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DATE: September 8, 1967

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Kentucky Balary Scales

Director	\$1048		1475	per	abrican
Assistant Director	862		1213	per	month
Senior Radiation Physicist	710		998	per	dracem
Radiation Physicist	643	-	906	per	morth
Associate Radiation Physicist	530		748	per	month

Auk G. W. Kerr

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# AEC STAFF EVALUATION OF THE KENTUCKY RADIATION CONTROL PROGRAM FOR THE PERIOD MARCH 15, 1966 TO FEBRUARY 15, 1967

The eighth review meeting was held with the State of Kentucky on February 14 and 15, 1967 in Frankfort. The AEC was represented by Ernest Resner and Bernard Weiss, Division of State & Licensee Relations; and Jack Sutherland, Region II, Division of Compliance. The State of Kentucky was represented by Richard M. Fry, Director, Radiological Health Program and Robert Britain and Charles Hardin of the Kentucky Radiological Health Staff. The AEC representatives met with Mr. Richard Pickard, Director, Division of Environmental Health during part of the morning of February 15. The agenda for the meeting is attached as Appendix A.

#### Conclusions

Based on the information developed during the eighth review meeting with Kentucky and the material received from the State under the exchange-of-information program, it is the staff's conclusion that the Kentucky program for the regulation of agreement materials is adequate to protect health and safety and compatible with the Commission's program. This view is supported primarily by the staff's examination of the State's licensing, compliance and enforcement activities including a review of selected files (Appendix B). A group of questions and answers concerning the details of Kentucky's licensing, compliance and enforcement activities and other phases of the State's program are included in Appendix C.

#### Changes in the Kentucky Program since March 1966

As a result of the previous review meeting with Kentucky on March 14 and 15, 1966, a letter was sent by E. R. Price to Dr. Russell E. Teague, Commissioner of Health. This letter pointed out two areas of the State's program where the AEC staff felt additional emphasis was needed.

1. At the time of the March 1966 review meeting, it was felt that the documentation of inspection results was minimal. Accordingly, our letter urged the State to include more detailed inspection reports to reflect the scope of the licensee's operation, the inspector's findings, the attitude of management and other necessary information. A review of a few inspection files during the February 1967 meeting indicated that the quality of State inspection reports has improved significantly. We feel, however, that additional improvement can



still be made with regard to substantiating items on noncompliance and the safety items. This point was discussed with Mr. Fry, and he agreed to place continued emphasis on the quality of inspection reports.

2. The Kentucky staff, at the previous review meeting, indicated that they planned to update their regulations in the near future. As of this review meeting, the updating of the regulations had not been completed. Mr. Fry stated that the revision was "95 percent complete," and he expects to submit a draft of the revisions for AEC review in the near future.

Kentucky adopted a regulation, effective March 21, 1966, which requires the licensing of naturally occurring and accelerator produced radioactive material. The regulations, deemed users of this material (essentially radium and radon) to be in compliance with the Kentucky regulations until June 30, 1966. After that date, the regulations required the user to demonstrate full compliance with the regulations.

#### Organization and Personnel

The organization of the Radiological Health Program (Appendix D) is the same as it was at the time of the previous review meeting. There have been no changes in the staffing of the radioactive materials program. Mr. Fry is Director of the program and Mr. Hardin is the Assistant Director. Mr. Britain has been given the responsibility for licensing functions. All three persons perform compliance inspections. Mr. Britain, a PHS assignee, will complete his assignment in Kentucky about May 1, 1967. The State has requested a replacement from the PHS and anticipates that an experienced person will be assigned to the program for regulatory training.

Three persons, Michael McCormick, J. Winston Rogers and Donald M. Hopper, have left the Kentucky X-ray program. Two of these positions have been filled; one by a State employee, Curt Hopkins; and the other by a PHS assignee, Bobby L. Dillard. Kentucky is actively recruiting for a replacement for the vacant position.

#### Regulations

A list of AEC amendments not adopted by Kentucky was presented to Mr. Fry (Appendix E). Fry stated that the draft revision of Kentucky's regulations is "95 percent complete." As soon as the Kentucky revisions are compared with the AEC list of amendments, the proposed changes will be submitted to SLR for comments. Kentucky intends to adopt all AEC changes up to January 1, 1967, except the medical general license. Fry anticipates that final adoption of the regulation changes will not be until the summer of 1967, at the earliest.

## Licensing Activities

The State's licensing policies and procedures closely follow those of the AEC. The review of Kentucky licenses prior to the meeting indicated only minor variances from similar AEC licenses. These variances were discussed with Mr. Fry during the meeting. He indicated that the license review was helpful and said that he would flag the license files to ensure that the variances were corrected prior to renewal of the licenses. A list of the licenses discussed and related discussion items is maintained in SLR files.

Kentucky has initiated the practice of naming the individual designated as the Radiation Safety Officer in the license. Fry feels this is particularly useful in licenses authorizing programs of considerable scope in that it pinpoints the individual who is to be contacted regarding license applications and enforcement actions.

Kentucky uses its Medical Advisory Committee to review all applications for non-routine and investigative medical radioisotope procedures. The staff noted that the State's Medical Advisory Committee is composed of five radiologists and that some advantage might be obtained if other medical disciplines were represented. Messrs. Pickard and Fry feel that the only way to diversify the medical disciplines represented on the Committee would be to expand the membership. Mr. Fry pointed out that almost all non-routine medical uses are performed under the two broad medical licerges in the State and that a real problem in this area does not exist.

Kentucky has approximately eight unlicensed medical radium users. The State has not "grandfathered" radium users and does not plan to do so. Kentucky changed from radium registration to radium licensure on June 30, 1966, and the Kentucky staff has made strenous efforts to obtain adequate license applications from the remaining unlicensed users. Should these users continue their delay in submitting adequate procedures, the State plans to restrain the physicians from using radium in Kentucky.

#### Compliance and Enforcement

Three files were reviewed in detail by the CO:II representative. As noted above, the review of these files indicated the need for continuing the efforts made to improve the technical quality of the inspection reports. The detailed comments prepared by the CO:II representative are attached as Appendix F.

## Emergency Capabilities

The Kentucky radiological emergency program, as described in previous review meeting reports, has not been revised since the last review meeting.

#### Miscellaneous

The Kentucky Department of Motor Transportation adopts ICC regulations by reference except those regulations pertaining to explosives and other dangerous articles. This Department is now becoming interested in these areas and expects to begin its program by regulating the transportation of radioactive material. The Department's 60 inspectors will attend the Civil Defense Monitor's Course. In addition, personnel in the Kentucky Radiological Health Program plan to assist the Department in training their inspectors through a 3 day course which will provide the inspectors with sufficient basic information so they will know when to call the Radiological Health Program.

The Radiological Health Program budget for the present fiscal year is approximately \$80,000 including \$40,000 from the USPHS. This, is about \$5,000 less than last year's budget.

# LIST OF APPENDICES

- A. Outline Agenda
- B. Review of Selected License Files
- C. List of Questions and Answers on Kentucky's Program
- D. Personnel Complement Radiological Health
- E. AEC Amendments to be Considered by Agreement States
- F. Division of Compliance Report of Review Meeting

# TOPICS FOR KENTUCKY-ABC REVIEW MEETING

- 1. Recent and contemplated changes in USAEC regulations.
- 2. Presentation by AEC representatives of suggested changes in Kentucky regulations.
- 3. Current Kentucky and AEC licensing activities:
  - a. Specific exemptions from regulations that have been granted (labeling, radiation levels, effluent concentrations, etc.).
  - b. Problems encountered in reciprocal recognition of licenses (notification, compliance, etc.).
  - c. Issuance of licenses including new procedures for evaluating license applications, new conditions of use that have been included in licenses, new or unusual uses that have been licensed or evaluated and new sealed sources or devices not previously licensed (generally or specifically).
  - d. Use of medical consultation in evaluating applications for medical use of radioactive materials.
  - e. Review of Kentucky licenses.
  - f. Beview of license cases.
- 4. Kentucky and AEC experience in compliance matters:
  - a. Inspection workload (including prelicensing inspections), number of reinspections conducted, etc.
  - b. Incidents and overexposures.
  - c. Extent of enforcement actions taken against licensees.
  - d. Review of inspection cases.

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- 5. Exchange of Information ABC and Kentucky:
  - a. State experience in regulating naturally-occurring and acceleratorproduced materials.
  - b. Fernounci changes and prepent number of personnel regulating agreement materials. Additional training, if any, received by radiological health personnel.
  - c. Specific types of information or assistance needed from the AEC.

APPENDIX A

#### REVIEW OF SELECTED LICENSE FILES

St. Anthony's Hospital Louisville, Kentucky License No. 16-BPM-39

No discrepancies noted.

W. K. Massie, M.D.

License No. 16-BPM-23

License authorizes the use of phosphorus 32 as soluble phosphate to study intracapsular fractures of the femur without case limitation or report requirement. The review of the files indicated this had previously been authorized by the AEC. Mr. Fry plans to limit the number of studies and obtain a report before renewing the license which expires on May 31, 1967.

License No. 16-BM-62

Kings Daughter Hospital Frankfort, Kentucky No discrepancies noted.

License No. 16-BPI-66

Tri-State Logging, Inc. Owensboro, Kentucky

License authorizes logging studies using Am-Be, Ra-Be and Ra sealed sources and fracturing using I-131, Sc-46 and Ir-192.

Original application which did not include request for Ra-226 sources was submitted on April 26, 1965. Dr. McDowell wrote a good detailed letter on May 19, 1965 requesting additional information. Tri-State answered the letter on July 19, 1965 but did not adequately answer the request for handling procedures for I-131 and Sc-46, emergency procedures for lost sources, or waste disposal of I-131. The application contained no information regarding the transportation of sources, e.g., how chained or bolted to truck, posting, labeling of source and container, radiation levels outside truck and/or source radiation profile. The license was issued on September 30, 1965 with no further communication noted in the file. The authorized use of I-131 was for fracturing materials, but the request was for tracer studies.

The Radium 226 sources were licensed on July 20, 1966 after an inspection by R. Britain. There was no request in the files to have the radium sources licensed and, consequently, there were no procedures for handling radium, leak testing radium, etc. Mr. Britain said that the radium was licensed after his "pre-licensing" visit, but two of the radium sources were not seen because they are permanently located in Paintsville, Kentucky which was not inspected until one month after a license was issued. It was noted that the Paintsville location was not authorized in the license. Mr. Britain said he thought that this was covered by the temporary job site condition.

The staff feels that the irregularities noted were a result of inexperience with well-logging operations. The Kentucky staff was receptive to suggestions regarding this area of industrial licensing and plans to upgrade the license as soon as practicable.

Malcolm L. Barnes, M.D. Louisville, Kentucky License No. 16-BPM-2

No discrepancies noted.

License No. 16-BPA-24

Roger W. Barbour, Ph.D. Department of Zoology University of Kentucky Lexington, Kentucky

License authorizes field studies tagging small animals with cobalt 60. Adequate supporting and control procedures noted in the file. The staff questioned whether it was appropriate to issue this license to a private individual. Mr. Fry explained that the study had been authorized under the university license but that when the University of Kentucky 1 mases were combined under a broad license the University's Committee W. 1d not authorize any field studies. There is no adequate reason to deny the license to Dr. Barbour.

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QUESTIONS WHICH MAY BE ASKED AT THE SEMI-ANNUAL EXCHANGE-OF-INFORMATION MEETINGS

- A. Licensing Activities
  - \*1. What are your administrative procedures for licensing?

Kentucky follows AEC procedures, conduct prior evaluation of applicant's facilities and capabilities.

\*2. Who evaluates license applications and who approves the issuance of a license?

R. Fry, R. Britain and C. Hardin evaluate licenses. Licenses are signed by Dr. Teague and R. Fry.

\*3. Do you conduct pre-licensing visits? If so, how do you determine which applicants are visited?

Yes. Visits are made if it is felt necessary to answer questions in application.

4. Approximately how many pre-licensing visits have you made?

Approximately 1/3 of new applications.

5. Approximately how many licensing actions have you taken during the period since the last meeting; ice., new licenses, amendments, etc.?

New licenses - 28 Amendments - 117

- Have you issued any licenses to out-of-state firms since the last meeting? Yes. Four Industrial (3 byproduct and 1 source).
- 7. Have you issued any licenses to your own organization?

Radiological Health Program is exempt.

- 8. Have you instituted any new procedures for evaluating license applications? No.
- Should normally be asked at the first semi-annual exchange-of-information meeting and not at subsequent meetings. It may be necessary to repeat some of these questions at some later meetings.

APPENDIX C





9. What unusual specific exemptions from your regulations have been granted since the last meeting?

None.

10. What new conditions have been included in your licenses that will likely become routipe?

Specify in the license that the health and safety procedures are the responsibility of an individual even if he is not a user on the license. Used for industrial, medical and academic licenses.

11. What new or unusual uses of radioactive materials have been licensed?

B. F. Goodrich is licensed to use a uranium catalyst in a secret process. G. E., California is licensed for 5,000,000 pounds of uranium for storage.

\*12. Do you have a system for notifying licensees of the impending expiration of their licenses?

Write letter 30 days prior to expiration.

13. Have you received any applications from persons who should have applied to the AEC?

No.

14. To what extent have you issued broad medical licenses? \*Do you examine the qualifications of members of the isotope committee and their procedures for approving new uses and users? \*Do you require such licensees to report new uses to you periodically?

University of Kentucky Medical Center and University of Louisville Medical Center. Reports are not required.

\*15. Do you specifically license persons wishing to perform leak test services? If so, what factors do you consider in issuing the license? Do you require equipment suppliers performing servicing functions to be specifically licensed?

Yes.



16. Have you developed any licensing guides? If so, we would like to have copies.

No.

- \*17. Are there any outstanding AEC licenses which have not yet been converted?
- \*18. Are your license files, including license applications, available for public inspection?

Yes. With certain exceptions as specified in RH-3, Section 37 of the Kentucky regulations.

19. What has been your experience in regulating naturally occurring and accelerator produced materials? Do you conduct pre-licensing visits for radium users?

Good. Pre-licensing visits conducted while material was registered.

20. How many radium licenses are there in the State? What is the total number of registrants?

Radium only-13 Radium users - 50 Registered X-ray units - 3234

- B. Evaluation of Medical Uses
  - 1. To what extent do you use your medical advisory committee in evaluating applications for medical uses of radioactive material? Obtain current list of members and their affiliations.

Twice sent formal proposals to committee. No changes in committee from last year. Robert D. Shepard, M.D., Maurice R. Walsh, M.D., Edward N. Maxwell, M.D., Robert E. Greenlaw, M.D., Orson P. Smith, M.D. (all radiologists)

\*2. Do you use your medical advisory committee as a committee or do you consult with members individually?

Used individually and as committee. Committee met in Frankfort during past year.

\*3. Are these committee members available for immediate consultation?

Yes.

\*4. Do you use a research protocol similar to that distributed at the December 1964 meeting of Agreement States in evaluating new or unusual medical uses?

Yes.

- C. Compliance Activities
  - 1. What is your inspection workload in terms of man-days per month or percentage of time spent on agreement material inspections?

Six man-days per month.

- \*2. How do you determine inspection frequencies and need for reinspections? Generally average once every 2 years. Determine frequency on basis of past history and type and quality of operation. Radiographers and well loggers done at least once each year.
- \*3. What is your policy regarding announced vs. unannounced inspections? Generally announced by telephone. Where the situation warrants no notification, the inspection is unannounced.
- \*4. Do you follow the priority and category system described in AEC's Materisls Inspection Guide?

No. See 2 above.

5. Is your inspection workload current or are there overdue inspections?

Essentially current.

6. Can you estimate the average length of time you spend inspecting the various types of licenses?

Not asked.

\*7. What type of instruments do your inspectors normally carry on inspection visits?

Sufficient instruments to measure the different types of radiations encountered during inspections.

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Contamination smears, radiation levels and direct physical measurements. Air samples taken when indicated.

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\*9. Describe your compliance enforcement procedures. Do you follow a system similar to the AEC's 591, 592, formal report system?

Issue a form similar to AEC's 591 for minor items of noncompliance. More major items of noncompliance are communicated by letter requiring a response.

\*10. Do you write an internal report for all inspections? Who reviews such reports?

Internal reports are written for all inspections.

\*11. Are inspection reports utilized in future licensing actions?

Yes.

- \*12. With what level of management do you orally discuss inspection results? If there are no serious items of noncompliance, discussions are with the licensed user. Policy is to go higher if asked or if the items of noncompliance are more serious.
- \*13. Does the inspector make specific suggestions for corrective action to be taken by the licensee?

Yes. The inspector will usually suggest alternative ways to correct a situation.

- 14. Have you noted any licensees who are in apparent noncompliance with AEC regulations? If so, we would appreciate your notifying our Regional Compliance office of such occasions.
- \*15. Have you found any persons possessing radium who also possessed agreement materials for which they did not have a license?

No.

16. Are you receiving notification from manufacturers of transfers of devices into your state?

Receiving reports from Industrial Nucleonics, Ohmart, Pyrotronics.

17. Do you inspect out-of-state firms licensed by you who perform work in your state?

Yes. Did not inspect any such firms in past year.

18. Do you inspect out-of-state firms working in your state under reciprocity? Yes. Did not inspect any such firms in past year.

# D. Investigations

- 1. How many investigations have been performed since the last meeting? Four investigations (1 contamination of a vehicle, and 3 alleged overexposures by x-ray machines).
- \*2. How do your techniques for investigations differ from your inspection techniques?

Not asked.

# E. Enforcement Activities

- 1. What has been the extent of enforcement actions taken against licensees? Letters.
- \*2. How do you handle oral and written discussion of so-called "safety items" which are not specifically items of non-compliance? Examples are poor calibration procedures, poor ventilation systems and need for bioassays.
- . Safety items are discussed at the inspection and covered by letter. They are checked at the next inspection.
- 3. Is any type of enforcement action accomplished by individual inspectors?

Inspector will issue the short form or put up signs. Major items of noncompliance are handled by letter.

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\*4. Who signs letters going to licensees notifying them of inspection results?

Richard Fry

45. How do you determine to whom letters of noncompliance should be directed?

Varies. Generally the person who is responsible for the program.

6. Do you have any problem in obtaining responses to letters of noncompliance? If so, what course of action do you follow?

No great difficulty. If no answer, will follow-up by telephone or write another letter.

7. Have you found it necessary to deny any license application or revoke or modify any license? Denied industrial radiography license because of inadequate experience.

Denied amendment to medical license for use of Se-75 for pancreas scanning.

\*8. What action is taken when a licensee fails to ranew his license of requests termination of his license? Telephone until get appropriate action. Certificate of disposal is used, as appropriate.

# F. Incidents and Unusual Occurrences

11. Please describe any indidents and overexposures which have occurred since the last meeting.

No overexposures. Container with Sr 90 waste ruptured during transfer from one truck to another. Investigation showed that only one truck contaminated. Decontamination performed by NECO.

2. What is your policy on requiring licensees to make a press release when an incident has occurred?

Licensee or the agency will make a press release only when the situation requires it.

## G. Laboratory Facilities and Services

\*1. Do you analyze smears, air samples, water samples, etc., which are collected during an inspection, in your Radiological Health organization or does some other division provide these services?

Analyzed by the Radiological Health Program.

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\*2. What is the time delay in obtaining results of analyses of such samples? None.

\*3. Do you have any difficulty in obtaining "immediate" results in emergency situations?

No.

\*4. Do you, or the persons providing laboratory services for you, have the capability for analyzing most types of samples which you might submit?

Yes.

- \*5. If not, how would you arrange to have unusual types of samples analyzed? Would use the facilities of the University of Kentucky.
- \*6. Do you have facilities for calibrating all types of instruments which you possess and use?

Have alpha, beta and neutron sources for calibration. Last neutron calibration done at Avon Army Base.

## H. Personnel and Training

1. Do you have any new personnel in your organization? Obtain a copy of the current organization chart.

Curtis Hopkins Bobby Dillard (PHS assignee)

2. Have any of your personnel received additional training since the last meeting? If so, specify the individual, the nature of the course and the duration of the course.

Robert Miller - Medical X-ray Protection (2 week PHS) Bobby Wilson - 10 week Health Physics Course (Oak Ridge) David Clark and Bobby Wilson - Radioisotope Spectrometry (2 week PHS)

\*3. What persons are specifically assigned to licensing, compliance, laboratory, etc. activitées?

Licensing and Inspection - R. Fry, R. Britain, C. Hardin X-ray - B. Dillard, C. Hopkins, R. Miller Laboratory - B. Wilson, D. Clark





4. Have there been any changes in assignment of personnel?

None in radioactive materials program.

- I. Exchange of Information
  - 1. What problems have you encountered in the reciprocal recognition of licenses?

None.

2. Have you evaluated any new sealed sources or devices of which we are not aware? We would like to receive a copy of evaluation sheets prepared for such items.

No.

3. Has the AEC's sealed source and device catalog been of value to you?

Yes. Would appreciate it if the time between evaluation and distribution of catalog sheets to the states was shortened.

- 4. Do you have a need for any specific information or assistance from the AEC?
- \*5. What is your procedure for responding to emergencies?

Emergency teams composed of members of Radiological Health Program staff.

\*6. Do you have a statewwide communication network which is used in conjunction with emergencies?

See emergency handbook attached to previous reports. No change in booklet.

- \*7. Do you have emergency teams established to respond to emergency situations? See 6 above.
- \*8. How do you use your technical adwisory committee (other than medical) in your program?

Not used.

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- 9. What is your budget for the current fiscal year? \$80,000
- 10. Has there been an increese or decrease in budget allotted to the program? \$5,000 less than last year because of no PHS reallocation of funds.
- 11. Do you receive funds from PHS, Defense Dept. or other sources?

PHS \$40,000

12. Do you plan to incorporate recent changes in ABC regulations is your regulations?

Yes. Will attempt to have regulations become effective during the summer of 1967.

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\*P. H. S. Assignee

# CHRONOLOGY

# AEC Amendments to Be Considered by Agreement States

Effective Date	10 CFR Part	Suggested State Regulations	Summary
*Jan. 29, 1963	40	B.3(c)(5)	Exemption for uranium in aircraft, rockets, projectiles and missiles.
*Sept. 6, 1963	40	B.3(c)(7)	Exemption of certain optical Lenses containing thorium.
*Oct. 17, 1963	30	B.4(a) B.26(h)	Licensing requirements with respect to exempt concentrations . of byproduct material.
*Jan. 26, 1964	40	B.3(c)(8)	Exemption of uranium in fire detection units.
June 5, 1964	31	B.22(e)	GL for americium 241 in cali-
	70	B.22(e)	bration or reference sources. GL for plutonium in calibration or reference sources.
Aug. 20, 1964	31	B.22(f)	Ownership, without possession, of byproduct material.
Sept. 7, 1964	30	B.4(b)	Exemption of tritium contained in balances of precision.
Nov. 20, 1964	20 Par	C.106 and t C, Appendix A	Revised certain concentration limits and gave criteria for release in excess of the limits of Appendix B.
Dec. 17, 1964	40	B.3(c)(2)	Exemption of source material contained in glass enamel and glass enamel frit.
Feb. 6, 1965	31 32	B.22(c)(2) B.26(e)(3)	Interval for testing GL devices and reporting results. Also criteria for extending leak test interval.
April 12, 1965	30	B.4(b)	Exemption of promethium 147 in
	31 32	B.22(d)	automobile locks. GL for promethium 147 in aircraft luminous safety devices

\*Adopted By Kentucky.

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APPENDIX E

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\*Appropriate wording for these paragraphs has been drafted; however, this has not as yet been formally incorporated as a part of the Suggested State Regulations.

Dec. 8, 1966

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30 32 B.4(b)(7)\*

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Exemption of tritium contained in glow lamps.

\*Appropriate wording for this paragraph has been drafted; however, this has not as yet been formally incorporated as a part of the Suggested State Regulations.



# Explanation of Change

Revice paragraph B.4(b) to provide exemptions for tritium contained in automobile shift quadrants, marine compasses and thermostat dials and pointers. This is similar to the change in Section 30.15, Part 30 of AEC regulations, effective May 2, 1965. Also include in paragraph B.4(b) the exemptions currently provided for in paragraphs B.4(b), (c)

# Section B.4 Radioactive Materials.

Delete existing paragraphs B.4(c) and (d) and revise existing paragraph B.4(b) to read as follows:

- (b) Certain items containing tritium, promethium 147 or radium. Except for persons who apply tritium, promethium 147 or radium to, or persons who incorporate tritium, promethium 147 or radium into, the following products, any person is exempt from these regulations to the extent that he receives, possesses, uses, transfers, owns or acquires the following products:2/
  - Timepieces or hands or dials containing radium or not more than (1) 25 millicuries of tritium per timepiece, (11) 5 millicuries of tritium per hand, or (111) 15 millicuries of tritium per dial (bezels when used shall be considered as part of the dial).
  - (2) Lock illuminators containing not more than 15 millicuries of tritium or not more than 2 millicuries of promethium 147 installed in automobile locks. The levels of radiation from each lock illuminator containing promethium 147 will not exceed 1 millirad per hour at 1 centimeter from any surface when measured through 50 milligrams per square
  - (3) Balances of precision containing not more than 1 millicurie of tritium per balance or not more than 0.5 millicurie of tritium per balance tart.
  - (4) Automobile shift quadrants containing not more than 25
     (5) Mania
  - (5) Marine compasses containing not more than 750 millicuries
     (6) The second seco
  - (6) Thermostat dials and pointers containing not more than 25 millicuries of tritium per thermostat.

Authority to transfer possession or control by the manufacturer, processor, or producer of any equipment, device, commodity, or other product containing source, hyproduct, or special nuclear material, intended for use by the general public may be obtained only from the U.S. Atomic Emergy Commission, Washington, D.C.,

# Explanation of Change

Revise Sections C.203(f) and C.204(d) to be consistent with a change in 10 CFR 20 of the AEC regulations, effective November 3, 1966. The amendment requires the labeling of containers in which radioactive materials are used, stored or transported. Labels must contain the radiation caution symbol and legend and identifying information on the material in the container. The amendment also provides for additional exceptions from the requirements for labeling of containers and posting of areas under certain specified conditions.

1. Paragraph (f) of C.203 is amended to read as follows:

Section C.203 Caution Signs, Labels and Signals.

\* \* \* \* \* \*

- (f) Containers.
  - Except as provided in subparagraph (3) of this paragraph, each container of radioactive material shall bear a durable, clearly visible label identifying the radioactive contents.
  - (2) A label required pursuant to subparagraph (1) of this paragraph shall bear the radiation caution symbol and the words:

CAUTION 7/

#### RADIOACTIVE MATERIAL

It shall also provide sufficient information  $\frac{8}{20}$  to permit individuals handling or using the containers, or working in the vicinity thereof, to take precautions to avoid or minimize exposures.

- (3) Notwithstanding the provisions of subparagraph (1) of this paragraph, labeling is not required:
  - (i) For containers that do not contain radioactive materials in quantities greater than the applicable quantities listed in Appendix B of this part;
  - (ii) For containers containing only natural uranium or thorium in quantities no greater than ten times the applicable quantities listed in Appendix B of this part;

7/ Or "Danger."

8/ As appropriate, the information will include radiation levels, kinds of material, estimate of activity, date for which activity is estimated, etc.

E-5

- (iii) For containers that do not contain radioactive materials in concentrations greater than the applicable concentrations listed in Column 2, Table I, Appendix A of this part;
  (iv) For containers when they are attended by an individual
- (iv) For containers when they are attended by prevent the exwho takes the precautions necessary to prevent the exposure of any individual to radiation or radioactive materials in excess of the limits established by the regulations in this part;
- (v) For containers when they are in transport and packaged and labeled in accordance with regulations of the Interstate Commerce Commission, Federal Aviation Agency, or Coast
- (vi) For containers which are accessible 2/ only to individuals authorized to handle or use them, or to work in the vicinity thereof, provided that the contents are identified to such individuals by a readily available written record; and
- (vii) For manufacturing and process equipment such as piping and tanks.

2. Revise paragraph (d) of Section C.204 to read as follows:

# Section C.204 Exceptions From Posting Requirements.

\* \* \* \* \*

(d) A room or other area is not required to be posted with a caution sign because of the presence of radioactive materials packaged and labeled in accordance with regulations of the Interstate Commerce Commission, Federal Aviation Agency, or Coast Guard.

9/ For example, containers in locations such as water filled canals, storage vaults, or hot cells.

E-6

## Explanation of Change

Add subparagraph B.4(b)(7) to provide an exemption for tritium contained in glow lamps. The proposed wording is identical to subparagraph 30.15(a)(7), Part 30 of AEC regulations, which became effective December 8. 1966.

Section B.4 Radioactive Materials.

# (b) Certain items containing tritium, promethium 147 or radium.

Except for persons who apply tritium, promethium 147 or radium to, or persons who incorporate tritium, promethium 147 or radium into, the following products, any person is exempt from these regulations to the extent that he receives, possesses, uses, transfers, owns or acquires the following products: 2/

\* \* \*

(7) Glow lamps containing not more than 10 microcuries of tritium per lamp.

2/ Authority to transfer possession or control by the manufacturer, processor, or producer of any equipment, device, commodity, or other product containing source, byproduct, or special nuclear material, intended for use by the general public may be obtained only from the U. S. Atomic Energy Commission, Washington, D. C., 20545.

E-7