



January 3, 2018

Reference: License #26-18033-01E

Attention: Traci Kime / Anthony Kirkwood  
Nuclear Material Safety and Safeguards  
US Nuclear Regulatory Commission  
Washington, DC 20555-0001

Subject: Annual Report of Byproduct Material Transfer

This report is required per VISHAY's license with the USNRC and the State of Nebraska per Section 32.16, 10 CFR Part 32. Certain models of plasma display/ tubes manufactured at the Columbus site contain Kr-85. It is a controlled byproduct material. Kr-85 is the only radio nuclide transferred. Kr-85 gas concentrations used are 5.0, 3.0, 2.5, 1.0 and 0.1 mCi per liter.

The US NRC allows VISHAY to sell / transfer product for use under Section 30.15, paragraph 8, IV, 10 CFR Part 30 pertaining to maximum allowed Kr-85 in a single electron tube. The State of Nebraska also requires the material be transferred in accordance with the provisions of 10 NAC 13.

The USNRC requires a breakdown per product type, pieces shipped, and amount of radio nuclide in each product type. The report summarizes the transfer of product from January 1, 2017 to December 31, 2017.

<u>Type of Device</u>	<u># of Devices Shipped</u>	<u>Total Quantity Kr-85 Shipped</u>
<b>Plasma Units</b>	<b>6,785 pcs</b>	<b>4,279 uCi</b>

Please see the attached spreadsheet for a breakdown of transferred byproduct material per each VISHAY part number.

Sincerely,

Dave Wolfe  
RSO / Sr. Process Engineer  
VISHAY Dale Electronics

CC: Keith Raysby, Don Groninger, Valerie Paul, Chad Christiansen, James Ryba  
Dave Holmgren, Bill Fetterley, CJ Swantek, Don McLaughlin, Tom Bertsch

Vishay Dale Electronics, Incorporated

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MANUFACTURER OF THE WORLD'S BROADEST LINE OF DISCRETE SEMICONDUCTORS AND PASSIVE COMPONENTS

**VISHAY Dale Electronics LLC**

**By Product Material Transfer Report for Year 2017**

USNRC License # 26-18033-01E

State of Nebraska License #10-02-01

<b>2017 Total</b>	<b>Reported 01-2018</b>	<b>Micro Curies</b>	<b>KR-85 Product Types Active in 2017</b>
<b>Display Type</b>	<b># Shipped</b>	<b>Radiation / Display</b>	<b>Radiation / Type ( uCi )</b>
A/PBG-12205,-1-5	423	1.19	503.37
APD-192G096B	199	0.372	74.028
APD-160G040-1	45	0.94	42.3
PD-04D025-3	90	0.3025	27.225
PD-08D023-8	127	0.49	62.23
PD-08D025-17	2	0.42	0.84
PD-08D025-21	90	0.3025	27.225
PD-09D025-1	49	0.41	20.09
PD-09D025-3	90	0.3113	28.017
PD-10D023-9	20	0.553	11.06
PD-10D023-13	3,164	0.553	1749.692
PD-10D025-10	106	0.58	61.48
PD-10D025-13	90	0.3025	27.225
PD-12D023-1	324	0.553	179.172
PD-13D025-1	16	1.124	17.984
PD-14D025-5	300	0.667	200.1
PD-20D025-5	527	0.8	421.6
PD-20D025-7	46	0.65	29.9
PD-50D023-4,-5	499	0.93	464.07
PD-133B011-1	195	0.515	100.425
PD-140B011-1	238	0.607	144.466
PD-171B082-1	125	0.505	63.125
PD-171B082-2	20	1.15	23
<b>TOTAL DISPLAYS</b>	<b>6785</b>	<b>TOTAL RADIATION</b>	<b>4278.624</b>
<b>AVERAGE</b>	<b>RADIATION</b>	<b>PER UNIT</b>	<b>0.630600442</b>