

U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

INSPECTION REPORT

Inspection No. 999-90001/99-008  
Docket No. 999-90001  
License No. General License in 10 CFR 31.5  
Licensee: Southeastern Plastics Corporation  
Location: 15 Home News Row  
New Brunswick, NJ  
Inspection Dates: October 27 through November 23, 1999

Inspector: Original Signed by:  
Sattar Lodhi December 2, 1999  
Sattar Lodhi, Ph.D. date  
Health Physicist

Approved By: Original signed by  
John D. Kinneman December 2, 1999  
John D. Kinneman, Chief  
Nuclear Materials Safety Branch 2  
Division of Nuclear Materials Safety date

## EXECUTIVE SUMMARY

### Southeastern Plastics Corporation NRC Inspection Report No. 999-90001/99-001

Southeastern Plastics Corporation (Licensee) is a manufacturer of plastic sheeting. Between 1986 and 1991, it acquired four thickness measuring gauges under the general license in 10 CFR 31.5. Three of these gauges (NDC Model 103) contained 150 millicuries of americium-241 each, and the fourth gauge (Ohmart Scanning Gauge) contained 1200 millicuries of krypton-85. The Licensee had these gauges installed at its manufacturing plant in New Brunswick, New Jersey.

Region I learned that one of these gauges (Ohmart Model) was stored in a warehouse in Washington Township, New Jersey, along with several other pieces of used equipment. The equipment apparently was brought to the warehouse from other plants to be disposed of by an auction. The warehouse belongs to Zeta Consumer Products Corporation, a sister corporation of the Licensee.

Region I conducted an inspection from October 27 through November 23, 1999, to review the circumstances leading to the appearance of the gauge at the warehouse, to identify the owner of the gauge and to determine the compliance of the owner with NRC requirements.

The Licensee did not maintain the required records of receipt, installation or removal from installation of these gauges. The Licensee can not explain how this gauge was transferred from the plant in New Brunswick to the warehouse in Washington Township. The Licensee is unable to locate one of the three NDC gauges.

The Licensee has returned the Ohmart gauge to the manufacturer for disposal. The Licensee is making arrangements with NDC to have the two NDC gauges returned to NDC Systems for disposal, and is continuing efforts to locate the missing NDC gauge.

Four apparent violations of NRC regulations were identified during the inspection. The violations included: (1) failure to assure that the device is removed from installation by persons specifically licensed to perform such services; (2) failure to test the on-off mechanism for proper operation at the required frequency; (3) failure to maintain the required records; and (4) abandonment of devices containing byproduct material.

## REPORT DETAILS

### **I. Organization and Scope of the Program**

#### a. Inspection Scope

Southeastern Plastics Corporation (Licensee) manufactures plastic sheeting at its plant in New Brunswick, New Jersey. The plant occupies several thousand square feet of area in a single building. It includes a currently operating plant, a closed part of the plant, a workshop and storage areas, and several offices. Alpha Industries of Lyndhurst, New Jersey, who owns several similar plants in the United States, acquired Southeastern Plastics Corporation on September 1, 1992. About the same time, Alpha Industries also acquired Zeta Consumer Products Corporation, who had a plant in Washington Township, New Jersey, then used for manufacturing plastic sheeting.

The inspection was conducted to review the Licensee's acquisition of generally licensed gauges, their installation and subsequent removal from the installed locations, records of required maintenance, and transfer of any of these gauges, and the Licensee's compliance with the conditions of the general license.

#### b. Observations and Findings

On October 27, 1999, the NRC learned that an Ohmart gauge containing 1200 millicuries of krypton 85 had been found in a warehouse of Zeta Consumer Products Corporation, in Washington Township, New Jersey. The gauge was stored on a pallet and was among several other pieces of used machinery and equipment that had been brought to the warehouse from other plants to be sold at an auction that was held at the warehouse. Zeta Consumer Products Corporation does not have a specific NRC license.

The inspector visited the warehouse on October 27, 1999, for an inspection of the gauge. Upon arrival at the warehouse, the inspector noted that the gauge was stored in a hallway separated from the rest of the equipment. The gauge was an Ohmart gauge with serial number 8529, and S.O. (Shop Order) number T0067120016. The label on the gauge indicated that it contained 1200 millicuries of krypton 85. A date of 2/91 was also inscribed on the label. Another label on the gauge stated that the device was distributed under a general license. The label also stated, in part, that dismantling and relocation shall be performed by persons specifically licensed by the NRC or an Agreement State. The gauge was in its mounting frame (C-frame) and did not appear to be damaged. According to the design specifications described in the Certificate of Registration of the device (No. NR-522-D-101-B), the gauge is equipped with a shutter that remains in closed position to shield the source, when there is no power to the unit. The inspector noted that the source opening area was completely covered by the detection unit with less than an inch separation between the source housing and the detection unit. There did not appear to be any risk of radiation exposure to personnel or members of the public because the entire unit appeared to be intact and the source assembly shielded. The inspector photographed the gauge for records.

The Custodian of the warehouse stated that the plant in Washington Township had manufactured plastic sheeting used in garbage bags, and was operational until June 1999, when Alpha Industries decided to close it and sell its equipment. The plant site then became a warehouse to store obsolete equipment from plants owned by Alpha Industries. The Custodian stated that the device was not from Zeta Consumer Products Corporation's plant, but had been brought to the warehouse about two months previously with other obsolete equipment from several other plants that are owned by Alpha Industries. This equipment was to be sold by auction that was held at the plant.

The inspector informed the Custodian that the gauge must remain secured until its owner is identified. The Custodian moved the gauge to a vacant room with a lockable door. He stated that he was the only person at the warehouse who had the key to this room and assured the inspector that the gauge would remain secured until its disposition.

The inspector contacted Ohmart Corporation to obtain information about the ownership of the gauge. The Radiation Safety Officer of Ohmart Corporation informed the inspector that their records indicate that the gauge was shipped to Southeastern Plastics Corporation, 15 Home News Row, New Brunswick, New Jersey, on February 8, 1991, and was installed at its plant by Ohmart personnel on July 1, 1991.

On October 28, 1999, the inspector contacted the Plant Manager of Southeastern Plastics Corporation to inform him that Southeastern Plastics Corporation was identified to be the owner of the gauge. He stated that he was not aware of Ohmart gauge being sent to Washington Township from his plant. He also stated that he was aware of only one gauge, an NDC Model 103, and that gauge was in his storage area.

On November 1, 1999, the inspector visited Southeastern Plastics Corporation's plant in New Brunswick. The Plant Manager informed the inspector that he had located a second NDC Model 103 gauge that was still at its installed location, and had removed it from the installed location to ensure that it remained secure. The first NDC gauge was removed by a former employee of the Licensee, who did not have a specific license to perform this service. The Plant Manager also does not have a specific license to perform this service. He stated that he did not know who removed the Ohmart gauge from its installed location at the plant.

10 CFR 31.5(c)(3) requires, in part, that any person who acquires, receives, possesses or uses byproduct material in a device pursuant to the general license in 10 CFR 31.5(a) assure that removal from installation involving radioactive material, its shielding or containment is performed: (i) in accordance with instructions provided by the labels, or (ii) by persons holding specific license pursuant to parts 30 and 32, or from an Agreement State to perform such activities.

The label on the Ohmart gauge states that device dismantling, or relocation shall be performed by persons specifically licensed by the NRC or an Agreement State.

Failure to have an Ohmart gauge removed from installation by a person specifically licensed to perform such activities is an apparent violation of 10 CFR 31.5(c)(3)

The inspector verified that there were two NDC Model 103 gauges (Serial Numbers 1452 and 1785) in storage in a cabinet in the workshop area of the plant. The inspector noted that the gauges were equipped with spring loaded shutter mechanisms, and the shutters were in closed position when the gauges were taken out from storage by the Plant Manager. However, the shutter on one of these gauges was not functioning properly. It was unclear when the damage to the shutter mechanism occurred. The radiation dose rates at approximately 10 centimeters from the source head were as high as 50 millirem/hour with the shutter open, and were indistinguishable from background when the shutter was closed. The Plant Manager secured the shutter in closed position before returning the gauges to storage cabinet. The Plant Manager stated that the gauges will remain stored in a locked cabinet until they are transferred for disposal.

The Plant Manager stated that during the first week of October 1999, obsolete equipment from storage was sent to the warehouse in Washington Township and it is possible that the Ohmart gauge was among that equipment. He stated that a contractor provides the services of installing and removing equipment at his plant and this contractor also helped in loading the equipment that was shipped to Washington Township. The inspector interviewed the contractor and showed him the photographs of the Ohmart gauge. The contractor stated that he did not remove such a gauge from this plant nor did he see it among the equipment that was sent to Washington Township.

10 CFR 31.5(c)(6) requires that a licensee not abandon the device containing byproduct material.

Allowing the Ohmart gauge, a device that contained 1200 millicuries of krypton 85, to be moved to the Zeta warehouse to disposed of in an auction is an apparent violation of 10 CFR 31.5(c)(6).

The inspector asked the Plant Manager if the required periodic tests of the gauges were performed and requested the records of acquisition, installation, periodic testing, and removal of these gauges. The Plant Manager stated that he was not aware of any testing of these gauges. The only available records were those of results of leak tests of the NDC gauges. The Licensee had no records of acquisition or installation of the Ohmart gauge. The NDC gauge with serial number 1452 was tested for leakage at approximately six-month intervals from October 9, 1987 to June 26, 1992. Similarly, the NDC gauge with serial number 1785 was tested between January 31, 1989 to June 26, 1992. In addition to these records, the Licensee also had records of leak tests of a third NDC Model 103 gauge with serial number 1136. This gauge was tested for leakage from September 22, 1986 to June 26, 1992. The Licensee did not have records of leak tests of any of these gauges after June 26, 1992. The records indicated that none of the gauges were leaking. From these records, it also became apparent that at one time, the Licensee may have possessed three NDC Model 103 gauges.

10 CFR 35.5(c)(2) requires, in part, that proper operation of the on-off mechanism and indicator be tested at no longer than six-month intervals.

Failure to test the on-off mechanism for proper operation at the required frequency is an apparent violation of 10 CFR 35.(c)(2).

10 CFR 31.5(c)(4) requires, in part, that a licensee maintain records showing the dates of performance of, and the names of persons performing installation, removing from the installation radioactive material and its shielding or containment, and of test of on-off mechanism for proper operation.

Failure to maintain records of installation, removal, and tests of on-off mechanism for proper operation, is an apparent violation of 10 CFR 31.5(c)(4) .

The Plant Manager stated that these devices may have been removed from installation in 1992 when the plant discontinued manufacturing the plastic sheeting that required an accurate measurement of thickness. The current manufacturing process does not require the use of any of these gauges.

The Radiation Safety Officer of NDC Systems confirmed that the Licensee acquired three NDC Model 103 gauges. The gauge with serial number 1136 was shipped to the Licensee on March 6, 1986, the gauge with serial number 1452 was shipped to the licensee on March 3, 1987, and the gauge with serial number 1785 was shipped to the Licensee on July 20, 1988.

Failure to locate an NDC Model 103 gauge, serial number 1136, is an apparent violation of 10 CFR 31.5(c)(6).

The RSO of Ohmart informed the inspector that on November 19, 1999, an engineer from Ohmart Corporation arrived at the warehouse to inspect and package the gauge for transfer back to Ohmart Corporation. The engineer did not reported any damage to the gauge or to the source assembly. The same day, the Plant Manager also informed the inspector that the gauge was being shipped to Ohmart Corporation.

On November 19, 1999, the engineer from Ohmart scanned the storage areas of the New Brunswick plant with a high sensitivity radiation detection instrument, but was unable to detect measurable dose rates in the plant that could help locate the missing gauge. The Plant Manager informed the inspector that Southeastern Plastics Corporation is making arrangements with NDC Systems to have the two NDC gauges returned to them for disposal and is continuing to search the plant for the missing NDC gauge. He believes that the missing gauge is still in the plant and efforts are continuing to locate that gauge. As of November 30, 1999, the Licensee had not located the missing NDC gauge (serial number 1136).

c. Conclusions

Four apparent violations of 10 CFR 31.5 were identified. One NDC gauge, serial number 1136, containing 150 millicuries of americium 241 is missing.

**II. Exit Meeting**

The inspector met with the Plant Manager and explained the scope and finding of the inspection.

## PARTIAL LIST OF PERSONS CONTACTED

### Licensee

Carl Buckland, Plant Manager

Dennis Mickalowski, Plant Custodian, Zeta Consumer Products Corporation

Darren Ramirez, Contractor

George W. Brown, Radiation Safety Officer, Ohmart Corporation

Christopher Fitz, Radiation Safety Officer, NDC Systems