From: Stanley Fitch <stanley_fitch@nmenv.state.nm.us>
To: John Zabko <jgz@nrc.gov>
Date: 3/3/04 1:17PM
Subject: New Mexico Rule Amendments

To: John Zabko, State and Tribal Programs

John --

As discussed during our phone call today, we have sent copies of New Mexico's most recent rule amendments to Josie by FedEx. This is the final version that will become effective on April 15, 2004. The public comment period was 60 days prior to adoption by the New Mexico Environmental Improvement Board on August 5, 2003.

As mentioned during the phone call, the Board added language to our equivalent of 10CFR 20.1405(b) regarding public notification and public participation. Please refer to our paragraph (2) of 20.3.4.426.E. This portion is compatibility C. The Board added the language:
"...the public. Further, that the public notice be published in any language when assessed appropriate."

Also, both the New Mexico Radiation Technical Advisory Council and the Board retained the language for reporting requirements in our equivalents of 10CFR 20.1906(d) and 10 CFR 20.2202(d)(2). These are compatibility categories H&S and C, respectively. Please refer to our 20.3.4.432.D and 20.3.4.452.D, respectively.

Please let me know if you need assistance. Thanks!

Stan Fitch

CC: Josie Piccone <jmp1@nrc.gov>, Bill Floyd <william_floyd@nmenv.state.nm.us>

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March 1, 2004

Josephine M. Piccone, Deputy Director
Office of State and Tribal Programs
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Mrs. Piccone:

Enclosed is a copy of the final revisions to Parts 1, 3, 4, 12, 13, and 15 of the New Mexico Radiation Protection Regulations (NMRPR). The documents are formatted exactly as will be published in the New Mexico Register on March 15, 2004. The effective date is set for April 15, 2004.

The final regulations are identified by line-out and underlined text, and correspond to the following equivalent amendments to NRC's regulations:

RATS ID 1997-1	RATS ID 1997-6	RATS ID 1997-7
RATS ID 1998-1	RATS ID 1998-5	RATS ID 1998-6

Please refer to the attachment entitled "Compatibility Matrix" for an explanation of where and how the integrations are made.

In addition to the above RATS revisions, the definition of "waste" would be revised at two locations in the NMRPR:

1. The first revision is in our Part 1. The revision is not made as part of a specific compatibility item, but is made to clarify inclusion of non-Atomic Energy Act (non-AEA) wastes that are regulated separately from federal law in accordance with the New Mexico Radiation Control Act. This definition of waste applies to all parts of the NMRPR except Part 13, which is our Part 61 equivalent.
2. The second is in our Part 13. The definition is revised specifically to be more compatible with the definition in 10CFR61.2.

We believe that the adoption of these revisions satisfies the compatibility and health and safety categories established in the Office of State and Tribal Programs (STP) Procedure SA-200.

If you have any questions, please feel free to contact me at (505) 476-3236 or Stanley Fitch of my staff at (505) 476-3249 or stanley_fitch@nmenv.state.nm.us.

Sincerely,

(Signature sent by FedEx on March 3, 2004)

William M. Floyd, Manager
Radiation Protection Program
Radiation Control Bureau

enclosures

COMPATIBILITY MATRIX

New Mexico Rule Revisions (February 2004)

10CFR citation	New or Revised	NMAC citation	Description	Compatibility Category
Resolution of Dual Regulation of Airborne Effluents of Radioactive Materials; Clean Air Act (RATS ID 1997-1)				
20.1003	new	20.3.4.7.D.	Definition of "constraint".	C
20.1101(d)	new	20.3.4.404.D.	ALARA constraint of air emissions.	C
20.2203	revised	20.3.4.453	Change section heading to that of 10 CFR 20.2203.	C
20.2203(a)(2)(vi)	new	20.3.4.453.A(2)(f)	Reports of exposures exceeding the limits.	C
20.2203(b)(1)(iv)	revised	20.3.4.453.B(1)(d)	Reports of exposures exceeding the limits.	C
20.2203(b)(2)	revised	20.3.4.453.B(2)	Reports of exposures exceeding the limits.	C
Radiological Criteria for License Termination (RATS ID 1997-6)				
20.1003	new	20.3.4.7.B.	Definition of "background radiation".	A

NMAC = New Mexico Administrative Code (in this case, the New Mexico Radiation Protection Regulations).

COMPATIBILITY MATRIX

New Mexico Rule Revisions (February 2004)

10CFR citation	New or Revised	NMAC citation	Description	Compatibility Category
20.1003	new	20.3.4.7.E.	Definition of "critical group".	B
20.1003	new	20.3.4.7.G.	Definition of "decommission".	C
20.1003	new	20.3.4.7.J.	Definition of "distinguishable from background".	B
20.1003	new	20.3.4.7.S.	Definition of "residual radioactivity".	B
20.1401	new	20.3.4.426.A.	General provisions and scope.	C
20.1402	new	20.3.4.426.B.	Radiological criteria for unrestricted use.	C
20.1403	new	20.3.4.426.C.	Criteria for license termination under restricted use.	C
20.1404	new	20.3.4.426.D.	Alternate criteria for license termination.	C
20.1405	new	20.3.4.426.E.	Public notification and public participation.	C

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COMPATIBILITY MATRIX

New Mexico Rule Revisions (February 2004)

10CFR citation	New or Revised	NMAC citation	Description	Compatibility Category
20.1406	new	20.3.4.426.F.	Minimization of contamination.	C
30.4	revised	20.3.3.311	Definition of "decommission". To appear as revised text in the section heading.	C
30.35(f)(5)	new	20.3.3.311.F(5)	Financial assurance for governmental custodialship.	D
30.35(g)(3)(iv)	revised	20.3.3.311.G(4)(d)	Decommissioning recordkeeping of offsite areas containing radioactive materials.	H&S
30.36(j)(2)	revised	20.3.3.318.O(2)	Radiation surveys for final release to terminate.	H&S
30.36(k)(3)	revised	20.3.3.318.P(3)	Radiation surveys for final release to terminate.	H&S
Exempt Distribution of a Radioactive Drug Containing One Microcurie of Carbon-14 Urea (RATS ID 1997-7)				
30.21	new	20.3.3.302.D.	Carbon-14 urea capsules for human "in vivo" diagnostic use.	B
Deliberate Misconduct by Unlicensed Persons (RATS ID 1998-1)				

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COMPATIBILITY MATRIX

New Mexico Rule Revisions (February 2004)

10CFR citation	New or Revised	NMAC citation	Description	Compatibility Category
30.1	new	20.3.1.122	Description of deliberate misconduct as a violation.	C
Minor Corrections, Clarifying Changes, and a Minor Policy Change (RATS ID 1998-5)				
20.1003	new	20.3.4.7.M.	Definition of "lens dose equivalent". Replaces "eye dose equivalent".	A
20.1003	revised	20.3.4.7.F.	Definition of "declared pregnant woman".	A
20.1003	revised	20.3.1.7.AV.	Definition of "high radiation area".	A
20.1003	revised	20.3.1.7.AZ.	Definition of "individual monitoring devices".	C
20.1003	revised	20.3.4.7.W.	Definition of "very high radiation area".	A
20.1101(b)	revised	20.3.4.404.B.	Slight revision of text regarding ALARA.	H&S
20.1201(a)(2)(i)	revised	20.3.4.405.A(2)(a)	Change of eye dose terminology to "lens dose equivalent".	A

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COMPATIBILITY MATRIX

New Mexico Rule Revisions (February 2004)

10CFR citation	New or Revised	NMAC citation	Description	Compatibility Category
20.1201(c)	revised	20.3.4.405.C(1)	Change of eye dose terminology to "lens dose equivalent".	A
20.1203	revised	20.3.4.407.A.	Introductory text revised to incorporate new eye dose terminology of "lens dose equivalent".	A
20.1206(a)	revised	20.3.4.410.A.	Regarding approved conditions for planned special exposures.	D
20.1208	revised	20.3.4.412	Inclusion of the word "equivalent" to the section heading.	A
20.1208(a)	revised	20.3.4.412.A.	Inclusion of the word "equivalent".	A
20.1208(c)	revised	20.3.4.412.C.	Inclusion of the word "equivalent" to the introductory text.	A
20.1208(c)(2)	revised	20.3.4.412.C(1)	Inclusion of the word "equivalent".	A
20.1208(d)	revised	20.3.4.412.D.	General text revision, and the inclusion of the word "equivalent".	A
20.1501(a)(2)(i)	revised	20.3.4.416.A(2)(a)	Adds the phrase "The magnitude and extent of...".	H&S

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COMPATIBILITY MATRIX

New Mexico Rule Revisions (February 2004)

10CFR citation	New or Revised	NMAC citation	Description	Compatibility Category
20.1501(a)(2)(iii)	revised	20.3.4.416.A(2)(c)	Eliminates the phrase "...that could be present".	H&S
20.1502(a)	revised	20.3.4.417.A	Changes to monitoring requirements for external dose.	H&S
20.1502(b)	revised	20.3.4.417.B	Changes to monitoring requirements for internal dose.	H&S
20.1903(d)	new	20.3.4.429.F.	New paragraph regarding requirements for posting exemptions for teletherapy rooms.	D
20.1906(d)	revised	20.3.4.432.D.	NRC's language eliminates the need to confirm contact with the Department by telegram, mailgram, or facsimile. However, the wording is retained with a revision providing for notification by e-mail.	H&S
20.2101	revised	20.3.4.440	Entire section revised to wording of 10CFR 20.2101 to maintain consistency with intent of NRC.	C
20.2106(a)(1)	revised	20.3.4.446.A(1)	"Eye dose equivalent" changed to "lens dose equivalent" (note: subsections A(2) and A(3) don't require revision).	C
20.2106(a)(4)	revised	20.3.4.446.A(4)	Additional cross reference citations.	C
20.2202(a)(1)(ii)	revised	20.3.4.452.A(1)(b)	"Eye dose equivalent" changed to "lens dose equivalent"	C

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COMPATIBILITY MATRIX

New Mexico Rule Revisions (February 2004)

10CFR citation	New or Revised	NMAC citation	Description	Compatibility Category
20.2202(b)(1)(ii)	revised	20.3.4.452.B(1)(b)	"Eye dose equivalent" changed to "lens dose equivalent"	C
20.2202(d)(2)	revised	20.3.4.452.D.	NRC's language eliminates the need to confirm contact with the Department by telegram, mailgram, or facsimile. However, the wording is retained with a revision providing for notification by e-mail.	C
35.641(a)(2)(i)	revised	---------	Because the compatibility category for this section is set as H&S, it will not be adopted at this time pending adoption of the new 10CFR Part 35 as appropriate.	H&S
35.641(a)(2)(ii)	revised	---------	Because the compatibility category for this section is set as H&S, it will not be adopted at this time pending adoption of the new 10CFR Part 35 as appropriate.	H&S
35.643(a)	revised	---------	Because the compatibility category for this section is set as H&S, it will not be adopted at this time pending adoption of the new 10CFR Part 35 as appropriate.	H&S
35.643(a)(1)	revised	---------	Because the compatibility category for this section is set as H&S, it will not be adopted at this time pending adoption of the new 10CFR Part 35 as appropriate.	H&S
36.23(g)	revised	20.3.15.1507.G.	Minor revisions to language on required postings.	H&S
39.33(a)	revised	20.3.12.1207.A.	Clarifying language and changes to radiation units.	C
Transfer for Disposal and Manifests: Minor Technical Conforming Amendment (RATS 1998-6)				

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COMPATIBILITY MATRIX

New Mexico Rule Revisions (February 2004)

10CFR citation	New or Revised	NMAC citation	Description	Compatibility Category
20.1002	revised	20.3.4.2	Excludes dose limits resulting from human use patients released in accordance with Part 7.	D
20.2006	revised	20.3.4.438	**20.3.4.438 is not revised,** because it already contains language compatible with 20.2006. **See attachment to this matrix.**	B
Appendix F	revised	20.3.4.463	Appendix F to Part 20 removed, the counterpart is 20.3.4.463 which will also be removed and reserved.	N/A
Waste Definitions Contained in the New Mexico Radiation Protection Regulations (NMRPR).				
---	revised	20.3.1.7.DQ	**THIS IS NOT A COMPATIBILITY ITEM.** The definition for waste that pertains to compatibility is listed below under 20.3.13.7.V. This definition revised to clarify inclusion of non-Atomic Energy Act (non-AEA) wastes that are regulated separately from federal law in accordance with the New Mexico Radiation Control Act.	N/A
61.2	revised	20.3.13.7.V.	Revised to be more closely compatible with 10CFR61.2.	B

NMAC = New Mexico Administrative Code (in this case, the New Mexico Radiation Protection Regulations).

MATRIX ADDENDUM

As noted in the matrix, 20.3.4.438 is not revised, because it already contains language compatible with 10CFR20.2006. Refer to RATS ID 1998-6. The existing language is provided below --

20.3.4.438 TRANSFER FOR DISPOSAL AND MANIFESTS:

A. The requirements of 20.3.4.438 NMAC and 20.3.4.466 NMAC are designed to:

(1) control transfers of low-level radioactive waste by any waste generator, waste collector, or waste processor licensee, as defined in this subpart, who ships low-level waste either directly, or indirectly through a waste collector, waste broker, or waste processor, to a licensed low-level waste land disposal facility (as defined in Part 13 (20.3.13 NMAC));

(2) establish a manifest tracking system; and

(3) supplement existing requirements concerning transfers and record keeping for those wastes.

B. Each shipment of radioactive waste intended for disposal at a licensed land disposal facility must be accompanied by a shipment manifest in accordance Subsection A of 20.3.4.466 NMAC.

C. Any licensee shipping radioactive waste intended for ultimate disposal at a licensed land disposal facility must document the information required on NRC's *Uniform Low-Level Radioactive Waste Manifest* and transfer this recorded manifest information to the intended consignee in accordance with 20.3.4.466 NMAC. Additionally, any licensee shipping radioactive waste from the rocky mountain low-level waste compact (RMLLWC) must be granted approval from the rocky mountain board prior to shipping waste from the compact.

D. Each shipment manifest must include a certification by the waste generator as specified in Subsection B of 20.3.4.466 NMAC.

E. Each person involved in the transfer for disposal and disposal of waste, including the waste generator, waste collector, waste processor, and disposal facility operator, shall comply with the requirements specified in Subsection C of 20.3.4.466 NMAC.

[5-3-95 ,N 7-30-99; A, 7-30-99; 20.3.4.438 NMAC - Rn, 20 NMAC 3.1.4.438, 04/15/2004]

MATRIX ADDENDUM

As noted in the matrix, 20.3.4.438 is not revised, because it already contains language compatible with 10CFR20.2006. Refer to RATS ID 1998-6. The existing language is provided below --

20.3.4.438 TRANSFER FOR DISPOSAL AND MANIFESTS:

A. The requirements of 20.3.4.438 NMAC and 20.3.4.466 NMAC are designed to:

(1) control transfers of low-level radioactive waste by any waste generator, waste collector, or waste processor licensee, as defined in this subpart, who ships low-level waste either directly, or indirectly through a waste collector, waste broker, or waste processor, to a licensed low-level waste land disposal facility (as defined in Part 13 (20.3.13 NMAC));

(2) establish a manifest tracking system; and

(3) supplement existing requirements concerning transfers and record keeping for those wastes.

B. Each shipment of radioactive waste intended for disposal at a licensed land disposal facility must be accompanied by a shipment manifest in accordance Subsection A of 20.3.4.466 NMAC.

C. Any licensee shipping radioactive waste intended for ultimate disposal at a licensed land disposal facility must document the information required on NRC's *Uniform Low-Level Radioactive Waste Manifest* and transfer this recorded manifest information to the intended consignee in accordance with 20.3.4.466 NMAC. Additionally, any licensee shipping radioactive waste from the rocky mountain low-level waste compact (RMLLWC) must be granted approval from the rocky mountain board prior to shipping waste from the compact.

D. Each shipment manifest must include a certification by the waste generator as specified in Subsection B of 20.3.4.466 NMAC.

E. Each person involved in the transfer for disposal and disposal of waste, including the waste generator, waste collector, waste processor, and disposal facility operator, shall comply with the requirements specified in Subsection C of 20.3.4.466 NMAC.

[5-3-95 ,N 7-30-99; A, 7-30-99; 20.3.4.438 NMAC - Rn, 20 NMAC 3.1.4.438, 04/15/2004]

These are amendments to 20.3.1 NMAC named "General Provisions". Contained are minor changes to the definitions of high radiation areas and dosimetry in Subsections AV and AZ of 20.3.1.7 NMAC. A more important change is made to the definition of "waste" in Subsection DQ of 20.3.1.7 NMAC that is broadly applicable to all of 20.3 NMAC. Finally, a new section 20.3.1.122 NMAC is added regarding deliberate misconduct. This rulemaking action also renumbers and reformats from that portion of 20 NMAC 3.1, Subpart 1, named "General" (filed 06-17-99) and now replaced by 20.3.1 NMAC. This amendment and renumber will become effective 04/15/2004.

20.3.1.7 DEFINITIONS: As used in these regulations, these terms have the definitions as set forth below. Additional definitions used only in a certain part of these regulations will be found in that part.

A. "Absorbed dose" means the energy imparted by ionizing radiation per unit mass of irradiated material. The units of absorbed dose are the gray (Gy) and the rad.

B. "Accelerator" (See particle accelerator).

C. "Accelerator produced material" means any material made radioactive by exposure in a particle accelerator.

D. "Act" means the Radiation Protection Act (Sections 74-3-1 through 74-3-16, NMSA 1978).

E. "Activity" means the rate of disintegration or transformation or decay of radioactive material. The units of activity are the becquerel (Bq) and the curie (Ci).

F. "Adult" means an individual 18 or more years of age.

G. "Agreement state" means any state with which the United States nuclear regulatory commission (NRC) or the United States atomic energy commission (AEC) has entered into an effective agreement under Section 274b of the Atomic Energy Act of 1954, as amended (73 Stat. 689).

H. "Airborne radioactive material" means any radioactive material dispersed in the air in the form of dusts, fumes, particulates, mists, vapors, or gases.

I. "Airborne radioactivity area" means a room, enclosure, or area in which airborne radioactive materials exist in concentrations:

(1) in excess of the derived air concentrations (DACs) specified in 20.3.4.461, Table I of List of Elements, of these regulations; or

(2) to such a degree that an individual in the area without respiratory protective equipment could exceed, during the hours an individual is present in a week, an intake of 0.6 percent of the annual limit on intake (ALI) or 12 DAC-hours.

J. "As low as is reasonably achievable" (ALARA) means making every reasonable effort to maintain exposures to radiation as far below the dose limits in these regulations as is practical, consistent with the purpose for which the licensed or registered activity is undertaken, taking into account the state of technology, the economics of improvements in relation to state of technology, the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to utilization of nuclear energy and licensed or registered sources of radiation in the public interest.

K. "Background radiation" means radiation from cosmic sources; naturally occurring radioactive materials, including radon, except as a decay product of source or special nuclear material, and including global fallout as it exists in the environment from the testing of nuclear explosive devices. "Background radiation" does not include sources of radiation from radioactive materials regulated by the department.

L. "Becquerel" (Bq) means the SI unit of activity. One becquerel is equal to 1 disintegration or transformation per second (dps or tps).

M. "Bioassay" means the determination of kinds, quantities or concentrations, and, in some cases, the locations of radioactive material in the human body, whether by direct measurement, in vivo counting, or by analysis and evaluation of materials excreted or removed from the human body. For purposes of these regulations "radiobioassay" is an equivalent term.

N. "Board" means the environmental improvement board.

O. "Brachytherapy" means a method of radiation therapy in which sealed sources are utilized to deliver a radiation dose at a distance of up to a few centimeters, by surface, intracavity, or interstitial application.

P. "Byproduct material" means:

(1) any radioactive material, (except special nuclear material), yielded in or made radioactive by exposure to the radiation incident to the process of producing or utilizing special nuclear material; and

(2) the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content, including discrete surface wastes resulting from uranium or thorium solution extraction processes; underground ore bodies depleted by these solution extraction operations do

not constitute byproduct material within this definition.

Q. "Calendar quarter" means not less than 12 consecutive weeks nor more than 14 consecutive weeks. The first calendar quarter of each year shall begin in January and subsequent calendar quarters shall be so arranged such that no day is included in more than one calendar quarter and no day in any one year is omitted from inclusion within a calendar quarter. No licensee or registrant shall change the method used to determine calendar quarters for purposes of these regulations except at the beginning of a calendar year without prior approval of the Department.

R. "Calibration" means the quantitative evaluation and adjustment, as deemed necessary by the department of radiation measuring instruments by a department approved laboratory. Calibration includes the determination of 1) the response or reading of an instrument relative to a series of known radiation values over the range of the instrument, or 2) the strength of a source of radiation relative to a standard using national institute of standards and technology (NIST) traceable sources and approved techniques.

S. "CFR" means code of federal regulations.

T. "Chelating agent" means amine polycarboxylic acids, hydroxycarboxylic acids, gluconic acid, and polycarboxylic acids.

U. "Collective dose" means the sum of the individual doses received in a given period of time by a specified population from exposure to a specified source of radiation.

V. "Commercial waste disposal" means disposal of radioactive waste as a business enterprise.

W. "Committed dose equivalent" ($H_{T,50}$) means the dose equivalent to organs or tissues of reference (T) that will be received from an intake of radioactive material by an individual during the 50-year period following the intake.

X. "Committed effective dose equivalent" ($H_{E,50}$) is the sum of the products of the weighting factors applicable to each of the body organs or tissues that are irradiated and the committed dose equivalent to each of these organs or tissues ($H_{E,50} = W_T H_{T,50}$).

Y. "Council" means the radiation technical advisory council (RTAC).

Z. "Curie" means a unit of measurement of activity. One curie (Ci) is that quantity of radioactive material which decays at the rate of 3.7×10^{10} (3.7E+10) disintegrations or transformations per second (dps or tps). Commonly used submultiples of the curie are the millicurie and the microcurie. One millicurie (mCi) = 3.7×10^{7} (3.7E+7) dps or tps. One microcurie (uCi) = 3.7×10^{4} (3.7E+4) dps or tps.

AA. "Deep dose equivalent" (H_d), which applies to external whole body exposure, means the dose equivalent at a tissue depth of 1 centimeter (1000 mg/cm^2).

AB. "Department" means the environment department, its successors, or its predecessors, the environmental improvement agency, or the environmental improvement division of the health and environment department.

AC. "Depleted uranium" means the source material uranium which the isotope uranium-235 is less than 0.711 weight percent of the total uranium present. Depleted uranium does not include special nuclear material.

AD. "Dose" is a generic term that means absorbed dose, dose equivalent, effective dose equivalent, committed dose equivalent, committed effective dose equivalent, total organ dose equivalent, or total effective dose equivalent. For purposes of these regulations, "radiation dose" is an equivalent term.

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

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

AG. "Effective dose equivalent (H_E)" means the sum of the products of the dose equivalent to each organ or tissue (H_T), and the weighting factor (W_T) applicable to each of the body organs or tissues that are irradiated ($H_E = W_T H_T$).

AH. "Embryo/fetus" means the developing human organism from conception until the time of birth.

AI. "Entrance or access point" means any opening through which an individual or extremity of an individual could gain access to radiation areas or to licensed or registered radiation materials. This includes entry or exit portals of sufficient size to permit human entry, irrespective of their intended use.

AJ. "Explosive material" means any chemical compound, mixture, or device which produces a substantial instantaneous release of gas and heat spontaneously or by contact with sparks or flame.

AK. "Exposure" means being exposed to ionizing radiation or to radioactive material.

AL. "Exposure" means the quotient of dQ divided by dm where "dQ" is the absolute value of the total charge of the ions of one sign produced in air when all the electrons (negatrons and positrons) liberated by photons

in a volume element of air having mass "dm" are completely stopped by air. (The special unit of exposure is the roentgen (R). The SI unit of exposure is the coulomb per kilogram (C/kg). See 20.3.1.117 NMAC, Units of Exposure and Dose, for the special unit.)

AM. "Exposure rate" means the exposure per unit of time, such as roentgen per minute and milliroentgen per hour.

AN. "External dose" means that portion of the dose equivalent received from any source of radiation outside the body.

AO. "Extremity" means hand, elbow, arm below the elbow, foot, knee, and leg below the knee.

AP. "Eye dose equivalent" means the external dose equivalent to the lens of the eye at a tissue depth of 0.3 centimeter (300 mg/cm^2).

AQ. "Former U.S. atomic energy commission (AEC) or U.S. nuclear regulatory commission (NRC) licensed facilities" means nuclear reactors, nuclear fuel reprocessing plants, uranium enrichment plants, or critical mass experimental facilities where AEC or NRC licenses have been terminated.

AR. "Generally applicable environmental radiation standards" means standards issued by the U.S. environmental protection agency (EPA) under the authority of the Atomic Energy Act of 1954, as amended, that impose limits on radiation exposures or levels, or concentrations or quantities of radioactive material, in the general environment outside the boundaries of locations under the control of persons possessing or using radioactive material.

AS. "Gray" (Gy) means the SI unit of absorbed dose. One gray is equal to an absorbed dose of 1 joule per kilogram (1 Gy=100 rads).

AT. "Hazardous waste" means those wastes designated as hazardous by U.S. environmental protection agency (EPA) regulations in 40 CFR Part 261.

AU. "Healing arts" means those professional disciplines authorized by the laws of this state to use X-rays or radioactive material in the diagnosis or treatment of human or animal disease.

AV. "High radiation area" means an area, accessible to individuals, in which radiation levels from radiation sources external to the body could result in an individual receiving a dose equivalent in excess of 0.1 rem (1 mSv) in 1 hour at 30 centimeters from [~~any source of radiation or~~] the radiation source or 30 centimeters from any surface that the radiation penetrates.

AW. "Human use" means the internal or external administration of radiation or radioactive material to human beings for the purpose of medical diagnosis or therapy.

AX. "Individual" means any human being.

AY. "Individual monitoring" means the assessment of:

(1) dose equivalent (a) by the use of individual monitoring devices or (b) by the use of survey data; or

(2) committed effective dose equivalent (a) by bioassay or (b) by determination of the time-weighted air concentrations to which an individual has been exposed, that is, DAC-hours. (See the definition of DAC-hours in 20.3.4 NMAC).

AZ. "Individual monitoring devices" (individual monitoring equipment) means devices designed to be worn by a single individual for the assessment of dose equivalent [~~. For purposes of these regulations, "personnel dosimeter" and "dosimeter" are equivalent terms. Examples of individual monitoring devices are film badges, thermoluminescent dosimeters (TLDs), pocket ionization chambers, and personal air sampling devices.~~], such as film badges, thermoluminescence dosimeters (TLDs), pocket ionization chambers, and personal ("lapel") air sampling devices.

BA. "Inspection" means an official examination or observation including, but not limited to, tests, surveys, and monitoring to determine compliance with rules, regulations, orders, requirements and conditions of the Department.

BB. "Interlock" means a device arranged or connected such that the occurrence of an event or condition is required before a second event or condition can occur or continue to occur.

BC. "Internal dose" means that portion of the dose equivalent received from radioactive material taken into the body.

BD. "License" means a license issued by the department in accordance with the regulations adopted by the Board.

BE. "Licensed (or registered) material" means radioactive material received, possessed, used, transferred or disposed of under a general or specific license (or registration) issued by the department.

BF. "Licensee" means any person who is licensed by the department in accordance with these regulations and the Act.

BG. "Licensing state" means any state with regulations equivalent to the *Suggested State Regulations*

for Control of Radiation (SSRCR) relating to, and an effective program for, the regulatory control of NARM and which has been granted final designation by the Conference of Radiation Control Program Directors, Inc.

BH. "Limits" (See "Dose limits").

BI. "Lost or missing source of radiation" means licensed (or registered) source of radiation whose location is unknown. This definition includes but is not limited to material that has been shipped but has not reached its planned destination and whose location cannot be readily traced in the transportation system.

BJ. "Major processor" means a user processing, handling, or manufacturing radioactive material exceeding type A quantities as unsealed sources or material, or exceeding 4 times type B quantities as sealed sources, but does not include nuclear medicine programs, universities, industrial radiographers or small industrial programs. Type A and B quantities are defined in Section 71.4 of 10 CFR Part 71.

BK. "Member of the public" means any individual except when that individual is receiving an occupational dose.

BL. "Minor" means an individual less than 18 years of age.

BM. "Mixed waste" means waste that contains both hazardous constituents regulated under the Resource Conservation Recovery Act and radioactive constituents regulated by these regulations.

BN. "Monitoring" means the measurement of radiation, radioactive material concentrations, surface area activities or quantities or radioactive material and the use of the results of these measurements to evaluate potential exposures and doses. For purposes of these regulations, "radiation monitoring" and "radiation protection monitoring" are equivalent terms.

BO. "NARM" means any naturally occurring or accelerator-produced radioactive material. It does not include byproduct, source, or special nuclear material.

BP. "Natural radioactivity" means radioactivity of naturally occurring nuclides.

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

BR. "Occupational dose" means the dose received by an individual in the course of employment in which the individual's assigned duties involve exposure to radiation or to radioactive material from licensed and unlicensed sources of radiation, whether in the possession of the licensee, registrant, or other person. Occupational dose does not include dose received from background radiation; from any medical administration the individual has received; from exposure to individuals administered radioactive materials and released in accordance with Subsection J of 20.3.7.703 NMAC; from voluntary participation in medical research programs, or as a member of the public.

BS. "Ore refineries" means all processors of a radioactive material ore including uranium mills or other source material extraction facilities.

BT. "Package" means the packaging together with its radioactive contents as presented for transport.

BU. "Particle accelerator" means any machine capable of accelerating electrons, protons, deuterons, or other charged particles in a vacuum and of discharging the resultant particulate or other radiation into a medium at energies usually in excess of 1 MeV. For purposes of this definition, "accelerator" is an equivalent term.

BV. "Person" means any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, agency, political subdivision of this state, any other state or political subdivision or agency thereof, and any legal successor, representative, agent or agency of the foregoing, but shall not include federal government agencies.

BW. "Personnel monitoring equipment" (See "individual monitoring devices").

BX. "Pharmacist" means an individual licensed by this state to compound and dispense drugs and prescriptions.

BY. "Physician" means an individual licensed by this state to prescribe drugs in the practice of medicine.

BZ. "Principal activities" means activities authorized by the license which are essential to achieving the purpose(s) for which the license was issued or amended. Storage during which no licensed material is accessed for use or disposal and activities incidental to decontamination or decommissioning are not principal activities.

CA. "Public dose" means the dose received by a member of the public from exposure to radiation or radioactive material released by a licensee or registrant, or to any other sources of radiation under the control of a licensee or registrant. Public dose does not include: occupational dose; or dose received from background radiation; or dose received from any medical administration the individual has received; or dose received from exposure to individuals administered radioactive material and released in accordance with Subsection J of 20.3.7.703 NMAC; or dose received from voluntary participation in medical research programs.

CB. "Pyrophoric material" means any liquid that ignites spontaneously in dry or moist air at or below

130 degrees fahrenheit (54.4 degrees celsius) or any solid material, other than one classed as an explosive, which under normal conditions is liable to cause fires through friction, retained heat from manufacturing or processing, or which can be ignited readily and, when ignited, burns so vigorously and persistently as to create a serious transportation, handling, or disposal hazard. Included are spontaneously combustible and water-reactive materials.

CC. "Qualified expert" means an individual having the knowledge and training to measure ionizing radiation, to evaluate safety techniques, and to advise regarding radiation protection needs, for example, individuals certified in the appropriate field by the American board of radiology (ABR), or the American board of health physics (ABHP), or the American board of medical physics (ABMP) or those having equivalent qualifications. With reference to the calibration of radiation therapy equipment, an individual having, in addition to the above qualifications, training and experience in the clinical applications of radiation physics to radiation therapy, for example, individuals certified in therapeutic radiological physics or x-ray and radium physics by the ABR, or those having equivalent qualifications. With reference to providing medical physics services to certified mammographic facilities, such individuals must meet the requirements as defined by the U.S. FDA.

CD. "Quality factor" (Q) means the modifying factor, listed in Table 117.1 of 20.3.1.117.C NMAC and Table 117.2 of 20.3.1.117.D NMAC, that is used to derive dose equivalent from absorbed dose.

CE. "Rad" means the special unit of absorbed dose. One rad is equal to an absorbed dose of 100 erg per gram or 0.01 joule per kilogram (0.01 gray).

CF. "Radiation" means alpha particles, beta particles, gamma rays, x-rays, neutrons, high-speed electrons, high-speed protons, and other particles capable of producing ions. For purposes of these regulations, ionizing radiation is an equivalent term. Radiation, as used in these regulations, does not include non-ionizing radiation, such as radiowaves or microwaves, visible, infrared, or ultraviolet light.

CG. "Radiation area" means any area, accessible to individuals in which radiation levels could result in an individual receiving a dose equivalent in excess of 0.05 mSv (0.005 rem) in 1 hour at 30 centimeters from the source of radiation or from any surface that the radiation penetrates.

CH. "Radiation dose" (See "Dose" in Subsection AD of 20.3.1.7 NMAC).

CI. "Radiation machine" means any device capable of producing radiation except those which produce radiation only from radioactive material.

CJ. "Radiation safety officer" means one who has the knowledge and responsibility to apply appropriate radiation protection regulations. (For medical use see 20.3.7.712 NMAC.)

CK. "Radioactive material" means any material (solid, liquid, or gas) which emits radiation spontaneously.

CL. "Radioactivity" means the transformation of unstable atomic nuclei by the emission of radiation.

CM. "Radiobioassay" (See "Bioassay" in Subsection M of 20.3.1.7 NMAC).

CN. "Registrant" means any person who is registered with the department. Registrant also means anyone who is legally obligated to register with the department pursuant to these regulations and the Act.

CO. "Registration" means registration with the department in accordance with these regulations.

CP. "Regulations of the U.S. department of transportation" (DOT) means the regulations in 49 CFR Parts 100-185.

CQ. "Rem" means a special unit of any of the quantities expressed as dose equivalent. The dose equivalent in rem is equal to the absorbed dose in rad multiplied by the quality factor (1 rem = 0.01 sievert).

CR. "Research and development" means: (1) theoretical analysis, exploration, or experimentation; or (2) the extension of investigative findings and theories of a scientific or technical nature into practical application for experimental and demonstration purposes, including the experimental production and testing of models, devices, equipment, materials, and processes. Research and development does not include the internal or external administration of radiation or radioactive material to human beings.

CS. "Restricted area" means an area, access to which is limited by the licensee or registrant for purposes of protection of individuals against undue risks from exposure to sources of radiation. Restricted area does not include areas used as residential quarters, but separate rooms in a residential building may be set apart as a restricted area.

CT. "Roentgen" means the special unit of exposure. One roentgen (R) equals 2.58E-4 coulombs per kilogram of air (see "Exposure" in Subsection AL of 20.3.1.7 NMAC and 20.3.1.117 NMAC).

CU. "Sealed source" means any container of radioactive material which has been constructed in such a manner as to prevent the escape of any radioactive material.

CV. "Shallow dose equivalent" (H_S), which applies to the external exposure of the skin or an extremity, means the dose equivalent at a tissue depth of 0.007 centimeter (7 mg/cm^2) averaged over an area of 1 square centimeter.

CW. "SI" means the abbreviation for the international system of units.

CX. "Sievert" means the SI unit of any of the quantities expressed as dose equivalent. The dose equivalent in sievert is equal to the absorbed dose in gray multiplied by the quality factor (1 Sv = 100 rem).

CY. "Site boundary" means that line beyond which the land or property is not owned, leased, or otherwise controlled by the licensee or registrant.

CZ. "Source material" means:

(1) uranium or thorium, or any combination thereof, in any physical or chemical form; or

(2) ores that contain by weight one-twentieth of 1 percent (0.05 percent) or more of uranium, thorium or any combination of uranium and thorium; source material does not include special nuclear material.

DA. "Source material milling" means any activity that results in the production of byproduct as defined by definition (2) of byproduct material.

DB. "Source of radiation" means any radioactive material, or any device or equipment emitting or capable of producing radiation.

DC. "Special form radioactive material" means radioactive material that satisfies the following conditions:

(1) it is either a single solid piece or is contained in a sealed capsule that can be opened only by destroying the capsule;

(2) the piece or capsule has at least one dimension not less than 5 millimeters (0.2 inch); and

(3) it satisfies the test requirements specified by the U.S. nuclear regulatory commission (NRC); a special form encapsulation designed in accordance with the NRC requirements in effect on June 30, 1983, and constructed prior to July 1, 1985, may continue to be used; a special form encapsulation either designed or constructed after June 30, 1985, must meet requirements of this definition applicable at the time of its design or construction.

DD. "Special nuclear material" means:

(1) plutonium, uranium-233, uranium enriched in the isotope 233 or in the isotope 235, and any other material that the department declares by order to be special nuclear material after the U.S. nuclear regulatory commission (NRC), pursuant to the provisions of Section 51 of the Atomic Energy Act of 1954, as amended, determines to be special nuclear material, but does not include source material; or

(2) any material artificially enriched by any of the foregoing but does not include source material.

DE. "Special nuclear material in quantities not sufficient to form a critical mass" means uranium enriched in the isotope U-235 in quantities not exceeding 350 grams of contained U-235; uranium-233 in quantities not exceeding 200 grams; plutonium in quantities not exceeding 200 grams or any combination of them in accordance with the following formula: for each kind of special nuclear material, determine the ratio between the quantity of that special nuclear material and the quantity specified above for the same kind of special nuclear material. The sum of such ratios for all of the kinds of special nuclear material in combination shall not exceed 1 (i.e., unity). For example, the following quantities in combination would not exceed the limitation and are within the formula: 175 (grams contained U-235)/350 + 50 (grams U-233)/200 + 50 (grams Pu)/200 = 1

DF. "State" means the state of New Mexico.

DG. "Survey" means an evaluation of the production, use, release, disposal, transfer or presence of sources of radiation under a specific set of conditions to determine actual or potential radiation hazards. When appropriate, such evaluation includes, but is not limited to tests, physical examination and measurements of levels of radiation or concentration of radioactive material present.

DH. "Test" means a method for determining the characteristics of conditions of sources of radiation or components thereof.

DI. "These regulations" means all parts of 20.3 NMAC [the New Mexico radiation protection regulations (NMRPR)].

DJ. "Total effective dose equivalent" (TEDE) means the sum of the deep dose equivalent for external exposures and the committed effective dose equivalent for internal exposures.

DK. "Total organ dose equivalent" (TODE) means the sum of the deep dose equivalent and the committed dose equivalent to the organ receiving the highest dose as described in Paragraph (6) of Subsection A of 20.3.4.446 NMAC.

DL. "U.S. Department of Energy" means the department of energy (DOE) established by Public Law 95-91, August 4, 1977, 91 Stat. 565, 42 U.S.C. 7101 et. seq., to the extent that the DOE exercises functions formerly vested in the U.S. atomic energy commission (AEC), its chairman, members, officers and components and transferred to the U.S. energy research and development administration (ERDA) and to the administrator thereof pursuant to sections 104(b), (c) and (d) of the Energy Reorganization Act of 1974 (Public Law 93-438, October 11,

1974, 88 Stat. 1233 at 1237, 42 U.S.C. 5814, effective January 19, 1975) and retransferred to the secretary of energy pursuant to section 301(a) of the Department of Energy Organization Act (Public Law 95-91, August 4, 1977, 91 Stat. 565 at 577-578, 42 U.S.C. 7151, effective October 1, 1977).

DM. "U.S. EPA" means the environmental protection agency.

DN. "U.S. FDA" means the food and drug administration (FDA).

DO. "Unrefined and unprocessed ore" means ore in its natural form prior to any processing such as grinding, roasting, beneficiating, or refining.

DP. "Unrestricted area" means an area, access to which is neither limited nor controlled by the licensee or registrant. For purposes of these regulations, "uncontrolled area" is an equivalent term.

~~[DQ. "Waste" means those low-level radioactive wastes that are acceptable for disposal in a land disposal facility. For the purposes of this definition, low-level waste has the same meaning as in the Low-Level Radioactive Waste Policy Act, P.L. 96-573, as amended by P.L. 99-240, effective January 15, 1986; that is, radioactive waste (a) not classified as high-level radioactive waste, spent nuclear fuel, or byproduct material as defined in Section 11e.(2) of the Atomic Energy Act (uranium or thorium tailings and waste) and (b) classified as low-level radioactive waste consistent with existing laws and in accordance with (a) by the U.S. Nuclear Regulatory Commission. Mixed waste streams may also be regulated under the Resource Conservation Recovery Act requirements or other State or Federal regulations or statutes.]~~

DQ. "Waste" means any radioactive material that is no longer of use, and is either discarded, disposed, or intended for disposal or treatment for the purposes of disposal, that requires licensure in accordance with the New Mexico radiation protection regulations (20.3 NMAC). This definition includes, however is not limited to, low-level radioactive waste as defined in the Low-Level Radioactive Waste Policy Act (42 U.S.C. 2021b), and radioactive material that the U.S. nuclear regulatory commission (NRC), consistent with existing law, classifies as low-level radioactive waste. Excluded from the definition of "waste" are:

(1) high-level radioactive waste or spent nuclear fuel as defined in section 2 of the Nuclear Waste Policy Act of 1982 (42 U.S.C. 10101);

(2) transuranic waste as defined in section 11ee of the Atomic Energy Act of 1954 (42 U.S.C. 2014(ee)); and

(3) by-product material as defined in section 11e(2) of the Atomic Energy Act of 1954 (42 U.S.C. 2014(e)(2)).

DR. "Waste disposal site operators" means persons licensed to dispose of radioactive waste.

DS. "Waste handling licensees" means persons licensed to receive and store radioactive wastes prior to disposal and/or persons licensed to dispose of radioactive waste.

DT. "Week" means 7 consecutive days starting on Sunday.

DU. "Whole body" means, for purpose of external exposure, head, trunk including male gonads, arms above the elbow, or legs above the knee.

DV. "Worker" means an individual engaged in work under a license or registration issued by the Department and controlled by a licensee or registrant, but does not include the licensee or registrant.

DW. "Working level" (WL) means any combination of short-lived radon daughters in 1 liter of air that will result in the ultimate emission of 1.3E+5 MeV of potential alpha particle energy. The short-lived radon daughters are for radon-222: polonium-218, lead-214, bismuth-214, and polonium-214; and for radon-220: polonium-216, lead-212, bismuth-212, and polonium-212.

DX. "Working level month" (WLM) means an exposure to 1 working level for 170 hours (2,000 working hours per year divided by 12 months per year is approximately equal to 170 hours per month).

DY. "Year" means the period of time beginning in January used to determine compliance with the provisions of these regulations. The licensee or registrant may change the starting date of the year used to determine compliance by the licensee or registrant provided that the change is made at the beginning of the year and that no day is omitted or duplicated in consecutive years.

20.3.1.122 DELIBERATE MISCONDUCT:

A. Any licensee, registrant, applicant for a license or registration, employee of a licensee, employee of a registrant or registration applicant; or any contractor (including a supplier or consultant), subcontractor, employee of a contractor or subcontractor of any licensee or registrant or applicant for a license or registration, who knowingly provides to any licensee, registrant, applicant, contractor, or subcontractor, any components, equipment, materials, or other goods or services that relate to a licensee's, registrant's or applicant's activities in these regulations (20.3 NMAC), may not:

(1) engage in deliberate misconduct that causes or would have caused, if not detected, a licensee,

registrant, or applicant to be in violation of any rule, regulation, or order; or any term, condition, or limitation of any license or registration issued by the department; or

(2) deliberately submit to the department, a licensee, registrant, an applicant, or a licensee's, registrant's or applicant's, contractor or subcontractor, information that the person submitting the information knows to be incomplete or inaccurate in some respect material to the department.

B. A person who violates Paragraphs (1) or (2) of Subsection A of 20.3.1.122 NMAC may be subject to enforcement action in accordance with all applicable provisions of the New Mexico Radiation Protection Act (NMSA 1978, Sec. 74-3-1 et. seq.) and these regulations (20.3 NMAC).

C. For the purposes of Paragraph (1) of Subsection A of 20.3.1.122 NMAC, deliberate misconduct by a person means an intentional act or omission that the person knows:

(1) would cause a licensee, registrant or applicant to be in violation of any rule, regulation, or order; or any term, condition, or limitation, of any license or registration issued by the department; or

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

These are amendments to 20.3.3 NMAC named "Licensing of Radioactive Material". The amendments include the addition of Section D to 20.3.3.302 NMAC regarding exemptions on drugs containing Carbon-14. The amendments also include improvements to the decommissioning requirements contained in 20.3.3.311 NMAC (refer to the title text and Subsection F and G), and in Subsections O and P of 20.3.3.318 NMAC. This rulemaking action also renumbers and reformats from that portion of 20 NMAC 3.1, Subpart 3, named "Licensing of Radioactive Material" (filed 06-17-99) and now replaced by 20.3.3 NMAC. This amendment and renumber will become effective 04/15/2004.

20.3.3.302 EXEMPTIONS - RADIOACTIVE MATERIAL OTHER THAN SOURCE MATERIAL:

A. Exempt Concentrations.

(1) Except as provided in Paragraph (2) of Subsection A of 20.3.3.302 NMAC, any person is exempt from this Part (20.3.3 NMAC) to the extent that such person receives, possesses, uses, transfers, or acquires products or materials containing radioactive material in concentrations not in excess of those listed in Schedule A of this Part.

(2) No person may introduce radioactive material into a product or material knowing or having reason to believe that it will be transferred to persons exempt under Paragraph (1) of Subsection A of 20.3.3.302 NMAC or equivalent regulations of the U.S. nuclear regulatory commission or any agreement state, except in accordance with a specific license issued pursuant to Paragraph (1) of Subsection A of 20.3.3.315 NMAC or in the general license provided in 20.3.3.324 NMAC.

B. Exempt Quantities.

(1) Except as provided in Paragraphs (2) and (3) of Subsection B of 20.3.3.302 NMAC any person is exempt from these regulations to the extent that such person receives, possesses, uses, transfers, or acquires radioactive material in individual quantities each of which does not exceed the applicable quantity set forth in Schedule B (20.3.3.330 NMAC).

(2) The production, packaging or repackaging of radioactive material for purposes of commercial distribution, or the incorporation of radioactive material into products intended for commercial distribution is not authorized by Subsection B of 20.3.3.302 NMAC.

(3) No person may, for purposes of commercial distribution, transfer radioactive material in the individual quantities set forth in Schedule B (20.3.3.330 NMAC), knowing or having reason to believe that such quantities of radioactive material will be transferred to persons exempt under Subsection B of 20.3.3.302 NMAC or equivalent regulations of the U.S. nuclear regulatory commission or any agreement state, except in accordance with a specific license issued by the U.S. nuclear regulatory commission pursuant to 10 CFR 32.18 by the department pursuant to Subsection B of 20.3.3.315 NMAC which license states that the radioactive material may be transferred by the licensee to persons exempt under Subsection B of 20.3.3.302 NMAC or the equivalent regulations of the U.S. nuclear regulatory commission or any agreement state.

C. Exempt Items.

(1) Certain Items Containing Radioactive Material. Except for persons who apply radioactive material to, or persons who incorporate radioactive material into the following products, any person is exempt from these regulations to the extent that they receive, possess, use, transfer, or acquire the following products (authority to transfer possession or control by the manufacturer, processor, or producer of any equipment, device, commodity, or other product containing source material or byproduct material whose subsequent possession, use, transfer, and disposal by all other persons are exempted from regulatory requirements may be obtained only from the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555):

(a) timepieces or hands or dials containing not more than the following specified quantities of radioactive material and not exceeding the following specified levels of radiation:

(i) 25 millicuries (925 MBq) of tritium per timepiece;

(ii) 5 millicuries (185 MBq) of tritium per hand;

(iii) 15 millicuries (555 MBq) of tritium per dial (bezels when used shall be considered as subpart of the dial);

(iv) 100 microcuries (3.7 MBq) of promethium-147 per watch hand or 200 microcuries (7.4 MBq) of promethium-147 per any other timepiece;

(v) 20 microcuries (0.74 MBq) of promethium-147 per watch hand or 40 microcuries (1.48 MBq) of promethium-147 per other timepiece hand;

(vi) 60 microcuries (2.22 MBq) of promethium-147 per watch dial or 120 microcuries (4.44 MBq) of promethium-147 per other timepiece dial (bezels when used shall be considered as subpart of the dial); or

(vii) the levels of radiation from hands and dials containing promethium-147 will not

exceed, when measured through 50 milligrams per square centimeter of absorber: 1) for wrist watches, 0.1 millirad (1mGy) per hour at 10 centimeters from any surface; 2) for pocket watches, 0.1 millirad (1mGy) per hour at 1 centimeter from any surface; or 3) for any other timepiece 0.2 millirad (2mGy) per hour at 10 centimeters from any surface; and

(viii) 1 microcurie (37 kBq) of radium-226 per timepiece in timepieces acquired prior to August 8, 1973;

(b) lock illuminators containing not more than 15 millicuries (555 MBq) of tritium or not more than 2 millicuries (74 MBq) of promethium-147 installed in automobile locks; the levels of radiation from each lock illuminator containing promethium-147 shall not exceed 1 millirad (10mGy) per hour at 1 centimeter from any surface when measured through 50 milligrams per square centimeter absorber;

(c) precision balances containing not more than 1 millicurie (37 MBq) of tritium per balance or not more than 0.5 millicurie (18.5 MBq) of tritium per balance part;

(d) automobile shift quadrants containing not more than 25 millicuries (925 MBq) of tritium;

(e) marine compasses containing not more than 750 millicuries (27.8 GBq) of tritium gas and other marine navigational instruments containing not more than 250 millicuries (9.25 GBq) of tritium gas;

(f) thermostat dials and pointers containing not more than 25 millicuries (925 MBq) of tritium per thermostat;

(g) electron tubes, provided that each tube does not contain more than one of the following specified quantities of byproduct material (for purposes of this exemption, "electron tubes" include spark gap tubes, power tubes, gas tubes including glow lamps, receiving tubes, microwaves tubes, indicator tubes, pick-up tubes, radiation detection tubes, and any other completely sealed tube that is designed to conduct or control electrical currents):

(i) 150 millicuries (5.55 GBq) of tritium per microwave receiver protector tube or 10 millicuries (370 MBq) of tritium per any other electron tube;

(ii) 1 microcurie (37 kBq) of cobalt-60;

(iii) 5 microcuries (185 kBq) of nickel-63;

(iv) 30 microcuries (1.11 MBq) of krypton-85;

(v) 5 microcuries (185 kBq) of cesium-137;

(vi) 30 microcuries (1.11 MBq) of promethium-147; and provided further that the levels of radiation from each electron tube containing byproduct materials do not exceed 1 millirad (10 mGy) per hour at 1 centimeter from any surface when measured through 7 milligrams per sq cm absorber;

(h) ionizing radiation measuring instruments containing, for purposes of internal calibration or standardization, one or more sources of radioactive material provided that:

(i) each source contains no more than one exempt quantity as set forth in 20.3.3.330 NMAC;

(ii) each instrument contains no more than ten exempt quantities; for this requirement, an instrument's source or sources may contain either one or multiple radionuclides; an individual exempt quantity may be composed of fractional parts of one or more of the exempt quantities in 20.3.3.330 NMAC provided that the sum of fractions shall not exceed the total of the radionuclide exempt quantity limits as specified in 20.3.3.330 NMAC; and

(iii) for purposes of this paragraph, 0.05 microcurie (1.85 kBq) of americium-241 is considered an exempt quantity under 20.3.3.330 NMAC;

(i) spark gap irradiators containing not more than 1 microcurie (37 kBq) of cobalt-60 per spark gap irradiator for use in electrically ignited fuel oil burners having a firing rate of at least 11.4 liters (3 gallons) per hour.

(2) Self-Luminous Products Containing Tritium, Krypton-85, Promethium-147, or Radium-226. Except for persons who manufacture, process, or produce self-luminous products containing tritium, krypton-85, promethium-147 or radium-226, any person is exempt from these regulations to the extent that such person receives, possesses, uses, transfers, or acquires tritium, krypton-85, promethium-147 or radium-226 in self-luminous products manufactured, processed, produced, imported, or transferred in accordance with a specific license issued by the U.S. Nuclear Regulatory Commission pursuant to 10 CFR 32.22 which license authorizes the transfer of the product to persons who are exempt from regulatory requirements. The exemption in Paragraph (2) of Subsection C of 20.3.3.302 NMAC does not apply to tritium, krypton-85, promethium-147 or radium-226 used in products for frivolous purposes or in toys or adornments.

(3) Radium-226 Acquired Previously. Any person is exempt from these regulations to the extent that such person possesses, uses or transfers, articles containing less than 0.1 microcurie (3.7 kBq) of radium-226 which

were acquired prior to the effective date of these regulations.

(4) Gas and Aerosol Detectors Containing Radioactive Material.

(a) Except for persons who manufacture, process, or produce gas and aerosol detectors containing radioactive material, any person is exempt from these regulations to the extent that such person receives, possesses, uses, transfers or acquires radioactive material in gas and aerosol detectors designed to protect life or property from fires and airborne hazards provided that detectors containing radioactive material shall have been manufactured, imported, or transferred in accordance with a specific license issued by the U.S. nuclear regulatory commission or an agreement state, pursuant to 10 CFR 32.36 or equivalent, which authorizes the transfer of the detectors to persons who are exempt from regulatory requirements; authority to transfer possession or control by the manufacturer, processor, or producer or any equipment, device, commodity, or other product containing source material or byproduct material whose subsequent possession, use, transfer, and disposal by all other persons are exempted from regulatory requirements may be obtained only from the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555.

(b) Gas and aerosol detectors previously manufactured and distributed to general licensees in accordance with a specific license issued by an agreement state shall be considered exempt under Subparagraph (a), Paragraph (4) of Subsection C of 20.3.3.302 NMAC, provided that the device is labeled in accordance with the specific license authorizing distribution of the general licensed device, and provided further that they meet the requirements of Subsection C of 20.3.3.315 NMAC.

(5) Resins Containing Scandium-46 and Designed for Sand Consolidation in Oil Wells. Any person is exempt from these regulations to the extent that such person receives, possesses, uses, transfers, or acquires synthetic plastic resins containing scandium-46 which are designed for sand consolidation in oil wells. Such resins shall have been manufactured or imported in accordance with a specific license issued by the NRC, the department, or any agreement state to the manufacturer of such resins pursuant to licensing requirements equivalent to 10 CFR 32.16. and 32.17. This exemption does not authorize the manufacture of any resins containing scandium-46.

D. Radioactive drug: Capsules containing carbon-14 urea for "in vivo" diagnostic use for humans.

(1) Except as provided in paragraphs (2) and (3) of Subsection D of 20.3.3.302 NMAC, any person is exempt from the requirements for a license set forth in 20.3.3 NMAC and 20.3.7 NMAC provided that such person receives, possesses, uses, transfers, owns, or acquires capsules containing 37 kBq (1microcurie) carbon-14 urea (allowing for nominal variation that may occur during the manufacturing process) each, for "in vivo" diagnostic use for humans.

(2) Any person who desires to use the capsules for research involving human subjects shall apply for and receive a specific license pursuant to 20.3.7 NMAC.

(3) Any person who desires to manufacture, prepare, process, produce, package, repackage, or transfer for commercial distribution such capsules shall apply for and receive a specific license pursuant to 20.3.3 NMAC.

(4) Nothing in this section relieves persons from complying with applicable FDA, other federal, and state requirements governing receipt, administration, and use of drugs.

20.3.3.311 FINANCIAL ASSURANCE AND RECORD KEEPING FOR DECOMMISSIONING: "Decommissioning" means to remove ~~[(as a facility) safely from service and reduce residual radioactivity to a level that permits release of the property for unrestricted use and termination of license.]~~ a facility or site safely from service and reduce residual radioactivity to a level that permits: 1) release of the property for unrestricted use and termination of the license; or, 2) release of the property under restricted conditions and termination of the license.

A. Each applicant for a specific license authorizing the possession and use of unsealed byproduct material of half-life greater than 120 days and in quantities exceeding 100,000 (1E+5) times the most current applicable quantities set forth in 20.3.4.465 NMAC, shall submit a decommissioning funding plan as described in Subsection E of 20.3.3.311 NMAC. The decommissioning funding plan must also be submitted when a combination of isotopes is involved if R divided by 100,000 (1E+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 20.3.4.465 NMAC.

B. Each applicant for a specific license authorizing possession and use of byproduct material of half-life greater than 120 days and in quantities specified in Subsection D of 20.3.3.311 NMAC shall either:

(1) submit a decommissioning funding plan as described in Subsection E of 20.3.3.311 NMAC; or

(2) submit a certification that financial assurance for decommissioning has been provided in the amount prescribed by Subsection D of 20.3.3.311 NMAC using one of the methods described in Subsection F of 20.3.3.311 NMAC; for an applicant, this certification may state that the appropriate assurance will be obtained after the application has been approved and the license issued but prior to the receipt of licensed material; if the applicant

defers execution of the financial instrument until after the license has been issued, a signed original of the financial instrument obtained to satisfy the requirements of Subsection F of 20.3.3.311 NMAC must be submitted to the department before receipt of licensed material; if the applicant does not defer execution of the financial instrument, the applicant shall submit to the department, as part of the certification, a signed original of the financial instrument obtained to satisfy the requirements of Subsection F of 20.3.3.311 NMAC.

C. Each holder of a specific license issued on or after the effective date of these regulations which is of a type described in Subsection A of 20.3.3.311 NMAC or Subsection B of 20.3.3.311 NMAC, shall provide financial assurance for decommissioning in accordance with the criteria set forth in this section.

(1) Each holder of a specific license issued before the effective date of these regulations, and of a type described in Subsection A of 20.3.3.311 NMAC shall submit, on or before the effective date of these regulations, a decommissioning funding plan as described in Subsection E of 20.3.3.311 NMAC or a certification of financial assurance for decommissioning in an amount at least equal to $750,000 in accordance with the criteria set forth in this section. If the licensee submits the certification of financial assurance rather than a decommissioning funding plan, the licensee shall include a decommissioning funding plan in any application for license renewal.

(2) Each holder of a specific license issued before the effective date of these regulations, and of a type described in Subsection B of 20.3.3.311 NMAC shall submit, on or before the effective date of these regulations, a decommissioning funding plan as described in Subsection E of 20.3.3.311 NMAC, or a certification of financial assurance for decommissioning in accordance with the criteria set forth in this section.

(3) Any licensee who has submitted an application before the effective date of these regulations, for renewal of license in accordance with 20.3.3.319 NMAC shall provide financial assurance for decommissioning in accordance with Subsections A and B of 20.3.3.311 NMAC. This assurance must be submitted when these regulations become effective.

D. Required Amounts of Financial Assurance for Decommissioning by Quantity of Material.

(1) Greater than 10,000 (1E+4) but less than or equal to 100,000 (1E+5) times the applicable quantities of 20.3.4.465 NMAC, in unsealed form. (For a combination of isotopes, if R as defined in Subsection A of 20.3.3.311 NMAC, divided by 10,000 (1E+4) is greater than 1 but R divided by 100,000 (1E+5) is less than or equal to 1): $750,000.

(2) Greater than 1,000 (1E+3) but less than or equal to 10,000 (1E+4) times the applicable quantities of 20.3.4.465 NMAC, in unsealed form. (For a combination of isotopes, if R, as defined in Subsection A of 20.3.3.311 NMAC, divided by 1,000 (1E+3) is greater than 1 but R divided by 10,000 (1E+4) is less than or equal to 1): $150,000.

(3) Greater than 10,000,000,000 (1E+10) times the applicable quantities of 20.3.4.465 NMAC, in sealed sources or plated foils. (For a combination of isotopes, if R, as defined in Subsection A of 20.3.3.311 NMAC, divided by 10,000,000,000 (1E+10) is greater than 1): $75,000.

E. Each decommissioning funding plan must contain a cost estimate for decommissioning and a description of the method of assuring funds for decommissioning from Subsection F of 20.3.3.311 NMAC, including means for adjusting cost estimates and associated funding levels periodically over the life of the facility. The decommissioning funding plan must also contain a certification by the licensee that financial assurance for decommissioning has been provided in the amount of the cost estimate for decommissioning and a signed original of the financial instrument obtained to satisfy the requirement of Subsection F of 20.3.3.311 NMAC.

F. Financial assurance for decommissioning must be provided by one or more of the following methods:

(1) Prepayment: Prepayment is the deposit prior to the start of operation into an account segregated from licensee assets and outside the licensee's administrative control of cash or liquid assets such that the amount of funds would be sufficient to pay decommissioning costs. Prepayment may be in the form of a trust, escrow account, government fund, certificate of deposit, or deposit of government securities.

(2) A Surety Method, Insurance, or Other Guarantee Method: These methods guarantee that decommissioning costs will be paid should the licensee default. 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 are as contained in 20.3.3.334 NMAC. A parent company guarantee may not be used in combination with other financial methods to satisfy the requirements of this section. 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 are as contained in 20.3.3.335 NMAC. A guarantee by the applicant or licensee may not be used in combination with any other financial methods to satisfy the requirements of this section or in any situation where the applicant or licensee has a parent company holding majority control of the voting stock of the company. Any surety method or insurance used to provide financial assurance for decommissioning must contain the

following conditions:

(a) the surety method or insurance must be open-ended or, if written for a specified term, such as five years, must be renewed automatically unless 90 days or more prior to the renewal date, the issuer notifies the department, the beneficiary, and the licensee of its intention not to renew; the surety method or insurance must also provide that the full face amount 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;

(b) the surety method or insurance must be payable to a trust established for decommissioning costs; the trustee and trust must be acceptable to the department; an acceptable trustee includes 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 federal or state agency; and

(c) the surety method or insurance must remain in effect until the department has terminated the license.

(3) An external sinking fund in which deposits are made at least annually, coupled with a surety method or insurance, the value of which may decrease by the amount being accumulated in the sinking fund. An external sinking fund is a fund established and maintained by setting aside funds periodically in an account segregated from licensee assets and outside the licensee's administrative control in which the total amount of funds would be sufficient to pay decommissioning costs at the time termination of 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 must be as stated in Paragraph (2) of Subsection F of 20.3.3.311 NMAC.

(4) 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 Subsection D of 20.3.3.311 NMAC, and indicating that funds for decommissioning will be obtained when necessary.

(5) When a governmental entity is assuming custody and ownership of a site, an arrangement that is deemed acceptable by such governmental entity.

G. Each person licensed under this Part (20.3.3 NMAC) or Parts 5, 7, 12, 13, and 15 (20.3.5 NMAC, 20.3.7 NMAC, 20.3.12 NMAC, 20.3.13 NMAC, or 20.3.15 NMAC) shall keep records of information important to the safe and effective decommissioning of the facility in an identified location until the site is released for unrestricted use. Before licensed activities are transferred or assigned in accordance with 20.3.3.317 NMAC, licensees shall transfer all records described in this paragraph to the new licensee. In this case, the new licensee will be responsible for maintaining these records until the department terminates the license. If records important to the decommissioning of a facility are kept for other purposes, reference to these records and their locations may be used. Information the department considers important to decommissioning consists of:

(1) records of spills or other unusual occurrences involving the spread of contamination in and around the facility, equipment, or site; these records may be limited to instances when contamination remains after any cleanup procedures or when there is reasonable likelihood that contaminants may have spread to inaccessible areas as in the case of possible seepage into porous materials such as concrete; these records must include any known information on identification of involved nuclides, quantities, forms and concentrations;

(2) as-built drawings and modifications of structures and equipment in restricted areas where radioactive materials are used and/or stored, and of locations of possible inaccessible contamination such as buried pipes which may be subject to contamination; if required drawings are referenced, each relevant document need not be indexed individually; if drawings are not available, the licensee shall substitute appropriate records of available information concerning these areas and locations;

(3) 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;

(4) except for areas containing only sealed sources (provided the sources have not leaked or no contamination remains after any leak) or radioactive materials having only half-lives of less than 65 days, a list contained in a single document and updated every two years, of the following:

(a) all areas designated and formerly designated restricted areas as 20.3.1 NMAC of these regulations;

(b) all areas outside of restricted areas that require documentation under Paragraph (1) of Subsection G of 20.3.3.311 NMAC;

(c) all areas outside of restricted areas where current and previous wastes have been buried as documented under 20.3.4.448 NMAC; and

(d) all areas outside of restricted areas that contain material such that, if the license expired, the licensee would be required to either decontaminate the area to [~~unrestricted release levels~~] meet the criteria for decommissioning in 20.3.4.426 NMAC, or apply for approval for disposal under 20.3.4.434 NMAC.

20.3.3.318 EXPIRATION AND TERMINATION OF LICENSES AND DECOMMISSIONING OF SITES AND SEPARATE BUILDINGS OR OUTDOOR AREAS:

A. Each specific license expires at the end of the day on the expiration date stated in the license unless the licensee has filed an application for renewal under 20.3.3.319 NMAC not less than 30 days before the expiration date stated in the existing license. If an application for renewal has been filed at least 30 days before the expiration date stated in the existing license, the existing license expires at the end of the day on which the department makes a final determination to deny the renewal application or, if the determination states an expiration date, the expiration date stated in the determination.

B. Each specific license revoked by the department expires at the end of the day on the date of the department's final determination to revoke the license, or on the expiration date stated in the determination, or as otherwise provided by department order.

C. Each specific license continues in effect, beyond the expiration date if necessary, with respect to possession of byproduct material until the department notifies the licensee in writing that the license is terminated. During this time, the licensee shall:

(1) limit actions involving byproduct material to those related to decommissioning; and

(2) continue to control entry to restricted areas until they are suitable for release in accordance with department requirements.

D. Within 60 days of the occurrence of any of the following, consistent with the administrative directions in 20.3.1.116 NMAC, each licensee shall provide notification to the department in writing of such occurrence, and either begin decommissioning its site, or any separate building or outdoor area that contains residual radioactivity so that the building or outdoor area is suitable for release in accordance with department requirements, or submit within 12 months of notification a decommissioning plan, if required by Subsection G of 20.3.3.318 NMAC, and begin decommissioning upon approval of that plan if:

(1) the license has expired pursuant to Subsections A or B of 20.3.3.318 NMAC; or

(2) the licensee has decided to permanently cease principal activities, as defined in Section BZ of 20.3.1.7 NMAC, at the entire site or in any separate building or outdoor area that contains residual radioactivity such that the building or outdoor area is unsuitable for release in accordance with department requirements; or

(3) no principal activities under the license have been conducted for a period of 24 months; or

(4) no principal activities have been conducted for a period of 24 months in any separate building or outdoor area that contains residual radioactivity such that the building or outdoor area is unsuitable for release in accordance with department requirements.

E. Coincident with the notification required by Subsection D of 20.3.3.318 NMAC, the licensee shall maintain in effect all decommissioning financial assurances established by the licensee pursuant to 20.3.3.311 NMAC in conjunction with a license issuance or renewal or as required by this section. The amount of the financial assurance must be increased, or may be decreased, as appropriate, to cover the detailed cost estimate for decommissioning established pursuant to Paragraph (5) of Subsection J of 20.3.3.318 NMAC. Following approval of the decommissioning plan, a licensee may reduce the amount of the financial assurance as decommissioning proceeds and radiological contamination is reduced at the site with the approval of the department.

F. The department may grant a request to extend the time periods established in Subsection D of 20.3.3.318 NMAC, if the department determines that this relief is not detrimental to the public health and safety and is otherwise in the public interest. The request must be submitted no later than 30 days before notification pursuant to Subsection D of 20.3.3.318 NMAC. The schedule for decommissioning set forth in Subsection D of 20.3.3.318 NMAC may not commence until the department has made a determination on the request.

G. A decommissioning plan must be submitted if required by license condition or if the procedures and activities necessary to carry out decommissioning of the site or separate building or outdoor area have not been previously approved by the department and these procedures could increase potential health and safety impacts to workers or to the public, such as in any of the following cases:

(1) procedures would involve techniques not applied routinely during cleanup or maintenance operations;

(2) workers would be entering areas not normally occupied where surface contamination and radiation levels are significantly higher than routinely encountered during operation;

(3) procedures could result in significantly greater airborne concentrations of radioactive materials

than are present during operation; or

(4) procedures could result in significantly greater releases of radioactive material to the environment than those associated with operation.

H. The department may approve an alternate schedule for submittal of a decommissioning plan required pursuant to Subsection D of 20.3.3.318 NMAC if the department determines that the alternative schedule is necessary to the effective conduct of decommissioning operations and presents no undue risk from radiation to the public health and safety and is otherwise in the public interest.

I. Procedures, such as those listed in Subsection G of 20.3.3.318 NMAC, with potential health and safety impacts may not be carried out prior to approval of the decommissioning plan.

J. The proposed decommissioning plan for the site or separate building or outdoor area must include:

(1) a description of the conditions of the site or separate building or outdoor area sufficient to evaluate the acceptability of the plan;

(2) a description of planned decommissioning activities;

(3) a description of methods used to ensure protection of workers and the environment against radiation hazards during decommissioning;

(4) a description of the planned final radiation survey;

(5) an updated detailed cost estimate for decommissioning, comparison of that estimate with present funds set aside for decommissioning, and a plan for assuring the availability of adequate funds for completion of decommissioning; and

(6) for decommissioning plans calling for completion of decommissioning later than 24 months after plan approval, the plan shall include a justification for the delay based on the criteria in Subsection N of 20.3.3.318 NMAC.

K. The proposed decommissioning plan will be approved by the department if the information therein demonstrates that the decommissioning will be completed as soon as practicable and that the health and safety of workers and the public will be adequately protected.

L. Except as provided in Subsection N of 20.3.3.318 NMAC, licensees shall complete decommissioning of the site or separate building or outdoor area as soon as practicable but no later than 24 months following the initiation of decommissioning.

M. Except as provided in Subsection N of 20.3.3.318 NMAC, when decommissioning involves the entire site, the licensee shall request license termination as soon as practicable but no later than 24 months following the initiation of decommissioning.

N. The department may approve a request for an alternative schedule for completion of decommissioning of the site or separate building or outdoor area, and license termination if appropriate, if the department determines that the alternative is warranted by consideration of the following:

(1) whether it is technically feasible to complete decommissioning within the allotted 24-month period;

(2) whether sufficient waste disposal capacity is available to allow completion of decommissioning within the allotted 24-month period;

(3) whether a significant volume reduction in wastes requiring disposal will be achieved by allowing short-lived radionuclides to decay;

(4) whether a significant reduction in radiation exposure to workers can be achieved by allowing short-lived radionuclides to decay; and

(5) other site-specific factors which the department may consider appropriate on a case-by-case basis, such as the regulatory requirements of other government agencies, lawsuits, ground-water treatment activities, monitored natural ground-water restoration, actions that could result in more environmental harm than deferred cleanup, and other factors beyond the control of the licensee.

O. As the final step in decommissioning, the licensee shall:

(1) certify the disposition of all licensed material, including accumulated wastes, by submitting a completed *Certificate - Disposition of Radioisotopes* form or equivalent information; and

(2) conduct a radiation survey of the premises where the licensed activities were carried out and submit a report of the results of this survey ~~[unless the licensee demonstrates that the premises are suitable for release in some other manner.]~~ , unless the licensee demonstrates in some other manner that the premises are suitable for release in accordance with the criteria for decommissioning in 20.3.4.426 NMAC; the licensee shall, as appropriate:

(a) report levels of gamma radiation in units of millisieverts (microroentgen) per hour at one meter from surfaces, and report levels of radioactivity, including alpha and beta, in units of megabecquerels

(disintegrations per minute or microcuries) per 100 square centimeters, removable and fixed, for surfaces, megabecquerels (microcuries) per milliliter for water, and becquerels (picocuries) per gram for solids such as soils or concrete; and

(b) specify the survey instrument(s) used and certify that each instrument is properly calibrated and tested.

P. Specific licenses, including expired licenses, will be terminated by written notice to the licensee when the department determines that:

(1) byproduct material has been properly disposed;

(2) reasonable effort has been made to eliminate residual radioactive contamination, if present; and

(3) a radiation survey has been performed which demonstrates that the premises are suitable for release in accordance with [~~Department requirements~~] the criteria for decommissioning in 20.3.4.426 NMAC; or other information submitted by the licensee is sufficient to demonstrate that the premises are suitable for release in accordance with [~~Department requirements~~] the criteria for decommissioning in 20.3.4.426 NMAC; and

(4) records required by 20.3.4.448 NMAC, have been received.

These are amendments to 20.3.4 NMAC named "Standards for Protection Against Radiation". The first amendment is to establish constraints on air emissions of radioactive material to the environment to avoid dual regulation between the state of New Mexico and the environmental protection agency (EPA). Second, amendments are made to regulations regarding decommissioning of licensed facilities to provide specific radiological criteria for the decommissioning of lands and structures. Third, minor corrections and clarifying changes are made to standards for protection against radiation to conform various regulations to the nuclear regulatory commission's (NRC) revised radiation protection requirements. Finally, amendments are made to streamline regulations concerning low-level waste shipment manifest information. This rulemaking action also renumbers and reformats from that portion of 20 NMAC 3.1, Subpart 4, named "Standards for Protection Against Radiation" (filed 06-17-99) and now replaced by 20.3.4 NMAC. This amendment and renumber will become effective 04/15/2004.

20.3.4.2 SCOPE: Except as specifically provided in other parts of these regulations (20.3 NMAC), Part 4 (20.3.4 NMAC) applies to persons licensed or registered by the department to receive, possess, use, transfer, or dispose of sources of radiation. The limits in Part 4 do not apply to doses due to background radiation, to exposure of patients to radiation for the purpose of medical diagnosis or therapy, to exposure from individuals administered radioactive material and released in accordance with Subsection J of 20.3.7.703 NMAC, or to voluntary participation in medical research programs.

20.3.4.7 DEFINITIONS. As used in this part (20.3.4 NMAC).

A. "Annual limit on intake" (ALI) means the derived limit for the amount of radioactive material taken into the body of an adult worker by inhalation or ingestion in a year. ALI is the smaller value of intake of a given radionuclide in a year by the reference man that would result in a committed effective dose equivalent of 5 rem (0.05 Sv) or a committed dose equivalent of 50 rem (0.5 Sv) to any individual organ or tissue. ALI values for intake by ingestion and by inhalation of selected radionuclides are given in Table I, Columns 1 and 2, of 20.3.4.461 NMAC.

B. "Background radiation" means radiation from cosmic sources; naturally occurring radioactive material, including radon (except as a decay product of source or special nuclear material); and global fallout as it exists in the environment from the testing of nuclear explosive devices or from past nuclear accidents such as Chernobyl that contribute to background radiation and are not under the control of the licensee. "Background radiation" does not include radiation from source, byproduct, or special nuclear materials regulated by the Commission.

[~~B~~]C. "Class" means a classification scheme for inhaled material according to its rate of clearance from the pulmonary region of the lung. Materials are classified as D, W, or Y, which applies to a range of clearance half-times: for Class D, Days, of less than 10 days, for Class W, Weeks, from 10 to 100 days , and for Class Y, Years, of greater than 100 days. For purposes of these regulations, "lung class" and "inhalation class" are equivalent terms.

D. "Constraint" (dose constraint) means a value above which specified licensee actions are required.

E. "Critical Group" means the group of individuals reasonably expected to receive the greatest exposure to residual radioactivity for any applicable set of circumstances.

[~~E~~]F. "Declared pregnant woman" means a woman who has voluntarily informed [~~her employer~~] the licensee, in writing, of her pregnancy and the estimated date of conception. The declaration remains in effect until the declared pregnant woman withdraws the declaration in writing or is no longer pregnant.

G. "Decommission" means to remove a facility or site safely from service and reduce residual radioactivity to a level that permits:

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

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

[~~D~~]H. "Derived air concentration" (DAC) means the concentration of a given radionuclide in air which, if breathed by reference man for a working year of 2,000 hours under conditions of light work, results in an intake of one ALI. For purposes of these regulations, the condition of light work is an inhalation rate of 1.2 cubic meters of air per hour for 2,000 hours in a year. DAC values are given in Table I, Column 3, of 20.3.4.461 NMAC.

[~~E~~]I. "Derived air concentration-hour" (DAC-hour) means the product of the concentration of radioactive material in air, expressed as a fraction or multiple of the derived air concentration for each radionuclide, and the time of exposure to that radionuclide, in hours. A licensee or registrant may take 2,000 DAC-hours to represent one ALI, equivalent to a committed effective dose equivalent of 5 rem (0.05 Sv).

J. "Distinguishable from background" means that the detectable concentration of a radionuclide is

statistically different from the background concentration of that radionuclide in the vicinity of the site or, in the case of structures, in similar materials using adequate measurement technology, survey, and statistical techniques.

[F]K. "Dosimetry processor" means an individual or an organization that processes and evaluates individual monitoring devices in order to determine the radiation dose delivered to the monitoring devices.

[G]L. "Inhalation class" [see "Class"].

M. "Lens dose equivalent" (LDE) applies to the external exposure of the lens of the eye and is taken as the dose equivalent at a tissue depth of 0.3 centimeter (300 mg/cm^2).

[H]N. "Lung class" [see "Class"].

[I]O. "Nonstochastic effect" means a health effect, the severity of which varies with the dose and for which a threshold is believed to exist. Radiation-induced cataract formation is an example of a nonstochastic effect. For purposes of these regulations, "deterministic effect" is an equivalent term.

[J]P. "Planned special exposure" means an infrequent exposure to radiation, separate from and in addition to the annual occupational dose limits.

[K]Q. "Quarter" means a period of time equal to one-fourth of the year observed by the licensee, approximately 13 consecutive weeks, providing that the beginning of the first quarter in a year coincides with the starting date of the year and that no day is omitted or duplicated in consecutive quarters.

[L]R. "Reference man" means a hypothetical aggregation of human physical and physiological characteristics determined by international consensus. These characteristics may be used by researchers and public health employees to standardize results of experiments and to relate biological insult to a common base. A description of reference man is contained in the international commission on radiological protection report, ICRP Publication 23, "Report of the Task Group on Reference Man."

S. "Residual radioactivity" means radioactivity in structures, materials, soils, groundwater, and other media at a site resulting from activities under the licensee's control. This includes radioactivity from all licensed and unlicensed sources used by the licensee, but excludes background radiation. It also includes radioactive materials remaining at the site as a result of routine or accidental releases of radioactive material at the site and previous burials at the site, even if those burials were made in accordance with the provisions of 20.3.4 NMAC.

[M]T. "Respiratory protective equipment" means an apparatus, such as a respirator, used to reduce an individual's intake of airborne radioactive materials.

[N]U. "Sanitary sewerage" means a system of public sewers for carrying off waste water and refuse, but excluding sewage treatment facilities, septic tanks, and leach fields owned or operated by the licensee or registrant.

[O]V. "Stochastic effect" means a health effect that occurs randomly and for which the probability of the effect occurring, rather than its severity, is assumed to be a linear function of dose without threshold. Hereditary effects and cancer incidence are examples of stochastic effects. For purposes of these regulations, "probabilistic effect" is an equivalent term.

[P]W. "Very high radiation area" means an area, accessible to individuals, in which radiation levels from radiation sources external to the body could result in an individual receiving an absorbed dose in excess of 500 rads (5 grays) in 1 hour at 1 meter from a radiation source or 1 meter from any surface that the radiation penetrates.[~~At very high doses received at high dose rates, units of absorbed dose, gray and rad, are appropriate, rather than units of dose equivalent, sievert and rem.~~]

[Q]X. "Weighting factor" w_T for an organ or tissue (T) means the proportion of the risk of stochastic effects resulting from irradiation of that organ or tissue to the total risk of stochastic effects when the whole body is irradiated uniformly. For calculating the effective dose equivalent, the values of w_T are:

ORGAN DOSE WEIGHTING FACTORS

Organ or Tissue	w_T
Gonads	0.25
Breast	0.15
Red bone marrow	0.12
Lung	0.12
Thyroid	0.03
Bone surfaces	0.03
Remainder	0.30[a]
Whole Body	1.00[b]

[a] 0.30 results from 0.06 for each of 5 "remainder" organs, excluding the skin and the lens of the eye, that receive the highest doses.

[b] For the purpose of weighting the external whole body dose, for adding it to the internal dose, a single weighting factor, $w_T = 1.0$, has been specified. The use of other weighting factors for external exposure will be approved on a case-by-case basis until such time as specific guidance is issued.

20.3.4.404 RADIATION PROTECTION PROGRAMS:

A. Each licensee or registrant shall develop, document, and implement a radiation protection program sufficient to ensure compliance with the provisions of 20.3.4 NMAC. See 20.3.4.411 NMAC for recordkeeping requirements relating to these programs.

B. The licensee or registrant shall use, to the extent [~~practicable~~] practical, procedures and engineering controls based upon sound radiation protection principles to achieve occupational doses and [~~public~~] doses to members of the public that are as low as is reasonably achievable (ALARA).

C. The licensee or registrant shall, at intervals not to exceed 12 months, review the radiation protection program content and implementation.

D. To implement the ALARA requirements of Subsection B of 20.3.4.404 NMAC, and notwithstanding the requirements in 20.3.4.413 NMAC, a constraint on air emissions of radioactive material to the environment, excluding Radon-222 and its daughters, shall be established by licensees such that the individual member of the public likely to receive the highest dose will not be expected to receive a total effective dose equivalent in excess of 10 mrem (0.1 mSv) per year from these emissions. If a licensee subject to this requirement exceeds this dose constraint, the licensee shall report the exceedance as provided in 20.3.4.453 NMAC and promptly take appropriate corrective action to ensure against recurrence.

20.3.4.405 OCCUPATIONAL DOSE LIMITS FOR ADULTS:

A. The licensee or registrant shall control the occupational dose to individual adults, except for planned special exposures pursuant to 20.3.4.410 NMAC, to the following dose limits:

(1) an annual limit, which is the more limiting of:

(a) the total effective dose equivalent being equal to 5 rem (0.05 Sv); or

(b) the sum of the deep dose equivalent and the committed dose equivalent to any individual organ or tissue other than the lens of the eye being equal to 50 rem (0.5 Sv); and

(2) the annual limits to the lens of the eye, to the skin, and to the extremities which are:

(a) [~~an eye~~] a lens dose equivalent of 15 rem (0.15 Sv); and

(b) a shallow dose equivalent of 50 rem (0.5 Sv) to the skin or to any extremity.

B. Doses received in excess of the annual limits, including doses received during accidents, emergencies, and planned special exposures, shall be subtracted from the limits for planned special exposures that the individual may receive during the current year and during the individual's lifetime. See Paragraphs (1) and (2) of Subsection E of 20.3.4.410 NMAC.

C. The assigned deep dose equivalent and shallow dose equivalent shall be for the portion of the body receiving the highest exposure:

(1) the deep-dose equivalent, [~~eye dose equivalent~~] lens dose equivalent, and shallow-dose equivalent may be assessed from surveys or other radiation measurements for the purpose of demonstrating compliance with the occupational dose limits, if the individual monitoring device was not in the region of highest potential exposure, or the results of individual monitoring are unavailable; or

(2) when a protective apron is worn while working with medical fluoroscopic equipment and monitoring is conducted as specified in Paragraph (4) of Subsection A of 20.3.4.417 NMAC, the effective dose equivalent for external radiation shall be determined as follows:

(a) when only one individual monitoring device is used and it is located at the neck outside the protective apron, the reported deep dose equivalent shall be the effective dose equivalent for external radiation; or

(b) when only one individual monitoring device is used and it is located at the neck outside the protective apron, and the reported dose exceeds 25 percent of the limit specified in Subsection A of 20.3.4.405 NMAC, the reported deep dose equivalent value multiplied by 0.3 shall be the effective dose equivalent for external radiation; or

(c) when individual monitoring devices are worn, both under the protective apron at the waist and outside the protective apron at the neck, the effective dose equivalent for external radiation shall be assigned the

value of the sum of the deep dose equivalent reported for the individual monitoring device located at the waist under the protective apron multiplied by 1.5 and the deep dose equivalent reported for the individual monitoring device located at the neck outside the protective apron multiplied by 0.04.

D. Derived air concentration (DAC) and annual limit on intake (ALI) values are specified in Table I of 20.3.4.461 NMAC, and may be used to determine the individual's dose and to demonstrate compliance with the occupational dose limits. See 20.3.4.446 NMAC.

E. Notwithstanding the annual dose limits, the licensee shall limit the soluble uranium intake by an individual to 10 milligrams in a week in consideration of chemical toxicity. See footnote 3 of 20.3.4.461 NMAC.

F. The licensee or registrant shall reduce the dose that an individual may be allowed to receive in the current year by the amount of occupational dose received while employed by any other person during the current year. See 20.3.4.409 NMAC.

20.3.4.407 DETERMINATION OF EXTERNAL DOSE FROM AIRBORNE RADIOACTIVE MATERIAL:

A. Licensees or registrants shall, when determining the dose from airborne radioactive material, include the contribution to the deep dose equivalent, [~~eye~~] lens dose equivalent, and shallow dose equivalent from external exposure to the radioactive cloud. See 20.3.4.461 NMAC, footnotes 1 and 2.

B. Airborne radioactivity measurements and DAC values shall not be used as the primary means to assess the deep dose equivalent when the airborne radioactive material includes radionuclides other than noble gases or if the cloud of airborne radioactive material is not relatively uniform. The determination of the deep dose equivalent to an individual shall be based upon measurements using instruments or individual monitoring devices.

20.3.4.410 PLANNED SPECIAL EXPOSURES. A licensee or registrant may authorize an adult worker to receive doses in addition to and accounted for separately from the doses received under the limits specified in 20.3.4.405 NMAC provided that each of the following conditions is satisfied:

A. the licensee or registrant authorizes a planned special exposure only in an exceptional situation when alternatives that might avoid the [~~higher exposure~~] dose estimated to result from the planned special exposure are unavailable or impractical;

B. the licensee or registrant, and employer if the employer is not the licensee or registrant, specifically authorizes the planned special exposure, in writing, before the exposure occurs;

C. before a planned special exposure, the licensee or registrant ensures that each individual involved is:

(1) informed of the purpose of the planned operation;

(2) informed of the estimated doses and associated potential risks and specific radiation levels or other conditions that might be involved in performing the task; and

(3) instructed in the measures to be taken to keep the dose ALARA considering other risks that may be present;

D. prior to permitting an individual to participate in a planned special exposure, the licensee or registrant ascertains prior doses as required by Subsection B of 20.3.4.409 NMAC during the lifetime of the individual for each individual involved;

E. subject to Subsection B of 20.3.4.405 NMAC, the licensee or registrant shall not authorize a planned special exposure that would cause an individual to receive a dose from all planned special exposures and all doses in excess of the limits to exceed:

(1) the numerical values of any of the dose limits in Subsection A of 20.3.4.405 NMAC in any year; and

(2) five times the annual dose limits in Subsection A of 20.3.4.405 NMAC during the individual's lifetime;

F. the licensee or registrant maintains records of the conduct of a planned special exposure in accordance with 20.3.4.445 NMAC and submits a written report in accordance with 20.3.4.454 NMAC;

G. the licensee or registrant records the best estimate of the dose resulting from the planned special exposure in the individual's record and informs the individual, in writing, of the dose within 30 days from the date of the planned special exposure; the dose from planned special exposures shall not be considered in controlling future occupational dose of the individual pursuant to Subsection A of 20.3.4.405 NMAC but shall be included in evaluations required by Subsections D and E of 20.3.4.410 NMAC.

20.3.4.412 DOSE EQUIVALENT TO AN EMBRYO/FETUS:

A. The licensee or registrant shall ensure that the dose equivalent to the embryo/fetus during the entire pregnancy, due to the occupational exposure of a declared pregnant woman, does not exceed 0.5 rem (5 mSv). See 20.3.4.446 NMAC for recordkeeping requirements.

B. The licensee or registrant shall make efforts to avoid substantial variation above a uniform monthly exposure rate to a declared pregnant woman so as to satisfy the limit in Subsection A of 20.3.4.412 NMAC. The national council on radiation protection and measurements (NCRP) recommended in NCRP Report No. 91 "Recommendations on Limits for Exposure to Ionizing Radiation" (June 1, 1987) that no more than 0.05 rem (0.5 mSv) to the embryo/fetus be received in any one month.

C. The dose equivalent to the embryo/fetus is the sum of:

(1) the dose equivalent to the embryo/fetus resulting from radionuclides in the embryo/fetus and radionuclides in the declared pregnant woman; and

(2) the dose that is most representative of the dose to the embryo/fetus from external radiation, that is, in the mother's lower torso region:

(a) if multiple measurements have not been made, assignment of the highest deep dose equivalent for the declared pregnant woman shall be the dose to the embryo/fetus, in accordance with Subsection C of 20.3.4.409 NMAC; or

(b) if multiple measurements have been made, assignment of the deep dose equivalent for the declared pregnant woman from the individual monitoring device which is most representative of the dose to the embryo/fetus shall be the dose to the embryo/fetus; assignment of the highest deep dose equivalent for the declared pregnant woman to the embryo/fetus is not required unless that dose is also the most representative deep dose equivalent for the region of the embryo/fetus.

D. [~~If by the time the woman declares pregnancy to the licensee or registrant, the dose to the embryo/fetus has exceeded 0.45 rem (4.5 mSv)~~] If the dose equivalent to the embryo/fetus is found to have exceeded 0.5 rem (5 mSv), or is within 0.05 rem (0.5 mSv) of this dose, by the time the woman declares the pregnancy to the licensee or registrant, the licensee or registrant shall be deemed to be in compliance with Subsection A of 20.3.4.412 NMAC if the additional dose equivalent to the embryo/fetus does not exceed 0.05 rem (0.5 mSv) during the remainder of the pregnancy.

20.3.4.416 SURVEY AND MONITORING/GENERAL:

A. Each licensee or registrant shall make, or cause to be made, surveys that:

(1) are necessary for the licensee or registrant to comply with 20.3.4 NMAC; and

(2) are necessary under the circumstances to evaluate:

(a) the magnitude and extent of radiation levels;

(b) concentrations or quantities of radioactive material; and

(c) the potential radiological hazards [~~that could be present~~].

B. The licensee or registrant shall ensure that instruments and equipment used for quantitative radiation measurements, for example, dose rate and effluent monitoring, are calibrated at intervals not to exceed 12 months for the radiation measured, except when a more frequent interval is specified in another applicable part of these regulations (20.3 NMAC) or a license condition.

C. All personnel dosimeters, except for direct and indirect reading pocket ionization chambers and those dosimeters used to measure the dose to any extremity, that require processing to determine the radiation dose and that are used by licensees and registrants to comply with 20.3.4.405 NMAC, with other applicable provisions of these regulations, or with conditions specified in a license or registration shall be processed and evaluated by a dosimetry processor:

(1) holding current personnel dosimetry accreditation from the national voluntary laboratory accreditation program (NVLAP) of the national institute of standards and technology (NIST); and

(2) approved in this accreditation process for the type of radiation or radiations included in the NVLAP program that most closely approximates the type of radiation or radiations for which the individual wearing the dosimeter is monitored.

D. The licensee or registrant shall ensure that adequate precautions are taken to prevent a deceptive exposure of an individual monitoring device.

20.3.4.417 CONDITIONS REQUIRING INDIVIDUAL MONITORING OF EXTERNAL AND INTERNAL OCCUPATIONAL DOSE. Each licensee or registrant shall monitor exposures from sources of radiation at levels sufficient to demonstrate compliance with the occupational dose limits of 20.3.4 NMAC. As a minimum:

A. Each licensee or registrant shall monitor occupational exposure to radiation from licensed and unlicensed radiation sources under the control of the licensee or registrant and shall supply and require the use of individual monitoring devices by:

(1) adults likely to receive, in 1 year from sources external to the body, a dose in excess of 10 percent of the limits in Subsection A of 20.3.4.405 NMAC;

[~~(2) minors and declared pregnant women likely to receive, in 1 year from sources external to the body, a dose in excess of 10 percent of any of the applicable limits in 411 or 412; and~~]

(2) minors likely to receive, in 1 year, from radiation sources external to the body, a deep dose equivalent in excess of 0.1 rem (1 mSv), a lens dose equivalent in excess of 0.15 rem (1.5 mSv), or a shallow dose equivalent to the skin or to the extremities in excess of 0.5 rem (5 mSv);

(3) declared pregnant women likely to receive during the entire pregnancy, from radiation sources external to the body, a deep dose equivalent in excess of 0.1 rem (1 mSv) (Note: All of the occupational doses in Subsection A of 20.3.4.405 NMAC continue to be applicable to the declared pregnant worker as long as the embryo/fetus dose limit is not exceeded.);

[~~(3)~~] (4) individuals entering a high or very high radiation area; and/or

[~~(4)~~] (5) individuals working with medical fluoroscopic equipment:

(a) an individual monitoring device used for the dose to an embryo/fetus of a declared pregnant woman, pursuant to Subsection A of 20.3.4.412 NMAC, shall be located under the protective apron at the waist;

(b) an individual monitoring device used for eye dose equivalent shall be located at the neck, or an unshielded location closer to the eye, outside the protective apron; and/or

(c) when only one individual monitoring device is used to determine the effective dose equivalent for external radiation pursuant to Paragraph (2) of Subsection C of 20.3.4.405 NMAC, it shall be located at the neck outside the protective apron; when a second individual monitoring device is used, for the same purpose, it shall be located under the protective apron at the waist; the second individual monitoring device is required for a declared pregnant woman.

B. Each licensee or registrant shall monitor [~~, to determine compliance with 408,~~] (see 20.3.4.408 NMAC) the occupational intake of radioactive material by and assess the committed effective dose equivalent to:

(1) adults likely to receive, in 1 year, an intake in excess of 10 percent of the applicable ALI(s) in Table 1, Columns 1 and 2, of 20.3.4.461 NMAC; [~~and~~]

(2) [~~minors and declared pregnant women likely to receive, in 1 year, a committed effective dose equivalent in excess of 0.05 rem (0.5 mSv).~~] minors likely to receive, in 1 year, a committed effective dose equivalent in excess of 0.1 rem (1 mSv); and

(3) declared pregnant women likely to receive, during the entire pregnancy, a committed effective dose equivalent in excess of 0.1 rem (1 mSv).

C. Each licensee or registrant shall ensure that individuals who are required to monitor occupational doses in accordance with Subsection A of 20.3.4.417 NMAC wear individual monitoring devices as follows:

(1) an individual monitoring device used for monitoring the dose to the whole body shall be worn at the unshielded location of the whole body likely to receive the highest exposure; when a protective apron is worn, the location of the individual monitoring device is typically at the neck (collar); or

(2) an individual monitoring device used for monitoring the dose to an embryo/fetus of a declared pregnant woman, pursuant to Subsection A of 20.3.4.412 NMAC, shall be located at the waist under any protective apron being worn by the woman; or

(3) an individual monitoring device used for monitoring the eye dose equivalent, to demonstrate compliance with Subparagraph (a) of Paragraph (2) of Subsection A of 20.3.4.405 NMAC, shall be located at the neck (collar), outside any protective apron being worn by the monitored individual, or at an unshielded location closer to the eye; and/or

(4) an individual monitoring device used for monitoring the dose to the extremities, to demonstrate compliance with Subparagraph (b) of Paragraph (2) of Subsection A of 20.3.4.405 NMAC, shall be worn on the extremity likely to receive the highest exposure; each individual monitoring device shall be oriented to measure the highest dose to the extremity being monitored.

20.3.4.426 [~~RESERVED~~] RADIOLOGICAL CRITERIA FOR LICENSE TERMINATION:

A. General provisions and scope.

(1) The criteria in this part (20.3.4 NMAC) apply to the decommissioning of facilities licensed under 20.3.3 NMAC, 20.3.13 NMAC, and 20.3.14 NMAC, as well as other facilities subject to the department's jurisdiction under the New Mexico Radiation Protection Act. For low-level waste disposal facilities (20.3.13

NMAC), the criteria apply only to ancillary surface facilities that support radioactive waste disposal activities.

(2) The criteria in this section (20.3.4.426 NMAC) do not apply to sites which:

(a) have been decommissioned prior to the effective date of the rule; or,

(b) have previously submitted and received department approval on a license termination plan (LTP) or decommissioning plan that is compatible with applicable department criteria.

(3) After a site has been decommissioned and the license terminated in accordance with the criteria in this section (20.3.4.426 NMAC), the department will require additional cleanup only if, based on new information, it determines that the criteria of this section were not met and residual radioactivity remaining at the site could result in significant threat to public health and safety.

(4) When calculating TEDE to the average member of the critical group the licensee shall determine the peak annual TEDE dose expected within the first 1000 years after decommissioning.

B. **Radiological criteria for unrestricted use.** A site will be considered acceptable for unrestricted use if the residual radioactivity that is distinguishable from background radiation results in a TEDE to an average member of the critical group that does not exceed 25 mrem (0.25 mSv) per year, including that from groundwater sources of drinking water, and the residual radioactivity has been reduced to levels that are as low as reasonably achievable (ALARA). Determination of the levels which are ALARA must take into account consideration of any detriments, such as deaths from transportation accidents, expected to potentially result from decontamination and waste disposal.

C. **Criteria for license termination under restricted conditions.** A site will be considered acceptable for license termination under restricted conditions if:

(1) the licensee can demonstrate that further reductions in residual radioactivity necessary to comply with the provisions of Subsection B of 20.3.4.426 NMAC would result in net public or environmental harm or were not being made because the residual levels associated with restricted conditions are ALARA; determination of the levels which are ALARA must take into account consideration of any detriments, such as traffic accidents, expected to potentially result from decontamination and waste disposal;

(2) the licensee has made provisions for legally enforceable institutional controls that provide reasonable assurance that the TEDE from residual radioactivity distinguishable from background to the average member of the critical group will not exceed 25 mrem (0.25 mSv) per year;

(3) the licensee has provided sufficient financial assurance to enable an independent third party, including a governmental custodian of a site, to assume and carry out responsibilities for any necessary control and maintenance of the site; acceptable financial assurance mechanisms are:

(a) funds placed into an account segregated from the licensee's assets and outside the licensee's administrative control as described in Paragraph (1) of Subsection F of 20.3.3.311 NMAC;

(b) surety method, insurance, or other guarantee method as described in Paragraph (2) of Subsection F of 20.3.3.311 NMAC;

(c) a statement of intent in the case of federal, state, or local government licensees, as described in Paragraph (4) of Subsection F of 20.3.3.311 NMAC; or

(d) when a governmental entity is assuming custody and ownership of a site, an arrangement that is deemed acceptable by such governmental entity;

(4) the licensee has submitted a decommissioning plan or license termination plan (LTP) to the department indicating the licensee's intent to decommission in accordance with Subsection D of 20.3.3.318 NMAC, and specifying that the licensee intends to decommission by restricting use of the site; the licensee shall document in the LTP or decommissioning plan how the advice of individuals and institutions in the community who may be affected by the decommissioning has been sought and incorporated, as appropriate, following analysis of that advice;

(a) licensees proposing to decommission by restricting use of the site shall seek advice from such affected parties regarding the following matters concerning the proposed decommissioning:

(i) whether provisions for institutional controls proposed by the licensee;

(A) will provide reasonable assurance that the TEDE from residual radioactivity distinguishable from background to the average member of the critical group will not exceed 25 mrem (0.25 mSv) TEDE per year;

(B) will be enforceable; and

(C) will not impose undue burdens on the local community or other affected parties;

(ii) whether the licensee has provided sufficient financial assurance to enable an independent third party, including a governmental custodian of a site, to assume and carry out responsibilities for

any necessary control and maintenance of the site;

(b) in seeking advice on the issues identified in Paragraph (4) of Subsection C of 20.3.4.426 NMAC, the licensee shall provide for:

(i) participation by representatives of a broad cross section of community interests who may be affected by the decommissioning;

(ii) an opportunity for a comprehensive, collective discussion on the issues by the participants represented; and

(iii) a publicly available summary of the results of all such discussions, including a description of the individual viewpoints of the participants on the issues and the extent of agreement and disagreement among the participants on the issues; and

(5) residual radioactivity at the site has been reduced so that if the institutional controls were no longer in effect, there is reasonable assurance that the TEDE from residual radioactivity distinguishable from background to the average member of the critical group is as low as reasonably achievable and would not exceed either:

(a) 100 mrem (1 mSv) per year; or

(b) 500 mrem (5 mSv) per year provided the licensee:

(i) demonstrates that further reductions in residual radioactivity necessary to comply with the 100 mrem/y (1 mSv/y) value of Subparagraph (a) of Paragraph (5) of Subsection C of 20.3.4.426 NMAC are not technically achievable, would be prohibitively expensive, or would result in net public or environmental harm;

(ii) makes provisions for durable institutional controls;

(iii) provides sufficient financial assurance to enable a responsible government entity or independent third party, including a governmental custodian of a site, both to carry out periodic rechecks of the site no less frequently than every 5 years to assure that the institutional controls remain in place as necessary to meet the criteria of Paragraph (2) of Subsection C of 20.3.4.426 NMAC and to assume and carry out responsibilities for any necessary control and maintenance of those controls; acceptable financial assurance mechanisms are those in Paragraph (3) of Subsection C of 20.3.4.426 NMAC.

D. Alternate criteria for license termination.

(1) The department may terminate a license using alternate criteria greater than the dose criterion of Subsection B of 20.3.4.426 NMAC, Paragraph (2) of Subsection C of 20.3.4.426 NMAC, and Item (i) of Subparagraph (a) of Paragraph (4) of Subsection C of 20.3.4.426 NMAC, if the licensee:

(a) provides assurance that public health and safety would continue to be protected, and that it is unlikely that the dose from all man-made sources combined, other than medical, would be more than the 1 mSv/y (100 mrem/y) limit of 20.3.4.413 NMAC, by submitting an analysis of possible sources of exposure; has employed to the extent practical restrictions on site use according to the provisions of Subsection C of 20.3.4.426 NMAC in minimizing exposures at the site; and reduces doses to ALARA levels, taking into consideration any detriments such as traffic accidents expected to potentially result from decontamination and waste disposal;

(b) has submitted a decommissioning plan or license termination plan (LTP) to the department indicating the licensee's intent to decommission in accordance with Subsection D of 20.3.3.318 NMAC, and specifying that the licensee proposes to decommission by use of alternate criteria; the licensee shall document in the decommissioning plan or LTP how the advice of individuals and institutions in the community who may be affected by the decommissioning has been sought and addressed, as appropriate, following analysis of that advice. In seeking such advice, the licensee shall provide for:

(i) participation by representatives of a broad cross section of community interests who may be affected by the decommissioning;

(ii) an opportunity for a comprehensive, collective discussion on the issues by the participants represented; and

(iii) a publicly available summary of the results of all such discussions, including a description of the individual viewpoints of the participants on the issues and the extent of agreement and disagreement among the participants on the issues.

(2) The use of alternate criteria to terminate a license requires the approval of the department after consideration of the department staff's recommendations that will address any comments provided by state and federal agencies and any public comments submitted pursuant to Subsection E of 20.3.4.426 NMAC.

E. Public notification and public participation. Upon the receipt of an LTP or decommissioning plan from the licensee, or a proposal by the licensee for release of a site pursuant to Subsection C or D of 20.3.4.426 NMAC, or whenever the department deems such notice to be in the public interest, the department shall:

(1) notify and solicit comments from:

(a) local governments in the vicinity of the site and any Indian nation or other indigenous people that have treaty or statutory rights that could be affected by the decommissioning; and

(b) the environmental protection agency (EPA) for cases where the licensee proposes to release a site pursuant to Subsection D of 20.3.4.426 NMAC.

(2) Publish a notice in the state Register and in a forum, such as local newspapers, letters to state or local organizations, or other appropriate forum, that is readily accessible to individuals in the vicinity of the site, and solicit comments from the public. Further, that the public notice be published in any language when assessed appropriate.

F. **Minimization of contamination.** Applicants for licenses, other than renewals, shall describe in the application how facility design and procedures for operation will minimize, to the extent practicable, contamination of the facility and the environment, facilitate eventual decommissioning, and minimize, to the extent practicable, the generation of radioactive waste.

20.3.4.429 EXCEPTIONS TO POSTING REQUIREMENTS:

A. A licensee or registrant is not required to post caution signs in areas or rooms containing sources of radiation for periods of less than 8 hours, if each of the following conditions is met:

(1) the sources of radiation are constantly attended during these periods by an individual who takes the precautions necessary to prevent the exposure of individuals to sources of radiation in excess of the limits established in 20.3.4 NMAC; and

(2) the area or room is subject to the licensee's or registrant's control.

B. Rooms or other areas in hospitals that are occupied by patients are not required to be posted with caution signs pursuant to 20.3.4.428 NMAC provided that the requirements of Subparagraph (b) of Paragraph (1) of Subsection C of 20.3.7.708 NMAC, or Subparagraph (b) of Paragraph (1) of Subsection E of 20.3.7.709 NMAC, are met.

C. Rooms or other areas in hospitals that are occupied by patients are not required to be posted with caution signs, provided that:

(1) a patient being treated with a permanent implant could be released from confinement pursuant to Subsection I 20.3.7.703 NMAC; or

(2) a patient being treated with a therapeutic radiopharmaceutical could be released from confinement pursuant to Subsection C of 20.3.7.708 NMAC.

D. A room or area is not required to be posted with a caution sign because of the presence of a sealed source provided the radiation level at 30 centimeters from the surface of the sealed source container or housing does not exceed 0.005 rem (0.05 mSv) per hour.

E. A room or area is not required to be posted with a caution sign because of the presence of radiation machines used solely for diagnosis in the healing arts.

F. Rooms in hospitals or clinics that are used for teletherapy are exempt from the requirement to post caution signs under 20.3.4.428 NMAC if:

(1) access to the room is controlled pursuant to 20.3.7.710 NMAC; and

(2) personnel in attendance take necessary precautions to prevent the inadvertent exposure of workers, other patients, and members of the public to radiation in excess of the limits established in this part (20.3.4 NMAC).

20.3.4.432 PROCEDURES FOR RECEIVING AND OPENING PACKAGES:

A. Each licensee or registrant who expects to receive a package containing quantities of radioactive material in excess of a type A quantity, as defined in 49 CFR 173.435 revised as of September 29, 1988, or as derived from 49 CFR 173.433 revised as of March 19, 1985, shall make arrangements to receive:

(1) the package when the carrier offers it for delivery; or

(2) the notification of the arrival of the package at the carrier's terminal and to take possession of the package expeditiously.

B. Each licensee or registrant shall:

(1) monitor the external surfaces of a labeled (labeled with a radioactive white I, yellow II, or yellow III label as specified in U.S. department of transportation (DOT) regulations 49 CFR 172.403 and 172.436-440.) package for radioactive contamination unless the package contains only radioactive material in the form of gas or in special form as defined in 20.3.1.7 NMAC;

(2) monitor the external surfaces of a labeled package for radiation levels unless the package contains quantities of radioactive material that are less than or equal to the type A quantity, as defined in 20.3.3.325 NMAC

and U.S. department of transportation (DOT) regulations 49 CFR 173.433, 173.434, and 173.435; and

(3) monitor all packages known to contain radioactive material for radioactive contamination and radiation levels if there is evidence of degradation of package integrity, such as packages that are crushed, wet, or damaged.

C. The licensee or registrant shall perform the monitoring required by Subsection B of 20.3.4.432 NMAC as soon as practicable after receipt of the package, but not later than 3 hours after the package is received at the licensee's or registrant's facility if it is received during the licensee's or registrant's normal working hours, or if there is evidence of degradation of package integrity, such as a package that is crushed, wet, or damaged. If a package is received after working hours and has no evidence of degradation of package integrity, the package shall be monitored no later than three hours from the beginning of the next working day.

D. The licensee or registrant shall immediately notify the final delivery carrier and, by telephone and written communication which can include e-mail, telegram, mailgram, or facsimile, the department when:

(1) removable radioactive surface contamination exceeds the limits of U.S. department of transportation (DOT) regulations 49 CFR 173.443; or

(2) external radiation levels exceed the limits of U.S. department of transportation (DOT) regulations 49 CFR 173.443.

E. Each licensee or registrant shall:

(1) establish, maintain, and retain written procedures for safely opening packages in which radioactive material is received; and

(2) insure that the procedures are followed and that due consideration is given to special instructions for the type of package being opened.

F. Licensees or registrants transferring special form sources in vehicles owned or operated by the licensee or registrant to and from a work site are exempt from the contamination monitoring requirements of Subsection B of 20.3.4.432 NMAC, but are not exempt from the monitoring requirement in Subsection B of 20.3.4.432 NMAC for measuring radiation levels that ensures that the source is still properly lodged in its shield.

20.3.4.440 RECORDS/GENERAL PROVISIONS:

~~[A. When recording information on shipping manifests, as required by 438.B, each licensee or registrant shall use the International System of Units (SI) becquerel, gray, sievert and coulomb per kilogram, or SI and the special units curie, rad, rem and roentgen (as allowed by DOT 49 CFR), including multiples and subdivisions, and shall clearly indicate the units of all quantities on records required by Subpart 4.~~

~~B. The licensee or registrant shall make a clear distinction among the quantities entered on the records required by Subpart 4, such as, total effective dose equivalent, total organ dose equivalent, shallow dose equivalent, eye dose equivalent, deep dose equivalent, or committed effective dose equivalent.]~~

A. Each licensee or registrant shall use the units: curie, rad, rem, including multiples and subdivisions, and shall clearly indicate the units of all quantities on records required by this part (20.3.4 NMAC).

B. In the records required by this part (20.3.4 NMAC), the licensee or registrant may record quantities in SI units in parentheses following each of the units specified Subsection A of 20.3.4.440 NMAC. However, all quantities must be recorded as stated in Subsection A of 20.3.4.440 NMAC.

C. Notwithstanding the requirements of Subsection A of 20.3.4.440 NMAC, when recording information on shipment manifests, as required in Subsection B of 20.3.4.438 NMAC, information must be recorded in the international system of units (SI), or in SI and the units as specified in Subsection A of 20.3.4.440 NMAC.

D. The licensee or registrant shall make a clear distinction among the quantities entered on the records required by 20.3.4 NMAC (e.g., total effective dose equivalent, shallow-dose equivalent, lens dose equivalent, deep-dose equivalent, committed effective dose equivalent).

20.3.4.446 RECORDS OF INDIVIDUAL MONITORING RESULTS:

A. Record Keeping Requirement. Each licensee or registrant shall maintain records of doses received by all individuals for whom monitoring was required pursuant to 20.3.4.417 NMAC, and records of doses received during planned special exposures, accidents, and emergency conditions. Assessments of dose equivalent and records made using units in effect before the effective date of these regulations need not be changed. These records shall include, when applicable:

(1) the deep dose equivalent to the whole body, [~~eye~~] lens dose equivalent, shallow dose equivalent to the skin, and shallow dose equivalent to the extremities;

(2) the estimated intake of radionuclides, see 20.3.4.406 NMAC;

(3) the committed effective dose equivalent assigned to the intake of radionuclides;

(4) the specific information used to [~~calculate~~] assess the committed effective dose equivalent pursuant to [~~408.C~~] Subsections A and C of 20.3.4.408 NMAC, and when required by 20.3.4.417 NMAC;

(5) the total effective dose equivalent when required by 20.3.4.406 NMAC; and

(6) the total of the deep dose equivalent and the committed dose to the organ receiving the highest total dose.

B. Record Keeping Frequency. The licensee or registrant shall make entries of the records specified in Subsection A of 20.3.4.446 NMAC at intervals not to exceed 1 year.

C. Record Keeping Format. The licensee or registrant shall maintain the records specified in Subsection A of 20.3.4.446 NMAC on department Form RPS 013, in accordance with the instructions for department form RPS 013, or in clear and legible records containing all the information required by department form RPS 013.

D. The licensee or registrant shall maintain the records of dose to an embryo/fetus with the records of dose to the declared pregnant woman. The declaration of pregnancy, including the estimated date of conception, shall also be kept on file, but may be maintained separately from the dose records.

E. The licensee or registrant shall retain each required form or record until the department terminates each pertinent license or registration requiring the record.

F. Upon termination of the license or registration, the licensee or registrant shall permanently store records on department form RPS 012 or equivalent, or shall make provision with the department for transfer to the department.

20.3.4.452 NOTIFICATION OF INCIDENTS:

A. Immediate Notification. Notwithstanding other requirements for notification, each licensee or registrant shall immediately report each event involving a source of radiation possessed by the licensee or registrant that may have caused or threatens to cause any of the following conditions:

(1) an individual to receive:

(a) a total effective dose equivalent of 25 rem (0.25 Sv) or more; or

(b) [~~An eye~~] a lens dose equivalent of 75 rem (0.75 Sv) or more; or

(c) a shallow dose equivalent to the skin or extremities or a total organ dose equivalent of 250 rad (2.5 Gy) or more; or

(2) the release of radioactive material, inside or outside of a restricted area, so that, had an individual been present for 24 hours, the individual could have received an intake five times the occupational ALI; this provision does not apply to locations where personnel are not normally stationed during routine operations, such as hot-cells or process enclosures.

B. Twenty-four Hour Notification. Each licensee or registrant shall, within 24 hours of discovery of the event, report to the department each event involving loss of control of a licensed or registered source of radiation possessed by the licensee or registrant that may have caused, or threatens to cause, any of the following conditions:

(1) an individual to receive, in a period of 24 hours:

(a) a total effective dose equivalent exceeding 5 rem (0.05 Sv); or

(b) [~~An eye~~] a lens dose equivalent exceeding 15 rem (0.15 Sv); or

(c) a shallow dose equivalent to the skin or extremities or a total organ dose equivalent exceeding 50 rem (0.5 Sv); or

(2) the release of radioactive material, inside or outside of a restricted area, so that, had an individual been present for 24 hours, the individual could have received an intake in excess of one occupational ALI; this provision does not apply to locations where personnel are not normally stationed during routine operations, such as hot-cells or process enclosures.

C. The licensee or registrant shall prepare each report filed with the department pursuant to 20.3.4.452 NMAC so that names of individuals who have received exposure to sources of radiation are stated in a separate and detachable portion of the report.

D. Licensees and registrants shall make the reports required by Subsections A and B of 20.3.4.452 NMAC to the department by telephone, and shall confirm the initial contact by e-mail, telegram, mailgram, or facsimile to the department.

E. The provisions of 20.3.4.452 NMAC do not apply to doses that result from planned special exposures, provided such doses are within the limits for planned special exposures and are reported pursuant to 20.3.4.454 NMAC.

20.3.4.453 REPORTS OF EXPOSURES, RADIATION LEVELS, AND CONCENTRATIONS OF

RADIOACTIVE MATERIAL EXCEEDING THE CONSTRAINTS OR LIMITS:

A. Reportable Events. In addition to the notification required by 20.3.4.452 NMAC, each licensee or registrant shall submit a written report within 30 days after learning of any of the following occurrences:

(1) incidents for which notification is required by 20.3.4.452 NMAC; or

(2) doses in excess of any of the following:

(a) the occupational dose limits for adults in 20.3.4.452 NMAC; or

(b) the occupational dose limits for a minor in 20.3.4.411 NMAC; or

(c) the limits for an embryo/fetus of a declared pregnant woman in 20.3.4.412 NMAC; or

(d) the limits for an individual member of the public in 20.3.4.413 NMAC; or

(e) the limit in the license or registration; or

(f) the ALARA constraints for air emissions established under Subsection D of 20.3.4.404 NMAC; or

(3) levels of radiation or concentrations of radioactive material in:

(a) a restricted area in excess of applicable limits in the license or registration; or

(b) an unrestricted area in excess of 10 times the applicable limit set forth in this part (20.3.4 NMAC) or in the license or registration, whether or not involving exposure of any individual in excess of the limits in 20.3.4.413 NMAC; or

(4) for licensees subject to the provisions of U.S. environmental protection agency's (EPA's) generally applicable environmental radiation standards in 40 CFR 190, levels of radiation or releases of radioactive material in excess of those standards, or of license conditions related to those standards.

B. Contents of Reports.

(1) Each report required by Subsection A of 20.3.4.453 NMAC shall describe the extent of exposure of individuals to radiation and radioactive material, including, as appropriate:

(a) estimates of each individual's dose;

(b) the levels of radiation and concentrations of radioactive material involved;

(c) the cause of the elevated exposures, dose rates, or concentrations; and

(d) corrective steps taken or planned to ensure against a recurrence, including the schedule for achieving conformance with applicable limits, ALARA constraints, generally applicable environmental standards, and associated license or registration conditions.

(2) Each report filed pursuant to Subsection A of 20.3.4.453 NMAC shall include for each [~~individual exposed~~] occupationally overexposed individual: the name, Social Security account number, and date of birth. With respect to the limit for the embryo-fetus set forth in 20.3.4.412 NMAC, the identifiers should be those of the declared pregnant woman. The report shall be prepared so that this information is stated in a separate and detachable part of the report.

C. All licensees or registrants who make reports pursuant to Subsection A of 20.3.4.453 NMAC shall submit the report in writing to the department.

20.3.4.463 [RESERVED] [~~APPENDIX D. REQUIREMENTS FOR TRANSFER OF LOW-LEVEL RADIOACTIVE WASTE FOR DISPOSAL AT LAND DISPOSAL FACILITIES AND MANIFESTS:~~

~~A. Manifest. The shipment manifest shall contain the name, address, and telephone number of the person generating the waste. The manifest shall also include the name, address, and telephone number or the name and U.S. Environmental Protection Agency hazardous waste identification number of the person transporting the waste to the land disposal facility. The manifest shall also indicate: a physical description of the waste, the volume, radionuclide identity and quantity, the total radioactivity, and the principal chemical form. The solidification agent shall be specified. Waste containing more than 0.1% chelating agents by weight shall be identified and the weight percentage of the chelating agent estimated. Wastes classified as Class A, Class B, or Class C in 464.A.2 shall be clearly identified as such in the manifest. The total quantity of the radionuclides hydrogen-3, carbon-14, technetium-99, and iodine-129 shall be shown. The manifest required by this paragraph may be shipping papers used to meet U.S. department of Transportation or U.S. Environmental Protection Agency regulations or requirements of the receiver, provided all the required information is included. Copies of manifests required by this section may be legible carbon copies or legible photocopies.~~

~~B. Certification: The waste generator shall include in the shipment manifest a certification that the transported materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the U.S. department of Transportation and the Agency. An authorized representative of the waste generator shall sign and date the manifest.~~

~~C. Control and Tracking:~~

~~(1) Any radioactive waste generator who transfers radioactive waste to a land disposal facility or a licensed waste collector shall comply with the requirements in 463.C.1.a-h. Any radioactive waste generator who transfers waste to a licensed waste processor who treats or repackages waste shall comply with the requirements of 463.C.1.d-h of this section. A licensee shall:~~

~~(a) Prepare all wastes so that the waste is classified according to 464.A and meets the waste characteristics requirements in 464.B;~~

~~(b) Label each package of waste to identify whether it is Class A waste, Class B waste, or Class C waste, in accordance with 464.A;~~

~~(c) Conduct a quality control program to ensure compliance with 464.A and 464.B; the program shall include management evaluation of audits;~~

~~(d) Prepare shipping manifests to meet the requirements of 464.A and B [Subsections A. and B.;~~

~~(e) Forward a copy of the manifest to the intended recipient, at the time of shipment, or deliver to a collector at the time the waste is collected, obtaining acknowledgment of receipt in the form of a signed copy of the manifest or equivalent documentation from the collector;~~

~~(f) Include one copy of the manifest with the shipment;~~

~~(g) Retain a copy of the manifest and documentation of acknowledgment of receipt as the record of transfer of licensed material;~~

~~(h) For any shipments or any portion of a shipment for which acknowledgment of receipt has not been received within the times set forth in this section, conduct an investigation in accordance with 463.C.5.~~

~~(2) Any waste collector licensee who handles only prepackaged waste shall:~~

~~(a) Acknowledge receipt of the waste from the generator within 1 week of receipt by returning a signed copy of the manifest or equivalent documentation;~~

~~(b) Prepare a new manifest to reflect consolidated shipments; the new manifest shall serve as a listing or index for the detailed generator manifests. Copies of the generator manifests shall be a part of the new manifest. The waste collector may prepare a new manifest without attaching the generator manifests, provided the new manifest contains for each package the information specified in 463.A. The collector licensee shall certify that nothing has been done to the waste that would invalidate the generator's certification;~~

~~(c) Forward a copy of the new manifest to the land disposal facility operator at the time of shipment;~~

~~(d) Include the new manifest with the shipment to the disposal site;~~

~~(e) Retain a copy of the manifest and documentation of acknowledgment of receipt as the record of transfer of licensed material and retain information from generator manifest until the license is terminated and disposition is authorized by the department; and~~

~~(f) For any shipments or any portion of a shipment for which acknowledgment of receipt is not received within the times set forth in this section, conduct an investigation in accordance with 463.C.5.~~

~~(3) Any licensed waste processor who treats or repackages wastes shall:~~

~~(a) Acknowledge receipt of the waste from the generator within 1 week of receipt by returning a signed copy of the manifest or equivalent documentation;~~

~~(b) Prepare a new manifest that meets the requirements of 463.A and 463.B. Preparation of the new manifest reflects that the processor is responsible for the waste;~~

~~(c) Prepare all wastes so that the waste is classified according to 464.A and meets the waste characteristics requirements in 464.B;~~

~~(d) Label each package of waste to identify whether it is Class A waste, Class B waste, or Class C waste, in accordance with 464.A and 464.C;~~

~~(e) Conduct a quality control program to ensure compliance with 464.A and 464.B. The program shall include management evaluation of audits;~~

~~(f) Forward a copy of the new manifest to the disposal site operator or waste collector at the time of shipment, or deliver to a collector at the time the waste is collected, obtaining acknowledgment of receipt in the form of a signed copy of the manifest or equivalent documentation by the collector;~~

~~(g) Include the new manifest with the shipment;~~

~~(h) Retain copies of original manifests and new manifests and documentation of acknowledgment of receipt as the record of transfer of licensed material; and~~

~~(i) For any shipment or portion of a shipment for which acknowledgment is not received within the times set forth in this section, conduct an investigation in accordance with 463.C.5.~~

~~(4) The land disposal facility operator shall:~~

~~(a) Acknowledge receipt of the waste within 1 week of receipt by returning a signed copy of the manifest or equivalent documentation to the shipper. The shipper to be notified is the licensee who last possessed the waste and transferred the waste to the operator. The returned copy of the manifest or equivalent documentation shall indicate any discrepancies between materials listed on the manifest and materials received;~~

~~(b) Maintain copies of all completed manifests or equivalent documentation until the Agency authorizes their disposition; and~~

~~(c) Notify the shipper, that is, the generator, the collector, or processor, and the Agency when any shipment or portion of a shipment has not arrived within 60 days after the advance manifest was received.~~

~~(5) Any shipment or portion of a shipment for which acknowledgment is not received within the times set forth in this section shall:~~

~~(a) Be investigated by the shipper if the shipper has not received notification or receipt within 20 days after transfer; and~~

~~(b) Be traced and reported to whom. The investigation shall include tracing the shipment and filing a report with the department. Each licensee who conducts a trace investigation shall file a written report with the department within 2 weeks of completion of the investigation.~~]

This is an amendment to 20.3.12 NMAC named "Radiation Safety Requirements for Wireline Service Operations and Subsurface Tracer Studies". The amendment provides clarifying language and changes to radiation units. This rulemaking action also renumbers and reformats from that portion of 20 NMAC 3.1, Subpart 12, named "Radiation Safety Requirements for Wireline Service Operations and Subsurface Tracer Studies" (filed 06-17-99) and now replaced by 20.3.12 NMAC. This amendment and renumber will become effective 04/15/2004.

20.3.12.1207 RADIATION SURVEY INSTRUMENTS:

A. The licensee or registrant shall [~~maintain sufficient~~] keep a calibrated and operable radiation survey instrument capable of detecting beta and gamma radiation at each field station and temporary jobsite to make [~~physical~~] radiation surveys required by this part (20.3.12 NMAC) and by 20.3.4 NMAC. [~~Instrumentation shall be capable of measuring 0.1 milliroentgen (25.8 nanocoulombs/kg) per hour through at least 50 milliroentgens (12.9 microcoulombs/kg)~~] To satisfy this requirement, the radiation survey instrument must be capable of measuring 0.001 mSv (0.1 mrem) per hour through at least 0.5 mSv (50 mrem) per hour.

B. Each radiation survey instrument shall be calibrated:

(1) at intervals not to exceed 6 months and after each instrument servicing;

(2) for linear scale instruments, at two points located approximately 1/3 and 2/3 of full-scale on each scale; for logarithmic scale instruments, and mid-range of each decade, and at two points of at least one decade; and for digital instruments, at appropriate points; and

(3) so that accuracy within 20 percent of the true radiation level can be demonstrated on each scale.

C. Calibration records shall be maintained for a period of two years for inspection by the department.

This is an amendment to 20.3.13 NMAC named "Licensing Requirements for Land Disposal of Radioactive Waste". The amendment is made to the definition of "waste" contained in Subsection V of 20.3.13.7 NMAC. The amendment specifically excludes transuranic waste from the definition, and is revised to be more compatible with the definition set forth by the NRC in 10CFR 61.2. This rulemaking action also renumbers and reformats from that portion of 20 NMAC 3.1, Subpart 13, named "Licensing Requirements for Land Disposal of Radioactive Waste" (filed 06-17-99) and now replaced by 20.3.13 NMAC. This amendment and renumber will become effective 04/15/2004.

20.3.13.7 DEFINITIONS: As used in this part (20.3.13 NMAC), the following definitions apply.

A. "Active maintenance" means any significant activity needed during the period of institutional control to maintain a reasonable assurance that the performance objectives in 20.3.13.1307 NMAC and 20.3.13.1308 NMAC are met. Such active maintenance includes ongoing activities, such as the pumping and treatment of water from a disposal unit, or one-time measures, such as replacement of a disposal unit cover. Active maintenance does not include custodial activities, such as repair of fencing, repair or replacement of monitoring equipment, revegetation, minor additions to soil cover, minor repair of disposal unit covers and general disposal site upkeep, such as mowing grass.

B. "Buffer zone" means a portion of the disposal site that is controlled by the licensee, and that lies under the disposal units and between the disposal units and the boundary of the site.

C. "Chelating agent" means amine polycarboxylic acids, hydroxy-carboxylic acids, gluconic acid and polycarboxylic acids.

D. "Commencement of construction" means any clearing of land, excavation or other substantial action that would adversely affect the environment of a land disposal facility. The term does not mean disposal site exploration, necessary roads for disposal site exploration, borings to determine foundation conditions, or other preconstruction monitoring or testing to establish background information related to the suitability of the disposal site or the protection of environmental values.

E. "Custodial agency" means an agency of the government designated to act on behalf of the government owner of the disposal site.

F. "Disposal" means the isolation of wastes from the biosphere inhabited by man and his food chains by emplacement in a land disposal facility.

G. "Disposal site" means that portion of a land disposal facility which is used for disposal of waste. It consists of disposal units and a buffer zone.

H. "Disposal unit" means a discrete portion of the disposal site into which waste is placed for disposal. For near-surface disposal, the unit is usually a trench.

I. "Engineered barrier" means a man-made structure or device that is intended to improve the land disposal facility's ability to meet the performance objective in part (20.3.13 NMAC).

J. "Explosive material" means any chemical compound, mixture or device which produces a substantial instantaneous release of gas and heat spontaneously, or by contact with sparks or flame.

K. "Hazardous waste" means those wastes designated as hazardous by U.S. environmental protection agency regulations in 40 CFR, Part 261.

L. "Hydrogeologic unit" means any soil or rock unit or zone which, by virtue of its porosity or permeability, or lack thereof, has a distinct influence on the storage or movement of ground water.

M. "Inadvertent intruder" means a person who might occupy the disposal site after closure and engage in normal activities, such as agriculture, dwelling construction or other pursuits in which an individual might be unknowingly exposed to radiation from the waste.

N. "Intruder barrier" means a sufficient depth of cover over the waste that inhibits contact with waste, and helps to ensure that radiation exposures to an inadvertent intruder will meet the performance objectives set forth in this part (20.3.13 NMAC), or engineered structures that provide equivalent protection to the inadvertent intruder.

O. "Land disposal facility" means the land, buildings and equipment which is intended to be used for the disposal of wastes into the subsurface of the land.

P. "Monitoring" means observing and making measurements to provide data to evaluate the performance and characteristics of the disposal site.

Q. "Near-surface disposal facility" means a land disposal facility in which waste is disposed of within approximately the upper 30 meters of the earth's surface;.

R. "Pyrophoric liquid" means any liquid that ignites spontaneously in dry or moist air at or below 130 degrees F (54.4 degrees C). A pyrophoric solid is any solid material, other than one classed as an explosive, which under normal conditions is liable to cause fires through friction, retained heat from manufacturing or

processing, or which can be ignited readily, and when ignited, burns so vigorously and persistently as to create a serious transportation, handling or disposal hazard. Included in this definition are spontaneously combustible and water-reactive materials.

S. "Site closure and stabilization" means those actions that are taken upon completion of operations that prepare the disposal site for custodial care and that assure that the disposal site will remain stable and will not need ongoing active maintenance.

T. "Stability" means structural stability.

U. "Surveillance" means monitoring and observation of the disposal site for purposes of visual detection of need for maintenance, custodial care, evidence of intrusion and compliance with other license and regulatory requirements.

~~[V. "Waste" means those low-level radioactive wastes that are acceptable for disposal in a land disposal facility. For the purposes of this definition, low-level waste has the same meaning as in the Low-Level Radioactive Waste Policy Act, PL96-573, radioactive waste not classified as high-level radioactive waste, spent nuclear fuel or byproduct material, as defined in Section 11.E.(2) of the Atomic Energy Act (uranium or thorium tailings and waste).]~~

V. "Waste" means, for the purposes of this part (20.3.13 NMAC), those low-level radioactive wastes containing source, special nuclear, or byproduct material that are acceptable for disposal in a land disposal facility. For the purposes of this definition, low-level waste has the same meaning as in the Low-Level Waste Policy Act, that is, radioactive waste not classified as high-level radioactive waste, transuranic waste, spent nuclear fuel, or byproduct material as defined in section 11e.(2) of the Atomic Energy Act (uranium or thorium tailings and waste).

This is an amendment 20.3.15 NMAC named "Licenses and Radiation Safety Requirements for Irradiators". Subsection G of 20.3.15.1507 NMAC is amended in regards to access control posting requirements for panoramic irradiators. This rulemaking action also renumbers and reformats from that portion of 20 NMAC 3.1, Subpart 15, named "Licenses and Radiation Safety Requirements for Irradiators" (filed 06-17-99) and now replaced by 20.3.15 NMAC. This amendment and renumber will become effective 04/15/2004.

20.3.15.1507 ACCESS CONTROL:

A. Each entrance to a radiation room at a panoramic irradiator must have a door or other physical barrier to prevent inadvertent entry of personnel if the sources are not in the shielded position. Product conveyer systems may serve as barriers as long as they reliably and consistently function as a barrier. It must not be possible to move the sources out of their shielded position if the door or barrier is open. Opening the door or barrier while the sources are exposed must cause the sources to return promptly to their shielded position. The personnel entrance door or barrier must have a lock that is operated by the same key used to move the source. The doors and barriers must not prevent any individual in the radiation room from leaving.

B. In addition, each entrance to a radiation room at a panoramic irradiator must have an independent backup access control to detect personnel entry while the sources are exposed. Detection of entry while the sources are exposed must cause the sources to return to their fully shielded position, and must also activate a visible and audible alarm to make the individual entering the room aware of the hazard. The alarm must also alert at least one other individual who is on-site of the entry. That individual shall be trained on how to respond to the alarm and prepared to promptly render or summon assistance.

C. A radiation monitor must be provided to detect the presence of high radiation levels in the radiation room of a panoramic irradiator before personnel entry. The monitor must be integrated with personnel access door locks to prevent room access when radiation levels are high. Attempted personnel entry while the monitor measures high radiation levels must activate the alarm described in Subsection B of 20.3.15.1507 NMAC. The monitor may be located in the entrance (normally referred to as the maze), but not in the direct radiation beam.

D. Before the sources move from their shielded position in a panoramic irradiator, the source control must automatically activate conspicuous visible and audible alarms to alert people in the radiation room that the sources will be moved from their shielded position. The alarms must give individuals enough time to leave the room before the sources leave the shielded position.

E. Each radiation room at a panoramic irradiator must have a clearly visible and readily accessible control that would allow an individual in the room to make the sources return to their fully shielded position.

F. Each radiation room of a panoramic irradiator must contain a control that prevents the sources from moving from the shielded position, unless the control has been activated and the door or barrier to the radiation room has been closed within a preset time after activation of the control.

G. Each entrance to the radiation room of a panoramic irradiator and each entrance to the area within the personnel access barrier of an underwater irradiator must [~~have a sign bearing the radiation symbol and the words, "Caution (or danger) Radioactive Material." Panoramic irradiators must also have a sign stating "High Radiation Area," but the sign~~] be posted as required by 20.3.4.428 NMAC. Radiation postings for panoramic irradiators must comply with the posting requirements of 20.3.4.428 NMAC, except that signs may be removed, covered, or otherwise made inoperative when the sources are fully shielded.

H. If the radiation room of a panoramic irradiator has roof plugs or other movable shielding, it must not be possible to operate the irradiator unless the shielding is in its proper location. This requirement may be met by interlocks that prevent operation if shielding is not placed properly or by an operating procedure requiring inspection of shielding before operating.

I. Underwater irradiators must have a personnel access barrier around the pool which must be locked to prevent access when the irradiator is not attended. Only operators and facility management may have access to keys to the personnel access barrier. There must be an intrusion alarm to detect unauthorized entry when the personnel access barrier is locked. Activation of the intrusion alarm must alert an individual (not necessarily onsite) who is prepared to respond or summon assistance.