

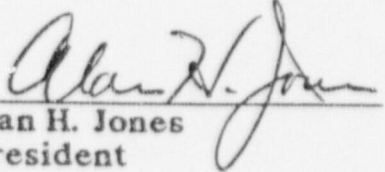
REPORT OF FINAL SURVEY  
OF  
27 MCKEE DRIVE, MAHWAH, NEW JERSEY  
COSERV DIVISION  
SEIKO CORPORATION OF AMERICA

by: SCT Services, Inc.  
171 Traver Road  
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Survey Dates: January 13-15 1997  
January 23, 1997

Report Date: February 7, 1997

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## INTRODUCTION

On January 23, 1997 a final contamination survey was completed of the former facility of Seiko Corporation of America's Coserv Division, located at 27 McKee Drive, Mahwah, New Jersey. All licensed operations involving radioactive material ceased at that location on December 13, 1996. According to Seiko Corporation personnel, all radioactive material and the equipment and furniture involved in the handling of radioactive material were transferred to the corporation's licensed facility at 1111 Macarthur Boulevard, Mahwah shortly thereafter. The McKee Drive facility remains under the control of Seiko Corporation of America and is unoccupied.

The areas included in the survey were those where radioactive was used pursuant to the USNRC radioactive materials license issued to Seiko Corporation of America. Licensed operations consisted of the disassembly, repair and reassembly of timepieces containing promethium-147 ( $\text{Pm}^{147}$ ). There was no direct handling of radioactive material, such as the painting or refinishing of dials/bezels or hands.

## DESCRIPTION OF FACILITY

The former Coserv facility at 27 McKee Drive occupies approximately one-third of a large one-story, cement-block commercial building. Within the facility there were three areas where radioactive timepieces were either disassembled and repaired or where disassembled radioactive timepieces or timepiece parts were handled and/or stored. These were the Repair Department, the Material Room and the dials and hands storage area of the Materials Warehouse. The three areas have painted walls and inlaid vinyl tile flooring, except for the customer service window area, where there is inlaid carpeting.

## SURVEY PROCEDURE

The floor in the Repair Department, Material Room and dial/hands storage area was gridded at three foot intervals and marked (Figures 1, 2 & 3). A 100% beta-gamma scan was performed at approximately one centimeter from the floor surface, moving at a pace of approximately one detector width per second. Locations found with radiation levels that were audibly discernable over ambient background were investigated and, if verified, marked for direct measurement.

Direct surface activity measurements were made at each point of elevated activity noted during the scan. In addition, direct beta-gamma surface activity measurements were made on the floor at three foot grid intersections in locations within the Repair Department and the Material Warehouse where radioactive parts were handled. Direct beta-gamma measurements were also made on all other floor areas using a six foot grid pattern. Additional direct beta-gamma measurements were made on certain other surfaces, such the sink and wall behind the sink and counter-tops.

Wipe samples were taken at each point of direct beta-gamma measurement. In addition, wipe or cotton swab samples were taken of the sink, sink trap, drain lines, safe, walls and window sills. Refer to Table 1 for information on the survey and sample analysis equipment used and detector sensitivity calculations.

## SURVEY RESULTS

The beta-gamma surface scan revealed nine locations with elevated radioactivity levels in the Repair Department and four in the dial/hands storage area of the Material Warehouse. Refer to Table 2, sample points a - m.

The results of the direct beta-gamma measurements (Table 2) at the sample points found during the floor scan, at floor survey grid intersections and on other surfaces show total beta-gamma activity to be below the guideline value of 5,000 dpm/100 cm<sup>2</sup>. The maximum beta-gamma activity found on any surface was 3,510 dpm/100 cm<sup>2</sup> at floor grid point 17,K, in the Repair Department.

The results of the wipe survey (Table 2) show removable beta-gamma contamination on surfaces to be below the guideline value of 1,000 dpm/100 cm<sup>2</sup>.

The radiation levels resulting from the beta-gamma surface contamination were found to be less than 0.2 mrad/hr at 1 cm, measured through a total absorber of less than 7 mg/cm<sup>2</sup>.

## CONCLUSION

The above survey results show surface contamination at the facility to be below the values contained in the US Nuclear Regulatory Commission's *Guidelines For Decontamination of Facilities and Equipment Prior To Release For Unrestricted Use or Termination of Licenses For Byproduct, Source or Special Nuclear Material*, dated April 1993. The facility therefore meets the requirements for release for unrestricted use.

\* \* \*



FIGURE 1

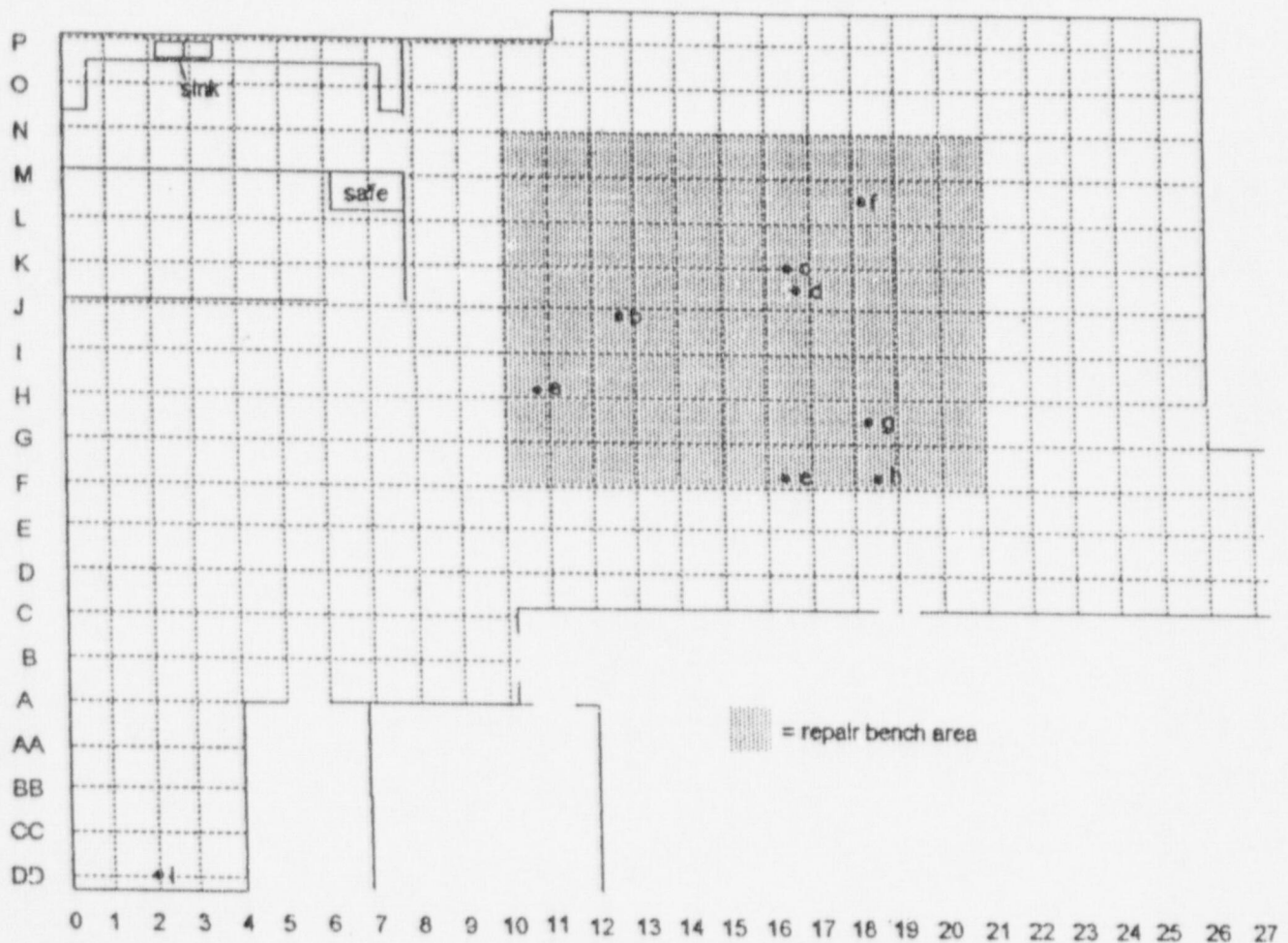
DIAGRAM OF SURVEYED AREA

Facility: Seiko Corporation of America, Coserv Division

27 McKee Drive, Mahwah, NJ

Survey Location: Repair Department

Type of Survey: Final



Scale: 1" = 13'

Grid: 3' x 3'

Sample Points: a,b,c...



FIGURE 2

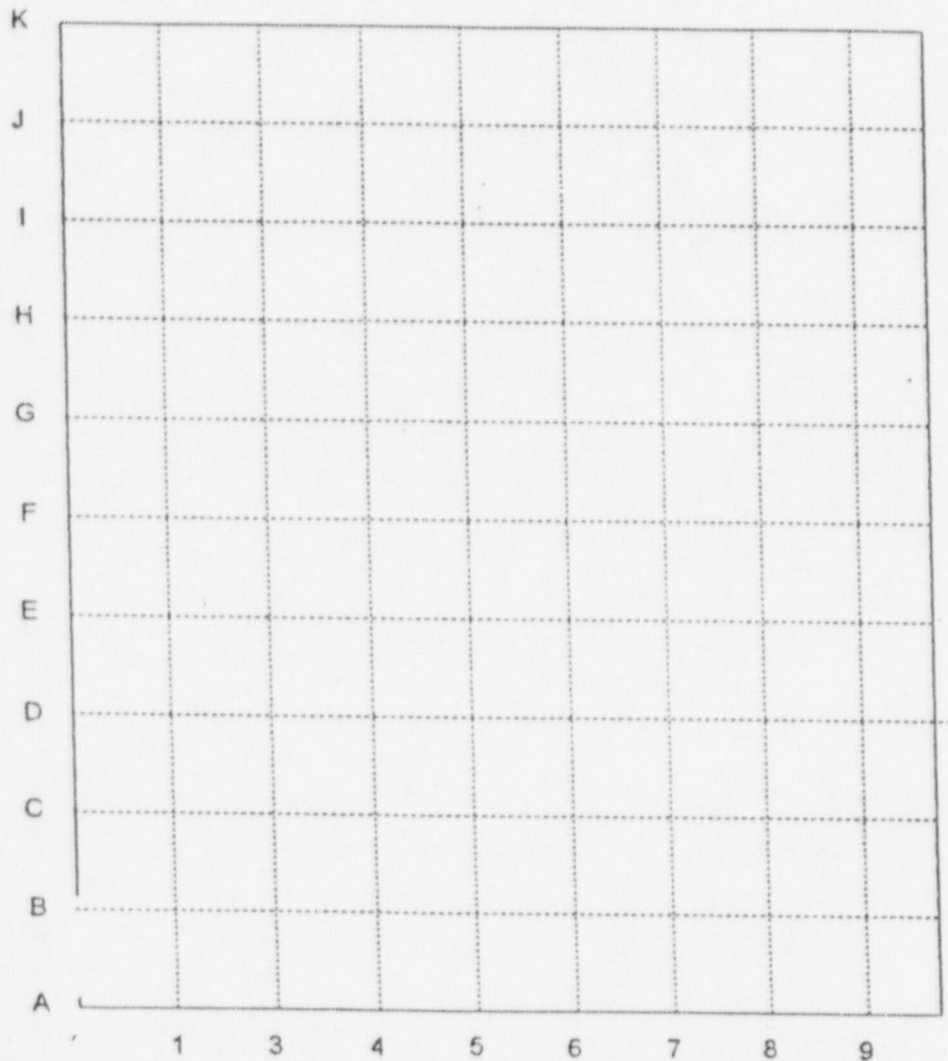
DIAGRAM OF SURVEYED AREA

Facility: Seiko Corporation of America, Coserv Division

27 McKee Drive, Mahwah, NJ

Survey Location: Material Room

Type of Survey: Final



Scale: 1" = 6'

Grid: 3' x 3'

Sample Points: a,b,c...

FIGURE 3

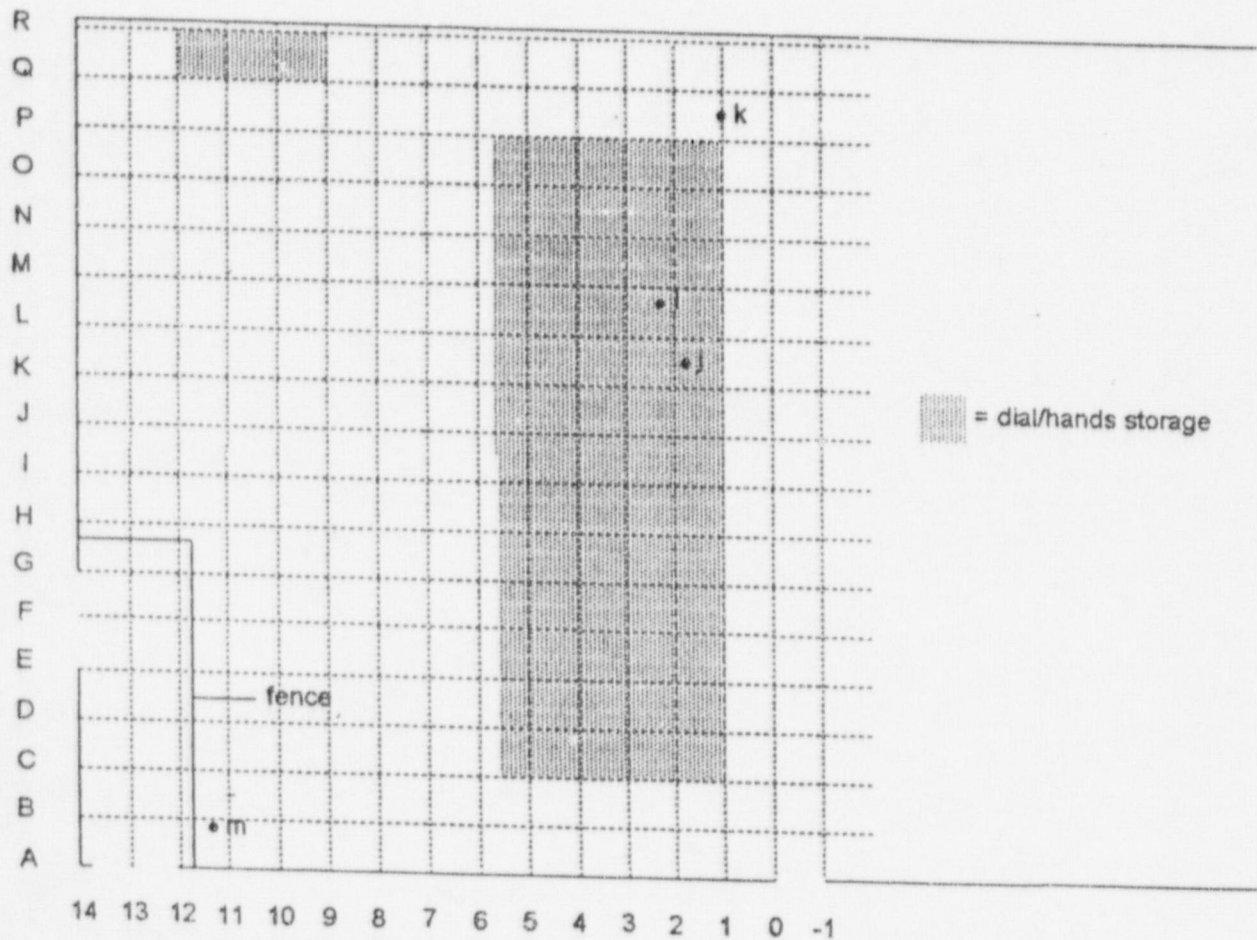
DIAGRAM OF SURVEYED AREA

Facility: Seiko Corporation of America, Coserv Division

27 McKee Drive, Mahwah, NJ

Survey Location: Dials/Hands Storage Area of Material Warehouse

Type of Survey: Final



Scale: 1" = 12'

Grid: 3' x 3'

Sample Points: a,b,c...

### TABLE 1

#### INSTRUMENTATION

Use <sup>1</sup>	Detector	Meter	Bkgd (cpm) <sup>2</sup>	4 $\pi$ Eff (%) <sup>2</sup>	Detection Sensitivity <sup>3</sup>	Standard Used <sup>4</sup>
A	GM pancake cluster Ludlum model 44-94	Ratemeter <sup>5</sup> Ludlum mod. 14C-	140	10	3,922 dpm/100 cm <sup>2</sup>	Pm-147
B	GM pancake cluster Ludlum model 44-94	Digital scaler <sup>6</sup> Ludlum mod. 2200	140	10	1,323 dpm/100 cm <sup>2</sup>	Pm-147
C	GM end-window detector Ludlum mod. 44-7 & mod. 180-4 holder	Digital scaler <sup>6</sup> Ludlum mod. 2200	30	8	336.7 dpm/100 cm <sup>2</sup>	Pm-147

- 1 Use: A - beta-gamma surface scan  
B - beta-gamma surface activity  
C - beta-gamma wipe/swab sample analysis
- 2 Nominal value
- 3 As measured (see below for MDA equations used)
- 4 NIST traceable
- 5 Audible response
- 6 1 minute integrated count

MDA EQUATIONS:

Scanning:

$$MDA = \frac{ADI}{E \times \frac{A}{100}}$$

### Direct Measurements:

$$MDA = \frac{2.71 + 4.65 \sqrt{B_R \times t}}{t \times E \times \frac{A}{100}}$$

### Wipe/swab Sample Analysis:

$$MDA = \frac{2.71 + 4.65 \sqrt{B_R \times t}}{t \times E}$$

Where:

- MDA = activity level in dpm/100 cm<sup>2</sup>  
ADI = audibly discernable increase in count rate (based on field evaluations, a value of 200 was used)  
B<sub>R</sub> = background count rate in cpm  
E = detector efficiency in counts/disintegration  
A = active probe area in cm<sup>2</sup>:  
                detector A = 50  
                detector B = 50  
t = counting time in minutes



TABLE 2

## SURFACE ACTIVITY MEASUREMENTS

Sample Point <sup>(1)</sup>	Grid Position	Total Beta-Gamma Activity <sup>(2)</sup> dpm/100 cm <sup>2</sup>	Removable Beta-Gamma Activity <sup>(2)</sup>	
			net cpm	dpm/100 cm <sup>2</sup>
Repair Department:				
a	10.8,H.1	<1,323	0	<336.7
b	12.7,J.9	2,005 ± 855	8	<336.7
c	16.5,K	3,113 ± 905	3	<336.7
d	16.7,J.5	3,029 ± 902	0	<336.7
e	16.4,F.3	<1,323	0	<336.7
f	18.2,L.6	2,507 ± 878	5	<336.7
g	18.3,G.6	<1,323	3	<336.7
h	18.6,F.3	1,441 ± 797	0	<336.7
i	2.0,DD	2,674 ± 857	0	<336.7
	10,E	<1,323	0	<336.7
	10,F	<1,323	8	<336.7
	10,G	<1,323	0	<336.7
	10,H	<1,323	0	<336.7
	10,I	<1,323	6	<336.7
	10,J	1,629 ± 807	6	<336.7
	10,K	<1,323	0	<336.7
	10,L	<1,323	12	<336.7
	10,M	<1,323	13	<336.7
	10,N	<1,323	3	<336.7
	10,O	<1,323	0	<336.7
	11,O	<1,323	4	<336.7
	11,N	<1,323	0	<336.7
	11,M	<1,323	0	<336.7
	11,L	<1,323	1	<336.7
	11,K	<1,323	8	<336.7
	11,J	<1,323	0	<336.7
	11,I	<1,323	2	<336.7
	11,H	<1,323	0	<336.7
	11,G	<1,323	3	<336.7
	11,F	<1,323	1	<336.7
	11,E	<1,323	2	<336.7
	12,E	<1,323	0	<336.7
	12,F	<1,323	0	<336.7
	12,G	<1,323	0	<336.7
	12,H	<1,323	2	<336.7
	12,I	<1,323	0	<336.7
	12,J	<1,323	1	<336.7
	12,K	<1,323	0	<336.7
	12,L	<1,323	0	<336.7
	12,M	<1,323	0	<336.7
	12,N	<1,323	0	<336.7
	12,O	<1,323	0	<336.7
	13,O	<1,323	0	<336.7
	13,N	<1,323	6	<336.7
	13,M	<1,323	12	<336.7
	13,L	<1,323	0	<336.7

(1) Sample points @ 3' x 3' or 6' x 6' grid intersections except as noted

(2) Uncertainties represent 95% confidence limits

TABLE 2 (cont'd)

Sample Point <sup>(1)</sup>	Grid Position	Total Beta-Gamma Activity <sup>(2)</sup> dpm/100 cm <sup>2</sup>	Removable Beta-Gamma Activity <sup>(2)</sup>	
			net cpm	dpm/100 cm <sup>2</sup>
	13,K	<1,323	7	<336.7
	13,J	<1,323	0	<336.7
	13,I	<1,323	3	<336.7
	13,H	<1,323	11	<336.7
	13,G	<1,323	0	<336.7
	13,F	<1,323	6	<336.7
	13,E	<1,323	4	<336.7
	14,E	<1,323	0	<336.7
	14,F	<1,323	2	<336.7
	14,G	<1,323	7	<336.7
	14,H	<1,323	0	<336.7
	14,I	<1,323	6	<336.7
	14,J	<1,323	0	<336.7
	14,K	<1,323	0	<336.7
	14,L	1,713 ± 811	5	<336.7
	14,M	1,337 ± 792	0	<336.7
	14,N	<1,323	3	<336.7
	14,O	<1,323	0	<336.7
	15,O	<1,323	0	<336.7
	15,N	<1,323	0	<336.7
	15,M	<1,323	0	<336.7
	15,L	<1,323	0	<336.7
	15,K	<1,323	22	<336.7
	15,J	<1,323	0	<336.7
	15,I	<1,323	0	<336.7
	15,H	<1,323	8	<336.7
	15,G	<1,323	7	<336.7
	15,F	<1,323	0	<336.7
	15,E	<1,323	2	<336.7
	16,E	<1,323	6	<336.7
	16,F	<1,323	1	<336.7
	16,G	<1,323	6	<336.7
	16,H	<1,323	0	<336.7
	16,I	<1,323	4	<336.7
	16,J	<1,323	1	<336.7
	16,K	<1,323	0	<336.7
	16,L	<1,323	11	<336.7
	16,M	<1,323	0	<336.7
	16,N	<1,323	0	<336.7
	16,O	<1,323	11	<336.7
	17,O	1,358 ± 824	0	<336.7
	17,N	<1,323	0	<336.7
	17,M	<1,323	0	<336.7
	17,L	<1,323	1	<336.7
	17,K	3,510 ± 895	0	<336.7
	17,J	<1,323	0	<336.7
	17,I	<1,323	11	<336.7
	17,H	<1,323	0	<336.7
	17,G	<1,323	2	<336.7
	17,F	<1,323	7	<336.7

(1) Sample points @ 3' x 3' or 6' x 6' grid intersections except as noted

(2) Uncertainties represent 95% confidence limits

TABLE 2 (cont'd)

Sample Point <sup>(1)</sup>	Grid Position	Total Beta-Gamma Activity <sup>(2)</sup> dpm/100 cm <sup>2</sup>	Removable Beta-Gamma Activity <sup>(2)</sup>	
			net cpm	dpm/100 cm <sup>2</sup>
	17,E	<1,323	0	<336.7
	18,E	<1,323	0	<336.7
	18,F	<1,323	5	<336.7
	18,G	<1,323	6	<336.7
	18,H	<1,323	0	<336.7
	18,I	<1,323	0	<336.7
	18,J	1,441 ± 797	0	<336.7
	18,K	<1,323	4	<336.7
	18,L	1,379 ± 794	9	<336.7
	18,M	<1,323	6	<336.7
	18,N	1,483 ± 799	0	<336.7
	18,O	<1,323	9	<336.7
	19,O	<1,323	2	<336.7
	19,N	1,358 ± 793	22	<336.7
	19,M	<1,323	4	<336.7
	19,L	<1,323	0	<336.7
	19,K	<1,323	0	<336.7
	19,J	<1,323	8	<336.7
	19,I	<1,323	8	<336.7
	19,H	<1,323	8	<336.7
	19,G	<1,323	6	<336.7
	19,F	<1,323	2	<336.7
	19,E	<1,323	7	<336.7
	20,E	<1,323	0	<336.7
	20,F	2,047 ± 827	0	<336.7
	20,G	<1,323	1	<336.7
	20,H	1,713 ± 811	4	<336.7
	20,I	1,462 ± 798	0	<336.7
	20,J	<1,323	1	<336.7
	20,K	<1,323	0	<336.7
	20,L	1,567 ± 803	9	<336.7
	20,M	<1,323	1	<336.7
	20,N	<1,323	0	<336.7
	20,O	<1,323	8	<336.7
	21,O	<1,323	0	<336.7
	21,N	<1,323	0	<336.7
	21,M	<1,323	0	<336.7
	21,L	<1,323	0	<336.7
	21,K	<1,323	0	<336.7
	21,J	<1,323	2	<336.7
	21,I	1,922 ± 821	0	<336.7
	21,H	<1,323	0	<336.7
	21,G	<1,323	0	<336.7
	21,F	<1,323	0	<336.7
	21,E	<1,323	0	<336.7
	22,E	<1,323	0	<336.7
	22,F	<1,323	0	<336.7
	22,G	<1,323	0	<336.7
	22,H	<1,323	0	<336.7
	22,I	<1,323	0	<336.7

(1) Sample points @ 3' x 3' or 6' x 6' grid intersections except as noted

(2) Uncertainties represent 95% confidence limits



TABLE 2 (cont'd)

Sample Point <sup>(1)</sup>	Grid Position	Total Beta-Gamma Activity <sup>(2)</sup> dpm/100 cm <sup>2</sup>	Removable Beta-Gamma Activity <sup>(2)</sup>	
			net cpm	dpm/100 cm <sup>2</sup>
	22,J	<1,323	0	<336.7
	22,K	<1,323	0	<336.7
	22,L	<1,323	3	<336.7
	22,M	<1,323	0	<336.7
	22,N	<1,323	0	<336.7
	22,O	<1,323	0	<336.7
	24,P	<1,323	0	<336.7
	24,N	<1,323	0	<336.7
	24,L	<1,323	0	<336.7
	24,J	<1,323	0	<336.7
	24,H	<1,323	0	<336.7
	24,F	<1,323	0	<336.7
	24,D	<1,323	0	<336.7
	26,E	<1,323	0	<336.7
	26,G	<1,323	0	<336.7
	26,I	<1,323	0	<336.7
	26,K	<1,323	0	<336.7
	26,M	<1,323	0	<336.7
	26,O	<1,323	0	<336.7
	26,P.7	<1,323	0	<336.7
	25,P.7	<1,323	0	<336.7
	23,P.7	<1,323	0	<336.7
	21,P.7	<1,323	0	<336.7
	19,P.7	<1,323	0	<336.7
	17,P.7	<1,323	0	<336.7
	15,P.7	<1,323	0	<336.7
	13,P.7	<1,323	8	<336.7
	11.1,P.7	<1,323	0	<336.7
	9,P	<1,323	0	<336.7
	8,N	<1,323	0	<336.7
	8,L	<1,323	0	<336.7
	8,J	<1,323	0	<336.7
	8,H	<1,323	0	<336.7
	8,F	<1,323	0	<336.7
	8,D	<1,323	0	<336.7
	8,B	<1,323	0	<336.7
	6,A	<1,323	0	<336.7
	6,C	<1,323	5	<336.7
	6,E	<1,323	0	<336.7
	6,G	<1,323	0	<336.7
	6,I	<1,323	0	<336.7
	6,K	<1,323	0	<336.7
	6,M	<1,323	9	<336.7
	4,L	<1,323	0	<336.7
	4,J	<1,323	0	<336.7
	4,H	<1,323	0	<336.7
	4,F	<1,323	6	<336.7
	4,D	<1,323	0	<336.7
	4,B	<1,323	0	<336.7
	2,A	<1,323	0	<336.7

(1) Sample points @ 3' x 3' or 6' x 6' grid intersections except as noted

(2) Uncertainties represent 95% confidence limits

TABLE 2 (cont'd)

Sample Point <sup>(1)</sup>	Grid Position	Total Beta-Gamma Activity <sup>(2)</sup> dpm/100 cm <sup>2</sup>	Removable Beta-Gamma Activity <sup>(2)</sup>	
			net cpm	dpm/100 cm <sup>2</sup>
	2,C	<1,323	0	<336.7
	2,E	<1,323	0	<336.7
	2,G	<1,323	0	<336.7
	2,I	<1,323	0	<336.7
	2,K	<1,323	0	<336.7
	2,M	<1,323	0	<336.7
	0,L	<1,323	0	<336.7
	0,J	<1,323	0	<336.7
	0,H	<1,323	0	<336.7
	0,F	<1,323	1	<336.7
	0,D	<1,323	0	<336.7
	0,B	1,337 ± 792	0	<336.7
	1,AA	2,737 ± 860	2	<335.7
	.8,CC.3	2,695 ± 858	0	<336.7
	.5,CC.7	1,671 ± 809	1	<336.7
	3,CC.7	1,880 ± 819	4	<336.7
	3,AA	1,629 ± 806	0	<336.7
	2,BB.3	1,504 ± 800	0	<336.7
	10.5,B	2,277 ± 838	0	<336.7
	11.5,B	<1,323	0	<336.7
	8.3,CC.3	2,256 ± 837	0	<336.7
	12,D	<1,323	0	<336.7
	14,C.3	<1,323	0	<336.7
	16,D	<1,323	0	<336.7
	18,D	<1,323	0	<336.7
	19,C	<1,323	0	<336.7
	20,D	<1,323	1	<336.7
	22,D	<1,323	0	<336.7
	24,D	<1,323	0	<336.7
	28,E	<1,323	0	<336.7
	30,E	<1,323	0	<336.7
	6,N	<1,323	0	<336.7
	6,O	<1,323	0	<336.7
	4,O	<1,323	0	<336.7
	4,N	<1,323	0	<336.7
	2,O	<1,323	0	<336.7
	2,N	<1,323	0	<336.7
	0,N	<1,323	0	<336.7
	left sink	1,985 ± 854	0	<336.7
	right sink	<1,323	0	<336.7
	lft.perm. strainer <sup>(3)</sup>	-	0	<336.7
	rt. perm. strainer <sup>(3)</sup>	-	0	<336.7
	sink trap <sup>(3)</sup>	-	0	<336.7
	sink drain line <sup>(3)</sup>	-	0	<336.7
	line to sewer <sup>(3)</sup>	-	0	<336.7
	counter-top @ sink	<1,323	0	<336.7
	wall behind sink	<1,323	0	<336.7
	west counter-top	<1,323	0	<336.7
	north counter-top	<1,323	0	<336.7

(1) Sample points at 3' x 3' or 6' x 6' grid intersections except as noted

(2) Uncertainties represent 95% confidence limits

(3) by cotton swab

TABLE 2 (cont'd)

Sample Point <sup>(1)</sup>	Grid Position	Total Beta-Gamma Activity <sup>(2)</sup> dpm/100 cm <sup>2</sup>	Removable Beta-Gamma Activity <sup>(2)</sup>	
			net cpm	dpm/100 cm <sup>2</sup>
west wall @ P		-	0	<336.7
north wall @ J		-	0	<336.7
north passthrough		-	0	<336.7
east window sill @ 16		-	3	<336.7
south window sill @ E		-	0	<336.7
safe - bottom shelf		-	0	<336.7
			0	<336.7
<u>Material Room:</u>				
	1,B	<1,323	0	<336.7
	1,D	<1,323	2	<336.7
	1,F	<1,323	0	<336.7
	1,H	<1,323	0	<336.7
	1,J	<1,323	3	<336.7
	3,K	<1,323	0	<336.7
	3,I	<1,323	0	<336.7
	3,G	<1,323	2	<336.7
	3,E	<1,323	0	<336.7
	3,C	<1,323	0	<336.7
	3,A	<1,323	0	<336.7
	5,B	<1,323	0	<336.7
	5,D	<1,323	0	<336.7
	5,F	<1,323	0	<336.7
	5,H	<1,323	0	<336.7
	5,J	<1,323	0	<336.7
	7,K	<1,323	0	<336.7
	7,I	<1,323	0	<336.7
	7,G	<1,323	0	<336.7
	7,E	<1,323	2	<336.7
	7,C	<1,323	0	<336.7
	7,A	<1,323	0	<336.7
	9,B	<1,323	0	<336.7
	9,D	<1,323	0	<336.7
	9,F	<1,323	0	<336.7
	9,H	<1,323	0	<336.7
	9,J	<1,323	0	<336.7
west wall @ 1		-	0	<336.7
north passthrough		-	0	<336.7
top of vacuum box		-	0	<336.7
east wall @ 7		-	0	<336.7
south window sill		-	0	<336.7
<u>Dials/Hands Storage:</u>				
j	1.7,K.5	2,987 ± 900	0	<336.7
k	1.0,P.5	<1,323	19	<336.7
l	2.3,L.7	<1,323	0	<336.7
m	11.4,A.8	<1,323	2	<336.7
	0,B	<1,323	0	<336.7

(1) Sample points at 3' x 3' or 6' x 6' grid intersections except as noted

(2) Uncertainties represent 95% confidence limits



TABLE 2 (cont'd)

Sample Point <sup>(1)</sup>	Grid Position	Total Beta-Gamma Activity <sup>(2)</sup> dpm/100 cm <sup>2</sup>	Removable Beta-Gamma Activity <sup>(2)</sup>	
			net cpm	dpm/100 cm <sup>2</sup>
	0,C	<1,323	0	<336.7
	0,D	<1,323	6	<336.7
	0,E	<1,323	0	<336.7
	0,F	<1,323	6	<336.7
	0,G	<1,323	0	<336.7
	0,H	<1,323	0	<336.7
	0,I	<1,323	0	<336.7
	0,J	<1,323	0	<336.7
	0,K	<1,323	0	<336.7
	0,L	<1,323	0	<336.7
	0,M	<1,323	0	<336.7
	0,N	<1,323	0	<336.7
	0,O	<1,323	0	<336.7
	0,P	<1,323	0	<336.7
	0,Q	1,504 ± 831	0	<336.7
	1,Q	<1,323	0	<336.7
	1,P	<1,323	0	<336.7
	1,O	<1,323	0	<336.7
	1,N	<1,323	0	<336.7
	1,M	<1,323	3	<336.7
	1,L	<1,323	0	<336.7
	1,K	<1,323	0	<336.7
	1,J	<1,323	0	<336.7
	1,I	<1,323	0	<336.7
	1,H	<1,323	0	<336.7
	1,G	<1,323	0	<336.7
	1,F	<1,323	0	<336.7
	1,E	<1,323	0	<336.7
	1,D	<1,323	0	<336.7
	1,C	<1,323	0	<336.7
	1,B	<1,323	0	<336.7
	2,B	<1,323	0	<336.7
	2,C	<1,323	0	<336.7
	2,D	<1,323	0	<336.7
	2,E	<1,323	0	<336.7
	2,F	<1,323	0	<336.7
	2,G	<1,323	2	<336.7
	2,H	<1,323	0	<336.7
	2,I	<1,323	0	<336.7
	2,J	<1,323	0	<336.7
	2,K	<1,323	0	<336.7
	2,L	<1,323	0	<336.7
	2,M	<1,323	2	<336.7
	2,N	<1,323	0	<336.7
	2,O	<1,323	0	<336.7
	2,P	<1,323	0	<336.7
	2,Q	<1,323	4	<336.7
	3,Q	<1,323	0	<336.7
	3,P	1,901 ± 850	0	<336.7
	3,O	<1,323	0	<336.7

(1) Sample points at 3' x 3' or 6' x 6' grid intersections except as noted

(2) Uncertainties represent 95% confidence limits

TABLE 2 (cont'd)

Sample Point <sup>(1)</sup>	Grid Position	Total Beta-Gamma Activity <sup>(2)</sup> dpm/100 cm <sup>2</sup>	Removable Beta-Gamma Activity <sup>(2)</sup>	
			net cpm	dpm/100 cm <sup>2</sup>
	3,N	<1,323	0	<336.7
	3,M	<1,323	0	<336.7
	3,L	<1,323	0	<336.7
	3,K	<1,323	0	<336.7
	3,J	1,462 ± 829	0	<336.7
	3,I	<1,323	0	<336.7
	3,H	<1,323	0	<336.7
	3,G	<1,323	0	<336.7
	3,F	<1,323	0	<336.7
	3,E	<1,323	0	<336.7
	3,D	<1,323	2	<336.7
	3,C	<1,323	0	<336.7
	3,B	<1,323	0	<336.7
	4,B	<1,323	9	<336.7
	4,C	<1,323	0	<336.7
	4,D	<1,323	6	<336.7
	4,E	<1,323	0	<336.7
	4,F	<1,323	0	<336.7
	4,G	<1,323	0	<336.7
	4,H	<1,323	0	<336.7
	4,I	<1,323	0	<336.7
	4,J	<1,323	1	<336.7
	4,K	<1,323	0	<336.7
	4,L	<1,323	0	<336.7
	4,M	<1,323	0	<336.7
	4,N	<1,323	0	<336.7
	4,O	<1,323	3	<336.7
	4,P	<1,323	2	<336.7
	4,Q	<1,323	0	<336.7
	5,Q	<1,323	0	<336.7
	5,P	<1,323	7	<336.7
	5,O	<1,323	0	<336.7
	5,N	<1,323	0	<336.7
	5,M	<1,323	0	<336.7
	5,L	<1,323	0	<336.7
	5,K	<1,323	0	<336.7
	5,J	<1,323	0	<336.7
	5,I	<1,323	0	<336.7
	5,H	<1,323	1	<336.7
	5,G	<1,323	2	<336.7
	5,F	<1,323	0	<336.7
	5,E	<1,323	0	<336.7
	5,D	<1,323	0	<336.7
	5,C	<1,323	0	<336.7
	5,B	<1,323	0	<336.7
	6,B	<1,323	0	<336.7
	6,C	<1,323	0	<336.7
	6,D	<1,323	0	<336.7
	6,E	<1,323	0	<336.7
	6,F	<1,323	0	<336.7

(1) Sample points at 3' x 3' or 6' x 6' grid intersections except as noted

(2) Uncertainties represent 95% confidence limits

TABLE 2 (cont'd)

Sample Point <sup>(1)</sup>	Grid Position	Total Beta-Gamma Activity <sup>(2)</sup> dpm/100 cm <sup>2</sup>	Removable Beta-Gamma Activity <sup>(2)</sup>	
			net cpm	dpm/100 cm <sup>2</sup>
	6,G	<1,323	1	<336.7
	6,H	<1,323	5	<336.7
	6,I	<1,323	0	<336.7
	6,J	<1,323	0	<336.7
	6,K	<1,323	0	<336.7
	6,L	<1,323	0	<336.7
	6,M	<1,323	0	<336.7
	6,N	<1,323	0	<336.7
	6,O	<1,323	0	<336.7
	6,P	<1,323	0	<336.7
	6,Q	<1,323	0	<336.7
	8,Q	<1,323	1	<336.7
	8,O	<1,323	0	<336.7
	8,M	<1,323	0	<336.7
	8,K	<1,323	0	<336.7
	8,I	<1,323	6	<336.7
	8,G	<1,323	1	<336.7
	8,E	<1,323	0	<336.7
	8,C	<1,323	0	<336.7
	8,A	<1,323	0	<336.7
	10,B	<1,323	0	<336.7
	10,D	<1,323	0	<336.7
	10,F	<1,323	0	<336.7
	10,H	<1,323	0	<336.7
	10,J	<1,323	0	<336.7
	10,L	<1,323	0	<336.7
	10,N	<1,323	0	<336.7
	10,P	<1,323	0	<336.7
	10,R	<1,323	4	<336.7
	12,R	<1,323	0	<336.7
	12,P	<1,323	0	<336.7
	12,N	<1,323	0	<336.7
	12,L	<1,323	0	<336.7
	12,J	<1,323	0	<336.7
	12,H	<1,323	0	<336.7
	12,F	<1,323	0	<336.7
	12,D	<1,323	0	<336.7
	12,B	2,966 ± 899	0	<336.7
	14,A	<1,323	0	<336.7
	14,C	<1,323	1	<336.7
	14,E	<1,323	0	<336.7
	14,G	<1,323	0	<336.7
	14,I	<1,323	0	<336.7
	14,K	<1,323	0	<336.7
	14,M	<1,323	0	<336.7
	14,O	<1,323	0	<336.7
	14,Q	<1,323	7	<336.7
	12,Q	<1,323	0	<336.7
	11,Q	<1,323	0	<336.7
	11,R	<1,323	0	<336.7

(1) Sample points at 3' x 3' or 6' x 6' grid intersections except as noted

(2) Uncertainties represent 95% confidence limits



TABLE 2 (cont'd)

Sample Point <sup>(1)</sup>	Grid Position	Total Beta-Gamma Activity <sup>(2)</sup> dpm/100 cm <sup>2</sup>	Removable Beta-Gamma Activity <sup>(2)</sup>	
			net cpm	dpm/100 cm <sup>2</sup>
	10,Q	<1,323	0	<336.7
	9,R	<1,323	0	<336.7
	9,R	<1,323	0	<336.7
	6,R	<1,323	0	<336.7
	4,R	<1,323	0	<336.7
	2,R	<1,323	10	<336.7
	0,R	<1,323	0	<336.7
	-1,Q	<1,323	0	<336.7
	-1,O	<1,323	3	<336.7
	-1,M	1,441 ± 828	6	<336.7
	-1,K	<1,323	0	<336.7
	-1,I	<1,323	0	<336.7
	-1,G	<1,323	0	<336.7
	-1,E	<1,323	0	<336.7
	-1,C	<1,323	0	<336.7
	-1,A	<1,323	0	<336.7
	0,B	<1,323	0	<336.7
	2,A	<1,323	0	<336.7
	4,A	<1,323	0	<336.7
	6,A	<1,323	5	<336.7
east wall @ 5		-	0	<336.7
south wall @ L		-	0	<336.7
west wall @ 10		-	0	<336.7

- (1) Sample points at 3' x 3' or 6' x 6' grid intersections except as noted  
 (2) Uncertainties represent 95% confidence limits

**SEIKO Corporation of America**  
1111 Macarthur Blvd., Mahwah, New Jersey 07430

REMITTANCE ADVISE

INVOICE NUMBER	INVOICE DATE	GROSS AMOUNT	DISCOUNT AMOUNT	NET AMOUNT
	05/23/97	\$300.00		\$300.00

**SEIKO Corporation of America**

1111 Macarthur Blvd., Mahwah, New Jersey 07430

Wachovia Bank of North Carolina, N.A.  
Asheville, North Carolina 28802

66-35/531

Check No. 003275

Date May 29, 1997

Amount \$300.00

Pay to the  
order of

U. S. Nuclear Regulatory Comm.

Region 1

475 Allendale Rd.

King of Prussia, PA 19406-1415

SEIKO Corporation of America

*[Signature]*  
Authorized Signature

⑈003275⑈ ⑆053100355⑆010452 066170⑈

## LICENSE FEE REQUIREMENTS

LICENSE FEE AND DEBT COLLECTION BRANCH  
DIVISION OF ACCOUNTING AND FINANCE  
OFFICE OF THE CONTROLLER  
U.S. NUCLEAR REGULATORY COMMISSION  
WASHINGTON, DC 20555-0001ATTN: JOANNE MARIONE  
RADIATION SAFETY OFFICER  
SEIKO CORPORATION OF AMERICA  
1111 MACARTHUR BOULEVARD  
MAHWAH, NJ 07430

## TYPE OF ACTION

- ☐
- NEW LICENSE
- 
- ☐
- RENEWAL OF LICENSE
- 
- ☒
- AMENDMENT TO LICENSE

REQUESTED DATE

1-29-98

LICENSE NUMBER

29-19080-01/29-19080-02E

CONTROL NUMBER

125407/125408

## I. APPLICATION FEE DUE

Your request for a licensing action is subject to the fee(s) in the category(ies) noted below in accordance with Section 170.31 of the enclosed Federal Register notice. Payment of the fee is required prior to the issuance of the license, renewal, or amendment.

FEE CATEGORY	APPLICATION	RENEWAL	AMENDMENT
3P	\$	\$	\$ 350.00
3I	\$	\$	\$ 1,100.00
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$

FEE(S) DUE	\$	1,450.00
PAYMENT RECEIVED	\$	1,160.00
AMOUNT DUE	\$	290.00

- ☒
- Your request was received without the prescribed application fee.

☒ We received your Check No. 3275 (\$300) + 3274 (\$860) in the amount of \$ 1,160.00. Payment of the additional fee noted above is required.

- ☐
- Your request will increase the scope of your license program. Therefore, your request is subject to the application fee(s) noted above. Refer to Section 170.31 and Footnote 1(d)(2).

- ☐
- Your license expired prior to the receipt of your application for renewal. Therefore, your request is subject to the application fee(s) noted above. Refer to Section 170.31 and Footnote 1(a).

MAKE PAYMENT OF THE FEE(S) TO THE U.S. NUCLEAR REGULATORY COMMISSION AND MAIL THE PAYMENT TO THE ADDRESS LISTED AT THE TOP OF THIS FORM. IF WE DO NOT RECEIVE A REPLY FROM YOU WITHIN 30 CALENDAR DAYS FROM THE DATE LISTED BELOW, WE SHALL ASSUME THAT YOU DO NOT WISH TO PURSUE YOUR APPLICATION AND WILL VOID THIS ACTION.

SIGNATURE - LICENSE FEE ANALYST

LFDCB

LFDCB

BRENDA BROWN 301-415-6055

BB

2/13/98

## II. FEE NOT REQUIRED

- ☐
- Enclosed is Check No. \_\_\_\_\_ which accompanied your request. The fee is not required because:

☐ We received your Check No. \_\_\_\_\_ in payment of the fee.☐ The Licensing staff has informed us that your request is to be considered as a continuation of your request dated \_\_\_\_\_, Control No. \_\_\_\_\_.☐ Your request was combined, prior to review, with your request, Control No. \_\_\_\_\_.

## III. CHECK RETURNED

- ☐
- Enclosed is Check No. \_\_\_\_\_ which was returned to us by the bank for:

☐ INSUFFICIENT FUNDS☐ ACCOUNT CLOSED☐ OTHER

MAIL THE REPLACEMENT CHECK TO THE ADDRESS LISTED AT THE TOP OF THIS FORM AND REFERENCE THE ABOVE CONTROL NUMBER.

## IV. LICENSE ISSUED WITHOUT THE REQUIRED FEE

☐ License No. \_\_\_\_\_ Amendment No. \_\_\_\_\_, issued on \_\_\_\_\_, was issued without the required fee being collected. The fee required is noted in Section I of this form.☐ The scope of your licensed program was increased. Therefore, your request is subject to the application fee(s) noted in Section I of this form. Refer to Section 170.31 and Footnote 1(d)(2).☐ Because of the urgency of your request, the license was issued without remittance of the prescribed fee noted in Section I of this form.Distribution:  
Region I  
Pending  
BBrownLFARB  
OCFO/DAF R/F  
OCFO/DAF S/F (IF-3.2.7)

DATE

2-13-98