

April 25, 2018

U.S. NRC
 Region II Office
 245 Peachtree Center Ave., NE, Suite 1200
 Atlanta, Georgia 30303-1257

RE: Automated Packaging Systems, Inc. – 10 CFR 20.2201 Written Report

U.S. NRC Region II:

On March 28, 2018, Automated Packaging Systems, Inc. (“APS”) contacted the U.S. Nuclear Regulatory Commission (“NRC”) by telephone pursuant to 10 CFR 20.2201(a) to report a potentially missing probe which is subject to a general license as it contains radiological material. In accordance with section 20.2201(b), APS now submits the required written report with the information required by this regulation. APS’ headquarters are located at 10175 Phillipp Parkway

Streetsboro, Ohio, 44241. However, the location at issue for this report of lost material is APS’ facility located at 58 Industrial Lane, Keyser, West Virginia 26726 (the “Keyser Facility”), which APS understands to be within NRC’s Region II.

(1) A description of the licensed material involved, including kind, quantity and chemical and physical form:

APS purchased three probes from NDC Infrared Engineering, Inc. (“NDC”) between the years 1998 and 2001 for use at APS’ production facilities as fixed gages in measuring thickness. Specifically, APS purchased three NDC Probe Model 103 containing regulated material Americium-241 (“Am-241”) and having the following characteristics:

Probe Model	Device S/N	Source Type	Source S/N	Assay Date	RWL (Yrs)	Source Age (Yrs)
103	12922	Am-241	0600CW	12/10/2001	15	16.0
103	12132	Am-241	7122 LQ	6/2/1998	15	19.5
103	12131	Am-241	7199 LQ	10/6/1998	15	19.2

The Am-241 isotope in this Probe Model 103 contain 150.00000 mCi of the material. The specific Am-241 probe at issue in this report is the device with serial number 12131 (hereafter referred to as the Am-241 Probe). The other two fixed gauges, S/N 12922 and 12132 are still maintained and accounted for at the Keyser Facility. All three probes were registered with NRC under a general license with Reference No. GL-657303-19.

Unrelated but in the interest of full disclosure, APS also maintains at its Keyser Facility one additional device not subject to registration. In 1995, APS purchased from NDC this unit with characteristics: Model no. 302, Serial Number 8036 and containing the isotope KR85 and 200.0000 mCi of Krypton-85.

(2) A description of the circumstances under which the loss or theft occurred:

APS maintained three probes at the Keyser Facility, two which were used in the company's process and one maintained as a backup unit. In 2017, management at the Keyser Facility determined to replace one of the units and removed it from the extruder. At or around this time, APS was conducting "Kaizen" or "6 Sigma" exercises at the Keyser Facility through which the Facility went through significant transition.

In December of 2017, NDC sent its annual letter to APS's Streetsboro, Ohio headquarters addressed to the attention of the former manager of the Keyser Facility, who had since retired. The letter was routed to the account payables department, who then scanned the letter and sent it to the Keyser Facility again addressed to the (now retired) manager. After a brief period of time, an individual in the safety department received a copy of the letter and forwarded to the appropriate contact at the Keyser Facility with instructions to respond to NDC providing the information requested in the letter.

In March 2018, the undersigned (Chris Knox, Corporate EH&S Manager for APS) was attending a management meeting at the Keyser Facility. During that visit, I was informed by the leadership team of the Keyser Facility that in addressing the information requested in the NDC letter, it could not locate the third Am-241 Probe. I, along with the Facility's Maintenance Manager and Production Manager, canvassed the entire facility, including the scarp and recycled gaylords, in an effort to locate the Am-241 Probe. Without success, APS then immediately contacted legal counsel and was advised to immediately rent and utilize a Geiger counter in an attempt to locate the missing Am-241 Probe. APS diligently identified a provider of the equipment and made arrangements for rental and shipment to the Keyser Facility as soon as it could. Within days, APS had the equipment at the Keyser Facility.

During the time period when the Geiger counter was being located and shipped, APS' Maintenance Manager contacted the scrap transporter used by APS and inquired whether its facility had a Geiger counter on its scales which would identify radiological material such as Am-241 when scrap was hauled to its location from APS. The scrap transporter did not have a Geiger counter on the scales at its facility, but confirmed that its "re-seller" to whom the transporter sold all of its scrap obtained from APS, did have a Geiger counter on its scales so if the missing Am-241 Probe had been included in scrap transported and sold it would have been identified.

The very day the Geiger counter arrived at the Keyser Facility, APS' Maintenance Manager canvassed the entire facility using the monitor. No signal was identified on the monitor apart from the other two identified Am-241 probes on hand at the Facility. With the canvass not producing the missing Am-241 Probe, APS determined it was now lost and immediately called the NRC and notified of the lost material pursuant to 10 CFR 20.2201.

Subsequent to the NRC notification, APS located one other location where an APS scrap metal material had been transported. APS employees were immediately dispatched to this location, where the scrap metal container still resided, and searched through these scrap metal materials with no success in locating the missing Am-241 Probe.

(3) A statement of the disposition, or probable disposition, of the licensed material involved:

The location of the missing AM-241 Probe is unknown at this time. It is believed with strong corroborating evidence from its investigation that the equipment has left the Keyser Facility. It is also unlikely to be at locations to which scrap metal materials have been shipped by APS, as those also have been investigated. The speculation is that the Am-241 Probe left the Keyser Facility in some fashion during the Kaizen/6S exercises.

(4) Exposure of individuals to radiation, circumstances under which the exposures occurred, and possible total effective dose equivalent to persons in restricted areas: APS has no knowledge, evidence or belief of any exposure to radiation from this missing equipment.

(5) Actions that have been taken, or will be taken, to recover the material:

APS has described the actions taken to locate the material in section (2) above, including its efforts in investigating and canvassing the Keyser Facility with monitoring equipment and its communication and investigation with two sites for disposition of scrap metal materials.

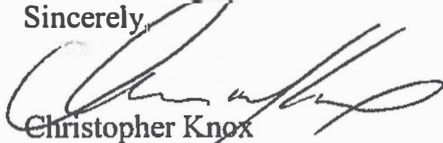
(6) Procedures or measures that have been, or will be, adopted to ensure against a recurrence of the loss or theft of licensed material:

Since being made aware of this situation, APS has diligently engaged in efforts to improve its radiation safety policies and procedures. The appropriate style and type of storage container for the Am-241 probes has been obtained and supplied to the Keyser Facility. A new and more secure location at the Keyser Facility was identified to maintain the spare probe. APS has purchased proper labels regarding the equipment which have been installed in all appropriate areas. APS engaged a qualified third party to draft a formal Radiation Safety Policies and Procedures manual and had it further customized to the Keyser Facility.

APS has engaged Perma-Fix Environmental Services as a consultant to provide radiological support services to the APS facilities. Perma-Fix will service, test and maintain all radiological equipment maintained at the Keyser Facility, and APS has arranged for this process to immediately begin. Finally, APS is engaged in efforts to replace all the radiological devices at the Keyser Facility with non-radiological instruments, and should APS be successful in this process it will transfer all remaining Am-241 probes in accordance with NRC regulations.

APS appreciates the cooperation and guidance from NRC during this process of notification, inspection, remediation and reporting of the missing equipment. If any additional information is needed please do not hesitate to contact the undersigned.

Sincerely,



Christopher Knox
Corporate EH&S Manager
Automated Packaging Services, Inc.

cc: Leonardo Wardrobe

bcc: Christopher Jones, Esq.