



Radiation Control Section
IMPEP Questionnaire
2022

Approved by OMB₁

Control No.: 3150-0183

Expires: 02/28/2023

INTEGRATED MATERIALS PERFORMANCE EVALUATION PROGRAM
QUESTIONNAIRE

Reporting Period:

Note: If there has been no change in the response to a specific question since the last IMPEP questionnaire, the State or Region may copy the previous answer, if appropriate.

A. GENERAL

1. Please prepare a summary of the status of the State's or Region's actions taken in response to each of the open recommendations from previous IMPEP reviews.

1. Section 3.1 Technical Quality of Licensing Actions

"The team recommends that Arkansas continue to perform and update its quarterly Quality Improvement audits to ensure that licensing actions are thorough, consistent, and adhere to Arkansas's licensing procedures for the use of standard license conditions, standard authorized use conditions, standard authorized medical user materials authorization; and to ensure that staff is appropriately implementing the RSRM checklist, especially in cases where the request is to remove or decrease RSRM."

Quarterly Audits (2018 through present) were performed to review licensing actions following this recommendation. All issues discovered throughout the audit process were acknowledged and corrected. Audits ensured that licensing actions, standard license conditions, standard authorized use conditions, standard authorized medical user materials authorization were thorough, consistent, and adhere to Arkansas' licensing procedures.

B. COMMON PERFORMANCE INDICATORS

I. Technical Staffing and Training

2. Please provide the following organization charts, including names and positions:

(a) A chart showing positions from the Governor down to the Radiation Control Program Director

SEE ATTACHED ITEM 2A

(b) A chart showing positions of the radiation control program, including management; and

SEE ATTACHED ITEM 2B

(c) Equivalent charts for sealed source and device evaluation, low-level radioactive waste and uranium recovery programs, if applicable.

This is not applicable.

3. Please provide a staffing plan, or complete a listing using the suggested format below, of the professional (technical) full-time equivalents (FTE) applied to the radioactive materials program by individual. Include the name, position, and, for Agreement States, the fraction of time spent in the following areas: administration, materials licensing & compliance, emergency response, low-level radioactive waste, uranium recovery, other. If these regulatory responsibilities are divided between offices, the table should be consolidated to include all personnel contributing to the radioactive materials program. If consultants were used to carry out the program's radioactive materials responsibilities,

include their efforts. The table heading should be: Name Position Area of Effort FTE%

SEE ATTACHED ITEM(S) 3; 4; 7; 8; 9

4. Please provide a listing of all new professional personnel hired into your radioactive materials program since the last review, indicate the date of hire; the degree(s) they received, if applicable; additional training; and years of experience in health physics or other disciplines, as appropriate.

SEE ATTACHED ITEM(S) 3; 4; 7; 8; 9

5. Please list all professional staff who have not yet met the qualification requirements for a radioactive materials license reviewer or inspector. For each, list the courses or equivalent training/experience they need and a tentative schedule for completion of these requirements.

SEE ATTACHED ITEM 5

6. Identify any changes to your qualification and training procedure that occurred during the review period.

There are no changes to the program's qualification and training procedure.

7. Please identify the technical staff that left your radioactive materials program during the review period and indicate the date they left.

SEE ATTACHED ITEM(S) 3; 4; 7; 8; 9

8. List any vacant positions in your radioactive materials program, the length of time each position has been vacant, and a brief summary of efforts to fill the vacancy.

SEE ATTACHED ITEM(S) 3; 4; 7; 8; 9

9. For Agreement States, does your program have an oversight board or committee which provides direction to the program and is composed of licensees and/or members of the public? If so, please describe the procedures used to avoid any potential conflict of interest.

SEE ATTACHED ITEM(S) 3; 4; 7; 8; 9

II. Status of Materials Inspection Program

10. Please identify individual licensees or categories of licensees the State is inspecting less frequently than called for in NRC's Inspection Manual Chapter (IMC) 2800 and explain the reason for the difference. The list only needs to include the following information: license category or licensee name and license number, your inspection interval, and rationale for the difference.

There are no licensees or categories of licensees inspected less frequently than IMC 2800.

11. Please provide the number of routine inspections of Priority 1, 2, and 3 licensees, as defined in IMC 2800 and the number of initial inspections that were completed during each year of the review period.

Priority	12/2017	2018	2019	2020	2021
I	1	8	9	9	11
II		7	7	6	5
III	1	18	4	12	17
Totals	2	33	20	27	33
Initials		3	3	9	3

12. Please submit a table, or a computer printout, that identifies inspections of Priority 1, 2, and 3 licensees and initial inspections that were conducted overdue.

At a minimum, the list should include the following information for each inspection that was conducted overdue during the review period:

- (1) Licensee Name
- (2) License Number
- (3) Priority (IMC 2800)
- (4) Last inspection date or license issuance date, if initial inspection
- (5) Date Due
- (6) Date Performed
- (7) Amount of Time Overdue
- (8) Date inspection findings issued

There was one overdue:

Desert NDT dba Shawcor ARK-1010-03310 I

Last Insp 09/14/2018, Due 09/14/2019 (+6m 03/14/2020)

Performed 06/09/2020, (3 months past 50% allowance)

Inspection findings issued 06/17/2020 with no violations noted.

This Business is restructuring and no longer at job site in Arkansas.

13. Please submit a table or computer printout that identifies any Priority 1, 2, and 3 licensees and initial inspections that are currently overdue, per IMC 2800. At a minimum, the list should include the same information for each overdue inspection provided for Question 12 plus your action plan for completing the inspection. Also include your plan for completing the overdue inspections.

There are no inspections currently overdue of Priority 1,2, and 3 licensees.

There are no initial inspections currently overdue.

14. Please provide the number of reciprocity licensees that were candidates for inspection per year as described in IMC 1220 and indicate the number of reciprocity inspections of candidate licensees that were completed each year during the review period.

Totals include all priority codes

2018 – 36 Candidates with 6 Inspections performed

2019 – 31 Candidates with 7 Inspections performed

2020 – 32 Candidates with 3 Inspections performed (covid impact on inspections)

2021 – 30 Candidates with 6 Inspections performed

III. Technical Quality of Inspections

15. What, if any, changes were made to your written inspection procedures during the reporting period?

SEE ATTACHED ITEM 15

16. Prepare a table showing the number and types of supervisory accompaniments made during the review period. Include:
Inspector Supervisor License Category Date

SEE ATTACHED ITEM 16

17. Describe or provide an update on your instrumentation, methods of calibration, and laboratory capabilities. Are all instruments properly calibrated at the present time? Were there sufficient calibrated instruments available throughout the review period?

The Radiation Control Section's Radiation Safety Manual describes procedures for the calibration of radiation detection instruments. Most instruments are sent to the manufacturer or other qualified vendor for calibration on an annual basis. A small number of pocket dosimeters are checked against a source/leakage checked in-house annually.

In addition, it is the Health Physicists' responsibility to assure that instruments are in calibration and are working properly at the time of use or otherwise obtain an instrument that is in calibration and operating properly.

A sufficient number of calibrated instruments are available to support the Arkansas Program. See attached Item 17, "HP Equipment List," for instrument specifications and laboratory capabilities.

SEE ATTACHED ITEM 17

IV. Technical Quality of Licensing Actions

18. How many specific radioactive material licenses does your program regulate at this time?

The program currently regulates 176 specific radioactive material licenses.

19. Please identify any major, unusual, or complex licenses which were issued, received a

major amendment, were terminated, decommissioned, submitted a bankruptcy notification or renewed in this period.

SEE ATTACHED ITEM 19

20. Discuss any variances in licensing policies and procedures or exemptions from the regulations granted during the review period.

No variances in licensing policies and procedures or exemptions from the regulations were granted during the review period.

21. What, if any, changes were made in your written licensing procedures (new procedures, updates, policy memoranda, etc.) during the reporting period?

SEE ATTACHED ITEM 21

22. Identify by licensee name and license number any renewal applications that have been pending for one year or more. Please indicate why these reviews have been delayed and describe your action plan to reduce the backlog.

There are no renewal applications that have been pending for one year or more. Currently, one renewal has been in timely renewal for eleven months.

V. Technical Quality of Incident and Allegation Activities

23. For Agreement States, please provide a list of any reportable incidents not previously submitted to NRC (See Procedure SA-300, *Reporting Material Events*, for additional guidance, OMB clearance number 3150-0178). The list should be in the following format:

Licensee Name License # Date of Incident/Report Type of Incident

SEE ATTACHED ITEM 23

24. Identify any changes to your procedures for responding to incidents and allegations that occurred during the period of this review.

There are no changes to procedures for responding to incidents and allegations that occurred during the period of this review.

C. NON-COMMON PERFORMANCE INDICATORS

I. Compatibility Requirements

25. Please list all currently effective legislation that affects the radiation control program. Denote any legislation that was enacted or amended during the review period.

Arkansas became an Agreement State on July 1, 1963. Legislative authority to create a radiation control agency and enter into an Agreement with NRC was granted in Arkansas Code Annotated

§ 20-21-201 et seq. The State Board of Health is designated as the State Radiation Control Agency, with the day-to-day administrative duties being carried out by the Secretary of the Department of Health's designee in accordance with A.C.A. § 20-21-206. The Arkansas Department of Energy and Environment, Division of Environmental Quality, has very limited provisions in Title 8, Chapter 7 – Hazardous Substances, Subchapter 6 – Low-Level Radioactive Waste, that address disposal and storage of low-level radioactive waste.

Act 315 of 2019 eliminates “unnecessary references to regulations throughout the Arkansas Code” and provides for “consistent references to rules throughout the Arkansas Code.” This Act will require the Program to amend all regulations, licenses, license conditions, forms, etc. to remove references to the word “regulation” and to replace with “rule.”

Act 517 of 2019 requires each state agency, after each regular and fiscal session of the General Assembly, to review any newly enacted laws to determine whether any existing rule should be repealed or amended or any new rule should be adopted. These new, amended, or repealed rules generally must be filed for adoption with the Secretary of State on or before January 1 of the following year.

Act 662 of 2019 establishes the Code of Arkansas Rules (CAR). The Act instructs the Bureau of Legislative Research (BLR) to develop a uniform style, format, and numbering system for the rules in the CAR. A Word document of our rules was submitted to BLR on August 3, 2021. The Program has little information on how this conversion will occur and has stressed that rules of an Agreement State must be compatible with that of the NRC and therefore must adhere to certain rulemaking procedures in order to demonstrate “adequacy” of the Program.

Act 268 of 2021 ensures compatibility of Arkansas law concerning ionizing radiation with NRC law and regulations and provides for updating of the Arkansas Code Annotated to reflect current terminology and technological advances. This was a Program-initiated Bill.

Rule changes pursuant to Act 268 of 2021 have been accomplished (as required by Act 517 of 2019) but a considerable amount of work will need to be done to be in compliance with Act 315 of 2019 and Act 662 of 2019.

26. Are your regulations subject to a "Sunset" or equivalent law? If so, explain and include the next expiration date for your regulations.

The Arkansas State Board of Health [Rules for Control of Sources of Ionizing Radiation](#) is not subject to a “sunset” or equivalent law.

27. Please review and verify that the information in the enclosed State Regulation Status (SRS) sheet is correct. For those regulations that have not been adopted by the State, explain why they were not adopted, and discuss actions being taken to adopt them. If legally binding requirements were used in lieu of regulations and they have not been reviewed by NRC for compatibility, please describe their use.

The most current State Regulation Status (SRS) sheet is dated October 1, 2021 and is correct.

With the adoption of the most recent rule package effective December 20, 2021, the Arkansas Program has adopted all RATS amendments due at this time. However, RATS ID 2018-1 is due January 14, 2022, and did not make it onto the Executive Staff agenda in order to begin the rulemaking process with other RATS that became effective December 20, 2021. Proposed language for this particular RATS has been reviewed by the NRC, though, with no comments. The other six RATS amendments, through RATS ID 2021-2 (plus 2018-1), should enter the rulemaking process this year. RATS IDs 2018-2, 2018-3, 2019-1, and a few provisions not associated with a RATS ID were contained in the rule package effective December 20, 2021, and were submitted to the NRC on January 7, 2022, for final review.

28. If you have not adopted all amendments within three years from the date of NRC rule promulgation, briefly describe your State's procedures for amending regulations in order to maintain compatibility with the NRC, showing the normal length of time anticipated to complete each step.

The process for amending rules includes the following:

- Development of the proposed rule, including approval by our Center Director and Agency Attorney
- Appearance before the Executive Staff of the Arkansas Department of Health to seek approval to proceed to the Arkansas State Board of Health
- Appearance before the Arkansas State Board of Health for approval to proceed with rulemaking
- Approval of the rule package by the Governor's Office prior to announcing the Public Comment Period
- Filing and distribution of the proposed rule
- A 30-day Public Comment Period to receive comments on the proposed revisions (if substantive comments received, rulemaking process restarts)
- Appearance before the Senate and House Joint Committee on Public Health, Welfare, and Labor for rule review
- Appearance before the Administrative Rules and Regulations Subcommittee of the Arkansas Legislative Council (ALC) for rule review and approval
- Appearance before the full ALC for final approval
- Signature of the final rule by the "Director" of the Arkansas Department of Health, who serves as the Secretary of the Arkansas State Board of Health; and filing and distribution of the final rule.

The rulemaking process generally takes at least one year to complete. The length of time required to complete each step varies depending on many factors.

II. Sealed Source and Device (SS&D) Evaluation Program – [NOT APPLICABLE](#)

29. Prepare a table listing new and amended (including transfers to inactive status) SS&D registrations of sources and devices issued during the review period. The table heading should be:

SS&D Manufacturer,
Registry Distributor or Product Type Date Type of
Number Custom User or Use Issued Action

30. Please include information on the following questions in Section A, as they apply to the SS&D Program:

Technical Staffing and Training - Questions 2-9
Technical Quality of Licensing Actions - Questions 18-22
Technical Quality of Incident and Allegation Activities - Questions 23-24

III. Low-level Radioactive Waste Disposal Program – [NOT APPLICABLE](#)

31. Please include information on the following questions in Section A, as they apply to the Low-Level Radioactive Waste Disposal Program:

Technical Staffing and Training - Questions 2-9
Status of Materials Inspection Program - Questions 10-14
Technical Quality of Inspections - Questions 15-17
Technical Quality of Licensing Actions - Questions 18-22
Technical Quality of Incident and Allegation Activities - Questions 23-24

IV. Uranium Recovery Program – [NOT APPLICABLE](#)

32. Please include information on the following questions in Section A, as they apply to the Uranium Recovery Program:

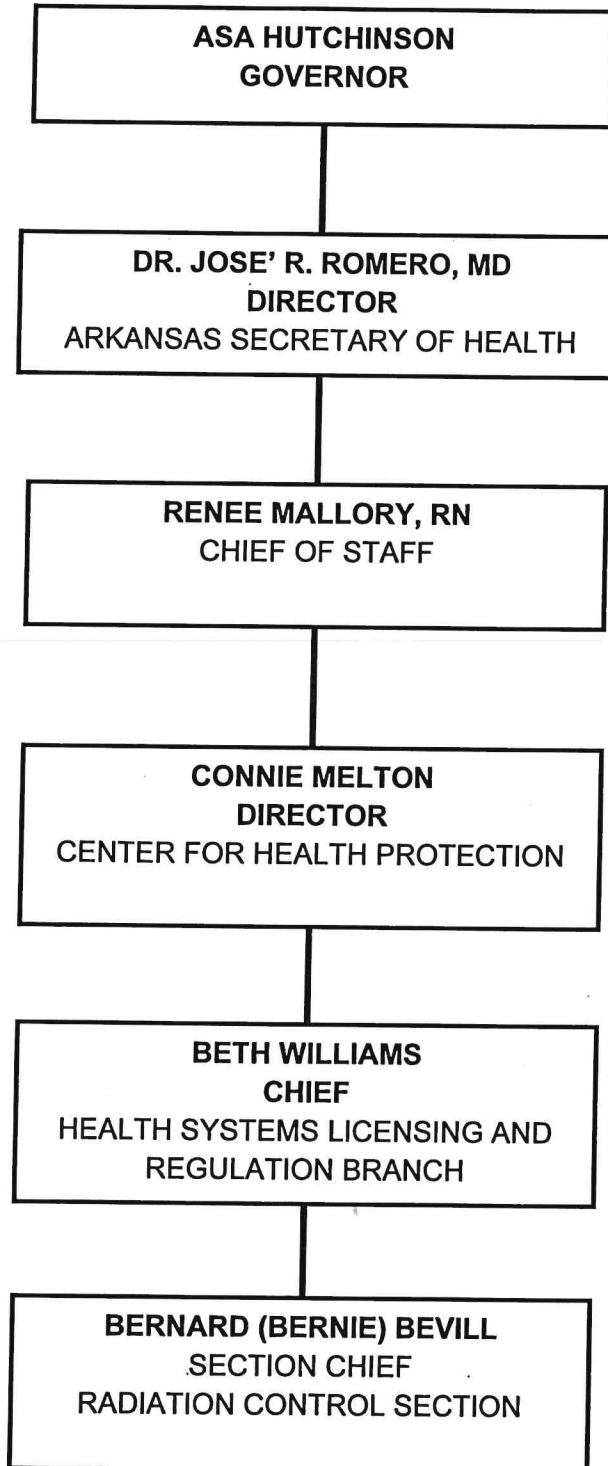
Technical Staffing and Training - Questions 2-9
Status of Materials Inspection Program - Questions 10-14
Technical Quality of Inspections - Questions 15-17
Technical Quality of Licensing Actions - Questions 18-22
Technical Quality of Incident and Allegation Activities - Questions 23-24



RADIATION CONTROL SECTION
INTEGRATED MATERIALS PERFORMANCE EVALUATION PROGRAM

ITEM 2A

ORGANIZATION CHART FROM GOVERNOR TO SECTION CHIEF



December 2021

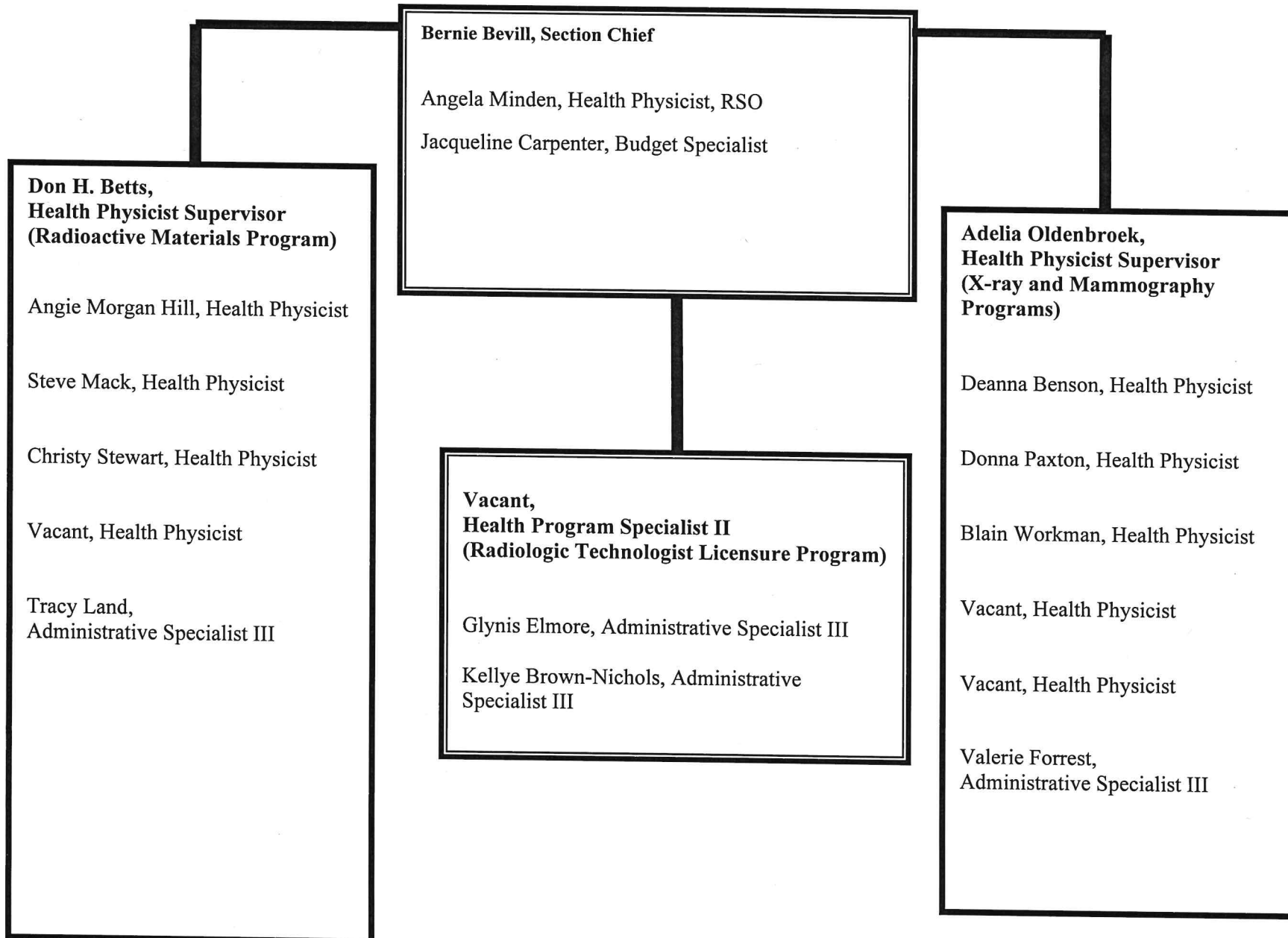
B.I. 2.a



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ITEM 2B

**Arkansas Department of Health
Radiation Control Section**





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ITEM(S)
3. 4. 7. 8. 9

I. Tech. Staff and Training

INDICATOR - STAFF	Bernard Bevill	Don H. Betts	Steve Mack
RAM Position	Radiation Control Section Chief	Program Manager	Health Physicist
Status of Employment	current	current	current
Area of Effort Inspections		20%	35%
Area of Effort Licensing		30%	35%
Area of Effort Emergency Response	10%	5%	5%
Area of Effort Administrative	10%	45%	15%
Area of Effort GL Program			10%
Area of Effort Training (received)			
Date of Hire		10/18/2021	
Degree(s) Received			
Additional Training			
Years of Experience			
License Reviewer	Yes	No	Yes
Qualified Inspector	Yes	No	Yes
Vacant Staff - Hiring Efforts			
Oversight Board / Committee	The Medical Advisory Committee is appointed by the Arkansas Chapter, American College of Radiology. Member Radiologist are appointed by the Chapter President to serve on this committee. The MAC has not been used during the IMPEP evaluation period.	RAM-01.5 MAC Approval Process. Conflict of Interest is avoided by identifying potential connections between a MAC member and the licensee in question. If a MAC member were associated with the licensee, they would not be included in the MAC Approval Process.	

I. Tech. Staff and Training

INDICATOR - STAFF	Angie Morgan Hill	Christy Steward	Vacant
RAM Position	Health Physicist	Health Physicist	Health Physicist
Status of Employment	current	current	vacant October 2021*
Area of Effort Inspections	35%	35%	
Area of Effort Licensing	40%	40%	
Area of Effort Emergency Response	5%	5%	
Area of Effort Administrative	15%	15%	
Area of Effort GL Program	5%	5%	
Date of Hire		5/3/2021	
Degree(s) Received		BS Biology	
Additional Training		see attached CS Course Log; OTJ Inspect Log	
Years of Experience		Environmental Health Inspector 14 years	
License Reviewer	Yes	No	
Qualified Inspector	Yes	No	
Vacant Staff - Hiring Efforts			
Oversight Board / Committee			

I. Tech. Staff and Training

INDICATOR - STAFF	David Stephens	Katia Gray	Jared Thompson
RAM Position	Health Physicist	Health Physicist	Program Manager
Status of Employment	exit: 9/1/2019	exit: 5/8/2020	exit: 6/30/2021
Area of Effort Inspections			
Area of Effort Licensing			
Area of Effort Emergency Response			
Area of Effort Administrative			
Area of Effort GL Program			
Area of Effort Training (received)			
Date of Hire			
Degree(s) Received			
Additional Training			
Years of Experience			
License Reviewer	Yes	Yes	Yes
Qualified Inspector	Yes	Yes	Yes
Vacant Staff - Hiring Efforts			
Oversight Board / Committee			

I. Tech. Staff and Training

INDICATOR - STAFF	Chris Talley
RAM Position	Health Physicist
Status of Employment	exit: 10/22/2021*
Area of Effort Inspections	
Area of Effort Licensing	
Area of Effort Emergency Response	
Area of Effort Administrative	
Area of Effort GL Program	
Area of Effort Training (received)	
Date of Hire	
Degree(s) Received	
Additional Training	
Years of Experience	
License Reviewer	Yes
Qualified Inspector	Yes
Vacant Staff - Hiring Efforts	* A request for position advertisement was made in October. As of 12-08-2021, this vacant position had not been advertised. Position advertised in mid-December, closing on 12-30-21. No applicants received. Position was reposted 1/3/2021.
Oversight Board / Committee	



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ITEM 5

COURSES - in training (Christy Steward Hire 5/3/2021)

[illegible]

INSPECTIONS - in training (Christy Steward Hire 5/3/2021)

License #	Licencee Name	Inspection Date	Risk	Type	with HP
ARK-1058	Advance Corrosion	6/2/2021	1	3310	SM
ARK-0497	Lanxess - Great Lakes	6/23/2021	5	03120/03122	CT
ARK-0920	Highlands Oncology	7/13/2021	2	02200/02230	AH
ARK-0344	Team Industrial	7/15/2021	1	3310	CT
ARK-1025	Swepco	7/27/2021	5	3120	CT
ARK-1055	Ingevity	8/20/2021	5	3120	AH
ARK-530	Clearwater Paper	8/26/2021	2	3120	AH
GL-0003	Ark. Dept. of Health	8/8/2021	na	GL-07	AH
ARK-0903	Sterigenics	10/26/2021	1	source load in	SM
ARK-0482	Drew Memorial Hospital	10/28/2021	4	2121	AH
ARK-0824	Hembree Mercy Med	11/2/2021	2	2120	AH
ARK-0824	Hembree Mercy Med	11/3/2021	2	2120	AH
ARK-0001	UAMS	11/16/2021	1	2110	SM
ARK-0001	UAMS	11/16/2021	1	2110	SM
ARK-0001	UAMS	11/16/2021	1	2110	AH
ARK-0903	Sterigenics (IMPEP)	12/7/2021	1	3521	SM
ARK-0623	Jefferson Regional (IMPEP)	12/8/2021	3	2120	AH
ARK-0576	Applied Inspections (IMPEP)	12/9/2021	1	3310	AH
ARK-0664	Arauco	1/5/2022	5	3120	AH



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ITEM 15

Procedures Index for Radioactive Materials Program

Procedure #	Title	Prepared By	Effective Date
RAM-01.0	Radioactive Materials Section Responsibilities	RAM Supervisor	05/15/90
RAM-01.09	Out-of-State Inspections	RAM Health Physicist	10/15/14
RAM-01.1	License Amendments	RAM Health Physicist	08/05/19
RAM-01.2	New Licenses	RAM Health Physicist	08/05/19
RAM-01.3	Renewal Licenses	RAM Health Physicist	08/05/19
RAM-01.4	Pre-Licensing Visits	RAM Health Physicist	11/15/17
RAM-01.5	Medical Advisory Committee Approval Requests	RAM Supervisor	12/21/01
RAM-01.6	License Termination & Decommissioning	RAM Health Physicist	12/23/09
RAM-01.7	Issuing Radioactive Material Reciprocity Licenses	RAM Health Physicist	01/16/12
RAM-01.8	Signature Authority for Licenses & Amendments	RAM Health Physicist	06/07/19
RAM-01.10	Inspection of Licenses	RAM Coordinator	10/30/13
RAM-01.11	Inspection Reports & Licensee Correspondence	RAM Coordinator	05/14/20
RAM-01.13	Submission of Samples	RAM Health Physicist	12/19/14
RAM-01.14	Incident & Allegation Tracking	RAM Health Physicist	07/25/19
RAM-01.15	Compliance Inspection Frequency for Reciprocity Licensees	RAM Coordinator	01/16/12
RAM-01.16	Approval of Radiation Safety Officer and/or Assistant /Associate Radiation Safety Officer	RAM Health Physicist	03/21/16
RAM -1.17	Extension of Renewal Licenses	RAM Health Physicist	04/29/20
RAM-03.3	Review of Bioassay Programs	RAM Supervisor	05/15/90
RAM-03.7	Inspection Form for RAM Shipments	RAM Supervisor	05/15/92
RAM-03.8	Escalated Enforcement Actions	RAM Supervisor	03/16/98
RAM-04.0	Compliance Inspection Frequency – AR Licensees	RAM Coordinator	01/04/07
RAM-04.1	Abnormal Occurrence Criteria: Notifying the NRC	RAM Supervisor	05/15/90
RAM-04.2	Abnormal Occurrences: New Releases	RAM Supervisor	05/15/90
RAM-04.3	Nuclear Materials Events Database	RAM Supervisor	11/09/98
RAM-04.4	Responding to Events Involving Radioactive Material	RAM Health Physicist	09/03/13
RAM-05.1	Reciprocal Exchange of Information or Enforcement	RAM Supervisor	06/20/90
RAM-05.4	Shipments of Scrap Metal under DOT-E 10656	Q&E Supervisor	01/28/92
RAM-06.0	Security Risk Checklist	RAM Health Physicist	02/20/19
RAM-06.1	Protection of Information	RAM Health Physicist	03/02/11
RAM-07.0	Training and Qualifying RAM Inspectors and License Reviewers	RAM Manager	07/01/19
RAM-07.1	Web-Based Licensing	RAM Health Physicist	10/14/13
RAM-08.1	Inspection of General Radioactive Material Licensees	RAM Health Physicist	12/18/13
RAM-09.0	Responding to Receipt of NRC Manual License Verification Report	RAM Health Physicist	09/06/16
RAM-11.0	Preceptor Verification Procedure	RAM Health Physicist	02/01/18
RAM-01.8	Signature Authority for Licenses and Amendments	RAM Supervisor	06/16/21



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ITEM 16

Inspector	Supervisor	License #	License Name	License Category	License Description	Priority	Date
Mack	Thompson	ARK-0824	Hembree Mercy Cancer Cntr.	2120	Medical Institution WD Rq'd	3	9/20/2017
Stephens	Thompson	ARK-0903	Sterigenics	3521	Irradiators - Other<10,000 Curies	2	10/18/2017
Stephens	Thompson	ARK-0384	Medical Center of So. Ark	2120	Medical Institution WD Rq'd	3	3/21/2018
Mack	Thompson	ARK-0390	St. Mary's Regional MC	2120	Medical Institution WD Rq'd	3	8/29/2018
Morgan-Hill	Thompson	REC-474	Cardiac Imaging	2220	Mobile Medical Svc. WD Not Rq'd	3	2/5/2019
Talley	Thompson	ARK-1057	Advanced Corrosion Tech and Trng.	3310	Industrial Radiography	1	9/20/2019
Talley	Thompson	REC-483	Stronghold Inspection	3310	Industrial Radiography	1	9/20/2019
Morgan-Hill	Thompson	ARK-0346	CHI St. Vincent Hot Springs	2120	Medical Institution WD Rq'd	3	12/17/2019
Talley	Thompson	ARK-1050	Bobby Kennedy Construction	3121	Measuring Systems - portable gauge	5	12/20/2019
Talley	Thompson	ARK-1016	Acuren Inspection	3310	Industrial Radiography	1	1/15/2020
Gray	Thompson	ARK-0681	Unity Health White County MC	2120	Medical Institution WD Rq'd	3	3/6/2020
Talley	Thompson	ARK-1066	Arkansas Lime (pre-license)	3122	Measuring Systems - Analytical Inst's	5	3/19/2020
Talley	Thompson	ARK-0773	Industrial Quality Svcs	3310	Industrial Radiography	1	6/26/2020
Talley	Thompson	ARK-0465	Howard Memorial Hospital	2121	Medical Institution WD Not Rq'd	5	8/25/2020
Morgan-Hill	Thompson	ARK-0042	Evergreen Packaging	3120	Measuring Systems - fixed gauges	5	9/30/2020
Talley	Thompson	ARK-1073	Fixed Equipment Reliability	3310	Industrial Radiography	1	3/11/2021

Mack	Thompson	ARK-0501	Entergy - White Bluff (Ra-226)	3120	Measuring Systems - fixed gauges	5	5/18/2021
Morgan-Hill	Bevill	ARK-0654	CARTI	2200	Medical Private Practice WD Rq'd	2	10/26/2021



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ITEM 17

HP Equipment List

Manufacturer	Model	Description (ABC order)	Storage location	Serial no.	Calibration**	Operational checks	Comments
RADeCO	H-811	Air samplers - area	HP Lab	2009 and 2038	annually – flow rate calibration by approved vendor; calibrate with media to be used; flow sensor is inspected as part of calibration (small fan behind front barrel)	quarterly – visually inspect heads for damage/wear; and with head on (media included), ensure calibration range is indicated when unit is powered up and that appropriate flow rate shows for AC/12V DC when a test sample is collected	available power – AC, 12V DC (vehicle), and 12V DC via battery bank; attach to tripod adapter by removing 2 small screws on side, that attach the case halves - sub with 2 longer screws; use 2 inch LB-5211 paper and CP-100 cartridge
F&J Specialty Products	12V 50Ah	Air sampler - lithium-ion battery pack	Conference room	none seen	NA	Verify battery is charged prior to use (starting at 100%, bank will run H-811 with our media ~3 hours)	12V for H-811 sampling; after use, charge via AC – 7 hours; recharge within 12 hrs if fully discharged; store in a charged state – recharge every 6 mo.
F&J Specialty Products OUT OF SERVICE	ECONOAIR L-5P	Air Sampler -personal	HP Lab	FJL5P-00176	annually – via a mini-calibrator (don't have); recom'd by F&J (overdue 2013); calibrate with media to be used	day of use – one point calibration verification via a mini calibrator (don't have); monthly – run the sampler 5-6 hrs then recharge (recom'd by F&J) (NiMH battery)	lapel cassette for 47 mm filter paper alone (LP-947); 2 chargers – regular and QuickOne charger [battery may need to be replaced]
Ludlum	43-5	Detectors: 43-5 alpha scintillators	Storage Room	various 7 available	none – These detectors will not be utilized if a	day of use* recommended by Ludlum – would be a non-quantitative ops	for Model 3's; for detection only (not for measurement); typical background is 1-3

HP Equipment List

					calibrated 43-5 is available for use.	check; use Th-230 source in HP Lab	cpm; range is bkg - 240 kcpm; Th-230 source should read ~1.5 kcpm on contact
Ludlum	44-9	Detectors: 44-9 "pancakes"	Storage Room	various 16 available	none	day of use* recommended by Ludlum – would be a non-quantitative ops check; could use 10 μ Ci Cs-137 source	for Model 3's; for detection only (not for measurement); typical background is 60 cpm; range is bkg - 300 kcpm; Mounted HP Lab Cs-137 source should read ~30 kcpm on contact
Mirion	RAD-60R	Electronic alarming dosimeters	HP Lab	various	biannually – by approved vendor (TK)	day of use – see procedure; quarterly for ANO purposes	used to record exposure; range of 0.1 mrem – 999 rem and 0.5 mrem/h – 300 rem/h
NA	NA	Lead shot and some sheets	Storage Room	NA	NA	NA	shielding purposes
Arrow-Tech	138	Pocket dosimeters	HP Lab	various 6 available (others that could be calibrated if needed)	annually – response to rad; in-house (AM)	day of use – check to see if zeroes out properly	electrical leakage checked annually at same time; range 0-200 mR
S.E. INT'L CDV-750 (FEMA)	6	Pocket dosimeter - charger	HP Lab	various	NA	NA	used for charging pocket dosimeters; "gun" style
Jordan Electronics CD V-750	5b	Pocket dosimeter - charger	HP Lab	various	NA	NA	used for charging pocket dosimeters; unit takes 1 D cell battery

HP Equipment List

Arrow-Tech	DC-DRD6Hole	Pocket dosimeter - checker	HP Lab	unknown	NA	NA	used for checking multiple DRD's for response to rad; 8 μ Ci on 04/2011 Cs-137
Flir	nanoRaider ZH	Radionuclide identifier	HP Lab	103156003538	annually – AM ("preventative maintenance and performance optimization" – manual says every 5 yrs)(not a true dose rate calibration)	day of use – check battery charge (Li ion); AC and car charger included; "calibration check" - will ID Cs-137 check source	gamma and manned neutron identification; has Dose Rate, Finder, and Identification modes; can act as a DRD; 30 keV - 3 MeV for gamma; \leq 10 μ rem/hr - 1.0 rem/hr
Berkeley Nucleonics	SAM 945-G	Radionuclide identifier	HP Lab	945032	annually – AM (annually recom'd by BNC - not in manual)(not a true dose rate calibration)	day of use – check battery charge (Li ion in device and PDA) – BN recom's charging both at least once/month (AM); AC and car chargers included for both; auto calibration and auto stabilization via internal KCl powder; will ID Cs-137 check source	gamma identification; manual calibration using \sim 0.5-1.0 μ Ci Cs-137 source required if drift; Gauge, Finder, and Identification modes; 3x3 NaI and GM; 20 keV - 3 MeV; 0.1 μ rem/hr - 10 rem/hr
Spectrum Techniques	unknown	Source – Cs-137; 0.913 μ Ci (unknown cal date)	HP Lab – black box	0214085	NA	NA	for SAM-945G use - appropriate distance needed for manual calibration, need \sim 2500 cps
Spectrum Techniques	CS137S10	Source – Cs-137; 10 μ Ci in April 2016	HP Lab	unknown	NA	NA	for operational checks, as appropriate

HP Equipment List

Spectrum Techniques	CS137S10	Source – Cs-137; 10 uCi in April 2016	X-ray area	unknown	NA	NA	for operational checks, as appropriate
North American Scientific	F710	Source – Th-230; 159 Bq (4.297 nCi) on 3/1/97	HP Lab – black box	unknown	NA	NA	for operational checks, as appropriate, e.g., the 43-5's
Victoreen/Fluke	451-B	Survey meter - ion chamber	X-ray or RAM	various 3 available SN 501 has beta dose correction factor	annually – AM	day of use* – via 10 µCi Cs-137 source recom'd by Fluke; see procedure	see manual for types and E's of emissions detected via window open or closed; up to 50 R/hr; not cal'd for α or β; Fluke only checks desiccant if meter is in for repair or bkg is high during cal (saturated is light pink); AM will inspect desiccant prior to sending for calibration
Victoreen/Fluke	451-P	Survey meter - ion chamber, pressurized	X-ray	various 4 available	annually – AM	day of use* – via 10 µCi Cs-137 source recom'd by Fluke; see procedure	see manual for types and E's of emissions detected (no α); up to 50 R/hr; not cal'd for β
Ludlum	2241-3	Survey meter - kit with 4 detectors	HP Lab	various 8 available	annually – AM	day of use – via side-mounted Cs-137 check source (1 µCi on 2/2006); see procedure; quarterly for ANO purposes – TK; also consider these checks: all segments in the display are working, typical bkg reading,	ratemeter and scaler (set to 1 min count); det's: 44-9, 44-38 (not cal'd for β), 44-2, and 133-6 or 133-7; 4 kits kept in LR for ANO response (can be used for other Rad Control activities)

HP Equipment List

						audio, alerts and alarms, F or S, initiation of counting, light (see manual)	
Ludlum	2241-3	Survey meter – kit with 5 detectors	HP Lab	326346	annually – AM	day of use – via side-mounted Cs-137 check source (1 μ Ci on 11/2016); see procedure; quarterly for ANO purposes – TK; additional checks as above	ratemeter and scaler (set to 1 min count); det's: 44-9, 44-38 (not cal'd for β), 44-2, 44-3, and 133-6; Rad Control purchased this kit; headphone capability
Ludlum	19	Survey meter - micro R meter	HP Lab	various 12 available	annually – AM	day of use* – via 10 μ Ci Cs-137 source recom'd by Ludlum; see procedure; quarterly for ANO purposes – HPs	internal detector; 0-5000 μ R/hr; typical background is 5-15 μ R/hr
Ludlum	12-4	Survey meter - Neutron detector	HP Lab	140119	annually – AM	day of use recommended by Ludlum - a neutron source may be a future purchase	9 inch sphere; 0-10000 mrem/hr; detector model 42-31
Ludlum	3	Survey meters – with 43-5 detectors	HP Lab	15038 92787	annually – AM	day of use* – via Th-230 source in HP Lab (approved by Ludlum); see procedure; quarterly for ANO purposes - HPs	meter cal'd with alpha scintillator probe; typical background is 1-3 cpm; range is bkg - 240 kcpm; Th-230 source should read ~1500 cpm
Ludlum	3	Survey meters - with 44-2 detectors	HP Lab	various 4 available	annually – AM	day of use* – via 10 μ Ci Cs-137 source recom'd by Ludlum; see procedure; quarterly for ANO purposes – HPs	meter cal'd with gamma scintillator probe; 4 meters with μ R/hr face, none in cpm; 0-5000 μ R/hr; typical background is 1800 cpm

HP Equipment List

Ludlum	3	Survey meters - with 44-6 detectors	HP Lab	various 16 available	semi-annually – AM	day of use* – via 10 μ Ci Cs-137 source recom'd by Ludlum; see procedure; quarterly for ANO purposes – HPs	meter cal'd with side window probe; not cal'd for β ; 0-200 mR/hr; typical background is 25-50 cpm at 8-15 μ R/hr
RTI Group	Piranha RF	X-ray test detector device	X-ray	various	biannually – AM	none	Solid state detector; measures kVp, time, HVL, total filtration, dose, dose rate, and presents waveform
Unfors RaySafe	DXR+, 8151011-A	X-ray/light field alignment ruler	X-ray	various	NA	none – spec's say all segments should turn on when it's fully irradiated	direct x-ray ruler

* If an overnight stay is required, e.g., due to an inspection, the check may be performed on the first day only. The check must be performed again upon return to the office.

** Also, before initial use and after damage, erratic behavior, and repairs. Switching to a different length of detector cable for meters such as the Ludlum model 3's or 2241-3's will also require a recalibration.

HP Equipment List

Public Health Laboratory

Manufacturer	Model	Description	Storage location	Serial no.	Calibration	Operational checks	Comments
PerkinElmer	4810TR	liquid scintillation counter	Radiochemistry Lab	NA	Dionne Colbert	Dionne Colbert	Low energy beta counting (C-14, Ni-63, or H-3 – can convert results to microcuries or dpm as needed)
Canberra	Apex-Gamma	gamma spec system - HPGe detectors	Radiochemistry Lab	NA	Dionne Colbert	Dionne Colbert	Gamma counting of various geometries; Detector 1 with pre-WWII steel shield (better for NORM) but requires longer count, Detector 2 with lead shield
Canberra	LB4200	gas flow proportional counter	Radiochemistry Lab	NA	Dionne Colbert	Dionne Colbert	Alpha-beta counting (gross alpha and gross beta in pCi/swipe and pCi/L)

Note: EPA could possibly help with an infrequent, definite need for alpha spectroscopy.

HP Equipment List

Some other things available in the HP Lab:

air sampling RAdECo 2500-19 combination holders (heads) (6, new design)	paint cans
air sampling RAdECo CP-100 charcoal cartridges (40x50) – sealed; watch exp date	pitchers, plastic
air sampling RAdECo LB-5211 particulate filters (2 inch) (2 boxes)	posting, CRAM, radiation area
air sampling RAdECo tripods (2); H-811 tripod adaptors (2), H-809C tripod adaptors (2), and screws; O-ring kits (2); H-811 fuses (3 total)	rope on a spool
applicators, cotton-tipped	spades
bags – clear, approx. 13 gallon	tape and stickers, RAM
bags – sample, 4x6, 4 mil, Fisher Scientific	tape for cordoning off, CRA
balance – Dial-O-Gram, 2610g by Ohaus	tape for seams of PPE (ChemTape)
batteries, D cell and 9V	tape, measuring (50 ft)
containers – plastic, round with lids, 16 oz	tape, tamper evidence
cubitainers, 1G/4L	tongs
ear plugs	trowels
envelopes, sample (glassine)	tweezers
flags, sample location	Tyvek
flashlights	vials – small, with caps
gloves, disposable	wipes, cloth*
goggles – splash and impact resistant, over-the-glasses	wipes, paper (ACME)
mallet	ziplocs, gallon
paint, spray	*cloth fibers might cause self-absorption of alpha



RADIATION CONTROL SECTION
INTEGRATED MATERIALS PERFORMANCE EVALUATION PROGRAM

ITEM 19

LICENSES TERMINATED SINCE MAY 2019 FOLLOW UP IMPEP

Licensee Name	Address	License Number	Termination Date	Health Physicist	Priority
S. H. Smith & Company, Inc.	901 Vine Street Poplar Bluff, MO 63902	ARK-1051-03121	11/24/2020	SM	5
Schlumberger Technology Services	300 Schlumberger Drive Mail Drop 121 Sugar Land, TX 77478	ARK-0077-03121	12/9/2020	SM	5
Rajesh K. Shroff, MD	1 Mercy Lane, Suite 305 Hot Springs, AR 71913	ARK-0968-02201	12/22/2020	SM	5
Cudd Pumping Svcs.	The Woodlands, Texas	GL-0130	1/6/2021	SM	
Clean Harbors El Dorado, LLC	309 American Circle El Dorado, AR 71730	ARK-0557-03120	3/2/2021	SM	5
Mercy Health Center - Bentonville	3101 S.E. 14th Street Bentonville, AR 72712	ARK-0880-02120	3/10/2021	SM	3
Caddo Inspections, Inc	P.O. Box 267 Crossett, Arkansas 71635	ARK-0881-03310	3/30/2021	CT	1
Heart Associates of South Arkansas	619 West Grove Street El Dorado, AR 71730	ARK-0961-02201	4/29/2021	AH	5
FutureFuel Chemical Company	2800 Gap Road Batesville, AR 72503	GL-0032	06/21/20201	CT	
Ackley Engineering Inc.	428 Highway 5 N Benton, AR 72019	ARK-1011-03121	8/23/2021	ADMH/CS	5
Twin Lakes Quarry's, Inc.	P.O. Box 705 Mountain Home, AR 72653	ARK-0700-03121	11/9/2021	CS	5



RADIATION CONTROL SECTION
INTEGRATED MATERIALS PERFORMANCE EVALUATION PROGRAM

ITEM 21

Procedures Index for Radioactive Materials Program

Procedure #	Title	Prepared By	Effective Date
RAM-01.0	Radioactive Materials Section Responsibilities	RAM Supervisor	05/15/90
RAM-01.09	Out-of-State Inspections	RAM Health Physicist	10/15/14
RAM-01.1	License Amendments	RAM Health Physicist	08/05/19
RAM-01.2	New Licenses	RAM Health Physicist	08/05/19
RAM-01.3	Renewal Licenses	RAM Health Physicist	08/05/19
RAM-01.4	Pre-Licensing Visits	RAM Health Physicist	11/15/17
RAM-01.5	Medical Advisory Committee Approval Requests	RAM Supervisor	12/21/01
RAM-01.6	License Termination & Decommissioning	RAM Health Physicist	12/23/09
RAM-01.7	Issuing Radioactive Material Reciprocity Licenses	RAM Health Physicist	01/16/12
RAM-01.8	Signature Authority for Licenses & Amendments	RAM Health Physicist	06/07/19
RAM-01.10	Inspection of Licenses	RAM Coordinator	10/30/13
RAM-01.11	Inspection Reports & Licensee Correspondence	RAM Coordinator	05/14/20
RAM-01.13	Submission of Samples	RAM Health Physicist	12/19/14
RAM-01.14	Incident & Allegation Tracking	RAM Health Physicist	07/25/19
RAM-01.15	Compliance Inspection Frequency for Reciprocity Licensees	RAM Coordinator	01/16/12
RAM-01.16	Approval of Radiation Safety Officer and/or Assistant /Associate Radiation Safety Officer	RAM Health Physicist	03/21/16
RAM -1.17	Extension of Renewal Licenses	RAM Health Physicist	04/29/20
RAM-03.3	Review of Bioassay Programs	RAM Supervisor	05/15/90
RAM-03.7	Inspection Form for RAM Shipments	RAM Supervisor	05/15/92
RAM-03.8	Escalated Enforcement Actions	RAM Supervisor	03/16/98
RAM-04.0	Compliance Inspection Frequency – AR Licensees	RAM Coordinator	01/04/07
RAM-04.1	Abnormal Occurrence Criteria: Notifying the NRC	RAM Supervisor	05/15/90
RAM-04.2	Abnormal Occurrences: New Releases	RAM Supervisor	05/15/90
RAM-04.3	Nuclear Materials Events Database	RAM Supervisor	11/09/98
RAM-04.4	Responding to Events Involving Radioactive Material	RAM Health Physicist	09/03/13
RAM-05.1	Reciprocal Exchange of Information or Enforcement	RAM Supervisor	06/20/90
RAM-05.4	Shipments of Scrap Metal under DOT-E 10656	Q&E Supervisor	01/28/92
RAM-06.0	Security Risk Checklist	RAM Health Physicist	02/20/19
RAM-06.1	Protection of Information	RAM Health Physicist	03/02/11
RAM-07.0	Training and Qualifying RAM Inspectors and License Reviewers	RAM Manager	07/01/19
RAM-07.1	Web-Based Licensing	RAM Health Physicist	10/14/13
RAM-08.1	Inspection of General Radioactive Material Licensees	RAM Health Physicist	12/18/13
RAM-09.0	Responding to Receipt of NRC Manual License Verification Report	RAM Health Physicist	09/06/16
RAM-11.0	Preceptor Verification Procedure	RAM Health Physicist	02/01/18
RAM-01.8	Signature Authority for Licenses and Amendments	RAM Supervisor	06/16/21



RADIATION CONTROL SECTION
INTEGRATED MATERIALS PERFORMANCE EVALUATION PROGRAM

ITEM 23

Appendix F

Question 23

<u>Licensee Name</u>	<u>License #</u>	<u>Date of Incident/Report</u>	<u>Type of Incident</u>
2022			
Georgia Pacific	ARK-0321	01/3/2022	Heat Damaged Exit Sign
2021			
3DI	ARK-1008	9/15/2021	Lost FedEx RAM Shipment
Material Testing	ARK-0859	8/16/2021	Lost Gauge During Transport
None	None	8/03/2021	Vial Removed from Private Residence
3M	GL-0048	5/17/2021	Damaged Gauge
Terracon	ARK-0820	1/21/2021	Unsecured Container
3DI	ARK-1008	1/19/2021	Contamination
Mid-Continent Labs, Inc.	REC-246	1/12/2021	Stolen Gauge
3DI	ARK-1008	6/16/2021	Finger dose and Improper Procedure with Zr-89
3DI	ARK-1008	10/25/2021	Package contamination in New Jersey
2020			
3DI	ARK-1008	12/22/2020	Contamination
BRMC Gastroenterology	ARK-0990	5/29/2020	Lost Source
Nucor Steel	ARK-786	3/2/2020	Stuck Shutter
2019			
JRMC	ARK-0623	7/9/2019	Patient Left with IV Port
UAMS	ARK-0001	2/15/2019	Medical Event

GTS	ARK-0995	3/5/2019	Source Destroyed by Skid Steer
2018			
3DI	ARK-1008	11/14/2018	Over Exposure
American Interplex	GL-0057	10/24/2018	Leaking Source
Cardinal Health	ARK-0642	10/13/2018	Recovery of Transport Container
Bionomics/TRG	REC-325	8/18/2018	Ra-226 Billion-Aire Analyzer
Cardinal Health	ARK-0642	6/27/2018	Lost Empty Shipping Container
Albermarle	ARK-0717	4/18/2018	Stuck Shutter
Georgia Pacific	ARK-0321	2/28/2018	Stuck Shutter
Clean Harbors	ARK-0557	2/26/2018	Accidental Incineration
Entergy-White Bluff	ARK-0501	1/9/2018	Stuck Plugs in 2 Gauges
2017			
N/A	N/A	6/7/2017	Mercury Clean-up, No RAM
Clearwater	ARK-0530	6/6/2017	Stuck Shutter
Baxter Healthcare	GL-0026	5/1/2017	Stuck Shutter
Construction Materials			
Testing Services	ARK-0750	4/18/2017	Stolen Gauge