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.

[~~C~~]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 of 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 [~~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.~~][RESERVED]