

10A NCAC 15 .0352 EMERGENCY PLANS

(a) Each application to possess radioactive materials in unsealed form, on foils or plated sources, or sealed in glass in excess of the quantities in the table in Subparagraph (e)(1) of this Rule must contain either:

- (1) an evaluation showing that the maximum dose to a person off-site due to a release of radioactive materials would not exceed one rem effective dose equivalent or five rems to the thyroid; or
- (2) an emergency plan for responding to a release of radioactive material.

(b) The following factors shall be used to support an evaluation submitted under Subparagraph (a)(1) of this Rule:

- (1) the radioactive material is physically separated so that only a portion could be involved in an accident;
- (2) all or part of the radioactive material is not subject to release during an accident because of the way it is stored or packaged;
- (3) the release fraction in the respirable size range would be lower than the release fraction shown in Subparagraph (e)(1) of this Rule due to the chemical or physical form of the material;
- (4) the solubility of the radioactive material would reduce the dose received;
- (5) the facility design or engineered safety features in the facility would cause the release fraction to be lower than shown in Subparagraph (e)(1) of this Rule; and
- (6) the operating restrictions or procedures would prevent a release fraction as large as that shown in Subparagraph (e)(1) of this Rule; or
- (7) the factors appropriate for the specific facility.

(c) An emergency plan for responding to a release of radioactive material submitted under Subparagraph (a)(2) of this Rule must include the following information:

- (1) a description of the licensee's facility and potentially impacted area;
- (2) the identification of each type of radioactive materials accident for which protective actions may be needed;
- (3) the classification system for classifying accidents as alerts or site area emergencies;
- (4) the identification of the means of detecting each type of accident in a timely manner quickly enough to mitigate off-site consequences;
- (5) a description of the means and equipment for mitigating the consequences of each type of accident, including those provided to protect workers on-site, and a description of the program for maintaining the equipment;
- (6) a description of the methods and equipment to assess releases of radioactive materials;
- (7) a description of the responsibilities of licensee personnel, should an accident occur, including identification of personnel responsible for notifying off-site response organizations and the agency, and responsibilities for developing, maintaining, and updating the plan;
- (8) a description of notification and coordination, to include a commitment to and a brief description of the means to notify off-site response organizations and request off-site assistance, including medical assistance for the treatment of contaminated injured on-site workers when needed, provided that:
 - (A) a control point is established;
 - (B) the notification and coordination is planned so that unavailability of some personnel, parts of the facility, and some equipment will not prevent the notification and coordination;
 - (C) the licensee commits to notify the agency after notification of the appropriate off-site response organizations, within one hour after the licensee declares an emergency; and
 - (D) the reporting requirements in this Subparagraph do not substitute for or relieve the licensee from responsibility for complying with the requirements in the Emergency Planning and Community Right-to-Know Act of 1986, Title III, Public Law 99-499 or other State or federal reporting requirements;
- (9) description of the types of information on facility status, radioactive releases, and recommended protective actions, if necessary, to be given to off-site response organizations and to the agency;
- (10) description of the frequency, performance objectives and plans for the training that the licensee will provide to workers on how to respond to an emergency, including any instructions and orientation tours the licensee offers to fire, police, medical and other emergency personnel, where such training shall:
 - (A) familiarize personnel with site-specific emergency procedures; and

- (B) prepare site personnel for their responsibilities in the event of accident scenarios postulated as most probable for the specific site, including the use of team training for such scenarios;
 - (11) description of the means of restoring the facility to a safe condition after an accident;
 - (12) description of provisions for conducting quarterly communications checks with off-site response organizations and biennial on-site exercises to test response to simulated emergencies where such provisions meet the following requirements:
 - (A) quarterly communications checks with off-site response organizations include the check and update of all necessary telephone numbers;
 - (B) while participation of off-site response organizations in biennial exercises is not required, the licensee shall invite off-site response organizations to participate in the biennial exercises;
 - (C) accident scenarios for biennial exercises are not known to most exercise participants;
 - (D) critique of each exercise using individuals who do not have direct implementation responsibility for the plan. Critiques of exercises evaluate the appropriateness of the plan, emergency procedures, facilities, equipment, training of personnel, and overall effectiveness of the response; and
 - (E) deficiencies found by the critiques in Part (c)(12)(D) of this Rule are corrected; and
 - (13) certification that the applicant has met its responsibilities under the Emergency Planning and Community Right-to-Know Act of 1986, Title III, Public Law 99-499, if applicable to the applicant's activities at the proposed place of use of the radioactive material.
- (d) The licensee shall submit the emergency plan to allow the off-site response organizations expected to respond in case of an accident 60 days to comment on the licensee's emergency plan before submitting the plan to the agency. The licensee shall provide any comments received within the 60 day comment period to the agency with the emergency plan.
- (e) Quantities of radioactive material requiring an emergency plan for responding to a release as used in this Rule and instructions for use are:

TABLE

RADIOACTIVE MATERIAL	RELEASE FRACTION	QUANTITY (CURIES)
Actinium-228	0.001	4,000
Americium-241	.001	2
Americium-242	.001	2
Americium-243	.001	2
Antimony-124	.01	4,000
Antimony-126	.01	6,000
Barium-133	.01	10,000
Barium-140	.01	30,000
Bismuth-207	.01	5,000
Bismuth-210	.01	600
Cadmium-109	.01	1,000
Cadmium-113	.01	80
Calcium-45	.01	20,000
Californium-252	.001	9 (20 mg)
Carbon-14 (NON CO ₂)	.01	50,000
Cerium-141	.01	10,000
Cerium-144	.01	300
Cesium-134	.01	2,000
Cesium-137	.01	3,000
Chlorine-36	.5	100
Chromium-51	.01	300,000
Cobalt-60	.001	5,000
Copper-64	.01	200,000
Curium-242	.001	60
Curium-243	.001	3

Curium-244	.001	4
Curium-245	.001	2
Europium-152	.01	500
Europium-154	.01	400
Europium-155	.01	3,000
Germanium-68	.01	2,000
Gadolinium-153	.01	5,000
Gold-198	.01	30,000
Hafnium-172	.01	400
Hafnium-181	.01	7,000
Holmium-166m	.01	100
Hydrogen-3	.5	20,000
Iodine-125	.5	10
Iodine-131	.5	10
Iodine-114m	.01	1,000
Iridium-192	.001	40,000
Iron-55	.01	40,000
Iron-59	.01	7,000
Krypton-85	1.0	6,000,000
Lead-210	.01	8
Manganese-56	.01	60,000
Mercury-203	.01	10,000
Molybdenum-99	.01	30,000
Neptunium-237	.001	2
Nickel-63	.01	20,000
Niobium-94	.01	300
Phosphorus-32	.5	100
Phosphorus-33	.5	1,000
Polonium-210	.01	10
Potassium-42	.01	9,000
Promethium-145	.01	4,000
Promethium-147	.01	4,000
Radium-226	.001	100
Ruthenium-106	.01	200
Samarium-151	.01	4,000
Scandium-46	.01	3,000
Selenium-75	.01	10,000
Silver-110m	.01	1,000
Sodium-22	.01	9,000
Sodium-24	.01	10,000
Strontium-89	.01	3,000
Strontium-90	.01	90
Sulfur-35	.5	900
Technetium-99	.01	10,000
Technetium-99m	.01	400,000
Tellurium-127m	.01	5,000
Tellurium-129m	.01	5,000
Terbium-160	.01	4,000
Thulium-170	.01	4,000
Tin-113	.01	10,000
Tin-123	.01	3,000
Tin-126	.01	1,000
Titanium-44	.01	100
Vanadium-48	.01	7,000
Xenon-133	1.0	900,000
Yttrium-91	.01	2,000

Zinc-65	.01	5,000
Zirconium-93	.01	400
Zirconium-95	.01	5,000
Any other beta-gamma emitter	.01	10,000
Mixed fission products	.01	1,000
Mixed corrosion products	.01	10,000
Contaminated equipment beta-gamma	.001	10,000
Irradiated material, any form other than solid noncombustible	.01	1,000
Irradiated material, solid noncombustible	.001	10,000
Mixed radioactive waste Beta-gamma	.01	1,000
Packaged mixed waste, beta-gamma	.001	10,000
Any other alpha emitter	.001	2
Contaminated equipment, alpha	.0001	20
Packaged waste, alpha	.0001	20

(f) For combinations of radioactive materials, an emergency plan is required if the sum of the ratios of the quantity of each radioactive material authorized to the quantity listed for that material in the table in Paragraph (e) of this Rule exceeds one.

(g) Waste packaged in Type B containers, as defined in 10 CFR Part 71.4, does not require an emergency plan.

*History Note: Authority G.S. 104E-7; 104E-18; 10 CFR 30.72;
Eff. May 1, 1992;
Amended Eff. October 1, 2013; May 1, 1993; October 1, 1992;
Transferred and Recodified from 15A NCAC 11 .0352 Eff. February 1, 2015.*