

State of Kansas

Bill Graves



Governor

Department of Health and Environment

James J. O'Connell, Secretary

October 21, 1996

RICHARD L BANGART DIRECTOR  
OFFICE OF STATE PROGRAMS (3D 23)  
U S NUCLEAR REGULATORY COMMISSION  
WASHINGTON DC 20555-0001

Dear Mr. Bangart:

This is to advise you that we have currently amended and adopted the following regulations :

K.A.R. 28-35-178b. Amendment changes to recognize a new reporting requirement for accidents which involve radioactive materials, but are not incidents as defined in K.A.R.'s.

K.A.R. 28-35-180a. Amendment which adds a new table schedule to assist the department and licensees to determine the correct level of funding for surety that is now required.

K.A.R. 28-35-184b. New regulation which establishes notification for accidents, clarifies requirements, and establishes response times and procedures.

K.A.R. 28-35-193b. New regulation which establishes the need for emergency planning for certain licensees.

K.A.R. 28-35-201. New regulation which establishes a new schedule for use with 28-35-180a. as amended.

K.A.R. 28-35-202. New regulation which establishes a new schedule for use with 28-35-193b. as adopted.

K.A.R. 28-35-290. New regulation to provide reporting of emergencies pursuant to 28-35-193b for industrial radiographers.

K.A.R. 28-35-291. New regulation which sets new standards for industrial radiography equipment.

K.A.R. 28-35-363. Amendment adds language to require emergency notifications pursuant to 28-35-184b for wireline operators.

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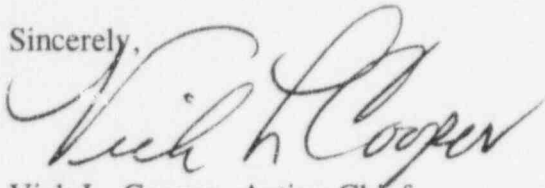
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To the best of our knowledge, this action assures the compatibility of our rules with NRC regulations, except for regulations dealing with "Licensees and Radiation Safety Requirements for Large Irradiators."

The other purpose of this letter is to inquire if we will be required to implement the "Licensees and Radiation Safety Requirements for Large Irradiators" to maintain compatibility. Kansas currently has no large irradiators which meet the definition found in 10 CFR, Part 36.2 nor have we ever had such an irradiation. It is understood that if a license application was received for a large irradiator, we would immediately need to start the rulemaking process. In the interim, we would be able to address the rule issue through the license condition process.

Your assistance in this matter is greatly appreciated. If you have any questions or we can be of assistance, please do not hesitate to contact this office.

Sincerely,

A handwritten signature in cursive script, appearing to read "Vick L. Cooper".

Vick L. Cooper, Acting Chief  
Radioactive Materials & X-ray Section  
Bureau of Air and Radiation  
Radiation Control Program

VLC/psw

Enclosures

Kansas Department of Health and Environment

K.A.R. 28-35-178b

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and K.A.R. 28-35-184b. (Authorized by and implementing K.S.A. 1984  
~~Supp.~~ 48-1607; effective, T-86-37, Dec. 11, 1985; effective May 1,  
1986; amended P-\_\_\_\_\_.)

ATTORNEY GENERAL

JUN 25 1996

APPROVED BY. *cn*

DEPT. OF ADMINISTRATION APPROVED

BY *Shelton* DATE 6-6-96

ATTORNEY GENERAL

JUN 25 1996

APPROVED BY *cm*

April 21, 1996

Kansas Department of Health and Environment

Proposed Amended Permanent Regulation

28-35-178b. General license-certain measuring, gauging and control devices. (a)(1) Subject to the provisions of subsection (b) and (c) of this regulation, a general license is hereby issued to acquire, possess, use and transfer radioactive material which is contained in any device designed, manufactured and used for one or more of the purpose of following purposes:

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

(B) ~~for the purpose of~~ producing light or an ionized atmosphere.

(2) The general license issued in paragraph (1) of this subsection shall apply only to radioactive material contained in any device which 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.

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

(1) Each person subject to this subsection shall assure that all labels which are affixed to the device at the time of receipt

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BY S. Hughes DATE 6-6-96



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and which bear 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 assure 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 such other intervals as are specified in any manufacturer's label affixed to the device, except as follows.

~~(i) (A) Devices containing only krypton need~~ Such person shall not be required to test devices containing only Krypton for leakage of radioactive material.

~~(ii) (B) devices~~ Such persons shall not be required to test, for any purpose, any device containing only tritium or not more than 100 microcuries of other beta or gamma-emitting material or 10 microcuries of alpha-emitting material ~~and devices~~ or any device held in storage in the original shipping container prior to initial installation ~~need not be tested for any purpose.~~

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

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

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BY S. H. Jones DATE 6-6-76

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~~(ii)~~ (B) by a person holding a specific license to perform such activities.

(4) (A) Each person subject to this subsection shall maintain records showing compliance with the requirements of paragraphs (b)(2) and (b)(3) ~~of this subsection~~. The records shall show the results of ~~tests~~ each test. The records also shall show the dates of, ~~and the names of persons performing,~~ 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 activities.

(B) Such persons shall maintain records of tests for leakage of radioactive material required by paragraph (b)(2) ~~of this subsection shall be maintained~~ for one year after the next, required leak test is performed or until the sealed source is transferred or disposed. Such persons shall maintain records of tests of the on-off mechanism and indicator, as required by paragraph (b)(2) ~~of this section, shall be maintained~~ for one year ~~of~~ after the next, required test of the on-off mechanism and indicator is performed or until the sealed source is transferred or disposed. Such persons shall maintain records which are required by paragraph (b)(3) ~~of this subsection shall be maintained~~ for a period of two years from the date of the recorded event or until the device is transferred or disposed.

(5) Upon a failure of or damage to, or any indication of a possible failure of or damage to, the shielding of the radioactive

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BY Shiger DATE 6-6-96

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material or the on-off mechanism or indicator, or upon the detection of 0.005 microcurie or more removable radioactive material, ~~the licensee~~ each person subject to this subsection shall take the following actions:

(A) immediately suspend operation of the device until ~~it~~ the device:

(i) has been repaired by the manufacturer or other person holding a specific license to repair such devices<sub>7i</sub> or ~~the device~~

(ii) is transferred to a person authorized by a specific license to receive the radioactive material contained in the device<sub>7i</sub> and ~~shall~~

(B) within 30 days, furnish to the secretary a report containing a brief description of the event and the remedial action taken<sub>7</sub>.

(6) Each person subject to this subsection shall not abandon the device<sub>7</sub>.

(7) Except as provided in paragraph (c)(8) of this subsection, each person subject to this subsection shall transfer the device only to a person holding a specific license to receive the device<sub>7</sub> and<sub>7</sub> within 30 days after the transfer, shall furnish to the secretary a written report containing an identification of the device by manufacturer's name and model number<sub>7</sub> and the name and address of the person to whom the device was transferred. However, a report shall not be required if the device is transferred to a specific licensee only for the purpose of

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BY S. H. [Signature] DATE 6-6-66

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obtaining a replacement device.

(8) Each person subject to this subsection shall transfer the device to another general licensee only:

(i) (A) When 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 and model number, and the name and address of the transferee, and the name and position of an individual who may be contacted by the secretary concerning the device; or

(ii) (B) When the device is held in storage in the original shipping container at its intended location of use prior to initial use by a general licensee, and.

(9) Each person subject to this subsection shall comply with the provisions of K.A.R. 28-35-228a and 28-35-229a ~~of this chapter for reporting 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.

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

(d) The general license issued in subsection (a) of this regulation shall be subject to the provisions of K.A.R. 28-35-184a

DEPT. OF ADMINISTRATION APPROVED

BY *Seigler* DATE 6-6-66

June 17, 1996

Kansas Department of Health and Environment

Proposed Amended Permanent Regulation

28-35-180a. General requirements for the issuance of specific licenses. An application for a specific license shall only be approved if the secretary determines that the application complies with the provisions of ~~these regulations~~ K.A.R. 28-35-133 through K.A.R. 28-35-363.

(a) Each ~~The~~ applicant shall 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 the public health and minimize danger to life and property.

(b) The ~~applicant's~~ proposed equipment, facilities, and procedures used by each applicant shall be adequate to protect the public health and minimize danger to life and property.

(c) A specific ~~The~~ license shall be approved if the secretary determines it will not be inimical to the health and safety of the public.

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

(e) Each application for a license for commercial waste disposal, source material milling or other activity which the secretary determines will significantly affect the environment shall meet the following conditions.

(1) Each applicant shall provide information which permits

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BY *Shugart* DATE 6-18-96

the secretary to weigh the environmental, economic, technical, and other benefits against the environmental costs and alternatives.

(2) Each determination made by the secretary to approve a specific license shall be based upon the following:

(A) Using the information provided in K.A.R. 28-35-180a(e) (1) and other information as necessary; and in accordance with

(B) the applicable portions of 10 CFR, Part 51, Subpart A, § 51.45, as in effect April 30, 1992; a determination shall be made by the secretary whether the action called for is issuance of the license.

(3) Each applicant shall be authorized to begin The applicant's commencement of construction shall begin only after the secretary approves determines that the action called for is issuance of the license. Commencement of construction prior to the secretary's determination shall be grounds for denial of the license. "Commencement of construction," as used here, means any clearing of land, excavation, or other substantial action that would adversely affect the environment of a site.

(4) The applicant shall make financial surety arrangements for site reclamation pursuant to K.S.A. 48-1623, and as otherwise provided. Arrangements may consist of surety bonds, cash deposits, certificates of deposit, deposits of government securities, letters or lines of credit, or any combination of the above for the categories of licenses listed in this regulation and shall be established to ensure the protection of the public health and

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~~safety in the event of abandonment, default, or other inability of the licensee to meet the requirements of the act and these regulations.~~

~~(A) The amount of funds to be ensured by such surety arrangements shall be based on department approved cost estimates~~

~~(B) Self-insurance, or any arrangement which essentially constitutes self-insurance, shall not be deemed to satisfy the surety requirement, since this provides no additional assurance other than that which already exists through license requirements.~~

~~(C) The arrangements required in this regulation shall be established prior to issuance of the license to assure that sufficient funds will be available to carry out the decontamination and decommissioning of the facility.~~

~~(D) Amendments to specific licenses in effect on June 30, 1993, may be issued to the following licensees if the required surety arrangements are established within 90 days after June 30, 1993:~~

- ~~(i) major processors,~~
- ~~(ii) waste-handling licensees,~~
- ~~(iii) former U.S. atomic energy commission or U.S. nuclear regulatory commission licensed facilities,~~
- ~~(iv) source material milling operations, and~~
- ~~(v) all others except persons who are exempt pursuant to K.A.R. 28-35-180a(E).~~

~~(E) The following persons shall be exempt from the~~

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~~requirements of K.A.R. 28-35-180a(e)(4):~~

~~(i) all state, local, or other government agencies, unless they are subject to K.A.R. 28-35-180a(g)(1) or (3);~~

~~(ii) persons authorized to possess no more than 1,000 times the quantity of a material specified in K.A.R. 28-35-234a, appendix c of these regulations or 1000 times the quantity of any combination of radioactive materials listed in appendix c, as stated as in note 1 of K.A.R. 28-35-234a appendix c;~~

~~(iii) persons authorized to possess hydrogen-3 contained as hydrogen gas in a sealed source; or~~

~~(iv) persons authorized to possess radioactive noble gases in sealed sources with no radioactive daughter product with a half-life greater than 30 days.~~

On and after 1996, each applicant for a specific license authorizing the possession and use of unsealed radioactive material with a half-life greater than 120 days and in quantities exceeding  $10^5$  times the applicable quantities set forth in K.A.R. 28-35-201, Schedule F shall submit a decommissioning funding plan as described in paragraph (e) (8) of this regulation. The applicant shall also submit the decommissioning funding plan when a combination of isotopes is involved if  $R$  divided by  $10^5$  is greater than 1 (unity rule), where  $R$  is defined here as the sum of the ratios of the quantity of each isotope to the applicable value in K.A.R. 28-35-201, Schedule F.

~~(5) On or after 1996, each applicant for a specific license~~

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authorizing possession and use of radioactive material with a half-life greater than 120 days and in quantities specified in Table I of this regulation shall either:

(A) submit a decommissioning funding plan as described in paragraph (e)(8) of this regulation; or

(B) submit a certification that financial assurance for decommissioning has been provided in the amount prescribed by Table I, using one of the methods described in paragraph (e)(9) of this regulation.

(i) This certification may state that the appropriate assurance will be obtained after the application has been approved and the license issued, but before the receipt of licensed material. If the applicant defers execution of the financial instrument required under paragraph (e)(9) until after the license has been issued, a signed original of the financial instrument shall be submitted to the department before the applicant receives the licensed material.

(ii) If the applicant does not defer execution of the financial instrument required under paragraph (e)(9), the applicant shall submit to the department, as part of the certification, a signed original of the financial instrument.

(6) Each holder of a specific license issued before October 1, 1996 which is of a type described in K.A.R. 28-35-180a (e)(4) or (5) shall provide financial assurance for decommissioning in accordance with the criteria established below.

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BY

*S. Hughes*

DATE 6-18-96

(A) Each holder of a specific license issued before October 1, 1996 which is of a type described in K.A.R. 28-35-180a(e)(4) shall submit a decommissioning funding plan as described in K.A.R. 28-35-180a paragraph (e)(8) or a certification of financial assurance for decommissioning in an amount at least equal to \$750,000.00. The plan or certification shall be submitted to the department in accordance with the criteria set forth in this regulation, not later than 90 days after October 1, 1996. If the licensee submits a certification of financial assurance rather than a decommissioning funding plan, the licensee shall include a decommissioning funding plan in any application for license renewal.

(B) Each holder of a specific license issued before October 1, 1996 which is of a type described in K.A.R. 28-35-180a (e)(5) shall submit a decommissioning funding plan as described in K.A.R. 28-35-180a (e)(8) or a certification of financial assurance for decommissioning. The plan or certification shall be submitted to the department, in accordance with the criteria set forth in this regulation, not later than 90 days after October 1, 1996.

(7) The amounts of financial assurance required for decommissioning, by quantity of material, shall be set out in Table I.

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BY Schuyler DATE 6-18-96  
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Table I

Financial Assurance for Decommissioning by Quantity of Material

Where the possession limit is greater

than  $10^4$  but less than or equal to

$10^5$  times the applicable quantities in

K.A.R. 28-35-201, Schedule F,

regulations in unsealed form.....\$750,000.00

Where a combination of isotopes exist,

if R, as defined in K.A.R. 28-35-180a

(e) (4), divided by  $10^4$

is greater than 1, but R divided by

$10^5$  is equal to or less than one.....\$750,000.00

Where the possession limit is greater

than  $10^3$  but less than or equal to

$10^4$  times the applicable quantities

of K.A.R. 28-35-201, Schedule F, in

unsealed form.....\$150,000.00

For a combination of

isotopes, if R, as defined in K.A.R.

28-35-180a (e) (4), divided by

$10^3$  is greater than one, but R divided

by  $10^4$  is less than or equal to one.....\$150,000.00

Where the possession limit is greater than

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$10^{10}$  times the applicable quantities in

K.A.R. 28-35-201, Schedule F,

in sealed sources or foils.....\$ 75,000.00

For a combination of isotopes, if R, as

defined in K.A.R. 28-35-180a (e) (4),

divided by  $10^{10}$  is greater than one.....\$ 75,000.00

(8) Each decommissioning funding plan shall contain the following:

(A) a cost estimate for decommissioning;

(B) a description of the method of assuring funds for decommissioning, selected from the methods available under K.A.R. 28-35-180a (e) (9);

(C) a description of the means for periodically adjusting cost estimates and associated funding levels over the life of the facility;

(D) a certification by the licensee that financial assurance for decommissioning has been provided in the amount of the cost estimate for decommissioning; and

(E) a signed original of the financial instrument obtained to satisfy the requirements of K.A.R. 28-35-180a (e) (9).

(9) Each licensee shall provide financial assurance for decommissioning by one or more of the following methods.

(A) Prepayment. "Prepayment" means a deposit of cash or liquid assets which is made:

(i) prior to the start of operation into an account which is

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*St. Hughes* DATE 6-18-96

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segregated from the licensee's assets and outside of the licensee's administrative control; and

(ii) in an amount which would be sufficient to pay decommissioning costs.

The prepayment may be in the form of a trust, escrow account, government fund, certificate of deposit, or deposit of government securities.

(B) A surety method, insurance, or other guarantee method. The licensee may use a surety, insurance, or other similar means to guarantee that decommissioning costs will be paid. A surety method may be in the form of a surety bond, letter of credit, or line of credit. A parent company guarantee of funds for decommissioning costs based on a financial test may be used if the guarantee and test meet the requirements of K.A.R. 28-35-203, Schedule G. A parent company guarantee shall not be used in combination with other financial methods to satisfy these requirements. A guarantee of funds by the applicant or licensee for decommissioning costs based on a financial test may be used if the guarantee and test meet the requirements of K.A.R. 28-35-203, Schedule G. A guarantee by the applicant or licensee shall not be used in combination with any other financial methods to satisfy these requirements or in any situation where a parent company of the applicant or licensee holds majority control of the voting stock of the company. Any surety method or insurance used to provide financial assurance for decommissioning shall contain the following conditions:

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(i) The surety or insurance shall be open-ended, or if written for a specified term shall be renewed automatically unless 90 days or more prior to the renewal date the insurer notifies the department, the beneficiary, and the licensee of its intention not to renew. The surety or insurance shall also provide that the full face amount will be paid to the beneficiary automatically prior to the expiration without proof of forfeiture if the licensee fails to provide a replacement acceptable to the department within 30 days after receipt of notification of cancellation.

(ii) The surety or insurance shall be payable to a trust established for decommissioning costs. The trustee and trust shall be acceptable to the department. An acceptable trustee may include an appropriate state or federal agency or an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency.

(iii) The surety or insurance shall remain in effect until the department has terminated the license.

(C) External sinking fund. A licensee may provide financial assurance for decommissioning through an external sinking fund in which deposits are made at least annually, coupled with a surety or insurance. The value of the surety or insurance may decrease by the amount accumulated in the sinking fund. "External sinking fund" means a fund:

(i) established and maintained by setting aside funds periodically in an account segregated from the licensee's assets

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and outside the licensee's administrative control; and

(9) in which the total amount of the funds would be sufficient to pay decommissioning costs at the time termination of the operation is expected. An external sinking fund may be in the form of a trust, escrow account, government fund, certificate of deposit, or deposit of government securities. The surety or insurance provisions shall meet the requirements of K.A.R. 28-35-180a (e)(9)(B).

(D) In the case of federal, state or local government licensees, a statement of intent containing a cost estimate for decommissioning or an amount based on Table I of this regulation, and indicating that funds for decommissioning will be obtained when necessary.

(10) Each person licensed under K.A.R. 28-35-180a (e)(4), (5), (6), (7), (8), (9) and (10) shall keep records of all information that is important to the safe and effective decommissioning of the facility. The records shall be kept in an identified location until the license is terminated by the department. If records of relevant information are kept for other purposes, the licensee may refer to these records in the records kept pursuant to this paragraph and their locations. Information that is important to decommissioning shall consist of information required in paragraphs (A), (B), (C), and (D) below.

(A) Each licensee shall maintain records of spills or other unusual occurrences involving the spread of contamination in and

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around the facility, equipment, or site. These records may be limited to records of instances in which contamination remains after any cleanup procedures or when there is reasonable likelihood that contaminants may have spread to inaccessible areas. These records shall include any known information identifying the nuclides, quantities, forms, and concentrations involved in the spill or occurrence.

(B) Each licensee shall maintain drawings of the following, both as originally built and as modified if applicable:

(i) structures and equipment in restricted areas where radioactive materials are used, stored or both; and

(ii) locations of possible inaccessible contamination. If the licensee references required drawings other than those kept pursuant to this regulation, the licensee shall not be required to index each relevant document individually. If drawings are not available, the licensee shall substitute appropriate records of available information concerning these areas and locations;

(C) Each licensee shall maintain a list, contained in a single document and updated every two years, of the following:

(i) all areas designated and formerly designated as restricted areas;

(ii) all areas outside of restricted areas that require documentation pursuant to K.A.R. 28-35-180a (e)(10)(A);

(iii) all areas outside of restricted areas where current and previous wastes have been buried as documented under K.A.R. 28-35-

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227j; and

(iv) all areas outside of restricted areas which contain material such that, if the license expired, the licensee would be required to either decontaminate the area to unrestricted release levels or apply for approval for disposal under K.A.R. 28-35-225a.

Those areas containing sealed sources only shall not be included in the list, if the sources have not leaked, no contamination remains in the area after any leak, or the area contains only radioactive materials having half-lives of less than 65 days.

(D) Each licensee shall maintain records of the cost estimate performed for the decommissioning funding plan or of the amount certified for decommissioning, and records of the funding method used for assuring funds if either a funding plan or certification is used.

(f) Each The applicant for a specific license shall make have made arrangements for a long-term care fund pursuant to K.S.A. 48-1623. Each applicant for any of the following specific licenses shall establish the long-term fund shall be established by the following specific licensees prior to the issuance of the license or prior to the termination of the license if the applicant chooses, at the time of the licensure, to provide a surety in lieu of a long-term care fund:

- (1) waste-handling licensees;
- (2) source material milling licensees; and

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BY *Schigler* DATE 6-18-96

(3) ~~former facilities formerly licensed by the U.S. atomic energy commission or the U.S. nuclear regulatory commission-~~  
~~licensed facilities~~, if required.

(g)(1) Each applicant shall agree to 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 ~~(U.S.C.)~~ by or against any of the following:

(A) the licensee;

(B) ~~an~~ any entity, as that term is defined in 11 U.S.C. 101 (14) as of January 28, 1991, controlling the licensee or listing the license or licensee as property of the estate; or

(C) ~~an~~ any affiliate, as that term is defined in 11 U.S.C. 101 (2) as of January 28, 1991, of the licensee.

(2) The bankruptcy ~~This~~ notification shall indicate:

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

(B) the date ~~of the filing of the petition~~ was filed.

(Authorized by and implementing K.S.A. ~~1992~~ Supp. 48-1607, effective, T-86-37, Dec. 11, 1985; effective May 1, 1986; amended Sept. 20, 1993; amended P-\_\_\_\_\_.)

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JUN 25 1996

APPROVED BY: *[Signature]*

DEPT. OF ADMINISTRATION APPROVED

BY *[Signature]* DATE 6-18-96

JUL 25 1996

APPROVED BY *cm*

April 21, 1996

## Kansas Department of Health and Environment

## Proposed New Regulation

28-35-184b. Reporting requirements. (a) Immediate report. Each licensee shall notify the department of the following types of events:

(1) an event that prevents immediate protective actions necessary to avoid exposures to radiation or radioactive materials that could exceed regulatory limits; or

(2) an event involving a release of licensed material that could exceed regulatory limits. The licensee shall notify the department of the event as soon as possible, but not later than four hours after the event is discovered.

(b) Twenty-four hour report. Each licensee shall notify the department within 24 hours after the discovery of any of the following events involving licensed material:

(1) An unplanned contamination event in which:

(A) access to the contaminated area, by workers or the public, must be restricted for more than 24 hours by imposing additional radiological controls or by prohibiting entry into the area;

(B) the quantity of material involved is greater than five times the lowest annual limit on intake specified for the material in appendix B of the "Kansas Department of Health and Environment Appendices to Part 4: Standards for Protection Against Radiation," effective April 1994; and

(C) access to the area must be restricted for a reason other than to allow isotopes with a half-life of less than 24 hours to

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decay prior to decontamination;

(2) an event in which equipment is disabled or fails to function as designed when:

(A) the equipment is required by regulation or license condition to prevent releases exceeding regulatory limits, to prevent exposures to radiation and radioactive materials exceeding regulatory limits, or to mitigate the consequences of an accident;

(B) the equipment is required to be available and operable at the time it is disabled or fails to function; and

(C) no redundant equipment is available and operable to perform the required safety function;

(3) an event that requires unplanned medical treatment at a medical facility of an individual with spreadable radioactive contamination on the individual or the individual's clothing; and

(4) an unplanned fire or explosion damaging any licensed material or any device, container, or equipment containing licensed material when:

(A) the quantity of material involved is greater than five times the lowest annual limit of intake specified for the material in appendix B of the "Kansas Department of Health and Environment Appendices to Part 4: Standards for Protection Against Radiation," effective April 1994; and

(B) the damage affects the integrity of the licensed material or its container.

(c) Preparation and submission of reports. Each report made by

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a licensee in response to the requirements of this regulation shall be made as follows:

(1) Each licensee shall make the reports required by subsection (a) and (b) of this regulation by telephone to the Kansas department of health and environment-bureau of air and radiation-radiation control program. The report shall include, to extent it is available, the following information:

- (A) the caller's name and a call back number;
- (B) a description of the event, including the date and time;
- (C) the exact location of the event;
- (D) the isotopes, quantities, and chemical and physical forms of the licensed material involved; and
- (E) any personnel radiation exposure data available.

(2) Written report. Each licensee who makes a report required by subsections (a) and (b) of this regulation shall submit a written follow-up report within 30 days of the initial report. A written report submitted pursuant to other requirements of K.A.R. 28-35-133 through K.A.R. 28-35-363 shall be considered to fulfill this requirement if the report contains all of the information required under this paragraph. The report shall include the following:

- (A) a description of the event, including the probable cause, and the name of the manufacturer and the model number, if applicable, of any equipment that failed or malfunctioned;
- (B) a description of the exact location of the event;

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(C) the isotopes, quantity, and chemical and physical form of the licensed material involved;

(D) the date and time of the event;

(E) a description of corrective actions taken or planned and the results of any evaluations or assessments; and

(F) a description of the extent to which individuals were exposed to radiation or to radioactive materials, without identifying individuals by name. (Authorized by and implementing K.S.A. 48-1607; effective P-\_\_\_\_\_.)

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BY *Seeger* DATE 6-6-96

June 17, 1996

Kansas Department of Health and Environment

Proposed New Regulation

28-35-193b. Emergency plan criteria. (a) Each application to possess radioactive materials in amounts in excess of the quantities in K.A.R. 28-35-202, "Schedule H - Quantities of Radioactive Materials Requiring Consideration of the Need for an Emergency Plan for Responding to a Release," whether in unsealed form, on foils or plated sources, or sealed in glass, shall contain either:

(1) An evaluation showing that the maximum dose to a person offsite due to a release of radioactive materials would not exceed one rem effective dose equivalent or five rems to the thyroid; or

(2) an emergency plan for responding to a release of radioactive material.

(b) The applicant may use one or more of the following factors to support the evaluation submitted under K.A.R. 28-35-193b (a) (1):

(1) Portions of the radioactive material are physically separated from the rest of the material so that only a portion could be involved in an accident;

(2) all or part of the radioactive material would not be subject to release during an accident because of the way it is stored or packaged;

(3) the release fraction in the respirable size range would be lower than the release fraction shown in K.A.R. 28-35-202, due to the chemical or physical form of the material;

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(4) the solubility of the radioactive material would reduce the dose received;

(5) facility design or engineered safety features in the facility would cause the release fraction to be lower than the limits shown in K.A.R. 28-35-202;

(6) operating restrictions or procedures would prevent a release fraction as large as the limits shown in K.A.R. 28-35-202; or

(7) other factors appropriate for the specific facility.

(c) Each emergency plan for responding to a release of radioactive material submitted under K.A.R. 28-35-193b (a)(2) shall include the following information.

(1) Facility description. Each plan shall contain a brief description of the licensee's facility and the area near the site.

(2) Types of accidents. Each type of radioactive materials accident for which protective actions may be needed shall be identified in the plan.

(3) Classification of accidents. Each plan shall include a classification system for classifying accidents as alerts or site-area emergencies.

(4) Detection of accidents. The plan shall identify the means which will be used to detect each type of accident in a timely manner.

(5) Mitigation of consequences. Each plan shall contain a brief description of the means and equipment for mitigating the

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consequences of each type of accident, including those provided to protect workers on-site, and a description of the program for maintaining the equipment.

(6) Assessment of releases. The plan shall include a brief description of the methods and equipment which will be used to assess releases of radioactive materials.

(7) Responsibilities. Each plan shall contain a brief description of the responsibilities of the licensee's personnel if an accident occurs, including:

(A) a list of personnel responsible for promptly notifying offsite response organizations and the department; and

(B) a list of personnel who are responsible for developing, maintaining, and updating the plan.

(8) Notification and coordination. Each plan shall contain a commitment to and a brief description of the means to promptly notify offsite response organizations of any accident and request offsite assistance, including medical assistance for the treatment of contaminated and injured onsite workers when appropriate. The licensee shall establish a control point. Each licensee's planned notifications and coordinations shall be prepared so that the unavailability of some personnel, parts of the facility, or equipment will not prevent the notification and coordination. The licensee shall also make a written commitment to notify the department immediately after notification of the appropriate offsite response organizations and not later than one hour after

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the licensee declares an emergency. These reporting requirements shall not supersede or release any licensee from the duty of complying with the requirements under the emergency planning and community right-to-know act of 1988 title III, Pub.L. 99-499, or other state or federal reporting requirements.

(9) Information to be communicated. Each plan shall contain a brief description of the types of information regarding the facility's status, radioactive releases, and recommended protective actions, if necessary, which will be given to each off-site response organization and to the department.


(10) Training. The plan shall include a brief description of the plans for training that the licensee will provide to workers regarding responses to an emergency including the following:

- (A) the proposed frequency of training sessions;
- (B) the performance objectives and plans for the training; and
- (C) any special instructions and orientation tours the licensee would offer to fire, police, medical and other emergency personnel. The training shall familiarize personnel with site-specific emergency procedures. The training also shall thoroughly prepare site personnel for their responsibilities in the event of the accident scenarios postulated as most probable for the specific site, including the use of team training for such scenarios.

(11) Safe shutdown. A brief description of the means of restoring the facility to a safe condition after an accident shall be included in the plan.

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(12) Exercises. The plan shall include provisions for conducting quarterly communications checks with off-site response organizations and biennial on-site exercises to test response to simulated emergencies.

(A) During each quarterly communication check with off-site response organizations, the licensee shall check and update all necessary telephone numbers.


(B) Each licensee shall invite off-site response organizations to participate in the biennial exercises. Participation of offsite response organizations in biennial exercises is recommended but not required. During the exercises each licensee shall use accident scenarios postulated as the most probable for that specific site and the scenarios shall not be known to most exercise participants.

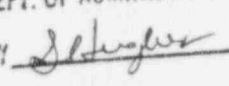
(C) The licensee shall critique each exercise using individuals not having direct implementation responsibility for the plan. Critiques of exercises shall evaluate the appropriateness of the plan, emergency procedures, facilities, equipment, training of personnel, and overall effectiveness of the response. Each licensee shall correct each deficiency found by the critiques.

(13) Hazardous chemicals. Each plan shall contain a certification that the applicant has met its responsibilities under the emergency planning and community right-to-know act of 1986, title III, Pub.L. 99-499, if applicable to the applicant's activities at the proposed place of use of the radioactive material.

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(d) Each licensee shall allow the off-site response organizations expected to respond in case of an accident 60 days to comment on the licensee's emergency plan before submitting it to the department. The licensee shall provide all comments received within the 60-day period to the department with the emergency plan. (Authorized by and implementing K.S.A. 48-1607; effective P-  
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BY *Schuyler* DATE *6-19-96*

April 21, 1996

Kansas Department of Health and Environment

Proposed New Regulation

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

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Material	Microcuries
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

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Material	Microcuries
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

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Material	Microcuries
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

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Material	Microcuries
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

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Material	Microcuries
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

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Material	Microcuries
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--235.....	.01
Vanadium-48.....	10

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Material	Microcuries
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 mixture of alpha- emitters of unknown composition.....	.01
Any radionuclide other than an alpha-emitting radionuclide that is not listed above or mixtures of beta-emitters of unknown composition.....	.1

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<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, 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 ratios for all the isotopes in the combination shall not exceed unity. (Authorized by and implementing K.S.A. 48-1607; effective P-\_\_\_\_\_.)

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April 21, 1996

Kansas Department of Health and Environment

Proposed New Regulation

28-35-202. Schedule H. Each licensee possessing any of the following quantities of radioactive materials shall comply with K.A.R. 28-35-193b (a). The release fractions listed below shall be used in the consideration of the need for an emergency plan for responding to a release unless other data regarding release fractions in respirable size range is available.

Radioactive material	Release fraction	Quantity (curies)
Actinium-228	0.001	4,000
Americium-241	0.001	2
Americium-242	0.001	2
Americium-243	0.001	2
Antimony-124	0.01	4,000
Antimony-126	0.01	6,000
Barium-133	0.01	10,000
Barium-140	0.01	30,000
Bismuth-207	0.01	5,000
Bismuth-210	0.01	600
Cadmium-109	0.01	1,000
Cadmium-113	0.01	80
Calcium-45	0.01	20,000
Californium-252	0.001	9 (20 mg)

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Radioactive material	Release fraction	Quantity (curies)
Carbon-14	0.01	50,000
Non CO		
Cerium-141	0.01	10,000
Cerium-144	0.01	300
Cesium-134	0.01	2,000
Cesium-137	0.01	3,000
Chlorine-36	0.5	100
Chromium-51	0.01	300,000
Cobalt-60	0.001	5,000
Copper-64	0.01	200,000
Curium-242	0.001	60
Curium-243	0.001	3
Curium-244	0.001	4
Curium-245	0.001	2
Europium-152	0.01	500
Europium-154	0.01	400
Europium-155	0.01	3,000
Germanium-68	0.01	2,000
Gadolinium-153	0.01	5,000
Gold-198	0.01	30,000
Hafnium-172	0.01	400
Hafnium-181	0.01	7,000
Holmium-166m	0.01	100
Hydrogen-3	0.5	20,000

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Radioactive material	Release fraction	Quantity (curies)
Iodine-125	0.5	10
Iodine-131	0.5	10
Indium-114m	0.01	1,000
Iridium-192	0.001	40,000
Iron-55	0.01	40,000
Iron-59	0.01	7,000
Krypton-85	1.0	6,000,000
Lead-210	0.01	8
Manganese-56	0.01	60,000
Mercury-203	0.01	10,000
Molybdenum-99	0.01	30,000
Neptunium-237	0.001	2
Nickel-63	0.01	20,000
Niobium-94	0.01	300
Phosphorus-32	0.5	100
Phosphorus-33	0.5	1,000
Polonium-210	0.01	10
Potassium-42	0.01	9,000
Promethium-145	0.01	4,000
Promethium-147	0.01	4,000
Ruthenium-106	0.01	200
Samarium-151	0.01	4,000
Scandium-46	0.01	3,000
Selenium-75	0.01	10,000

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BY A. Hughes DATE 6-6-90

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Radioactive material	Release fraction	Quantity (curies)
Silver-110m	0.01	1,000
Sodium-22	0.01	9,000
Sodium-24	0.01	10,000
Strontium-89	0.01	3,000
Strontium-90	0.01	90
Sulfur-35	0.5	900
Technetium-99	0.01	10,000
Technetium-99m	0.01	400,000
Tellurium-127m	0.01	5,000
Tellurium-129m	0.01	5,000
Terbium-160	0.01	4,000
Thulium-170	0.01	4,000
Tin-113	0.01	10,000
Tin-123	0.01	3,000
Tin-126	0.01	1,000
Titanium-44	0.01	100
Vanadium-48	0.01	7,000
Xenon-133	1.0	900,000
Yttrium-91	0.01	2,000
Zinc-65	0.01	5,000
Zirconium-93	0.01	400
Zirconium-95	0.01	5,000
Any other beta-gamma emitter	0.01	10,000

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JUN 25 1966

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Radioactive material	Release fraction	Quantity (curies)
Mixed fission products	0.01	1,000
Mixed corrosion products	0.01	10,000
Equipment contaminated with radioactive material beta-gamma emissions equivalent to	0.001	10,000
Irradiated material, in any form which is not solid and noncombustible	0.01	1,000
Irradiated material, which is solid and noncombustible	0.001	10,000
Mixed radioactive waste, beta-gamma emissions equivalent to	0.01	1,000
Packaged mixed waste, beta-gamma <sup>1</sup>	0.001	10,000
Any other material emitting alpha radiation equivalent to	0.001	2
Equipment contaminated with radioactive material		

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Radioactive material	Release fraction	Quantity (curies)
alpha emissions		
euivalent to	0.0001	20
Packaged waste containing		
material emitting alpha <sup>1</sup>		
radiation	0.0001	20
Combinations of radioactive		
materials listed above <sup>2</sup>		

<sup>1</sup> Waste packaged in type B containers shall not require an emergency plan.

<sup>2</sup> For combinations of radioactive materials, the licensee shall comply with K.A.R. 28-35-193(b)(a) if the sum of the ratios of the quantity of each radioactive material authorized to the quantity listed for that material in Schedule C exceeds one.

(Authorized by and implementing K.S.A. 48-1607; effective P-  
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April 21, 1996

Kansas Department of Health and Environment

Proposed New Regulation

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) shall be required to show its 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 is less than 2.0;

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

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

(2) Each parent company shall have net working capital and tangible net worth that each are equal to a minimum of six times

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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.

(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 the prescribed amount if a certification is used based on the requirements of K.A.R. 28-35-180a.

(4) Each parent company shall have:

(A) A current rating for its 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;

(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 the prescribed amount if certification is used based on the requirements of K.A.R. 28-35-180a.

(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

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audited, year end financial statements for the latest fiscal year, with the amounts in such financial statement. If any matters come to the auditor's attention which 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 matter.

(d) After the initial financial test, the parent company shall 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 intent to establish alternate financial assurance as specified in the 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.

(e) Each parent company guarantee obtained by an applicant or licensee shall contain terms which 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

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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 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 has terminated the license.

(4) If a trust is established for decommissioning costs, the trustee and trust shall be acceptable to the department. An acceptable trustee may be an appropriate state or federal government agency or an entity which 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 P-\_\_\_\_\_.)

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Kansas Department of Health and Environment

Proposed New Regulation

28-35-290. Reports of incidents, lost or stolen sources. (a) Each licensee shall provide a written report of all events involving radiography devices and licensed material as required pursuant to K.A.R. 28-35-184b, 28-35-228a, 28-35-229a, and 28-35-230a.

(b) In addition to the requirements in subsection (a), each licensee shall provide a written report to the department within 30 days of the occurrence of any of the following incidents involving radiographic equipment:

(1) Unintentional disconnection of the source assembly from the control cable;

(2) inability to retract the source assembly to its fully shielded position and secure it in this position; or

(3) failure of any component which is critical to safe operation of the device to perform its intended function.

(c) Each licensee shall include the following information in each report submitted under subsection (b):

(1) A description of the equipment problem;

(2) a description of the cause of each incident, if known;

(3) the name of the manufacturer and the model number of the equipment involved in the incident;

(4) the place, time and date of incident;

(5) a description of the actions taken to establish normal

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operations;

(6) a description of all corrective actions taken or planned to prevent reoccurrence; and

(7) a description of the qualifications of personnel involved in the incident.

(d) Each report of overexposure submitted pursuant to these regulations which involves failure of the safety components of radiography equipment shall also include the information specified in subsection (c). (Authorized by and implementing K.S.A. 48-1607; effective P-\_\_\_\_\_.)

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Kansas Department of Health and Environment

Proposed New Regulation

28-35-291. Performance requirements for radiography equipment.

(a) Each radiographic exposure device and all associated equipment shall meet the requirements specified in "Radiological Safety for Design and Construction of Apparatus for Gamma Radiography," published by the American national standards institute as NBS Handbook 136, issued January, 1981 (ANSI N432-1980 standards). As an alternative, any licensee or applicant may submit an engineering analysis demonstrating that testing previously performed on similar individual radiography components is adequate to support a finding that the previous testing is an acceptable substitute for that described in the N432-1980 standards.

(b) In addition to the requirements specified in K.A.R. 28-35-291 (a), each radiographic exposure device and associated equipment shall meet the following requirements.

(1) Each user of a radiographic exposure device shall attach to the device a durable, legible, clearly visible label bearing the following information:

(i) the chemical symbol and mass number of the radionuclide in the device;

(ii) the radioactive activity level and the date on which this activity was last measured;

(iii) the model number and serial number of the sealed source;

(iv) the manufacturer of the sealed source; and

(v) the licensee's name, address, and telephone number.

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(2) Each radiographic exposure device intended for use as a type B transport container shall meet the applicable requirements of 10 CFR 71.51 adopted by the U.S. nuclear regulatory commission, as in effect on April 15, 1992.

(3) The licensee shall not modify any exposure device or associated equipment in a manner that would compromise the design safety features of the system.

(c) In addition to the requirements specified in K.A.R. 28-35-291 (a) and (b), each radiographic exposure device and associated equipment that allows the source to be moved out of the device for routine operation shall comply with the following requirements.

(1) The coupling between the source assembly and the control cable shall be designed so that the source assembly can not become disconnected if cranked outside the guide tube. The coupling shall be designed to prevent an unintentional disconnection under normal and reasonably foreseeable abnormal conditions.

(2) The device shall automatically secure the source assembly when it is cranked back into the fully shielded position in the device. A deliberate operation on the exposure device shall be required to release the source assembly.

(3) The outlet fitting, lock box, and drive cable fittings on each radiographic exposure device shall be equipped with safety plugs or covers, which shall be installed during storage and transportation to protect the source assembly from water, mud,

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sand, or other foreign matter.

(4) Each sealed source or source assembly shall have attached to it or engraved on it a durable, legible, visible label with the words: "DANGER RADIOACTIVE." The label shall not interfere with the safe operation of the exposure device or associated equipment.

(5) The guide tube shall have passed the crushing tests for the control tube as specified in ANSI N432-1980 standards and a kinking resistance test that closely approximates the kinking forces likely to be encountered during use.

(6) Guide tubes shall be used when moving the source out of the device.

(7) An exposure head or similar device shall be used to prevent the source assembly from passing out of the end of the guide tube during radiographic operations.

(8) The guide tube exposure head connection shall be able to withstand the tensile test for control units specified in ANSI N432-1980 standards.

(9) Each source changer shall provide a system for assuring that the source will not accidentally be withdrawn from the changer when connecting or disconnecting the drive cable to or from a source assembly.

(d) Each licensee shall only acquire newly manufactured radiographic exposure devices and associated equipment which complies with the requirements of this regulation after January 10,

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(e) Each licensee shall only use radiographic exposure devices and associated equipment which complies with the requirements of this regulation after January 10, 1995.

(f) Any licensee may use equipment in industrial radiographic operations which does not comply with section 8.9.2(c) of the endurance test in ANSI N432-1980 standards, if prototype equipment has been tested using a torque that an individual using the radiography equipment can realistically exert on the lever or crankshaft of the drive mechanism. (Authorized by and implementing K.S.A. 48-1607; effective P-\_\_\_\_\_.)

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April 21, 1996

## Kansas Department of Health and Environment

## Proposed Amended Permanent Regulation

28-35-362. Notification of incidents, abandonment, and lost sources. (a) The licensee shall notify the department ~~Notification~~ of any incidents and sources lost in other than downhole logging operations ~~shall be provided~~ in accordance with K.A.R. 28-35-184b, 28-35-228a, 28-35-229a and 28-35-230a.

(b) Whenever a sealed source or device containing radioactive material is lodged downhole, the licensee shall:

(1) monitor at the surface for the presence of radioactive contamination with a radiation survey instrument or logging tool during logging tool recovery operations; and

(2) notify the department immediately by telephone and subsequently, within 30 days, by confirmatory written report if the licensee knows or has reason to believe that a sealed source has been ruptured. This written report shall identify the well or other location, describe the magnitude and extent of the escape of radioactive material, assess the consequences of the rupture, and explain efforts planned or being taken to mitigate these consequences.

(c) If it becomes apparent that efforts to recover the radioactive source will not be successful, the licensee shall comply with the following requirements.

(1) The licensee shall advise the well-operator of the following requirements regarding the method of abandonment:

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(A) The well-operator shall immobilize ~~the immobilization and sealing in place of~~ seal the radioactive source in place with a cement plug.

(B) The well-operator shall set in place ~~the setting of~~ a whipstock or other deflection device, ~~and~~.

(C) The well-operator shall mount ~~the mounting of~~ a permanent identification plaque at the surface of the well, containing the appropriate information required by this regulation.

(2) The licensee shall notify the department by telephone, giving the circumstances of the loss, and request approval of the proposed abandonment procedures, ~~and~~.

(3) The licensee shall file a written report with the department within 30 days of the abandonment, setting forth the following information:

(A) the date of occurrence and a brief description of attempts to recover the source;

(B) a description of the radioactive source involved, including the radionuclide, quantity, and chemical and physical form;

(C) a description of the surface location and identification of well;

(D) the results of efforts to immobilize and set the source in place;

(E) the depth of the radioactive source;

(F) the depth of the top of the cement plug;

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- (G) the depth of the well; and
- (H) the information contained on the permanent identification plaque.

(d) Whenever a sealed source containing radioactive material is abandoned downhole, the licensee shall provide a permanent plaque as described in K.A.R. 28-35-364 for posting on the well or well-bore. The plaque shall:

- (1) be constructed of long-lasting material, which may include stainless steel or monel; and
- (2) contain the following information engraved on its face:
  - (A) the word "CAUTION";
  - (B) the radiation symbol, without the conventional color requirement;
  - (C) the date of abandonment;
  - (D) the name of the well operator or well owner;
  - (E) the well name and well identification number or numbers or other designation;
  - (F) a description of the sealed source or sources, by radionuclide and quantity of activity;
  - (G) the source depth and the depth to the top of the plug; and
  - (H) an appropriate warning which, depending on the specific circumstances of that abandonment, shall include:
    - (i) "Do not drill below plug back depth";
    - (ii) "do not enlarge casing"; or

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(iii) "do not reenter the hole before contacting the Kansas department of health and environment radiation control program;" and

(3) be a minimum of seven inches square. The word caution shall be written in 1/2-inch letters and all other information shall be written in 1/4-inch letters.

(e) Each licensee shall immediately notify the department by telephone, and subsequently by confirming letter, if the licensee knows or has reason to believe that radioactive material has been lost in or to an underground potable water source. The notice shall designate the well location and shall describe the magnitude and extent of loss of radioactive material, assess the consequences of such loss, and explain efforts planned or being taken to mitigate these consequences. (Authorized by and implementing K.S.A. ~~1992-Supp.~~ 48-1607; effective Sept. 20, 1993; amended P-\_\_\_\_\_.)

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