

**KAISER ALUMINUM
& CHEMICAL CORPORATION**

LAW DEPARTMENT

February 5, 1993

James Lieberman, Director
Office of Enforcement
U. S. Nuclear Regulatory Commission
Attn: Document Control Clerk
Washington, DC 2055

Re: **NOTICE OF VIOLATION**

Dear Mr. Lieberman:

Reference is made to the Notice of Violation and Proposed Imposition of Civil Penalty issued to Kaiser Aluminum & Chemical Corporation ("Kaiser") by A. Bert Davis, Regional Administrator for Region III of the U. S. Nuclear Regulatory Commission ("NRC") on November 20, 1992, and to Kaiser's reply thereto dated December 18, 1992.

At the request of the NRC, Kaiser has undertaken an inventory of devices containing licensed material at all of its manufacturing and research facilities located in the United States. This inventory has included a review, by plant personnel, of available records regarding purchase, use and disposal of licensed material at these facilities. Attached as Exhibit A is a list of devices containing licensed material currently located at Kaiser's facilities at Gramercy, LA, Trentwood, WA and Pleasanton, CA.

Attached as Exhibit B is a summary of past disposal of licensed devices previously located at the Pleasanton, CA, Trentwood, WA and Gramercy, LA facilities.

As a part of our investigation, we obtained from the NRC a copy of an "Activity-Report" from the U.S. Nuclear Regulatory Commission, GENERAL LICENSE DATABASE SYSTEM, regarding Kaiser Aluminum, a copy of which is enclosed as Exhibit C.

The Ravenswood, WV facility listed in the "Activity Report" was sold to Ravenswood Aluminum Corporation pursuant to an Asset Purchase Agreement dated December 13, 1988. Schedule 7.14 of that Agreement lists US NRC Lic. No. 47-14123-01 effective 9/28/87 as one of the licenses to be assigned as part of the sale. We are in the process of contacting Ravenswood Aluminum Corporation to determine if any additional documents exist

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February 5, 1993

regarding the transfer of this license and the current status of the devices for the Ravenswood facility listed in the "Activity Report."

With respect to the unit listed at the Toledo, Ohio facility, we have determined that the unit was returned to ABB Process Automation on September 23, 1988. A copy of the ABB Process Automation letter dated September 29, 1988 acknowledging receipt of the device is enclosed as Exhibit D.

Kaiser's facility located at Wanatah, Indiana was sold to Packaging Corporation of America on or about August 20, 1987. This sale included all machinery and equipment located at the facility and all books and records regarding such equipment. We have written to Packaging Corporation of America requesting that they advise us of the status of the eight units listed in the NRC "Activity Report" at the Wanatah facility. We will advise you as soon as a response is received.

As we have previously advised representatives of the NRC, in addition to the Bedford, IN, Ravenswood, WV and Wanatah, IN facilities, Kaiser sold a number of aluminum manufacturing facilities in the 1980's including facilities engaged in the manufacture of aluminum cans, electrical wire and cable, extrusions, and laminated foil products. The books and records relating to these facilities were sold with the facilities or were destroyed in accordance with existing record retention policies. We have been unable to locate any records regarding the use of devices containing licensed material at any of these facilities. We have asked current technical personnel about the existence of devices at the plants containing licensed material at the plants and have been advised that to the best of their knowledge there were none.

As we have previously advised the NRC, we are developing radiation compliance and safety audit criteria and will incorporate them into our established health and safety audit program. Based on the inventories taken to date, we have decided that we will undertake, with the assistance of a qualified health physicist, a field audit of the Gramercy, Trentwood and Pleasanton facilities. This audit will be undertaken in March or April 1993 and will include a visit to each of the three facilities, interviews of responsible personnel, review of their physical inventory, current practices, and current record keeping. We believe that this audit will give us a better picture of where we stand at present and assist in the development of appropriate audit criteria for use in the future. We will submit a report on this audit as a supplement to this report as soon as the audit has been completed.

February 5, 1993

Radiation compliance and safety will be a separate topic included in the health and safety workshop to be held in May or June of 1993.

Kaiser Aluminum fully understands the serious nature of this matter and is endeavoring to put a program in place to assure full compliance. We are prepared to meet with representatives of the NRC at your convenience to review the steps being taken.

Sincerely yours,



Charles B. Brown
Assistant General Counsel

CBB:mm

Attachments
As Indicated

cc: A. Bert Davis (With Attachments)
Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
799 Roosevelt Road
Glen Ellyn, Illinois 60137

BUSINESS UNIT/PLANT

EQUIPMENT TYPE

SERIAL NO.

TYPE OF SOURCE OF RADIAT

ALUMINA
GRAMERCY

DENSITY METER	63328	GAMMA, CESIUM 137/50mCi
DENSITY METER	65643	GAMMA, CESIUM 137/100mCi
DENSITY METER	49829	GAMMA, CESIUM 137/150mCi
DENSITY METER	66438	GAMMA, CESIUM 137/100mCi
DENSITY METER	61569	GAMMA, CESIUM 137/100mCi
DENSITY METER	N808	GAMMA, CESIUM 137/100mCi
BELT SCALE	3145	GAMMA, CESIUM 137/100mCi
DENSITY METER	73824	GAMMA, CESIUM 137/100mCi
DENSITY METER	72434	GAMMA, CESIUM 137/500mCi
DENSITY METER	69697	GAMMA, CESIUM 137/300mCi
DENSITY METER	69696	GAMMA, CESIUM 137/300mCi
DENSITY METER	72943	GAMMA, CESIUM 137/300mCi
DENSITY METER	72651	GAMMA, CESIUM 137/100mCi
DENSITY METER	72942	GAMMA, CESIUM 137/300mCi
DENSITY METER	72647	GAMMA, CESIUM 137/300mCi
DENSITY METER	72646	GAMMA, CESIUM 137/300mCi
DENSITY METER	72280	GAMMA, CESIUM 137/100mCi
DENSITY METER	73821	GAMMA, CESIUM 137/100mCi
DENSITY METER	M0298	GAMMA, CESIUM 137/50mCi
DENSITY METER	M0297	GAMMA, CESIUM 137/50mCi
DENSITY METER	71329	GAMMA, CESIUM 137/50mCi
DENSITY METER	69879	GAMMA, CESIUM 137/100mCi
DENSITY METER	69353	GAMMA, CESIUM 137/80mCi
DENSITY METER	M1646	GAMMA, CESIUM 137/10mCi
DENSITY METER	M2786	GAMMA, CESIUM 137/80mCi
DENSITY METER	M1651	GAMMA, CESIUM 137/10mCi
DENSITY METER	61582	GAMMA, CESIUM 137/10mCi
DENSITY METER	61583	GAMMA, CESIUM 137/10mCi
DENSITY METER	61589	GAMMA, CESIUM 137/10mCi
DENSITY METER	51012	GAMMA, CESIUM 137/20mCi
DENSITY METER	61584	GAMMA, CESIUM 137/10mCi
DENSITY METER	69668	GAMMA, CESIUM 137/80mCi
DENSITY METER	M0370	GAMMA, CESIUM 137/10mCi
DENSITY METER	M4002	GAMMA, CESIUM 137/10mCi
DENSITY METER	66667	GAMMA, CESIUM 137/20mCi
DENSITY METER	66669	GAMMA, CESIUM 137/20mCi
DENSITY METER	65703	GAMMA, CESIUM 137/10mCi
DENSITY METER	65705	GAMMA, CESIUM 137/10mCi
DENSITY METER	M5348	GAMMA, CESIUM 137/20mCi
DENSITY METER	M5782	GAMMA, CESIUM 137/50mCi
DENSITY METER	M4971	GAMMA, CESIUM 137/10mCi
DENSITY METER	M7059	GAMMA, CESIUM 137/250mCi

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EXHIBIT A

ION CONTAINING EQUIPMENT

ION	LOCATION IN FACILITY	DATE OF PURCHASE	MANUFACTURER	NAME OF INDIVIDUAL RESPONSIBLE FOR EQUIPMENT
	Bauxite Thickener	5/74		
CI	#1 Seed Charge Line - Precip.	1/77	Ohmart	George Guelfo
CI	#3 Seed Charge Line - Precip.	10/77	Ohmart	George Guelfo
CI	Storage Locker	10/77	Ohmart	Harry Wilthew
CI	#2 Seed Charge Line - Precip.	5/78	Ohmart	George Guelfo
CI	#4 Seed Charge Line - Precip.	6/78	Ohmart	George Guelfo
CI	#2 Bauxite Scale	6/78	Ohmart	John Haplerretinger
CI	Tank #91 Primary Underflow - Precip.	7/83	Ohmart	George Guelfo
CI	#3 Calcine Line - Precip.	3/82	Ohmart	George Guelfo
CI	#2 Calcine Line - Precip.	12/80	Ohmart	George Guelfo
CI	#1 Calcine Line - Precip.	12/80	Ohmart	George Guelfo
CI	Tank 26 Primary Thickener Underflow - Precip.	4/82	Ohmart	George Guelfo
CI	Tank 39 Primary Thickener Underflow - Precip.	4/82	Ohmart	George Guelfo
CI	Tank 65 Primary Thickener Underflow - Precip.	4/82	Ohmart	George Guelfo
CI	Tank 78 Primary Thickener Underflow - Precip.	4/82	Ohmart	George Guelfo
CI	Tank 104 Primary Thickener Underflow - Precip.	4/82	Ohmart	George Guelfo
CI	Storage Locker	4/82	Ohmart	Harry Wilthew
CI	Storage Locker	7/83	Ohmart	Harry Wilthew
	#2 Kiln Slurry Line - Calcination	2/86	Ohmart	George Guelfo
	Storage Locker	2/86	Ohmart	Harry Wilthew
	Hydrate Dryer Feed Line	7/81	Ohmart	George Guelfo
CI	Dual Seed Charge (A) - Precip.	10/80	Ohmart	George Guelfo
	Storage Locker	12/86	Ohmart	Harry Wilthew
	West Oxalate Settler Tank	10/87	Ohmart	Seymour Brown
	#8 Washer Underflow	1/88	Ohmart	Seymour Brown
	East Oxalate Settler Tank	3/83	Ohmart	Seymour Brown
	Storage	11/89	Ohmart	Harry Wilthew
	Dual Seed Charge (B) - Precip.	11/89	Ohmart	George Guelfo
	#1 Kiln Slurry Line - Calcination	2/90	Ohmart	George Guelfo
	Pretreat Head Tank Discharge	2/90	Ohmart	George Guelfo
	Storage Locker	11/89	Ohmart	Harry Wilthew
	Tank 117 PPT Underflow	8/89	Ohmart	George Guelfo
	North Sweet's Density	2/90	Ohmart	Seymour Brown
	South Sweet's Density	2/90	Ohmart	Seymour Brown
	D.E. 313 (ST Seed)	8/90	Ohmart	George Guelfo
	D.E. 276 (TT Seed)	8/90	Ohmart	George Guelfo
	D.E. 234 (Product Transfer "A" Train)	8/90	Ohmart	George Guelfo
	D.E. 267 (Product Transfer "B" Train)	8/90	Ohmart	George Guelfo
	Storage Magmeter Building	8/90	Ohmart	Harry Wilthew
	Monohydrate Density	4/91	Ohmart	Seymour Brown
	#3 Kiln Feed	7/90	Ohmart	George Guelfo
CI	7 Washer Underflow	3/92	Ohmart	Seymour Brown

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BUSINESS UNIT/PLANT EQUIPMENT TYPE SERIAL NO. TYPE OF SOURCE OF RADIAT

FLAT ROLLED PRODS.
Pleasanton (CFT)

THICKNESS GAUGE 4-B MODEL	5420A	300 mCi - SR-90 SOURCE
THICKNESS GAUGE MODEL U-8D	83292431-Source Serial # -AM-29	X-RAY 1000mCi - AM-241 IS
THICKNESS GAUGE MODEL U-8D	83292431-Source Serial # -S-521-	300mCi - SR90 ISOTOPE
THICKNESS GAUGE MODEL U-6	R2293731-Source Serial # -S-885-	70mCi - SR90 ISOTOPE
THICKNESS GAUGE MODEL U-6	482232331-Source Serial # -S-424	300mCi - SR90 ISOTOPE
THICKNESS GAUGE MODEL U-6	B741B4131-Source Serial # -S-110	70mCi - SR90 ISOTOPE
THICKNESS GAUGE MODEL O-2	3734822-Source Serial # -S-843-T	70mCi - SR90 ISOTOPE
THICKNESS GAUGE MODEL U-3	3734782-Source Serial # -S-978-T	70mCi - SR90 ISOTOPE
THICKNESS GAUGE MODEL U-3	3734782-Source Serial # -S-1028-	70mCi - SR90 ISOTOPE
THICKNESS GAUGE MODEL U-6	581305231-Source Serial # -S-440	300mCi - SR90 ISOTOPE
THICKNESS GAUGE MODEL U-6	481232431-Source Serial # -S-418	300mCi - SR90 ISOTOPE
THICKNESS GAUGE MODEL U-6	484272031-Source Serial # -S-114	70mCi - SR90 ISOTOPE
THICKNESS GAUGE MODEL U-6	B2293731-Source Serial # -S-528-	X-RAY - 300mCi - SR90 ISOT

Trentwood

EXHIBIT A

ION CONTAINING EQUIPMENT

ION	LOCATION IN FACILITY	DATE OF PURCHASE	MANUFACTURER	NAME OF INDIVIDUAL RESPONSIBLE FOR EQUIPMENT
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	Room B135	1983	Accuray	Ghaziary
OTOPE	#1 Cold Mill	1981	Accuray	B. Fletcher
	#1 Cold Mill	1981	Accuray	B. Fletcher
	#2 Cold Mill	1984	Accuray	B. Fletcher
	#5 Cold Mill - exit	1984	Accuray	B. Fletcher
	#4 Cold Mill	1984	Accuray	B. Fletcher
	#3 Coll Slitter	1984	Accuray	J. Lewis
	#4 Coll Slitter	1984	Accuray	J. Lewis
	#5 Coll Slitter	1984	Accuray	J. Lewis
	#6 Coll Slitter	1986	Accuray	J. Lewis
	#7 Coll Slitter	1986	Accuray	J. Lewis
	Coll Coater	1991	Accuray	J. Lewis
OPE	#2 Cold Mill - stored	1985	Accuray	B. Fletcher

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BUSINESS UNIT/PLANT EQUIPMENT TYPE SERIAL NO. TYPE OF SOURCE OF RADIATION

FLAT ROLLED PRODS.

Pleasanton (CFT)

PHOSGENE ANALYZER	#51-383	600 Microcuries Am241
Gas Chromatograph	#087270002042	15mCi Ni-63
Gas Chromatograph	#0872850011120	15mCi Ni-63
Gas Chromatograph	856	15mCi Ni-63

Trentwood

Isotope	#S-759-T	70mCi
Isotope	#S-1121-T	70mCi
Isotope	#S-850-T	70mCi

Gramercy

Gramercy reported an additional 58 sources in use at the facility since the early 1950's. Fifty-seven (57) sources were reported to Radiation Services and Texas Nuclear. One source was reported lost in 1976. Documents are on file regarding the remaining 37 devices; quarterly inspection reports indicate that 18 were disposed of between May, 1977 and May, 1978. Records do not exist for nineteen (19) devices.

EXHIBIT B

INVENTORY - RADIATION CONTAINING EQUIPMENT

RADIATION	LOCATION	DISPOSITION		NAME OF INDIVIDUAL RESPONSIBLE FOR EQUIPMENT
		DATE	MANUFACTURER	
	Disposed - Richland, WA	5/88	MSA	Suchyta
	Sold - Cal Coast, Berkeley, CA	5/88	Perkin-Elmer	Suchy
	Sold - Cal Coast, Berkeley, CA	5/89	Perkin-Elmer	Suchyta
	Disposed - Beatty, NV	7/91	Perkin-Elmer	Suchyta
	Transferred - ABB, Columbus, OH	2/5/91		Jabara
	Transferred - ABB, Columbus, OH	2/5/91		Jabara
	Transferred - ABB, Columbus, OH	12/20/91		Jabara

sources are believed to have been disposed of by three qualified companies - Ohmart Corporation, Coastal
 regarding the disposal of 20 (of these 57) devices during the period of July, 1983 through July, 1991. Of the
 and September, 1979. The records contain no information regarding disposal of these 18 devices, however.

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DATE: 12/23/92

U. S. NUCLEAR REGULATORY COMMISSION

GENERAL LICENSE DATABASE SYSTEM

Enclosure 3

ACTIVITY - REPORT

RECIPIENT-CODE.....: 443

RECIPIENT NAME.....: KAISER ALUMINUM

DEPARTMENT.....:

ADDRESS.....:

CITY.....: RAVENSWOOD

STATE.....: WV

ZIP CODE.....: 26164

MODEL NUMBER	SERIAL NUMBER	DEVICE CODE	MATERIAL TYPE	ISOTOPE AMOUNT UNITS - (MCI)	DATE SOLD	VENDOR NAME
J-3		31.5E	SR90	70.000000000	723	ABB PROCESS AUTOMATION

LICENSE NUMBER
34-00255-06G

DATE: 12/23/92

U. S. NUCLEAR REGULATORY COMMISSION

PAGE: 2

GENERAL LICENSE DATABASE SYSTEM

ACTIVITY - REPORT

RECIPIENT-CODE.....: 1295

RECIPIENT NAME.....: KAISER ALUMINUM

DEPARTMENT.....:

ADDRESS.....: 1100 4TH STREET

CITY.....: BEDFORD

STATE.....: IN

ZIP CODE.....: 47421

MODEL NUMBER	SERIAL NUMBER	DEVICE CODE	MATERIAL TYPE	ISOTOPE AMOUNT UNITS - (MCI)	DATE SOLD	VENDOR NAME	LICENSE NUMBER
3600F		31.5D	CS137	100.0000000000	812	KAY-RAY/SENSALL, INC.	IL-01010-02
3600F		31.5D	CS137	100.0000000000	812	KAY-RAY/SENSALL, INC.	IL-01010-02
3600F		31.5D	CS137	100.0000000000	812	KAY-RAY/SENSALL, INC.	IL-01010-02
		31.5E	CS137	100.0000000000	831	KAY-RAY/SENSALL, INC.	IL-01010-02
7062P		31.5D	CS137	100.0000000000	812	KAY-RAY/SENSALL, INC.	IL-01010-02
7062P		31.5D	CS137	100.0000000000	812	KAY-RAY/SENSALL, INC.	IL-01010-02
7062P		31.5D	CS137	100.0000000000	812	KAY-RAY/SENSALL, INC.	IL-01010-02

DATE: 12/23/92

U. S. NUCLEAR REGULATORY COMMISSION

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GENERAL LICENSE DATABASE SYSTEM

ACTIVITY - REPORT

RECIPIENT-CODE.....: 3892

RECIPIENT NAME.....: KAISER ALUM. & CHEM. CO.

DEPARTMENT.....:

ADDRESS.....:

CITY.....: TOLEDO

STATE.....: OH

ZIP CODE.....: 43601

MODEL NUMBER	SERIAL NUMBER	DEVICE CODE	MATERIAL TYPE	ISOTOPE AMOUNT UNITS - (MCI)	DATE SOLD	VENDOR NAME	LICENSE NUMBER
U-6		31.5E	SR90	70.000000000	844	ABB PROCESS AUTOMATION	34-00255-06G

DATE: 12/23/92

U. S. NUCLEAR REGULATORY COMMISSION

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GENERAL LICENSE DATABASE SYSTEM

ACTIVITY - REPORT

RECIPIENT-CODE.....: 4392

RECIPIENT NAME.....: KAISER ALUMINUM & CHEMICAL CORP.
 DEPARTMENT.....:
 ADDRESS.....: RAVENSWOOD WORKS, RTE. 2 SOUTH
 CITY.....: RAVENSWOOD
 STATE.....: VA
 ZIP CODE.....: 26164

MODEL NUMBER	SERIAL NUMBER	DEVICE CODE	MATERIAL TYPE	ISOTOPE AMOUNT UNITS - (MCI)	DATE SOLD	VENDOR NAME	LICENSE NUMBER
J-3		31.5D	SR90	70.000000000	723	ABB PROCESS AUTCMATION	34-00255-06G
J-3		31.5D	SR90	70.000000000	733	ABB PROCESS AUTOMATION	34-00255-06G
J-3		31.5D	SR90	70.000000000	744	ABB PROCESS AUTOMATION	34-00255-06G
J-3		31.5D	SR90	70.000000000	762	ABB PROCESS AUTOMATION	34-00255-06G
J-6		31.5D	SR90	70.000000000	804	ABB PROCESS AUTOMATION	34-00255-06G
J-3		31.5E	SR90	70.000000000	733	ABB PROCESS AUTOMATION	34-00255-06G
J-3		31.5D	SR90	70.000000000	744	ABB PROCESS AUTOMATION	34-00255-06G
J-3		31.5E	SR90	70.000000000	762	ABB PROCESS AUTOMATION	34-00255-06G
J-6		31.5E	SR90	70.000000000	804	ABB PROCESS AUTOMATION	34-00255-06G
5310		31.5D	AM241	1,000.000000000	854	LORAL CONTROL SYSTEMS	37-16268-02G
5310		31.5D	AM241	1,000.000000000	854	LORAL CONTROL SYSTEMS	37-16268-02G

DATE: 12/23/92

U. S. NUCLEAR REGULATORY COMMISSION

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GENERAL LICENSE DATABASE SYSTEM

ACTIVITY - REPORT

RECIPIENT-CODE.....: 4884

RECIPIENT NAME.....: KAISER ALUMINUM & CHEM. CORP.

DEPARTMENT.....:

ADDRESS.....: U.S. HWY 30

CITY.....: WANATAH

STATE.....: IN

ZIP CODE.....: 46390

MODEL NUMBER	SERIAL NUMBER	DEVICE CODE	MATERIAL TYPE	ISOTOPE UNITS	AMOUNT (MCI)	DATE SOLD	VENDOR NAME	LICENSE NUMBER
P-2031		31.50	PO-210	20.000000000		861	HERBERT PRODUCTS, INC.	(GL)1430-1950
P-2031		31.50	PO-210	20.000000000		861	HERBERT PRODUCTS, INC.	(GL)1430-1950
P-2031		31.50	PO-210	20.000000000		861	HERBERT PRODUCTS, INC.	(GL)1430-1950
P-2031		31.50	PO-210	20.000000000		861	NRD, INC.	1429-1811GL
P-2031		31.50	PO-210	20.000000000		861	NRD, INC.	1429-1811GL
P-2031		31.50	PO-210	20.000000000		861	NRD, INC.	1429-1811GL
P-2031		31.50	PO-210	20.000000000		861	NRD, INC.	1429-1811GL
P-2031		31.5E	NI63	15.000000000		844	LFE CORPORATION	20-01382-16G



ABB Process Automation • 650 Ackerman Road • Columbus, Ohio 43202 • telex 246675 (in Col.) • fax 614/261-2172

September 29, 1988

Kaiser Aluminum & Chemical Corp.
Attn: Bob Wood
5201 Enterprise
Toledo, OH 43612

Dear Sir:

Please be advised that the following source was received at Process Automation Business, Inc., Columbus, Ohio and is now in our possession under USNRC Byproduct Material License 34-00255-03.

<u>DATE</u>	<u>SOURCE</u>	<u>ISOTOPE</u>	<u>QUANTITY</u>	<u>SOURCE</u>	<u>DEVICE</u>
<u>RECEIVED</u>	<u>SERIAL NO.</u>			<u>MODEL</u>	<u>MODEL</u>
9-23-88	S-1146-T	Sr-90	70 mCi	S-18	U-6

To comply with the requirement for notification of transfer in the Code of Federal Regulations Title 10, Part 31.5, we recommend you forward a copy of this letter to:

Director of Nuclear Material Safety & Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Very truly yours,

Doris Kramer
Administrator
Radiological Operations

cc: K. Higgins, Columbus Office