Approved by OMB[1]
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INTEGRATED MATERIALS PERFORMANCE EVALUATION PROGRAM QUESTIONNAIRE

Kentucky Agreement State Program
Reporting Period: July 30, 2016 – January 13, 2020

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

A. GENERAL

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

The review team identified some performance issues in the indicators of Compatibility Requirements and Low-Level Waste Disposal.

Status:

The Program has taken action on this recommendation. The program received an application for a renewal in its entirety for Maxey Flatts Disposal Site. The amendment (#68) in its entirety was completed on 11/7/2017. The disposal site was inspected on 9/6/2017 with no compliance issues noted. The Environmental Protection Agency (EPA) has indicated that Operable Unit 1 construction was complete on 4/19/2018 and that Remedial Action was completed on 7/12/2018.

Kentucky was found unsatisfactory on the compatibility requirements indicator due to not adopting regulations in accordance with NRC time requirements.

Status:

The RATS ID has been recently updated.

The RHB is drafting regulations to adopt by reference process for 10 CFR 20, 10 CFR 30, 10 CFR 31, 10 CFR 32, 10 CFR 40, 10 CFR 70, and 10 CFR 150. The conversion process will be complete when the Kentucky specific regulations are adopted.

The RHB has adopted the NRC following regulations by reference since the last IMPEP: 10 CFR 33, 10 CFR 34, 10 CFR 35, 10 CFR 37, 10 CFR 39, and 10 CFR 70.

[1]Estimated burden per response to comply with this voluntary collection request: 53 hours. Forward comments regarding burden estimate to the Records Management Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0183), Office of Management and Budget, Washington, DC 20503. If an information collection does not display a currently valid OMB control number, NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

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%
Matthew McKinley	RCPD	Administration	2%
		Materials Lic. & Comp.	0%
		Emergency Response	10%
		LLRW	0%
		Other	8%
		Total	20%
Jerry Hensley	RH Sup	Administration	60%
		Materials Lic. & Comp.	10%
		Emergency Response	10%
		LLRW	5%
		Other	15%
		Total	100%
Angela Wilbers	RH Spec. III	Administration	35%
		Materials Lic. & Comp.	55%
		Emergency Response	5%
		LLRW	0%
		Other (Training, NSTS)	5%
		Total	100%
Anjan Bhattacharyya	RH Spec. III	Administration	35%
		Materials Lic. & Comp.	40%
		Emergency Response	5%
		LLRW reporting & MFDS	15%
		Other (LLRW, Hot Loads)	5%
		Total	100%
Russell Hestand	RH Spec. III	Administration	35%
		Materials Lic. & Comp.	55%
		Emergency Response	5%
		LLRW	0%
		Other (Training, NSTS)	5%
		Total	100%

Corinne Hay (Started 8-16-2019)	RH Spec. II	Administration	15%
		Materials Lic. & Comp.	30%
		Emergency Response	5%
		LLRW	0%
		Other (Training, Reg Review)	50%
		Total	100%
Ashley Marshall (Started 11/18/2019)	RH Spec. II	Administration	15%
		Materials Lic. & Comp.	30%
		Emergency Response	5%
		LLW	0%
		Other (Training, Reg Review)	50%
		Total	100%

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.

Name	Hire Date	Degree(s)	Years of Exp.
Russell Hestand	1/2/2018	BS	26 years Nuc Med Tech
Jerry Hensley, CHP	8/16/2019	BS	30+ years health physics
Corinne Hay	8/16/2019	BA	30+ years X-ray
Ashley Marshall	11/18/2019	BA	15 years X-ray

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.

Jerry Hensley, Radiation Health Supervisor: Hire Date August 16, 2019
OJT training to become license reviewer and inspector. New employee. Projected date to become qualified for all inspections is June 2022.

Russell Hestand, Radiation Health Specialist III:
OJT training for Brachytherapy, Gamma Knife & Other Medical Uses (H-3040 Projected date to become qualified for all inspection/licensing is June 2020.

Corrine Hay, Radiation Health Specialist II: Hire Date August 16, 2019
OJT training to become license reviewer and inspector. New employee
Root Cause/Incident Investigation Workshop (G-205), Safety Aspects of well Logging (H-314), Diagnostic & Therapeutic Nuclear Medicine ((H-304). Projected date to become qualified for all inspections is June 2021.

Ashley Marshall, Radiation Health Specialist II: Hire Date November 16, 2019
OJT training to become license reviewer and inspector. New employee Inspection Procedures (G-108), Licensing Practices & Procedures (G-109), and Introductory Health Physics Self-Study Course (H-117S) ; 2021 Courses – Root Cause/Incident Investigation Workshop (G-205), Safety Aspects of Well Logging (H-314), Diagnostic & Therapeutic Nuclear Medicine ((H-304). Projected date to become qualified for all inspections is October 2021.

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

None

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

Steve Berrier left the program on 1/1/2018 – 15 years with RHB Radioactive Materials

Christopher Keffer left the program on 6/28/2018 – 11 years with RHB Radioactive Materials

Jeannie Merwin left the program on 12/16/2016 – 3 years with RHB Radioactive Materials

Curt Pendergrass left the program on 12/1/2018 – 13 years with RHB Radioactive Materials

Eric Perry left the program on 3/22/2019 – 6 years with RHB Radioactive Materials

Marissa Vega Velez left the program on 5/16/2019 – 10 years with RHB Radioactive Materials

Dell Potter left the program on 5/16/2019 – 1 year with RHB Radioactive Materials

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.

There is one vacancy in the Radioactive Materials Section. The position was advertised and interviews were performed on December 6 and 9, 2019. When this vacancy is filled, the radioactive materials section will be completely staffed. This position has been vacant for 8 months

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.

No

I. 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.

All licensees are inspected in accordance with the RMS policy "RAM Inspection Frequency and Announcement of Inspections". No licensees or groups of licensees are inspected less frequently than called for in NRC Inspection Manual Chapter 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.

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Date		Priority 1	Priority 2	Priority 3	Initial	Yearly Total
7/16/2016	12/31/2016	6	7	5	1	19
1/1/2017	12/31/2017	11	11	24	4	50
1/1/2018	12/31/2018	10	8	18	3	39
1/1/2019	12/17/2019	8	8	9	0	25
Priority Totals		35	34	56	8	
Total Priority 1-3 & Initial Inspections for the reporting period						133

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:

Only one priority 1, 2, or 3 facility was overdue.

(1) Licensee Name: *Rockcastle County Hospital*
(2) License Number: *202 214 25*
(3) Priority (IMC 2800): *3*
(4) Last inspection date or license issuance date, if initial inspection*: 9/29/11*
(5) Date Due: *6/25/2015*
(6) Date Performed *11/16/16*
(7) Amount of Time Overdue: *505 days*
(8) Date inspection findings issued: *December 5, 2016 (Compliant)*

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 priority 1, 2 or 3 inspections or 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.

Year	Priority 1		Priority 2		Priority 3		Other	
	Eligible Candidates	Inspected	Eligible Candidates	Inspected	Eligible Candidates	Inspected	Eligible Candidates	Inspected
16	3	0	6	3	6	0	29	1
17	4	1	7	1	4	1	28	0
18	4	0	6	2	5	1	23	0
19	2	0	6	3	5	0	27	1

Year	Total Priority 1,2,3		
	Eligible Candidates	Inspected	%
16	15	3	20%
17	15	3	20%
18	15	3	20%
19	13	3	23%

II. Technical Quality of Inspections

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

None

16. Prepare a table showing the number and types of supervisory accompaniments made during the review period. Include:

Inspector	Supervisor	License Category	Date
2016			
Eric Perry	Curt Pendergrass	University of Kentucky Gamma Knife (inspector Qualification, routine)	12/16/16
Angela Wilbers	Curt Pendergrass	Norton Suburban Hospital (therapeutic unsealed WD Required, manual brachy-therapy, HDR, routine)	11/21/16
Jeannie Merwin	Curt Pendergrass	PETNET Solutions, Inc. (cyclotron, radiopharmacy routine)	11/17/16
Chris Keffer	Curt Pendergrass	Integrity Testing & Inspec-tion (radiographer, routine)	10/03/16
Marissa Vega Velez	Curt Pendergrass	Baptist Health Paducah (therapeutic unsealed WD required, manual brachy-therapy, HDR, routine)	1/14/16
Anjan Bhattacharyya	Curt Pendergrass	Ohio County Hospital (diagnostic imaging, routine)	1/15/16
Eric Perry	Curt Pendergrass	National Inspection Services (radiographer, routine)	7/6/16

2017

Eric Perry	Curt Pendergrass	University of Louisville (Medical Broad Scope)	8/31/17
Marissa Velez	Curt Pendergrass	University of Louisville (Medical Broad Scope)	8/31/17
AJ Bhattacharyya	Curt Pendergrass	University of Kentucky (Medical Broad Scope)	11/30/17
Angela Wilbers	Curt Pendergrass	University of Kentucky (Medical Broad Scope)	11/30/17

2018

Christopher Keffer	Left RHB June 2018		
AJ Bhattacharyya	Rob Gresham	University of Kentucky (Academic Broad Scope)	8/14/18
Angela Wilbers	Rob Gresham	University of Kentucky (Academic Broad Scope)	8/14/18
Angela Wilbers	Matt McKinley	American Red Cross Blood Services (Blood Irradiator)	12/14/18
Eric Perry	Matt McKinley	Jewish Hospital (Hospital)	12/13/18

2019

AJ Bhattacharyya	Jerry Hensley	Jan X-Ray Services (Radiography)	10/30/19
Angela Wilbers	Matt McKinley	Norton Hospital (Hospital)	3/25/2019
Russell Hestand	Jerry Hensley	LG&E Mill Creek (Fixed Gauges – Utility)	11/14/19

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?

New equipment purchased during the review period:

Inspection: The RHB purchased 2 Ludlum 44-38 detectors (hard wall GM detectors). Only equipment routinely used for inspections or emergency response is being calibrated. Equipment is being calibrated by facilities authorized by a NRC or Agreement State radioactive materials license in accordance with ANSI N323A, 1997 or the manufacture's recommendation. There are a sufficient number of instruments available for the radioactive materials section.

The Radiation Environmental/Monitoring Section is the laboratory of the Radiation Health Branch. Instruments used by the laboratory include 4 Gas-Flow Proportional Counters, 3 Liquid Scintillation Counters, 7 HPGe Gamma Detectors and 32 Alpha Chambers. Sample preparation capabilities include drying, grinding, sifting, furnace ashing, acid leaching, acid digesting, U separation, Pu separation, Th separation, Y-90 separation, Tc-99 separation, distillation (H-3) and C-14.

III. Technical Quality of Licensing Actions

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

Kentucky Radioactive Materials Section regulates 350 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.

Clariant Corporation
Transport Logistics International
Paducah-McCracken County Riverport

The holders of fixed gauge licenses for 14 coal mines filed for bankruptcy. Of the 14, one terminated when they came out of bankruptcy and 3 new owners applied for a radioactive materials license and were approved. There are 10 licensees currently in bankruptcy. RHB is working with these licensees to ensure all licensed materials are controlled and secure and pending proper disposition and termination and where requested, assisting with transfer of control of those licenses to other entities which will use these licensed materials as intended. RHB is working with its Office of Legal Services to ensure public health and safety is maintained.

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

No exemptions or variations 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?

Revised Licensing Guides

- Kentucky License Guide for Industrial Radiography, Revised for 10 CFR 34 implementation

- Kentucky Medical License Guide, Revised 10/2019, Revised for 10 CFR 35 implementation

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.

No renewals. Kentucky sends a new license with a new expiration date when the annual fees are paid. It does not perform renewal in its entirety like the NRC

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

All reportable incidents occurring during the review period have been previously submitted to the NRC.

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

None

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.

No pending legislation for RHB.

Adoption Date	Title	State Section (902 KAR 100)	NRC
8/17/2016	Quantities of Radioactive Material Requiring Labeling	30	10 CFR 20, App C
8/17/2016	Exempt Quantities	80	10 CFR 30.71
8/17/2016	Exempt Concentrations	85	10 CFR 30.70
12/12/2018	Specific Domestic License of Broad Scope for Byproduct Material	52	10 CFR 33
12/12/2018	Packaging and Transportation of Radioactive Material	70	10 CFR 71
12/12/2018	Medical Use of Byproduct Materials	72	10 CFR 35
12/12/2018	License for Industrial Radiography & Radiation Safety Requirements for Industrial Radiography	100	10 CFR 34
12/12/2018	Wire Line Service Operations	142	10 CFR 39

Since the 2016 IMPEP, the RHB has adopted 902 KAR 100:180, Technologically Enhanced Naturally Occurring Radioactive Material Related to Oil and Gas Development.

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

Our regulations are subject to a “sunset law”. If the regulations are amended or certified that they are still required every 7 years, they will be extended another 7 years.

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 provided SRS information is not current.

The RHB had drafted regulations to adopt by reference the following NRC regulations: 10 CFR 20, 10 CFR 30, 10 CFR 31, 10 CFR 32, 10 CFR 40, 10 CFR 70, and parts of 10 CFR 150. The NRC should receive copies of the proposed license condition and regulations early 2020.

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.

Our process for amending regulations includes the following steps:

Drafting the regulation(s) IAW NRC compatibility requirements	1 months
NRC review of proposed regulation	1 months
Cabinet review and approval	6 months
File with Legislative Research Commission (LRC)	1 month
Regulation published by LRC	0.5 months
Prepare for public hearing	0.5 months
Public hearing period	3 month
Administrative Regulation Subcommittee review	1 month
Health & Welfare Committee review	1 month
Finalization of Kentucky Administrative Regulation	1 month
NRC review of final regulation	1 months
Total	18 months

II. Sealed Source and Device (SS&D) Evaluation Program

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

There have been no new SS&D registries since the last IMPEP. RHB is working with a Kentucky manufacturer on a specific model SS&D with shutter concerns.

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

Dr. Anjan Bhattacharyya is the lead for SS&D reviews at this time. He has a Ph.D. in Chemistry has met all the requirements specified in the RMS Staff Training and Qualification program for a SS&D reviewer. Dr. Bhattacharyya attended the SS&D Workshop in 2014 and has attended the following NRC courses: G-108, G-109, G-205, H-111, H-117, H-119, H-120, H-121, H-122, H-123, H-304, H-305, H-308, H-313, H-314, H-410, H-500, and S-201. Dr. Bhattacharyya has been employed by the RHB since 2012. Russell Hestand is an alternate technical reviewer and is currently reviewing NRC guidance documents for SS&D evaluations, reviewing existing SS&D evaluations performed by other programs, and is working with Dr Bhattacharyya. Russell has attended the following NRC courses: F-104,G-108, H-117, H-122, and H-313. Russell has worked for the RHB since 2018 and was a nuclear medicine technologist for 26 years. Mr. Hestand will attend the next SS&D Workshop.

Prior to their leaving the program, Chris Keffer and Eric Perry performed SS&D evaluations. Mr. Keffer has successfully completed 3 weeks of NRC health physics training including H-117, H-122, H-201, and H-123. Mr. Keffer spent approximately 40 hours on SS&D review during this review period. In addition to Mr. Keffer, Eric Perry, who is a veteran of the US Navy nuclear power program where he attained the rank of Machinist Mate First Class and where he served as Engineering Watch Supervisor and Quality Assurance officer. He has taken several engineering related courses at the University of Kentucky with hopes of eventually pursuing a BS degree in Mechanical Engineering. Mr. Perry also attended the SS&D Workshop in 2014 and he has completed his qualifications as a SS&D reviewer. Mr. Perry has assumed the role of lead SS&D technical reviewer for RHB with Chris Keffer

III. Low-level Radioactive Waste Disposal Program

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

Information on the LLRW program is incorporated in the responses to the above questions on the program and is not separate from the radioactive materials program.

IV. Uranium Recovery Program

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

Kentucky does not have a uranium recovery program