

**From:** Janet Schlueter  
**To:** Orendi, Monica; Rathbun, Patricia; Schneider, Kathleen  
**Date:** 03/23/2007 1:14:30 PM  
**Subject:** Fwd: Kansas Request to Review Proposed Regulations

I responded to Tom acknowledging receipt.

>>> <TConley@kdhe.state.ks.us> 03/23/2007 1:12 PM >>>

Janet,

With all the changes at NRC I wasn't sure exactly who to send this to but I knew you would get it to the right people.

Rats ID	Title	State Section
NRC letter dated May 18, 2006 (Ascension # ML061370535)	Kansas' Final Revision to Regulation Submittal.	Various – See Attachment 1
N/A	Minor Editorial Revisions to Kansas Regulations	Various – See Attachment 2
2005-1	Security Requirements for Portable Gauges Containing Byproduct Material: 10 CFR 30	K.A.R 28-35-184a – See Attachment 3
2006-2	National Source Tracking System -Serialization Requirements	K.A.R 28-35-135n and K.A.R. 28-35-180a(h) – See Attachment 4
2006-3	National Source Tracking System Part 20	K.A.R. 28-35-135n and K.A.R. 28-35-230g – See Attachment 5

(See attached file: KS Proposed Revisions Attachment 5.pdf)(See attached file: Kansas regulation submittal letter.pdf)(See attached file: KS Proposed Revisions Attachment 1.pdf)(See attached file: KS Proposed Revisions Attachment 2.pdf)(See attached file: KS Proposed Revisions Attachment 3.pdf)(See attached file: KS Proposed Revisions Attachment 4.pdf)

If you have any questions or need additional information please contact me or Isabelle Busenitz at (785) 296-8286 or [IBusenitz@kdhe.state.ks.us](mailto:IBusenitz@kdhe.state.ks.us)

Thomas A. Conley, RRPT, CHP  
Section Chief, Radiation and Asbestos Control  
Kansas Department of Health and Environment  
Phone: (785) 296-1565  
email: [tconley@kdhe.state.ks.us](mailto:tconley@kdhe.state.ks.us)

**CC:**

Moore, Scott

**Mail Envelope Properties** (46040AEF.9DA : 0 : 9584)

**Subject:** Fwd: Kansas Request to Review Proposed Regulations  
**Creation Date** 03/23/2007 1:14:23 PM  
**From:** Janet Schlueter

**Created By:** JRS1@nrc.gov

**Recipients**

nrc.gov  
TWGWPO01.HQGWDO01  
SWM CC (Scott Moore)

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<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>	
MESSAGE	4543	03/23/2007 1:14:23 PM	
KS Proposed Revisions Attachment 5.pdf PM		71074	03/23/2007 1:13:58
Kansas regulation submittal letter.pdf PM		49005	03/23/2007 1:13:58
KS Proposed Revisions Attachment 1.pdf PM		18343	03/23/2007 1:13:58
KS Proposed Revisions Attachment 2.pdf PM		20762	03/23/2007 1:13:58
KS Proposed Revisions Attachment 3.pdf PM		18050	03/23/2007 1:13:58
KS Proposed Revisions Attachment 4.pdf PM		35695	03/23/2007 1:13:59

**Options**

**Expiration Date:** None

**Priority:** Standard  
**ReplyRequested:** No  
**Return Notification:** None

**Concealed Subject:** No  
**Security:** Standard



Kathleen Sebelius, Governor  
Roderick L. Bremby, Secretary

DEPARTMENT OF HEALTH  
AND ENVIRONMENT

[www.kdheks.gov](http://www.kdheks.gov)

Division of Environment

March 23, 2007

George Pangburn, Deputy Director  
Federal & State Materials & Environmental Management Programs  
U.S. Nuclear Regulatory Commission Washington, D.C. 20555-0001

Re: Kansas Proposed Regulation Changes

Dear Deputy Director:

Enclosed is a copy of proposed revisions to Kansas Radiation Protection Regulations. The proposed revisions were made available for public comment and will be officially adopted on or about June 1, 2007. The proposed changes to Kansas Rules are identified by underline/strike out text and correspond to the following equivalent amendments to NRC's regulations

<b>Rats ID</b>	<b>Title</b>	<b>State Section</b>
NRC letter dated May 18, 2006 (Ascension # ML061370535)	Kansas' Final Revision to Regulation Submittal.	Various – See Attachment 1
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2006-2	National Source Tracking System - Serialization Requirements	K.A.R 28-35-135n and K.A.R. 28-35-180a(h) – See Attachment 4
2006-3	National Source Tracking System Part 20	K.A.R. 28-35-135n and K.A.R. 28-35-230g – See Attachment 5

We believe that adoption of these revisions satisfies the compatibility and health and safety categories established in the Office of Federal & State Materials & Environmental Management Programs Procedure SA-200 for these amendments.

If you have any questions or comments, please contact either Isabelle Busenitz at (785) 296-8286 or [IBusenitz@kdhe.state.ks.us](mailto:IBusenitz@kdhe.state.ks.us) or myself.

Sincerely,



Thomas A. Conley, CHP  
Chief, Radiation and Asbestos Control Section  
(785) 296-1565  
[tconley@kdhe.state.ks.us](mailto:tconley@kdhe.state.ks.us)

Attachments

Radiation Regulation Summary

NRC Section	NRC Section Title	State Section	RATS ID	Compatibility Category	Summary of Amendment Change	Is There a Difference Between State Text and NRC Yes/No	Is the Difference Significant Yes/No	Comment: If Difference Exists, why or why not is the difference significant.
35.2	Definitions	28-35-135a(dd)	2002-2 NRC letter dated May 18, 2006 Item 1	B	Definition of Authorized User changed to reflect the adoption by reference and exclusion of specific terms in Part 6 of the regulations as requested by the Nuclear Regulatory Commission. 10 CFR 35 definition is used for medical uses in Part 6 of the Kansas regulations.	No		
35.2	Definitions	28-35-135p(z)	2002-2 NRC letter dated May 18, 2006 Item 2	C	Definition of Prescribed Dose changed to reflect the adoption by reference and exclusion of specific terms in Part 6 of the regulations as requested by the Nuclear Regulatory Commission. 10 CFR 35 definition is used for medical uses in Part 6 of the Kansas regulations.	No		
35.2	Definitions	28-35-135r(g)	2002-2 NRC letter dated May 18, 2006 Item 1	B	Definition of Radiation Safety Officer changed to reflect the adoption by reference and exclusion of specific terms in Part 6 of the regulations as requested by the Nuclear Regulatory Commission. 10 CFR 35 definition is used for medical uses in Part 6 of the Kansas regulations.	No		
35.2	Definitions	28-35-135d	1997-6 NRC letter dated May 18, 2006 Item 3	C	Definition of Decommission changed to make the wording consistent with the NRC compatibility requirement. The meaning of the terms remain unchanged.	No		

Radiation Regulation Summary

40.22	Small quantities of source material	28-35-177a.	2002-2 NRC letter dated May 18, 2006 Item 4	B	Changed to reflect the requirement by the NRC to remove authorization to possess source material from specific groups.	No		
31.3	Certain devices and equipment	28-35-178a.	2001-1 NRC letter dated May 18, 2006 Item 5 comment is applicable to this regulation.	B	Changed to reflect the requirement by the NRC to provide a list of entities to which a general license will be issued, removing the broad category of 'persons'.	No		
31.5	Certain detecting, measuring, gauging, or controlling devices and certain devices for producing light or an ionized atmosphere	28-35-178b.	2001-1 NRC letter dated May 18, 2006 Item 5	B	Changed to reflect the requirement by the NRC to provide a list of entities to which a general license will be issued, removing the broad category of 'persons'.	Yes	No	State rule is more restrictive than the NRC rule. As noted in the September 28, 2005 All Agreement States Letter STP-05-072, the determination on this provision will be held in abeyance until such time that NRC completes its review and response to the OAS on compatibility changes for the GL rule. Waiting for petition on rulemaking PRM 31-05

Radiation Regulation Summary

Part 35	Specific Licenses for Medical Use	28-35-181d	2002-2 NRC letter dated May 18, 2006 Item 7	C	Changed to reflect the relocation of the definition of specific groups	No		
39.41	Design and performance criteria for sources	28-35-349	2000-1 NRC letter dated May 18, 2006 Item 8	B	Design, performance, and certification criteria for sealed sources used in downhole operations. Changed to correct an incorrect date on a reference to an ANSI standard.	No		

# Radiation Regulation Summary

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Radiation Regulation Summary

NRC Section	NRC Section Title	State Section	RATS ID	Compatibility Category	Summary of Amendment Change	Is There a Difference Between State Text and NRC Yes/No	Is the Difference Significant Yes/No	Comment: If Difference Exists, why or why not is the difference significant.
35.2	Definitions	28-35-135r(b)	n/a	B	Definition of Radiation Area enhanced to clarify the wording to include the dose received in a specific time period.	No		
32.72	Manufacture, preparation, or transfer for commercial distribution of radioactive drugs containing byproduct material for medical use under part 35	28-35-181m.	n/a	B	Changed to clarify the wording regarding requirements for applications for specific licenses to manufacture, prepare or distribute radiopharmaceuticals containing radioactive material for medical use.	No		
32.72	Manufacture, preparation, or transfer for commercial distribution of radioactive drugs containing byproduct material for medical use under part 35	28-35-181n	n/a	B	Changed to remove reference to a regulation that was revoked in the last set of regulatory changes.	No		

Radiation Regulation Summary

32.74	Manufacture and distribution of sources or devices containing byproduct material for medical use.	28-35-181o	n/a	B	Changed to remove reference to a regulation that was revoked in the last set of regulatory changes.	No		
33.14	Requirements for the issuance of a Type B specific license of broad scope	28-35-182c	n/a	D	Changed to reflect the proper assignment of responsibility to the radiation safety officer instead of the radiation safety committee.	No		
Appendix B to Part 30	Quantities of Licensed Material Requiring Labeling	28-35-201	n/a	B	Changed to reflect an incorrect reference in the footnotes of the table.	No		
30.72	Schedule C-- Quantities of radioactive materials requiring consideration of the need for an emergency plan for responding to a release.	28-35-202	n/a	H&S	Duplicate table revoked to reflect that the table has been previously incorporated in Part 13 of the regulations as 28-35-411.	No		

Radiation Regulation Summary

Appendix C to Part 30	Criteria Relating to Use of Financial Tests and Self Guarantees for Providing Reasonable Assurance of Funds for Decommissioning	28-35-203	n/a	D	Changed to correct an incorrect reference.	No		
		28-35-216a.	n/a		Changed to clarify exemption from testing for sealed sources.	No		

Radiation Regulation Summary

34.43	Training	28-35-289	n/a	B, except Paragraph (a)(2) is D and paragraph (c) is B - for States that authorize the use of radiographer's assistants and D- for States that do not authorize radiographer	Training Requirements. Changed to clarify the requirements for training for industrial radiographic operations.	No		
34.89	Location of documents and records	28-35-292	n/a	C	Location of documents and records. Changed to reflect an incorrect reference to a part of the regulation.	No		

# Radiation Regulation Summary

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**Security Requirements for Portable Gauges Containing Byproduct Material - Part 30**  
**(70 FR 2001) RATS ID # 2005-1 Effective date 7/11/05**  
**Date due for State adoption : 7/11/08**

Change to NRC Section	Title	State Section	Compatibility Category	Summary of Change to CFR	Difference Yes/No	Significant Yes/No	If Difference, Why or Why Not Was a Comment Generated
§ 30.34	Terms and conditions of licenses.	28-35-184a	C	<p>The final rule requires a portable gauge licensee to use a minimum of two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal whenever the portable gauges are not under the control and constant surveillance of the licensee. The primary intent of this rulemaking is to increase licensees' control of portable gauges to reduce the opportunity for unauthorized removal or theft.</p> <p>(i) Security requirements for portable gauges.</p> <p>Each portable gauge licensee shall use a minimum of two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal, whenever portable gauges are not under the control and constant surveillance of the licensee.</p>	No		

National Source Tracking System - Serialization Requirements  
(Part 32 with reference to Part 20 Appendix E)  
(71 FR 65685; November 8, 2006) RATS ID **2006-2** Effective 2/06/07  
Date due for State adoption : February 6, 2007

NRC Section	Section Title	State Section	Compatibility Category	Summary of Change to CFR	Difference Yes/No	Significant Yes/No	If difference, why or why not comment generated
§20 Appendix E	Nationally tracked sources threshold	28-35-135n	B	<b>Added Appendix:</b> See table at end of document	No		
§32.2	Definitions- Nationally tracked sources	28-35-135n	B	<b>Added Definition:</b> Nationally tracked source means a sealed source containing a quantity equal to or greater than Category 1 or 2 levels of any radioactive material listed in Appendix E of this Part. In this context a sealed source is defined as radioactive material that is sealed in a capsule or closely bonded, in a solid form and which is not exempt from regulatory control. It does not mean material encapsulated solely for disposal, or nuclear material contained in any fuel assembly, subassembly, fuel rod, or fuel pellet. Category 1 nationally tracked sources are those containing radioactive material at a quantity equal to or greater than the Category 1 threshold. Category 2 nationally tracked sources are those containing radioactive material at a quantity equal to or greater than the Category 2 threshold but less than the Category 1 threshold.	No		

NRC Section	Section Title	State Section	Compatibility Category	Summary of Change to CFR	Difference Yes/No	Significant Yes/No	If difference, why or why not comment generated
§32.201	Serialization of nationally tracked sources	28-35-180a(h)	B	<b>Added Section:</b> Each licensee who manufactures a nationally tracked source after February 6, 2007 shall assign a unique serial number to each nationally tracked source. Serial numbers must be composed only of alpha-numeric characters.	No		

### Appendix E Part 20-Nationally Tracked Source Thresholds

Radioactive Material	Category 1 (TBq)	Category 1 (Ci)	Category 2 (TBq)	Category 2 (Ci)
Actinium-227	20	540	0.2	5.4
Americium-241	60	1600	0.6	16
Americium-241/Be	60	1600	0.6	16
Californium-252	20	540	0.2	5.4
Cobalt-60	30	810	0.3	8.1
Curium-244	50	1400	0.5	14
Cesium-137	100	2700	1	27
Gadolinium-153	1000	27000	10	270
Iridium-192	80	2200	0.8	22
Plutonium-238	60	1600	0.6	16
Plutonium-239/Be	60	1600	0.6	16

Polonium-210	60	1600	0.6	16
Promethium-147	40000	1100000	400	11000
Radium-226	40	1100	0.4	11
Selenium-75	200	5400	2	54
Strontium-90	1000	27000	10	270
Thorium-228	20	540	0.2	5.4
Thorium-229	20	540	0.2	5.4
Thulium-170	20000	540000	200	5400
Ytterbium-169	300	8100	3	81

**From:** <lBusenitz@kdhe.state.ks.us>  
**To:** "Janet Schlueter" <JRS1@nrc.gov>  
**Date:** 03/23/2007 4:53:39 PM  
**Subject:** Fw: Kansas Request to Review Proposed Regulations

Janet,

Here are the proposed regulations that accompany the request for review that Tom sent. I have also included a modified version of the Attachment 5. If you have any questions, please feel free to contact me.

(See attached file: KS Proposed Revisions Attachment 5 modified.pdf)

(See attached file: 28-35-349.pdf)(See attached file: 28-35-135a.pdf)(See attached file: 28-35-135d.pdf)(See attached file: 28-35-135n.pdf)(See attached file: 28-35-135p.pdf)(See attached file: 28-35-135r.pdf)(See attached file: 28-35-177a.pdf)  
(See attached file: 28-35-178a.pdf)(See attached file: 28-35-178b.pdf)(See attached file: 28-35-180a.pdf)(See attached file: 28-35-181d.pdf)(See attached file: 28-35-181m.pdf)(See attached file: 28-35-181n.pdf)(See attached file: 28-35-181o.pdf)  
(See attached file: 28-35-182c.pdf)(See attached file: 28-35-184a.pdf)(See attached file: 28-35-201.pdf)(See attached file: 28-35-202.pdf)(See attached file: 28-35-203.pdf)(See attached file: 28-35-216a.pdf)(See attached file: 28-35-230g.pdf)  
(See attached file: 28-35-289.pdf)(See attached file: 28-35-292.pdf)

Isabelle Busenitz, M.S.  
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----- Forwarded by Isabelle Busenitz/Kdhe on 03/23/2007 03:42 PM -----

Tom Conley/Kdhe

03/23/2007 12:12 PM To  
"Janet Schlueter" <JRS1@nrc.gov>  
cc  
Isabelle Busenitz/Kdhe@KDHE  
Subject  
Kansas Request to Review Proposed  
Regulations

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2006-3	National Source Tracking System Part 20	K.A.R. 28-35-135n and K.A.R. 28-35-230g - See Attachment 5

[attachment "KS Proposed Revisions Attachment 5.pdf" deleted by Isabelle Busenitz/Kdhe] [attachment "Kansas regulation submittal letter.pdf" deleted by Isabelle Busenitz/Kdhe] [attachment "KS Proposed Revisions Attachment 1.pdf" deleted by Isabelle Busenitz/Kdhe] [attachment "KS Proposed Revisions Attachment 2.pdf" deleted by Isabelle Busenitz/Kdhe] [attachment "KS Proposed Revisions Attachment 3.pdf" deleted by Isabelle Busenitz/Kdhe] [attachment "KS Proposed Revisions Attachment 4.pdf" deleted by Isabelle Busenitz/Kdhe]

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**Subject:** Fw: Kansas Request to Review Proposed Regulations  
**Creation Date** 03/23/2007 4:54:55 PM  
**From:** <[IBusenitz@kdhe.state.ks.us](mailto:IBusenitz@kdhe.state.ks.us)>

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<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
MESSAGE	5433	03/23/2007 4:54:55 PM
KS Proposed Revisions Attachment 5 modified.pdf	71116	
28-35-349.pdf	15464	
28-35-135a.pdf	22827	
28-35-135d.pdf	20349	
28-35-135n.pdf	33128	
28-35-135p.pdf	23176	
28-35-135r.pdf	79202	
28-35-177a.pdf	18146	
28-35-178a.pdf	12508	
28-35-178b.pdf	28593	
28-35-180a.pdf	13165	
28-35-181d.pdf	31628	
28-35-181m.pdf	21366	
28-35-181n.pdf	19162	
28-35-181o.pdf	17359	
28-35-182c.pdf	13594	
28-35-184a.pdf	12793	
28-35-201.pdf	59433	
28-35-202.pdf	8587	
28-35-203.pdf	25471	
28-35-216a.pdf	14688	
28-35-230g.pdf	18558	

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28-35-289.pdf	20599
28-35-292.pdf	11722
Mime.822	853358

**Options**

<b>Expiration Date:</b>	None
<b>Priority:</b>	Standard
<b>ReplyRequested:</b>	No
<b>Return Notification:</b>	None

<b>Concealed Subject:</b>	No
<b>Security:</b>	Standard

National Source Tracking System Part 20  
 (71 FR 65865; November 8, 2006) RATS ID 2006-3 Effective: February 6, 2007  
 Date due for State adoption : November 15, 2007 (category I), November 30, 2007 (category II)

NRC Section	Section Title	State Section	Compatibility Category	Summary of Change to CFR	Difference Yes/No	Significant Yes/No	If difference, why or why not comment generated
§20.1003	Definitions- Nationally tracked sources	28-35-135n(b)	B	<p><b>Added Definition:</b>            Nationally tracked source means a sealed source containing a quantity equal to or greater than Category 1 or Category 2 levels of any radioactive material listed in Appendix E of this Part. In this context a sealed source is defined as radioactive material that is sealed in a capsule or closely bonded, in a solid form and which is not exempt from regulatory control. It does not mean material encapsulated solely for disposal, or nuclear material contained in any fuel assembly, subassembly, fuel rod, or fuel pellet. Category 1 nationally tracked sources are those containing radioactive material at a quantity equal to or greater than the Category 1 threshold. Category 2 nationally tracked sources are those containing radioactive material at a quantity equal to or greater than the Category 2 threshold but less than the Category 1 threshold.</p>	No		

NRC Section	Section Title	State Section	Compatibility Category	Summary of Change to CFR	Difference Yes/No	Significant Yes/No	If difference, why or why not comment generated
§20.2207 (a)	Reports of transactions involving nationally tracked sources	28-35-230g(a)	B	<p><b>Added Section:</b>  Each licensee who manufactures, transfers, receives, disassembles, or disposes of a nationally tracked source shall complete and submit a National Source Tracking Transaction Report as specified in paragraphs (a) through (e) of this section for each type of transaction.</p> <p>(a) Each licensee who manufactures a nationally tracked source shall complete and submit a National Source Tracking Transaction Report. The report must include the following information:</p> <ol style="list-style-type: none"> <li>(1) The name, address, and license number of the reporting licensee;</li> <li>(2) The name of the individual preparing the report;</li> <li>(3) The manufacturer, model, and serial number of the source;</li> <li>(4) The radioactive material in the source;</li> <li>(5) The initial source strength in becquerels (curies) at the time of manufacture; and</li> <li>(6) The manufacture date of the source.</li> </ol>	No		

NRC Section	Section Title	State Section	Compatibility Category	Summary of Change to CFR	Difference Yes/No	Significant Yes/No	If difference, why or why not comment generated
§20.2207 (b)	Reports of transactions involving nationally tracked sources	28-35-230g(b)	B	<p><b>Added Section:</b>            (b) Each licensee that transfers a nationally tracked source to another person shall complete and submit a National Source Tracking Transaction Report. The report must include the following information:            (1) The name, address, and license number of the reporting licensee;            (2) The name of the individual preparing the report;            (3) The name and license number of the recipient facility and the shipping address;            (4) The manufacturer, model, and serial number of the source or, if not available, other information to uniquely identify the source;            (5) The radioactive material in the source;            (6) The initial or current source strength in becquerels (curies);            (7) The date for which the source strength is reported;            (8) The shipping date;            (9) The estimated arrival date;            and            (10) For nationally tracked sources transferred as waste under a Uniform Low-Level Radioactive Waste Manifest, the waste manifest number and the container identification of the container with the nationally tracked source</p>			

NRC Section	Section Title	State Section	Compatibility Category	Summary of Change to CFR	Difference Yes/No	Significant Yes/No	If difference, why or why not comment generated
§20.2207 (c)	Reports of transactions involving nationally tracked sources	28-35-230g(c)	B	<p>(c) Each licensee that receives a nationally tracked source shall complete and submit a National Source Tracking Transaction Report. The report must include the following information:</p> <p>(1) The name, address, and license number of the reporting licensee;</p> <p>(2) The name of the individual preparing the report;</p> <p>(3) The name, address, and license number of the person that provided the source;</p> <p>(4) The manufacturer, model, and serial number of the source or, if not available, other information to uniquely identify the source;</p> <p>(5) The radioactive material in the source;</p> <p>(6) The initial or current source strength in becquerels (curies);</p> <p>(7) The date for which the source strength is reported;</p> <p>(8) The date of receipt; and</p> <p>(9) For material received under a Uniform Low-Level Radioactive Waste Manifest, the waste manifest number and the container identification with the nationally tracked source.</p>	No		

NRC Section	Section Title	State Section	Compatibility Category	Summary of Change to CFR	Difference Yes/No	Significant Yes/No	If difference, why or why not comment generated
§20.2207 (d)	Reports of transactions involving nationally tracked sources	28-35-230g(d)	B	<p><b>Added Section:</b>            (d) Each licensee that disassembles a nationally tracked source shall complete and submit a National Source Tracking Transaction Report. The report must include the following information:</p> <ul style="list-style-type: none"> <li>(1) The name, address, and license number of the reporting licensee;</li> <li>(2) The name of the individual preparing the report;</li> <li>(3) The manufacturer, model, and serial number of the source or, if not available, other information to uniquely identify the source;</li> <li>(4) The radioactive material in the source;</li> <li>(5) The initial or current source strength in becquerels (curies);</li> <li>(6) The date for which the source strength is reported;</li> <li>(7) The disassemble date of the source.</li> </ul>	No		

NRC Section	Section Title	State Section	Compatibility Category	Summary of Change to CFR	Difference Yes/No	Significant Yes/No	If difference, why or why not comment generated
§20.2207 (e)	Reports of transactions involving nationally tracked sources	28-35-230g(e)	B	<p><b>Added Section:</b>            (e) Each Licensee who disposes of nationally tracked source shall complete and submit a National Source Tracking Transaction Report. The report must include the following information:</p> <ul style="list-style-type: none"> <li>(1) The name, address, and license number of the reporting licensee;</li> <li>(2) The name of the individual preparing the report;</li> <li>(3) The waste manifest number;</li> <li>(4) The container identification with the nationally tracked source;</li> <li>(5) The date of disposal; and</li> <li>(6) The method of disposal.</li> </ul>	No		

NRC Section	Section Title	State Section	Compatibility Category	Summary of Change to CFR	Difference Yes/No	Significant Yes/No	If difference, why or why not comment generated
§20.2207 (f)	Reports of transactions involving nationally tracked sources	28-35-230g(f)	B	<p><b>Added Section:</b>  (f) The reports discussed in paragraphs (a) through (e) of this section must be submitted by the close of the next business day after the transaction. A single report may be submitted for multiple sources and transactions. The reports must be submitted to the National Source Tracking System by using:</p> <ul style="list-style-type: none"> <li>(1) The on-line National Source Tracking System;</li> <li>(2) Electronically using a computer-readable format;</li> <li>(3) By facsimile;</li> <li>(4) By mail to the address on the National Source Tracking Transaction Report Form (NRC Form 748); or</li> <li>(5) By telephone with followup by facsimile or mail.</li> </ul>	No		

NRC Section	Section Title	State Section	Compatibility Category	Summary of Change to CFR	Difference Yes/No	Significant Yes/No	If difference, why or why not comment generated
§20.2207 (g)	Reports of transactions involving nationally tracked sources	28-35-230g(g) and 28-35-230g(h)	B	<p><b>Added Section:</b>  (g) Each licensee shall correct any error in previously filed reports or file a new report for any missed transaction within 5 business days of the discovery of the error or missed transaction. Such errors may be detected by a variety of methods such as administrative reviews or by physical inventories required by regulation. In addition, each licensee shall reconcile the inventory of nationally tracked sources possessed by the licensee against that licensee's data in the National Source Tracking System. The reconciliation must be conducted during the month of January in each year. The reconciliation process must include resolving any discrepancies between the National Source Tracking System and the actual inventory by filing the reports identified by paragraphs (a) through (e) of this section. By January 31 of each year, each licensee must submit to the National Source Tracking System confirmation that the data in the National Source Tracking System is correct.</p>	No		

<b>NRC Section</b>	<b>Section Title</b>	<b>State Section</b>	<b>Compatibility Category</b>	<b>Summary of Change to CFR</b>	<b>Difference Yes/No</b>	<b>Significant Yes/No</b>	<b>If difference, why or why not comment generated</b>
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NRC Section	Section Title	State Section	Compatibility Category	Summary of Change to CFR	Difference Yes/No	Significant Yes/No	If difference, why or why not comment generated
§20.2207 (h)	Reports of transactions involving nationally tracked sources	28-35-230g(i)	B	<p><b>Added Section:</b>            (h) Each licensee that possesses Category 1 nationally tracked sources shall report its initial inventory of Category 1 nationally tracked sources to the National Source Tracking System by November 15, 2007. Each licensee that possesses Category 2 nationally tracked sources shall report its initial inventory of Category 2 nationally tracked sources to the National Source Tracking System by November 30, 2007. The information may be submitted by using any of the methods identified by paragraph (f)(1) through (f)(4) of this section. The initial inventory report must include the following information:</p> <ul style="list-style-type: none"> <li>(1) The name, address, and license number of the reporting licensee;</li> <li>(2) The name of the individual preparing the report;</li> <li>(3) The manufacturer, model, and serial number of each nationally tracked source or, if not available, other information to uniquely identify the source;</li> <li>(4) The radioactive material in the sealed source;</li> <li>(5) The initial or current source strength in becquerels (curies); and</li> <li>(6) The date for which the source strength is reported.</li> </ul>			

NRC Section	Section Title	State Section	Compatibility Category	Summary of Change to CFR	Difference Yes/No	Significant Yes/No	If difference, why or why not comment generated
§20 Appendix E	Nationally tracked sources threshold	28-35-135n(b)	B	Added Appendix: See table at end of document			

### Appendix E Part 20-Nationally Tracked Source Thresholds

Radioactive Material	Category 1 (TBq)	Category 1 (Ci)	Category 2 (TBq)	Category 2 (Ci)
Actinium-227	20	540	0.2	5.4
Americium-241	60	1600	0.6	16
Americium-241/Be	60	1600	0.6	16
Californium-252	20	540	0.2	5.4
Cobalt-60	30	810	0.3	8.1
Curium-244	50	1400	0.5	14
Cesium-137	100	2700	1	27
Gadolinium-153	1000	27000	10	270
Iridium-192	80	2200	0.8	22
Plutonium-238	60	1600	0.6	16
Plutonium-239/Be	60	1600	0.6	16

Polonium-210	60	1600	0.6	16
Promethium-147	40000	1100000	400	11000
Radium-226	40	1100	0.4	11
Selenium-75	200	5400	2	54
Strontium-90	1000	27000	10	270
Thorium-228	20	540	0.2	5.4
Thorium-229	20	540	0.2	5.4
Thulium-170	20000	540000	200	5400
Ytterbium-169	300	8100	3	81

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Article 35. Radiation

Part 11. Wireline and Subsurface Tracer Studies

28-35-349. Design, performance, and certification criteria for sealed sources used in downhole operations. (a) Each sealed source that is used in downhole operations and manufactured after May 1, 1991 shall be certified by the manufacturer or other testing organization to meet the following minimum criteria.

(1) Each source shall be doubly encapsulated.

(2) Each source shall contain radioactive material with a chemical and physical form that is as insoluble and nondispersive as practical.

(3) Each source's prototype shall have been tested and found to maintain its integrity after each of the following tests:

(A) Temperature. The test source shall be held at  $-40^{\circ}\text{C}$  for 20 minutes and at  $600^{\circ}\text{C}$  for one hour. Then the test source be subjected to a thermal shock test with a temperature drop from  $600^{\circ}\text{C}$  to  $20^{\circ}\text{C}$  within 15 seconds.

(A) Impact test. A five-kg steel hammer with a diameter of 2.5 cm shall be dropped from a height of one meter onto the test source.

(C) Vibration test. The test source shall be subject to a vibration from 25 Hz to 500 Hz at five g (gravitational acceleration) amplitude for 30 minutes.

(D) Puncture test. A one-gram hammer with a pin having a diameter of 0.3 cm shall be dropped from a height of one meter onto the test source.

(E) Pressure test. The test source shall be subjected to an external pressure of 24,600 pounds per square inch absolute ( $1.695 \times 10^7$  pascal ).

(b) No sealed source acquired after May 1, 1992 shall be put into use in the absence of a certificate from a transferor certifying that the sealed source meets the requirements of subsection (a) ~~of this regulation~~, until the required determinations and testing have been performed.

(c) Each sealed source that is used in downhole operations after May 1, 1992 shall be certified by the manufacturer or other testing organization as meeting the sealed source performance requirements for oil well-logging contained in "sealed radioactive sources--classification," ANSI/HPS ~~N43.6-1977~~ N43.6-1997, including the annexes, approved by the American national standards institute, inc. in November 1997, published by the health physics society, and hereby adopted by reference.

(d) Certification documents shall be maintained for inspection by the department for a period of two years after source disposal. If the source is abandoned downhole, the certification documents shall be maintained until the department authorizes disposition of these documents.

(e) The requirements in subsections (a), (b), (c), and (d) ~~of this regulation~~ shall not apply to any sealed sources that contain licensed material in gaseous form.

(f) The requirements in subsections (a), (b), (c), and (d) ~~of this regulation~~ shall not apply to any energy compensation sources (ECS). Each ECS shall be

registered with the department, NRC, or an agreement state. (Authorized by and implementing K.S.A. 48-1607; effective Sept. 20, 1993; amended Dec. 30, 2005; amended P-\_\_\_\_\_.)

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Article 35. Radiation

Part 1. General

28-35-135a. Definitions. As used in these regulations, each of the following terms shall have the meaning assigned in this regulation: (a) "A<sub>1</sub>" means the maximum activity of special form radioactive material permitted in a type A package.

(b) "A<sub>2</sub>" means the maximum activity of radioactive material, other than special form radioactive material, permitted in a type A package. These values either are listed in table I in K.A.R. 28-35-221b or may be derived in accordance with the procedure specified in K.A.R. 28-35-221b of these regulations.

(c) "Absorbed dose" means the energy imparted to matter by ionizing radiation per unit mass of irradiated material at the place of interest. The units of absorbed dose are the rad and the gray (Gy).

(d) "Absorbed dose rate" means the absorbed dose per unit of time or, for linear accelerators, the dose monitor unit per unit of time.

(e) "Accelerator-produced material" means any material made radioactive by exposing it in a particle accelerator.

(f) "Accessible surface" means the surface of equipment or of an equipment part that can be easily or accidentally touched by persons without the use of a tool.

(g) "Accident" means an unintended event, including an operating error, equipment failure, and other mishap, that could result in either of the following:

(1) A dose in excess of regulatory limits on site or for the public; or

(2) consequences or potential consequences that cannot be ignored from the point of view of protection or safety, including an actual or potential substantial degradation of the level of protection or safety of the facility or the release of radioactive material in sufficient quantity to warrant consideration of protective actions.

(h) "Act" means the "nuclear energy development and radiation control act," K.S.A. 48-1601 et seq., and amendments thereto.

(i) "Activity" means the rate of disintegration, transformation, or decay of radioactive material. Activity is expressed in the SI unit of becquerel (Bq) or in the special unit of curie (Ci), or the multiples of either unit, or disintegrations or transformations per unit of time as follows:

(1) One becquerel (Bq) equals one disintegration or transformation per second (dps or tps); and

(2) one curie (Ci) equals  $3.7E+10$  disintegrations or transformations per second (dps or tps). One curie also equals  $3.7E+10$  becquerels (Bq).

(j) "Added filter" means the filter added to the inherent filtration.

(k) "Address of use" means the building or buildings that are identified on the license and each location where radioactive material could be produced, prepared, received, used, or stored.

(l) "Adult" means an individual who is 18 or more years of age.

(m) "Agreement state" means any state with which the United States nuclear regulatory commission enters, or has entered, into an effective agreement pursuant to 42 U.S.C. § 2021, as in effect on January 4, 1995.

(n) "Airborne radioactive area" means the following:

(1) Any room, enclosure, or operating area in which airborne radioactive material exists in concentrations in excess of the derived air concentrations (DAC) specified in "appendices to part 4: standards for protection against radiation," effective April 1994, published by the department and hereby adopted by reference; or

(2) any room, enclosure, or operating area in which airborne radioactive material exists in concentrations such that an individual present in the area without respiratory protective equipment could exceed, during the hours an individual is present in a week, an intake of 0.6 percent of the ALI or 12 DAC-hours.

(o) "Airborne radioactive material" means any radioactive material dispersed in the air in the form of dust, fumes, mists, vapors, or gases.

(p) "Air kerma (K)" means the kinetic energy released in air by ionizing radiation. Kerma is determined by dividing  $dE$  by  $dM$ , where  $dE$  is the sum of the initial kinetic energies of all the charged ionizing particles liberated by uncharged ionizing particles in air of mass  $dM$ . The SI unit of air kerma is joule per kilogram, and the special name for the unit of kerma is the gray (Gy).

(q) "Alert" means a period during which an event could occur, is in progress, or has occurred and could lead to a release of radioactive material. However, the event is not expected to require a response by off-site response organizations to protect persons off-site.

(r) "Aluminum equivalent" means the thickness of type 1100 aluminum alloy that affords the same attenuation, under specified conditions, as that of the material in

question. The nominal chemical composition of type 1100 aluminum alloy is a minimum of 99.00 percent aluminum and 0.12 percent copper.

(s) "Amendment" means any change to a license or registration issued under these regulations.

(t) "Analytical X-ray system" means a group of local and remote components utilizing X-rays to determine the elemental composition or to examine the microstructure of materials.

(1) Local components shall include those components that are struck by X-rays, including radiation source housings, port and shutter assemblies, collimators, sample holders, cameras, goniometers, detectors, and shielding.

(2) Remote components may include power supplies, transformers, amplifiers, readout devices, and control panels.

(u) "Annual limit on intake (ALI)" means the derived limit for the amount of radioactive material taken into the body of an adult worker by inhalation or ingestion in a year. ALI is the smaller value of intake of a given radionuclide in a year by the reference man that would result in a committed effective dose equivalent of 5 rem (0.05 Sv) or a committed dose equivalent of 50 rem (0.5 Sv) to any individual organ or tissue. ALI values for intake by ingestion and by inhalation of selected radionuclides are specified in appendix B, table I, published in "appendices to part 4: standards for protection against radiation," ~~effective April 1994~~ which is adopted by reference in this regulation.

(v) "Annual refresher safety training" means a review conducted or provided by the licensee or registrant for its employees on radiation safety aspects of industrial radiography. The review shall include, at a minimum, any results of internal inspections,

new procedures or equipment, new or revised regulations, and accidents or errors that have been observed. The review shall also provide opportunities for employees to ask safety questions.

(w) "ANSI" means the American national standards institute.

(x) "Applicator" means a structure that determines the extent of the treatment field at a given distance from the virtual source.

(y) "Area of use" means a portion of a physical structure that has been set aside for the purpose of producing, preparing, receiving, using, or storing radioactive material.

(z) "As low as is reasonably achievable (ALARA)," when used to describe exposures to radiation workers, means that every reasonable effort has been made to maintain exposures to radiation workers as far below the dose limits specified in these regulations as is practical, consistent with the purpose for which the licensed or registered activity is undertaken, taking the following into account:

- (1) The state of technology;
- (2) the economics of improvements in relation to the state of technology;
- (3) the economics of improvements in relation to benefits to public health and safety and to other societal and socioeconomic considerations; and
- (4) the economics of improvements in relation to the utilization of nuclear energy and licensed or registered sources of radiation in the public interest.

(aa) "Assembler" means any person engaged in the business of assembling, replacing, or installing one or more components into an X-ray system or subsystem. The term shall include the owner of an X-ray system or any employee or agent of the owner

who assembles components into an X-ray system that is subsequently used to provide professional or commercial services.

(bb) "Associated equipment" means equipment that is used in conjunction with a radiographic exposure device that makes radiographic exposures and that drives, guides, or comes in contact with the source.

(cc) "Attenuation block" means a block or stack, with dimensions of 20 cm by 20 cm by 3.8 cm, made of type 1100 aluminum alloy or other materials having equivalent attenuation.

(dd) "Authorized user" means an individual who is identified as an authorized user on a license issued by the department for the use of radioactive material or an individual who is designated by a registered facility as a user of X-ray machines or accelerators. This term shall not apply to part 6 of these regulations.

(ee) "Automatic exposure control" means a device that automatically controls one or more technique factors in order to obtain a required quantity of radiation, at one or more preselected locations. (Authorized by K.S.A. 48-1607; implementing K.S.A. 48-1603 and 48-1607; effective Dec. 30, 2005; amended P-\_\_\_\_\_.)

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Article 35. Radiation

Part 1. General

28-35-135d. Definitions. As used in these regulations, each of the following terms shall have the meaning assigned in this regulation: (a) "Deadman switch" means a switch constructed so that circuit closure can be maintained only by continuous pressure by the operator.

(b) "Declared pregnant woman" means a woman who has voluntarily informed her employer, in writing, of her pregnancy and the estimated date of delivery. The written declaration shall remain in effect until the declared pregnant woman withdraws the declaration in writing or is no longer pregnant.

(c) "Decommission" means ~~either of the following:~~

~~(1) to remove a facility or site safely from service and reduce residual radioactivity to a level that permits either of the following:~~

~~(1) The release of the property for unrestricted use and the termination of the license; or~~

~~(2) to the release of the property under restricted conditions and to terminate the termination of the license.~~

(d) "Dedicated check source" means a radioactive source that is used to ensure the constant operation of a radiation detection or measurement device over several months or years. This source may also be used for other purposes.

(e) "Deep dose equivalent ( $H_d$ )," which applies to external whole body exposure, means the dose equivalent to a tissue depth of one centimeter ( $1,000 \text{ mg/cm}^2$ ).

(f) "Deliberate misconduct" means a person's intentional act or omission about which the person knows one of the following:

(1) If not detected, the act or omission would cause a licensee, a registrant, or an applicant to be in violation of any statute, regulation, or order or any term, condition, or limitation of any license issued by the secretary.

(2) The act or omission constitutes a violation of a requirement, procedure, instruction, contract, purchase order, or policy of a licensee, registrant, applicant, contractor, or subcontractor.

(3) The act or omission involves the person's deliberate submission to the department, a licensee, a registrant, an applicant, or a licensee's contractor or subcontractor of information relating to a licensee's, a registrant's, or an applicant's operations that the person knows to be incomplete or inaccurate in some respect.

(g) "Dentistry" means the functions authorized by K.S.A. 65-1421 et seq., and amendments thereto.

(h) "Department" means the department of health and environment.

(i) "Depleted uranium" means source material uranium in which the isotope uranium 235 is less than 0.711 percent of the total weight of uranium present. This term shall not include special nuclear material.

(j) "Derived air concentration (DAC)" means the concentration of a given radionuclide in air that, if breathed by the reference man for a working year of 2,000 hours under conditions of light work, results in an intake of one ALI. For purposes of

these regulations, the condition of light work is an inhalation rate of 1.2 cubic meters of air per hour for 2,000 hours in a year. The DAC are values specified in “appendices to part 4: standards for protection against radiation,” effective April 1994.

(k) “Derived air concentration-hour (DAC-hour)” means the product of the concentration of radioactive material in air, expressed as a fraction or multiple of the derived air concentration for each radionuclide, and the time of exposure to that radionuclide, in hours. A licensee or registrant may assume that a total of 2,000 DAC-hours represents one ALI, which is equivalent to a committed effective dose equivalent of 5 rem (0.05 Sv).

(l) “Diagnostic clinical procedures manual” means a collection of written procedures that describes each method and other instructions and precautions by which the licensee performs diagnostic clinical procedures, each of which has been approved by the authorized user and includes the radiopharmaceutical, dosage, and route of administration.

(m) “Diagnostic source assembly” means the tube housing assembly with a beam-limiting device attached.

(n) “Diagnostic-type tube housing” means an X-ray tube housing constructed so that the leakage radiation, at a distance of one meter from the target, does not exceed 100 milliroentgens in one hour when the tube is operated at the maximum rate of continuous tube current and the maximum rate of tube potential.

(o) “Diagnostic X-ray imaging system” means an assemblage of components for the generation, emission, and reception of X-rays and the transformation, storage, and visual display of the resultant X-ray image.

(p) "Diagnostic X-ray system" means an X-ray system designed for irradiation of any part of the human body for the purpose of diagnosis or visualization.

(q) "Direct scattered radiation" means scattered radiation that has been deviated in direction only by materials irradiated by the useful beam.

(r) "Dose" is a generic term that means the absorbed dose, dose equivalent, effective dose equivalent, committed dose equivalent, committed effective dose equivalent, total organ dose equivalent, or total effective dose equivalent. For purposes of these regulations, "radiation dose" shall be considered an equivalent term.

(s) "Dose equivalent ( $H_T$ )" means the product of the absorbed dose in tissue, quality factor, and all other necessary modifying factors at the location of interest. The units of dose equivalent are the rem and sievert (Sv).

(t) "Dose limits" means the permissible upper bounds of radiation doses established in accordance with these regulations. For purposes of these regulations, "limits" is an equivalent term.

(u) "Dose-monitoring system" means a system of devices for the detection, measurement, and display of quantities of radiation.

(v) "Dose monitor unit" means a unit response from the dose-monitoring system from which the absorbed dose can be calculated.

(w) "Dosimetry processor" means an individual or an organization that processes and evaluates individual monitoring devices in order to determine the radiation dose delivered to the monitoring devices.

(x) "Doubly encapsulated sealed source" means a sealed source in which the radioactive material is sealed within an inner capsule and that capsule is sealed within an outer capsule.

(y) "Drill" means a supervised, hands-on instruction period intended to test, develop, or maintain a specific emergency response capability. A drill may be a component of an exercise. (Authorized by K.S.A. 48-1607; implementing K.S.A. 48-1603 and 48-1607; effective Dec. 30, 2005; amended P-\_\_\_\_\_.)

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Article 35. Radiation

Part 1. General

28-35-135n. Definitions. As used in these regulations, each of the following terms shall have the meaning assigned in this regulation: (a) "NARM" means any naturally occurring or accelerator-produced radioactive material, not including byproduct, source, or special nuclear material.

(b) "Nationally tracked source" means a sealed source containing any quantity of radioactive material equal to or greater than any threshold listed in the table in this subsection. For purposes of the definition of "nationally tracked source," "sealed source" shall be defined as radioactive material that is sealed in a capsule or closely bonded, that is in a solid form and that is not exempt from regulatory control. For purposes of the definition of "nationally tracked source," "sealed source" shall not include any radioactive material encapsulated solely for disposal and any nuclear material contained in any fuel assembly, subassembly, fuel rod, or fuel pellet.

<u>Nationally tracked source thresholds</u>				
<u>Radioactive material</u>	<u>Category 1</u> <u>(TBq)*</u>	<u>Category 1</u> <u>(Ci)**</u>	<u>Category 2</u> <u>(TBq)*</u>	<u>Category 2</u> <u>(Ci)**</u>
<u>Actinium-227</u>	<u>20</u>	<u>540</u>	<u>0.2</u>	<u>5.4</u>
<u>Americium-241</u>	<u>60</u>	<u>1,600</u>	<u>0.6</u>	<u>16</u>
<u>Americium-241/Be</u>	<u>60</u>	<u>1,600</u>	<u>0.6</u>	<u>16</u>

<u>Californium-252</u>	<u>20</u>	<u>540</u>	<u>0.2</u>	<u>5.4</u>
<u>Cobalt-60</u>	<u>30</u>	<u>810</u>	<u>0.3</u>	<u>8.1</u>
<u>Curium-244</u>	<u>50</u>	<u>1,400</u>	<u>0.5</u>	<u>14</u>
<u>Cesium-137</u>	<u>100</u>	<u>2,700</u>	<u>1</u>	<u>27</u>
<u>Gadolinium-153</u>	<u>1,000</u>	<u>27,000</u>	<u>10</u>	<u>270</u>
<u>Iridium-192</u>	<u>80</u>	<u>2,200</u>	<u>0.8</u>	<u>22</u>
<u>Plutonium-238</u>	<u>60</u>	<u>1,600</u>	<u>0.6</u>	<u>16</u>
<u>Plutonium-239/Be</u>	<u>60</u>	<u>1,600</u>	<u>0.6</u>	<u>16</u>
<u>Polonium-210</u>	<u>60</u>	<u>1,600</u>	<u>0.6</u>	<u>16</u>
<u>Promethium-147</u>	<u>40,000</u>	<u>1,100,000</u>	<u>400</u>	<u>11,000</u>
<u>Radium-226</u>	<u>40</u>	<u>1,100</u>	<u>0.4</u>	<u>11</u>
<u>Selenium-75</u>	<u>200</u>	<u>5,400</u>	<u>2</u>	<u>54</u>
<u>Strontium-90</u>	<u>1,000</u>	<u>27,000</u>	<u>10</u>	<u>270</u>
<u>Thorium-228</u>	<u>20</u>	<u>540</u>	<u>0.2</u>	<u>5.4</u>
<u>Thorium-229</u>	<u>20</u>	<u>540</u>	<u>0.2</u>	<u>5.4</u>
<u>Thulium-170</u>	<u>20,000</u>	<u>540,000</u>	<u>200</u>	<u>5,400</u>
<u>Ytterbium-169</u>	<u>300</u>	<u>8,100</u>	<u>3</u>	<u>81</u>

\*The Terabecquerel (TBq) values are the regulatory standard.

\*\*The curie (Ci) values specified are obtained by converting from the TBq value. The curie values are provided for practical usefulness only and are rounded after conversion.

(c) "Natural radioactivity" means the radioactivity of naturally occurring nuclides.

~~(e)~~ (d) "New equipment" means any system subject to K.A.R 28-35-249 that was manufactured after January 1, 1985.

~~(d)~~ (e) "Nonionizing radiation" means radiation not capable of producing ionization, including sound and radio waves and visible, infrared, or ultraviolet light.

~~(e)~~ (f) "Non-stochastic effect" means a health effect, the severity of which varies with the dose and for which a threshold is believed to exist. For purposes of these regulations, "deterministic effect" shall be considered an equivalent term.

~~(f)~~ (g) "Normal operating procedures" means operating procedures for conditions suitable for routine purposes with shielding and barriers in place, including routine alignment procedures. This term shall not include maintenance procedures and routine and emergency radiation safety considerations.

~~(g)~~ (h) "Normal treatment distance" means either of the following:

(1) For electron irradiation, the distance from the virtual source to the surface along the central axis of the useful beam, as specified by the manufacturer; or

(2) for X-ray irradiation, the distance from the virtual source to the isocenter along the central axis of the useful beam. For non-isocentric equipment, this distance shall be the distance specified by the manufacturer.

~~(h)~~ (i) "Nuclear regulatory commission (NRC)" means the U.S. nuclear regulatory commission or its duly authorized representatives.

~~(i)~~ (j) "NVLAP" means the national voluntary laboratory accreditation program.

(Authorized by K.S.A. 48-1607; implementing K.S.A. 48-1603 and 48-1607; effective Dec. 30, 2005; P-\_\_\_\_\_.)

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Article 35. Radiation

Part 1. General

28-35-135p. Definitions. As used in these regulations, each of the following terms shall have the meaning assigned in this regulation: (a) "Package" means a container and packing material, together with the radioactive contents, as presented for transport.

(b) "Panoramic dry-source-storage irradiator" means an irradiator in which the irradiations occur in air in areas potentially accessible to personnel and in which the sources are stored in shields made of solid materials. This term shall include beam-type dry-source-storage irradiators in which one narrow beam of radiation is produced for performing irradiations.

(c) "Panoramic wet-source-storage irradiator" means an irradiator in which the irradiations occur in air in areas potentially accessible to personnel and in which the sources are stored underwater in a storage pool.

(d) "Particle accelerator" means any machine capable of accelerating electrons, protons, deuterons, or other charged particles in a vacuum and of discharging the resultant particulate or other radiation into a medium at energies usually in excess of one mega electron volt (MeV).

(e) "Patient" means an individual subjected to examination, diagnosis, or treatment.

(f) "Patient intervention" means any action by the patient or human research subject, whether intentional or unintentional, that affects the prescribed treatment. This term shall include dislodging or removing any treatment device and prematurely terminating the prescribed treatment.

(g) "Peak tube potential" means the maximum value of the potential differences across an X-ray tube during an exposure. This term is also referred to as "kilovolts peak (kVp)."

(h) "Periodic quality-assurance check" means a procedure that is performed to ensure that the previous calibration continues to be valid.

(i) "Permanent radiographic installation" means an enclosed, shielded room, cell, or vault, not located at a temporary job site, in which radiography is performed.

(j) "Person" means any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, agency, political subdivision of this or any other state, or political subdivision or agency, excluding federal government agencies.

(k) "Personnel-monitoring equipment" means any device designed to be carried or worn by an individual and used to measure the exposure of that individual to radiation. For purposes of these regulations, "PMD," which means "personnel-monitoring device," shall be an equivalent term.

(l) "Personnel supervision" means guidance and instruction by the supervisor who is physically present at the job site and who is watching the performance of the operation in such proximity that contact can be maintained and immediate assistance given, as required.

(m) "Phantom" means a volume of material behaving in a manner similar to that of tissue, with respect to the attenuation and scattering of radiation.

(n) "Pharmacist" means any individual licensed to practice pharmacy under K.S.A. 65-1626 et seq., and amendments thereto.

(o) "Phototimer" means a device used for controlling radiation exposures to image receptors by limiting the amount of radiation that reaches a radiation-monitoring device or devices. The radiation-monitoring device or devices are part of an electronic circuit that controls the period of time during which the tube is activated. For purposes of these regulations, "automatic exposure control" is an equivalent term.

(p) "Physician" means any individual licensed to practice the healing arts specified in K.S.A. 65-2869, K.S.A. 65-2870, or K.S.A. 65-2871, and amendments thereto.

(q) "Planned special exposure" means an infrequent exposure to radiation, separate from and in addition to the annual occupational dose limits.

(r) "Podiatry" means the activities authorized and specified in K.S.A. 65-2001 et seq., and amendments thereto.

(s) "Pool irradiator" means any irradiator at which the sources are stored or used in a pool of water, including panoramic wet-source-storage irradiators and underwater irradiators.

(t) "Portable X-ray equipment" means X-ray equipment designed to be hand-carried.

(u) "Position indication device (PID)" means a device on dental X-ray equipment used to indicate the beam position and to establish a definite source-to-skin-surface distance. A PID can incorporate or serve as a beam-limiting device.

(v) "Positive beam limitation" means the automatic or semiautomatic adjustment of an X-ray beam to the size of the selected image receptor. Exposures cannot be made without this adjustment.

(w) "Practical examination" means a demonstration by personnel through the application of safety principles, including the use of all procedures and equipment.

(x) "Preceptor" means an individual who provides or directs the training and experience required for another individual to become an authorized user, an authorized medical physicist, an authorized nuclear pharmacist, or a radiation safety officer.

(y) "Prescribed dosage" means the quantity of radiopharmaceutical activity documented as follows:

(1) In a written directive; or

(2) either in the diagnostic clinical procedures manual or in any appropriate record in accordance with the directions of the authorized user for diagnostic procedures.

(z) "Prescribed dose" means any of the following:

(1) For gamma stereotactic radiosurgery, the total dose as documented in the written directive;

(2) for teletherapy, the total dose and dose per fraction as documented in the written directive; or

(3) for brachytherapy, either the total source strength and exposure time or the total dose, as documented in the written directive.

This term shall not apply to part 6 of these regulations.

(aa) "Primary beam" means ionizing radiation that passes through an aperture of the source housing by a direct path from the X-ray tube or a radioactive source located in the radiation source housing.

(bb) "Primary dose-monitoring system" means a system that monitors the useful beam during irradiation and that terminates irradiation when a preselected number of dose monitor units are acquired.

(cc) "Primary protective barrier" means a barrier of attenuating materials used to reduce the useful X-ray beam to the required degree.

(dd) "Product conveyor system" means a system for moving the product to be irradiated to, from, and within the area where irradiation takes place.

(ee) "Projected dose" means a future dose calculated for a specified time period on the basis of estimated or measured initial concentrations of radionuclides or exposure rates and in the absence of protective actions.

(ff) "Protective action" means an action taken by members of the public to protect themselves from radiation from an accident involving radioactive material. This term may include sheltering, evacuation, relocation, control of access, administration of a radioprotective drug, decontamination of persons, decontamination of land or property, and controls placed on food or water.

(gg) "Protective action guide" means a projected dose from an accidental release of radioactive material at which protective action may be considered.

(hh) "Protective apron" means an apron made of radiation-absorbing materials used to reduce radiation exposure.

(ii) "Protective barrier" means a barrier of attenuating materials used to reduce radiation exposure to the required degree.

(jj) "Protective glove" means a glove made of radiation-absorbing materials used to reduce radiation exposure.

(kk) "Public dose" means the dose received by a member of the public from exposure to radiation, radioactive material released by a licensee or registrant, or any other source of radiation under the control of the licensee or registrant. This term shall not include an occupational dose, a dose received from background radiation, a dose received as a patient from medical practices, and a dose received from voluntary participation in a medical research program.

(ll) "Pulse dose-rate remote afterloader" means a special type of remote afterloading brachytherapy device that meets all of the following conditions:

(1) The device uses a single source capable of delivering more than 12 grays per hour.

(2) The source activity of the device is approximately one-tenth of the activity of typical high dose-rate remote afterloader sources.

(3) The device is used to stimulate the radiobiology of a low dose-rate treatment by inserting the source for a given fraction of each hour.

(mm) "Pyrophoric liquid" means any liquid that ignites spontaneously in dry or moist air at or below 130°F (54.4°C).

(nn) "Pyrophoric solid" means any solid material, other than one classified as an explosive, that under normal conditions results in the following:

(1) Is liable to cause fires through friction or retained heat from manufacturing or processing;

(2) is ignited readily; and

(3) if ignited, burns vigorously and persistently enough to create a serious transportation, handling, or disposal hazard, including spontaneously combustible and water-reactive materials. (Authorized by K.S.A. 48-1607; implementing K.S.A. 48-1603 and 48-1607; effective Dec. 30, 2005; amended P-\_\_\_\_\_.)

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Proposed Amended Regulation

Article 35. Radiation

Part 1. General

28-35-135r. Definitions. As used in these regulations, each of the following terms shall have the meaning assigned in this regulation: (a) "Rad" means the unit of absorbed dose. One rad equals one-hundredth of a joule per kilogram of material or the absorption of 100 ergs per gram of material. One millirad (mrad) equals 0.001 rad.

(b) "Radiation area" means any area that is accessible to individuals, in which there exists radiation at such levels that, at 30 centimeters from the source of the radiation or any surface that the radiation penetrates, an individual could receive a dose equivalent in excess of five millirems in one hour.

(c) "Radiation detector" means a device that, in the presence of radiation, provides a signal or other indication suitable for use in measuring one or more quantities of incident radiation.

(d) "Radiation head" means the structure from which the useful beam emerges.

(e) "Radiation machine" means either of the following:

(1) Any device that is primarily intended to produce, and is capable of producing, ionizing radiation; or

(2) any device that is not primarily intended to produce, but does produce, ionizing radiation at a level greater than 0.5 mR/hr at any point five centimeters from its surface.

This term shall not mean any device that produces ionizing radiation only by use of radioactive materials.

(f) "Radiation room" means a shielded room in which irradiations take place. Underwater irradiators shall not be deemed to have radiation rooms.

(g) "Radiation safety officer" means an individual directly responsible for radiation protection. This term shall not apply to part 6 of these regulations.

(h) "Radiation therapy simulation system" means a radiographic or fluoroscopic X-ray system intended for localizing the volume of tissue to be exposed during radiation therapy and confirming the position and size of the therapeutic irradiation field.

(i) "Radioactive marker" means radioactive material placed subsurface or on a structure intended for subsurface use for the purpose of depth determination or direction orientation.

(j) "Radioactive material" means any material, in any chemical or physical form, that emits radiation spontaneously.

(k) "Radioactivity" means the disintegration of unstable atomic nuclei by the emission of radiation.

(l) "Radiograph" means an image receptor on which the image is created directly or indirectly by an X-ray pattern that results in a permanent record.

(m) "Radiographer" means any individual who meets the following conditions:

(1) Performs nonmedical radiographic operations or, while in attendance at the site where those radiographic operations are being performed, personally supervises the operations; and

(2) is responsible to the licensee or registrant, or both, for ensuring compliance with the requirements of these regulations or the conditions of the license, including any specific authorization by the department to provide training to radiographic trainees.

(n) "Radiographer certification" means the written approval received from a certifying entity stating that an individual has satisfactorily met the radiation safety, testing, and experience criteria.

(o) "Radiographer's assistant" means any individual who, under the personal supervision of a radiographer, uses radiation machines, radiographic exposure devices, sealed sources, or related handling tools or survey instruments in industrial radiography.

(p) "Radiographic exposure device" means any instrument with a sealed source fastened or contained in the instrument in which the sealed source or shielding of the source can be moved or otherwise changed from a shielded to unshielded position for purposes of making a radiographic exposure.

(q) "Radiographic imaging system" means any system that produces a permanent or semipermanent image on an image receptor by the action of ionizing radiation.

(r) "Radiographic operations" means all activities performed with a radiographic exposure device or with a radiation machine. These activities shall include the following:

- (1) Transporting, except by common or contract carriers;
- (2) storing at a temporary job site;
- (3) performing surveys to confirm the adequacy of boundaries;
- (4) setting up equipment; and
- (5) any activity performed inside restricted area boundaries.

This term shall not include transporting a radiation machine.

(s) "Radiological physicist" means an individual who meets at least one of the following requirements:

(1) Is certified by the American board of radiology in any of the following:

- (A) Therapeutic radiological physics;
- (B) roentgen ray and gamma ray physics;
- (C) X-ray and radium physics; or
- (D) radiological physics;

(2) is certified by the American board of medical physics in radiation oncology physics; or

(3) (A) Holds a master's or ~~doctor's~~ doctoral degree in physics, biophysics, radiological physics, or health physics; and

(B) has completed one year of full-time training in therapeutic radiological physics and an additional year of full-time work experience under the supervision of teletherapy physicist at a medical institution that includes duties that involve performing calibration and spot checks of a medical accelerator or a sealed source teletherapy unit.

(t) "Rating" means the operating limits specified by the component manufacturer.

(u) "Recordable event" means the administration of any of the following:

(1) A radiopharmaceutical or radiation without a written directive if a written directive is required;

(2) a radiopharmaceutical or radiation if a written directive is required, without the daily recording of each administered radiopharmaceutical dosage or radiation dose in the appropriate record;

(3) a radiopharmaceutical dosage greater than 1.11 megabecquerels (30  $\mu$ Ci) of sodium iodide I-125 or I-131 if the administered dosage of both differs from the prescribed dosage by more than 10 percent of the prescribed dosage and if the difference between the administered dosage and the prescribed dosage exceeds 555 kilobecquerels (15  $\mu$ Ci);

(4) a therapeutic radiopharmaceutical dosage, other than sodium iodide I-125 or I-131, if the administered dosage differs from the prescribed dosage by more than 10 percent of the prescribed dosage;

(5) a teletherapy radiation dose if the calculated weekly administered dose exceeds the weekly prescribed dose by 15 percent or more of the weekly prescribed dose;  
or

(6) a brachytherapy radiation dose if the calculated administered dose differs from the prescribed dose by more than 10 percent of the prescribed dose.

(v) "Recording" means producing a permanent form of an image resulting from X-ray photons.

(w) "Redundant beam-monitoring system" means a combination of two dose-monitoring systems in which each system is designed to terminate irradiation in accordance with a preselected number of dose monitor units.

(x) "Reference man" means a hypothetical aggregation of human physical and physiological characteristics determined by international consensus. These characteristics may be used by researchers and public health workers to standardize the results of experiments and to relate biological damage to a common base.

(y) "Registrable item" means any radiation machine.

(z) "Registrant" means any person who is registered with the department and is legally obligated to register with the department according to these regulations.

(aa) "Registration" means the process of completing and filing forms with the department as required by these regulations.

(bb) "Relocation" means the removal or, after a plume has passed, the continued exclusion of people from contaminated areas to avoid a chronic radiation dose.

(cc) "Rem" means the special unit of any of the quantities expressed as dose equivalent. One millirem (mrem) equals 0.001 rem.

(dd) "Research and development" means either of the following:

(1) Theoretical analysis, exploration, or experimentation; or

(2) the extension of investigating findings and theories of a scientific or technical nature into practical application for experimental purposes, including the experimental production and testing of models, devices, equipment, materials, and processes.

(3) Research and development, as used in these regulations, shall not include the internal or external administration of radiation or radioactive materials to any individual.

(ee) "Respiratory protective equipment" means any apparatus used to reduce an individual's intake of airborne radioactive materials.

(ff) "Response time" means the time required for an instrument system to reach 90 percent of its final reading when the radiation-sensitive volume of the instrument system is exposed to a step change in radiation flux from zero to a level sufficient to provide a steady-state midscale reading.

(gg) "Restricted area" means any area to which the access is limited by the licensee or registrant to protect individuals against undue risks from exposure to sources

of radiation. This term shall not include areas used as residential quarters. However, separate rooms in a residential building may be set apart and designated as a restricted area. (Authorized by K.S.A. 48-1607; implementing K.S.A. 48-1603 and 48-1607; effective Dec. 30, 2005; amended P-\_\_\_\_\_.)

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Article 35. Radiation

Part 3. Licensing of Sources of Radiation

28-35-177a. General licenses; source material. (a)(1) Each of the following persons shall be deemed to have been issued a general license authorizing the acquisition, possession, use, and transfer of not more than 15 pounds (6.8 kg) of source material at any one time or the receipt of a total of 150 pounds (68.2 kg) of source material in any calendar year:

~~(A) Any pharmacist using the source material solely for the compounding of medicinals;~~

~~(B) any physician using the source material for medicinal purposes;~~

~~(C) any person receiving possession of source material from pharmacists or physicians in the form of medicinals or drugs; and~~

~~(D) if the source material is used for research, development, education, or commercial, or operational purposes, the following persons:~~

~~(i) (A) Any commercial or industrial firm;~~

~~(ii) (B) any research, educational, or medical institution; and~~

~~(iii) (C) any state or local governmental agency.~~

(2) Each person who acquires, possesses, uses, or transfers source material pursuant to the general license specified in subsection (a) shall be exempt from parts 4 and 10 of these regulations to the extent that the acquisition, possession, use, or transfer is within the terms of the general license. This exemption shall not apply to any person

who is also in possession of source material under a specific license issued pursuant to these regulations.

(3) Each person who receives, possesses, uses, or transfers source material pursuant to the general license specified in subsection (a) shall be prohibited from administering source material or the radiation, either externally or internally, to human beings except as may be authorized in a specific license.

(b) Each person receiving title to source material shall be deemed to have been issued a general license without regard to quantity. This general license shall not authorize any person to receive, possess, use, or transfer source material.

(c)(1) Each person who meets the requirements of paragraphs (2), (3), and (4) of this subsection shall be deemed to have been issued a general license to acquire, possess, use, or transfer depleted uranium contained in industrial products or devices for the purpose of providing a concentrated mass in a small volume of the product or device.

(2)(A) Each person who acquires, possesses, or uses depleted uranium pursuant to the general license issued in this subsection shall file a form specified by the department. The form shall be filed with the department within 30 days of the date on which the depleted uranium is received or acquired. Each person filing a form shall provide all the information requested by the form.

(B) If any change in circumstances renders any information provided on the form inaccurate, the department shall be provided with a written notice of the change within 30 days of the date of the change.

(3) A person who acquires, possesses, or uses depleted uranium pursuant to the general license specified in this subsection shall not perform any of the following:

(A) Introduce depleted uranium, in any form, into a chemical, physical, or metallurgical treatment or process, except a treatment or process for the repair or restoration of any plating or other covering of the depleted uranium;

(B) abandon depleted uranium; or

(C) export depleted uranium, except in accordance with a license issued by the U.S. nuclear regulatory commission.

(4)(A) Each person possessing depleted uranium pursuant to the general license specified in this subsection shall transfer or dispose of the depleted uranium only by transfer in accordance with K.A.R. 28-35-190a.

(B) When depleted uranium is transferred to any person in this state, the transferor shall provide a copy of this regulation and the required form to the transferee.

(C) When depleted uranium is transferred to any person outside this state, the transferor shall furnish the transferee with a copy of this regulation, the required form, and a written notice that possession or use of the depleted uranium is regulated by the U.S. nuclear regulatory commission or the state in which the person is located, under requirements substantially the same as those in this regulation.

(D) Each person who transfers depleted uranium pursuant to this subsection shall give written notice to the department of the name and address of the person to whom the depleted uranium was transferred. The notice shall be filed within 30 days of the date of transfer.

(5) The general license specified in this subsection shall apply only to industrial products or devices that have been manufactured or initially transferred in accordance

with a specific license that authorizes the manufacture of the products or devices for distribution to persons generally licensed by the NRC or an agreement state.

(d) Each person who acquires, possesses, uses, or transfers depleted uranium pursuant to subsection (c) ~~of this regulation~~ shall be exempt from parts 4 and 10 of these regulations with respect to the depleted uranium acquired, possessed, used, or transferred by that person. (Authorized by and implementing K.S.A. 48-1607; effective, T-86-37, Dec. 11, 1985; effective May 1, 1986; amended Dec. 30, 2005; amended P-\_\_\_\_\_.)

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Article 35. Radiation

Part 3. Licensing of Sources of Radiation

28-35-178a. General license; certain ionization devices. (a) Each ~~person~~ commercial and industrial firm, research, educational, and medical institution, individual in the conduct of the individual's business, and federal, state, or local government agency shall be deemed to have been issued a general license to acquire, receive, possess, use, ~~and or~~ transfer radioactive material incorporated in any device or equipment as described in this subsection, if the device or equipment is manufactured, tested, and labeled by a manufacturer in accordance with the specifications of a specific license issued to the manufacturer by the secretary, the U.S. nuclear regulatory commission, or an agreement state. This general license shall apply to the following:

(1) Static elimination devices that are designed for ionization of air and that contain, as a sealed source or sources, radioactive material containing a total of not more than 500 microcuries of polonium-210 per device; and

(2) ion-generating tubes that are designed for ionization of air and that contain, as a sealed source or sources, radioactive material consisting of a total of not more than 500 microcuries of polonium-210 per device or a total of not more than 50 millicuries of hydrogen-3 (tritium) per device.

(b) The general license specified in subsection (a) ~~of this regulation~~ shall be subject to the following regulations:

(1) K.A.R. 28-35-137 through 28-35-139;

(2) K.A.R. 28-35-192b;

(3) K.A.R. 28-35-184a;

(4) K.A.R. 28-35-190a;

(5) K.A.R. 28-35-191a;

(6) K.A.R. 28-35-196a; and

(7) all of parts 4 and 10 of these regulations. (Authorized by and implementing K.S.A. 48-1607; effective, T-86-37, Dec. 11, 1985; effective May 1, 1986; amended Dec. 30, 2005; amended P-\_\_\_\_\_.)

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Article 35. Radiation

Part 3. Licensing of Sources of Radiation

28-35-178b. General license; certain detecting, measuring, gauging, or controlling devices and certain devices for producing light or an ionized atmosphere. (a) (1) Subject to the provisions of subsections (b) and (c) ~~of this regulation~~, each person commercial and industrial firm, research, educational, and medical institution, individual in the conduct of the individual's business, and federal, state, or local government agency shall be deemed to have been issued a general license to acquire, receive, possess, use, ~~and~~ or transfer radioactive material that is contained in any device designed, manufactured, and used for one or more of the following purposes:

(A) Detecting, measuring, gauging, or controlling thickness, density, level interface location, radiation leakage, or qualitative or quantitative chemical composition;  
or

(B) producing light or an ionized atmosphere.

(2) The general license specified in paragraph (1) of this subsection shall apply only to radioactive material contained in any device that has been manufactured and labeled by a manufacturer in accordance with the specifications of a specific license issued to that manufacturer by the secretary, the U.S. nuclear regulatory commission, or an agreement state.

(3) The general license specified in paragraph (1) of this subsection shall not apply to radioactive material in any device containing at least 370 MBq (10 mCi) of

cesium-137, 3.7 MBq (0.1 mCi) of strontium-90, 37 MBq (1 mCi) of cobalt-60, or 37 MBq (1 mCi) of americium-241 or any other transuranic element, based on the activity indicated on the label.

(4) Each device shall have been received from one of the specific licensees described in paragraph (a)(2) ~~of this regulation~~ or through a transfer made under paragraph (b)(9) ~~of this regulation~~.

(b) Each person who acquires, receives, possesses, uses, or transfers radioactive material in a device pursuant to the general license specified in subsection (a) ~~of this regulation~~ shall comply with all of the following requirements:

(1) Each person subject to this subsection shall ensure that all labels affixed to the device at the time of receipt and bearing a statement that removal of the label is prohibited are maintained and shall comply with all instructions and precautions provided by these labels.

(2) Each person subject to this subsection shall ensure that the device is tested for leakage of radioactive material and proper operation of the on-off mechanism and indicator, if any, at no longer than six-month intervals or at any other intervals specified in any manufacturer's label affixed to the device, except as follows:

(A) The person shall not be required to test devices containing only krypton for leakage of radioactive material.

(B) The person shall not be required to test, for any purpose, any device containing only tritium, not more than 100 microcuries of other beta-emitting or gamma-emitting material, or 10 microcuries of alpha-emitting material or any device held in storage in the original shipping container before initial installation.

(3) Each person subject to this subsection shall ensure that the tests required by paragraph (b)(2) and other operations involving testing, installation, servicing, and removal from installation of the radioactive material, its shielding, or containment, are performed in compliance with one of the following:

(A) In accordance with instructions provided on labels affixed to the device; or

(B) by a person holding a specific license issued under this part or equivalent regulations of NRC or an agreement state to perform the tests and other operations.

(4)(A) Each person subject to this subsection shall maintain records showing compliance with the requirements of paragraphs (b)(2) and (b)(3). The records shall show the results of each test. The records also shall show the dates of the testing, installation, servicing, or removal from installation of the radioactive material, its shielding, or containment and the name of each person performing one or more of these tests and other operations.

(B) Each person shall maintain records of tests for leakage of radioactive material required by paragraph (b)(2) for three years after the next required leak test is performed or until the sealed source is transferred or disposed of. Each person shall maintain records of tests of the on-off mechanism and indicator, as required by paragraph (b)(2), for three years after the next required test of the on-off mechanism and indicator is performed or until the sealed source is transferred or disposed of. Each person shall maintain the records required by paragraph (b)(3) for three years from the date of the recorded event or until the device is transferred or disposed of.

(5) Upon a failure of or damage to, or any indication of a possible failure of or damage to, the shielding of the radioactive material or the on-off mechanism or indicator,

or upon the detection of 0.005 microcurie or more removable radioactive material, each person subject to this subsection shall take the following actions:

(A) Immediately suspend operation of the device until either of the following conditions is met:

(i) The device has been repaired by the manufacturer or other person holding a specific license issued under this part or equivalent regulations of NRC or an agreement state to repair the device; or

(ii) the device is transferred to a person authorized by a specific license to receive the radioactive material contained in the device;

(B) within 30 days, furnish to the secretary a report containing a brief description of the event and the remedial action taken; and

(C) within 30 days, if contamination of the premises or the environs is likely, furnish to the secretary a plan for ensuring that the premises and environs are acceptable for unrestricted use. The criteria for unrestricted use specified in K.A.R. 28-35-205 may be applicable, as determined by the secretary.

(6) A person subject to this subsection shall not abandon the device.

(7) A person shall not export any device containing radioactive byproduct material except in accordance with 10 CFR part 110.

(8) (A) Each person shall transfer or dispose of any device containing radioactive byproduct material only by export as provided in paragraph (b)(7) of this regulation by transfer to another general licensee as authorized in paragraph (b)(9) of this regulation or to a person authorized to receive the device by a specific license issued under this part or equivalent regulations of NRC or an agreement state.

(B) Each person shall furnish a report to the department within 30 days after the export of the device or the transfer of the device to a specific licensee. The report shall contain the following information:

(i) The identification of the device by manufacturer's name, model number, and serial number;

(ii) the name, address, and license number of the person receiving the device; and

(iii) the date of the transfer.

(C) Each person shall obtain written department approval before transferring the device to any other specific licensee not specifically identified in paragraph (b)(8)(A) of this regulation.

(9) Any person subject to this subsection may transfer the device to another general licensee only if either of the following conditions is met:

(A) The device remains in use at a particular location. In this case, the transferor shall give the transferee a copy of this regulation and any safety documents identified in any label affixed to the device and, within 30 days of the transfer, provide a written report to the secretary containing identification of the device by manufacturer's name, model number, and serial number; the name and address of the transferee; and the name, telephone number, and position of an individual who ~~may~~ can be contacted by the secretary concerning the device.

(B) The device is held in storage in the original shipping container at its intended location of use before initial use by a general licensee.

(10) Each person subject to this subsection shall comply with the provisions

of K.A.R. 28-35-228a and K.A.R. 28-35-229a relating to reports of radiation incidents, theft, or loss of licensed material, but shall be exempt from the other requirements of parts 4 and 10 of these regulations.

(11) Each person shall respond to all written requests from the department to provide information relating to the general license within 30 calendar days of the date of the request or on or before any other deadline specified in the request. If the person cannot provide the requested information within the allotted time, the person, within that same time period, shall request a longer period to supply the information by submitting a letter to the department and shall provide written justification as to why the person cannot comply.

(12) Each general licensee shall appoint an individual responsible for having knowledge of the appropriate regulations and requirements and the authority for taking required actions to comply with appropriate regulations and requirements. The general licensee, through this individual, shall ensure day-to-day compliance with the appropriate regulations and requirements. This appointment shall not relieve the general licensee of any of the licensee's responsibility in this regard.

(13)(A) Each person shall register, in accordance with paragraph (b)(13)(B) of ~~this regulation~~, each device generally licensed as required by this regulation. Each address for a location of use, as described in paragraph (b)(13)(B)(iv) of ~~this regulation~~, shall represent a separate general licensee and shall require a separate registration and fee.

(B) In registering each device, the general licensee shall furnish the following information and any other information specifically requested by the department:

(i) The name and mailing address of the general licensee;

(ii) information about each device as indicated on the label, including the manufacturer's name, the model number, the serial number, and the radioisotope and activity;

(iii) the name, title, and telephone number of the responsible person appointed as a representative of the general licensee under paragraph (b)(12) of this regulation;

(iv) the address or location at which each device is used or stored, or both. For each portable device, the general licensee shall provide the address of the primary place of storage;

(v) certification by the responsible representative of the general licensee that the information concerning each device has been verified through a physical inventory and a check of the label information; and

(vi) certification by the responsible representative of the general licensee that the person is aware of the requirements of the general license.

(14) Each person shall report any change in the mailing address for the location of use, including any change in the name of the general licensee, to the department within 30 days of the effective date of the change. For a portable device, a report of address change shall be required only for a change in the primary place of storage of the device.

(15) No person may store a device that is not in use for longer than two years. If any device with shutters is not being used, the shutters shall be locked in the closed position. The testing required by paragraph (b)(2) of this regulation shall not be required to be performed during the period of storage only. If the device is put back into service or transferred to another person and was not tested at the required test interval, the device

shall be tested for leakage before use or transfer, and all shutters shall be tested before use. Each device kept in storage for future use shall be excluded from the two-year time limit if the general licensee performs quarterly physical inventories of the device while the device is in storage.

(c) Nothing in this regulation shall be deemed to authorize the manufacture or import of any device containing radioactive material.

(d) The general license specified in subsection (a) ~~of this regulation~~ shall be subject to the provisions of K.A.R. 28-35-184a and K.A.R. 28-35-184b. (Authorized by and implementing K.S.A. 48-1607; effective, T-86-37, Dec. 11, 1985; effective May 1, 1986; amended Nov. 1, 1996; amended March 24, 2006; amended

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28-35-180a. General requirements for the issuance of specific licenses. Each application for a specific license shall be approved only if the application meets the requirements of these regulations.

(a) Each applicant shall be required to be qualified by reason of training and experience to use the material in question for the purpose requested, in accordance with these regulations, and in a manner that will protect public health and safety and the environment.

(b) The proposed equipment, facilities, and procedures used by each applicant shall protect public health and safety and the environment.

(c) A specific license shall be approved only if the secretary determines that the specific license will not be a detriment to the health and safety of the public.

(d) Each applicant shall meet the requirements prescribed in these regulations for the particular license sought.

(e) (1) Each application for a license for commercial waste disposal, source material milling, or any other operation that the secretary determines will affect the environment shall meet the requirement specified in this paragraph. Each application shall include information that permits the secretary to weigh the environmental, economic, technical, and other benefits against the environmental costs and alternatives to ensure the protection of public health and safety and the environment.

(2) The approval of each application specified in paragraph (e)(1) shall be based

upon the following:

(A) The information specified in paragraph (e)(1) and other information as necessary; and

(B) the applicable portions of 10 CFR, part 51, subpart A, §51.45, as in effect on April 30, 1992.

(f) Each applicant shall be authorized to begin construction only after the issuance of the license. Commencement of construction before issuance of the license shall be grounds for denial of the license application. "Commencement of construction," as used in this regulation, shall mean any clearing of land, excavation, or other substantial action that would adversely affect the environment of a site.

(g) Each applicant for a license, other than a renewal, shall describe in the application how the facility design and procedures for operation will minimize, to the extent practicable, contamination of the facility and the environment, facilitate eventual decommissioning, and minimize, to the extent practicable, the generation of radioactive waste.

(h) Each licensee who manufactures a nationally tracked source shall assign a unique serial number to each nationally tracked source. Each serial number shall be composed only of alphanumeric characters. (Authorized by and implementing K.S.A. 48-1607; effective, T-86-37, Dec. 11, 1985; effective May 1, 1986; amended Sept. 20, 1993; amended Nov. 1, 1996; amended Dec. 30, 2005; amended

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28-35-181d. Specific licenses for ~~a group~~ one or more groups of medical uses.

(a) Any institution, person, or group of persons ~~who meet~~ meeting the requirements of K.A.R. 28-35-181a or 28-35-181b may file a written application with the secretary for a specific license to use radioactive material for any group or groups of medical uses ~~specified in K.A.R. 28-35-199a~~. Each such application shall meet the requirements of K.A.R. 28-35-179a and shall designate the intended group or groups of uses for the radioactive material.

(b) ~~An~~ Each application for a specific license to use radioactive material for any group or groups of medical uses ~~specified in K.A.R. 28-35-199a schedule shall not be approved unless~~ meet all of the following requirements:

(1) The applicant, or the physician or physicians designated in the application as the individual user or users, has adequate clinical experience in performing the medical use or uses for which application is made;

(2) The applicant's proposed radiation detection instrumentation is adequate for conducting the medical procedures specified in the group or groups of uses for which application is made;

(3) The applicant's radiation safety operating procedures are adequate for the proper handling and disposal of radioactive material involved in the group or groups of uses for which application is made; ~~and~~.

(4) The applicant, or the physician or physicians designated in the application as the individual user or users, and all other personnel who will be involved in the preparation and use of the radioactive material, have adequate training and experience in the handling of radioactive material. ~~Such~~ The training and experience shall be appropriate for the conduct of the uses included in the group or groups of uses for which application is made.

(c) Each licensee who is licensed under this regulation shall be subject to the following limitations:

(1) ~~Each~~ A licensee who has been issued a license for group I, II, IV, or V uses shall not receive, possess, or use radioactive material, except those radiopharmaceuticals manufactured in the form to be administered to the patient, and labeled, packaged, and distributed in accordance with a specific license issued by the secretary, or the United States nuclear regulatory commission or an agreement state.

(2) ~~Each~~ A licensee who has been issued a license for group III uses shall not receive, possess, or use generators or reagent kits containing radioactive material, ~~nor~~ shall ~~any licensee~~ not use reagent kits that do not contain radioactive material to prepare radiopharmaceuticals containing radioactive material, except for the following:

(i) (A) Reagent kits not containing radioactive material that are approved by the secretary, the United States nuclear regulatory commission, or an agreement state for use by persons licensed pursuant to this regulation for group III medical uses; or

(ii) (B) generators or reagent kits containing radioactive material that are manufactured, labeled, packaged, and distributed in accordance with a specific license

issued by the secretary, the United States nuclear regulatory commission, or an agreement state.

(3) Each licensee who has been issued a license for group III uses and who uses generators or reagent kits shall elute the generator or process radioactive material with the reagent kit in accordance with instructions that are approved by the secretary, the United States nuclear regulatory commission, or an agreement state and furnished by the manufacturer on the label attached to, or in the leaflet or brochure that accompanies, the generator or reagent kit.

(4) Each licensee who has been issued a license for groups I, II, or III uses and who uses the radioactive material for clinical procedures other than those specified in the product labeling or package insert shall comply with the product labeling regarding the following:

- (i) (A) Chemical and physical form;
- (ii) (B) route of administration; and
- (iii) (C) dosage range.

(5) Each A licensee who has been issued a license for group IV uses shall not receive, possess, or use radioactive material unless contained in a source or device that has been manufactured, labeled, packaged, and distributed in accordance with a specific license issued by the secretary, the United States nuclear regulatory commission, or an agreement state.

(d) Each licensee who is licensed under this regulation shall be authorized to use radioactive material under the general license issued in K.A.R. 28-35-178h for the specified in vitro uses, without filing form RH-31 as otherwise required by that

regulation. However, the licensee shall be subject to the other requirements of K.A.R. 28-35-178h.

(e) ~~Any~~ Each licensee who is licensed under this regulation shall be authorized, subject to the provisions of subsections (f) and (g) ~~of this regulation~~, to receive, possess, and use the following for calibration and reference standards:

(1) Any radioactive material listed in groups I, II, or III ~~of K.A.R. 28-35-199a~~ that has a half-life of 100 days or less, in amounts not exceeding 15 millicuries;

(2) any radioactive material listed in group I, II, or III ~~of K.A.R. 28-35-199a~~ that has a half-life greater than 100 days, in amounts not exceeding 200 microcuries;

(3) technetium-99m, in amounts not exceeding 30 millicuries; and

(4) any radioactive material, in amounts not exceeding three millicuries per source, contained in calibration or reference sources that have been manufactured, labeled, packaged, and distributed in accordance with a specific license issued by the secretary, the United States nuclear regulatory commission, or an agreement state.

(f)(1) ~~Any~~ Each licensee who possesses sealed sources as calibration or reference sources pursuant to subsection (e) ~~of this regulation~~ shall cause each sealed source containing radioactive material, other than hydrogen 3, that has a half-life greater than 30 days, and that is in any form other than gas, to be tested for leakage, contamination, or both at intervals not exceeding six months. In the absence of a certificate from a transferor indicating that a leak test has been made within six months ~~prior to~~ before the transfer of a particular sealed source, that sealed source shall not be used until tested, unless one of the following conditions is met:

(A) The source contains 100 microcuries or less of beta-emitting, gamma-emitting, or beta-emitting and gamma-emitting material, or 10 microcuries or less of alpha-emitting material; ~~or~~ .

(B) The sealed source is stored and is not being used.

(2) Each leak test required under paragraph ~~(f)~~(1) ~~of this subsection~~ shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. The test sample shall be taken from sealed source or from the surfaces of the device in which the sealed source is permanently mounted or stored and on which contamination might be expected to accumulate. Records of leak test results shall be kept in units of microcuries and shall be maintained for inspection by the department.

(3) If the leak test reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired, or to be disposed of in accordance with parts 3 and 4 of these regulations. A report shall be filed with the secretary within five days of the test, describing the equipment involved, the test results, and the corrective action taken.

(g) Each licensee who possesses and uses calibration and reference sources pursuant to subsection ~~(e)~~ ~~of this regulation~~ shall perform the following:

(1) Follow radiation safety and handling instructions that are approved by the secretary, the United States nuclear regulatory commission, or an agreement state and furnished by the manufacturer on the label attached to the source, or permanent container thereof, or in the leaflet or brochure that accompanies the source;

(2) maintain the instructions referenced in paragraph (g)(1) ~~of this subsection~~ in a legible and conveniently available form; and

(3) conduct a quarterly physical inventory to account for all sources received and possessed. Records of the inventories shall be maintained for inspection by the department and shall include the quantities and kinds of radioactive material, location of sources, and the date of the inventory. (Authorized by and implementing K.S.A. 1984 Supp. 48-1607; effective, T-86-37, Dec. 11, 1985; effective May 1, 1986; amended P-\_\_\_\_\_.)

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28-35-181m. Specific licenses to manufacture, prepare, or distribute radiopharmaceuticals containing radioactive material for medical use. An application for a specific license to manufacture, prepare, or distribute radiopharmaceuticals containing radioactive material and used by persons as specified in part 6 of these regulations shall not be approved unless the applicant meets the requirements of this regulation and all other applicable requirements of these regulations.

(a) The applicant shall meet the requirements specified in K.A.R. 28-35-180a.

(b) The applicant shall submit evidence of ~~all~~ either of the following:

(1) ~~(A)~~ The radiopharmaceutical containing radioactive material is subject to the federal food, drug and cosmetic act or the public health service act and will be manufactured, labeled, and packaged in accordance with a new drug application (NDA) approved by the food and drug administration (FDA), a biologic product license issued by the FDA, or a "notice of claimed investigational exemption for a new drug" (IND) accepted by the FDA; or

~~(B)~~ (2) the manufacture and distribution of the radiopharmaceutical containing radioactive material is not subject to the federal food, drug, and cosmetic act or the public health service act.

(c) The applicant shall submit evidence of at least one of the following:

~~(2)~~ (1) The applicant is registered or licensed with the U.S. food and drug administration as a drug manufacturer.

~~(3)~~ (2) The applicant is registered or licensed with a state agency as a drug manufacturer.

~~(4)~~ (3) The applicant is licensed as a pharmacy by the state board of pharmacy.

~~(5)~~ (4) The applicant is operating as a nuclear pharmacy within a federal medical institution.

~~(e)~~ (d) The applicant shall submit the following information on the radionuclide:

(1) The chemical and physical form of the material;

(2) the packaging in which the radionuclide is shipped, including the maximum activity per package;

and

(3) evidence that the shielding provided by the packaging of the radioactive material is appropriate for the safe handling and storage of radiopharmaceuticals by group licensees.

~~(d)~~ (e) (1) The applicant shall submit a description of the following:

(A) A label that shall be affixed to each transport radiation shield, whether the shield is constructed of lead, glass, plastic, or other material, of a radioactive drug to be transferred for commercial distribution. The label shall include the following:

(i) The radiation symbol and the words "CAUTION - RADIOACTIVE MATERIAL" or "DANGER - RADIOACTIVE MATERIAL";

(ii) the name of the radioactive drug and the abbreviation; and

(iii) the quantity of radioactivity at a specified date and time. For radioactive drugs with a half-life greater than 100 days, the time may be omitted; and

(B) a label that shall be affixed to each syringe, vial, or other container used to hold a radioactive drug to be transferred for commercial distribution. The label shall include the radiation symbol and the words "CAUTION - RADIOACTIVE MATERIAL" or "DANGER - RADIOACTIVE MATERIAL" and an identifier that ensures that the syringe, vial, or other container can be correlated with the information on the transport radiation shield label.

(2) The labels, leaflets or brochures required by this regulation shall be made in addition to the labeling required by the FDA. The labels, leaflets or brochures may be separate from the FDA labeling, or with the approval of the FDA, the labeling may be combined with the labeling required by the FDA.

(e) (f) All of the following shall apply to each licensee described in subsection (b):

(1) The licensee may prepare radioactive drugs for medical use, if each radioactive drug is prepared by either an authorized nuclear pharmacist, as specified in paragraphs (2) and (4) of this subsection, or an individual under the supervision of an authorized nuclear pharmacist.

(2) The licensee may allow a pharmacist to work as an authorized nuclear pharmacist if at least one of the following conditions is met:

(A) The pharmacist qualifies as an authorized nuclear pharmacist.

(B) The pharmacist meets the requirements specified in 10 CFR 35.55 (b) and 35.59, and the licensee has received an approved license amendment identifying this individual as an authorized nuclear pharmacist.

(C) The pharmacist is designated as an authorized nuclear pharmacist in accordance with paragraph (4) of this subsection.

(3) The actions authorized in paragraphs (1) and (2) of this subsection shall be permitted in spite of more restrictive language in license conditions.

(4) The licensee may designate a pharmacist as an authorized nuclear pharmacist if the individual was identified on or before December 2, 1994 as an "authorized user" on a nuclear pharmacy license issued under this part.

(5) Each licensee shall provide the following to the department no later than 30 days after the date that the licensee allows, pursuant to paragraphs (2)(A) and (2)(C) of this subsection, the individual to work as an authorized nuclear pharmacist:

(A) A copy of each individual's certification by the board of pharmaceutical specialties, the department or agreement state license, or the permit issued by a licensee of broad scope; and

(B) a copy of the state pharmacy license or registration.

~~(F)~~ (g) Each licensee shall possess and use instrumentation to measure the radioactivity of radioactive drugs. Each licensee shall have procedures for using the instrumentation. Each licensee shall measure, by direct measurement or by combination of measurements and calculations, the amount of radioactivity in dosages of alpha-, beta-, or photon-emitting radioactive drugs before transfer for commercial distribution. Each licensee shall meet the following requirements:

(A) Perform tests before initial use, periodically, and following repair on each instrument for accuracy, linearity, and geometry dependence, as appropriate for the use of the instrument, and make adjustments if necessary; and

(B) check each instrument for constancy and proper operation at the beginning of each day of use.

~~(g)~~ (h) Nothing in these regulations shall exempt the licensee from the requirement to comply with applicable FDA requirements and other federal and state requirements governing radioactive drugs. (Authorized by and implementing K.S.A. 48-1607; effective, T-86-37, Dec. 11, 1985; effective May 1, 1986; amended Dec. 30, 2005; amended P-\_\_\_\_\_.)

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28-35-181n. Specific licenses to manufacture and distribute generators or reagent kits for preparation of radiopharmaceuticals containing radioactive material. An application for a specific license to manufacture and distribute generators or reagent kits containing radioactive material for preparation of radiopharmaceuticals by persons licensed pursuant to as specified in K.A.R. 28-35-181d for the uses listed in group III of ~~K.A.R. 28-35-199a, Schedule D~~, shall be approved if the applicant meets meet the requirements of subsections (a), (b), (c), and (d) ~~of this regulation~~.

(a) ~~The~~ Each applicant shall ~~satisfy~~ meet the general requirements specified in K.A.R. 28-35-180a.

(b) ~~The~~ Each applicant shall submit ~~evidence~~ documentation that of one of the following:

(1) The generator or reagent kit is subject to the federal food, drug and cosmetic act or the public health service act and will be manufactured, labeled, and packaged in accordance with a new drug application (NDA) approved by the food and drug administration (FDA), a biologic product license issued by FDA, or a "notice of claimed investigational exemption for a new drug" (IND) accepted by FDA;~~or.~~

(2) The manufacture and distribution of the generator or reagent kit is not subject to the federal food, drug, and cosmetic act and the public health service act.

(c) ~~The~~ Each applicant shall submit information on the following:

(1) Radionuclide;

(2) the chemical and physical form of the material;

(3) packaging, including maximum activity per package; and

(4) shielding provided by the packaging of the radioactive material contained in the generator or reagent kit.

(d) The label affixed to the generator or reagent kit shall contain information on the radionuclide, quantity, and date of assay.

(e) The label affixed to the generator or reagent kit, or the leaflet or brochure ~~which~~ that accompanies the generator or reagent kit, shall contain the following:

(1) Adequate information, from a radiation safety standpoint, on the procedures to be followed and the equipment and shielding to be used in eluting the generator or processing radioactive material with the reagent kit; and

(2) a statement that "this generator or reagent kit, (as appropriate), is approved for use by persons licensed by the department ~~pursuant~~ according to K.A.R. 28-35-181d for group III uses, ~~under K.A.R. 28-35-199a, Schedule D, Group III of Part 3,~~ or under equivalent licenses of the United States nuclear regulatory commission or another agreement state." The labels, leaflets or brochures required by this paragraph shall be in addition to the labeling required by the FDA. ~~Such~~ The labels, leaflets, or brochures may be separate from FDA labeling, or with the approval of FDA, the labeling may be combined with the labeling required by the FDA. (Authorized by and implementing K.S.A. ~~1984 Supp.~~ 48-1607; effective, T-86-37, Dec. 11, 1985; effective May 1, 1986; amended P-\_\_\_\_\_.)

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28-35-181o. Specific licenses to manufacture and distribute sources and devices for use as a calibration or reference source, or for certain medical uses. (a) ~~An~~ Each application for a specific license to manufacture and distribute sources and devices containing radioactive material to persons licensed ~~under~~ as specified in K.A.R. 28-35-181d for use as a calibration or reference source or for one or more of the uses listed in group VI of ~~K.A.R. 28-35-199a~~ shall ~~not be approved unless the applicant submits~~ include the following information regarding each type of source or device:

- (1) The radioactive material contained, its chemical and physical form, and amount;
- (2) details of design and construction of the source or device;
- (3) procedures for, and results of, prototype tests to demonstrate that the source or device will maintain its integrity under stresses likely to be encountered in normal use and in accidents;
- (4) for devices containing radioactive material, the radiation profile for a prototype device;
- (5) details of quality control procedures to ~~assure~~ ensure that the production sources and devices meet the standards of the design and prototype tests;
- (6) procedures and standards for calibrating sources and devices;
- (7) legend and methods for labeling sources and devices as to their radioactive

content;

(8) radiation safety instructions for handling and storing the source or device.

These instructions shall be included on a durable label attached to the source or device.

However, instructions ~~which~~ that are too lengthy for the label may be summarized on the label and printed in detail on a brochure ~~which~~ that is referenced on the label; and

(9) the label ~~which~~ that is to be affixed to the source or device, or to the permanent storage container for the source or device. The label shall contain information on the radionuclide, quantity, and date of assay, and a statement that the source or device is licensed by the department for distribution to persons licensed under K.A.R. 28-35-181d or under an equivalent license of the U.S. nuclear regulatory commission or an agreement state. Labeling for sources ~~which~~ that do not require long-term storage may be on a leaflet or brochure ~~which~~ that is to accompany the source.

(b)(1) If the applicant desires that the source or device ~~is~~ be required to be tested for leakage of radioactive material at intervals longer than six months, the applicant shall include in the application sufficient information to demonstrate that the longer interval is justified by performance characteristics of the source or device, or similar sources or devices, and by design features that have a significant bearing on the probability or consequences of leakage of radioactive material from the source.

(2) In determining the acceptable interval between tests for leakage of radioactive material, the secretary shall consider information that includes the following:

- (A) The nature of the primary containment (~~source capsule~~);
- (B) the method for protection of the primary containment;
- (C) the method of sealing the containment;

(D) containment construction materials;

(E) the form of the contained radioactive material;

(F) the maximum temperature withstood during prototype tests;

(G) the maximum pressure withstood during prototype tests;

(H) the maximum quantity of contained radioactive material;

(I) the radiotoxicity of contained radioactive material; and

(J) the applicant's operating experience with identical sources or devices or with

similarly designed and constructed sources or devices. (Authorized by and implementing

K.S.A. ~~1984 Supp.~~ 48-1607; effective, T-86-37, Dec. 11, 1985; effective May 1, 1986;

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28-35-182c. Qualifications for a type B specific license of broad scope. A type B specific license of broad scope shall be issued only to an applicant who has established controls and provisions relating to organization and management, procedures, ~~record-keeping~~ recordkeeping, material control and accounting, and management review that are sufficient to ~~assure~~ ensure safe operation. These controls and provisions shall include the following:

(a) The appointment of a radiation safety officer who is qualified by training and experience in radiation protection, and who is available for advice and assistance on radiation safety matters; and

(b) the establishment of appropriate administrative procedures. These procedures shall ~~assure~~ ensure that all of the following conditions are met:

(1) The procurement and use of radioactive material ~~is~~ are controlled;

(2) Safety evaluations of proposed uses of radioactive material are completed.

~~Such~~ These evaluations shall take into consideration the adequacy of facilities and equipment, training and experience of the user, and proper operating or handling procedures; ~~and~~ .

(3) ~~prior to~~ Before use of the radioactive material, the safety evaluation of proposed uses, prepared in accordance with paragraph (b)(2) ~~of this regulation~~, is

reviewed, approved, and recorded by the radiation safety ~~committee~~ officer. (Authorized by and implementing K.S.A. ~~1984-Supp.~~ 48-1607; effective, T-86-37, Dec. 11, 1985; effective May 1, 1986; amended P-\_\_\_\_\_.)

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28-35-184a. Specific conditions on all licenses. (a) No license and no right under any license shall be assigned or otherwise transferred except as authorized under the act or these regulations.

(b) Each person authorized under these regulations shall confine the use and possession of the radioactive material licensed to the locations and purposes authorized in the license.

(c) No person shall introduce radioactive material into any product or material knowing or having reason to believe that the product or material will be transferred to a person exempt from these regulations under K.A.R. 28-35-192a, 28-35-192b, 28-35-192c, 28-35-192d, 28-35-192e, 28-35-192f, or 28-35-192g or the equivalent regulations of the United States nuclear regulatory commission or an agreement state, except in accordance with a specific license issued under K.A.R. 28-35-181f or the general license issued under K.A.R. 28-35-194a.

(d) Each licensee shall file written notice with the secretary 30 days before vacating any facility when the licensee decides to permanently discontinue all activities involving licensed materials authorized in that facility under the license.

(e) Each licensee authorized under K.A.R. 28-35-181h to distribute devices to generally licensed persons shall perform the following:

(1) Report to the department all sales or transfers of those devices to persons generally licensed under K.A.R. 28-35-178b. The report shall identify each general

licensee by name and address, the type of device transferred, and the quantity and type of radioactive material contained in the device. A report shall be submitted within 90 days of the sale or transfer; and

(2) furnish, to each general licensee to whom the licensee transfers any such device, a copy of the general license issued under K.A.R. 28-35-178b.

(f)(1) Each general licensee that is required by this part to register and each specific licensee shall notify the department, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any chapter of title 11, bankruptcy, of the United States code by or against the following:

(A) The licensee;

(B) any person controlling the licensee or listing the license or licensee as property of the estate; or

(C) any affiliate of the licensee.

(2) The notification specified in paragraph (f)(1) shall indicate the following:

(A) The name of the bankruptcy court in which the petition for bankruptcy was filed; and

(B) the date of the filing of the petition.

(g) Each portable gauge licensee shall use at least two independent physical controls that form tangible barriers to secure each portable gauge from unauthorized removal, whenever each portable gauge is not under the control and constant surveillance of the licensee. (Authorized by and implementing K.S.A. 48-1607; effective, T-86-37, Dec. 11, 1985; effective May 1, 1986; amended Dec. 30, 2005; amended

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28-35-201. Schedule F. (a) Single isotope quantities.

Material	Microcuries
Americium-241	.01
Antimony-122	100
Antimony-124	10
Antimony-125	10
Arsenic-73	100
Arsenic-74	10
Arsenic-76	10
Arsenic-77	100
Barium-131	10
Barium-133	10
Barium-140	10
Bismuth-210	1
Bromine-82	10
Cadmium-109	10
Cadmium-115m	10
Cadmium-115	100
Calcium-45	10
Calcium-47	10
Carbon-14	100

Cerium-141	100
Cerium-143	100
Cerium-144	1
Cesium-131	1,000
Cesium-134m	100
Cesium-134	1
Cesium-135	10
Cesium-136	10
Cesium-137	10
Chlorine-36	10
Chlorine-38	10
Chromium-51	1,000
Cobalt-58m	10
Cobalt-58	10
Cobalt-60	1
Copper-64	100
Dysprosium-165	10
Dysprosium-166	100
Erbium-169	100
Erbium-171	100
Europium-152 9.2hr	100
Europium-152 13yr	1
Europium-154	1
Europium-155	10
Fluorine-18	1,000
Gadolinium-153	10
Gadolinium-159	100

Gallium-72	10
Germanium-71	100
Gold-198	100
Gold-199	100
Hafnium-181	10
Holmium-166	100
Hydrogen-3	1,000
Indium-113m	100
Indium-114m	10
Indium-115m	100
Indium-115	10
Iodine-125	1
Iodine-126	1
Iodine-129	0.1
Iodine-131	1
Iodine-132	10
Iodine-133	1
Iodine-134	10
Iodine-135	10
Iridium-192	10
Iridium-194	100
Iron-55	100
Iron-59	10
Krypton-85	100
Krypton-87	10
Lanthanum-140	10
Lutetium-177	100

Manganese-52	10
Manganese-54	10
Manganese-56	10
Mercury-197m	100
Mercury-197	100
Mercury-203	10
Molybdenum-99	100
Neodymium-147	100
Neodymium-149	100
Nickel-59	100
Nickel-63	10
Nickel-65	100
Niobium-93m	10
Niobium-95	10
Niobium-97	10
Osmium-185	10
Osmium-191m	100
Osmium-191	100
Osmium-193	100
Palladium-103	100
Palladium-109	100
Phosphorus-32	10
Platinum-191	100
Platinum-193m	100
Platinum-193	100
Platinum-197m	100
Platinum-197	100

Plutonium-239	.01
Polonium-210	.1
Potassium-42	10
Praseodymium-142	100
Praseodymium-143	100
Promethium-147	10
Promethium-149	10
Radium-226	.01
Rhenium-186	100
Rhenium-188	100
Rhodium-103m	100
Rhodium-105	100
Rubidium-86	10
Rubidium-87	10
Ruthenium-97	100
Ruthenium-103	10
Ruthenium-105	10
Ruthenium-106	1
Samarium-151	10
Samarium-153	100
Scandium-46	10
Scandium-47	100
Scandium-48	10
Selenium-75	10
Silicon-31	100
Silver-105	10
Silver-110m	1

Silver-111	100
Sodium-24	10
Strontium-85	10
Strontium-89	1
Strontium-90	.1
Strontium-91	10
Strontium-92	10
Sulfur-35	100
Tantalum-182	10
Technetium-96	10
Technetium-97m	100
Technetium-97	100
Technetium-99m	100
Technetium-99	10
Tellurium-125m	10
Tellurium-127m	10
Tellurium-127	100
Tellurium-129m	10
Tellurium-129	100
Tellurium-131m	10
Tellurium-132	10
Terbium-160	10
Thallium-200	100
Thallium-201	100
Thallium-202	100
Thallium-204	10
Thorium (natural) <sup>1</sup>	100

Thulium-170	10
Thulium-171	10
Tin-113	10
Tin-125	10
Tungsten-181	10
Tungsten-185	10
Tungsten-187	100
Uranium (natural) <sup>2</sup>	100
Uranium-233	.01
Uranium-234— <del>Uranium-235</del>	.01
Vanadium-48	10
Xenon-131m	1,000
Xenon-133	100
Xenon-135	100
Ytterbium-175	100
Yttrium-90	10
Yttrium-91	10
Yttrium-92	100
Yttrium-93	100
Zinc-65	10
Zinc-69m	100
Zinc-69	1,000
Zirconium-93	10
Zirconium-95	10
Zirconium-97	10

Any alpha-emitting radionuclide not listed above or <u>any</u> mixture of alpha-emitters of unknown composition	.01
Any radionuclide other than an alpha-emitting radionuclide that is not listed above or <del>mixtures</del> <u>any mixture</u> of beta-emitters of unknown composition	.1

<sup>1</sup> Based on an alpha disintegration rate of Th-232, Th-230, and their daughter products.

<sup>2</sup> Based on an alpha disintegration rate of U-238, U-234, and U-235.

(b) Combinations of isotopes. For the purposes of K.A.R. ~~28-35-180~~ 28-35-180b, when a combination of isotopes in known amounts is involved, the limit for the combination shall be derived by determining, for each isotope in the combination, the ratio between the quantity present in the combination and the limit otherwise established for the specific isotope when not in combination. The sum of ~~such~~ the ratios for all the isotopes in the combination shall not exceed unity. (Authorized by and implementing K.S.A. 48-1607; effective Nov. 1, 1996; amended P-\_\_\_\_\_.)

06-22-06

**Kansas Department of Health and Environment  
Proposed Revocation**

**Article 35. Radiation**

**Part 3. Licensing of Sources of Radiation**

28-35-202. (Authorized by and implementing K.S.A. 48-1607; effective Nov. 1, 1996;

revoked P-\_\_\_\_\_.)

Kansas Department of Health and Environment  
Proposed Amended Regulation

Article 35. Radiation

Part 3. Licensing of Sources of Radiation

28-35-203. Schedule G; / Criteria relating to use of financial tests and parent company guarantees for providing reasonable assurance of funds for decommissioning. (a) Each applicant or licensee providing assurance of the availability of funds for decommissioning based on a parent company guarantee that funds will be available for decommissioning costs based on a demonstration that the parent company passes a financial test shall meet the following standards:

(b) Each licensee or applicant applying to the department for recognition of a parent company guarantee for the purposes of complying with the requirements of ~~28-35-180a(e)(9)(B)~~ 28-35-180b shall be required to show ~~its~~ the parent company guarantee meets the following criteria:

(1) Each parent company shall meet two of the following three ratios:

(A) A ratio of total liabilities to net worth ~~which~~ that is less than 2.0;

(B) a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities ~~which~~ that is greater than 0.1; or

(C) a ratio of current assets to current liabilities ~~which~~ that is greater than 1.5.

(2) Each parent company shall have net working capital and tangible net worth ~~that each are~~ of which equal ~~to~~ a minimum of six times the current decommissioning cost estimates, or the prescribed amount if a certification is used based on the requirements of K.A.R. ~~28-35-180a~~ 28-35-180b.

(3) Each parent company shall have assets located in the United States amounting to at least 90 percent of the company's total assets or at least six times the current decommissioning cost estimates, or at least six times the prescribed amount if a certification is used based on the requirements of K.A.R. ~~28-35-180a~~ 28-35-180b.

(4) Each parent company shall have the following:

(A) A current rating for ~~its~~ the company's most recent bond issuance of AAA, AA, A, or BBB as issued by standard and poor's or Aaa, Aa, A, or Baa as issued by moody's;

(B) a tangible net worth at least six times the current decommissioning cost estimate, or the prescribed amount if a certification is used based on the requirements of K.A.R. ~~28-35-180a~~ 28-35-180b;

(C) a tangible net worth of at least \$10 million; and

(D) assets located in the United States amounting to at least 90 percent of the company's total assets or at least six times the current decommissioning cost estimates, or at least six times the prescribed amount if certification is used based on the requirements of K.A.R. ~~28-35-180a~~ 28-35-180b.

(c) The parent company's independent certified public accountant shall compare the data used by the parent company in the financial test, which shall be derived from the independently audited, year-end financial statements for the latest fiscal year, with the amounts in ~~such~~ the financial statement. If any matters come to the auditor's attention ~~which~~ that cause the auditor to believe that the data specified in the financial test should be adjusted and that the company no longer passes the test, the licensee shall notify the department within 90 days of the date the auditor identifies ~~such a~~ the matter.

(d) After the initial financial test, the parent company shall be required to pass the test within 90 days after the close of each succeeding fiscal year.

(1) If the parent company no longer meets the requirements of subsection (a) of ~~this schedule G~~, the licensee shall notify the department of ~~its~~ the licensee's intent to establish alternate financial assurance as specified in ~~the~~ these regulations.

(2) The notice shall be sent by certified mail within 90 days after the end of the fiscal year for which the year-end financial data shows that the parent company no longer meets the financial test requirements.

(3) The licensee shall provide alternate financial assurance within 120 days after the end of ~~such~~ a fiscal year for which the year-end financial data shows that the parent company no longer meets the financial test requirements.

(e) Each parent company guarantee obtained by an applicant or licensee shall contain terms ~~which~~ that provide the following information:

(1) The parent company guarantee shall remain in force unless the guarantor sends notice of cancellation by certified mail to the licensee and the department. The guarantee shall not be canceled during the 120 days beginning on the date of receipt of the notice of cancellation by both the licensee and the department, as evidenced by the return receipts.

(2) If the licensee fails to provide alternate financial assurance within 90 days after receipt of a notice of cancellation of the parent company guarantee by the licensee and the department, the guarantor shall provide ~~such~~ the alternative financial assurance in the name of the licensee.

(3) The parent company guarantee and financial test provisions shall remain in effect until the ~~department~~ secretary has terminated the license.

(4) If a trust is established for decommissioning costs, the trustee and trust shall be acceptable to the ~~department~~ secretary. An acceptable trustee may be an appropriate state or federal government agency or an entity ~~which~~ that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency.

(Authorized by and implementing K.S.A. 48-1607; effective Nov. 1, 1996; amended

P-\_\_\_\_\_.)

Kansas Department of Health and Environment  
Proposed Amended Regulation

Article 35. Radiation

Part 4. Standards for Protection Against Radiation

28-35-216a. Testing for leakage or contamination of sealed sources. (a) Each licensee in possession of any sealed source shall ensure that all of the following requirements are met:

(1) Each sealed source, except as specified in subsection (b) ~~of this regulation~~, shall be tested for leakage or contamination, and the test results shall be received before the sealed source is put into use, unless the licensee has a certificate from the transferor indicating that the sealed source was tested within six months before transfer to the licensee.

(2) Each sealed source that is not designed to emit alpha particles shall be tested for leakage or contamination at intervals not to exceed six months or at alternative intervals approved by the secretary, an agreement state, a licensing state, or the nuclear regulatory commission.

(3) Each sealed source designed to emit alpha particles shall be tested for leakage or contamination at intervals not to exceed three months or at alternative intervals approved by the secretary, an agreement state, a licensing state, or the nuclear regulatory commission.

(4) For each sealed source required to be tested for leakage or contamination, whenever there is reason to suspect that the sealed source might have been damaged or might be leaking, the licensee shall ensure that the sealed source is tested for leakage or

contamination before further use.

(5) Tests for leakage for all sealed sources shall be capable of detecting the presence at 185 Bq (0.005  $\mu$ Ci) of radioactive material on a test sample. Test samples shall be taken from the sealed source or from the surfaces of the container in which the sealed source is stored or mounted and on which one might expect contamination to accumulate. For a sealed source contained in a device, test samples shall be obtained when the source is in the "off" position.

(b) The following sealed sources shall be exempt from testing for leakage and contamination:

(1) Sealed sources containing only radioactive material with a half-life of fewer than 30 days;

(2) sealed sources containing only radioactive material as a gas;

(3) sealed sources containing 3.7 Mbq (100  $\mu$ Ci) or less of beta-emitting or photon-emitting material or 370 kBq (10  $\mu$ Ci) or less of alpha-emitting material;

(4) sealed sources containing only hydrogen-3;

(5) seeds of iridium-192 encased in nylon ribbon; and

(6) sealed sources, except sources used in radiation therapy, that are stored, are not being used, and are identified as being in storage. The sources exempted from this test shall be tested for leakage before any use or transfer to another ~~source~~ person, unless the source has been leak-tested within six months before the date of the use or transfer. The sources in storage shall be physically inventoried every six months and listed in the radioactive materials inventory.

(c) Each test for leakage or contamination from sealed sources shall be performed

by a person specifically authorized by the secretary, an agreement state, a licensing state, or the nuclear regulatory commission to perform these services.

(d) All test results shall be recorded in units of becquerel or microcurie and maintained for inspection by the department.

(e) If any test reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the sealed source from use and shall cause the source to be decontaminated and repaired or to be disposed of in accordance with these regulations. The licensee shall file a report within five days of the test with the radiation control program, bureau of air and radiation, Kansas department of health and environment, describing the equipment involved, the test results, and the corrective action taken. (Authorized by and implementing K.S.A. 48-1607; effective, T-85-43, Dec. 19, 1984; effective May 1, 1985; amended Dec. 30, 2005; amended

P-\_\_\_\_\_.)

Kansas Department of Health and Environment  
Proposed New Regulation

Article 35. Radiation

Part 4. Standards for Protection Against Radiation

28-35-230g. Reports of transactions involving nationally tracked sources. (a) Each licensee who manufactures a nationally tracked source shall submit a report on each nationally tracked source containing the following information:

- (1) The name, address, and license number of the reporting licensee;
- (2) the name of the individual preparing the report;
- (3) the manufacturer, model, and serial number of the source;
- (4) the radioactive material in the source;
- (5) the initial source strength in becquerels or curies at the time of manufacture; and
- (6) the manufacture date of the source.

(b) Each licensee that transfers a nationally tracked source to another person shall submit a report on each nationally tracked source containing the following information:

- (1) The name, address, and license number of the reporting licensee;
- (2) the name of the individual preparing the report;
- (3) the name and license number of the recipient facility and the shipping address;
- (4) the manufacturer, model, and serial number of the source or, if not available, other information to uniquely identify the source;
- (5) the radioactive material in the source;
- (6) the initial or current source strength in becquerels or curies;
- (7) the date for which the source strength is reported;
- (8) the shipping date;

(9) the estimated arrival date; and

(10) for nationally tracked sources transferred as waste under a uniform low-level radioactive waste manifest, the waste manifest number and the container identification of the container with the nationally tracked source.

(c) Each licensee that receives a nationally tracked source shall submit a report on each nationally tracked source containing the following information:

(1) The name, address, and license number of the reporting licensee;

(2) the name of the individual preparing the report;

(3) the name, address, and license number of the person that provided the source;

(4) the manufacturer, model, and serial number of the source or, if not available, other information to uniquely identify the source;

(5) the radioactive material in the source;

(6) the initial or current source strength in becquerels or curies;

(7) the date for which the source strength is reported;

(8) the date of receipt; and

(9) for material received under a uniform low-level radioactive waste manifest, the waste manifest number and the container identification with the nationally tracked source.

(d) Each licensee that disassembles a nationally tracked source shall submit a report on each nationally tracked source containing the following information:

(1) The name, address, and license number of the reporting licensee;

(2) the name of the individual preparing the report;

(3) the manufacturer, model, and serial number of the source or, if not available, other information to uniquely identify the source;

- (4) the radioactive material in the source;
- (5) the initial or current source strength in becquerels or curies;
- (6) the date for which the source strength is reported;
- (7) the disassemble date of the source.

(e) Each licensee who disposes of a nationally tracked source shall submit a report on each nationally tracked source containing the following information:

- (1) The name, address, and license number of the reporting licensee;
- (2) the name of the individual preparing the report;
- (3) the waste manifest number;
- (4) the container identification with the nationally tracked source.
- (5) the date of disposal; and
- (6) the method of disposal.

(f) The reports required in subsections (a) through (e) shall be submitted by the close of the next business day after the transaction. A single report may be submitted for multiple sources and transactions. The reports must be submitted to the nuclear regulatory commission's national source tracking system by one of the following methods:

- (1) The nuclear regulatory commission's on-line national source tracking system;
- (2) electronically using a computer-readable format;
- (3) by facsimile;
- (4) by mail to the address specified on the nuclear regulatory commission's on each nationally tracked source form; or
- (5) by telephone with followup by facsimile or mail.

(g) Each licensee shall correct any error in previously filed reports or file a new report for any missed transaction within 5 business days of the discovery of the error or missed transaction.

(h) Each licensee shall reconcile the inventory of nationally tracked sources possessed by the licensee against that licensee's data in the national source tracking system. The reconciliation must be conducted during the month of January in each year. The reconciliation process must include resolving any discrepancies between the national source tracking system and the actual inventory by filing the reports required by subsections (a) through (e). Each licensee shall submit to the national source tracking system confirmation that the data in the national source tracking system is correct by January 31 of each year.

(i) Each licensee that possesses category 1 nationally tracked sources shall report its initial inventory of category 1 nationally tracked sources to the national source tracking system by November 15, 2007. Each licensee that possesses category 2 nationally tracked sources shall report its initial inventory of category 2 nationally tracked sources to the national source tracking system by November 30, 2007. The information may be submitted by using any of the methods specified in subsection (f). The initial inventory report must include the following information:

- (1) The name, address, and license number of the reporting licensee;
- (2) the name of the individual preparing the report;
- (3) the manufacturer, model, and serial number of each nationally tracked source or, if not available, other information to uniquely identify the source;
- (4) the radioactive material in the sealed source;
- (5) the initial or current source strength in becquerels or curies; and
- (6) the date for which the source strength is reported.

(j) This regulation shall be effective on and after November 15, 2007. (Authorized by and implementing K.S.A. 48-1607; effective P-\_\_\_\_\_.)

Kansas Department of Health and Environment  
Proposed Amended Regulation

Article 35. Radiation

Part 7. Special Requirements for Industrial Radiographic Operations

28-35-289. Training requirements. (a) The licensee or registrant shall not permit any individual to act as a radiographer until the individual has completed ~~either~~ both of the following:

(1) At least 40 hours of training in the subjects specified in subsection (g) of this regulation; and

(2) one of the following types of on-the-job training consisting of hands-on experience under the supervision of a radiographer and certification through a radiographer certification program by a certifying entity as specified in K.A.R. ~~28-35-292;~~ and 28-35-293:

~~(3)~~(A) If the individual will be performing industrial radiography utilizing radioactive material, on-the-job training that includes at least two months or 320 hours of active participation in the performance of industrial radiography utilizing radioactive material;

(B) if the individual will be performing industrial radiography utilizing radiation machines, on-the-job training that includes at least one month or 160 hours of active participation in the performance of industrial radiography utilizing radiation machines; or

(C) if the individual will be performing industrial radiography utilizing radioactive material and radiation machines, both segments of the on-the-job training specified in paragraphs ~~(a)(1)(C)(i) and (ii)~~ (a)(2)(A) and (B).

(b) The licensee or registrant shall not permit any individual to act as a radiographer until the individual meets the following requirements:

(1) Has received the following:

(A) A copy of and instruction in the requirements contained in this part;

(B) a copy of the applicable portions of parts 4 and 10 of these regulations;

(C) the license or registration under which the radiographer will perform industrial radiography; and

(D) a copy of the licensee's or registrant's operating and emergency procedures;

(2) has demonstrated an understanding of the material listed in paragraphs (b)(1) (A) through (D) by successful completion of a written or oral examination;

(3) has received training in the use of the registrant's radiation machines, or the licensee's radiographic exposure services and sealed sources, in the daily inspection of devices and associated equipment and in the use of radiation survey instruments; and

(4) has demonstrated an understanding of the use of the equipment specified in paragraph (b)(3) by successful completion of a practical examination.

(c) The licensee or registrant shall not permit any individual to act as a radiographer's assistant until the individual meets the following requirements:

(1) Has received the following:

(A) A copy of and instruction in the requirements contained in this part;

(B) a copy of the applicable portions of parts 4 and 10 of these regulations;

(C) the license or registration under which the radiographer's assistant will perform industrial radiography; and

(D) a copy of the licensee's or registrant's operating and emergency procedures;

(2) has demonstrated an understanding of the material listed in paragraphs (c)(1) (A) through (D) by successful completion of a written or oral examination;

(3) under the personal supervision of a radiographer, has received training in the use of the registrant's radiation machines, or the licensee's radiographic exposure devices and sealed sources, in the daily inspection of devices and associated equipment and in the use of radiation survey instruments; and

(4) has demonstrated an understanding of the use of the equipment specified in paragraph (c)(3) by successful completion of a practical examination.

(d) Each radiographer and radiographer's assistant shall receive the annual refresher safety training at least every 12 months.

(e) The radiation safety officer or designee shall conduct an inspection program of the job performance of each radiographer and radiographer's assistant to ensure that the department's regulations, the license or registration requirements, and the operating and emergency procedures are followed. Alternatives may be considered by the secretary if the individual serves as both radiographer and radiation safety officer. In those operations in which a single individual serves as both radiographer and radiation safety officer and performs all radiography operations, an inspection program shall not be required. The inspection program shall include the following:

(1) Observation of the performance of each radiographer and radiographer's assistant during an actual industrial radiographic operation, at least every six months; and

(2) a provision that, if a radiographer or a radiographer's assistant has not participated in an industrial radiographic operation for more than six months since the last inspection, the radiographer shall demonstrate knowledge of the training

requirements of paragraph (b)(3) and the radiographer's assistant shall demonstrate knowledge of the training requirements of paragraph (c)(3) by a practical examination before these individuals are allowed to participate in a radiographic operation.

(f) Each licensee or registrant shall maintain the following:

(1) Records of the training of each radiographer and radiographer's assistant.

These records shall include radiographer certification documents and verification of certification status, copies of written tests, dates of oral and practical examinations, the names of individuals conducting and receiving the oral and practical examinations, a list of the subjects tested, and the results of the oral and practical examinations; and

(2) records of annual refresher safety training and semiannual inspections of job performance for each radiographer and each radiographer's assistant. These records shall list the topics discussed during the refresher safety training, the date or dates on which the annual refresher safety training was conducted, and the names of the instructors and attendees. For inspections of job performance, the records shall also include a list showing the items checked and any noncompliance observed by the radiation safety officer.

(g) The training of each licensee or registrant shall include information about the following:

(1) Fundamentals of radiation safety, including the following:

(A) The characteristics of gamma radiation and X-radiation;

(B) the units of radiation dose and activity;

(C) the hazards of exposure to radiation;

(D) the levels of radiation from different sources of radiation; and

(E) the methods of controlling radiation dose using time, distance, and shielding;

(2) radiation detection instruments, including the following:

(A) The use, operation, calibration, and limitations of radiation survey

instruments;

(B) survey techniques; and

(C) the use of personnel-monitoring equipment;

(3) the equipment to be used, including the following:

(A) The operation and control of radiographic exposure equipment, remote handling equipment, and storage containers, including pictures or models of source assemblies;

(B) the operation and control of radiation machines;

(C) the storage, control, and disposal of sources of radiation; and

(D) inspection and maintenance of equipment;

(4) the requirements of state and federal regulations; and

(5) case histories of accidents in radiography. (Authorized by and implementing K.S.A. 48-1607; effective Jan. 1, 1970; amended May 1, 1976; amended, T-85-43, Dec. 19, 1984; amended May 1, 1985; amended Dec. 30, 2005; amended P-

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**Kansas Department of Health and Environment  
Proposed Amended Regulation**

**Article 35. Radiation**

**Part 7. Special Requirements for Industrial Radiographic Operations**

**28-35-292. Location of documents and records. (a) Each licensee or registrant shall maintain copies of records required by this part and other applicable parts of these regulations.**

**(b) Each licensee or registrant shall also maintain current copies of the following documents or records sufficient to demonstrate compliance at each applicable field station and each temporary job site:**

- (1) The license or registration authorizing the use of sources of radiation;**
- (2) a copy of parts 1, 4, 5, and 10 of these regulations;**
- (3) the utilization logs for each source of radiation dispatched from that location;**
- (4) the records of any equipment problems identified in daily checks of equipment;**
- (5) the records of alarm systems and entrance control checks, if applicable;**
- (6) the records of all dosimeter readings;**
- (7) the operating and emergency procedures;**
- (8) evidence of the latest calibration of the radiation survey instruments in use at the site;**
- (9) evidence of the latest calibrations of alarming ratemeters and operability checks of dosimeters;**
- (10) the survey records for the period of operation at the site;**

(11) the shipping papers for the transportation of radioactive materials; and

(12) when operating under reciprocity pursuant to part 3 of these regulations, a copy of the applicable state license or registration, or nuclear regulatory commission license authorizing the use of sources of radiation. (Authorized by and implementing K.S.A. 48-1607; effective Dec. 30, 2005; amended P-\_\_\_\_\_.)