UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

January 19, 2021

OFFICE OF
LAND AND EMERGENCY
MANAGEMENT

Mr. John A. Mullis II
Oak Ridge Office of Environmental Management
Oak Ridge Reservation
U. S. Department of Energy
P.O. Box 2001
Oak Ridge, Tennessee 37831

Mr. David W. Salyers
Commissioner
Tennessee Department of Environment and Conservation
312 Rosa L. Parks Avenue
Nashville, Tennessee 37243-0435

Dear Mr. Mullis and Commissioner Salyers:

I write you on behalf of Administrator Andrew R. Wheeler as a follow up to his December 31, 2020 final decision resolving the dispute among the U.S. Environmental Protection Agency, the Tennessee Department of Environment and Conservation and the U.S. Department of Energy regarding the Oak Ridge Reservation National Priorities List site. Specifically, this letter encloses the table of Applicable or Relevant and Appropriate Requirements (ARARs) that identifies the EPA, Tennessee and Nuclear Regulatory Commission regulations to be added to Table D.1. *ARARs and TBC guidance for landfill wastewater management at the ORR CERCLA EMWMF and the EMDF, Oak Ridge, Tennessee* in the *Focused Feasibility Study for Water Management for the Disposal of CERCLA Waste on the Oak Ridge Reservation, Oak Ridge, Tennessee*, DOE/OR/01-2664&D2 (FFS).

The table includes both the ARARs relevant and appropriate to radionuclides that were the subject of the dispute decided by Administrator Wheeler as well as the additional ARARs applicable to Clean Water Act pollutants that were identified in the Regional Administrator's decision and not disputed. This second set of ARARs was referenced in footnote 24 of page 8 of the Administrator's decision.

Thank you for providing comments on the draft table in response to my January 8, 2021 email. In response to the Department of Energy's comment, we agree that the table includes ARARs that were not disputed and therefore beyond the scope of Administrator's decision. The table is intended to be a compilation of ARARs to be added to the D2 FFS ARARs and TBCs tables for the purpose of developing Preliminary Remediation Goals consistent with CERCLA and the National Contingency Plant. In response to the State of Tennessee's comments, for any state or federal regulations unrelated to the discharge of radionuclides (and therefore outside the scope of the dispute resolved by the Administrator) that are identified in the coming months during the



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remaining steps of the CERCLA remedy decision process, the parties will have the opportunity to examine them against the criteria in the NCP for consideration as ARARs. Ultimately there will be final cleanup numbers that are part of a final cleanup plan that will be part of the Record of Decision.

In order to ensure that the ARARs to be added do not become separated from the Administrator's decision on this matter, a copy of his decision is also enclosed. The EPA looks forward to working closely with both the DOE and the State of Tennessee as we move the landfill projects forward.

Sincerely,

Wright, Peter Digitally signed by Wright, Peter Date: 2021.01.19 11:00:15 -05'00'

Peter C. Wright
Assistant Administrator

Enclosures

cc: Andrew R. Wheeler, EPA Administrator
Susan Parker Bodine, EPA Assistant Administrator, Office of Enforcement and Compliance Assurance
David Fotouhi, EPA Acting General Counsel
Mary S. Walker, EPA Region 4 Administrator
William Cooper, DOE General Counsel



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**Table - Additional ARARs for Inclusion in Revised D2 FFS for Management of Waste Water from ORR On-site Landfills 1/19/2021**

| Action/Media | Requirements | Prerequisite | Citation |
|---|---|---|---|
| **Chemical-specific ARARs** | | | |
| Prevention of pollution through application of treatment | In order to permit the reasonable and necessary uses of the Waters of the State, existing pollution should be corrected as rapidly as practicable, and future pollution prevented through the best available technology economically achievable or that greater level of technology necessary to meet water quality standards; i.e., modeling and stream survey assessments, treatment plants or other control measures.[1] | Point source discharge of pollutants as defined in 40 CFR 122.2 into surface water – **Applicable**<br><br>Point source discharge of radionuclides into surface water – **Relevant and appropriate** | TDEC 0400-40-03-.02(4)<br>*General considerations* |
| | Technology-based treatment requirements cannot be satisfied through the use of "non-treatment" techniques such as flow augmentation and in-stream mechanical aerators. | | 40 CFR 125.3(f) |
| Application of most stringent criteria | Since all Waters of the State are classified for more than one use, the most stringent criteria will be applicable. In cases where criteria for protection of more than one use apply at different stream flows (e.g., aquatic life versus recreation), the most protective will also be applicable. | | TDEC 0400-40-03-.02(5)<br>*General considerations* |
| Compliance with narrative water quality criteria | Interpretation and application of narrative criteria shall be based on available scientific literature and EPA guidance and regulations. | Point source discharge of pollutants as defined in 40 CFR 122.2 into surface water – **Applicable**<br><br>Point source discharge of radionuclides into surface water – **Relevant and appropriate** | TDEC 0400-40-03-.02(10)<br>*General considerations* |
| Application of stream flow for water quality criteria | Water quality criteria shall generally be applied on the basis of stream flows equal to or exceeding the 7-day minimum, 10-year recurrence interval. Criteria that are based on measurements of ambient aquatic community health shall | Discharge of pollutants as defined in 40 CFR 122.2 into surface water Classified as *Fish and Aquatic Life* – **Applicable** | TDEC 0400-40-03-.05(4)<br>*Interpretation of criteria* |

[1] Treatment may be necessary to meet TN water quality standards. Consistent with the Administrator's Decision dated December 31,2020, TBEL requirements are not considered relevant and appropriate to discharges of radionuclides at this Site.



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**Table - Additional ARARs for Inclusion in Revised D2 FFS for Management of Waste Water from ORR On-site Landfills 1/19/2021**

| Action/Media | Requirements | Prerequisite | Citation |
|---|---|---|---|
| | support the designated use, independent of a specified minimum flow duration and recurrence. All other criteria shall be applied on the basis of stream flows equal to or exceeding the 30-day minimum 5-year recurrence interval. | Discharge of radionuclides into surface water Classified as *Fish and Aquatic Life* – **Relevant and appropriate** | |
| | The frequency, magnitude and duration of deviations from normal water conditions shall be considered in interpreting the water quality criteria. When interpreting pathogen data, samples collected during or immediately after significant rain events may be treated as outliers unless caused by point source dischargers. | *Point source discharge of pollutants as defined in 40 CFR 122.2 into surface water* – ***Applicable***<br><br>*Point source discharge of radionuclides into surface water* – ***Relevant and appropriate*** | TDEC 0400-40-03-.05(5)<br>*Interpretation of criteria* |
| Application of water quality criteria | The criteria and standards provide that all discharges of sewage, industrial waste, and other waste shall receive the degree of treatment or effluent reduction necessary to comply with water quality standards, or state or federal laws and regulations pursuant thereto, and where appropriate will comply with the "Standards of Performance" as required by the Tennessee Water Quality Control Act, (T.C.A., §§ 69-3-101, et seq.). (See FN 1.) | Point source discharge of pollutants as defined in 40 CFR 122.2 into surface water – **Applicable**<br><br>Point source discharge of radionuclides into surface water – **Relevant and appropriate** | TDEC 0400-40-03-.05(6)<br>*Interpretation of criteria* |
| | Where naturally formed conditions or background water quality conditions are substantial impediments to attainment of the water quality standards, these conditions shall be taken into consideration in **establishing any effluent l**imitations or restriction on discharge to such waters. For purposes of water quality assessment, exceedances of water quality standards caused by natural conditions will not be considered the condition of pollution. | Point source discharge of pollutants as defined in 40 CFR 122.2 into surface water – **Applicable**<br><br>Point source discharge of radionuclides into surface water – **Relevant and appropriate** | TDEC 0400-40-03-.05(7)<br>*Interpretation of criteria* |
| Use of Reporting Limits | In instances where permit limits established through implementation of these criteria are below analytical capabilities, compliance with those limits will be determined using the following reporting limits, unless in specific cases other reporting limits are demonstrated to be the best | Point source discharge of pollutants as defined in 40 CFR 122.2 into surface water – **Applicable** | TDEC 0400-40-03-.05(8) |

**Table - Additional ARARs for Inclusion in Revised D2 FFS for Management of Waste Water from ORR On-site Landfills 1/19/2021**

| Action/Media | Requirements | Prerequisite | Citation |
|---|---|---|---|
| | achievable because of the particular nature of the wastewater being analyzed. | Point source discharge of radionuclides into surface water – **Relevant and appropriate** | |
| Target Risk Level for Recreation AWQC | The $10^{-5}$ risk level is used for all carcinogenic pollutants. | Derivation of AWQC for pollutants in surface water classified for *Recreation* use – **Applicable**<br><br>Derivation of AWQC Equivalents for radionuclides in surface water classified for *Recreation* use – **Relevant and Appropriate** | TDEC 0400-40-03.-03(4)(j)<br>Footnote c |
| Establishing effluent limits using a calculated numeric water quality criterion | Permitting authority must establish effluent limits using a calculated numeric water quality criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and will fully protect the designated use.<br>Such criterion may be derived using an explicit State policy or regulation interpreting its narrative water quality criterion, supplemented with other relevant information which may include EPA's Water Quality Standards Handbook, October 1983, risk assessment data, exposure data … and current EPA criteria documents.<br>NOTE: *DOE is not required to obtain a permit for any part of a remedial action conducted entirely onsite, per CERCLA §121(e). Use of the terms "permit" and "permittee" reflect regulatory language; in this remedial action, "permit" can generally be taken to mean the Record of Decision, and "permittee" to mean DOE.* | Determination of effluent limits where a State has not established a water quality criterion for a specific pollutant – **Applicable**<br><br>Determination of effluent limits where a State has not established a water quality criterion for radionuclides – **Relevant and Appropriate** | 40 CFR 122.44(d)(vi)(A) |



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**Table - Additional ARARs for Inclusion in Revised D2 FFS for Management of Waste Water from ORR On-site Landfills 1/19/2021**

| Action/Media | Requirements | Prerequisite | Citation |
|---|---|---|---|
| **Action-specific ARARs** | | | |
| Operation and maintenance of treatment and control systems | Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the condition of this permit.<br><br>This provision requires the operation of backup or auxiliary facilities or similar systems, which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.<br>NOTE: *DOE is not required to obtain a permit for any part of a remedial action conducted entirely onsite, per CERCLA §121(e). Use of the terms "permit" and "permittee" reflect regulatory language; in this remedial action, "permit" can generally be taken to mean the Record of Decision, and "permittee" to mean DOE.* | Point source discharge of pollutants as defined in 40 CFR 122.2 into surface water where treatment is used– **Applicable**<br><br>Point source discharge of radionuclides into surface water where treatment is used – **Relevant and Appropriate** | TDEC 0400-40-05-.07(2)(c) |
| Monitoring of effluent | Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. | Point source discharge of pollutants as defined in 40 CFR 122.2 into surface water – **Applicable**<br><br>Point source discharge of radionuclides into surface water – **Relevant and Appropriate** | TDEC 0400-40-05-.07(2)(h) |
| | Permittee shall take all reasonable steps to minimize any adverse impact to the waters of Tennessee resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.<br>NOTE: *DOE is not required to obtain a permit for any part of a remedial action conducted entirely onsite, per CERCLA §121(e). Use of the terms "permit" and "permittee" reflect regulatory language; in this remedial action, "permit" can* | | TDEC 0400-40-05-.07(2)(q) |



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**Table - Additional ARARs for Inclusion in Revised D2 FFS for Management of Waste Water from ORR On-site Landfills 1/19/2021**

| Action/Media | Requirements | Prerequisite | Citation |
|---|---|---|---|
| | *generally be taken to mean the Record of Decision, and "permittee" to mean DOE.* | | |
| Minimum monitoring requirements | In addition to § 122.48, the following monitoring requirements: (1) To assure compliance with permit limitations, requirements to monitor:<br>(i) The mass (or other measurement specified in the permit) for each pollutant limited in the permit;<br>(ii) The volume of effluent discharged from each outfall;<br>(iii) Other measurements as appropriate including pollutants in internal waste streams under § 122.45(i); pollutants in intake water for net limitations under § 122.45(f); frequency, rate of discharge, etc., for non-continuous discharges under § 122.45(e); pollutants subject to notification requirements under§ 122.42(a); and pollutants in sewage sludge or other monitoring as specified in 40 CFR part 503; or as determined to be necessary on a case-by-case basis pursuant to section 405(d)(4) of the CWA.<br>NOTE: *DOE is not required to obtain a permit for any part of a remedial action conducted entirely onsite, per CERCLA §121(e). Use of the terms "permit" and "permittee" reflect regulatory language; in this remedial action, "permit" can generally be taken to mean the Record of Decision, and "permittee" to mean DOE.* | Point source discharge of pollutants as defined in 40 CFR 122.2 into surface water – **Applicable**<br><br>Point source discharge of radionuclides into surface water – **Relevant and appropriate** | 40 CFR § 122.44(i)<br>*Monitoring requirements* |
| Waiver for monitoring certain pollutants under existing permit | The Director may authorize a discharger subject to technology-based effluent limitations guidelines and standards in an NPDES permit to forego sampling of a pollutant found at 40 CFR Subchapter N of this chapter if the discharger has demonstrated through sampling and other technical factors that the pollutant is not present in the discharge or is present only at background levels from intake water and without any increase in the pollutant due to activities of the discharger. | Discharge of pollutants subject to TBELs in existing NPDES Permit – **Applicable** | 40 CFR § 122.44(a)(2)(i)<br>*Monitoring waivers for certain guideline-listed pollutants* |



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**Table - Additional ARARs for Inclusion in Revised D2 FFS for Management of Waste Water from ORR On-site Landfills 1/19/2021**

| Action/Media | Requirements | Prerequisite | Citation |
|---|---|---|---|
| | NOTE: *DOE is not required to obtain a permit for any part of a remedial action conducted entirely onsite, per CERCLA §121(e). Use of the terms "permit" and "permittee" reflect regulatory language; in this remedial action, "permit" can generally be taken to mean the Record of Decision, and "permittee" to mean DOE.* | | |
| Monitoring parameter waiver demonstration | Any request for this waiver must be submitted when applying for a reissued permit or modification of a reissued permit. The request must demonstrate through sampling or other technical information, including information generated during an earlier permit term that the pollutant is not present in the discharge or is present only at background levels from intake water and without any increase in the pollutant due to activities of the discharger.<br>NOTE: *DOE is not required to obtain a permit for any part of a remedial action conducted entirely onsite, per CERCLA §121(e). Use of the terms "permit" and "permittee" reflect regulatory language; in this remedial action, "permit" can generally be taken to mean the Record of Decision, and "permittee" to mean DOE.* | Discharge of pollutants subject to TBELs in existing NPDES Permit – **Applicable** | 40 CFR § 122.44(a)(2)(iii) |
| | Any grant of the monitoring waiver must be included in the permit as an express permit condition and the reasons supporting the grant must be documented in the permit's fact sheet or statement of basis.<br>NOTE: *DOE is not required to obtain a permit for any part of a remedial action conducted entirely onsite, per CERCLA §121(e). Use of the terms "permit" and "permittee" reflect regulatory language; in this remedial action, "permit" can generally be taken to mean the Record of Decision, and "permittee" to mean DOE.* | Discharge of pollutants subject to TBELs in existing NPDES Permit – **Applicable** | 40 CFR § 122.44(a)(2)(iv) |

**Table - Additional ARARs for Inclusion in Revised D2 FFS for Management of Waste Water from ORR On-site Landfills 1/19/2021**

| Action/Media | Requirements | Prerequisite | Citation |
|---|---|---|---|
| Development of effluent limitations | For new sources, technology-based effluent limitations shall require the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, which shall be new source performance standards, if available. | Discharges of pollutants as defined in 40 CFR 122.2 from "*new sources*" – **Applicable** | TDEC 0400-40-05-.08(1)(b) |
| | Toxic effluent limitations shall be based on consideration of the toxicity of the pollutant, its persistence, its degradability, the usual or potential presence of the affected organisms in any waters, the importance of the affective organisms and the nature and extent of the effect of the toxic pollutant on such organisms. | Discharge of toxic pollutants as defined in 40 CFR 122.2 into surface water – **Applicable**<br><br>Point source discharge of radionuclides into surface water – **Relevant and Appropriate** | TDEC 0400-40-05-.08(1)(d) |
| | All effluent limitations or standards shall meet or exceed any minimum standards promulgated by the Administrator and currently effective under the Federal Water Pollution Control Act, P.L. 92-500 as amended or any subsequent applicable acts. | | TDEC 0400-40-05-.08(1)(f) |
| | All pollutants shall receive treatment or corrective action to insure compliance with effluent limitations established by the US EPA pursuant to Section 301 and 302 and standards of performance for new sources pursuant to Section 306, effluent limitations and prohibitions and pretreatment standards pursuant to Section 307 of the Federal Water Pollution Control Act, P.L. 92-500 as amended; also to insure compliance with any approved water quality standard. | | TDEC 0400-40-05-.08(1)(g) |



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**Table - Additional ARARs for Inclusion in Revised D2 FFS for Management of Waste Water from ORR On-site Landfills 1/19/2021**

| Action/Media | Requirements | Prerequisite | Citation |
|---|---|---|---|
| Compliance Point for Discharge | All permit effluent limitations, standards, and prohibitions shall be established for each outfall or discharge point of the permitted facility, except as otherwise provided for BMPs where limitations on effluent or internal waste streams are infeasible<br>NOTE: *DOE is not required to obtain a permit for any part of a remedial action conducted entirely onsite, per CERCLA §121(e). Use of the term "permit" reflects regulatory language; in this remedial action, "permit" can generally be taken to mean the Record of Decision.* | Point source discharge of pollutants as defined in 40 CFR 122.2 into surface water – **Applicable**<br><br>Point source discharge of radionuclides into surface water – **Relevant and Appropriate** | TDEC 0400-40-05-.08(1)(k) |
| | All permit effluent limitations, standards, and prohibitions shall be expressed as maximum daily and monthly average, unless impracticable.<br>NOTE: *DOE is not required to obtain a permit for any part of a remedial action conducted entirely onsite, per CERCLA §121(e). Use of the term "permit" reflects regulatory language; in this remedial action, "permit" can generally be taken to mean the Record of Decision.* | Continuous discharge of pollutants as defined in 40 CFR 122.2 into surface water – **Applicable**<br><br>Continuous discharge of radionuclides into surface water – **Relevant and Appropriate** | TDEC 0400-40-05-.08(1)(m) |
| Effluent Limitations for metals | All permit effluent limitations, standards, or prohibitions for a metal shall be expressed as "total recoverable metal" unless a promulgated effluent guideline specifies otherwise.<br>NOTE: *DOE is not required to obtain a permit for any part of a remedial action conducted entirely onsite, per CERCLA §121(e). Use of the term "permit" reflects regulatory language; in this remedial action, "permit" can generally be taken to mean the Record of Decision.* | Point source discharge of pollutants as defined in 40 CFR 122.2 into surface water – **Applicable**<br><br>Point source discharge of radionuclides that are also metals into surface water – **Relevant and Appropriate** | TDEC 0400-40-05-.08(1)(p) |
| Measurement of effluent standards | Any discharge which is not a minor discharge or activity that contains a toxic pollutant for which an effluent standard has been established shall be monitored:<br>• Flow (in million gallons per day); and | Point source discharge of pollutants as defined in 40 CFR 122.2 into surface water – **Applicable** | TDEC 0400-40-05-.08(1)(s) |

**Table - Additional ARARs for Inclusion in Revised D2 FFS for Management of Waste Water from ORR On-site Landfills 1/19/2021**

| Action/Media | Requirements | Prerequisite | Citation |
|---|---|---|---|
| | • Pollutants which are subject to reduction or elimination under the terms and conditions of the permit<br>NOTE: *DOE is not required to obtain a permit for any part of a remedial action conducted entirely onsite, per CERCLA §121(e). Use of the term "permit" reflects regulatory language; in this remedial action, "permit" can generally be taken to mean the Record of Decision. "Pollutant" in this requirement shall include all radionuclides for which an effluent limitation is established under this remedial action.* | Point source discharge of radionuclides into surface water – **Relevant and Appropriate** | |
| Discharge of wastewater from RCRA hazardous waste landfills | Except as provided in 40 CFR § 125.30 through § 125.32, any existing point source subject to this subpart must achieve the Effluent Limitations listed in the regulation for each regulated parameter[2] which represent the application of *best practicable control technology* (BPT). | Discharge of wastewater[3] from landfills subject to 40 CFR Part 264, from an "*existing* "source – **Applicable** | 40 CFR § 445.11<br>*Effluent limitations attainable by the application of BPT.* |
| | Except as provided in 40 CFR § 125.30 through § 125.32, any existing point source subject to this subpart must achieve the following effluent limitations which represent the application of *best available technology economically* (BAT): Limitations for ammonia (as N), a-terpineol, aniline, benzoic acid, naphthalene, p-cresol, phenol, pyridine, arsenic, chromium | | 40 CFR § 445.13<br>*Effluent limitations representing the degree of effluent reduction attainable by the application of BAT.* |

[2] Radionuclides are not on the list of *regulated parameters*.

[3] "*Landfill wastewater* means all wastewater associated with, or produced by, landfilling activities except for sanitary wastewater, non-contaminated storm water, contaminated ground water, and wastewater from recovery pumping wells. Landfill wastewater includes, but is not limited to, leachate, gas collection condensate, drained free liquids, laboratory derived wastewater, contaminated storm water and contact wash water from washing truck, equipment, and railcar exteriors and surface areas which have come in direct contact with solid waste at the landfill facility." 40 CFR 445. 2(f). "*Contaminated storm water* means storm water which comes in direct contact with landfill wastes, the waste handling and treatment areas, or landfill wastewater as defined in paragraph (f) of this section. Some specific areas of a landfill that may produce contaminated storm water include (but are not limited to): the open face of an active landfill with exposed waste (no cover added); the areas around wastewater treatment operations; trucks, equipment or machinery that has been in direct contact with the waste; and waste dumping areas." 40 CFR 445.2(b).



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**Table - Additional ARARs for Inclusion in Revised D2 FFS for Management of Waste Water from ORR On-site Landfills 1/19/2021**

| Action/Media | Requirements | Prerequisite | Citation |
|---|---|---|---|
| | and zinc are the same as the corresponding limitations specified in §445.11. | | |
| | Any new source subject to this subpart must achieve the following performance standards: Standards are the same as those specified in § 445.11. | Discharge of wastewater[1] from landfills subject to 40 CFR Part 264, from a "*new*" source – **Applicable** | 40 CFR § 445.14<br>*New source performance standards* |
| Protection of the general population from releases of radioactivity from land disposal facility | Concentrations of radioactive material which may be released to the general environment in groundwater, surface water, air, soil, plants, or animals must not result in an annual dose exceeding an equivalent of 25 millirems to the whole body, 75 millirems to the thyroid, and 25 millirems to any other organ of any member of the public.[4] | The siting, design, operation, closure, and control after closure of radioactive waste land disposal facilities – **Relevant and appropriate** | 10 CFR 61.41 |
| Protection of individuals during land disposal facility operations | Operations involving releases of radioactivity in effluents from the land disposal facility shall be governed by the 25/75/25 millirem per year dose limits in 10 CFR 61.41. (See FN4.) | The operation of radioactive waste land disposal facilities – **Relevant and appropriate** | 10 CFR 61.43 |

[4] NOTE: Under these regulations, concentrations of radioactive material that may be released to the general environment in groundwater, surface water, air, soil, plants or animals must not result in an annual dose exceeding an equivalent of 25 millirems to the whole body, 75 millirems to the thyroid, and 25 millirems to any other organ of any member of the public with flexibility on apportionment of that dose among exposure pathways.



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