radiation dosimetry supplied by a National Voluntary Laboratory Accreditation Program approved vendor for monitoring personnel. EMCI exchanged the dosimetry on a quarterly frequency. From a review of those dosimetry reports, the inspector observed annual total effective dose equivalent radiation exposures ranging from 0 to 159 millirem. Based on those discussions and reviews, the inspector determined that EMCI had no external radiation exposures exceeding NRC regulatory limits.

06. Posting and Labeling (83822)

10 CFR 20.1904 and 10 CFR 71.5 require that containers of licensed material contain certain information. 10 CFR 20.1401 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 the PMDGs that EMCI possessed and independently verified that the PMDGs were properly labeled to ensure compliance with NRC and DOT regulatory requirements. In addition, the inspector conducted independent radiation surveys of the PMDGs and storage area with measurements ranging from 0.0 to 0.3 millirem/hour. Based on those independent measurements the inspector observed that the licensee adequately posted and labeled the storage area and PMDGs in accordance with NRC and DOT regulatory requirements.

07. 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 EMCI representatives and a review of transportation records, the inspector determined that EMCI transported the PMDGs in the bed of company pickup trucks. EMCI representatives informed the inspector that when transporting the gauges, the individuals would chain and lock the gauge transportation boxes to the beds of the pickup trucks. The inspector reviewed EMCI's transportation records maintained for each gauge and discussed those records with EMCI

representatives. EMCI representatives informed the inspector that the transportation records were kept in the front of EMCI's vehicles within arms reach of the driver. From those discussions and reviews, the inspector determined that EMCI maintained appropriate documentation to ensure compliance to NRC and DOT regulatory requirements.

08. Miscellaneous Issues (87100)

Through discussions with EMCI representatives and from a review of records, the inspector determined that EMCI had previously been inspected by the State of Florida on November 19, 1992 and November 21, 1995. During the November 19, 1992 inspection, EMCI had been cited for two items of noncompliance: 1) Unavailability of personnel records; and 2) Inventory records did not include all of the required information. During the November 21, 1995 inspection, EMCI had been cited for three items of noncompliance: 1) Leak test records did not include all of the required information; 2) Licensee did not advise radiation workers of their annual exposure; and 3) Inventory records were not available at the time of the onsite inspection. At the time of the onsite inspection, the inspector did not identify any items similar to the findings of the state.

EXIT MEETING SUMMARY

An exit meeting was held with EMCI representatives on August 9, 1996. The overall findings from the inspection, including the apparent violation were discussed. No dissenting comments were received from EMCI, and EMCI did not specify any information reviewed during the inspection as proprietary in nature.

LIST OF PERSONS CONTACTED

Licensee

R. Kelly, Laboratory Technician
T. Perry, Vice President
J. Strother, Laboratory Foreman, Radiation Safety Officer

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 OBTAIN A LICENSE TO POSSESS AND USE RADIOACTIVE MATERIAL