DCD(SP03)

Re: SP-99-074

State of New Mexico
ENVIRONMENT DEPARTMENT
Hazardous & Radioactive Materials Bureau
Radiation Licensing & Registration Section
2044 Galisteo Street, P.O. Box 26110
Santa Fe, New Mexico 87502
Telephone (505) 827-1862
Fax (505) 827-1863

GARY E. JOHNSON
GOVERNOR

PETER MAGGIORE
SECRETARY

November 22, 1999

COPY

Thomas J. O'Brien
Office of State Programs
United States Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike, 3rd Floor
Rockville, Maryland 20852

Dear Mr. O'Brien:

This letter is in response to your request for technical information (SP-99-074) regarding release criteria in New Mexico. The following answers correlate directly to the bulleted questions on page 2 of the NRC's correspondence dated November 2, 1999.

1. How were the criteria derived?
   NRC Regulatory Guide 1.86 is used by reference for surface contaminants. Release of soil and effluents were adopted as regulation in compatibility with applicable NRC regulations.

   Oil and gas NORM release criteria were adopted as regulation through consideration of other agreement state regulations, and with input from industry and the approval of the New Mexico Radiation Technical Advisory Council. The release criteria is 50 μR/hr including background for contaminated equipment, sludges, and scale. For soil, the release criteria is 30 pCi/gm above background for ^{226}Radium, and 150 pCi/gm above background for all other NORM constituents.

2. How are the criteria applied?
   Surface contaminants: By reference to NRC Regulatory Guide 1.86.
   Soil, effluent, and NORM: State regulations.

3. What surveying/monitoring methodologies are used?
   Our licensees are expected to employ accepted health physics practices, provided those practices accurately estimate radiation and surface contaminants and satisfy regulatory requirements.

   No protocols are established for our State inspectors, instead they are trained in the methods of accepted health physics practices. MARSSIM training has been provided to a portion of the inspectors, however MARSSIM protocols are not required.

4. What type of instruments?
   βλ particulate: pancake G-M βλ dose rates: ion chamber α: mylar window scintillators

SP-A-4

96 SP-AG-19

The probes are configured with either rate or integrating instruments. No specific sensitivities are set, instead probes and instruments are used that reflect industry accepted standards. Swipes, soil, water, vegetation, and air samples are analyzed at a State lab which uses open window proportional counters, liquid scintillation, and gamma spec.

5. If your release criterion is zero……?
   New Mexico does not have any release criteria that are zero.

6. Are any licensees currently authorized volumetric release?
   No licensees in New Mexico currently authorized for volumetric release.

If I can provide any further assistance, please feel free to contact me.

Sincerely,

Stanley Fitch
Radiation Specialist
Radiation Licensing & Registration Section
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department

Phone: (505)827-1868
e-mail: stanley_fitch@nmenv.state.nm.us

cc: William Floyd, Program Manager, NMED Radiation Licensing & Registration Section
James Bearzi, Chief, NMED Hazardous and Radioactive Materials Bureau

New Mexico (2 of 3)

DCD (SP03)

SP-99-014

106.H. "Airborne radioactive material" means any radioactive material dispersed in the air in the form of dusts, fumes, particulates, mists, vapors, or gases. [5-3-95]

106.I. "Airborne radioactivity area" means a room, enclosure, or area in which airborne radioactive materials exist in concentrations: [5-3-95]

106.I.1. in excess of the derived air concentrations (DACs) specified in §461, Table I of LIST OF ELEMENTS, of these regulations; or [5-3-95]

106.I.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. [5-3-95]

106.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. [5-3-95]

106.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. [5-3-95]

106.L. "Becquerel" (Bq) means the SI unit of activity. One becquerel is equal to 1 disintegration or transformation per second (dps or tps). [5-3-95]

106.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. [5-3-95]

106.N. "Board" means the Environmental Improvement Board. [5-3-95]

106.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. [5-3-95]

106.P. "Byproduct material" means: [5-3-95]

SP-A-4

 SP-AG-19

New Mexico Byproduct material

106.P.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 [5-3-95]

106.P.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. [5-3-95]

106.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. [5-3-95]

106.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. [5-3-95]

106.S. "CFR" means Code of Federal Regulations. [5-3-95]

106.T. "Chelating agent" means amine polycarboxylic acids, hydroxycarboxylic acids, gluconic acid, and polycarboxylic acids. [5-3-95]

106.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. [5-3-95]

106.V. "Commercial waste disposal" means disposal of radioactive waste as a business enterprise. [5-3-95]

106.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. [5-3-95]

Development Administration 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). [5-3-95; Rn, 20 NMAC 3.1.106.DK, 7-30-99]

106.DM. "U.S. EPA" means the Environmental Protection Agency. [5-3-95; Rn, 20 NMAC 3.1.106.DL, 7-30-99]

106.DN. "U.S. FDA" means the Food and Drug Administration. [5-3-95; Rn, 20 NMAC 3.1.106.DM, 7-30-99]

106.DO. "Unrefined and unprocessed ore" means ore in its natural form prior to any processing such as grinding, roasting, beneficiating, or refining. [5-3-95; Rn, 20 NMAC 3.1.106.DN, 7-30-99]

106.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. [5-3-95; Rn, 20 NMAC 3.1.106.DO, 7-30-99]

106.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. [5-3-95; Rn, 20 NMAC 3.1.106.DP, 7-30-99]

106.DR. "Waste Disposal Site Operators" means persons licensed to dispose of radioactive waste. [5-3-95; Rn, 20 NMAC 3.1.106.DQ, 7-30-99]

106.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. [5-3-95; Rn, 20 NMAC 3.1.106.DR, 7-30-99]

106.DT. "Week" means 7 consecutive days starting on Sunday. [5-3-95; Rn, 20 NMAC 3.1.106.DS, 7-30-99]