

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 30-9639/83-01(DRMSP)

Docket No. 030-09639

License No. 12-03231-03 (Expired)

Licensee: Luminous Processes, Inc.  
801 Clinton Street  
Ottawa, IL 61350

Facility Name: Luminous Processes, Inc.

Inspection At: Ottawa, Illinois Facility

Inspection Conducted: May 25, 1983

Inspectors: *A. G. Januska*  
A. G. Januska

6/14/83

*G. M. McCann*  
G. M. McCann

6/17/83

Approved By: *M. C. Schumacher*  
M. C. Schumacher, Chief  
Independent Measurements and  
Environmental Protection Section

6/14/83

Inspection Summary

Inspection on May 25, 1983 (Report No. 30-9639/83-01(DRMSP))

Areas Inspected: Nonroutine inspection of seven pieces of equipment, formerly used in the facility. Five items, having been decontaminated, were surveyed for removable tritium contamination in anticipation of release for unrestricted use. Two air compressors were also surveyed for tritium to determine base line activity levels prior to decontamination. The inspection involved 6 inspector-hours onsite by 2 NRC inspectors.

Results: Results reported in Table 1 prohibit unconditional release of the five screening machines for unrestricted use in the absence of a safety evaluation.

## DETAILS

### 1. Persons Contacted

M. Neuweg, State of Illinois, Nuclear Safety  
P. Eastvold, State of Illinois, Nuclear Safety  
R. Mencarelli, Valley Nuclear, Inc.  
D. Berglund, Valley Nuclear, Inc.

### 2. Survey

Ten smears on each of five Autoroll Rotoflex 20 Screening Machines were taken in order to quantify the amount of removable tritium activity remaining after decontamination. Replication of the location smeared and the size of the area smeared on each machine (Attachment 1) was attempted for consistency between the machines. Two air compressors, which had not been decontaminated were also smeared to establish a base line for comparison after decontamination. The smears were put into liquid scintillator bottles containing distilled water for transportation to the Region III laboratory where a gel solution was added to each vial. The smears were counted in a liquid scintillation counter along with standards for the smear geometry. Results, normalized to 100 cm<sup>2</sup>, reported in Table 1, indicate that none of the screening machines meet the applicable limit for removable beta-gamma emitters (1000 d/m/100 cm<sup>2</sup>) specified in the "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source or Special Nuclear Material" (July 1982 Revision).

### 3. Exit Interview

B. Mallett, M. Schumacher and A. Januska of Region III discussed the survey results with M. Neuweg by telephone on May 27, 1983. It was agreed that the machines could not be unconditionally released for unrestricted use without a safety evaluation. Mr. Neuweg stated that his office would prepare an evaluation of the hazard present based on the activity remaining on the machines, and the conditions to be imposed on and agreed to by prospective buyers of these machines.

#### Enclosures:

1. Attachment 1, Legend
2. Table 1, Tritium Smear Results

LUMINOUS PROCESSES, INC.

LEGEND

<u>NRC #</u>	<u>Description</u>	<u>State #</u>
1	Rotary Top Table	3
2	Roller Housing	19
3	Top Horizontal Surface (General)	4 + 20
4	Inner Drive Motor	11
5	Inner Drive Assembly (General)	
6	Clean Up Assembly	10 (Partial)
7	Internal Horizontals (General)	
8	Electrical Panel (Internals)	
9	Vacuum Pump (Rear)	
10	Outer Vertical (General)	6 + 7 + 9 (Partial)
11	Compressor Motor	
12	Compressor Breather	
13	Compressor Motor Base	
14	Compressor Tank	

Tritium Smear Results (d/m/100 cm<sup>2</sup>)

Location No.	Auto Roll SN 40000	Auto Roll SN 40157	Auto Roll SN 43856	Auto Roll SN 43860	Auto Roll SN 43961	Compressor w/o Breather	Compressor w Breather
1	2400	5000	2100	58000	8800	---	---
2	740	2200	6700	9300	5500	---	---
3	1400	3400	2300	31000	1800	---	---
4	2200	2500	3800	34000	37000	---	---
5	7900	9500	2900	30000	13000	---	---
6	6700	7500	550	3100	3800	---	---
7	2800	3000	6300	30000	11000	---	---
8	6200	8100	13000	34000	8400	---	---
9	3100	20000	32000	2900	1800	---	---
10	930	660	3200	5200	830	---	---
11	---	---	---	---	---	2100	13000
12	---	---	---	---	---	6800	4000
13	---	---	---	---	---	3300	2100
14	---	---	---	---	---	1500	1200

Table 1