Graphic images included in rules are published separately in this tables and graphics section. Graphic images are arranged in this section in the following order: Title Number, Part Number, Chapter Number and Section Number.

Graphic images are indicated in the text of the emergency, proposed, and adopted rules by the following tag: the word "Figure" followed by the TAC citation, rule number, and the appropriate subsection, paragraph, subparagraph, and so on.

Figure: 25 TAC §289.252(jj)(9)

Category 1 and Category 2 Radioactive Material Thresholds

The terabecquerel (TBq) values are the regulatory standard. The curie (Ci) values specified are obtained by converting from the TBq value. The curie values are provided for practical usefulness only.

Radioactive material	Category 1 (TBq)	Category 1 (Ci)	Category 2 (TBq)	Category 2 (Ci)
Americium-241	60	1,620	0.6	16.2
Americium-241/Be	60	1,620	0.6	16.2
Californium-252	20	540	0.2	5.40
Cobalt-60	30	810	0.3	8.10
Curium-244	50	1,350	0.5	13.5
Cesium-137	100	2,700	1	27.0
Gadolinium-153	1,000	27,000	10	270
Iridium-192	80	2,160	0.8	21.6
Plutonium-238	60	1,620	0.6	16.2
Plutonium-239/Be	60	1,620	0.6	16.2
Promethium-147	40,000	1,080,000	400	10,800
Radium-226	40	1,080	0.4	10.8
Selenium-75	200	5,400	2	54.0
Strontium-90	1,000	27,000	10	270
Thulium-170	20,000	540,000	200	5,400
Ytterbium-169	300	8,100	3	81.0

Note: Calculations Concerning Multiple Sources or Multiple Radionuclides

The "sum of fractions" methodology for evaluating combinations of multiple sources or multiple radionuclides is to be used in determining whether a location meets or exceeds the threshold and is subject to the requirements of §289.252(ii) of this subchapter.

I. If multiple sources of the same radionuclide or multiple radionuclides are aggregated at a location, the sum of the ratios of the total activity of each of the radionuclides must be determined to verify whether the activity at the location is less than the category 1 or category 2 thresholds in Figure: 25 TAC §289.252(jj)(9), as appropriate. If the calculated sum of the ratios, using the equation below, is greater than or equal to 1.0, then the applicable requirements of §289.252(ii) of this subchapter apply.

II. First, determine the total activity for each radionuclide from Figure: 25 TAC §289.252(jj)(9). This is done by adding the activity of each individual source, material in any device, and any loose or bulk material that contains the radionuclide. Then use the equation below to calculate the sum of the ratios by inserting the total activity of the applicable radionuclides in the numerator of the equation and, in the denominator of the equation, the corresponding activity threshold from Figure: 25 TAC §289.252(jj)(9).

Calculations must be performed in regulatory standard values (i.e., TBq) and the numerator and denominator values must be in the same units.

R_1 = total activity for radionuclide 1
R_2 = total activity for radionuclide 2
R_N = total activity for radionuclide n
AR_1 = activity threshold for radionuclide 1
AR_2 = activity threshold for radionuclide 2
AR_N = activity threshold for radionuclide n

$$\frac{R_1}{AR_1} + \frac{R_2}{AR_2} + \cdots + \frac{R_n}{AR_n} \geq 1.0$$

~~Category 1 and Category 2 Radioactive Material Thresholds~~

~~The terabecquerel (TBq) values are the regulatory standard. The curie (Ci) values specified are obtained by converting from the TBq value. The curie values are provided for practical usefulness only.~~

~~Radioactive material~~	~~Category 1 (TBq)~~	~~Category 1 (Ci)~~	~~Category 2 (TBq)~~	~~Category 2 (Ci)~~
~~Americium-241~~	~~60~~	~~1,620~~	~~0.6~~	~~16.2~~
~~Americium-241/Be~~	~~60~~	~~1,620~~	~~0.6~~	~~16.2~~
~~Californium-252~~	~~20~~	~~540~~	~~0.2~~	~~5.40~~
~~Cobalt-60~~	~~30~~	~~810~~	~~0.3~~	~~8.10~~
~~Curium-244~~	~~50~~	~~1,350~~	~~0.5~~	~~13.5~~
~~Cesium-137~~	~~100~~	~~2,700~~	~~1~~	~~27.0~~
~~Gadolinium-153~~	~~1,000~~	~~27,000~~	~~10~~	~~270~~
~~Iridium-192~~	~~80~~	~~2,160~~	~~0.8~~	~~21.6~~
~~Plutonium-238~~	~~60~~	~~1,620~~	~~0.6~~	~~16.2~~
~~Plutonium-239/Be~~	~~60~~	~~1,620~~	~~0.6~~	~~16.2~~
~~Promethium-147~~	~~40,000~~	~~1,080,000~~	~~400~~	~~10,800~~
~~Radium-226~~	~~40~~	~~1,080~~	~~0.4~~	~~10.8~~
~~Selenium-75~~	~~200~~	~~5,400~~	~~2~~	~~54.0~~
~~Strontium-90~~	~~1,000~~	~~27,000~~	~~10~~	~~270~~
~~Thulium-170~~	~~20,000~~	~~540,000~~	~~200~~	~~5,400~~
~~Ytterbium-169~~	~~300~~	~~8,100~~	~~3~~	~~81.0~~

~~Note: Calculations Concerning Multiple Sources or Multiple Radionuclides~~

~~The "sum-of-fractions" methodology for evaluating combinations of multiple sources or multiple radionuclides is to be used in determining whether a location meets or exceeds the threshold and is thus subject to the requirements of §289.252(ii) of this title.~~

~~I. If multiple sources of the same radionuclide and/or multiple radionuclides are aggregated at a location, the sum of the ratios of the total activity of each of the radionuclides must be determined to verify whether the activity at the location is less than the category 1 or category 2 thresholds in Figure: 25 TAC §289.252(jj)(9), as appropriate. If the calculated sum of the ratios, using the equation below, is greater than or equal to 1.0, then the applicable requirements of §289.252(ii) of this title apply.~~

~~II. First determine the total activity for each radionuclide from Figure: 25 TAC §289.252(jj)(9). This is done by adding the activity of each individual source, material in any device, and any loose or bulk material that contains the radionuclide. Then use the equation below to calculate the sum of the ratios by inserting the total activity of the applicable radionuclides in the numerator of the equation and, in the denominator of the equation, the corresponding activity threshold from Figure: 25 TAC §289.252(jj)(9) which is applicable.~~

~~Calculations must be performed in metric values (i.e., TBq) and the numerator and denominator values must be in the same units.~~

~~R_1 = total activity for radionuclide 1~~
~~R_2 = total activity for radionuclide 2~~
~~R_N = total activity for radionuclide n~~
~~AR_1 = activity threshold for radionuclide 1~~
~~AR_2 = activity threshold for radionuclide 2~~
~~AR_N = activity threshold for radionuclide n~~

$$\sum_{1}^{n}\left[\frac{R_1}{AR_1}+\frac{R_2}{AR_2}+\frac{R_n}{AR_n}\right]\geq 1.0$$

Figure: 25 TAC §289.252(mm)

Rule Cross Reference	Name of Records/Documents	Time Interval for Keeping Record/Document
(l)(7)(D)	Documentation of all receipts and transfers for the manufacture and commercial distribution of devices	3 years after the date of the event (i.e., receipt or transfer)
(r)(2)(C)	Records of tests and checks of measurements of the radioactivity of radioactive drugs	A minimum of 3 years after the record was made
(r)(3)(G)	A complete description of any deviation from the manufacturer's instructions when eluting generators or processing radioactive materials with a reagent kit	3 years after the record was made
(s)(4)(G)	Records including the name, address, and point of contact for each general licensee to whom depleted uranium in products or devices is distributed	2 years after the record was made
(x)(10)	Test results and records for generator eluates of molybdenum-99 breakthrough or strontium-82 and strontium-85 contamination	3 years after the record was made
(cc)(6)(B)(iv)	All information supporting the report of a transfer of small quantities of source material	1 year after the transfer event is included in a report to the agency, the NRC, or any agreement state
(gg)(7)	Records of information important to the safe and effective decommissioning of the facility	Until the license is terminated by the agency
(ii)(3)(G)(i)	Confirmation of receipt of a notification to the individual of the right to complete, correct, and explain any reasons for denial of personnel access authorization	1 year after the date of the notification
(ii)(3)(H)(i)	Documentation regarding the trustworthiness and reliability of individual employees	3 years after the date the individual no longer requires unescorted access to category 1 or category 2 quantities of radioactive material
(ii)(3)(H)(ii)	Copy of the current access authorization program procedures	3 years after the procedure is no longer needed
(ii)(3)(H)(ii)	Superseded material for any portion of the access authorization program procedures	3 years after the procedure or any portion of the procedure is superseded

Rule Cross Reference	Name of Records/Documents	Time Interval for Keeping Record/Document
(ii)(3)(H)(iii)	List of persons approved for unescorted access authorization	3 years after the list is superseded or replaced
(ii)(4)(A)(ii)	Certification in writing that each individual employee's identification was properly reviewed and any documents used for the review	3 years after the date an individual granted unescorted access to category 1 or category 2 quantities of radioactive material no longer requires such access, or, for an individual denied access, 3 years after the date the record was made
(ii)(6)(A)(xii)	Written confirmation of an active security clearance from the agency or employer that granted the clearance or reviewed the criminal history records check of the individual	3 years after the date the individual no longer requires unescorted access to category 1 or category 2 quantities of radioactive material
(ii)(6)(A)(xiii)	Written verification from a service provider licensee for an individual employed by that service provider that it has conducted a background investigation for the individual and approved that individual for unescorted access to category 1 or category 2 quantities of radioactive material	3 years after the date the individual employee no longer requires unescorted access to category 1 or category 2 quantities of radioactive material
(ii)(6)(B)	Written confirmation from an agency or employer that reviewed the criminal history records check for an individual who has had a favorably adjudicated U.S. Government criminal history records check within the last 5 years, under a comparable U.S. Government program involving fingerprinting and an FBI identification and criminal history records check if the individual makes available the appropriate documentation	3 years after the date the individual no longer requires unescorted access to category 1 or category 2 quantities of radioactive material
(ii)(7)(E)	All fingerprint and criminal history records on an individual (including data indicating no record) received from the FBI, or a copy of these records if the individual's file has been transferred	3 years after the date the individual no longer requires unescorted access to category 1 or category 2 quantities of radioactive material

§289.252 Rule Cross Reference	Name of Records/Documents	Time Interval for Keeping Record/Document
(ii)(8)(C)	Access authorization program review records	3 years after the record was made
(ii)(10)(A)(iv)	Copy of the current security plan	3 years after the record is no longer needed
(ii)(10)(A)(iv)	Copy of superseded material from any portion of the security plan that is superseded	3 years after the record is superseded
(ii)(10)(B)(iii)	Copy of the current implementing procedures	3 years after the procedure is no longer needed
(ii)(10)(B)(iii)	Any superseded portion of the implementing procedures	3 years after the record is superseded
(ii)(10)(C)(iv)	Copies of initial and refresher training	3 years after the date of the training
(ii)(10)(D)(viii)(I)	Copy of the information protection procedures	3 years after the document is no longer needed
(ii)(10)(D)(viii)(II)	List of individuals approved for access to the security plan, implementing procedures, or the list of individuals that have been approved for unescorted access	3 years after the document is no longer needed
(ii)(11)(C)	Documentation of the licensee's efforts to coordinate with the LLEA	3 years after the record was made
(ii)(14)(B)	Records on maintenance and testing activities	3 years after the record was made
(ii)(16)(C)	Security program review documentation	3 years after the record was made
(ii)(18)(D)	Verification documentation for any transfer of category 1 or category 2 quantity of radioactive material	3 years after the record was made
(ii)(20)(E)	Documentation, and any revisions thereof, for the preplanning and coordination of shipments of category 1 or category 2 quantities of radioactive material	3 years after the record was made
(ii)(21)(E)	Copy of the advance notification and any revision and cancellation notices for the shipment of category 1 quantities of radioactive material through or across boundaries of a State	3 years after the record was made
(ll)(2)	Documentation of any installation, repair, or maintenance of devices containing sealed sources of radioactive material	5 years after date of service

Rule Cross Reference	Name of Records/Documents	Time Interval for Keeping Record/Document
(l)(7)(D)	Documentation of all receipts and transfers for the manufacture and commercial distribution of devices	3 years after the date of the event (i.e. receipt or transfer)
(r)(2)(C)	Records of tests and checks of measurements of the radioactivity of radioactive drugs	A minimum of 3 years after when the record was made
(r)(3)(G)	A complete description of any deviation from the manufacturer's instructions when eluting generators or processing radioactive materials with a reagent kit	3 years after the record was made
(s)(4)(G)	Records including the name, address, and point of contact for each general licensee to whom depleted uranium in products or devices is distributed	2 years after the record was made
(x)(10)	Test results and records for generator eluates of molybdenum-99 breakthrough or strontium-82 and strontium-85 contamination	3 years after the record was made
(ee)(6)(B)(v)	All information supporting the report of a transfer of small quantities of source material	1 year after the transfer event is included in a report to the agency, the NRC, or any agreement state
(gg)(7)	Records of information important to the safe and effective decommissioning of the facility	Until the license is terminated by the agency
(ii)(3)(G)(i)	Confirmation of receipt of a notification to the individual of the right to complete, correct and explain any reasons for denial of personnel access authorization	1 year after the date of the notification
(ii)(3)(H)(i)	Documentation regarding the trustworthiness and reliability of individual employees	3 years after the date the individual no longer requires unescorted access to category 1 or category 2 quantities of radioactive material
(ii)(3)(H)(ii)	Copy of the current access authorization program procedures	3 years after the procedure is no longer needed
(ii)(3)(H)(ii)	Superseded material for any portion(s) of the access authorization program procedures that is superseded	3 years after the procedure or any portion(s) of the procedure is superseded

Rule Cross Reference	Name of Records/Documents	Time Interval for Keeping Record/Document
(ii)(3)(H)(iii)	List of persons approved for unescorted access authorization	3 years after the list is superseded or replaced
(ii)(4)(A)(ii)	Certification in writing that each individual employee's identification was properly reviewed and any documents used for the review	3 years after the date an individual granted unescorted access to category 1 or category 2 quantities of radioactive material no longer requires such access, or, for an individual denied access, 3 years from the date the record was made
(ii)(6)(A)(xii)	Written confirmation of an active security clearance from the agency or employer that granted the clearance or reviewed the criminal history records check of the individual	3 years after the date the individual no longer requires unescorted access to category 1 or category 2 quantities of radioactive material
(ii)(6)(A)(xiii)	Written verification from a service provider licensee for an individual employed by that service provider that it has conducted a background investigation for the individual and approved that individual for unescorted access to category 1 or category 2 quantities of radioactive material	3 years after the date the individual employee no longer requires unescorted access to category 1 or category 2 quantities of radioactive material
(ii)(6)(B)	Written confirmation from an agency or employer that reviewed the criminal history records check for an individual who has had a favorably adjudicated U.S. Government criminal history records check within the last 5 years, under a comparable U.S. Government program involving fingerprinting and an FBI identification and criminal history records check provided that he or she makes available the appropriate documentation	3 years after the date the individual no longer requires unescorted access to category 1 or category 2 quantities of radioactive material
(ii)(7)(E)	All fingerprint and criminal history records on an individual (including data indicating no record) received from the FBI, or a copy of these records if the individual's file has been transferred	3 years after the date the individual no longer requires unescorted access to category 1 or category 2 quantities of radioactive material

§289.252 Rule Cross Reference	Name of Records/Documents	Time Interval for Keeping Record/Document
(ii)(8)(C)	Access authorization program review records	3 years after the record was made
(ii)(10)(A)(iv)	Copy of the current security plan	3 years after the record is no longer needed
(ii)(10)(A)(iv)	Copy of superseded material from any portion of the security plan that is superseded	3 years after the record is superseded
(ii)(10)(B)(iii)	Copy of the current implementing procedures	3 years after the procedure is no longer needed
(ii)(10)(B)(iii)	Any superseded portion(s) of the implementing procedures	3 years after the record is superseded
(ii)(10)(C)(iv)	Copies of initial and refresher training	3 years after the date of the training
(ii)(10)(D)(viii)(I)	Copy of the information protection procedures	3 years after the document is no longer needed
(ii)(10)(D)(viii)(II)	List of individuals approved for access to the security plan, implementing procedures, or the list of individuals that have been approved for unescorted access	3 years after the document is no longer needed
(ii)(11)(C)	Documentation of the licensee's efforts to coordinate with the LLEA	3 years after the record was made
(ii)(14)(B)	Records on maintenance and testing activities	3 years after the record was made
(ii)(16)(C)	Security program review documentation	3 years after the record was made
(ii)(18)(D)	Verification documentation for any transfer of category 1 or category 2 quantity of radioactive material	3 years after the record was made
(ii)(20)(E)	Documentation, and any revisions thereof, for the preplanning and coordination of shipments of category 1 or category 2 quantities of radioactive material	3 years after the record was made
(ii)(21)(E)	Copy of the advance notification and any revision and cancellation notices for the shipment of category 1 quantities of radioactive material through or across boundaries of a State	3 years after the record was made
(ll)(2)	Documentation of any installation, repair, or maintenance of devices containing sealed sources of radioactive material	5 years after date of service

Figure: 30 TAC §115.470(b)(60)

$$\text{Pounds of volatile organic compounds (VOC) per gallon of adhesive (minus water and exempt solvent)} = \frac{W_V}{(V_M - V_W - V_{ES})}$$

Where:

W_V = The weight of VOC contained in V_M gallons of adhesive or adhesive primer measured in pounds.

V_M = The volume of adhesive or adhesive primer, generally assumed to be one gallon.

V_W = The volume of water contained in V_M gallons of adhesive or adhesive primer measured in gallons.

V_{ES} = The volume of exempt solvent contained in V_M gallons of adhesive or adhesive primer measured in gallons.

Figure: 30 TAC §115.470(b)(61)

$$\text{Pounds of volatile organic compounds (VOC) per gallon of solids} = \frac{W_V}{V_M - V_V - V_W - V_{ES}}$$

Where:

W_V = The weight of VOC contained in V_M gallons of adhesive or adhesive primer measured in pounds.

V_M = The volume of adhesive or adhesive primer, generally assumed to be one gallon.

V_V = The volume of VOC contained in V_M gallons of adhesive or adhesive primer measured in gallons.

V_W = The volume of water contained in V_M gallons of adhesive or adhesive primer measured in gallons.

V_{ES} = The volume of exempt solvent contained in V_M gallons of adhesive or adhesive primer measured in gallons.

Figure: 30 TAC §115.473(e)

Table 1.	
Application Specific Adhesives[Category]	Grams of volatile organic compounds (VOC) per liter adhesive
Architectural Applications	
Building Envelope Membrane Adhesive	250
Carpet Pad Adhesive	50
Ceramic Tile Installation Adhesive	65
Cove Base Installation Adhesive	50
Dry Wall Adhesive	50
Glass, Porcelain, and Stone Tile Adhesive	65
Multipurpose Construction Adhesive	70
Panel Adhesive	50
Roofing	
Hot Applied Modified Bitumen or Built Up Roof Adhesive	30
EPDM/TPO Single-Ply Roof Membrane Adhesive	250
Single-Ply Roof Membrane Installation and Repair Adhesive (Except EPDM and TPO)	250
Shingle Laminating Adhesive	30
All Other Roof Adhesives	250
Rubber Floor Adhesive	60
Structural Glazing Adhesive	100
Structural Wood Member Adhesive	140
Subfloor Adhesive	50
VCT and Asphalt Tile Adhesive	50
Wood Flooring Adhesive	20
All Other Indoor Floor Covering Adhesives	50
All Other Outdoor Floor Covering Adhesives	50
Computer Diskette Manufacturing Adhesive	350
Contact Adhesive	80
Edge Glue	250
Plastic Welding Cement	
ABS Welding Cement	325
ABS to PVC Transition Cement	425[510]
CPVC Welding Cement	400[490]

Table 1.	
Application Specific Adhesives[Category]	Grams of volatile organic compounds (VOC) per liter adhesive
CPVC For Life-Safety Systems	490
Higher Viscosity CPVC Welding Cement	400[490]
PVC Welding Cement	425[510]
All Other Plastic Welding Cements	100
Rubber Vulcanization Adhesive	250[850]
Special Purpose Contact Adhesive	250
Thin Metal Laminating Adhesive	780
Tire Tread Adhesive	100
Top and Trim Adhesive	250[540]
Waterproof Resorcinol Glue	170
All Other Adhesives	250

Table 2.	
Substrate Specific Adhesives	Grams of volatile organic compounds (VOC) per liter adhesive
Metal	30
Plastic Foams	50
Porous Material (except wood)	50
Wood	30
Fiberglass	80
Reinforced Plastic Composite	200

Table 3.	
Adhesive Primers	Grams of volatile organic compounds (VOC) per liter adhesive
Plastic	550
Pressure Sensitive	785
Traffic Marking Tape	150
Vehicle Glass	700
Roof Adhesive Primers	250
All Other Adhesive Primers	250

Figure: 30 TAC §115.473(f)

Table 1.	
Application Specific Adhesives[Category]	Grams of volatile organic compounds (VOC) per liter adhesive
Architectural Applications	
Building Envelope Membrane Adhesive	250
Carpet Pad Adhesive	50
Ceramic Tile Installation Adhesive	65
Cove Base Installation Adhesive	50
Dry Wall Adhesive	50
Glass, Porcelain, and Stone Tile Adhesive	65
Multipurpose Construction Adhesive	70
Panel Adhesive	50
Roofing	
Hot Applied Modified Bitumen or Built Up Roof Adhesive	30
EPDM/TPO Single-Ply Roof Membrane Adhesive	250
Single-Ply Roof Membrane Installation and Repair Adhesive (Except EPDM and TPO)	250
Shingle Laminating Adhesive	30
All Other Roof Adhesives	250
Rubber Floor Adhesive	60
Structural Glazing Adhesive	100
Structural Wood Member Adhesive	140
Subfloor Adhesive	50
VCT and Asphalt Tile Adhesive	50
Wood Flooring Adhesive	20
All Other Indoor Floor Covering Adhesives	50
All Other Outdoor Floor Covering Adhesives	50
Computer Diskette Manufacturing Adhesive	350
Contact Adhesive	80
Edge Glue	250
Plastic Welding Cement	
ABS Welding Cement	325
ABS to PVC Transition Cement	425[510]
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Table 1.	
Application Specific Adhesives[Category]	Grams of volatile organic compounds (VOC) per liter adhesive
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PVC Welding Cement	425[510]
All Other Plastic Welding Cements	100
Rubber Vulcanization Adhesive	250[850]
Special Purpose Contact Adhesive	250
Thin Metal Laminating Adhesive	780
Tire Tread Adhesive	100
Top and Trim Adhesive	250[540]
Waterproof Resorcinol Glue	170
All Other Adhesives	250

Table 2.	
Substrate Specific Adhesives	Grams of volatile organic compounds (VOC) per liter adhesive
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Porous Material (except wood)	50
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Reinforced Plastic Composite	200

Table 3.	
Adhesive Primers	Grams of volatile organic compounds (VOC) per liter adhesive
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Pressure Sensitive	785
Traffic Marking Tape	150
Vehicle Glass	700
Roof Adhesive Primers	250
All Other Adhesive Primers	250