

PART He-P 4001 SCOPE, EXEMPTIONS, AND GENERAL PROVISIONS

Readopt with amendment He-P 4001.01 through 4001.03, effective 5-22-26 (Document #14597, INTERIM), to read as follows:

He-P 4001.01 Scope. Except as otherwise specifically provided, this chapter shall apply to all persons who receive, possess, use, transfer, own, or acquire any source of radiation, as defined in He-P 4003.01, provided, however, that nothing in this chapter shall apply to any person to the extent such person is subject to regulation by the U.S. Nuclear Regulatory Commission, (NRC). Regulation by the department of health and human services/radiological health section, (DHHS/RHS) of source material, byproduct material, and special nuclear material in quantities not sufficient to form a critical mass is subject to the provisions of the agreement between the Agreement State, New Hampshire, and the NRC as of May 16, 1966, and to 10 CFR Part 150.

He-P 4001.02 Exemptions. ~~(a)~~ Pursuant to RSA 125-F:7, III, the following persons shall be exempt from the requirements of He-P 4000 as follows:

~~(1a)~~ Prime contractors performing work for the U.S. Department of Energy at U.S. Government owned or controlled sites shall be exempt from this chapter to the extent that such contractor or subcontractor under the contract receives, possesses, uses, transfers, or acquires sources of radiationradioactive material including the transportation of sources of radiationradioactive material to or from such sites and the performance of contract services during temporary interruptions of such transportation;

~~(2b)~~ Prime contractors of the U.S. Department of Energy shall be exempt from this chapter to the extent that such contractor or subcontractor under the contract receives, possesses, uses, transfers, or acquires sources of radiationradioactive material to perform research in, or development, manufacture, storage, testing, or transportation of, atomic weapons, or components thereof;

~~(3c)~~ Prime contractors of the U.S. Department of Energy shall be exempt from this chapter to the extent that such contractor or subcontractor under the contract receives, possesses, uses, transfers, or acquires sources of radiationradioactive material to use or operate nuclear reactors or other nuclear devices in a U.S. government owned vehicle or vessel;

~~(4d)~~ Any other prime contractor or subcontractor of the U.S. Department of Energy or of the NRC shall be exempt from this chapter to the extent that such contractor or subcontractor under the contract receives, possesses, uses, transfers, or acquires sources of radiationradioactive material; and

~~(5e)~~ Any other prime contractor or subcontractor of the U.S. Department of Energy or of the NRC shall be exempt from this chapter when the state and the NRC jointly determine:

~~(1)a.~~ That the exemption of the prime contractor or subcontractor is authorized by law; and

~~(2)b.~~ That, under the terms of the contract or subcontract, there is adequate assurance that the work there under can be accomplished without undue risk to the public health and safety.

He-P 4001.03 Records.

(a) Each licensee and registrant shall maintain records pursuant to He-P 4000 showing the receipt, transfer, and disposal of all sources of radiation. Each licensee and registrant shall also comply with the records requirements in He-P 4021.

(b) Records of receipt, transfer, and disposal of sources of radiation shall include as a minimum, the following:

- (1) A unique identification of each source of radiation including:
 - a. Manufacturer's name;
 - b. Isotope, if a radioactive source;
 - c. Activity, if a radioactive source;
 - d. Source model number; and
 - e. Source serial number;
 - (2) The date of receipt, transfer, or disposal of each source of radiation;
 - (3) For the person transferring the source of radiation, pertinent information including:
 - a. The name of the transferee;
 - b. The number of the transferee's radioactive material license or registration certificate authorizing possession of the source of radiation; and
 - c. The regulatory agency issuing the license or registration to the transferee; and
 - (4) For the person receiving the source of radiation, pertinent information including:
 - a. The name of the transferor;
 - b. The number of the transferor's radioactive material license or registration certificate authorizing possession of the source of radiation; and
 - c. The regulatory agency issuing the license or registration to the transferor.
- (c) Records required by this part shall be retained by the licensee or registrant indefinitely or as per additional record requirements specified elsewhere in this chapter.
- (d) All records required by this part shall be accurate and factual.
- (e) Records required by this part shall be considered valid only if stamped, initialed, or signed and dated by authorized personnel or otherwise authenticated.
- (f) Each record required by this part shall be legible throughout the retention period as specified in He-P 4001.03(c).
- (g) Each record required by this part shall be the original or a reproduced copy or a microform or stored in electronic media, provided that:
- (1) The copy is authenticated by authorized personnel; and
 - (2) The microform or electronic media is authenticated by authorized personnel and is capable of producing clear, legible, accurate, and complete copies of records throughout the required retention period.
- (h) The licensee shall maintain adequate safeguards against tampering with and loss of records.

Readopt with amendment He-P 4001.04 and He-P 4001.05, effective 3-24-23 (Document #13599), to read as follows:

He-P 4001.04 Inspections.

(a) Each licensee and registrant shall allow the department of health and human services/ radiological health section (DHHS/RHS) at any time during the licensee's or registrant's regular business hours to inspect sources of radiation and the premises and facilities wherein such sources of radiation are used or stored.

(b) Each licensee and registrant shall make available to DHHS/RHS for inspection, records maintained pursuant to the ~~requirements~~rules in this chapter.

He-P 4001.05 Tests.

(a) Each licensee and registrant shall perform, ~~shall perform~~ pursuant to instructions from DHHS/RHS, or shall permit DHHS/RHS to perform, tests which will assist DHHS/RHS in determining the licensee's or registrant's compliance with these rules, including tests of:

- (1) Sources of radiation;
 - (2) Facilities where sources of radiation are utilized or stored;
 - (3) Radiation detection and monitoring instruments;
 - (4) Other equipment and devices used in connection with the utilization or storage of licensed or registered sources of radiation.
- (b) The licensee in possession of any sealed source shall assure that:

(1) Each sealed source, except as specified in He-P4001.05(c), ~~shall be is~~ tested for leakage or contamination ~~and the test results are received at intervals not to exceed the intervals specified in the certificate of registration issued by the NRC U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or by an Agreement State~~ before the sealed source is put into use, unless the licensee has a certificate from the transferor indicating that the sealed source was tested within 6 months before transfer to the licensee;

~~(2) Each sealed source that is not designed to emit alpha particles is tested for leakage or contamination at intervals not to exceed 12 months, except those as specified in He P 4034.10 and He P 4035.21;~~

~~(23)~~ Each sealed source that is designed to emit alpha particles ~~is~~shall be tested for leakage or contamination at intervals not to exceed 3 months;

~~(34)~~ Each sealed source ~~that is~~ required to be tested for leakage or contamination, that might have been damaged or might be leaking, ~~is~~shall be tested for leakage and contamination before further use;

~~(45) Tests for leakage for all sealed sources, except brachytherapy sources manufactured to contain radium, are~~Sealed source leak tests shall be capable of detecting the presence of 185 Bq (0.005 µCi) of radioactive material on a test sample which is taken from the sealed source or taken from the surfaces of the container in which the sealed source is stored or mounted and at the nearest accessible point to the sealed source where contamination might accumulate, and

for a sealed source contained in a device, test samples are obtained when the source is in the “off” position;

~~(56) The test for leakage for brachytherapy sources manufactured to contain radium is capable of detecting an absolute leakage rate of 37 Bq (0.001 μ Ci) of radon-222 in a 24-hour period when the collection efficiency for radon-222 and its daughters has been determined with respect to collection method, volume and time.~~ Leak testing of medical sealed and brachytherapy sources shall be in accordance with He-P 4035.21;

~~(67) Tests for contamination from radium daughters are taken on the interior surface of brachytherapy source storage containers and are capable of detecting the presence of 185 Bq (0.005 μ Ci) of a radium daughter which has a half-life greater than 4 days.~~ Leak testing of industrial radiographic exposure devices containing sealed sources and depleted uranium (DU) shall be in accordance with He-P 4034.10; and

~~(78)~~ Tests for leakage or contamination are performed using a leak test kit or method approved by DHHS/RHS.

(c) A licensee shall not be required to perform tests for leakage or contamination on the following sealed sources:

- (1) Sealed sources containing only radioactive material with a half-life of less than 30 days;
- (2) Sealed sources containing only radioactive material as a gas;
- (3) Sealed sources containing 3.7 MBq (100 μ Ci) or less of beta or photon-emitting material or 370 kBq (10 μ Ci) or less of alpha-emitting material;
- (4) Sealed sources containing only hydrogen-3;
- (5) Seeds of iridium-192 encased in nylon ribbon; and
- (6) Sealed sources, ~~except teletherapy and brachytherapy sources~~, which are stored, not being used and identified as in storage.

(d) The licensee shall, however, test each such sealed source in ~~He-P 4001.05(c)(6)~~ above for leakage or contamination ~~and receive the test results:~~

~~(1) At intervals no greater than 3 years; and~~

~~(2) b~~ Before any use or transfer unless the source has been tested for leakage or contamination within 6 months before the date of use or transfer.

(e) Tests for leakage or contamination from sealed sources shall be performed by persons specifically licensed by DHHS/RHS, an Agreement State, ~~a Licensing State~~, or the ~~U.S. NRC Nuclear Regulatory Commission~~ to perform such services.

(f) Test results shall be kept in units of Becquerel or microcurie and maintained for inspection by DHHS/RHS for ~~35~~ years from date of test.

~~(g) The following shall be considered evidence that a sealed source is leaking:~~

~~(1) The presence of 185 Bq (0.005 μ Ci) or more of removable contamination on any test sample;~~

~~(2) Leakage of 37 Bq (0.001 µCi) of radon 222 per 24 hours for brachytherapy sources manufactured to contain radium; or~~

~~(3) The presence of removable contamination resulting from the decay of 185 Bq (0.005 µCi) or more of radium.~~

(gh) The licensee shall immediately withdraw a leaking sealed source from use and shall take action in accordance with ~~He-P 4003.06~~(hi) below to prevent the spread of contamination.

(hi) If a sealed source is leaking, the licensee shall:

(1) Decontaminate the facility and source in accordance with He-P 4021.20, and dispose of the leaking source in accordance with He-P 4023; or

(2) Decontaminate the facility and source in accordance with He-P 4021.20, and have the source repaired by a person specifically licensed to perform this service.

(ij) Reports of test results for leaking or contaminated sealed sources shall be made pursuant to He-P 4021.19.

Readopt with amendment He-P 4001.06 and He-P 4001.07, effective 5-22-26 (Document #14597, INTERIM), to read as follows

He-P 4001.06 Prohibited Uses.

(a) A hand-held fluoroscopic screen shall not be used with x-ray equipment unless it has first been listed in the Conference of Radiation Control Program Directors (CRCPD) Registry of Sealed Source and Devices or accepted for certification by the U.S. Food and Drug Administration, Center for Devices and Radiological Health.

(b) A shoe-fitting fluoroscopic device shall never be used for any purpose.

(c) The mining or milling, i.e. any processing of ore including underground solution extraction of unmined ore, of uranium, thorium, or other source material within the state of New Hampshire.

He-P 4001.07 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 part, shall 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 DHHS/RHS; or

(2) Deliberately submit to DHHS/RHS, a licensee, 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 material to DHHS/RHS.

(b) A person who violates paragraph (a)(1) or (a)(2) above shall be subject to enforcement action in accordance with RSA 125-F:21 and RSA 125-F:22.

(c) For the purposes of (a)(1) above, “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 DHHS/RHS; 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.

Readopt with amendment He-P 4001.08, effective 10-20-20 (Document# 13120), to read as follows:

He-P 4001.08 Communications.

(a) All paper communications and reports concerning these rules, and applications, ~~or electronic submissions filed thereunder~~, shall be addressed to:

Radiological Health Section
Division of Public Health Services
NH Department of Health and Human Services
29 Hazen Drive
Concord, New Hampshire 03301

(b) All electronic submissions shall be submitted via email to: Radiological.Health@dhhs.nh.gov

Readopt with amendment He-P 4001.09, effective 3-24-23 (Document #13599), to read as follows:

He-P 4001.09 Units of Exposure and Dose.

(a) As used in these rules, the unit of exposure shall be the coulomb per kilogram (C/kg) of air.

(b) One roentgen shall be equal to 2.58×10^{-4} coulomb per kilogram of air.

(c) As used in these rules, the units of dose shall be:

(1) Gray (Gy) as defined in He-P 4003.01;

(2) Rad as defined in He-P 4003.01;

(3) Rem as defined in He-P 4003.01; or

(4) Sievert (Sv) as defined in He-P 4003.01.

(d) As used in these rules, the quality factors for converting absorbed dose to dose equivalent shall be as in Table 4001.1:

Table 4001.1 Quality Factors and Absorbed Dose Equivalencies

Type of Radiation	Quality Factor	Absorbed Dose
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	(Q)	Equal to a Unit Dose Equivalent
X, gamma, or beta radiation and high speed electrons	1	1
Alpha particles, multiple-charged particles, fission fragments and heavy particles of unknown charge	20	0.05
Neutrons of unknown energy	10	0.1
High-energy protons	10	0.1

(e) If it is more convenient to measure the neutron fluence rate than to determine the neutron dose equivalent rate in sievert per hour or rem per hour, as provided in [He-P-4001.09\(f\) below](#), 0.01 Sv (1 rem) of neutron radiation of unknown energies may, for purposes of these rules, be assumed to result from a total fluence of 25 million neutrons per square centimeter incident upon the body.

(f) If sufficient information exists to estimate the approximate energy distribution of the neutrons, the licensee or registrant may use the fluence rate per unit dose equivalent or the appropriate Q value from Table 4001.2 to convert a measured tissue dose in gray or rad to dose equivalent in sievert or rem.

(g) As used in these rules, the mean quality factors, Q, and fluence per unit dose equivalent for monoenergetic neutrons shall be as shown in Table 4001.2 below:

Table 4001.2 Mean Quality Factors, Q, and Fluence Per Unit Dose Equivalent
for Monoenergetic Neutrons

Neutron Energy	Quality Factor	Fluence per Unit Dose Equivalent	Fluence per Unit Dose Equivalent
(MeV)	(Q)	$\frac{(\text{Neutrons})}{(\text{cm}^2 \cdot \text{rem})}$ (Neutrons cm ⁻² rem ⁻¹)	$\frac{(\text{Neutrons})}{(\text{cm}^2 \cdot \text{Sv})}$ (Neutrons cm ⁻² Sv ⁻¹)
(thermal) 2.5 × 10 ⁻⁸	2	980 × 10 ⁶	980 × 10 ⁸
1 × 10 ⁻⁷	2	980 × 10 ⁶	980 × 10 ⁸
1 × 10 ⁻⁶	2	810 × 10 ⁶	810 × 10 ⁸
1 × 10 ⁻⁵	2	810 × 10 ⁶	810 × 10 ⁸
1 × 10 ⁻⁴	2	840 × 10 ⁶	840 × 10 ⁸
1 × 10 ⁻³	2	980 × 10 ⁶	980 × 10 ⁸
1 × 10 ⁻²	2.5	1010 × 10 ⁶	1010 × 10 ⁸
1 × 10 ⁻¹	7.5	170 × 10 ⁶	170 × 10 ⁸
5 × 10 ⁻¹	11	39 × 10 ⁶	39 × 10 ⁸
1	11	27 × 10 ⁶	27 × 10 ⁸
2.5	9	29 × 10 ⁶	29 × 10 ⁸
5	8	23 × 10 ⁶	23 × 10 ⁸
7	7	24 × 10 ⁶	24 × 10 ⁸
10	6.5	24 × 10 ⁶	24 × 10 ⁸
14	7.5	17 × 10 ⁶	17 × 10 ⁸
20	8	16 × 10 ⁶	16 × 10 ⁸
40	7	14 × 10 ⁶	14 × 10 ⁸
60	5.5	16 × 10 ⁶	16 × 10 ⁸
100	4	20 × 10 ⁶	20 × 10 ⁸

Neutron Energy	Quality Factor	Fluence per Unit Dose Equivalent	Fluence per Unit Dose Equivalent
(MeV)	(Q)	~~$\frac{\text{Neutrons}}{\text{cm}^2 \cdot \text{rem}}$~~ $(\text{Neutrons cm}^{-2} \text{ rem}^{-1})$	~~$\frac{\text{Neutrons}}{\text{cm}^2 \cdot \text{Sv}}$~~ $(\text{Neutrons cm}^{-2} \text{ Sv}^{-1})$
200	3.5	19×10^6	19×10^8
300	3.5	16×10^6	16×10^8
400	3.5	14×10^6	14×10^8

(h) Value of quality factor (Q) in Table 4001.2 shall be the point where the dose equivalent is maximum in a 30-centimeter diameter cylinder tissue-equivalent phantom.

(i) Fluence per unit dose equivalent in Table 4001.2 shall be monoenergetic neutrons incident normally on a 30-centimeter diameter cylinder tissue-equivalent phantom.

Readopt He-P 4001.10 through 4001.12, effective 5-22-26 (Document #14597, INTERIM), to read as follows:

He-P 4001.10 Units of Activity. Activity shall be expressed in the SI unit of Becquerel (Bq) or in the special unit of curie (Ci), or their multiples, and submultiples, or disintegrations (transformations) per unit of time.

He-P 4001.11 Determination of Year.

(a) Year shall be the period of time beginning in January used to determine compliance with the provisions of this chapter.

(b) The licensee or registrant may change the starting date of the year used to determine compliance by the licensee or registrant provided that the change is made at the beginning of the year and that no day is omitted or duplicated in consecutive years.

He-P 4001.12 Additional Requirements.

(a) DHHS/RHS shall, by rule, regulation, or order, written pursuant to RSA 125-F:5, RSA 125-F:7, RSA 125-F:10, or RSA 125-F:17 and RSA 541-A, impose upon any licensee or registrant such requirements in addition to those established in this chapter as DHHS/RHS deems appropriate or necessary to minimize danger to public health and safety or property.

(b) Any person shall report any source of radiation, as defined in RSA 125-F:3 XX, if the person:

- (1) Finds or detects, and which is not under the physical or administrative control of a licensee or registrant, provided it is not excluded, exempted, or otherwise authorized under the provisions of this chapter; or
- (2) Discovers is the subject of a violation of RSA 125-F:19, and which is not subject to the exclusion, exemption, or authorization described in paragraph (b)(1) above.

(c) Any person who has a responsibility to report pursuant to (b) above, shall report as soon as possible, as follows:

- (1) To DHHS/RHS by telephoning DHHS/RHS, Monday through Friday between the hours of 8:00 a.m. and 4:30 p.m., at (603) 271-4588;
- (2) To the NH state police on all state holidays and at any other time not specified in (c)(1) above, at (603) 271-3636; and
- (3) The person shall report a description of the source of radiation, its location and provide the name and phone number of the person making the report.

APPENDIX

Rule	State or Federal Statute or Federal Regulation Implemented
He-P 4001	RSA 125-F:1; RSA 125-F:2; RSA 125-F:5, II, IV, and V; RSA 541-A:21, IV; Section 274 of the Atomic Energy Act of 1954, as amended, and Title 10 CFR
He-P 4001.01	10 CFR 19.2; 10 CFR 20.1002; 10 CFR 150.01
He-P 4001.02	RSA 125-F:7, III; 10 CFR 30.12; 10 CFR 40.11; 10 CFR 70.11
He-P 4001.03	RSA 125-F:13; 10 CFR 30.51; 10 CFR 40.61; 10 CFR 70.51
He-P 4001.04	10 CFR 30.52; 10 CFR 40.62; 10 CFR 70.55
He-P 4001.05	10 CFR 30.53; 10 CFR 40.63; 10 CFR 70.56; 10 CFR 34.27; 10 CFR 35.67; 10 CFR 35.2067 10 CFR 39.35
He-P 4001.06	RSA 125-F:1; RSA 125-F:2; RSA 125-F:5 II & V; RSA 125-F:19
He-P 4001.07	RSA 125-F:21; RSA 125-F:22; 10 CFR 30.10; 10 CFR 40.10; 10 CFR 70.10
He-P 4001.08	RSA 125-F:1; RSA 125-F:2; RSA 125-F:5, II, IV, and V; Section 274 of the Atomic Energy Act of 1954, as amended; 10 CFR 30.6; 10 CFR 40.5; 10 CFR 70.5
He-P 4001.09	10 CFR 20.1004
He-P 4001.10	RSA 125-F:5, II, IV, and V; 10 CFR 20.1005
He-P 4001.11	RSA 125-F:5, II, IV, and V; 10 CFR 20.1003
He-P 4001.12	RSA 125-F:5; RSA 125-F:7; RSA 125-F:10; RSA 125-F:17; RSA 125-F:19