

TABLES & GRAPHICS

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 §289.229(e)(13) [~~§289.229(e)(14)~~]

$$C = \frac{s}{\bar{X}} = \frac{1}{\bar{X}} \left[\sum_{i=1}^n \frac{(X_i - \bar{X})^2}{n-1} \right]^{1/2}$$

Where: s = estimated standard deviation of the population
 \bar{X} = mean value of observations in sample
 X_i = i th observation in sample
 n = number of observations in sample.

Figure: 25 TAC §289.229(h)(2)(A)(i)

TABLE I

System	Measurement Location	Leakage Limit
5-50 kV	5 centimeters (cm) from the tube housing assembly	1 milligray (mGy) in 1 hour (hr)
>50 and <500 kV	1 meter (m) from the target	1 cGy in 1 hr
	5 cm from the tube housing assembly	30 cGy in 1 hr

TABLE I.

System	Leakage Limit	Measurement Location
0-150 kVp (manufactured or installed prior to March 1, 1989)	1 R (10 mGy) in 1 hr	1 meter (m) from source
0-150 kVp (manufactured on or after March 1, 1989)	100 mR (1mGy) in 1 hr	1 m from source
151-499 kVp	1 R (10 mGy) in 1 hr	1 m from source

Figure: 25 TAC §289.229(h)(5)(F)(i) [~~§289.229 (h)(4)(B)(i)~~]

TABLE IV.
HALF-VALUE LAYER FOR SELECTED kVp

X-ray tube voltage (kilovolt peak)		Minimum HVL (mm of aluminum)	Minimum HVL (mm of aluminum)
Designed operating range	Measured operating potential	X-ray systems (except dental) manufactured before June 10, 2006	X-ray systems (except dental) manufactured on or after June 10, 2006
Below 51 <u>kVp</u>	30	0.3	0.3
	40	0.4	0.4
	50	0.5	0.5
51 to 70 <u>kVp</u>	51	1.2	1.3
	60	1.3	1.5
	70	1.5	1.8
Above 70 <u>kVp</u>	71	2.1	2.5
	80	2.3	2.9
	90	2.5	3.2
	100	2.7	3.6
	110	3.0	3.9
	120	3.2	4.3
	130	3.5	4.7
	140	3.8	5.0
150	4.1	5.4	

Figure: 25 TAC §289.229(h)(5)(F)(viii) [~~§289.229(h)(4)(B)(viii)~~]

The average ratios of exposure in milliRoentgen (mR) [~~mR~~] to the indicated mAs product obtained at any two consecutive Milliampere (mA) [~~mA~~] or Milliampere-seconds (mAs) [~~mAs~~] settings must [~~shall~~] not differ by more than 0.10 times their sum, where X_1 and X_2 are the average mR/mAs values obtained at each of two consecutive tube current settings:

$$|\bar{x}_1 - \bar{x}_2| \leq 0.10(\bar{x}_1 + \bar{x}_2)$$

Figure: 25 TAC §289.229(I)

Name of Record		Rule Cross-Reference	Time Interval Required for Record Keeping
Accelerators used for research and development and industrial operations			
(A)	Initial surveys	(f)(2)(C)	Until termination of registration
(B)	Tests and repairs	(f)(3)(A)(x)	5 years
(C)	Calibration, surveys	(f)(3)(F)	5 years
(D)	Contamination smear for units operating greater than 10 MeV	(f)(3)(G)	Until termination of registration
(E)	Receipt, transfers, and disposal	(f)(3)(H)	Until termination of registration
(F)	Training for operators	(f)(4)(B)	Until 2 years after the individual terminates employment
Therapeutic radiation machines, radiation therapy simulation systems, and EBT devices			
(G)	Credentials of operators	(h)(1)(C)	Until 2 years after the individual terminates employment
	EBT device operators	(h)(1)(E)	
(H)	Review of quality assurance program	(h)(1)(F)(vii)	5 years
(I)	Written OSP	(h)(1)(G)	Until transfer of machine or termination of registration
(J)	FDA variances	(h)(1)(H)	Until transfer of machine or termination of registration
(K)	Initial and Subsequent Surveys		Until termination of registration
	Therapy (below 1 MeV)	(h)(2)(D)(i)(II)	
	Therapy (1 MeV and above)	(h)(3)(C)(i)(III)	
	EBT device	(h)(4)(B)(i)(II)	

(L)	Calibration Therapy (below 1 MeV) Therapy (1 MeV and above) EBT device	(h)(2)(D)(ii)(V) (h)(3)(C)(ii) (h)(4)(B)(ii)	5 years
(M)	Contamination smears for units operating greater than 10 MeV	(h)(1)(I)	Until termination of registration
(N)	QA checks and corrective actions Therapy (below 1 MeV) Therapy (1 MeV and above) EBT device	(h)(2)(D)(iii)(VI) (h)(3)(C)(iii)(VII) (h)(4)(B)(iii)	5 years after the QA checks
(O)	Leakage measurements Therapy (1 MeV and above)	(h)(3)(A)(i)	5 years
(P)	Protective devices for radiation therapy simulation systems	(h)(5)(A)(iii)(II)	3 years
(Q)	Film processing records for simulators	(h)(5)(E)(i)(V), (VI), and (ii)	3 years
(R)	Digital imaging acquisition systems	(h)(5)(E)(iii)	3 years
(S)	CT dose measurements	(h)(5)(C)(iv)(III)	5 years
(T)	CT films resulting from quality control tests	(h)(5)(D)(ii)	1 year or until a new phantom image is performed
(U)	Reports of medical events	(j)(2)	Until termination of registration

Name of Record	Rule Cross-Reference	Time Interval Required for Record Keeping
Accelerators used for research and development and Industrial Operations		
(A) Initial surveys	(f)(2)(C)(iii)	Until termination of registration
(B) Tests and repairs	(f)(3)(A)(x)	5 years
(C) Calibration, surveys	(f)(3)(F)	5 years
(D) Contamination smear for units operating greater than 10 MeV	(f)(3)(G)	Until termination of registration
(E) Receipt, transfers, and disposal	(f)(3)(H)	Until termination of registration
(F) Training for operators	(f)(4)(B)	Until 2 years after the individual terminates employment

Therapeutic radiation machines, simulators, and electronic brachytherapy devices		
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(G) Credentials of operators	(h)(1)(C)	Until 2 years after the individuals leave the facility
Electronic brachytherapy device operators	(h)(i)(E)(iii)	Until 2 years after the individuals leave the facility
(H) Review of quality assurance program	(h)(1)(F)(vii)	5 years
(I) FDA Variances	(h)(1)(H)	Until transfer of machine or termination of

		registration
(J) Initial Surveys	-	-
Therapy (below 1-MeV)	(h)(2)(D)(i)(II)	Until termination of registration
Therapy (1 MeV) and above	(h)(3)(C)(i)(III)	Until termination of registration
Electronic brachytherapy device	(k)(2)(A)(ii)	Until termination of registration
(K) Calibration	-	-
Therapy (below 1-MeV)	(h)(2)(D)(i)(II)	5 years
Therapy (1 MeV and above)	(h)(3)(C)(ii)(VI)	5 years
Electronic brachytherapy device	(k)(2)(B)(vi)	5 years
(L) Contamination Smears for units operating greater than 10 MeV	(h)(1)(I)	Until termination of registration
(M) Spot checks and corrective actions	-	-
Therapy (below 1-MeV)	(h)(2)(D)(iii)(VI)	5 years after the spot checks
Therapy (1 MeV and above)	(h)(3)(C)(iii)(VII)	5 years after the spot checks
Electronic brachytherapy device	(k)(2)(C)(v)	5 years after the spot checks
(N) Leakage measurements	-	-
Therapy (1 MeV and above)	(h)(3)(A)(i)	5 years
(O) Protective devices	(h)(4)(A)(iii)(II)	3 years

for simulators

~~(P) Film processing records for simulators~~ ~~(h)(4)(A)((viii)(VI) and (ix)~~ ~~3 years~~

~~(Q) Digital imaging acquisition systems~~ ~~(h)(4)(A)(x)~~ ~~3 years~~

~~(R) CT dose measurements~~ ~~(h)(4)(D)(iii)(III)~~ ~~5 years~~

~~(S) CT films resulting from quality control tests~~ ~~(h)(4)(D)(iv)(II)~~ ~~1 year or until a new phantom image is performed~~

~~(T) Record of device-specific training for electronic brachytherapy devices~~ ~~(h)(1)(E)(iii)~~ ~~Until 2 years after the individual leaves the facility]~~

Figure: 26 TAC §550.410(d)(2)

Minors	Total Staff	RN	RN or LVN	RN, LVN or Direct Care staff
1	1	1		
2-6	2	1		1
7-9	3	1	1	1
10-12	4	1	1	2
13-15	5	2	1	2
16-18	6	2	1	3
19-21	7	2	2	3
22-24	8	2	2	4
25-27	9	3	2	4
28-30	10	3	2	5
31-33	11	3	3	5
34-36	12	3	3	6
37-39	13	4	3	6
40-42	14	4	3	7
43-45	15	4	4	7
46-48	16	4	4	8
49-51	17	5	4	8
52-54	18	5	4	9
55-57	19	5	5	9
58-60	20	5	5	10

Minors	Total Staff	RN	RN or LVN	RN, LVN or Direct Care staff
1	1	1	-	-
2-6	2	1	-	1
7-9	3	1	1	1
10-12	4	1	1	2
13-15	5	2	1	2
16-18	6	2	1	3
19-21	7	2	2	3
22-24	8	2	2	4
25-27	9	3	2	4
28-30	10	3	2	5
31-33	11	3	3	5
34-36	12	3	3	6
37-39	13	4	3	6
40-42	14	4	3	7
43-45	15	4	4	7
46-48	16	4	4	8
49-51	17	5	4	8
52-54	18	5	4	9
55-57	19	5	5	9
58-60	20	5	5	10]

Figure: 26 TAC §550.1408(m)

S E V E R I T Y		Isolated	Pattern	Widespread
	Severity Level A: Immediate threat	\$400-\$500 J	\$400-\$500 K	\$400-\$500 L
	Severity Level B: Actual harm	\$300-\$400 G	\$300-\$400 H	\$300-\$400 I
	Severity Level C: No actual harm with a potential for more than minimal harm	\$200-\$300 D	\$200-\$300 E	\$200-\$300 F
	Severity Level D: No actual harm with a potential for minimal harm	\$100-\$200 A	\$100-\$200 B	\$100-\$200 C
S C O P E				

Note: To assist in using the scope and severity table, the following example is provided: a center that is cited for a violation that is an immediate threat to the health or safety of a minor and is widespread in scope will receive a penalty amount of \$400-\$500 as reflected in box L.

S
E
V
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Y

	Isolated	Pattern	Widespread
Severity Level A: Immediate threat	\$400-\$500 J	\$400-\$500 K	\$400-\$500 L
Severity Level B: Actual harm	\$300-\$400 G	\$300-\$400 H	\$300-\$400 I
Severity Level C: No actual harm with a potential for more than minimal harm	\$200-\$300 D	\$200-\$300 E	\$200-\$300 F
Severity Level D: No actual harm with a potential for minimal harm	\$100-\$200 A	\$100-\$200 B	\$100-\$200 C

S
C
O
P
E

Note: To assist in using the scope and severity table, the following example is provided: a center that is cited for a violation that is an immediate threat to the health or safety of a minor and is widespread in scope will receive a penalty amount of ~~\$400-\$500~~ as reflected in box L.]

Figure: 31 TAC §155.15(b)(1)(C)(i)

Residential Use, Category I
Coastal Easement Rent and Fees

Notable Definitions

Residential use, Category I -- One single-family residential dwelling and accessory building(s) on one defined lot or parcel of land; both land and improvements are typically under the same ownership. (Definition from 31 TAC §155.1(d)(47))

Fill formula -- Encumbered state land multiplied by the appraised market value of adjacent littoral property multiplied by the return on investment. (Definition from 31 TAC §155.1(d)(28))

Fees

Application Fee: \$25.00 (per occurrence on new, amendment, and assignment applications)

Rent

Rental consideration is determined by taking the greater of:

- (i) Minimum Rent (\$25.00 annually per project component)
- (ii) Project Component Rent (listed below)

Project Component	Annual Rent
Piers, Docks and Watercraft Storage	\$0.03 per square foot
Multiple Boatlift, Boathouse, Covered Boat Slip, Oversized Personal and Watercraft Slip	\$250.00 for each additional
Covered Second Level (Partially or Fully)	\$75.00 per structure
Breakwater, Jetty, Groin	\$0.03 per square foot ¹
Dredge	
New Dredge	\$0.50 per cubic yard ²
Existing Dredge	\$0.01 per square foot
Fill	
Proposed Fill	\$0.10 per square foot -OR- fill formula not to exceed \$1.00 per square foot
Existing Fill	Variable ³
Concrete Stairs and Slabs	\$0.03 per square foot
Rip Rap, Vegetative Shoreline Stabilization, and Living Shorelines	No rent ⁴

¹ Breakwaters constructed in association with a living shoreline will have no annual rent.

² New Dredge is a one-time rent assessed at the initial dredging, subject to §155.15(b)(4).

³ (-a-) existing fill (excluding bulkheads) not permitted as of August 15, 1995: \$0.02 per square foot.

(-b-) existing fill permitted after August 15, 1995: \$0.10 per square foot -OR- fill formula not to exceed \$1.00 per square foot.

(-c-) existing fill at renewal: 110% of the previous contract fill rate for each five-year period not to exceed \$1.00 per square foot.

⁴ Projects that consist only of rip rap or vegetative shoreline stabilization have no rent.

Figure: 31 TAC §155.15(b)(1)(C)(ii)

**Residential Use, Category II
Coastal Easement Rent and Fees**

Notable Definitions

Residential use, Category II -- Multi-family residential units per defined lot or parcel of land; land and individual units may be separately owned; includes uses by condominium developments and homeowners associations acting for and on behalf of owners of a multi-family residential development, but does not include time-share developments or any use that includes commercial activities. (Definition from 31 TAC §155.1(d)(48))

Fill formula -- Encumbered state land multiplied by the appraised market value of adjacent littoral property multiplied by the return on investment. (Definition from 31 TAC §155.1(d)(28))

Fees

Application Fee: \$50.00 (per occurrence on new, amendment, and assignment applications)

Rent

Rental consideration is determined by taking the greater of:

- (i) Minimum Rent (\$100.00 per year)
- (ii) Project Component Rent (listed below)

Project Component	Annual Rent
Piers, Docks and Watercraft Storage	\$0.15 per square foot
Breakwater, Jetty, Groin	\$0.03 per square foot ¹ –
Dredge	
New Dredge Existing	\$0.50 per cubic yard ²
Dredge	\$0.01 per square foot
Open Encumbered Area	\$0.02 per square foot
Fill	
Proposed Fill	\$0.10 per square foot -OR- fill formula not to exceed \$1.00 per square foot
Existing Fill	Variable ³
Concrete Stairs and Slabs	\$0.15 per square foot
Rip Rap, Vegetative Shoreline Stabilization, and Living Shorelines	No rent ⁴

¹ Breakwaters constructed in association with a living shoreline will have no annual rent.

² New Dredge is a one-time rent assessed at the initial dredging, subject to §155.15(b)(4).

³ (-a-) existing fill (excluding bulkheads) not permitted as of August 15, 1995: \$0.02 per square foot.

(-b-) existing fill permitted after August 15, 1995: \$0.10 per square foot -OR- fill formula not to exceed \$1.00 per square foot.

(-c-) existing fill at renewal: 110% of the previous contract fill rate for each five-year period not to exceed \$1.00 per square foot.

⁴ Projects that consist only of rip rap or vegetative shoreline stabilization have no rent.

Figure: 31 TAC §155.15(b)(1)(C)(iii)

Residential Use, Category III
Coastal Easement Rent and Fees

Notable Definitions

Residential use, Category III -- One single family residential dwelling and accessory building(s) on one defined lot or parcel of land that is being used for (in part or whole) short-term residential rental--i.e., daily, weekly, monthly, seasonal; both land and improvements are typically under the same ownership. (Definition from 31 TAC §155.1(d)(49))

Fill formula -- Encumbered state land multiplied by the appraised market value of adjacent littoral property multiplied by the return on investment. (Definition from 31 TAC §155.1(d)(28))

Fees

Application Fee: \$50.00 (per occurrence on new, amendment, and assignment applications)

Rent

Rental consideration is determined by taking the greater of:

- (i) Minimum Rent (\$100.00 per year)
- (ii) Project Component Rent (listed below)

Project Component	Annual Rent
Piers, Docks and Watercraft Storage	\$0.15 per square foot
Multiple Boatlift, Boathouse, Covered Boat Slip, Oversized Personal and Watercraft Slip	\$250.00 for each additional
Covered Second Level (Partially or Fully)	\$75.00 per structure
Breakwater, Jetty, Groin	\$0.03 per square foot ¹
Dredge	
New Dredge	\$0.50 per cubic yard ²
Existing Dredge	\$0.01 per square foot
Fill	
Proposed Fill	\$0.10 per square foot -OR- fill formula not to exceed \$1.00 per square foot
Existing Fill	Variable ³
Concrete Stairs and Slabs	\$0.15 per square foot
Rip Rap, Vegetative Shoreline Stabilization, and Living Shorelines	No rent ⁴

¹ Breakwaters constructed in association with a living shoreline will have no annual rent.

² New Dredge is a one-time rent assessed at the initial dredging, subject to §155.15(b)(4).

³ (-a-) existing fill (excluding bulkheads) not permitted as of August 15, 1995: \$0.02 per square foot.
 (-b-) existing fill permitted after August 15, 1995: \$0.10 per square foot -OR- fill formula not to exceed \$1.00 per square foot.
 (-c-) existing fill at renewal: 110% of the previous contract fill rate for each five-year period not to exceed \$1.00 per square foot.

⁴ Projects that consist only of rip rap or vegetative shoreline stabilization have no rent.

Figure: 31 TAC §155.15(b)(1)(C)(iv)

Commercial and Industrial Activity
Commercial Coastal Easement Rent and Fees

Notable Definitions

Commercial activity -- Activity undertaken by a lessee or any other person with or without consent, which is designed to enhance or accommodate a venture associated with a revenue generating activity. This definition excludes industrial activity, but includes residential uses other than those included in the definition of residential use, Category III if there is revenue generating activity conducted on the premises. (Definition from TAC §155.1(d)(17))

Fees

Application Fee: \$100.00 (per occurrence on new, amendment, and assignment applications)

Rent

Rental consideration is determined by taking the greater of:

- (i) Minimum Rent (\$500.00 per year)
- (ii) Project Component Rent (listed below)
- (iii) Marina Rent (listed below, and applied if applicable)

CPI Based Rent Adjustment Schedule

The published rent schedule will be updated every five years based on changes in the Consumer Price Index for All Urban Consumers (CPI-U) relative to the baseline index at the inception of this policy. The adjustment will reflect the percentage change in the CPI-U over each five-year period. Renewals and new agreements will use the updated rent schedule effective at the time of renewal or new agreement.

Project Component	Annual Rent
Piers, Docks and Watercraft Storage	\$0.32 per square foot
Wharf (industrial only)	\$0.48 per square foot
Breakwater, Jetty, Groin	\$0.32 per square foot ¹
Dredge	
New Dredge Existing	\$0.80 per cubic yard ²
Dredge	\$0.01 per square foot
Open Encumbered Area	\$0.05 per square foot
Fill	
Proposed Fill	\$1.00 per square foot
Existing Fill	Variable ³
Concrete Stairs and Slabs	\$0.32 per square foot
Rip Rap, Vegetative Shoreline Stabilization, and Living Shorelines	No rent ⁴
Marina	\$3.00 per linear foot of boatslip

¹ Breakwaters constructed in association with a living shoreline will have no annual rent.

² New Dredge is a one-time rent assessed at the initial dredging, subject to §155.15(b)(4).

³ (-a-) existing fill (excluding bulkheads) as of August 15, 1995: \$0.02 per square foot.

 (-b-) existing fill after August 15, 1995: \$1.00 per square foot.

 (-c-) existing fill at renewal: 120% of the previous contract fill rate for each five-year period.

⁴ Projects that consist only of rip rap or vegetative shoreline stabilization have no rent.