

**Title 33**  
**ENVIRONMENTAL QUALITY**  
**Part XV. Radiation Protection**

**Chapter 1. General Provisions**

**' 102. Definitions and Abbreviations**

As used in these regulations, these terms have the definitions set forth below. Additional definitions used only in a certain chapter may be found in that chapter.

\* \* \*

[See Prior Text]

*Background Radiation* 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 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 ~~sources of radiation from source, byproduct, or special nuclear radioactive materials regulated by the department.~~

\* \* \*

[See Prior Text]

*Decommission* ~~C~~to remove (as a facility) safely from service and reduce residual radioactivity to a level that permits:

1. release of the property for unrestricted use and termination of license; or
2. release of the property under restricted conditions and termination of the license.

\* \* \*

[See Prior Text]

*Distinguishable From Background* – the detectable concentration of a radionuclide that 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.

\* \* \*

[See Prior Text]

*Extremity*—hand, elbow, arm below the elbow, foot, knee, and leg below the knee.

*Eye Dose Equivalent* ~~C~~the external dose equivalent to the lens of the eye at a tissue depth of 0.3 centimeter (300 mg/cm<sup>2</sup>).

*Former U.S. Atomic Energy Commission (AEC) or U.S. Nuclear Regulatory Commission (NRC) Licensed Facilities*—nuclear reactors, nuclear fuel reprocessing plants, uranium enrichment plants, or critical mass experimental facilities where AEC or NRC licenses have been terminated.

\* \* \*

[See Prior Text]

*High-Radiation Area* 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 100 millirems (one millisievert) in one hour at 30 centimeters from the radiation source or 30 centimeters from any surface that the radiation penetrates.

\* \* \*

[See Prior Text]

*Individual Monitoring Devices* 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~~ thermoluminescence dosimeters (TLDs), pocket ionization chambers, and personal air sampling devices.

\* \* \*

[See Prior Text]

*Lens Dose Equivalent (LDE)*—the external exposure of the lens of the eye, which is taken as the dose equivalent at a tissue depth of 0.3 centimeter (300 mg/cm<sup>2</sup>).

\* \* \*

[See Prior Text]

*Residual Radioactivity* – 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 LAC 33:XV.Chapter 4.

\* \* \*

[See Prior Text]

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2104 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Nuclear Energy Division, LR 13:569 (October 1987), repealed and repromulgated by the Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 18:34 (January 1992), amended LR 19:1421 (November 1993), LR 20:650 (June 1994), LR 22:967 (October 1996), LR

24:2089 (November 1998), repromulgated LR 24:2242 (December 1998), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:2563 (November 2000), LR 26:

**Title 33**  
**ENVIRONMENTAL QUALITY**  
**Part XV. Radiation Protection**

**Chapter 3. Licensing of Radioactive Material**

**§302. Deliberate Misconduct**

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

1. engage in deliberate misconduct that causes or would have caused, if not detected, a licensee, certificate of registration holder, or applicant to be in violation of any rule, regulation, or order; or any term, condition, or limitation of any license issued by the department;  
or

2. deliberately submit to the department, a licensee, a certificate of registration holder, an applicant, or a licensee's, certificate holder's, or applicant's contractor or subcontractor, information that the person submitting the information knows to be incomplete or inaccurate in some respect.

B. A person who violates Subsection A of this Section may be subject to enforcement action in accordance with the procedures in LAC:33:XV.108.

C. For the purposes of Subsection A.1 of this Section, deliberate misconduct by a person means an intentional act or omission that the person knows:

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

2. constitutes a violation of a requirement, procedure, instruction, contract, purchase order, or policy of a licensee, certificate of registration holder, applicant, contractor, or subcontractor.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2104 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Office of Environmental Assessment, Environmental Planning Division, LR 26:

**' 328. Special Requirements for Specific License to Manufacture, Assemble, Repair, or Distribute Commodities, Products, or Devices that Contain Radioactive Material**

\* \* \*

[See Prior Text in A-H.1.c.i]

ii. displaying the radiation symbol described in LAC 33:XV.422 ~~A.1450.A~~ and the words, "CAUTION, RADIOACTIVE MATERIAL," and "Not for Internal or External Use in Humans or Animals."

\* \* \*

[See Prior Text in H.1.d-M.4.g]

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2104 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Nuclear Energy Division, LR 13:569 (October 1987), repealed and repromulgated by the Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 18:34 (January 1992), amended LR 24:2092 (November 1998), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:2571 (November 2000), LR 26:

**§332. Expiration and Termination of Licenses and Decommissioning of Sites and Separate Buildings or Outdoor Areas**

\* \* \*

[See Prior Text in A-D.1.e]

i. report levels of radiation in units of milliroentgens per hour of beta and gamma radiation at 1 centimeter and gamma radiation at 1 meter from surfaces and report levels of radioactivity, including alpha, in units of transformations per minute (or microcuries) per 100 square centimeters removable and fixed on surfaces, microcuries per milliliter in water, and picocuries per gram in contaminated solids such as soils or concrete; ~~and~~

ii. specify the instrumentation used and certify that each instrument was properly calibrated and tested; ~~and~~

iii. consider a site to be 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 that 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.

\* \* \*

[See Prior Text in D.2-E.2]

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2104 et seq.

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Quality and Radiation Protection, Radiation Protection Division, LR 18:34 (January 1992), amended LR 24:2094 (November 1998), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:2571 (November 2000), LR 26:

### **Subchapter E. Reciprocity**

#### **' 390. Reciprocal Recognition of Licenses**

A. Subject to these regulations, any person who holds a specific license from the U.S. Nuclear Regulatory Commission, any other agreement state, or any licensing state and issued by the agency having jurisdiction where the licensee maintains an office for directing the licensed activity and at which radiation safety records are normally maintained, is hereby granted a general license to conduct the activities authorized in such licensing document within this state, except in areas of exclusive federal jurisdiction, for any period of time deemed appropriate by the department provided that the following conditions are met:

\* \* \*

[See Prior Text in A.1-C]

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2104 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Nuclear Energy Division, LR 13:569 (October 1987), repealed and repromulgated by the Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 18:34 (January 1992), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:2574 (November 2000), LR 26:

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**ENVIRONMENTAL QUALITY**  
**Part XV. Radiation Protection**

**Chapter 4. Standards for Protection Against Radiation**

**Subchapter A. General Provisions**

**' 403. Definitions**

A. As used in this Chapter, the following definitions apply:

\* \* \*

[See Prior Text]

*Constraint (Dose Constraint)* – a value above which specified licensee actions are required.

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

*Declared Pregnant Woman*Ca 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.

\* \* \*

[See Prior Text]

*Very High Radiation Area*Can area, accessible to individuals, in which radiation levels external to the body could result in an individual receiving an absorbed dose in excess of 5 Gy (500 rad) in one hour at 1 meter from a source of radiation or from any surface that the radiation penetrates.<sup>1</sup>

\* \* \*

[See Prior Text]

<sup>1</sup>At very high doses received at high dose rates, units of absorbed dose (e.g., gray and rad) are appropriate, rather than units of dose equivalent (e.g., sievert and rem).

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2104 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 19:1421 (November 1993), amended LR 22:969 (October 1996), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:

**Subchapter B. Radiation Protection Programs**

**' 406. Radiation Protection Programs**

\* \* \*

[See Prior Text in A-C]

D. To implement the ALARA requirements of Subsection B of this Section, and notwithstanding the requirements in LAC 33:XV.421, 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 LAC 33:XV.487 and promptly take appropriate corrective action to ensure against recurrence.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2104 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 19:1421 (November 1993), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:

**' 410. Occupational Dose Limits for Adults**

\* \* \*

[See Prior Text in A-A.2]

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

\* \* \*

[See Prior Text in A.2.b-C]

1. the deep dose equivalent, eye 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's monitoring device was not in the region of highest potential exposure or the results of individual monitoring are unavailable;

\* \* \*

[See Prior Text in C.2-F]

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2104 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Nuclear Energy Division, LR 13:569 (October 1987), amended Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 19:1421 (November 1993), LR 22:969 (October 1996), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:

**' 412. 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 Appendix B of this Chapter, endnotes 1 and 2.

\* \* \*

[See Prior Text in B]

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2104 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Nuclear Energy Division, LR 13:569 (October 1987), amended by the Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 19:1421 (November 1993), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:

**' 417. Dose to an Embryo/Fetus**

A. The licensee or registrant shall ensure that the dose equivalent to an ~~the~~ embryo/fetus during the entire pregnancy, due to occupational exposure of a declared pregnant woman, does not exceed 5 mSv (0.5 rem). See LAC 33:XV.476 for recordkeeping requirements.

\* \* \*

[See Prior Text in B]

C. The dose equivalent to an ~~the~~ embryo/fetus shall be taken as the sum of:

1. the dose equivalent to the embryo/fetus from radionuclides in the embryo/fetus and radionuclides in the declared pregnant woman; and
2. the dose that is most representative of the dose equivalent to the embryo/fetus from external radiation, that is, in the mother's lower torso region, determined as follows:
  - a. if multiple measurements have not been made, assignment of the highest deep dose equivalent for the declared pregnant woman shall be the dose equivalent to the embryo/fetus, in accordance with LAC 33:XV.414.C; or
  - b. if multiple measurements have been made, the dose equivalent to the embryo/fetus shall be the assignment of the deep dose equivalent for the declared pregnant woman from the individual monitoring device which is most representative of the dose equivalent 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 equivalent to the embryo/fetus has exceeded 4.5 mSv (0.45 rem), the licensee or registrant shall be deemed to be in compliance with Subsection A of this Section if the additional dose equivalent to the embryo/fetus does not exceed 0.5 mSv (0.05 rem) during the remainder of the pregnancy<sup>2</sup>.

<sup>2</sup>The National Council on Radiation Protection and Measurements recommended in NCRP Report No. 91, "Recommendations on Limits for Exposure to Ionizing Radiation" (June 1, 1987), that no more than 0.5 mSv (0.05 rem) to the embryo/fetus be received in any one month.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2104 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Nuclear Energy Division, LR 13:569 (October 1987), amended by the Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 19:1421 (November 1993), LR 22:970 (October 1996), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:

### **Subchapter C. Surveys and Monitoring**

#### **' 431. 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 this Chapter.

\* \* \*

[See Prior Text in A-A.4]

a. an individual monitoring device used to determine the dose equivalent to ~~an~~ the embryo/fetus of a declared pregnant woman, in accordance with LAC 33:XV.417, shall be located under the protective apron at the waist;

b. an individual monitoring device used to determine eye lens dose equivalent shall be located at the neck, or an unshielded location closer to the eye, outside the protective apron; and

\* \* \*

[See Prior Text in A.4.c-B.2]

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2104 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Nuclear Energy Division, LR 13:569 (October 1987), amended by the Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 19:1421 (November 1993), LR 22:971 (October 1996), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:

#### **' 432. Location of Individual Monitoring Devices**

A. Each licensee or registrant shall ensure that individuals who are required to monitor occupational doses in accordance with LAC 33:XV.431.A wear individual monitoring devices as follows:

\* \* \*

[See Prior Text in A.1]

2. an individual monitoring device used for monitoring the dose equivalent to ~~an~~ the embryo/fetus of a declared pregnant woman, in accordance with LAC 33:XV.417.A, shall be located at the waist under any protective apron being worn by the woman;

3. an individual monitoring device used for monitoring the eye lens dose equivalent, to demonstrate compliance with LAC 33:XV.410.A.2.a, 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

\* \* \*

[See Prior Text in A.4]

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2104 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 22:972 (October 1996), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:

## Subchapter I. Records

### ' 470. General Provisions

A. Each licensee or registrant shall use the ~~International System of Units (SI) units becquerel, gray, sievert, and coulomb per kilogram, or the special units curie, rad, and rem, and roentgen~~ including multiples and subdivisions, and shall clearly indicate the units of all quantities on records required by this Chapter. In the records required by this Chapter, the licensee may record quantities in the International System of Units (SI) in parentheses following each of the special units specified above. However, all quantities must be recorded as stated in this Subsection. Notwithstanding these allowances, when recording information on shipment manifests, as required in LAC 33:XV.465, information shall be recorded in SI or in both SI and special units.

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

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2104 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 19:1421 (November 1993), amended LR 24:2096 (November 1998), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:

' 476. Records of Individual Monitoring Results

\* \* \*

[See Prior Text in A]

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;

\* \* \*

[See Prior Text in A.2-3]

4. the specific information used to calculate the committed effective dose equivalent pursuant to in accordance with LAC 33:XV.413.CA;

\* \* \*

[See Prior Text in A.5-C]

D. The licensee or registrant shall maintain the records of dose equivalent to an the 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.

\* \* \*

[See Prior Text in E-F]

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2104 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 19:1421 (November 1993), amended by the Department of Environmental Assessment, Environmental Planning Division, LR 26:2578 (November 2000), LR 26:

**Subchapter J. Reports**

' 486. Notification of Incidents

\* \* \*

[See Prior Text in A-A.1.a]

b. an eye lens dose equivalent of 0.75 Sv (75 rem) or more; or

\* \* \*

[See Prior Text in A.1.c-B.1.a]

b. an ~~eye lens~~ dose equivalent exceeding 0.15 Sv (15 rem); or

\* \* \*

[See Prior Text in B.1.c-2]

C. Licensees or registrants shall make the reports required by Subsections A and B of this Section through initial contact by telephone and shall confirm the initial contact by telegram, mailgram, or facsimile to the Office of Environmental Compliance, or **by e-mail at [surveillance@deq.state.la.us](mailto:surveillance@deq.state.la.us) utilizing the Incident Report Form and procedures found at [www.deq.state.la.us/surveillance](http://www.deq.state.la.us/surveillance).**

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

\* \* \*

[See Prior Text in E]

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2104 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 19:1421 (November 1993), amended LR 22:973 (October 1996), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:2579 (November 2000), LR 26:

**' 487. Reports of Exposures, Radiation Levels, and Concentrations of Radioactive Material Exceeding the Constraints or Limits**

\* \* \*

[See Prior Text in A-A.2.c]

d. the limits for an individual member of the public in LAC 33:XV.421;

or

e. any applicable limit in the license or registration; or

f. the ALARA constraints for air emissions established under LAC

33:XV.406.D;

\* \* \*

[See Prior Text in A.3-B.1.c]

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~~ in accordance with LAC 33:XV.487.A shall include for each occupationally overexposed individual ~~exposed~~: the name, Social Security account number, and date of birth. With respect to the limit for the embryo/fetus in LAC

33:XV.417, 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 portion of the report.

\* \* \*

[See Prior Text in C]

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2104 et seq.

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**Title 33**  
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**Part XV. Radiation Protection**

**Chapter 15. Transportation of Radioactive Material**

**§1502. Scope**

\* \* \*

[See Prior Text in A-C.4]

D. If U.S. DOT regulations are not applicable to a shipment of licensed material, the licensee shall conform to the standards and requirements of the U.S. DOT specified in Subsection A of this Section to the same extent as if the shipment or transportation were subject to U.S. DOT regulations. A request for modification, waiver, or exemption from those requirements, and any notification referred to in those requirements, must be filed with, or made to, the ~~Director, Office of Nuclear Material Safety and Safeguards, U.S. NRC, Washington, DC 20555-0001~~ Office of Environmental Services, Permits Division.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2001 et seq.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Nuclear Energy Division, LR 13:569 (October 1987), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:1265 (June 2000), LR 26:

**Title 33**  
**ENVIRONMENTAL QUALITY**  
**Part XV. Radiation Protection**

**Chapter 20. Radiation Safety Requirements for Wireline Service Operations and Subsurface Tracer Studies**

**' 2013. Radiation Survey Instruments**

A. The licensee or registrant shall maintain sufficient calibrated operable radiation survey instruments at each field station to make physical radiation surveys as required by this Chapter and by LAC 33:XV.426 and 430. Instrumentation shall be capable of measuring ~~0.1 milliroentgen ( $2.58 \times 10^8$  C/kg)~~ 0.001 mSv (0.1 mrem) per hour through at least ~~50 milliroentgens ( $1.29 \times 10^5$  C/kg)~~ 0.5 mSv (50 mrem) per hour. ~~Survey instruments acquired before January 1, 1988, and capable of measuring 0.1 milliroentgen ( $2.58 \times 10^8$  C/kg) per hour through at least 20 milliroentgen ( $5.16 \times 10^8$  C/kg) per hour also satisfy this requirement until October 20, 1992.~~

\* \* \*

[See Prior Text in B-C]

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2104 et seq.

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**Subchapter B. Precautionary Procedures in Logging and Subsurface Tracer Operations**

**' 2031. Security**

A. A logging supervisor must be physically present at a temporary job site whenever licensed materials are being handled or are not stored and locked in a vehicle or storage place. The logging supervisor may leave the job site in order to obtain assistance if a source becomes lodged in a well.

B. During each logging or tracer application, the logging supervisor or other designated employee shall maintain direct surveillance of the operation to protect against unauthorized and/or unnecessary entry into a restricted area, as defined in Chapter 1 of these regulations.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2104 et seq.

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