



# Iowa Department of Public Health

Thomas J. Vilsack  
Governor

Sally J. Pederson  
Lt. Governor

Mary Mincer Hansen, R.N., Ph.D.  
Director

## TRANSMITTAL MEMORANDUM

Date: April 26, 2004

To: Mary Hansen, Director, IDPH  
Tom Newton, Division Director HP & EH  
Kathy Franke, FDA  
James Lynch, NRC  
Lloyd Bolling, NRC  
Scotty Hargrave, FDA  
Robert Dye, EPA

FROM: Donald A. Flater, Chief *DAF*  
Iowa Bureau of Radiological Health  
515-281-3478

RE: 2003 Bureau Self Audit

In order to be aware of the accomplishments of the Bureau for the past calendar year, staff has conducted a self-audit of all programs with the Iowa Bureau of Radiological Health. With encouragement from Federal Agencies, the Bureau's self-audit process started with the calendar year of 2002.

As a result of staff efforts we have just completed the 2003 audit and have provided a copy of the Audit Report for your perusal. Any comments you can provide to increase the usefulness of the document in future years would be welcomed.

If you have questions regarding the 2003 audit report, please contact me.

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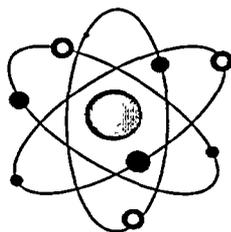
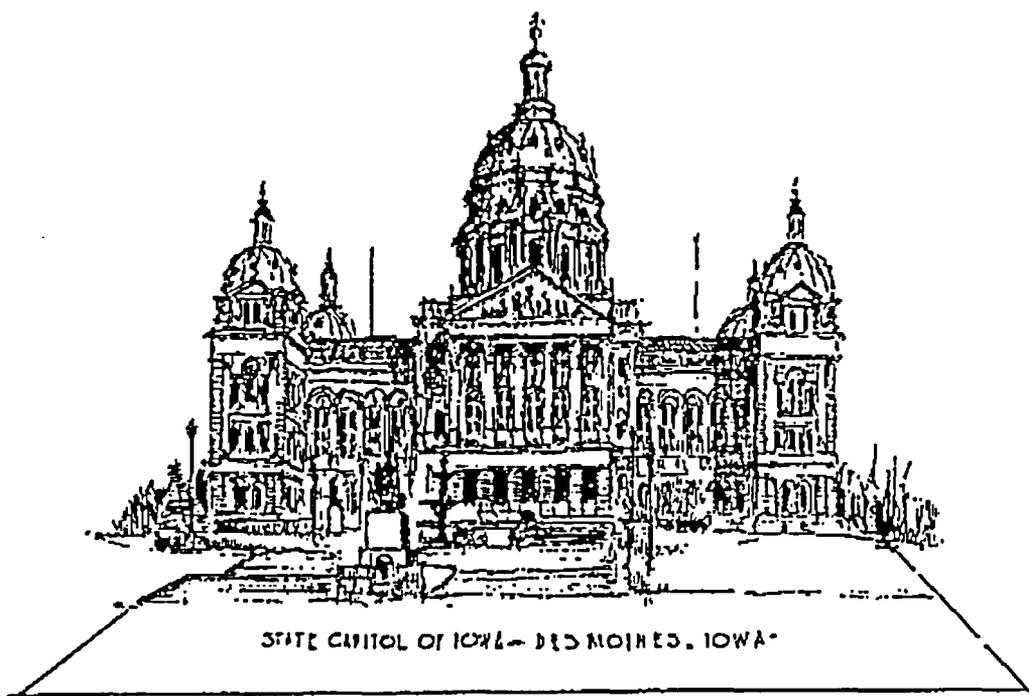
Promoting and protecting the health of Iowans

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**IOWA DEPARTMENT OF PUBLIC HEALTH  
DIVISION OF HEALTH PROTECTION AND  
ENVIRONMENTAL HEALTH**

**2003 ANNUAL AUDIT OF  
BUREAU OF RADIOLOGICAL HEALTH  
PROGRAMS**

(January 1, 2003-December 31, 2003)



Iowa Bureau of Radiological Health

401 SW Seventh Street, Suite D  
Des Moines, Iowa 50309-4611  
515-281-3478

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## ENVIRONMENTAL, TRAINING, AND TRANSPORTATION

### I. Staffing

On July 1, 2003 the Environmental, Training and Transportation section was merged with the Radioactive Materials (RAM) Program. The staffing levels are indicated in the RAM Program section of this document.

### II. Training

Iowa Bureau of Radiological Health (BRH) provided training to support First Responder operations in Iowa. The following table summarizes the training efforts.

DATE	ORGANIZATION/LOCATION	TRAINING TYPE	NUMBER OF ATTENDEES	PRESENTOR
01/08	Fire Department – HazMat, Newton	MERRTT Train the Trainer	23	Dan McGhee Randy Dahlin
03/26	Iowa State Patrol – District 5, Cherokee	Radiological Awareness	23	Randy Dahlin
04/21-23	Fire Department – HazMat, Des Moines	Radiological Response “Hands-on”	37	Dan McGhee Randy Dahlin
05/20-22	Fire Department – HazMat, Cedar Rapids	Radiological Response “Hands-on”	31	Dan McGhee
05/29	Iowa State Patrol – District 16, Des Moines	Radiological Awareness	40	Dan McGhee
05/27-29	Fire Department – HazMat, Sioux City	Radiological Response “Hands-on”	28	Randy Dahlin
06/30	Iowa State Patrol – District 2, Osceola	Radiological Awareness	21	Dan McGhee
07/01	Iowa State Patrol – District 9, Cedar Falls	Radiological Awareness	29	Randy Dahlin
07/07	Jefferson County Emergency Management, Fairfield	Radiological Awareness	05	Randy Dahlin
07/21	Iowa State Patrol – District 7, Fort Dodge	Radiological Awareness	18	Randy Dahlin Ramona Ubaldo-Mealey
09/03	Iowa State Patrol – District 10, Oelwein	Radiological Awareness	23	Randy Dahlin Ramona Ubaldo-Mealey
09/04	Iowa State Patrol – District 8, Mason City	Radiological Awareness	18	Randy Dahlin Ramona Ubaldo-Mealey
09/07-09	Fire Department – HazMat, Burlington	Radiological Response “Hands-on”	34	Dan McGhee
09/23	Iowa State Patrol – District 12, Stockton	Radiological Awareness	30	Dan McGhee

09/24	Iowa State Patrol – District 13, Mt Pleasant	Radiological Awareness	23	Randy Dahlin
12/05	Iowa State Patrol – District 1, Des Moines	Radiological Awareness	41	Randy Dahlin
12/12	Iowa State Patrol – District 11, Cedar Rapids	Radiological Awareness	36	Randy Dahlin
12/17-19	Fire Department – HazMat, Council Bluffs	Radiological Response “Hands- on”	27	Randy Dahlin

### III. Environmental Investigations and Remediation

#### A. Fansteel/Wellman Dynamics Corporation

This is an ongoing project that involves the decommissioning of a former “304” burial site. The parent corporation, Fansteel, Inc., filed Chapter 11 bankruptcy in November 2001. At the end of 2003 it had not yet emerged from bankruptcy, although the final legal pleadings are in place.

The Site Characterization Report was submitted in October 2003. Currently, the company is waiting for the funds to have contractors evaluate the results of the characterization study and meet with the local Fansteel-Wellman Dynamics personnel and the State to determine the course of final action. The actual date is subject to the variabilities caused by the bankruptcy. The current target is the 3<sup>rd</sup> quarter 2004.

#### B. Iowa Army Ammunition Plant (IAAAP)

This is an active site, consisting of 19,000 acres, operated for the US Army by a contractor. Until 1975, the Energy Research and Development Administration and its progenitors, utilizing the predecessors of the current contractor, conducted various operations that involved nuclear weapons. In 1990, the Army, under Comprehensive Environmental Response Compensation and Liability Act, began a clean up of the entire site. The radiation issues did not surface until December 1999.

Little or no actual clean up actually occurred at IAAAP this year. The discovery of a possible non-radiation plume off-post became the highest priority for investigation. A proposed plan is scheduled for completion in mid-2004.

In December 2003 the State began participating in the negotiations for an additional Federal Facilities’ Agreement (FFA) at IAAAP. The parties are the US Environmental Protection Agency, the Army Corps of Engineers, St. Louis District, and the State. The purpose of this FFA is to outline responsibilities for those areas of IAAAP at which the US Atomic Energy Commission conducted its operations.

#### **IV. Rules**

In July of 2002, Iowa Department of Public Health (IDPH) implemented a fee for transportation of radioactive waste shipments in Iowa. The fee was established to fund training for personnel who might respond to transportation accidents involving radioactive materials. The table in Section II summarizes the training accomplished in 2003.

Fee generated income from these waste shipments equaled \$94,450 in calendar year 2003.

## MAMMOGRAPHY PROGRAM

### I. Staffing

The Mammography Program consists of four employees: a Health Physicist III, 2 Health Physicist II's, and an Administrative Assistant. (The Section Coordinator, Paul Koehn, has dual responsibility for the Mammography and Radiation Machines Programs.)

### II. Training

<b>Paul E. Koehn, B.S., R.T. (R)</b>		<b>FDA Certified Mammography Inspector</b>	
		<b>Certified: February 10, 1995</b>	
<b>Date</b>	<b>Activity</b>	<b>Location</b>	<b>MEU</b>
12/5/03	Full Field Digital Mammography	Kodak Website	1 Digital
12/5/03	Mammo Digital Image Quality	Kodak Website	1 Digital
12/5/03	Optimizing the Mammo Image	Kodak Website	1.5
11/15/03	Imaging Seminar Conference	Des Moines, IA	5
11/4/03	Digital Mammography	ASRT Journal	1 Digital
10/01/03	Digital Mammography on site	Storm Lake, IA	3 Digital
05/09/03	Mammography CEU-University of Iowa	Ames, IA	6
04/12/03	Mammography CEU- Mayo Health	La Crosse, WI	8 includes 2 Digital
01/07/03	Phantom Image Scoring	Des Moines, IA	1

<b>Jeanie M. Hudson, R.T. (R)(M)</b>		<b>FDA Certified Mammography Inspector</b>	
		<b>Certified June 16, 1995</b>	
May 3-4, 2003	CRCPD Mammo Con. Education 2003	Anaheim, CA	12 includes 4 Digital
04/25/03	Practicum in Digital Mammography	Iowa City, IA	8 Digital
01/08/03	Phantom Image Scoring	Des Moines, IA	1

<b>Kellee J. Kemp, B.A., R.T. (R) (M)</b>		<b>FDA Certified Mammography Inspector</b>	
		<b>Certified: May 2, 2002</b>	
10/01/03	Digital Mammography on site	Storm Lake, IA	6 Digital
08/15/03	Basic Health Physics	Oakridge, TN	11.5
May 3-4, 2003	CRCPD Mammo Con. Education 2003	Anaheim, CA	12 includes 4 Digital
04/25/03	Practicum in Digital Mammography	Iowa City, IA	8 Digital

### III. Accredited Facilities

Due to the lack of a computerized system, the Mammography Program staff continues to track facilities manually. At year's end, the number of facilities was as follows:

ACCREDITED FACILITIES	
American College of Radiology (ACR) accredited	8
IDPH accredited	140
Stereotactic	21
<b>TOTAL</b>	<b>169</b>

In addition to the above facilities, there are two mobile facilities from South Dakota.

### IV. Physician/Physicist Qualifications

IDPH manually maintains a list of qualified radiologists. The list, which currently consists of 354 physicians, is another function awaiting creation of a computer program.

IDPH staff also manually maintains a list of 22 surgeons qualified to conduct stereotactic breast biopsies and files on 19 physicists who conduct mammography surveys in Iowa

### V. Technologist Qualifications

Technologists who perform mammography in the State of Iowa must possess a current permit to practice in Diagnostic Radiography. (See Operator Certification.) In addition to that certification requirement, the Mammography Program staff is directed by Iowa Law to monitor continuing education of all mammographic technologists, specific to mammography, to insure that these technologists maintain minimum requirements.

Absent a computer database, this continues to be a manual process. At year's end, the training for 702 mammography technologists was being manually tracked.

### VI. Inspections

All accredited facilities are inspected annually. The breakdown in inspections is indicated in the following table.

Stereotactic            During the reporting period 20 stereotactic inspections were

	completed
Film-screen	During the reporting period 148 inspections were completed
Re-visits	During the reporting period there were no charged re-visits
Digital	During the reporting period 2 digital inspections were completed.

The difference in number of facilities and the number of inspections is attributed to the fact that two facilities were inspected by South Dakota and to the fact that some were either provisionally accredited or ceased operations.

## VII. Film Image Review

Random select	During the reporting period 65 random reviews were conducted
Self select	During the reporting period 81 self-selected reviews were conducted 68: re-accreditation, 9 new accreditation and 4 who switched from American College of Radiology (ACR) to Iowa.

## VIII. FDA Visits/Program Reviews

- A. States As Certifiers on-site visit was conducted by the US food and Drug Administration (FDA) on August 6 & 7, 2003. Personnel in attendance included Mike Devine, Joanne Choy, Scotty Hargrave, and Denise Robinson of the Food and Drug Administration (FDA), and Donald A. Flater, Jeanie Hudson and Janet Kent for the State of Iowa.
- B. The FDA on-site review for Accreditation Bodies was conducted on January 14, 2003 with the following FDA personnel in attendance; Kathy Franke, Kaye Chesemore, and Vicki Jernigan. Representing the State of Iowa at this review were Donald A. Flater, Jeanie Hudson, Kellee Kemp, Janet Kent and Paul E. Koehn.

## OPERATOR CERTIFICATION

### I. Staffing

Charlene Craig oversees the certification process. Carol Trimble is the clerical support. Nancy Farrington, Paul Koehn, Jeanie Hudson and Kellee Kemp review continuing education training programs.

### II. Permits to Practice

IDPH staff reviews training, testing, and continuing education requirements for personnel as part of the Permit to Practice process.

PERMITS ISSUED	
Diagnostic radiographers	3529
Radiation therapists	186
Nuclear medicine technologists	325
<b>TOTAL</b>	<b>4040</b>

In 2003, IDPH took action to revoke 2 permits.

### II. Continuing Education Reviews

In this audit period, 1100 continuing education programs were reviewed and approved. Eighty-two requests were reviewed and denied. BRH staff audited 15 approved programs for appropriate content.

### III. Training Program Reviews

IDPH staff review, interview, and approve new training programs. Approximately 150 individuals took the certification exams for limited diagnostic and nuclear medicine permits.

#### A. Inspections of Nuclear Medicine Technologist Training Programs

Members of the RAM became involved in the review of Licensee Nuclear Medicine Training Programs in September of 2002. Since that time, the review has consisted of at least two visits to each facility during each student's training. The initial visit is for the student to meet with BRH staff and to become familiar with who we are and how we play a part in their training. The final visit is for BRH staff to review the didactic portion of their training, observe the students in a clinical setting, and to orally question the student about various aspects of nuclear medicine. The BRH staff will then evaluate these aspects to either

recommend that the student appears to be prepared to sit for the examination or recommend for additional time to be spent in a particular area of training.

In 2003, IDPH has had three licensees that have had approved training programs. Nancy Farrington and Charlene Craig inspected the following programs.

Licensee	NUMBER OF STUDENTS	NUMBER OF VISITS BY IDPH	NUMBER OF FINAL VISITS BY IDPH	NUMBER PASS ON 1 <sup>ST</sup> TRY	NUMBER THAT NEED TO TAKE EXAM 2 <sup>ND</sup> TIME
0022-1-29-M1	1	3	1	1	
0124-1-77-M1	4	8	4	3	1
0220-1-23-M1**	2	2			

\*\*This licensee is scheduled for the final visit of the students June 2004.

#### **B. Inspection of Limited Radiographers Training Program**

Four programs were reviewed and approved for training of limited radiographers. Two are formal school programs. The other two still have students in training.

#### **IV. Rules**

Effective May, 2003, new rules were implemented to clarify the training process and program requirements.

## RADIOACTIVE MATERIALS PROGRAM

### I. Staffing

Staffing consists of one Health Physicist III, two Health Physicist II's and one Clerk Specialist Advanced. When the Program Coordinator left the Bureau in April 2003, the Radioactive Materials, Transportation and Environmental Programs merged.

### II. Inspector Evaluations

To ensure quality and consistency in inspections of licensees, the following inspector accompaniments were completed during this year:

DATE	INSPECTOR	REVIEWER	TYPE OF LICENSE
01/14	Ramona-Ubaldo-Mealey	Nancy A. Farrington	Portable Gauge
02/12	Ramona-Ubaldo-Mealey	Nancy A. Farrington	Fixed Gauge
02/12	Ramona-Ubaldo-Mealey	Nancy A. Farrington	Fixed Gauge
02/13	Ramona-Ubaldo-Mealey	Nancy A. Farrington	Portable Gauge
02/25	George F. Johns, Jr.	Nancy A. Farrington	Medical – Diagnostic & Therapeutic
02/26	Randal S. Dahlin	George F. Johns, Jr.	Medical – Diagnostic & Therapeutic
05/22	Randal S. Dahlin	Nancy A. Farrington	Industrial Radiography
06/18	Randal S. Dahlin	James Lynch (NRC)	Medical – No Written Directives
06/19	Nancy A. Farrington	James Lynch (NRC)	High Dose Rate Afterloader
07/25	Randal S. Dahlin	Nancy A. Farrington	Portable Gauge
07/28	Randal S. Dahlin	Nancy A. Farrington	Portable Gauge
08/26	Randal S. Dahlin	Nancy A. Farrington	Nuclear Pharmacy

### III. Training

The following table summarizes the training efforts.

DATE	TRAINING	ATTENDEE	LOCATION	SPONSOR
January 29 - 31	MERRTT Train the Trainer	Randal S. Dahlin	Carlsbad, NM	DOE
January 30	<i>Hospital Emergency Department Management of Radiation Accidents</i>	George F. Johns, Jr. & Nancy A. Farrington - Presenters	Sioux City	Mercy Medical Center
March 17 - 21	Licensing Practices & Procedures	Randal S. Dahlin	Topeka, KS	NRC
April 7 - 11	Inspection Procedures	Ramona Ubaldo-Mealey Randal S. Dahlin	Chattanooga, TN	NRC
April 14 - 18	Instructor Development	Randal S. Dahlin	Johnston, IA	FBI
April 14 - 18	Root Cause Analysis	Nancy A. Farrington	Lisle, IL	NRC
April 29 - 30	TRANSCOM	Nancy A. Farrington	Harrisburg, PA	DOE
April 28 - May 2	Transportation of Radioactive Materials	Randal S. Dahlin	Chattanooga, TN	NRC
May 9	<i>Hospital Emergency Department Management of Radiation Accidents</i>	Nancy A. Farrington - Presenter	Davenport, IA	Genesis Medical Center
May 12 - 16	Safety Aspects of Industrial Radiography	Randal S. Dahlin	New Orleans, LA	NRC
June 2 - 6	Air Sampling for Radioactive Materials	Nancy A. Farrington Randal S. Dahlin	Oak Ridge, TN	NRC
June 9 - 13	Environmental Monitoring for Radioactivity	Nancy A. Farrington Randal S. Dahlin	Oak Ridge, TN	NRC
June 16 - 18	Nuclear Materials Events Database (NMED)	Nancy A. Farrington	Lisle, IL	NRC
June 23 - 28	Radiological Emergency Response Operations (RERO)	Kellee Kemp	Mt. Weather, VA	FEMA
August 4 - 15	Basic Health Physics	Nancy A. Farrington Kellee Kemp	Oak Ridge, TN	NRC
August 11 - 15	Diagnostic & Therapeutic Nuclear Medicine	Randal S. Dahlin	Houston, TX	NRC
August 18 - 22	Teletherapy and Brachytherapy	Randal S. Dahlin	Houston, TX	NRC
December 16	<i>Hospital Emergency Department Management of Radiation Accidents</i>	Nancy A. Farrington - Presenter	Des Moines, IA	Des Moines University

#### IV. Inspections

BRH staff conducted two team inspections in 2003. The team inspection of Iowa State University occurred in March and that of the University of Iowa in October. The following table summarizes the inspection activities:

INSPECTIONS			
	2001	2002	2003
IDPH Licenses	42	62	57
Reciprocity	2	4	4

#### V. Licenses

BRH responded to the Nuclear Regulatory Commission (NRC) request to identify licensees with radionuclides and quantities of concern. To readily identify those licensees, the file folders have been changed from green to red.

The RAM Program completed the following licensing actions:

	2001	2002	2003
New Licenses	4	4	10
Renewals	29	26	36
Terminations	4	6	2
Amendments	73	51	54

The RAM Program issued the following new licenses:

0315-1-00-NV1	Avera McKennan Hospital
0318-1-59-M2	Lucas County Health Center
0319-1-77-M1	Nuclear Sonics Associated, Inc.
0320-1-84-M2	Sioux Center Community Hospital
0321-1-52-PG	Hart-Frederick Consulting, PC
0322-1-07-PG	Earth Tech, Inc.
0323-1-50-M2	Skiff Medical Center
0324-1-07-M2	Cardiology Specialist PC
0325-1-07-XRF	Blackhawk County Health Department
0326-1-57-NV1	Midwest PET/CT Imaging, Inc.

BRH re-classified its medical licenses to better reflect the usage and to be consistent with the evolving rules concerning the two types of facilities. An M1 now is a medical institution that performs diagnostic and therapy procedures. An M2 is now defined as diagnostic only (no written directives). The following licenses were revised to reflect the re-classification:

FACILITY	LICENSE NUMBER	CHANGE
Buena Vista Regional Medical Center	0303-1-11-M2	M1 to M2
Ft. Madison Community Hospital	0074-1-56-M2	M1 to M2
Iowa Clinic	0215-1-77-M1	M2 to M1
Iowa Heart Center	0124-1-77-M1	M2 to M1
Knoxville Area Community Hospital	0277-1-63-M2	M1 to M2
Radiology Consultants of Iowa	0041-1-57-M1	M2 to M1

BRH staff also revised two licenses to address problems with the Sealed Source and Device Registry (SS&D).

1. WI-587-D-107-S is the SS&D for a Model C-200 Radium-226 gauge manufactured by Seaman. NR-587-D-104-S is a registry for the Seaman C-200 but with Cesium-137 and Americium-241 sources. The problem is that there is no model differentiation for the differently sourced devices.
2. NC-646-D-130-S is for the Troxler 3400 Series gauges. That implies that the Model 3411 and the 3450 are in the series. However, the 3400 series includes Models 3430, 3430-M, 3440, and 3440-M only.

In the first instance, a licensee requested transfer of a Model C-200 to another licensee. The transfer was to eliminate all radioactive material and subsequently terminate the license. BRH licensing staff was unaware of the difference in sources until they reviewed the SS&Ds.

In 2000, BRH identified the potential problem with using the "series" designation and changed the licensing practices to delete reference to the "3400 Series." (At least one license has inadvertently been issued with the imprecise information since then.) However, in this audit period, a licensee transferred a gauge to another licensee that was authorized the 3400 Series gauges. The license pre-dated that change.

The following licenses were revised to reflect the actual model numbers covered by the "3400 series" designation:

0033-1-31-PG	City of Dubuque
0084-1-77-PG	Geotechnical Services
0126-1-57-PG	Terracon
0168-1-31-PG	IIW Engineers and Surveyors, Inc.
0174-1-52-PG	Shive-Hattery, Inc.
0244-1-77-PG	TEAM Services
0266-1-28-PG	Gibbs Engineering & Surveying
0279-1-77-PG	Barker, Lemar & Associates, Inc.
0284-1-77-PG	Stork/Twin Cities Testing
0285-1-07-PG	Robinson Engineering Company

**A. License**

As a comparison to previous years, the following is a summary of the specific licenses at the end of 2003.

LICENSES			TYPE
2001	2002	2003	
2	2	2	Academic Broad Scope
--	1	1	Accelerator-Produced RAM (PET)
1	1	1	Civil Defense
3	3	3	Irradiators, Self-Shielding
5	5	5	Industrial Radiography
1	1	1	In-vitro Testing Lab
34	33	33	Fixed Gauges
52	47	47	Portable Gauges
2	2	2	Gas Chromatographs
1	1	1	Gamma Knife
2	2	2	High Dose Rate Afterloader
35	34	35	Medical Institutions-Diagnostic and Therapeutic
9	10	14	Medical Institutions-Diagnostic
4	3	3	Nuclear Pharmacy
4	6	8	Nuclear Medical Vans
2	2	2	Nuclear Medical Vans-Scan Only
1	1	1	Pacemaker Byproducts
13	12	12	Research & Development - Other
2	2	2	Source Material
2	2	2	Neutron Source in Device
2	2	2	Calibration and W/L Tests
4	4	4	Storage
2	2	3	X-Ray Fluorescent Analyzer
1	1	1	Veterinary Medicine Therapy
<b>184</b>	<b>179</b>	<b>187</b>	<b>TOTAL</b>

**B. Revised Licenses**

During the inspection of Iowa State University, BRH inspectors found that the license did not address training requirements for portable gauge users. That license was revised accordingly.

BRH staff revised a license to permit possession of a Troxler Model 3411B moisture density gauge. Garden and Associates transferred the gauge to Terracon. The licensees incorrectly assumed that the 3411B was one of the 3400 Series gauges authorized on Terracon's license. This issue has been addressed with the State and Tribal Programs staff.

## VI. Standard License Conditions

After reviewing the license conditions associated with Liquid and Microsphere Brachytherapy, which were published by the NRC, several have been added to the IDPH Standard Licensing Conditions (refer to conditions 123 through 127).

## VII. Generally Licensed Materials Program

IDPH began a General License (GL) inspection program in 1999. This program was initiated in anticipation of the NRC's change in handling Generally Licensed material. No additional actions regarding inspection of GL devices have been accomplished since the previous audit. The following is a summary of the GL licenses:

LICENSEES			CATEGORY
2001	2002	2003	
12	26	33	Portable Gauges
36	34	34	Fixed Gauges
28	28	37	X-Ray Fluorescent Analyzers
4	3	3	In-vitro Laboratories
7	5	4	Dew Point Analyzers
14	13	13	Electron Capture Devices
2	2	3	Liquid Scintillation Detectors
20	15	18	Static Eliminators
<b>123</b>	<b>126</b>	<b>141</b>	<b>TOTAL</b>

Three companies have reported missing, lost, or stolen static eliminators in 2003. These events have been documented in Nuclear Materials Events Database (NMED). Another general licensee reported that companies in another Agreement State had purchased their generally licensed radioactive devices in an auction. BRH required that the facility contact the appropriate regulatory authority.

## VIII. Reported events

In June 2003, BRH staff received a report of a "lead-lined room" into which people were afraid to go. This room was in a physics laboratory at Drake University in Des Moines. It turned out that in this room, inside of which dose rates were 1.5 mr/hr, was a steel box containing button sources and a "pig," labeled "10mg-Radium." Other items in this room included a neutron howitzer, 10mg Ra:Be. Drake University was not licensed for these items.

Additionally, another "pig" containing a radium source was discovered in a storage area off-campus.

By December 2003, Drake University had properly transferred all radioactive material, including waste from the clean-up of loose surface contamination in the steel box. At no time, based on calculations, were any limits to the general public exceeded.

A complete report will be on file in the Bureau by mid-2004.

## IX. Machines

The RAM Program has been tasked with inspecting accelerators and industrial X-ray machines. No inspections were accomplished in 2003 due to staff shortages.

REGISTRANTS			CATEGORY	INSPECTION FREQUENCY IN YEARS
2001	2002	2003		
35	35	64	Analytical X-Ray Machines	3
10	11	30	Cabinet X-Ray Systems	3
9	16	14	Industrial X-Ray Systems	1
20	11	22	Medical Accelerators	3
5	4	7	Non-Medical Accelerators	3
2	2	4	Self-Shielded Particle Accelerators	3
3	2	3	Walk-In X-Ray Cabinets	3
84	81	144	<b>TOTAL</b>	

## X. Chemically Safe Schools and Radioactive Materials Collection

In 2000, Iowa Department of Natural Resources (IDNR) initiated a program to remove unwanted, hazardous chemicals from schools. The initiative lost funding and was abandoned by IDNR. "Chemically Safe Schools" became a partnership of private companies such as Metro Waste Management and county health agencies who inventory and catalog the chemicals in schools. They also arrange for the disposal of the unwanted chemicals. Radioactive materials, which were primarily purchased in the 1950's and 1960's as educational tools, are classified as mixed hazardous waste. As such, the disposal is costly. (The materials were mainly uranium acetate and thorium nitrate.)

The RAM Program has participated in the program by removing the identified radioactive material from high schools. These materials have been delivered to Iowa State University for disposal as part of a 28E Agreement. The following is a list of the schools that had material removed:

Clinton High School

In addition, material was removed from the following businesses throughout the state.

North Star Steel, Wilton  
Midlands Clinic, PC, Sioux City  
John Deere, Dubuque

#### **XI. Department of Transportation Exemptions**

IDPH issued one U.S. Department of Transportation exemption in 2003. Shipments of scrap metal that alarm detectors at processing plants or scrap yards in Iowa are required to have authorization for their return to the state of origin. Upon return, the responsible state radiological program must assist the shipper in identifying the cause of the alarm.

One shipment was returned to Iowa in the audit period. This item contained Radium-226, in scale, in sections of pipe. The pipe was transferred to Iowa State University for disposal as low-level solid waste.

#### **XII. Industrial Radiography Certification Testing**

Ramona Ubaldo-Mealey continues to provide outstanding administrative control of the industrial radiography certification program. The following table summarizes those efforts:

RADIOGRAPHY CERTIFICATION EXAMINATIONS			
	2001	2002	2003
Radioactive Materials	6	7	0
X-Ray	12	8	0
Both	21	20	20
<b>Total</b>	<b>39</b>	<b>35</b>	<b>20</b>

#### **XIII. Rules**

The BRH filed a Notice of Intended Action to address Compatibility A and B rules. The NRC has and several licensees have provided comments. With the exception of subpart J rules, implementation of those rules IDPH will not have any un-addressed Compatibility A or B items after February of 2003, which is the scheduled implementation date. IDPH will be in compliance with regard to the NRC required implementation requirements. In a second set of rules, the errors identified by the NRC review that had not been corrected were addressed. In addition, the verbiage concerning issuance of industrial radiography licenses was added.

The Transportation Security Authority claimed that they were not subject to regulation because the IDPH rules did not include federal agencies. A rule change was considered in 2002 to address this issue but no action was taken. This issue will be researched to determine if all federal agencies are exempt or if those specifically mentioned in our rules are the only ones exempted. The only other facilities that may be exempted are those under federal jurisdiction.

#### XIV. Revenues

Radioactive materials licenses are issued for five years. Inspection frequencies vary but are primarily between one and five years<sup>1</sup>. To grasp the ebbs and flows of the cycles, the specific license revenues for the past five years are listed in the table below.

	NEW	RENEWAL	AMENDMENT	RECIPROCITY	INSPECTION	TOTAL
1998	9000	28575	18805	31000	122805	210185
1999	13030	31565	22190	40400	122507	229692
2000 <sup>2</sup>	14250	67588	26946	42400	142924	294108
2001	24100	42120	47360	43400	137122	294102
2002	10900	44550	31115	44800	172162	303527
2003	20060	43370	29725	67900	149907	310962
<b>TOTAL</b>	<b>91340</b>	<b>257768</b>	<b>176141</b>	<b>269900</b>	<b>847427</b>	<b>1,642,576</b>

#### XV. Integrated Materials Performance Evaluation Program (IMPEP)

From July 29 to August 1, 2003, a team, comprised of members from NRC's Office of State and Tribal Programs, NRC Region III States Agreement Officer, a staff member from NRC Region III and a radiation control program member from the State of New York, conducted an IMPEP review of the program.

With the recommendations of this team, the Management Review Board determined that this program was both adequate to protect public health and safety and compatible with similar NRC programs.

Additionally, there were no findings or recommendations. The IMPEP team also noted two areas of "Good Practice."

<sup>1</sup> Pacemaker By-Product and X-Ray Fluorescent Analyzers are on a seven-year cycle.

<sup>2</sup> Last fee change

## **TANNING PROGRAM**

### **I. Staffing**

Charlene Craig oversees the registration and inspection process and conducts inspections and inspector training. Carol Trimble is the clerical support.

### **II. Training**

Charlene Craig conducted training of county inspectors. Three group update sessions were held and 4 individual county inspectors were trained.

### **III. Facility Registration**

Approximately 1360 tanning facilities were registered in 2003. This includes new facilities and renewal of existing facilities. Each facility is billed and a receipt sent back. All owner/managers complete a monitored exam before the permit is issued. Exams are given by the county health departments and submitted as part of the registration process.

### **IV. Inspections**

The county health departments through contracts with IDPH perform inspections of tanning facilities. Charlene Craig performed 26 inspections for counties without contracts. All inspections are annual and have been completed within the audit period.

### **V. Rules**

Rules updating the health warnings and photosensitizing drug list for tanning, became effective May 2003. This change clarified the two items.

## **RADIATION MACHINES PROGRAM**

### **I. Staffing**

David Myers and Paul E. Koehn conduct X-ray inspections, investigations, and shielding evaluations. Charlene Craig reviews shielding evaluations and oversees the registration process. Carol Trimble is the clerical support.

### **II. X-ray Machine Registrations**

Approximately 2600 facilities and 7200 x-ray units were registered in 2003. This includes new facilities and renewal of existing facilities. Each facility is billed and a receipt sent back upon collection of fees.

### **III. X-ray Machine Inspections**

In 2003, David Myers inspected 165 X-ray units in 81 facilities and Paul E. Koehn inspected 8 tubes in 8 facilities. During this period, 66 percent of the inspections found a non-compliance.

### **IV. Compliance Testing**

Approximately 20 Level II compliance tests were performed as part of Iowa's agreement with the FDA'S Southwest District. The FDA has agreed to calibrate IDPH equipment as compensation for the Level II compliance tests.

### **VI. Gas Delivery System Inspections**

Under a 28E Agreement with the Iowa Dental Board, numerous gas delivery systems are inspected annually. The maximum yearly amount of reimbursement is \$5000.00.

### **VII. Shielding Evaluations**

Shielding evaluations were performed for facilities that have installed new-X-ray equipment or have remodeled existing spaces. The evaluation involved review and calculation of workload, distance, barrier composition, etc. Approximately 300 reviews were performed this year (90 percent by David Myers, 5 percent by Charlene Craig and 5 percent by Paul E. Koehn). The staff has committed to initiating a computerized tracking system to more accurately track and count evaluations.

VIII. Rules

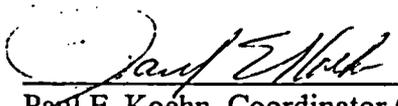
IDPH rules were amended effective May 2003, to reflect changes in Suggested State Regulations for the Control of Radiation (SSRCR's), which are provided by the Conference of Radiation Control Program Directors (CRCPD).

  
\_\_\_\_\_  
Donald A. Flater, Chief

Date 4/27/04

  
\_\_\_\_\_  
Daniel K. McGhee, Coordinator (RAM)

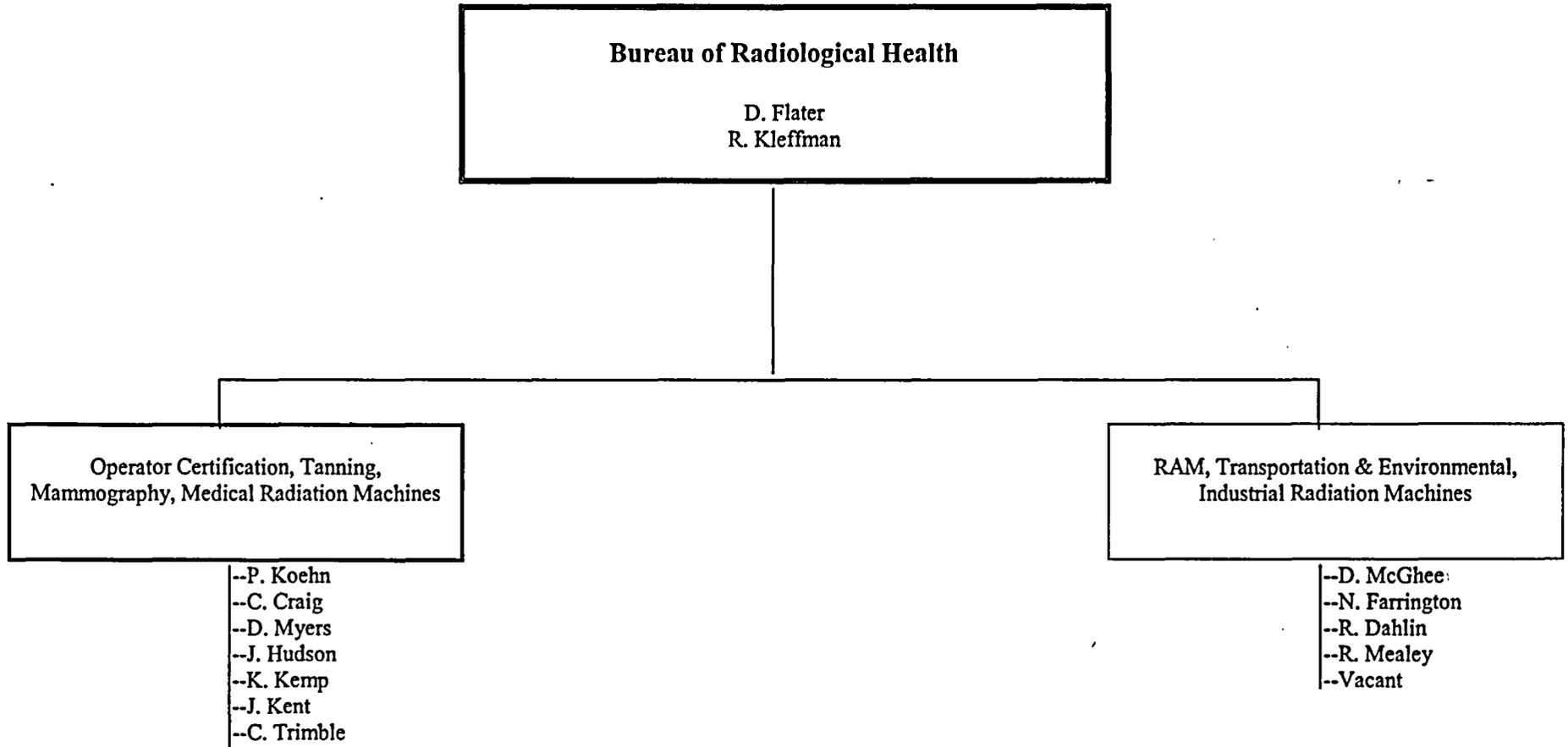
Date 27 APR 04

  
\_\_\_\_\_  
Paul E. Koehn, Coordinator (X-Ray)

Date 04/27/04

Appendix A

BUREAU ORGANIZATIONAL CHART



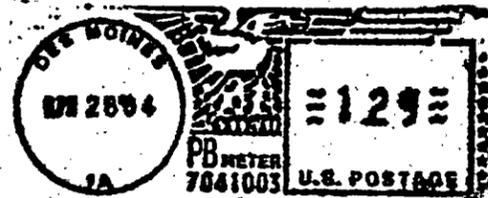
\*This organization table was modified after George F. Johns, Jr., coordinator of the RAM program, retired in April 2003.

## **Appendix B**

### **List of Acronyms**

<b>BRH</b>	<b>Iowa Bureau of Radiological Health</b>
<b>FFA</b>	<b>Federal Facilities Agreement</b>
<b>FDA</b>	<b>Food and Drug Administration</b>
<b>GL</b>	<b>General License</b>
<b>IAAAP</b>	<b>Iowa Army Ammunition Plant</b>
<b>IDNR</b>	<b>Iowa Department of Natural Resources</b>
<b>IDPH</b>	<b>Iowa Department of Public Health</b>
<b>IMPEP</b>	<b>Integrated Materials Performance Evaluation Program</b>
<b>NRC</b>	<b>Nuclear Regulatory Commission</b>
<b>RAM</b>	<b>Radioactive Materials</b>

IOWA DEPARTMENT OF PUBLIC HEALTH  
BUREAU OF RADIOLOGICAL HEALTH  
401 S.W. 7<sup>TH</sup> STREET, SUITE D  
DES MOINES, IA 50309



Lloyd Bolling  
US Nuclear Regulatory Commission  
Mail Stop WF-3-D-23  
Washington, DC 20555

