

**FOURTH FIVE-YEAR REVIEW ADDENDUM REPORT  
ST. LOUIS AIRPORT/HAZELWOOD INTERIM STORAGE SITE  
ST. LOUIS COUNTY, MISSOURI**



**Prepared by:  
U.S. Army Corps of Engineers**

**Reviewed and Approved by:  
U.S. Environmental Protection Agency, Region 7  
Lenexa, Kansas**

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**Robert D. Jurgens, Director  
Superfund and Emergency Management Division  
EPA, Region 7**

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**Date**

**DEPARTMENT OF THE ARMY  
U. S. ARMY CORPS OF ENGINEERS, ST. LOUIS DISTRICT  
114 James S McDonnell Boulevard  
Hazelwood, MO 63042-3102  
August 8, 2025**

**Addendum to the *Five-Year Review Report: Fourth Five-Year Review Report for Formerly Utilized Sites Remedial Action Program (FUSRAP) St. Louis Sites, Revision 0, dated August 17, 2020***

A five-year review report addendum (FYRRA) is generally completed for remedies where the protectiveness determination is deferred by the lead agency or by the U.S. Environmental Protection Agency (USEPA) as the lead regulatory agency for National Priorities List (NPL) sites, until further information is obtained. This FYRRA follows the template published by the USEPA.

The USEPA provided a timeframe of September 30, 2024, for completion of the FYRRA and a protectiveness statement (USEPA 2023). This FYRRA documents progress since the *Five-Year Review Report: Fourth Five-Year Review Report for Formerly Utilized Sites Remedial Action Program (FUSRAP) St. Louis Sites* (Fourth FYRR) (USACE 2020) in St. Louis, Missouri, and protectiveness determinations for the remedies where the statement was deferred in the USEPA's review of the Revision 0 Fourth FYRR.

The Revision 0 Fourth FYRR was signed by U.S. Army Corps of Engineers (USACE) Colonel Kevin R. Golinghorst on August 17, 2020. The protectiveness statement(s) outlined in that report and in the USEPA Memorandum dated August 17, 2020, (USEPA 2020) are as follows.

**USACE Protectiveness Statement for the North St. Louis County Sites**

The remedy at the North St. Louis County (NC) Sites is expected to be protective of human health and the environment upon completion. In the interim, remedial activities completed to date have adequately addressed all exposure pathways that could result in unacceptable risks in these areas.

**USACE Protectiveness Statement for the St. Louis Downtown Site**

The remedy at St. Louis Downtown Site (SLDS) is expected to be protective of human health and the environment upon completion. In the interim, remedial activities completed to date have adequately addressed all exposure pathways that could result in unacceptable risks in these areas.

**USEPA Protectiveness Statement for the NC Sites**

The USEPA is making an independent assessment of the protectiveness of “deferred protectiveness.” A protectiveness determination of the remedy at the St. Louis Airport Site (SLAPS) cannot be made until further information is obtained. Further information is necessary to evaluate temporary/interim institutional controls and the potential for exposures from inaccessible soil or identified accessible soil that has not yet been remediated, evaluate the vapor intrusion pathway, and provide additional characterization of groundwater sufficient to delineate and monitor groundwater impacts. The USEPA defines institutional controls as “non-engineered instruments such as administrative and legal controls that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy.... Institutional controls play an important role in site remedies because they reduce exposure to contamination by limiting land or resource use and guide human behavior” (<https://www.epa.gov/superfund/superfund-institutional-controls>, accessed 02/26/2024).

### USEPA Protectiveness Statement for the SLDS

The USEPA is making an independent assessment of the protectiveness of “deferred protectiveness.” A protectiveness determination of the remedies for both the accessible and inaccessible soil of the SLDS cannot be made until further information is obtained. Further information is necessary to evaluate temporary/interim institutional controls and the potential for exposures from inaccessible soil or identified accessible soil that has not yet been remediated, evaluate the vapor intrusion pathway, and provide additional characterization of groundwater sufficient to delineate and monitor groundwater impacts.

The USEPA identified the following issues and recommendations regarding the deferred protectiveness statements (USEPA 2020).

<b>USEPA Issues/Recommendations for the NC Sites</b>				
<b>NC Sites 1</b>	<b>Issue Category:</b> Institutional Controls			
	<b>Issue:</b> Temporary/interim institutional controls as presented in the Fourth FYRR are not clearly defined nor do they demonstrate that near-future exposures to contaminated soil are unlikely.			
	<b>Recommendation:</b> Evaluate temporary/interim institutional controls and the potential for exposures from inaccessible soil or identified accessible soil that has not yet been remediated.			
	<b>Affect Current Protectiveness</b>	<b>Affect Future Protectiveness</b>	<b>Implementing Party</b>	<b>Oversight Party</b>
	No	Yes	USACE	USEPA
<b>NC Sites 2</b>	<b>Issue Category:</b> Remedy Performance			
	<b>Issue:</b> The vapor intrusion pathway has not been evaluated to determine whether unacceptable exposures are occurring.			
	<b>Recommendation:</b> Evaluate the vapor intrusion pathway.			
	<b>Affect Current Protectiveness</b>	<b>Affect Future Protectiveness</b>	<b>Implementing Party</b>	<b>Oversight Party</b>
	No	Yes	USACE	USEPA
<b>NC Sites 3</b>	<b>Issue Category:</b> Remedy Performance			
	<b>Issue:</b> Impacts to groundwater have not been fully characterized.			
	<b>Recommendation:</b> Conduct additional groundwater characterization sufficient to delineate and monitor for groundwater impacts.			
	<b>Affect Current Protectiveness</b>	<b>Affect Future Protectiveness</b>	<b>Implementing Party</b>	<b>Oversight Party</b>
	No	Yes	USACE	USEPA

<b>USEPA Issues/Recommendations for the SLDS</b>				
<b>SLDS 1</b>	<b>Issue Category:</b> Institutional Controls			
	<b>Issue:</b> Temporary/interim institutional controls as presented in the Fourth FYRR are not clearly defined nor do they demonstrate that near-future exposures to contaminated soil are unlikely.			
	<b>Recommendation:</b> Evaluate temporary/interim institutional controls and the potential for exposures from inaccessible soil or identified accessible soil that has not yet been remediated.			
	<b>Affect Current Protectiveness</b>	<b>Affect Future Protectiveness</b>	<b>Implementing Party</b>	<b>Oversight Party</b>
No	Yes	USACE	USEPA	
<b>SLDS 2</b>	<b>Issue Category:</b> Remedy Performance			
	<b>Issue:</b> The vapor intrusion pathway has not been evaluated to determine whether unacceptable exposures are occurring.			
	<b>Recommendation:</b> Evaluate the vapor intrusion pathway.			
	<b>Affect Current Protectiveness</b>	<b>Affect Future Protectiveness</b>	<b>Implementing Party</b>	<b>Oversight Party</b>
No	Yes	USACE	USEPA	
<b>SLDS 3</b>	<b>Issue Category:</b> Remedy Performance			
	<b>Issue:</b> Impacts to groundwater have not been fully characterized.			
	<b>Recommendation:</b> Conduct additional groundwater characterization sufficient to delineate and monitor for groundwater impacts.			
	<b>Affect Current Protectiveness</b>	<b>Affect Future Protectiveness</b>	<b>Implementing Party</b>	<b>Oversight Party</b>
No	Yes	USACE	USEPA	

The Revision B Fourth FYRR did not contain sufficient information for the USEPA to arrive at a protectiveness determination; consequently, a protectiveness determination was deferred until further information could be obtained.

Issues leading to the USEPA’s deferred protectiveness statement were among 73 numbered and 62 lettered comments that were received via email on July 27, 2020. At that time, the USEPA did not identify which of the comments would be related to a deferred protectiveness statement, so comments with the same topics as those identified in the USEPA’s protectiveness statements are assumed to be the relevant issues. These comments and the subsequent USACE responses are included in this FYRRA and are presented based on the recommendation numbers listed previously (e.g., NC Sites 1, NC Sites 2, etc.).

For the issues labeled NC Sites 3 and SLDS 3, additional groundwater evaluation has taken place in the form of comprehensive sampling events. No data collected during these events has led to a questioning of the protectiveness (e.g., no indication of plume migration or completion of an exposure pathway is identified). To further demonstrate the protectiveness of groundwater, additional evaluations are planned or on-going.

**Progress Since the Fourth FYRR for NC Sites 1:** *Temporary/interim institutional controls and the potential for exposures from inaccessible soil or identified accessible soil that has not yet been remediated.*

With respect to Manhattan Engineer District (MED)/U.S. Atomic Energy Commission (AEC) contaminated soil (whether inaccessible or pending remediation), the USACE has long-standing programs with property owners, utility operators, and transportation corridor operators to reduce exposure to contamination by limiting land or resource use and to guide human behavior. The USACE informs property owners of areas of MED/AEC contamination and advises that the USACE will provide assistance if soil is to be disturbed. The USACE has agreements with utility operators and transportation corridor operators to inform the USACE of planned work that would disturb soil within the *Record of Decision for the North St. Louis County Sites* (NC ROD) (USACE 2005) boundaries so the USACE can inform them of soil conditions relative to MED/AEC contamination and provide support as necessary for safe conduct of their work. These USACE efforts meet the intent and effect of institutional controls. Not disturbing the soil controls the risk from applicable pathways identified in the NC ROD.

In furtherance of this effort to leave contaminated soil undisturbed until remediation can be performed, the USACE has developed and implemented the *Interim Land Use Control and Inspection Plan for the North St. Louis County Sites* (USACE 2025). This plan provides for systematic notification and annual renotification of landowners with soil contaminated from historical MED/AEC activities and quarterly USACE inspection of the contaminated soil to confirm the soil is not disturbed.

In addition, the USACE has revised its *Formerly Utilized Sites Remedial Action Program (FUSRAP) Utility Policy* (USACE 2018) to clarify the steps necessary for utilities and to update the inaccessible areas included. This policy is included as Attachment 1 of this FYRRA.

The risk posed to humans from undisturbed radiologically contaminated soil was evaluated for the suburban resident scenario associated with Coldwater Creek (CWC) and its floodplain north of Dunn Road and for the industrial worker scenario associated with properties with contaminated soil that are south of Dunn Road. The radiation risk is evaluated as follows.

- As a conservative measure and regardless of location, the 20 subsurface samples and the 20 surface samples with the greatest net sum of ratios ( $SOR_N$ ) along CWC north of Dunn Road were selected as the datasets for the suburban resident evaluation. The datasets were used to calculate surface and subsurface exposure point concentrations (EPCs) by subtracting the respective surface or subsurface background value from the recommended ProUCL 95 percent upper confidence limit ( $UCL_{95}$ ) value for each contaminant of concern (COC). The residential scenario assumes time spent indoors (i.e., 63.9 percent) and outdoors (i.e., 10.3 percent). Because no contamination exceeding remediation goals (RGs) has been identified under any residential building on the NC Sites, RESidual RADioactivity (RESRAD)-ONSITE used surface EPCs and the outdoor time fraction to represent the resident spending outdoor time directly on soil containing the surface EPC concentrations and RESRAD-OFFSITE used the subsurface EPCs and the indoor time fraction to represent the resident spending time indoors in a house that butted against soil containing the subsurface EPC concentrations. The RESRAD-ONSITE and RESRAD-OFFSITE risk and dose evaluation output reports are contained in Attachment 2 of this FYRRA.
  - The RESRAD-OFFSITE risk (i.e.,  $8.98E-5$ ) summed with the RESRAD-ONSITE risk (i.e.,  $2.19E-6$ ) resulted in a total risk to the residential receptor of  $9.2E-5$ , which demonstrates that contamination exceeding RGs in its current configuration in residential areas of the NC Sites is less than  $1E-4$  risk and shows protectiveness.

- The highest sample results for unremediated soil or inaccessible soil for the portion of the NC Sites south of Dunn Road are the soil under the Futura Coatings Company (Futura) buildings. The inaccessible soil risk to an industrial worker risk from the *Post-Remedial Action Report and Final Survey Evaluation for the Latty Avenue Futura Property* (USACE 2014) is 1.0E-4; however, two individual buildings have calculated risks of 1.5E-4 (i.e., Building 1) and 1.8E-4 (i.e., Building 2/3), which are slightly greater than the upper target risk range. Monitoring within the buildings has shown that Title 40 *Code of Federal Regulations (CFR) Part 192.12(b)(1) and (2)*, as discussed in the response to issue NC Sites 2, are being met. A site management plan and Missouri environmental covenant, which are in the process of being completed, will direct the landowner how to prevent exposures from removal of cover material.

The results show that for accessible areas, both the estimated risks associated with the resident scenario and the industrial worker scenario are within the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) risk range. While the inaccessible soil risk slightly exceeds the CERCLA risk range, the residual contaminated soil does not pose an unacceptable risk in its current configuration, and the risks are being managed through land use controls. The land use controls will be described and formalized in the site management plan and the forthcoming Missouri environmental covenant. Protectiveness will be evaluated through sampling and comparison with 40 *CFR Part 192.12(b)(1) and (b)(2)*.

**Progress Since the Fourth FFYR for NC Sites 2:** *Vapor intrusion related to volatile organic compounds (VOCs) and radon.*

#### Volatile Organic Compounds

As documented in the NC ROD, VOCs are not related to MED/AEC activities. Thus, the USACE has no authority to include VOCs as COCs or consider them in a protectiveness statement.

#### Radon

As documented in the NC ROD, radon is addressed via the applicable or relevant and appropriate requirement (ARAR) from 40 *CFR Part 192.12(b)*.

#### **192.12 Standards.**

Remedial actions shall be conducted so as to provide reasonable assurance that, *as a result of residual radioactive materials from any designated processing site:*

⋮

(b) In any occupied or habitable building—

(1) The objective of remedial action shall be, and reasonable effort shall be made to achieve, an annual average (or equivalent) radon decay product concentration (including background) not to exceed 0.02 WL. In any case, the radon decay product concentration (including background) shall not exceed 0.03 WL, and

(2) The level of gamma radiation shall not exceed the background level by more than 20 microrentgens per hour.

The USACE evaluates the concentration of radium (Ra)-226 and Ra-228 under or adjacent to buildings because those radionuclides are precursors to radon (Rn)-222 and Rn-220, respectively. Within the NC Sites, only the concentrations of Ra-226 in the soil under the buildings at Futura exceed the RGs (i.e., 5 pCi/g averaged over 100 m<sup>2</sup> in the uppermost 15 cm or 15 pCi/g averaged over 100 m<sup>2</sup> in subsequent 15 cm layers). Thus, Rn-222 has been monitored within those buildings

since 2006 as documented in the applicable annual [Environmental Monitoring Data and Analysis Report](#) (EMDAR), which can be accessed under the Other FUSRAP Documents heading by clicking on Expand All and scrolling down to select the hyperlink for each individual EMDAR. The display and office room at Futura has the only radon result exceeding the 0.02 WL threshold, ranging from 0.014 to 0.025 with an annual average of 0.021, but not exceeding the 0.03 WL limit. The USACE added more radon monitoring devices, specifically alpha track detectors (ATDs), in the Building 1 display and office room in 2022 and 2023 to assess possible variations within this large room. The additional results were within the range of previous results.

Thus, the vapor intrusion pathway presented by radon is being evaluated and remains less than the applicable 0.03 WL limit. The design of the building and the clayey nature of soil underlying the concrete foundation, which restricts horizontal movement of gas to a lower pressure zone, make interim mitigation for this room impractical.

**Progress Since the Fourth FYRR for NC Sites 3:** *Groundwater investigations, evaluations, and monitoring revisions.*

Sampling and evaluation of the groundwater has been expanded since the finalization of the Fourth FYRR. No new information has been found to cast doubt on the current protectiveness of the remedy in regard to groundwater. Additional expansion and evaluations are planned and more data from the recent expansion are needed for groundwater to support modeling to show the current lack of pathway to human use will continue in the future. The following sections contain descriptions of the expansion that has occurred since August 2020.

*NC Sites Monitoring Well Comprehensive Groundwater/Sampling*

One concern displayed in the USEPA comments on groundwater was about perceived data gaps due to the length of time between sampling of various wells for all COCs. Although the previous sampling schedules were driven by the approved ground-water algorithm sampling protocol (GASP), concerns existed that the frequency was not sufficient to identify changes in the nature and extent of groundwater contamination. Use of the GASP for well and COC selection has been discontinued. Beginning with the fourth quarter of 2023, each well is being sampled for all required COCs during the comprehensive sampling events. This expanded data will fill the perceived data gaps and be used to assess the nature and extent of groundwater contamination. A minimum of five consecutive quarters of comprehensive sampling events will be required before modeling based on that data can be performed.

*Investigation of SLAPS Monitoring Well PW46*

Monitoring well PW46, located on the western end of the SLAPS, continues to indicate the presence of total uranium (U) exceeding the NC ROD guideline level of 30 ug/L. An expanded groundwater investigation using 14 temporary wells was conducted during the second quarter of 2024. The purpose of this expansion was to gather the necessary information and data to support future actions in relation to total U concentrations in groundwater at the western end of the SLAPS near monitoring well PW46, as follows.

- Obtain sufficient groundwater data to further assess potential presence of residual radiological COCs affecting groundwater near PW46.
- Obtain sufficient groundwater data to further assess the presence of residual radiological COCs in groundwater in an upgradient direction from PW46 and provide further plume delineation.

- Obtain sufficient groundwater data to further assess the presence of residual radiological COCs in groundwater between PW46 and CWC to evaluate migration of groundwater and potential surface water impacts.
- Collect all groundwater data consistent with *Sampling and Analysis Guide for the St. Louis Sites* (SAG) (USACE 2000) guidance and with sufficient quality to maximize use of data, when appropriate.
- Sample soil from the temporary well borings for analysis for radiological COCs.

**Progress Since the Fourth FYRR for SLDS 1:** Temporary/interim institutional controls and the potential for exposures from inaccessible soil or identified accessible soil that has not yet been remediated.

With respect to MED/AEC contaminated soil (whether inaccessible or pending remediation), the USACE has long-standing programs with property owners, utility operators, and transportation corridor operators to reduce exposure to contamination by limiting land or resource use and to guide human behavior. The USACE informs property owners of areas of MED/AEC contamination and advises that the USACE will provide assistance if soil is to be disturbed. The USACE has agreements with utility operators and transportation corridor operators to inform the USACE of planned work that would disturb soil within the *Record of Decision for the St. Louis Downtown Site* (SLDS ROD) (USACE 1998) boundaries so the USACE can inform them of soil conditions relative to MED/AEC contamination and provide support as necessary for safe conduct of their work. These USACE efforts meet the intent and effect of institutional controls. Not disturbing the soil controls the risk from applicable pathways identified in the SLDS ROD.

In furtherance of this effort to leave contaminated soil undisturbed until remediation can be performed, the USACE has developed an *Interim Land Use Control and Inspection Plan for the St. Louis Downtown Site* (USACE 2024). This plan will provide for systematic notification and annual renotification of landowners with soil contaminated from historical MED/AEC activities and quarterly USACE inspection of the contaminated soil to confirm the soil is not disturbed.

In addition, the USACE has revised its *Formerly Utilized Sites Remedial Action Program (FUSRAP) Utility Policy* (USACE 2018) to clarify the steps necessary for utilities and to update the inaccessible areas included. This policy is included as Attachment 1 of this FYRRA.

The risk posed to humans from undisturbed radiologically contaminated soil was evaluated for the radiological risk as follows.

- The highest sample results for unremediated soil or inaccessible soil for the SLDS is the soil under two locations within the rail spurs on the vicinity property Terminal Railroad Association (DT-9). The locations are associated with sample stations HTZ76782 and collocated stations HTZ113670/HTZ113671. A worst-case scenario dose evaluation for a 1-m<sup>2</sup> area of elevated radioactivity beneath 6 inches of cover (current condition) using the Microshield™ dose rate modeling software resulted in an annual dose of 0.7 mrem per year for an individual standing above the sample location (general area) for an entire year (i.e., 8,760 hours) and an annual dose of 1.1 mrem per year for an individual laying (on contact) on the sample location for an entire year. This increased dose is a small fraction of the average annual terrestrial background radiation dose per person in the United States of 21 mrem per year.
- Radon monitoring results and dose rate survey results conducted in Plant 1 Building 26 indicate that the 40 CFR 192.12(b)(1) and 192.12(b)(2) ARARs are being met. All radon

results (including background) are less than 0.02 WL and no dose rate results exceeded background by more than 20 microrentgens per hour.

- Indoor radon monitoring is performed at one building at the SLDS (Plant 1 Building 26) using one ATD placed in the building at a height of 5 ft (to approximate breathing zone conditions) to measure radon concentrations. Radon monitoring results and dose rate survey results conducted in Plant 1 Building 26 show that the 40 *CFR* 192.12(b)(1) and 192.12(b)(2) ARARs are being met. All radon results (including background) are less than 0.02 WL and no dose rate results exceeded background by more than 20 microrentgen per hour. Additional details of the data and calculation methodology used to determine indoor radon WL in Building 26 at Plant 1 are contained in the annual SLDS EMDARs. The most recently published SLDS EMDAR, covering the 2022 sampling period, indicated the following data.

Monitoring Location	Monitoring Station	Average Annual Concentration (pCi/L)			WL <sup>c</sup>
		01/05/22 to 07/05/22 <sup>a</sup>	07/05/22 to 01/04/23 <sup>a</sup>	Annual Average <sup>b</sup>	
Plant 1, Building 26	DI-1	0.35	0.62	0.49	0.002

<sup>a</sup> Detectors were installed and removed on the dates listed. Data are as reported from the vendor.

<sup>b</sup> Results reported from vendor for two periods are averaged to estimate an annual average radon concentration (pCi/L).

<sup>c</sup> The average annual WL is calculated by dividing the average pCi/L by 100 pCi/L per WL and multiplying by 0.4 (equilibrium factor). The average annual WL must be less than 0.02 (40 *CFR* 192.12(b)).

**Progress Since the Fourth FYRR for SLDS 2: Vapor intrusion related to VOCs and radon.**

Volatile Organic Compounds

As documented in the SLDS ROD, VOCs are not related to MED/AEC activities. Thus, the USACE has no authority to include VOCs as COCs or consider them in a protectiveness statement. With the long history of industrial activities that have occurred in downtown St. Louis, many likely sources of VOCs and any associated vapor intrusion exist that are beyond the scope of the FUSRAP.

Radon

As documented in the SLDS ROD, radon is addressed via the ARAR from 40 *CFR* Part 192.12(b) which states the following.

**192.12 Standards.**  
 Remedial actions shall be conducted so as to provide reasonable assurance that, *as a result of residual radioactive materials from any designated processing site:*  
 ∴  
 (b) In any occupied or habitable building—  
 (1) The objective of remedial action shall be, and reasonable effort shall be made to achieve, an annual average (or equivalent) radon decay product concentration (including background) not to exceed 0.02 WL. In any case, the radon decay product concentration (including background) shall not exceed 0.03 WL, and  
 (2) The level of gamma radiation shall not exceed the background level by more than 20 microrentgens per hour.

The USACE evaluates the concentration of Ra-226 and Ra-228 under or adjacent to buildings because those radionuclides are precursors to Rn-222 and Rn-220, respectively. Within the SLDS,

the only building with concentrations of Ra-226 exceeding the RGs in the underlying soil is Building 26, located at Plant 1. The Fourth FYRR also discussed radon monitoring within the South Storage Building on Gunther Salt (DT-4) because Ra-226 in the underlying soil exceeded the RG. However, in 2020 and 2021, which was after the Fourth FYRR was issued, the South Storage Building on DT-4 was removed and the underlying soil was remediated. Thus, radon monitoring is not required within the replacement building on DT-4. Rn-222 has been monitored within Building 26 since 2012 as documented in the annual SLDS EMDAR. No radon result has exceeded the 0.02 WL threshold, ranging from 0.001 to 0.009 WL.

For radon exposure from groundwater, the *Baseline Risk Assessment for Exposure to Contaminants at the St. Louis Site, St. Louis, Missouri*, (BRA) (DOE 1993) evaluated the potential exposure from inhalation of radon from groundwater and determined that based on maximum radium sample results, “the contributions from groundwater to radon in household air are less than 1% of the contribution from soil” which “is consistent with the results of other studies, which have reported that water sources generally make a relatively small contribution to indoor radon levels” and this source of radon (i.e., groundwater) was not evaluated further.

To ensure protectiveness, current radiological data were used to evaluate potential groundwater radon exposure following the process documented in the BRA evaluation. The evaluation was based on maximum radium concentrations in groundwater. Since 2018, the maximum radium concentration sample result in groundwater of 8.16 pCi/L would equate to contributions from groundwater to radon in household air of 0.09 pCi/L or 0.0004 working levels. This groundwater radon exposure level is considerably less than the 40 CFR 192.12(b)(1) ARAR guideline of 0.02 WL. Additionally, this radon concentration equates to 2.41E-5 risk, which shows protectiveness within the CERCLA risk range.

**Progress Since the Fourth FYRR for SLDS 3:** *Conduct additional groundwater characterization sufficient to delineate and monitor for groundwater impacts.*

*SLDS Groundwater Comprehensive Groundwater and Sampling Site Wide*

One concern displayed in the USEPA comments on groundwater was about perceived data gaps due to the length of time between sampling of various wells for all COCs. Although the previous sampling schedules were driven by the approved GASP, concerns existed that the frequency was not sufficient to identify changes in the nature and extent of groundwater contamination. Use of the GASP for well and COC selection has been discontinued. Beginning with the fourth quarter of 2023, each well is being sampled for all required COCs during the comprehensive sampling events. This expanded data will fill the perceived data gaps and be used to assess the nature and extent of groundwater contamination. A minimum of five consecutive quarters of comprehensive sampling events will be required before modeling based on that data can be performed.

**Issues and Recommendations**

<b>Issues/Recommendations for the NC Sites</b>				
<b>Operable Unit: NC Sites</b>	<b>Issue Category:</b> Remedy Performance			
	<b>Issue:</b> Impacts to groundwater have not been fully characterized.			
	<b>Recommendation:</b> Conduct additional groundwater characterization sufficient to delineate and monitor for groundwater impacts. Continue comprehensive groundwater monitoring at all wells for all required COCs. Complete the evaluation of data gathered from the temporary groundwater monitoring wells in the west end of the SLAPS near permanent groundwater monitoring well PW46 and further expand data collection as necessary. After a minimum of five quarters of comprehensive monitoring, conduct modeling to assess future performance monitoring of groundwater relative to a possible human or ecological exposure pathways.			
<b>Affect Current Protectiveness</b>	<b>Affect Future Protectiveness</b>	<b>Implementing Party</b>	<b>Oversight Party</b>	<b>Milestone Date</b>
No	Yes	USACE	USEPA	8/30/2028

<b>Issues/Recommendations for the SLDS</b>				
<b>Operable Unit: Accessible Soil and Groundwater</b>	<b>Issue Category:</b> Remedy Performance			
	<b>Issue:</b> Impacts to groundwater have not been fully characterized.			
	<b>Recommendation:</b> Conduct additional groundwater characterization sufficient to delineate and monitor for groundwater impacts. Continue comprehensive groundwater monitoring at all wells for all required COCs and further expand data collection as necessary. After a minimum of five quarters of comprehensive monitoring, conduct modeling to assess future performance monitoring of groundwater relative to a possible human or ecological exposure pathways.			
<b>Affect Current Protectiveness</b>	<b>Affect Future Protectiveness</b>	<b>Implementing Party</b>	<b>Oversight Party</b>	<b>Milestone Date</b>
No	Yes	USACE	USEPA	8/30/2028

**Protectiveness Statements**

Based on the results of the Fourth FYRR and the USEPA’s review, the remedies at the NC Sites and the SLDS were expected to be protective of human health and the environment upon completion with the exceptions of issues related to interim institutional controls, vapor intrusion, and groundwater for both the NC Sites and the SLDS. Based on new information and/or actions taken since the Fourth FYRR completion date, the issues related to interim institutional controls and vapor intrusion have been resolved for both the NC Sites and the SLDS. While efforts to resolve the issues with groundwater for the NC Sites and the SLDS have been initiated, additional data collection on a quarterly basis remains to be gathered to enable resolution of those issues.

Based on the new information and actions taken since the Fourth FYRR’s completion date, the protectiveness statements for the NC Sites and the SLDS are as follows.

<b>Protectiveness Statement</b>	
<i>Operable Unit:</i> SLDS Accessible Soil and Groundwater Operable Unit	<i>Protectiveness Determination:</i> Protectiveness Deferred
<p><i>Protectiveness Statement:</i> A protectiveness determination of the remedy for the SLDS cannot be made until further information is obtained. Further information will be obtained by taking the following actions.</p> <ul style="list-style-type: none"> <li>• Conduct additional groundwater characterization sufficient to delineate and monitor for groundwater impacts. Continue comprehensive groundwater monitoring at all wells for all required COCs and further expand data collection as necessary. After a minimum of five quarters of comprehensive monitoring, conduct modeling to assess future performance monitoring of groundwater relative to possible human or ecological exposure pathways.</li> </ul> <p>These actions, including the comprehensive monitoring and modeling, are expected to take approximately 4 years, at which time a protectiveness determination will be made.</p>	

<b>Protectiveness Statement</b>	
<i>Operable Unit:</i> NC Sites	<i>Protectiveness Determination:</i> Protectiveness Deferred
<p><i>Protectiveness Statement:</i> A protectiveness determination of the remedy for the NC Sites cannot be made until further information is obtained. Further information will be obtained by taking the following actions.</p> <ul style="list-style-type: none"> <li>• Conduct additional groundwater characterization sufficient to delineate and monitor for groundwater impacts. Continue comprehensive groundwater monitoring at all wells for all required COCs and further expand data collection as necessary. After a minimum of five quarters of comprehensive monitoring, conduct modeling to assess future performance monitoring of groundwater relative to possible human or ecological exposure pathways.</li> </ul> <p>These actions, including the comprehensive monitoring and modeling, are expected to take approximately 4 years, at which time a protectiveness determination will be made.</p>	

**Next Five-Year Review**

The reports documenting the fifth five-year reviews of the NC Sites and the SLDS will be completed on August 18, 2025, which is 5 years after the signature of the Fourth FYRR.

**ATTACHMENT 1**

***FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM (FUSRAP)  
UTILITY POLICY***

## MEMORANDUM FOR RECORD

DATE: 28 February 2018

SUBJECT : Formerly Utilized Sites Remedial Action Program (FUSRAP)  
Utility Policy Revision 3 dated 28 February 2018

This policy outlines the methods used by the U.S. Army Corps of Engineers (USACE) to ensure the radiological safety and protection of utility personnel and property owners at the FUSRAP St. Louis Sites (SLS) during all intrusive, repair, etc. work activities in areas suspected or known to be contaminated with Manhattan Engineer District/Atomic Energy Commission (MED/AEC) residual radiological contamination. Utility personnel are defined as workers who must perform work activities at the SLS, i.e. utility workers, road crews, construction workers, etc.

The USACE includes personnel who work for the U.S. Army Corps of Engineers and the duly appointed representative under contract with the USACE at the SLS.

To ensure worker safety at the SLS, the USACE will perform monitoring that may include but is not limited to some or all of the following measures:

- Contamination control measures
- Air monitoring
- Selection of PPE
- Radiological surveys (personnel, area, and equipment)
- Collection of soil samples
- Management of contaminated soils
- Decontamination of personnel and equipment

The framework set forth in this policy is effective immediately and should be followed for all related work activities performed by the USACE in conjunction with private and public service organizations/companies that perform work activities at the SLS. This policy is intended to promote site wide consistency and to delineate the responsibilities and measures to be followed by the USACE and by utility personnel during planned and unplanned activities at the SLS.

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ou=DoD, ou=PKI, ou=USA,  
cn=MUNHOLAND.BRUCE.A.123120234  
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Date: 2018.02.28 10:11:17 -06'00'

Bruce Munholand  
FUSRAP Program Manager

**FORMERLY UTILIZED SITES REMEDIAL  
ACTION PROGRAM (FUSRAP)  
UTILITY POLICY**

The United States Army Corps of Engineers, St. Louis District (USACE) has the responsibility to remediate several sites in the St. Louis, Missouri area that have residual radioactive contamination that resulted from former Manhattan Engineer District (MED) and Atomic Energy Commission (AEC) activities. During remediation of the MED/AEC contaminated areas at the St. Louis FUSRAP Sites (SLS), private and/or public service companies (known as "utility personnel") and property owners may need to perform improvements, repairs, or other work activities on properties that are included in the SLS. The SLS are those properties that are part of the St. Louis Downtown Site (SLDS) (see figure 1), and the North St. Louis County (see figure 2) FUSRAP Sites. This policy has been prepared to protect the utility personnel who perform work activities at the SLS.

This policy delineates the responsibilities and measures to be followed by the USACE and utility personnel during planned and unplanned work activities at the SLS. A planned activity is work that has been scheduled in advance (i.e., preventative or scheduled maintenance, scheduled utility line construction or repairs, etc.). An unplanned activity is any event that prior knowledge of the need for the work or repairs is not known (i.e., water or gas line rupture, accidents involving utility lines or poles, etc.). It is advisable that private and/or public service companies establish a Point-of-Contact (POC) with the USACE before performing any work at the SLS.

Figures 3 and 4 illustrate the process that the USACE follows to ensure an appropriate response to work requests or notifications. This process ensures that utility personnel are monitored during work activities at the SLS suspected of being contaminated with residual MED/AEC radioactive contamination. Should the work conditions become unsafe due to the presence of MED/AEC contamination above release criteria; the USACE will notify the POC of the private and/or public service company that radiological contaminants are present and recommend that work activities be stopped until appropriate precautions have been put in place to minimize exposure to utility personnel.

The basic limit for the annual radiation exposure (excluding radon) received by an individual member of the general public is 100 millirem/year (mrem/yr) (NRC regulation 10 CFR 20 Subpart D). In implementing this limit, USACE applies As Low As Reasonably Achievable (ALARA) principles to set site-specific guidelines. The USACE performs sampling, surveying, and monitoring activities to obtain an exposure for utility personnel working at the SLS. The results and dose are sent to the private and/or public service company of the utility personnel.

This policy provides control methods to ensure radiological safety and protection during all work activities at the SLS. This policy also applies to all contractors responsible for providing support to a participating private and/or public service company conducting maintenance at the SLS.

This policy includes requirements for radiological monitoring of utility personnel, equipment and vehicles prior to starting, during, and at the completion of any work activities in areas suspected or known to be contaminated with MED/AEC radiological contamination at the SLS.

The monitoring may include, but is not limited to:

1. Contamination control measures
2. Air Monitoring (Only when USACE involvement requires excavation or hauling)
3. Selection of Personal Protective Equipment (PPE)
4. Radiological surveys (personnel, area, and equipment)
5. Collection of soil samples
6. Management of contaminated soils
7. Decontamination of personnel and equipment

**I. The Responsibilities of USACE:**

1. Determine if the utility work requires FUSRAP support. Provide qualified health physics (HP) technician to monitor activities and provide support at the job site when necessary.
2. Perform radiological surveys and collect soil samples as appropriate to determine the levels of radioactive MED/AEC contamination encountered by non-radiological workers.
3. Make recommendations on, and provide PPE as needed.
4. Make recommendations on contamination control measures to be utilized during work activities.
5. Survey and decontaminate equipment as necessary, and provide survey results to the private and/or public service company within a reasonable amount of time of the release survey.
6. Provide a utility support summary report that contains monitoring/sampling data to the private and/or public service company within 90 days from the end of the activity. Provide monitoring/sampling results and dose received by each utility personnel to the private and/or public service company to enable the utility to ensure that the worker has not exceeded 100 mrem/yr (NRC regulation 10 CFR 20 Subpart D). Figures 3 and 4 are flowcharts that indicate how the USACE will respond during planned and unplanned activities.
7. For planned events where advance notice has been given, coordinate with the private and/or public service company/utility personnel at an agreed time and place. For unplanned activities, respond as soon as reasonably possible of notification from the private and/or public service company/utility personnel.
8. Be available on a 24-hour basis to respond to unplanned activities within the SLS boundaries that are defined in figure 1 and figure 2.
9. Provide upon request, a radiation awareness briefing at the USACE facility for non-radiological workers/utility personnel.
10. Provide proper management (including disposal) of MED/AEC contaminated soils and media generated on or near the SLS sites during work activities.
11. Provide appropriate equipment and material to support monitoring, sampling, decontamination, and disposal.

**II. The Responsibilities of the Private and/or Public Service Company/Utility Personnel:**

1. Provide approximately 1 week lead-time for planned work at or near the SLS in order for the USACE to provide a more thorough analysis of site characterization data to determine if it is safe for utility personnel.
2. Coordinate all work at the SLS with property owners.
3. Provide qualified personnel, equipment, and materials necessary to conduct work within the SLS MED/AEC contaminated properties, including excavation equipment, transportation for the excavation equipment, tools, repair materials, backfill, a truck to stage/transport potentially contaminated soils, etc. At no cost to the company, the USACE will survey, and decontaminate as necessary, the equipment for release after it has been used on the contaminated sites. USACE will not compensate for loss of use during decontamination and release.

**Note: Historical data, composite soil samples, and direct reading instruments will be used to prevent private and/or public service company/utility personnel from transporting DOT Class 7 or Class 9 materials.**

**III. Notification**

Before beginning work site excavations in the areas outlined in Figure 3 and Figure 4, the company/utility personnel must contact the USACE from the list provided on page 9 of this document. The contacted person will ensure that the appropriate qualified HP technician responds to the work site and provide additional information on the site conditions associated with the proposed work. If the first person on the contact list cannot be reached, proceed down the list until contact is made. As personnel changes occur, the attachment will be revised and reissued to all companies subject to this policy.

**IV. Response Times**

For planned events where advance notice has been given, the USACE will coordinate with the company/utility personnel at an agreed to time and place. For unplanned activities, an HP technician will respond as soon as reasonably possible.

**V. Planned Work Procedures**

1. The utility company will provide the location or a detailed plan in advance if possible.
2. The USACE Health Physicist will assess the relative risk associated with each planned work activity prior to responding to the request for the USACE support. A preliminary radiological survey will be conducted to determine if evidence of elevated activity exists in the work area.
3. In the event that MED/AEC radiological contamination exists in the work area prior to start of work or during the activity, work activities will stop and the USACE will mobilize to further assess the suspected areas, as appropriate. The work activity may start (or continue) upon approval of the USACE Health Physicist.

## **VI. Unplanned Situations**

In the event that an unplanned situation exists (e.g., a gas leak) that requires immediate response by the participating company/utility personnel prior to the arrival of the USACE, the following provisions are recommended to ensure radiological protection.

1. The participating company/utility personnel should only perform immediate response actions (i.e., isolating the source of an emergency) prior to the arrival of the USACE. Further activity in a potentially MED/AEC contaminated area, beyond the immediate response actions, should follow the flowchart as outlined in Figure 4.
2. Recommended PPE during the immediate response actions are a Modified Level D with taped interfaces at the gloves and boots until the USACE arrive to evaluate radiological conditions in the work area. See Section X .Personal Protective Equipment (PPE) for a description of Modified Level D Protection.
3. All other provisions (i.e., surveying, contamination controls, decontamination of equipment, soils management, soil sampling, soil misting etc.) set forth in this policy for work activities at the SLS shall be followed (Figure 4) upon arrival of the USACE.
4. The USACE will attempt to coordinate with the company/utility personnel to ensure that any materials required, for radiological protection in an unplanned situation, is available upon the arrival of the USACE. These materials may include, but are not limited to, clean plastic, Tyvek coveralls, PVC or nitrile gloves, appropriate outer work gloves, and chemical resistant pull-on outer boots.

## **VII. Pre-Job Briefing**

A pre-job briefing shall be conducted upon USACE arrival, with all utility personnel involved with the work activity. The briefing may include, but is not limited to, the following information:

1. Utility Support Informational Handout (see page 13) is distributed to utility personnel by the USACE provided HP technician.
2. USACE establish the name of the company and the workers present.
3. Potential radiological hazards of the area and methods of controlling such hazards.
4. Appropriate work controls and precautions to be taken during the performance of work, including PPE requirements.

## **VIII. Radiological Monitoring**

In work areas that the USACE knows or suspects are contaminated with MED/AEC contaminated materials:

1. The USACE will provide a qualified HP Technician to monitor activities as needed at the job site.

2. The USACE will monitor activities and recommend work practices that are in compliance with all applicable regulatory requirements pertinent to radiological safety.

## **IX. Contamination Control**

During planned and unplanned activities, some contamination control measures may be implemented to protect USACE and utility personnel. In general, because the radioactive contamination tends to adhere to soil particles, contamination can be controlled by implementing some or all of the following practices as determined by the USACE.

The USACE will recommend contamination control measures to be implemented for the protection of the utility personnel (i.e., PPE).

Contamination control measures will also be used to prevent/minimize equipment and tool contamination, and thus minimize/eliminate the need for decontamination. The USACE may line excavated work areas with plastic to minimize personal contact with contaminated soils. The USACE may tape or cover tools to minimize contact with contaminated soils.

Excavation activities shall be performed by the utility company. Once excavated, work areas in wet soil can be lined with plastic. The USACE will determine the proper disposal for radioactive wastes generated during work activities and manage the wastes generated as appropriate (See Section XV Contaminated Soils Management).

Decontamination of contaminated worker-owned tools and equipment is the responsibility of the USACE. Tools and equipment will be surveyed, and decontaminated as appropriate, by the USACE (See Section XIII Decontamination).

## **X. Personal Protective Equipment (PPE)**

The USACE will determine if utility personnel require PPE above Level D to be worn inside the work area. It is the responsibility of the non-radiological worker/company supervisor to ensure that non-radiological workers wear the PPE recommended by the USACE. The USACE will supply the additional PPE required above Level D protection (i.e. Tyvek coveralls, gloves and boot covers), where applicable. Level D protection includes the following:

### Level D Protection:

Steel toe/shank work shoes, safety glasses, hard hat, work gloves, and coveralls.

### Modified Level D Protection:

Level D protection with the addition of Tyvek coveralls, PVC or inner gloves, appropriate outer work gloves, and chemical resistant pull-on outer boots or boot covers.

Modified Level D PPE will be required if initial surveys and /or historical data indicate that there is MED/AEC radioactive contamination. The USACE will monitor conditions such that the utility personnel will never require more than Modified Level D protection. Should the USACE determine that a higher level of protection is required; the USACE will inform the company/utility personnel that work should not be permitted to start or should be stopped until the suspect area has been further assessed and/or remediated, as appropriate.

**XI. Soil Sampling**

1. During excavation activities, the removed soil and bottom of the excavation (when no evidence of a situation that could result in possible cave-ins, slides, hazardous atmospheres, or other hazardous condition is identified) will be surveyed for radiological contaminants. A composite soil sample may be collected from the removed soil, and analyzed. A biased soil sample may be collected from the excavation at the location with the most elevated readings from the survey. The results of these informational samples will be included in the utility support report.
2. Contamination control measures may also be used to prevent/minimize equipment and tool contamination, and thus minimize/eliminate the need for decontamination. The USACE may line excavated work areas with plastic to minimize personal contact with contaminated soils. The USACE may tape or cover tools to minimize contact with contaminated soils
3. The USACE may request the assistance of the company/utility personnel to stage the soils that are suspected to be MED/AEC contaminated to allow sampling prior to shipment to a licensed disposal facility.
4. Soil samples collected will be analyzed by the St. Louis FUSRAP Analytical Laboratory for the contaminants-of-concern for the SLS.
5. The soil sampling analytical data may be utilized to modify and prescribe controls for on-site activities.

**XII. Radiological Surveys**

1. Personnel coming into contact with contaminated soils will be surveyed for radioactive contamination prior to exiting the area of concern. The survey will be conducted by an HP technician
2. Prior to being released for unrestricted use, equipment that may have contacted removable contamination shall be surveyed.
3. The appropriate radiological survey will be performed on all available equipment. The survey results will be included with the summary report (see section XV).
4. The HP technician monitoring the activity will notify utility personnel if radioactive contamination is found or suspected during any radiological survey. Potentially contaminated personnel or equipment should remain at their location until released by the HP technician to avoid contamination spread to non-contaminated surfaces/personnel.
5. HP technicians shall follow applicable monitoring, decontamination, notification, and documentation requirements when responding to suspect personnel or equipment

contamination incidents.

**XIII. Decontamination**

1. Contamination Control/prevention is preferred over decontamination. If possible, use contamination control measures (See Section XI) to minimize/eliminate the need for decontamination.
2. Decontamination of contaminated utility worker-owned tools and equipment is the responsibility of the USACE. Tools and equipment will be radiologically surveyed, and decontaminated as appropriate by the USACE. Radiological surveys for unrestricted release may be delayed if extensive decontamination efforts are necessary.

**XIV. Contaminated Soils Management**

1. The USACE is responsible for the proper management (including disposal) of MED/AEC contaminated soils and materials generated during work activities on the SLS.
2. In cases where the soil cannot be put back into the excavated area, the soil will be staged in the vicinity of the excavated area, or in a location designated by the USACE, and covered/managed by the USACE. This may include staging soil in trucks supplied by the utility company until the soil has been analyzed to determine soil management options.

**XV. Utility Support Summary Report**

A utility support summary report of the USACE activities and the field survey/soil sample data will be provided to the company of the utility personnel within 90 days from the end of the work activity. The USACE will include as part of the summary report, a dose assessment for the workers involved with the work activity at the SLS.

A utility support summary report shall not be submitted when USACE is notified of underground utility activities and determines no support is needed.

A utility support summary report may be submitted when no soil samples are collected, but a radiological survey was performed. Report submittal shall be determined by the USACE on a case by case basis.

A utility support summary report shall be submitted when soil samples are collected.

**XVI. Training**

Utility workers on the SLS properties are not required by 29 CFR 1926.65 (e) to have the Hazardous Waste Operations Training. Utility workers are not expected to experience exposure above 100 millirem per year. Therefore, utility workers are not Radiation Workers as described by the Nuclear Regulatory Commission (NRC) 10 CFR Part 19.

Upon arrival at a planned or unplanned work activity area, an HP technician will give a briefing along with a copy of the Utility Support Informational Handout (see Attachment 1) to the utility personnel on radiological safety/protection concerns specific to the work area and recommendations related to health physics and radiological safety/protection. Provisions for Unplanned Situations (Section VI) with regard to radiological safety/protection should be employed in the event that the participating utility personnel require immediate response to the emergency situation prior to the USACE arrival. Recommendations may include soil misting to eliminate fugitive dust and the use of PPE such as Tyvek coveralls to minimize potentially contaminating personnel clothing.

Upon request the USACE will conduct a radiation awareness briefing at the USACE facility at the Latty Avenue Project Management trailers or SLDS Project Trailers. This briefing covers the basic principles of radiation, radioactive contamination, and remedial activities at the SLS. The briefing will be provided at no cost. However, worker/utility personnel salaries during the time required to attend the briefing will be the responsibility of the respective company. More extensive training can be provided as requested or required.

#### **XVII. Amendments**

This policy represents the best efforts by the USACE to protect human health and the environment at the SLS. As new information is made available or new requirements are established that could impact this policy, amendments may be offered by the USACE or by the participating private and/or public service companies for discussion and possible inclusion.

#### **XVIII. The USACE Limit of Responsibility**

This policy and any internal procedures adopted for policy implementation is intended solely as guidance for employees of the USACE. This policy does not constitute rule making or final action by the USACE and may not be relied upon to create a right or a benefit, substantial or procedural, enforceable by law or in equity, by any person. This policy does not affect the rights or liabilities of the named private and/or public service companies under applicable law.

## USACE Contact List

### North County Sites

Primary

William Viehweg  
Work: (314) 731-8074  
Cell: (314) 452-3486  
[William.Viehweg@usace.army.mil](mailto:William.Viehweg@usace.army.mil)

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### St. Louis Downtown Sites

Primary

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## Company Contact List

### Missouri American Water Co

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### Metropolitan St. Louis Sewer District

St. Louis Downtown Site

Jim Derby  
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St. Louis Airport Site

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Alternate (SLAPS)

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### City of St. Louis, Water Division

Robin Suda-Hill  
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24 HR Emergency: (314) 771-4880 Ext. 132

### Ameren MISSOURI

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St. Louis Downtown Site (24 Hr)

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Division

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Alternate SLDS (24 Hr)

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St. Louis Airport Site (24 Hr)

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Dispatcher

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**Spire**

Joseph Weir  
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Dispatcher

24 HR Emergency: (314) 342-0800

**AT&T**

St. Louis Downtown Site

Trevis Brewer, Manager I&M  
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Fax: (314) 691-3565  
Email: [TB8419@att.com](mailto:TB8419@att.com)

St. Louis Airport Site

Leonard Stelly, Sr. Manager  
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Cell: (314) 452-7075  
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Alternate Contact (SLAPS)

Maurice Person, Manager I&M  
Work: (636) 949-1358  
Cell: (314) 570-0241  
Email: [mp5215@att.com](mailto:mp5215@att.com)

Alternate Contact (Either Site)

John Malone, Sr. Safety Specialist  
Work: (314) 505-1461  
Cell: (314) 606-5313  
Email: [jm7842@att.com](mailto:jm7842@att.com)

Customer Service Bureau

24 Hr Emergency: 1-800-870-8390

**Lambert St. Louis Airport**

Jon Strobel,  
Title: Env./Health & Safety Mgr.  
Work: (314) 551-5035  
Cell: (314) 258-4345  
Fax: (314) 551-5013  
Email: [JMStrobel@flystl.com](mailto:JMStrobel@flystl.com)

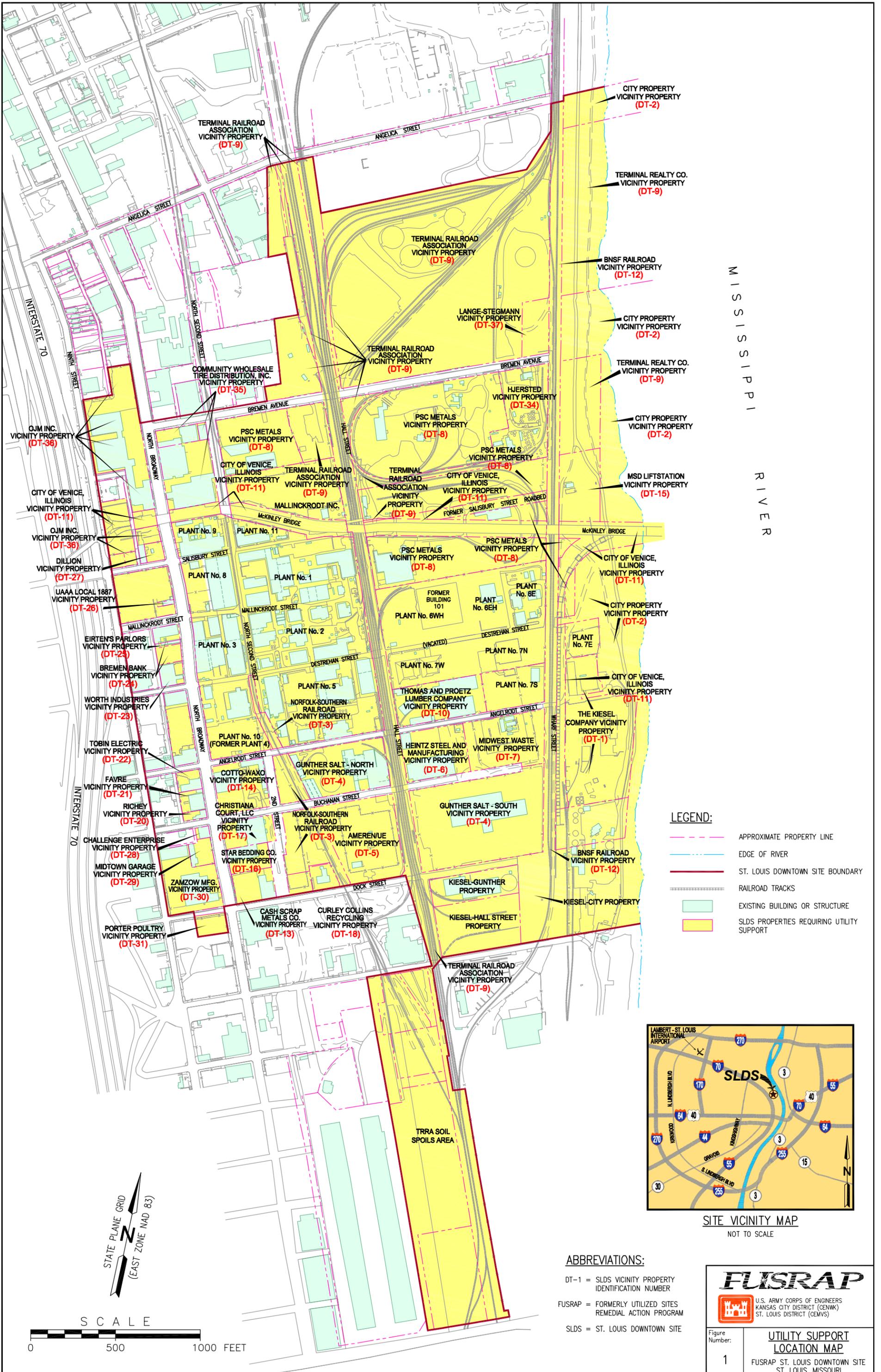
Operations Center

24 Hr. Emergency: (314) 426-8041

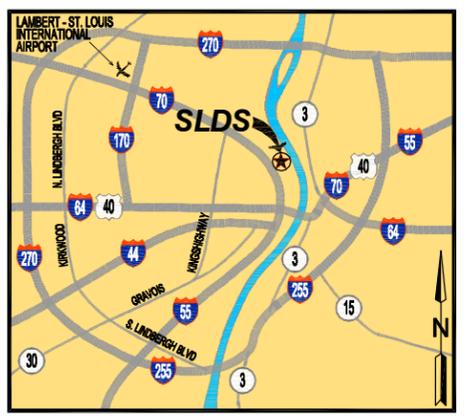
**Verizon**

Jason Weller  
Work: (972) 729-5143  
Cell: (972) 841-0799  
Email: [Jason.weller@verizonbusiness.com](mailto:Jason.weller@verizonbusiness.com)





- LEGEND:**
- APPROXIMATE PROPERTY LINE
  - EDGE OF RIVER
  - ST. LOUIS DOWNTOWN SITE BOUNDARY
  - RAILROAD TRACKS
  - █ EXISTING BUILDING OR STRUCTURE
  - █ SLDS PROPERTIES REQUIRING UTILITY SUPPORT



**SITE VICINITY MAP**  
NOT TO SCALE

**ABBREVIATIONS:**

- DT-1 = SLDS VICINITY PROPERTY IDENTIFICATION NUMBER
- FUSRAP = FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM
- SLDS = ST. LOUIS DOWNTOWN SITE

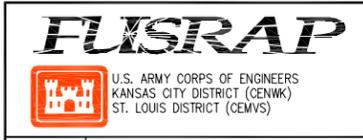
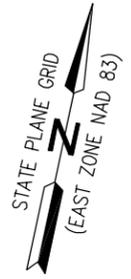
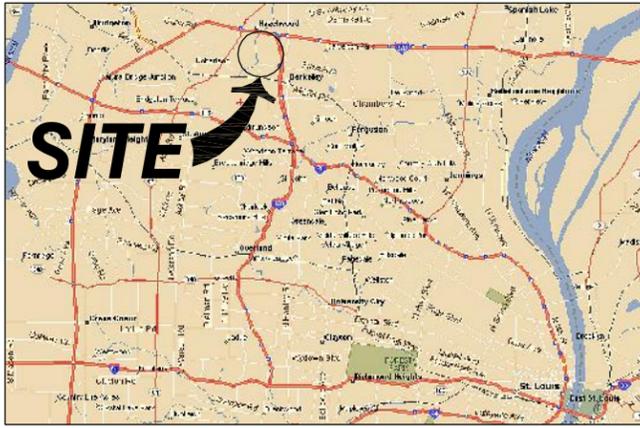
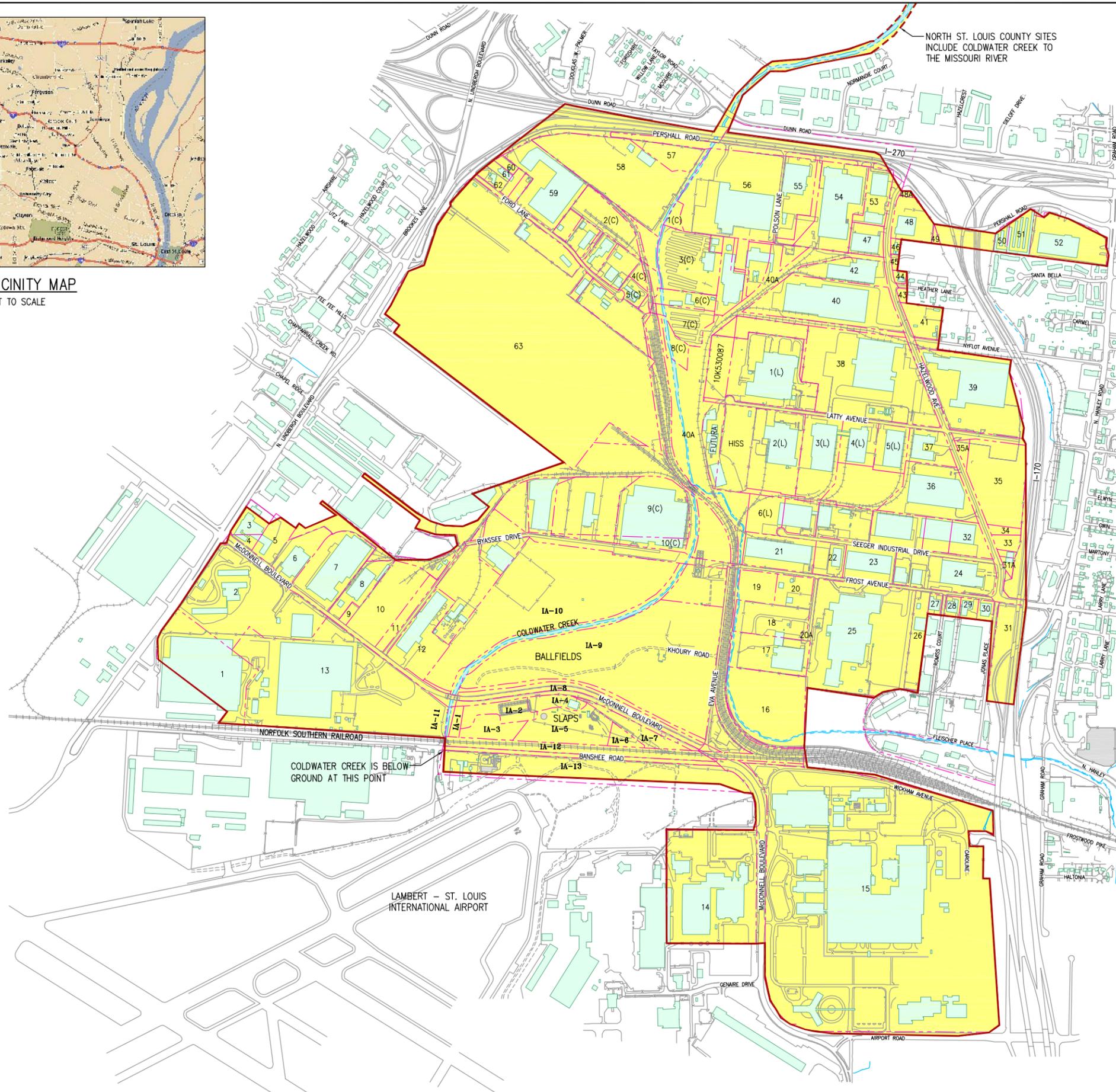


Figure Number: **1**  
**UTILITY SUPPORT LOCATION MAP**  
FUSRAP ST. LOUIS DOWNTOWN SITE  
ST. LOUIS, MISSOURI





**SITE VICINITY MAP**  
NOT TO SCALE



**LEGEND:**

- NORTH ST. LOUIS COUNTY SITES BOUNDARY
- APPROXIMATE PROPERTY LINE
- RAILROAD TRACKS
- EXISTING BUILDING OR STRUCTURE
- 63 VICINITY PROPERTY ID
- IA-3 INVESTIGATION AREA ID
- NORTH ST. LOUIS COUNTY SITES PROPERTIES REQUIRING UTILITY SUPPORT

**ABBREVIATIONS:**

- FUSRAP = FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM
- SLAPS = ST. LOUIS AIRPORT SITE

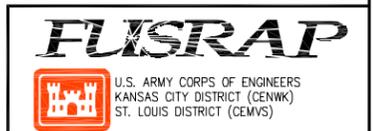
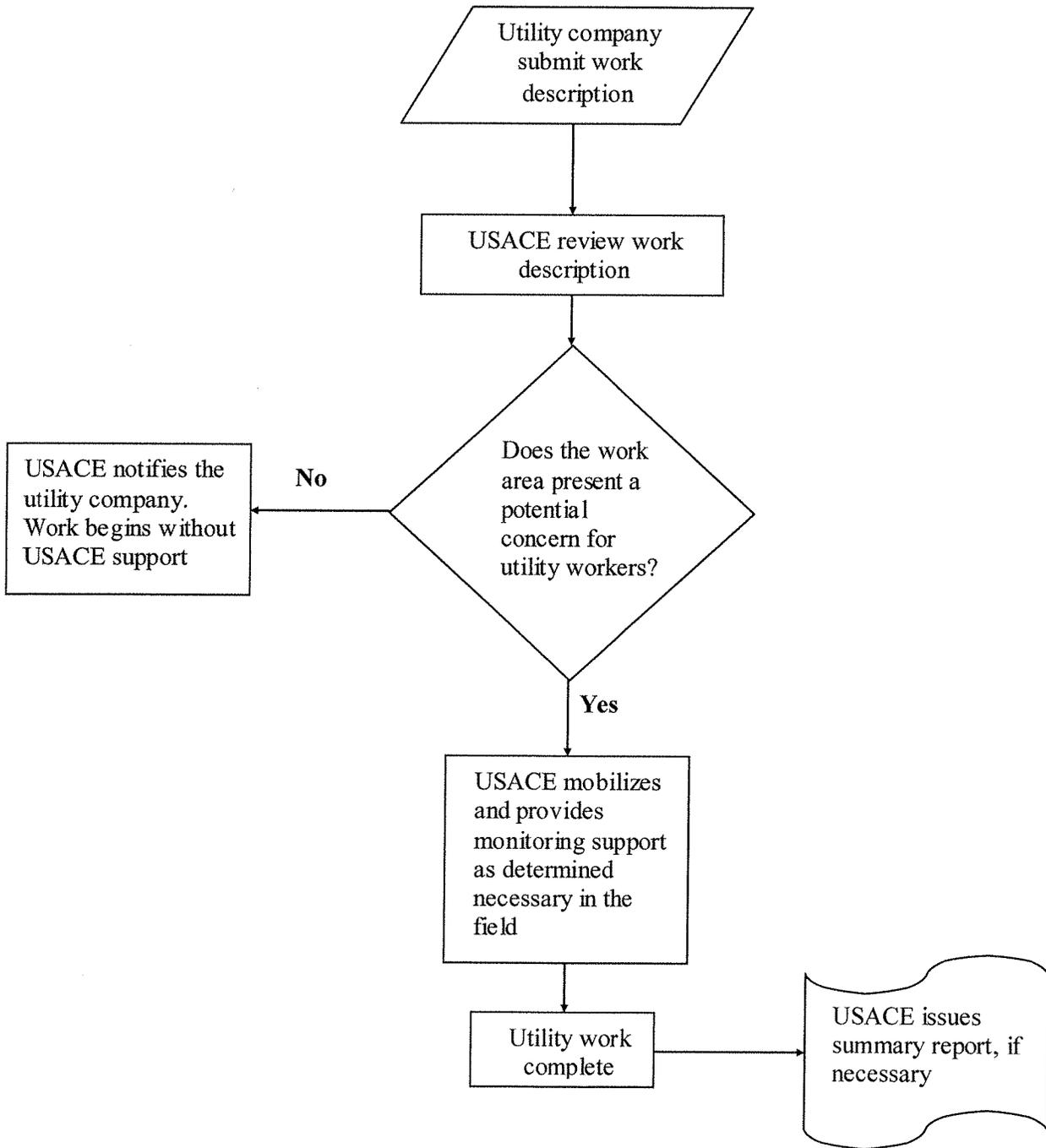
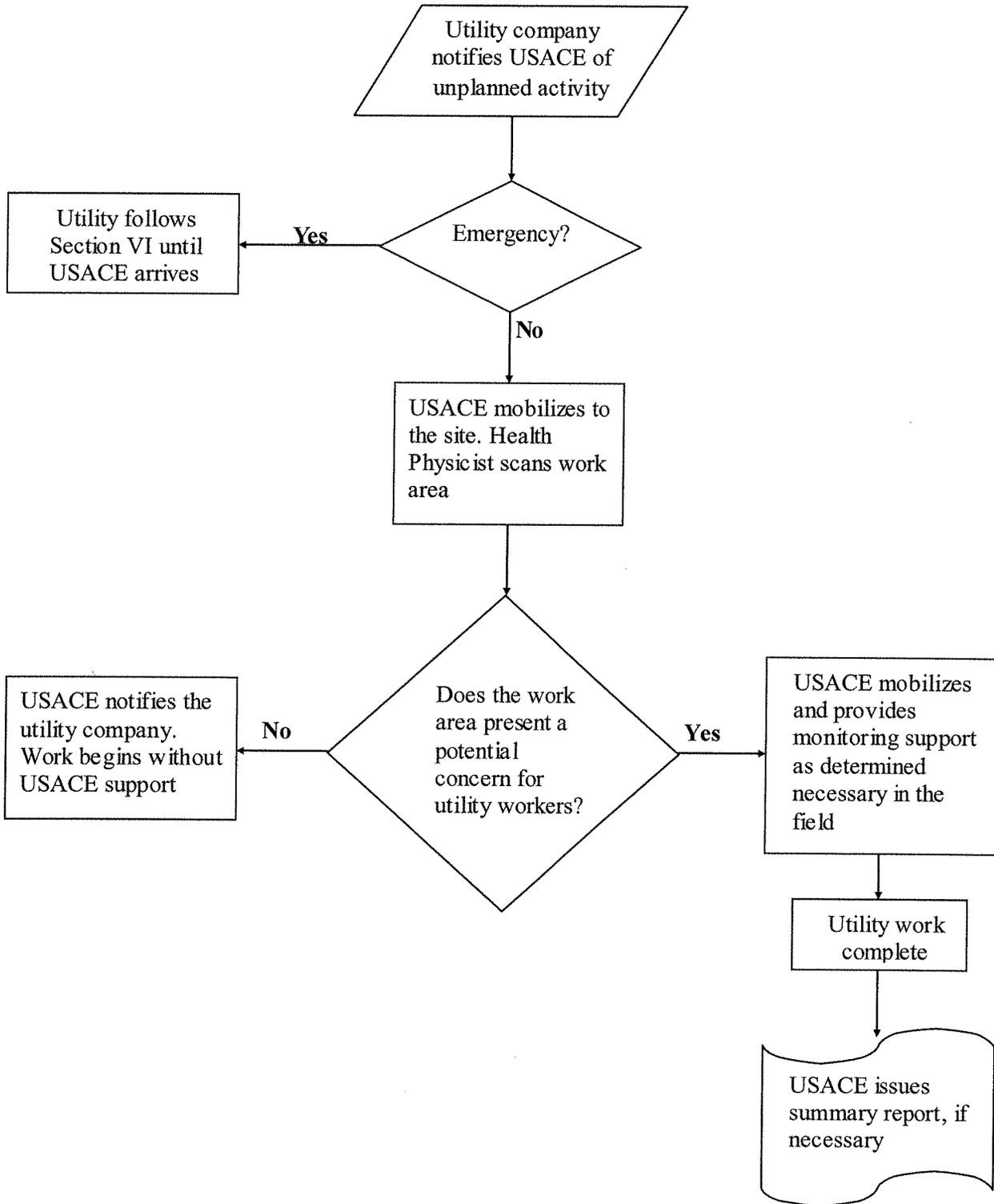


Figure Number: **2**  
**UTILITY SUPPORT LOCATION MAP**  
FUSRAP NORTH ST. LOUIS COUNTY SITES ST. LOUIS, MISSOURI

**Figure 3**  
**Planned Utility Activities**



**Figure 4**  
**Unplanned Utility Activities**



**ATTACHMENT 2**  
**RESRAD-ONSITE AND RESRAD-OFFSITE OUTPUT REPORTS**

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Time = 1.000E+00 .....	15
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Summary : NC Suburban Resident 5YR Outdoor Surface EPCs

File : C:\RESRAD\_FAMILY\ONSITE\7.2\USERFILES\NC 5YR OUTDOOR SURF EPCS.RAD

Dose Conversion Factor (and Related) Parameter Summary

Dose Library: DCFPAK3.02 (Age 10)

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: DCFPAK3.02)	2.615E-04	2.615E-04	DCF1 ( 1)
A-1	Ac-228 (Source: DCFPAK3.02)	5.044E+00	5.044E+00	DCF1 ( 2)
A-1	At-218 (Source: DCFPAK3.02)	5.567E-05	5.567E-05	DCF1 ( 3)
A-1	At-219 (Source: DCFPAK3.02)	0.000E+00	0.000E+00	DCF1 ( 4)
A-1	Bi-210 (Source: DCFPAK3.02)	5.473E-03	5.473E-03	DCF1 ( 5)
A-1	Bi-211 (Source: DCFPAK3.02)	2.410E-01	2.410E-01	DCF1 ( 6)
A-1	Bi-212 (Source: DCFPAK3.02)	6.258E-01	6.258E-01	DCF1 ( 7)
A-1	Bi-214 (Source: DCFPAK3.02)	9.135E+00	9.135E+00	DCF1 ( 8)
A-1	Bi-215 (Source: DCFPAK3.02)	1.369E+00	1.369E+00	DCF1 ( 9)
A-1	Fr-223 (Source: DCFPAK3.02)	1.758E-01	1.758E-01	DCF1 ( 10)
A-1	Hg-206 (Source: DCFPAK3.02)	6.127E-01	6.127E-01	DCF1 ( 11)
A-1	Pa-231 (Source: DCFPAK3.02)	1.608E-01	1.608E-01	DCF1 ( 12)
A-1	Pa-234 (Source: DCFPAK3.02)	8.275E+00	8.275E+00	DCF1 ( 13)
A-1	Pa-234m (Source: DCFPAK3.02)	1.257E-01	1.257E-01	DCF1 ( 14)
A-1	Pb-210 (Source: DCFPAK3.02)	2.092E-03	2.092E-03	DCF1 ( 15)
A-1	Pb-211 (Source: DCFPAK3.02)	3.680E-01	3.680E-01	DCF1 ( 16)
A-1	Pb-212 (Source: DCFPAK3.02)	6.314E-01	6.314E-01	DCF1 ( 17)
A-1	Pb-214 (Source: DCFPAK3.02)	1.257E+00	1.257E+00	DCF1 ( 18)
A-1	Po-210 (Source: DCFPAK3.02)	5.641E-05	5.641E-05	DCF1 ( 19)
A-1	Po-211 (Source: DCFPAK3.02)	4.707E-02	4.707E-02	DCF1 ( 20)
A-1	Po-212 (Source: DCFPAK3.02)	0.000E+00	0.000E+00	DCF1 ( 21)
A-1	Po-214 (Source: DCFPAK3.02)	4.801E-04	4.801E-04	DCF1 ( 22)
A-1	Po-215 (Source: DCFPAK3.02)	9.452E-04	9.452E-04	DCF1 ( 23)
A-1	Po-216 (Source: DCFPAK3.02)	8.873E-05	8.873E-05	DCF1 ( 24)
A-1	Po-218 (Source: DCFPAK3.02)	9.228E-09	9.228E-09	DCF1 ( 25)
A-1	Ra-223 (Source: DCFPAK3.02)	5.791E-01	5.791E-01	DCF1 ( 26)
A-1	Ra-224 (Source: DCFPAK3.02)	4.950E-02	4.950E-02	DCF1 ( 27)
A-1	Ra-226 (Source: DCFPAK3.02)	3.176E-02	3.176E-02	DCF1 ( 28)
A-1	Ra-228 (Source: DCFPAK3.02)	6.575E-05	6.575E-05	DCF1 ( 29)
A-1	Rn-218 (Source: DCFPAK3.02)	4.259E-03	4.259E-03	DCF1 ( 30)
A-1	Rn-219 (Source: DCFPAK3.02)	2.970E-01	2.970E-01	DCF1 ( 31)
A-1	Rn-220 (Source: DCFPAK3.02)	3.474E-03	3.474E-03	DCF1 ( 32)
A-1	Rn-222 (Source: DCFPAK3.02)	2.130E-03	2.130E-03	DCF1 ( 33)
A-1	Th-227 (Source: DCFPAK3.02)	5.641E-01	5.641E-01	DCF1 ( 34)
A-1	Th-228 (Source: DCFPAK3.02)	7.248E-03	7.248E-03	DCF1 ( 35)
A-1	Th-230 (Source: DCFPAK3.02)	1.106E-03	1.106E-03	DCF1 ( 36)
A-1	Th-231 (Source: DCFPAK3.02)	3.250E-02	3.250E-02	DCF1 ( 37)
A-1	Th-232 (Source: DCFPAK3.02)	4.782E-04	4.782E-04	DCF1 ( 38)
A-1	Th-234 (Source: DCFPAK3.02)	2.316E-02	2.316E-02	DCF1 ( 39)
A-1	Tl-206 (Source: DCFPAK3.02)	1.278E-02	1.278E-02	DCF1 ( 40)
A-1	Tl-207 (Source: DCFPAK3.02)	2.391E-02	2.391E-02	DCF1 ( 41)
A-1	Tl-208 (Source: DCFPAK3.02)	2.167E+01	2.167E+01	DCF1 ( 42)
A-1	Tl-210 (Source: DCFPAK3.02)	1.677E+01	1.677E+01	DCF1 ( 43)
A-1	U-234 (Source: DCFPAK3.02)	3.456E-04	3.456E-04	DCF1 ( 44)
A-1	U-235 (Source: DCFPAK3.02)	7.005E-01	7.005E-01	DCF1 ( 45)
A-1	U-238 (Source: DCFPAK3.02)	1.713E-04	1.713E-04	DCF1 ( 46)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	7.496E-01	6.567E-01	DCF2 ( 1)

Summary : NC Suburban Resident 5YR Outdoor Surface EPCs

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Age 10)

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
B-1	Pa-231	9.778E-01	9.778E-01	DCF2 ( 2)
B-1	Pb-210+D	4.899E-02	2.641E-02	DCF2 ( 3)
B-1	Ra-226+D	4.570E-02	4.554E-02	DCF2 ( 4)
B-1	Ra-228+D	7.292E-02	7.284E-02	DCF2 ( 5)
B-1	Th-228+D	2.217E-01	2.042E-01	DCF2 ( 6)
B-1	Th-230	4.177E-01	4.177E-01	DCF2 ( 7)
B-1	Th-232	4.961E-01	4.961E-01	DCF2 ( 8)
B-1	U-234	4.499E-02	4.499E-02	DCF2 ( 9)
B-1	U-235+D	4.058E-02	4.058E-02	DCF2 ( 10)
B-1	U-238	3.848E-02	3.848E-02	DCF2 ( 11)
B-1	U-238+D	3.852E-02	3.848E-02	DCF2 ( 12)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	3.150E-03	1.384E-03	DCF3 ( 1)
D-1	Pa-231	2.090E-03	2.090E-03	DCF3 ( 2)
D-1	Pb-210+D	1.681E-02	7.215E-03	DCF3 ( 3)
D-1	Ra-226+D	2.969E-03	2.967E-03	DCF3 ( 4)
D-1	Ra-228+D	1.451E-02	1.450E-02	DCF3 ( 5)
D-1	Th-228+D	1.531E-03	5.069E-04	DCF3 ( 6)
D-1	Th-230	9.102E-04	9.102E-04	DCF3 ( 7)
D-1	Th-232	1.069E-03	1.069E-03	DCF3 ( 8)
D-1	U-234	2.757E-04	2.757E-04	DCF3 ( 9)
D-1	U-235+D	2.665E-04	2.638E-04	DCF3 ( 10)
D-1	U-238	2.505E-04	2.505E-04	DCF3 ( 11)
D-1	U-238+D	2.781E-04	2.505E-04	DCF3 ( 12)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF ( 1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF ( 1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF ( 1,3)
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF ( 2,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF ( 2,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF ( 2,3)
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF ( 3,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF ( 3,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF ( 3,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF ( 4,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF ( 4,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF ( 4,3)
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF ( 5,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF ( 5,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF ( 5,3)
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF ( 6,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF ( 6,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF ( 6,3)

Dose Conversion Factor (and Related) Parameter Summary (continued)  
 Dose Library: DCFPAK3.02 (Age 10)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF ( 7,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF ( 7,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF ( 7,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF ( 8,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF ( 8,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF ( 8,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF ( 9,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF ( 9,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF ( 9,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF ( 10,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF ( 10,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF ( 10,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF ( 11,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF ( 11,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF ( 11,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF ( 12,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF ( 12,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF ( 12,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC ( 1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC ( 1,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC ( 2,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC ( 2,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC ( 3,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC ( 3,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC ( 4,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC ( 4,2)
D-5				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC ( 5,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC ( 5,2)
D-5				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC ( 6,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC ( 6,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC ( 7,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC ( 7,2)
D-5				
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC ( 8,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC ( 8,2)
D-5				

Summary : NC Suburban Resident 5YR Outdoor Surface EPCs

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DCFPAK3.02 (Age 10)

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC( 9,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC( 9,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC( 10,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC( 10,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC( 11,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC( 11,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC( 12,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC( 12,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

\*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : NC Suburban Resident 5YR Outdoor Surface EPCs

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Site-Specific Parameter Summary

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+02	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	3.000E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.900E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T ( 2)
R011	Times for calculations (yr)	3.000E+00	3.000E+00	---	T ( 3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T ( 4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T ( 5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T ( 6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T ( 7)
R011	Times for calculations (yr)	1.000E+03	1.000E+03	---	T ( 8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T ( 9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Ac-227	1.070E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Pa-231	7.700E-01	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Pb-210	7.560E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Ra-226	3.150E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-228	1.900E-01	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-228	1.700E-01	0.000E+00	---	S1(6)
R012	Initial principal radionuclide (pCi/g): Th-230	9.566E+01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Th-232	9.900E-01	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-234	1.680E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): U-235	9.000E-02	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): U-238	1.680E+00	0.000E+00	---	S1(11)
R012	Concentration in groundwater (pCi/L): Ac-227	not used	0.000E+00	---	W1( 1)
R012	Concentration in groundwater (pCi/L): Pa-231	not used	0.000E+00	---	W1( 2)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1( 3)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1( 4)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1( 5)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1( 6)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1( 7)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1( 8)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1( 9)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(11)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID

Summary : NC Suburban Resident 5YR Outdoor Surface EPCs

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Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Evapotranspiration coefficient	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1, thickness (m)	not used	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	not used	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	not used	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	not used	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	not used	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ (1)
R016	Distribution coefficients for Ac-227				
R016	Contaminated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCC ( 1)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU ( 1,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS ( 1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.497E-02	ALEACH ( 1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK ( 1)
R016	Distribution coefficients for Pa-231				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC ( 2)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU ( 2,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS ( 2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.213E-02	ALEACH ( 2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK ( 2)
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC ( 3)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU ( 3,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS ( 3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.109E-02	ALEACH ( 3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK ( 3)

Summary : NC Suburban Resident 5YR Outdoor Surface EPCs

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Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC ( 4)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU ( 4,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS ( 4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.582E-02	ALEACH ( 4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK ( 4)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC ( 5)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU ( 5,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS ( 5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.582E-02	ALEACH ( 5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK ( 5)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC ( 6)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU ( 6,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS ( 6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.852E-05	ALEACH ( 6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK ( 6)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC ( 7)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU ( 7,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS ( 7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.852E-05	ALEACH ( 7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK ( 7)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC ( 8)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU ( 8,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS ( 8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.852E-05	ALEACH ( 8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK ( 8)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC ( 9)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU ( 9,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS ( 9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.213E-02	ALEACH ( 9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK ( 9)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC (10)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU (10,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS (10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.213E-02	ALEACH (10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (10)

Summary : NC Suburban Resident 5YR Outdoor Surface EPCs

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Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(11,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.213E-02	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R017	Inhalation rate (m**3/yr)	5.402E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.030E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE( 1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE( 2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE( 3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE( 4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE( 5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE( 6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE( 7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE( 8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE( 9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA( 1)
R017	Ring 2	not used	2.732E-01	---	FRACA( 2)
R017	Ring 3	not used	0.000E+00	---	FRACA( 3)
R017	Ring 4	not used	0.000E+00	---	FRACA( 4)
R017	Ring 5	not used	0.000E+00	---	FRACA( 5)
R017	Ring 6	not used	0.000E+00	---	FRACA( 6)
R017	Ring 7	not used	0.000E+00	---	FRACA( 7)
R017	Ring 8	not used	0.000E+00	---	FRACA( 8)
R017	Ring 9	not used	0.000E+00	---	FRACA( 9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	4.380E+01	3.650E+01	---	SOIL

Summary : NC Suburban Resident 5YR Outdoor Surface EPCs

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Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5

Summary : NC Suburban Resident 5YR Outdoor Surface EPCs

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Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : NC Suburban Resident 5YR Outdoor Surface EPCs

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Contaminated Zone Dimensions

Area: 200.00 square meters  
 Thickness: 0.30 meters  
 Cover Depth: 0.00 meters

Initial Soil Concentrations, pCi/g

Ac-227 1.070E+00  
 Pa-231 7.700E-01  
 Pb-210 7.560E+00  
 Ra-226 3.150E+00  
 Ra-228 1.900E-01  
 Th-228 1.700E-01  
 Th-230 9.566E+01  
 Th-232 9.900E-01  
 U-234 1.680E+00  
 U-235 9.000E-02  
 U-238 1.680E+00

0

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.900E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	3.738E+00	3.772E+00	3.857E+00	4.079E+00	4.089E+00	3.793E+00	3.645E+00	3.508E+00
M(t):	1.967E-01	1.985E-01	2.030E-01	2.147E-01	2.152E-01	1.996E-01	1.918E-01	1.846E-01

0 Maximum TDOSE(t): 4.139E+00 mrem/yr at t = 17.98 ± 0.04 years

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.798E+01 years

Water Independent Pathways (Inhalation excludes radon)

0

0

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.												
Ac-227	3.964E-02	0.0096	1.010E-03	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.114E-04	0.0001
Pa-231	3.970E-02	0.0096	3.953E-03	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.463E-03	0.0004
Pb-210	2.436E-03	0.0006	1.061E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.246E-02	0.0127
Ra-226	2.061E+00	0.4980	9.948E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.245E-02	0.0054
Ra-228	2.481E-02	0.0060	4.046E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.335E-04	0.0001
Th-228	1.587E-04	0.0000	2.913E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.900E-07	0.0000
Th-230	5.940E-01	0.1435	2.502E-01	0.0605	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.266E-02	0.0200
Th-232	9.223E-01	0.2228	4.499E-03	0.0011	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.254E-02	0.0030
U-234	4.037E-05	0.0000	3.149E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.778E-04	0.0001
U-235	3.962E-03	0.0010	1.535E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.444E-05	0.0000
U-238	1.568E-02	0.0038	2.691E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.801E-04	0.0001
<b>Total</b>	<b>3.704E+00</b>	<b>0.8948</b>	<b>2.624E-01</b>	<b>0.0634</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>1.730E-01</b>	<b>0.0418</b>

Summary : NC Suburban Resident 5YR Outdoor Surface EPCs

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.798E+01 years

Radio- Nuclide Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.												
Ac-227	0.000E+00	0.0000	4.126E-02	0.0100										
Pa-231	0.000E+00	0.0000	4.511E-02	0.0109										
Pb-210	0.000E+00	0.0000	5.595E-02	0.0135										
Ra-226	0.000E+00	0.0000	2.085E+00	0.5036										
Ra-228	0.000E+00	0.0000	2.508E-02	0.0061										
Th-228	0.000E+00	0.0000	1.593E-04	0.0000										
Th-230	0.000E+00	0.0000	9.269E-01	0.2239										
Th-232	0.000E+00	0.0000	9.393E-01	0.2269										
U-234	0.000E+00	0.0000	6.330E-04	0.0002										
U-235	0.000E+00	0.0000	3.992E-03	0.0010										
U-238	0.000E+00	0.0000	1.623E-02	0.0039										
<b>Total</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>4.139E+00</b>	<b>1.0000</b>										

0\*Sum of all water independent and dependent pathways.

Summary : NC Suburban Resident 5YR Outdoor Surface EPCs

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.												
Ac-227	1.888E-01	0.0505	4.809E-03	0.0013	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.913E-03	0.0008
Pa-231	1.313E-02	0.0035	4.717E-03	0.0013	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.470E-03	0.0004
Pb-210	5.214E-03	0.0014	2.270E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.123E-01	0.0300
Ra-226	2.761E+00	0.7387	9.087E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.103E-03	0.0024
Ra-228	9.843E-02	0.0263	1.217E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.365E-03	0.0006
Th-228	1.079E-01	0.0289	1.979E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.970E-04	0.0001
Th-230	2.786E-02	0.0075	2.501E-01	0.0669	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.862E-02	0.0210
Th-232	2.938E-02	0.0079	3.109E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.711E-03	0.0005
U-234	5.887E-05	0.0000	4.679E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.133E-04	0.0001
U-235	5.897E-03	0.0016	2.262E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.141E-05	0.0000
U-238	2.335E-02	0.0062	4.007E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.169E-04	0.0001
<b>Total</b>	<b>3.261E+00</b>	<b>0.8725</b>	<b>2.671E-01</b>	<b>0.0715</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>2.095E-01</b>	<b>0.0560</b>

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.												
Ac-227	0.000E+00	0.0000	1.966E-01	0.0526										
Pa-231	0.000E+00	0.0000	1.932E-02	0.0052										
Pb-210	0.000E+00	0.0000	1.197E-01	0.0320										
Ra-226	0.000E+00	0.0000	2.771E+00	0.7414										
Ra-228	0.000E+00	0.0000	1.009E-01	0.0270										
Th-228	0.000E+00	0.0000	1.082E-01	0.0290										
Th-230	0.000E+00	0.0000	3.566E-01	0.0954										
Th-232	0.000E+00	0.0000	3.420E-02	0.0092										
U-234	0.000E+00	0.0000	9.401E-04	0.0003										
U-235	0.000E+00	0.0000	5.941E-03	0.0016										
U-238	0.000E+00	0.0000	2.417E-02	0.0065										
<b>Total</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>3.738E+00</b>	<b>1.0000</b>										

\*Sum of all water independent and dependent pathways.

Summary : NC Suburban Resident 5YR Outdoor Surface EPCs

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.												
Ac-227	1.731E-01	0.0459	4.409E-03	0.0012	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.670E-03	0.0007
Pa-231	1.694E-02	0.0045	4.718E-03	0.0013	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.501E-03	0.0004
Pb-210	4.998E-03	0.0013	2.176E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.076E-01	0.0285
Ra-226	2.716E+00	0.7202	9.227E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.037E-02	0.0028
Ra-228	1.200E-01	0.0318	1.688E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.126E-03	0.0006
Th-228	7.505E-02	0.0199	1.377E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.371E-04	0.0000
Th-230	6.389E-02	0.0169	2.501E-01	0.0663	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.874E-02	0.0209
Th-232	9.883E-02	0.0262	3.202E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.121E-03	0.0008
U-234	5.759E-05	0.0000	4.577E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.042E-04	0.0001
U-235	5.768E-03	0.0015	2.213E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.094E-05	0.0000
U-238	2.284E-02	0.0061	3.919E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.078E-04	0.0001
<b>Total</b>	<b>3.298E+00</b>	<b>0.8744</b>	<b>2.667E-01</b>	<b>0.0707</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>2.071E-01</b>	<b>0.0549</b>

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.												
Ac-227	0.000E+00	0.0000	1.802E-01	0.0478										
Pa-231	0.000E+00	0.0000	2.316E-02	0.0061										
Pb-210	0.000E+00	0.0000	1.148E-01	0.0304										
Ra-226	0.000E+00	0.0000	2.728E+00	0.7232										
Ra-228	0.000E+00	0.0000	1.223E-01	0.0324										
Th-228	0.000E+00	0.0000	7.532E-02	0.0200										
Th-230	0.000E+00	0.0000	3.928E-01	0.1041										
Th-232	0.000E+00	0.0000	1.052E-01	0.0279										
U-234	0.000E+00	0.0000	9.196E-04	0.0002										
U-235	0.000E+00	0.0000	5.811E-03	0.0015										
U-238	0.000E+00	0.0000	2.364E-02	0.0063										
<b>Total</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>3.772E+00</b>	<b>1.0000</b>										

\*Sum of all water independent and dependent pathways.

Summary : NC Suburban Resident 5YR Outdoor Surface EPCs

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.												
Ac-227	1.455E-01	0.0377	3.707E-03	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.245E-03	0.0006
Pa-231	2.332E-02	0.0060	4.694E-03	0.0012	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.546E-03	0.0004
Pb-210	4.592E-03	0.0012	1.999E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.888E-02	0.0256
Ra-226	2.630E+00	0.6819	9.466E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.268E-02	0.0033
Ra-228	1.286E-01	0.0333	1.968E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.687E-03	0.0004
Th-228	3.634E-02	0.0094	6.667E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.639E-05	0.0000
Th-230	1.342E-01	0.0348	2.501E-01	0.0649	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.904E-02	0.0205
Th-232	2.585E-01	0.0670	3.438E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.509E-03	0.0014
U-234	5.513E-05	0.0000	4.380E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.867E-04	0.0001
U-235	5.519E-03	0.0014	2.120E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.004E-05	0.0000
U-238	2.185E-02	0.0057	3.749E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.901E-04	0.0001
<b>Total</b>	<b>3.388E+00</b>	<b>0.8785</b>	<b>2.660E-01</b>	<b>0.0690</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>2.025E-01</b>	<b>0.0525</b>

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.												
Ac-227	0.000E+00	0.0000	1.515E-01	0.0393										
Pa-231	0.000E+00	0.0000	2.956E-02	0.0077										
Pb-210	0.000E+00	0.0000	1.055E-01	0.0273										
Ra-226	0.000E+00	0.0000	2.643E+00	0.6854										
Ra-228	0.000E+00	0.0000	1.305E-01	0.0338										
Th-228	0.000E+00	0.0000	3.647E-02	0.0095										
Th-230	0.000E+00	0.0000	4.634E-01	0.1202										
Th-232	0.000E+00	0.0000	2.674E-01	0.0693										
U-234	0.000E+00	0.0000	8.799E-04	0.0002										
U-235	0.000E+00	0.0000	5.560E-03	0.0014										
U-238	0.000E+00	0.0000	2.262E-02	0.0059										
<b>Total</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>3.857E+00</b>	<b>1.0000</b>										

\*Sum of all water independent and dependent pathways.

Summary : NC Suburban Resident 5YR Outdoor Surface EPCs

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	7.926E-02	0.0194	2.019E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.223E-03	0.0003
Pa-231	3.605E-02	0.0088	4.430E-03	0.0011	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.572E-03	0.0004
Pb-210	3.415E-03	0.0008	1.487E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.353E-02	0.0180
Ra-226	2.347E+00	0.5754	9.933E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.866E-02	0.0046
Ra-228	6.941E-02	0.0170	1.123E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.857E-04	0.0002
Th-228	2.870E-03	0.0007	5.267E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.244E-06	0.0000
Th-230	3.630E-01	0.0890	2.502E-01	0.0613	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.050E-02	0.0197
Th-232	7.032E-01	0.1724	4.143E-03	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.043E-02	0.0026
U-234	4.748E-05	0.0000	3.754E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.313E-04	0.0001
U-235	4.727E-03	0.0012	1.823E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.719E-05	0.0000
U-238	1.872E-02	0.0046	3.211E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.342E-04	0.0001
Total	3.627E+00	0.8893	2.641E-01	0.0647	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.873E-01	0.0459

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.										
Ac-227	0.000E+00	0.0000	8.251E-02	0.0202										
Pa-231	0.000E+00	0.0000	4.205E-02	0.0103										
Pb-210	0.000E+00	0.0000	7.844E-02	0.0192										
Ra-226	0.000E+00	0.0000	2.366E+00	0.5802										
Ra-228	0.000E+00	0.0000	7.021E-02	0.0172										
Th-228	0.000E+00	0.0000	2.881E-03	0.0007										
Th-230	0.000E+00	0.0000	6.937E-01	0.1701										
Th-232	0.000E+00	0.0000	7.177E-01	0.1760										
U-234	0.000E+00	0.0000	7.542E-04	0.0002										
U-235	0.000E+00	0.0000	4.763E-03	0.0012										
U-238	0.000E+00	0.0000	1.937E-02	0.0047										
Total	0.000E+00	0.0000	4.079E+00	1.0000										

0\*Sum of all water independent and dependent pathways.

Summary : NC Suburban Resident 5YR Outdoor Surface EPCs

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.												
Ac-227	1.397E-02	0.0034	3.557E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.154E-04	0.0001
Pa-231	3.623E-02	0.0089	3.178E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.211E-03	0.0003
Pb-210	1.465E-03	0.0004	6.379E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.155E-02	0.0077
Ra-226	1.695E+00	0.4146	9.354E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.426E-02	0.0059
Ra-228	4.869E-03	0.0012	7.953E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.544E-05	0.0000
Th-228	2.032E-06	0.0000	3.731E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.716E-09	0.0000
Th-230	8.896E-01	0.2176	2.503E-01	0.0612	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.637E-02	0.0211
Th-232	1.014E+00	0.2481	4.649E-03	0.0011	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.340E-02	0.0033
U-234	3.222E-05	0.0000	2.418E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.130E-04	0.0001
U-235	3.038E-03	0.0007	1.186E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.110E-05	0.0000
U-238	1.202E-02	0.0029	2.063E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.147E-04	0.0001
<b>Total</b>	<b>3.671E+00</b>	<b>0.8978</b>	<b>2.605E-01</b>	<b>0.0637</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>1.575E-01</b>	<b>0.0385</b>

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.												
Ac-227	0.000E+00	0.0000	1.454E-02	0.0036										
Pa-231	0.000E+00	0.0000	4.062E-02	0.0099										
Pb-210	0.000E+00	0.0000	3.365E-02	0.0082										
Ra-226	0.000E+00	0.0000	1.720E+00	0.4208										
Ra-228	0.000E+00	0.0000	4.922E-03	0.0012										
Th-228	0.000E+00	0.0000	2.040E-06	0.0000										
Th-230	0.000E+00	0.0000	1.226E+00	0.2999										
Th-232	0.000E+00	0.0000	1.032E+00	0.2525										
U-234	0.000E+00	0.0000	4.871E-04	0.0001										
U-235	0.000E+00	0.0000	3.061E-03	0.0007										
U-238	0.000E+00	0.0000	1.244E-02	0.0030										
<b>Total</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>4.089E+00</b>	<b>1.0000</b>										

\*Sum of all water independent and dependent pathways.

Summary : NC Suburban Resident 5YR Outdoor Surface EPCs

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.												
Ac-227	3.207E-05	0.0000	8.170E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.948E-07	0.0000
Pa-231	8.724E-03	0.0023	7.006E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.730E-04	0.0001
Pb-210	7.581E-05	0.0000	3.300E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.632E-03	0.0004
Ra-226	5.427E-01	0.1431	3.853E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.201E-02	0.0032
Ra-228	3.477E-07	0.0000	5.690E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.249E-09	0.0000
Th-228	1.920E-17	0.0000	3.532E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.517E-20	0.0000
Th-230	1.817E+00	0.4790	2.504E-01	0.0660	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.035E-01	0.0273
Th-232	1.034E+00	0.2726	4.680E-03	0.0012	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.360E-02	0.0036
U-234	1.575E-05	0.0000	5.280E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.582E-05	0.0000
U-235	6.470E-04	0.0002	2.641E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.405E-06	0.0000
U-238	2.553E-03	0.0007	4.385E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.562E-05	0.0000
<b>Total</b>	<b>3.406E+00</b>	<b>0.8979</b>	<b>2.563E-01</b>	<b>0.0676</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>1.311E-01</b>	<b>0.0346</b>

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.												
Ac-227	0.000E+00	0.0000	3.338E-05	0.0000										
Pa-231	0.000E+00	0.0000	9.698E-03	0.0026										
Pb-210	0.000E+00	0.0000	1.741E-03	0.0005										
Ra-226	0.000E+00	0.0000	5.551E-01	0.1464										
Ra-228	0.000E+00	0.0000	3.516E-07	0.0000										
Th-228	0.000E+00	0.0000	1.927E-17	0.0000										
Th-230	0.000E+00	0.0000	2.171E+00	0.5723										
Th-232	0.000E+00	0.0000	1.052E+00	0.2774										
U-234	0.000E+00	0.0000	1.144E-04	0.0000										
U-235	0.000E+00	0.0000	6.520E-04	0.0002										
U-238	0.000E+00	0.0000	2.642E-03	0.0007										
<b>Total</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>3.793E+00</b>	<b>1.0000</b>										

\*Sum of all water independent and dependent pathways.

Summary : NC Suburban Resident 5YR Outdoor Surface EPCs

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.												
Ac-227	9.248E-13	0.0000	2.358E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.428E-14	0.0000
Pa-231	1.040E-04	0.0000	8.353E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.255E-06	0.0000
Pb-210	1.603E-08	0.0000	6.974E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.449E-07	0.0000
Ra-226	2.092E-02	0.0057	1.555E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.962E-04	0.0001
Ra-228	4.942E-19	0.0000	8.128E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.641E-21	0.0000
Th-228	0.000E+00	0.0000												
Th-230	2.218E+00	0.6085	2.493E-01	0.0684	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.126E-01	0.0309
Th-232	1.025E+00	0.2812	4.662E-03	0.0013	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.355E-02	0.0037
U-234	1.600E-05	0.0000	2.431E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.357E-06	0.0000
U-235	7.793E-06	0.0000	3.574E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.040E-08	0.0000
U-238	3.050E-05	0.0000	5.253E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.464E-07	0.0000
<b>Total</b>	<b>3.264E+00</b>	<b>0.8956</b>	<b>2.540E-01</b>	<b>0.0697</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>1.267E-01</b>	<b>0.0348</b>

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.												
Ac-227	0.000E+00	0.0000	9.626E-13	0.0000										
Pa-231	0.000E+00	0.0000	1.156E-04	0.0000										
Pb-210	0.000E+00	0.0000	3.679E-07	0.0000										
Ra-226	0.000E+00	0.0000	2.144E-02	0.0059										
Ra-228	0.000E+00	0.0000	4.997E-19	0.0000										
Th-228	0.000E+00	0.0000												
Th-230	0.000E+00	0.0000	2.580E+00	0.7078										
Th-232	0.000E+00	0.0000	1.043E+00	0.2862										
U-234	0.000E+00	0.0000	1.979E-05	0.0000										
U-235	0.000E+00	0.0000	7.860E-06	0.0000										
U-238	0.000E+00	0.0000	3.157E-05	0.0000										
<b>Total</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>3.645E+00</b>	<b>1.0000</b>										

\*Sum of all water independent and dependent pathways.

Summary : NC Suburban Resident 5YR Outdoor Surface EPCs

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	1.911E-11	0.0000	1.544E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.015E-13	0.0000
Pb-210	2.200E-21	0.0000	9.569E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.733E-20	0.0000
Ra-226	2.339E-07	0.0000	1.776E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.666E-09	0.0000
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.147E+00	0.6119	2.445E-01	0.0697	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.109E-01	0.0316
Th-232	9.882E-01	0.2817	4.602E-03	0.0013	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.337E-02	0.0038
U-234	1.568E-05	0.0000	1.787E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.101E-07	0.0000
U-235	1.492E-12	0.0000	9.395E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.750E-15	0.0000
U-238	2.009E-09	0.0000	2.284E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.036E-10	0.0000
Total	3.135E+00	0.8936	2.492E-01	0.0710	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.243E-01	0.0354

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.										
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000										
Pa-231	0.000E+00	0.0000	2.126E-11	0.0000										
Pb-210	0.000E+00	0.0000	5.049E-20	0.0000										
Ra-226	0.000E+00	0.0000	2.398E-07	0.0000										
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000										
Th-228	0.000E+00	0.0000	0.000E+00	0.0000										
Th-230	0.000E+00	0.0000	2.502E+00	0.7132										
Th-232	0.000E+00	0.0000	1.006E+00	0.2868										
U-234	0.000E+00	0.0000	1.828E-05	0.0000										
U-235	0.000E+00	0.0000	1.508E-12	0.0000										
U-238	0.000E+00	0.0000	2.341E-09	0.0000										
Total	0.000E+00	0.0000	3.508E+00	1.0000										

0\*Sum of all water independent and dependent pathways.

Summary : NC Suburban Resident 5YR Outdoor Surface EPCs

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Dose/Source Ratios Summed Over All Pathways												
Parent and Progeny Principal Radionuclide Contributions Indicated												
0	Parent (i)	Product (j)	Parent Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)								
				0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ac-227+D	Ac-227+D	1.000E+00	1.837E-01	1.684E-01	1.416E-01	7.711E-02	1.359E-02	3.120E-05	8.996E-13	3.654E-39		
OPa-231	Pa-231	1.000E+00	2.214E-02	2.166E-02	2.072E-02	1.774E-02	1.139E-02	2.417E-03	2.879E-05	5.301E-12		
Pa-231	Ac-227+D	1.000E+00	2.944E-03	8.419E-03	1.768E-02	3.687E-02	4.136E-02	1.018E-02	1.214E-04	2.231E-11		
Pa-231	EDSR(j)		2.508E-02	3.007E-02	3.839E-02	5.461E-02	5.276E-02	1.259E-02	1.502E-04	2.761E-11		
OPb-210+D	Pb-210+D	1.000E+00	1.584E-02	1.518E-02	1.395E-02	1.038E-02	4.451E-03	2.303E-04	4.867E-08	6.678E-21		
ORa-226+D	Ra-226+D	1.000E+00	8.794E-01	8.652E-01	8.375E-01	7.473E-01	5.397E-01	1.727E-01	6.659E-03	7.444E-08		
Ra-226+D	Pb-210+D	1.000E+00	2.477E-04	7.240E-04	1.595E-03	3.911E-03	6.473E-03	3.508E-03	1.464E-04	1.672E-09		
Ra-226+D	EDSR(j)		8.797E-01	8.660E-01	8.391E-01	7.513E-01	5.462E-01	1.762E-01	6.805E-03	7.611E-08		
ORa-228+D	Ra-228+D	1.000E+00	4.143E-01	3.615E-01	2.752E-01	1.059E-01	6.924E-03	4.945E-07	7.042E-19	0.000E+00		
Ra-228+D	Th-228+D	1.000E+00	1.169E-01	2.823E-01	4.116E-01	2.636E-01	1.898E-02	1.356E-06	1.926E-18	0.000E+00		
Ra-228+D	EDSR(j)		5.311E-01	6.437E-01	6.868E-01	3.695E-01	2.591E-02	1.850E-06	2.630E-18	0.000E+00		
0Th-228+D	Th-228+D	1.000E+00	6.368E-01	4.431E-01	2.145E-01	1.694E-02	1.200E-05	1.134E-16	0.000E+00	0.000E+00		
0Th-230	Th-230	1.000E+00	3.537E-03	3.537E-03	3.536E-03	3.536E-03	3.534E-03	3.527E-03	3.507E-03	3.440E-03		
Th-230	Ra-226+D	1.000E+00	1.910E-04	5.689E-04	1.306E-03	3.706E-03	9.227E-03	1.895E-02	2.315E-02	2.241E-02		
Th-230	Pb-210+D	1.000E+00	3.594E-08	2.474E-07	1.260E-06	9.871E-06	5.806E-05	2.198E-04	3.123E-04	3.101E-04		
Th-230	EDSR(j)		3.728E-03	4.106E-03	4.844E-03	7.252E-03	1.282E-02	2.269E-02	2.697E-02	2.616E-02		
0Th-232	Th-232	1.000E+00	4.119E-03	4.119E-03	4.119E-03	4.118E-03	4.117E-03	4.111E-03	4.096E-03	4.043E-03		
Th-232	Ra-228+D	1.000E+00	2.554E-02	7.222E-02	1.485E-01	2.980E-01	3.853E-01	3.905E-01	3.879E-01	3.767E-01		
Th-232	Th-228+D	1.000E+00	4.893E-03	2.988E-02	1.175E-01	4.228E-01	6.535E-01	6.682E-01	6.619E-01	6.356E-01		
Th-232	EDSR(j)		3.455E-02	1.062E-01	2.701E-01	7.250E-01	1.043E+00	1.063E+00	1.054E+00	1.016E+00		
0U-234	U-234	1.000E+00	5.595E-04	5.473E-04	5.236E-04	4.485E-04	2.881E-04	6.120E-05	7.320E-07	1.370E-13		
U-234	Th-230	1.000E+00	1.614E-08	4.795E-08	1.095E-07	3.046E-07	7.209E-07	1.308E-06	1.457E-06	1.431E-06		
U-234	Ra-226+D	1.000E+00	5.830E-10	4.037E-09	2.081E-08	1.705E-07	1.123E-06	5.519E-06	9.462E-06	9.322E-06		
U-234	Pb-210+D	1.000E+00	8.250E-14	1.216E-12	1.366E-11	3.154E-10	5.251E-09	5.594E-08	1.264E-07	1.290E-07		
U-234	EDSR(j)		5.596E-04	5.474E-04	5.237E-04	4.489E-04	2.899E-04	6.808E-05	1.178E-05	1.088E-05		
0U-235+D	U-235+D	1.000E+00	6.601E-02	6.457E-02	6.177E-02	5.291E-02	3.399E-02	7.221E-03	8.641E-05	1.617E-11		
U-235+D	Pa-231	1.000E+00	2.334E-07	6.865E-07	1.533E-06	3.941E-06	7.353E-06	5.144E-06	1.836E-07	1.134E-13		
U-235+D	Ac-227+D	1.000E+00	2.084E-08	1.406E-07	6.833E-07	4.558E-06	1.748E-05	1.836E-05	7.343E-07	4.698E-13		
U-235+D	EDSR(j)		6.601E-02	6.457E-02	6.178E-02	5.292E-02	3.401E-02	7.245E-03	8.733E-05	1.675E-11		
0U-238	U-238	5.450E-07	2.604E-10	2.547E-10	2.437E-10	2.087E-10	1.341E-10	2.849E-11	3.409E-13	6.394E-20		
0U-238+D	U-238+D	1.000E+00	1.439E-02	1.407E-02	1.346E-02	1.153E-02	7.406E-03	1.573E-03	1.879E-05	3.488E-12		
U-238+D	U-234	1.000E+00	7.870E-10	2.315E-09	5.172E-09	1.329E-08	2.481E-08	1.737E-08	6.213E-10	3.876E-16		
U-238+D	Th-230	1.000E+00	1.514E-14	1.046E-13	5.374E-13	4.344E-12	2.758E-11	1.220E-10	1.846E-10	1.828E-10		
U-238+D	Ra-226+D	1.000E+00	4.105E-16	6.078E-15	6.889E-14	1.646E-12	2.994E-11	4.026E-10	1.157E-09	1.191E-09		
U-238+D	Pb-210+D	1.000E+00	4.654E-20	1.418E-18	3.435E-17	2.331E-15	1.110E-13	3.559E-12	1.517E-11	1.648E-11		
U-238+D	EDSR(j)		1.439E-02	1.407E-02	1.346E-02	1.153E-02	7.406E-03	1.573E-03	1.879E-05	1.394E-09		

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Summary : NC Suburban Resident 5YR Outdoor Surface EPCs

File : C:\RESRAD\_FAMILY\ONSITE\7.2\USERFILES\NC 5YR OUTDOOR SURF EPCS.RAD

Single Radionuclide Soil Guidelines G(i,t) in pCi/g  
Basic Radiation Dose Limit = 1.900E+01 mrem/yr

ONuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227	1.034E+02	1.128E+02	1.342E+02	2.464E+02	1.398E+03	6.090E+05	2.112E+13	*7.232E+13
Pa-231	7.574E+02	6.318E+02	4.949E+02	3.479E+02	3.602E+02	1.509E+03	1.265E+05	*4.723E+10
Pb-210	1.200E+03	1.251E+03	1.362E+03	1.831E+03	4.268E+03	8.251E+04	3.904E+08	*7.632E+13
Ra-226	2.160E+01	2.194E+01	2.264E+01	2.529E+01	3.479E+01	1.078E+02	2.792E+03	2.496E+08
Ra-228	3.577E+01	2.952E+01	2.767E+01	5.142E+01	7.334E+02	1.027E+07	*2.726E+14	*2.726E+14
Th-228	2.984E+01	4.288E+01	8.856E+01	1.121E+03	1.583E+06	*8.201E+14	*8.201E+14	*8.201E+14
Th-230	5.097E+03	4.628E+03	3.922E+03	2.620E+03	1.482E+03	8.373E+02	7.045E+02	7.264E+02
Th-232	5.500E+02	1.789E+02	7.034E+01	2.621E+01	1.822E+01	1.788E+01	1.803E+01	1.869E+01
U-234	3.396E+04	3.471E+04	3.628E+04	4.232E+04	6.553E+04	2.791E+05	1.613E+06	1.746E+06
U-235	2.878E+02	2.943E+02	3.076E+02	3.590E+02	5.586E+02	2.623E+03	2.176E+05	*2.160E+06
U-238	1.321E+03	1.350E+03	1.411E+03	1.648E+03	2.565E+03	1.208E+04	*3.361E+05	*3.361E+05

\*At specific activity limit

0

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)  
and Single Radionuclide Soil Guidelines G(i,t) in pCi/g  
at tmin = time of minimum single radionuclide soil guideline  
and at tmax = time of maximum total dose = 17.98 ± 0.04 years

ONuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Ac-227	1.070E+00	0.000E+00	1.837E-01	1.034E+02	3.856E-02	4.927E+02
Pa-231	7.700E-01	17.35 ± 0.03	5.861E-02	3.242E+02	5.859E-02	3.243E+02
Pb-210	7.560E+00	0.000E+00	1.584E-02	1.200E+03	7.401E-03	2.567E+03
Ra-226	3.150E+00	0.000E+00	8.797E-01	2.160E+01	6.618E-01	2.871E+01
Ra-228	1.900E-01	2.468 ± 0.005	6.912E-01	2.749E+01	1.320E-01	1.439E+02
Th-228	1.700E-01	0.000E+00	6.368E-01	2.984E+01	9.369E-04	2.028E+04
Th-230	9.566E+01	350.5 ± 0.7	2.701E-02	7.035E+02	9.689E-03	1.961E+03
Th-232	9.900E-01	61.5 ± 0.1	1.064E+00	1.785E+01	9.488E-01	2.003E+01
U-234	1.680E+00	0.000E+00	5.596E-04	3.396E+04	3.768E-04	5.042E+04
U-235	9.000E-02	0.000E+00	6.601E-02	2.878E+02	4.436E-02	4.283E+02
U-238	1.680E+00	0.000E+00	1.439E-02	1.321E+03	9.663E-03	1.966E+03

Summary : NC Suburban Resident 5YR Outdoor Surface EPCs

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Individual Nuclide Dose Summed Over All Pathways  
Parent Nuclide and Branch Fraction Indicated

ONuclide	Parent (j)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227	Ac-227	1.000E+00	1.966E-01	1.802E-01	1.515E-01	8.251E-02	1.454E-02	3.338E-05	9.626E-13	0.000E+00
Ac-227	Pa-231	1.000E+00	2.267E-03	6.483E-03	1.361E-02	2.839E-02	3.185E-02	7.837E-03	9.347E-05	1.718E-11
Ac-227	U-235	1.000E+00	1.876E-09	1.265E-08	6.150E-08	4.102E-07	1.573E-06	1.652E-06	6.608E-08	4.228E-14
Ac-227	ΣDOSE (j)		1.988E-01	1.867E-01	1.651E-01	1.109E-01	4.639E-02	7.872E-03	9.353E-05	1.722E-11
OPa-231	Pa-231	1.000E+00	1.705E-02	1.667E-02	1.595E-02	1.366E-02	8.772E-03	1.861E-03	2.217E-05	4.082E-12
Pa-231	U-235	1.000E+00	2.100E-08	6.178E-08	1.380E-07	3.547E-07	6.618E-07	4.630E-07	1.652E-08	1.021E-14
Pa-231	ΣDOSE (j)		1.705E-02	1.667E-02	1.595E-02	1.366E-02	8.772E-03	1.861E-03	2.218E-05	4.092E-12
OPb-210	Pb-210	1.000E+00	1.197E-01	1.148E-01	1.055E-01	7.844E-02	3.365E-02	1.741E-03	3.679E-07	5.049E-20
Pb-210	Ra-226	1.000E+00	7.802E-04	2.281E-03	5.025E-03	1.232E-02	2.039E-02	1.105E-02	4.612E-04	5.268E-09
Pb-210	Th-230	1.000E+00	3.438E-06	2.367E-05	1.205E-04	9.443E-04	5.554E-03	2.103E-02	2.988E-02	2.967E-02
Pb-210	U-234	1.000E+00	1.386E-13	2.044E-12	2.294E-11	5.299E-10	8.822E-09	9.398E-08	2.124E-07	2.168E-07
Pb-210	U-238	1.000E+00	7.819E-20	2.381E-18	5.770E-17	3.917E-15	1.864E-13	5.979E-12	2.549E-11	2.769E-11
Pb-210	ΣDOSE (j)		1.205E-01	1.171E-01	1.106E-01	9.170E-02	5.960E-02	3.382E-02	3.034E-02	2.967E-02
ORa-226	Ra-226	1.000E+00	2.770E+00	2.726E+00	2.638E+00	2.354E+00	1.700E+00	5.441E-01	2.097E-02	2.345E-07
Ra-226	Th-230	1.000E+00	1.827E-02	5.442E-02	1.250E-01	3.545E-01	8.827E-01	1.812E+00	2.215E+00	2.143E+00
Ra-226	U-234	1.000E+00	9.795E-10	6.782E-09	3.497E-08	2.864E-07	1.886E-06	9.272E-06	1.590E-05	1.566E-05
Ra-226	U-238	1.000E+00	6.896E-16	1.021E-14	1.157E-13	2.765E-12	5.030E-11	6.763E-10	1.944E-09	2.001E-09
Ra-226	ΣDOSE (j)		2.788E+00	2.780E+00	2.763E+00	2.709E+00	2.583E+00	2.356E+00	2.236E+00	2.143E+00
ORa-228	Ra-228	1.000E+00	7.871E-02	6.868E-02	5.228E-02	2.012E-02	1.316E-03	9.395E-08	1.338E-19	0.000E+00
Ra-228	Th-232	1.000E+00	2.528E-02	7.150E-02	1.470E-01	2.950E-01	3.814E-01	3.866E-01	3.840E-01	3.729E-01
Ra-228	ΣDOSE (j)		1.040E-01	1.402E-01	1.993E-01	3.152E-01	3.828E-01	3.866E-01	3.840E-01	3.729E-01
0Th-228	Ra-228	1.000E+00	2.221E-02	5.363E-02	7.821E-02	5.009E-02	3.607E-03	2.576E-07	3.659E-19	0.000E+00
Th-228	Th-228	1.000E+00	1.082E-01	7.532E-02	3.647E-02	2.881E-03	2.040E-06	1.927E-17	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	4.844E-03	2.958E-02	1.163E-01	4.186E-01	6.469E-01	6.615E-01	6.552E-01	6.293E-01
Th-228	ΣDOSE (j)		1.353E-01	1.585E-01	2.310E-01	4.716E-01	6.506E-01	6.615E-01	6.552E-01	6.293E-01
0Th-230	Th-230	1.000E+00	3.383E-01	3.383E-01	3.383E-01	3.382E-01	3.380E-01	3.374E-01	3.355E-01	3.291E-01
Th-230	U-234	1.000E+00	2.712E-08	8.056E-08	1.840E-07	5.118E-07	1.211E-06	2.198E-06	2.448E-06	2.404E-06
Th-230	U-238	1.000E+00	2.543E-14	1.758E-13	9.029E-13	7.298E-12	4.634E-11	2.049E-10	3.101E-10	3.072E-10
Th-230	ΣDOSE (j)		3.383E-01	3.383E-01	3.383E-01	3.382E-01	3.380E-01	3.374E-01	3.355E-01	3.291E-01
0Th-232	Th-232	1.000E+00	4.078E-03	4.078E-03	4.077E-03	4.077E-03	4.075E-03	4.070E-03	4.055E-03	4.003E-03
OU-234	U-234	1.000E+00	9.400E-04	9.195E-04	8.797E-04	7.534E-04	4.840E-04	1.028E-04	1.230E-06	2.302E-13
U-234	U-238	1.000E+00	1.322E-09	3.889E-09	8.688E-09	2.233E-08	4.168E-08	2.918E-08	1.044E-09	6.511E-16
U-234	ΣDOSE (j)		9.400E-04	9.195E-04	8.797E-04	7.534E-04	4.840E-04	1.028E-04	1.231E-06	2.308E-13
OU-235	U-235	1.000E+00	5.941E-03	5.811E-03	5.560E-03	4.762E-03	3.059E-03	6.499E-04	7.777E-06	1.455E-12
OU-238	U-238	5.450E-07	4.375E-10	4.279E-10	4.094E-10	3.506E-10	2.252E-10	4.786E-11	5.728E-13	1.074E-19
U-238	U-238	1.000E+00	2.417E-02	2.364E-02	2.262E-02	1.937E-02	1.244E-02	2.642E-03	3.157E-05	5.860E-12
U-238	ΣDOSE (j)		2.417E-02	2.364E-02	2.262E-02	1.937E-02	1.244E-02	2.642E-03	3.157E-05	5.860E-12

THF(i) is the thread fraction of the parent nuclide.

Summary : NC Suburban Resident 5YR Outdoor Surface EPCs

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Individual Nuclide Soil Concentration  
Parent Nuclide and Branch Fraction Indicated

ONuclide	Parent (j)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227	Ac-227	1.000E+00	1.070E+00	9.810E-01	8.247E-01	4.492E-01	7.915E-02	1.818E-04	5.246E-12	2.142E-38
Ac-227	Pa-231	1.000E+00	0.000E+00	2.322E-02	6.255E-02	1.447E-01	1.670E-01	4.133E-02	4.933E-04	9.115E-11
Ac-227	U-235	1.000E+00	0.000E+00	2.902E-08	2.395E-07	1.980E-06	8.087E-06	8.664E-06	3.482E-07	2.243E-13
Ac-227	ΣS(j):		1.070E+00	1.004E+00	8.872E-01	5.938E-01	2.462E-01	4.152E-02	4.936E-04	9.137E-11
OPa-231	Pa-231	1.000E+00	7.700E-01	7.531E-01	7.205E-01	6.170E-01	3.962E-01	8.406E-02	1.002E-03	1.851E-10
Pa-231	U-235	1.000E+00	0.000E+00	1.863E-06	5.346E-06	1.526E-05	2.940E-05	2.081E-05	7.456E-07	4.627E-13
Pa-231	ΣS(j):		7.700E-01	7.531E-01	7.205E-01	6.170E-01	3.962E-01	8.408E-02	1.003E-03	1.856E-10
OPb-210	Pb-210	1.000E+00	7.560E+00	7.247E+00	6.659E+00	4.952E+00	2.125E+00	1.099E-01	2.323E-05	3.187E-18
Pb-210	Ra-226	1.000E+00	0.000E+00	9.552E-02	2.703E-01	7.359E-01	1.257E+00	6.879E-01	2.874E-02	3.283E-07
Pb-210	Th-230	1.000E+00	0.000E+00	6.345E-04	5.493E-03	5.342E-02	3.351E-01	1.295E+00	1.847E+00	1.834E+00
Pb-210	U-234	1.000E+00	0.000E+00	3.413E-11	8.852E-10	2.853E-08	5.238E-07	5.769E-06	1.313E-05	1.340E-05
Pb-210	U-238	1.000E+00	0.000E+00	2.408E-17	1.872E-15	2.004E-13	1.089E-11	3.655E-10	1.575E-09	1.712E-09
Pb-210	ΣS(j):		7.560E+00	7.343E+00	6.935E+00	5.741E+00	3.717E+00	2.093E+00	1.875E+00	1.834E+00
ORa-226	Ra-226	1.000E+00	3.150E+00	3.099E+00	3.000E+00	2.677E+00	1.934E+00	6.198E-01	2.399E-02	2.739E-07
Ra-226	Th-230	1.000E+00	0.000E+00	4.111E-02	1.213E-01	3.824E-01	9.834E-01	2.044E+00	2.513E+00	2.484E+00
Ra-226	U-234	1.000E+00	0.000E+00	3.304E-09	2.898E-08	2.947E-07	2.072E-06	1.043E-05	1.803E-05	1.815E-05
Ra-226	U-238	1.000E+00	0.000E+00	3.102E-15	8.126E-14	2.709E-12	5.441E-11	7.579E-10	2.205E-09	2.318E-09
Ra-226	ΣS(j):		3.150E+00	3.140E+00	3.121E+00	3.060E+00	2.918E+00	2.664E+00	2.537E+00	2.484E+00
ORa-228	Ra-228	1.000E+00	1.900E-01	1.658E-01	1.262E-01	4.858E-02	3.177E-03	2.271E-07	3.244E-19	0.000E+00
Ra-228	Th-232	1.000E+00	0.000E+00	1.116E-01	2.938E-01	6.513E-01	8.601E-01	8.736E-01	8.704E-01	8.592E-01
Ra-228	ΣS(j):		1.900E-01	2.773E-01	4.200E-01	6.999E-01	8.633E-01	8.736E-01	8.704E-01	8.592E-01
0Th-228	Ra-228	1.000E+00	0.000E+00	5.380E-02	9.967E-02	6.976E-02	5.086E-03	3.639E-07	5.199E-19	0.000E+00
Th-228	Th-228	1.000E+00	1.700E-01	1.183E-01	5.728E-02	4.525E-03	3.206E-06	3.035E-17	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.837E-02	1.212E-01	5.304E-01	8.513E-01	8.736E-01	8.704E-01	8.592E-01
Th-228	ΣS(j):		1.700E-01	1.905E-01	2.781E-01	6.047E-01	8.564E-01	8.736E-01	8.704E-01	8.592E-01
0Th-230	Th-230	1.000E+00	9.566E+01	9.566E+01	9.565E+01	9.563E+01	9.558E+01	9.540E+01	9.487E+01	9.305E+01
Th-230	U-234	1.000E+00	0.000E+00	1.528E-05	4.484E-05	1.386E-04	3.385E-04	6.206E-04	6.922E-04	6.798E-04
Th-230	U-238	1.000E+00	0.000E+00	2.149E-11	1.878E-10	1.884E-09	1.276E-08	5.769E-08	8.766E-08	8.685E-08
Th-230	ΣS(j):		9.566E+01	9.566E+01	9.565E+01	9.563E+01	9.558E+01	9.540E+01	9.487E+01	9.305E+01
0Th-232	Th-232	1.000E+00	9.900E-01	9.900E-01	9.899E-01	9.898E-01	9.895E-01	9.882E-01	9.845E-01	9.718E-01
0U-234	U-234	1.000E+00	1.680E+00	1.643E+00	1.572E+00	1.346E+00	8.649E-01	1.837E-01	2.198E-03	4.114E-10
U-234	U-238	1.000E+00	0.000E+00	4.640E-06	1.332E-05	3.802E-05	7.326E-05	5.188E-05	1.862E-06	1.163E-12
U-234	ΣS(j):		1.680E+00	1.643E+00	1.572E+00	1.347E+00	8.650E-01	1.838E-01	2.200E-03	4.125E-10
0U-235	U-235	1.000E+00	9.000E-02	8.803E-02	8.422E-02	7.213E-02	4.634E-02	9.846E-03	1.178E-04	2.210E-11
0U-238	U-238	5.450E-07	9.156E-07	8.956E-07	8.568E-07	7.338E-07	4.714E-07	1.002E-07	1.199E-09	2.248E-16
U-238	U-238	1.000E+00	1.680E+00	1.643E+00	1.572E+00	1.347E+00	8.650E-01	1.838E-01	2.200E-03	4.125E-10
U-238	ΣS(j):		1.680E+00	1.643E+00	1.572E+00	1.347E+00	8.650E-01	1.838E-01	2.200E-03	4.125E-10

THF(i) is the thread fraction of the parent nuclide.

ORESCALC.EXE execution time = 1.53 seconds

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Part III: Intake Quantities and Health Risk Factors

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Cancer Risk Slope Factors Summary Table  
 Risk Library: DCFPAK3.02 Morbidity

0 Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-1	Ground external radiation slope factors, 1/yr per (pCi/g):			
Sf-1	Ac-227+D	1.63E-06	1.98E-10	SLPF( 1,1)
Sf-1	Pa-231	1.27E-07	1.27E-07	SLPF( 2,1)
Sf-1	Pb-210+D	4.30E-09	1.48E-09	SLPF( 3,1)
Sf-1	Ra-226+D	8.37E-06	2.50E-08	SLPF( 4,1)
Sf-1	Ra-228+D	4.04E-06	3.43E-11	SLPF( 5,1)
Sf-1	Th-228+D	7.33E-06	5.64E-09	SLPF( 6,1)
Sf-1	Th-230	8.45E-10	8.45E-10	SLPF( 7,1)
Sf-1	Th-232	3.58E-10	3.58E-10	SLPF( 8,1)
Sf-1	U-234	2.53E-10	2.53E-10	SLPF( 9,1)
Sf-1	U-235+D	5.76E-07	5.51E-07	SLPF( 10,1)
Sf-1	U-238	1.24E-10	1.24E-10	SLPF( 11,1)
Sf-1	U-238+D	1.19E-07	1.24E-10	SLPF( 12,1)
Sf-2	Inhalation, slope factors, 1/(pCi):			
Sf-2	Ac-227+D	2.13E-07	1.49E-07	SLPF( 1,2)
Sf-2	Pa-231	7.62E-08	7.62E-08	SLPF( 2,2)
Sf-2	Pb-210+D	3.08E-08	1.59E-08	SLPF( 3,2)
Sf-2	Ra-226+D	2.82E-08	2.81E-08	SLPF( 4,2)
Sf-2	Ra-228+D	4.37E-08	4.37E-08	SLPF( 5,2)
Sf-2	Th-228+D	1.44E-07	1.32E-07	SLPF( 6,2)
Sf-2	Th-230	3.41E-08	3.41E-08	SLPF( 7,2)
Sf-2	Th-232	4.33E-08	4.33E-08	SLPF( 8,2)
Sf-2	U-234	2.78E-08	2.78E-08	SLPF( 9,2)
Sf-2	U-235+D	2.50E-08	2.50E-08	SLPF( 10,2)
Sf-2	U-238	2.36E-08	2.36E-08	SLPF( 11,2)
Sf-2	U-238+D	2.37E-08	2.36E-08	SLPF( 12,2)
Sf-3	Food ingestion, slope factors, 1/(pCi):			
Sf-3	Ac-227+D	6.54E-10	2.45E-10	SLPF( 1,3)
Sf-3	Pa-231	2.26E-10	2.26E-10	SLPF( 2,3)
Sf-3	Pb-210+D	3.44E-09	1.18E-09	SLPF( 3,3)
Sf-3	Ra-226+D	5.15E-10	5.14E-10	SLPF( 4,3)
Sf-3	Ra-228+D	1.43E-09	1.42E-09	SLPF( 5,3)
Sf-3	Th-228+D	4.23E-10	1.48E-10	SLPF( 6,3)
Sf-3	Th-230	1.19E-10	1.19E-10	SLPF( 7,3)
Sf-3	Th-232	1.33E-10	1.33E-10	SLPF( 8,3)
Sf-3	U-234	9.55E-11	9.55E-11	SLPF( 9,3)
Sf-3	U-235+D	9.76E-11	9.43E-11	SLPF( 10,3)
Sf-3	U-238	8.66E-11	8.66E-11	SLPF( 11,3)
Sf-3	U-238+D	1.21E-10	8.66E-11	SLPF( 12,3)
Sf-3	Water ingestion, slope factors, 1/(pCi):			
Sf-3	Ac-227+D	4.87E-10	2.01E-10	SLPF( 1,4)
Sf-3	Pa-231	1.72E-10	1.72E-10	SLPF( 2,4)
Sf-3	Pb-210+D	2.67E-09	8.84E-10	SLPF( 3,4)
Sf-3	Ra-226+D	3.85E-10	3.85E-10	SLPF( 4,4)
Sf-3	Ra-228+D	1.04E-09	1.04E-09	SLPF( 5,4)
Sf-3	Th-228+D	3.00E-10	1.08E-10	SLPF( 6,4)
Sf-3	Th-230	9.14E-11	9.14E-11	SLPF( 7,4)

Cancer Risk Slope Factors Summary Table (continued)  
 Risk Library: DCFPAK3.02 Morbidity

0 Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-3	Th-232	1.01E-10	1.01E-10	SLPF( 8,4)
Sf-3	U-234	7.07E-11	7.07E-11	SLPF( 9,4)
Sf-3	U-235+D	7.17E-11	6.95E-11	SLPF( 10,4)
Sf-3	U-238	6.40E-11	6.40E-11	SLPF( 11,4)
Sf-3	U-238+D	8.71E-11	6.40E-11	SLPF( 12,4)
Sf-3	Soil ingestion, slope factors, 1/(pCi):			
Sf-3	Ac-227+D	6.54E-10	2.45E-10	SLPF( 1,5)
Sf-3	Pa-231	2.26E-10	2.26E-10	SLPF( 2,5)
Sf-3	Pb-210+D	3.44E-09	1.18E-09	SLPF( 3,5)
Sf-3	Ra-226+D	5.15E-10	5.14E-10	SLPF( 4,5)
Sf-3	Ra-228+D	1.43E-09	1.42E-09	SLPF( 5,5)
Sf-3	Th-228+D	4.23E-10	1.48E-10	SLPF( 6,5)
Sf-3	Th-230	1.19E-10	1.19E-10	SLPF( 7,5)
Sf-3	Th-232	1.33E-10	1.33E-10	SLPF( 8,5)
Sf-3	U-234	9.55E-11	9.55E-11	SLPF( 9,5)
Sf-3	U-235+D	9.76E-11	9.43E-11	SLPF( 10,5)
Sf-3	U-238	8.66E-11	8.66E-11	SLPF( 11,5)
Sf-3	U-238+D	1.21E-10	8.66E-11	SLPF( 12,5)
Sf-Rn	Radon Inhalation slope factors, 1/(pCi):			
Sf-Rn	Rn-222	1.80E-12	1.80E-12	SLPFRN(1,1)
Sf-Rn	Po-218	3.70E-12	3.70E-12	SLPFRN(1,2)
Sf-Rn	Pb-214	6.20E-12	6.20E-12	SLPFRN(1,3)
Sf-Rn	Bi-214	1.50E-11	1.50E-11	SLPFRN(1,4)
Sf-Rn	Rn-220	1.90E-13	1.90E-13	SLPFRN(2,1)
Sf-Rn	Po-216	3.00E-15	3.00E-15	SLPFRN(2,2)
Sf-Rn	Pb-212	3.90E-11	3.90E-11	SLPFRN(2,3)
Sf-Rn	Bi-212	3.70E-11	3.70E-11	SLPFRN(2,4)
Sf-Rn	Radon K factors, (mrem/WLM):			
Sf-Rn	Rn-222 Indoor	3.88E+02	3.88E+02	KFACTR(1,1)
Sf-Rn	Rn-222 Outdoor	3.88E+02	3.88E+02	KFACTR(1,2)
Sf-Rn	Rn-220 Indoor	1.88E+02	1.88E+02	KFACTR(2,1)
Sf-Rn	Rn-220 Outdoor	1.88E+02	1.88E+02	KFACTR(2,2)

\*Base Case means Default.Lib w/o Associate Nuclide contributions.

ONuclide (i)	Risk Slope and Environmental Transport Factors for the Ground Pathway								
	Slope(i) *	ETFG(i,t) At Time in Years (dimensionless)							
	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227	1.990E-10	9.340E-02	9.340E-02	9.340E-02	9.340E-02	9.340E-02	9.341E-02	9.341E-02	9.337E-02
Ac-228	4.040E-06	8.517E-02	8.517E-02	8.517E-02	8.516E-02	8.514E-02	8.506E-02	8.479E-02	8.336E-02
At-218	2.740E-11	8.690E-02	8.690E-02	8.690E-02	8.690E-02	8.690E-02	8.690E-02	8.689E-02	8.673E-02
At-219	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Bi-210	2.770E-09	8.890E-02	8.890E-02	8.890E-02	8.890E-02	8.890E-02	8.892E-02	8.896E-02	8.903E-02
Bi-211	1.900E-07	8.839E-02	8.839E-02	8.839E-02	8.839E-02	8.839E-02	8.837E-02	8.829E-02	8.774E-02
Bi-212	4.960E-07	8.547E-02	8.547E-02	8.547E-02	8.546E-02	8.544E-02	8.536E-02	8.511E-02	8.374E-02
Bi-214	7.340E-06	8.408E-02	8.408E-02	8.407E-02	8.406E-02	8.403E-02	8.390E-02	8.351E-02	8.160E-02
Bi-215	1.080E-06	8.797E-02	8.797E-02	8.797E-02	8.797E-02	8.796E-02	8.791E-02	8.777E-02	8.688E-02
Fr-223	1.350E-07	8.893E-02	8.893E-02	8.893E-02	8.893E-02	8.893E-02	8.894E-02	8.893E-02	8.877E-02
Hg-206	4.830E-07	8.931E-02	8.931E-02	8.931E-02	8.931E-02	8.931E-02	8.928E-02	8.920E-02	8.865E-02
Pa-231	1.270E-07	8.943E-02	8.943E-02	8.943E-02	8.942E-02	8.942E-02	8.940E-02	8.934E-02	8.886E-02
Pa-234	6.620E-06	8.600E-02	8.600E-02	8.600E-02	8.600E-02	8.598E-02	8.592E-02	8.571E-02	8.454E-02
Pa-234m	9.060E-08	8.599E-02	8.599E-02	8.599E-02	8.598E-02	8.597E-02	8.591E-02	8.573E-02	8.468E-02
Pb-210	1.480E-09	1.018E-01	1.018E-01	1.018E-01	1.018E-01	1.018E-01	1.018E-01	1.018E-01	1.018E-01
Pb-211	2.910E-07	8.655E-02	8.655E-02	8.655E-02	8.655E-02	8.654E-02	8.650E-02	8.637E-02	8.550E-02
Pb-212	4.960E-07	9.000E-02	9.000E-02	9.000E-02	9.000E-02	9.000E-02	8.999E-02	8.995E-02	8.962E-02
Pb-214	9.940E-07	8.928E-02	8.928E-02	8.928E-02	8.928E-02	8.927E-02	8.925E-02	8.916E-02	8.858E-02
Po-210	4.510E-11	8.557E-02	8.557E-02	8.557E-02	8.557E-02	8.555E-02	8.547E-02	8.523E-02	8.393E-02
Po-211	3.760E-08	8.552E-02	8.552E-02	8.552E-02	8.551E-02	8.549E-02	8.542E-02	8.520E-02	8.396E-02
Po-212	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Po-214	3.850E-10	8.556E-02	8.556E-02	8.556E-02	8.555E-02	8.554E-02	8.547E-02	8.525E-02	8.403E-02
Po-215	7.480E-10	8.756E-02	8.756E-02	8.756E-02	8.755E-02	8.755E-02	8.752E-02	8.743E-02	8.677E-02
Po-216	7.100E-11	8.562E-02	8.562E-02	8.562E-02	8.561E-02	8.559E-02	8.552E-02	8.528E-02	8.400E-02
Po-218	6.840E-15	9.028E-02	9.028E-02	9.028E-02	9.028E-02	9.028E-02	9.029E-02	9.029E-02	9.029E-02
Ra-223	4.550E-07	9.002E-02	9.002E-02	9.002E-02	9.002E-02	9.002E-02	9.001E-02	8.998E-02	8.968E-02
Ra-224	3.910E-08	8.951E-02	8.951E-02	8.951E-02	8.951E-02	8.951E-02	8.950E-02	8.946E-02	8.911E-02
Ra-226	2.500E-08	9.008E-02	9.008E-02	9.008E-02	9.008E-02	9.008E-02	9.008E-02	9.005E-02	8.983E-02
Ra-228	3.430E-11	1.022E-01	1.022E-01	1.022E-01	1.022E-01	1.022E-01	1.022E-01	1.022E-01	1.022E-01
Rn-218	3.390E-09	8.596E-02	8.596E-02	8.596E-02	8.596E-02	8.594E-02	8.589E-02	8.573E-02	8.474E-02
Rn-219	2.350E-07	8.929E-02	8.929E-02	8.929E-02	8.929E-02	8.928E-02	8.925E-02	8.917E-02	8.859E-02
Rn-220	2.770E-09	8.667E-02	8.667E-02	8.666E-02	8.666E-02	8.665E-02	8.662E-02	8.651E-02	8.572E-02
Rn-222	1.690E-09	8.681E-02	8.681E-02	8.681E-02	8.680E-02	8.680E-02	8.677E-02	8.668E-02	8.599E-02
Th-227	4.450E-07	8.994E-02	8.994E-02	8.994E-02	8.994E-02	8.994E-02	8.992E-02	8.987E-02	8.947E-02
Th-228	5.640E-09	9.083E-02	9.083E-02	9.083E-02	9.083E-02	9.083E-02	9.083E-02	9.084E-02	9.077E-02
Th-230	8.450E-10	9.118E-02	9.118E-02	9.118E-02	9.118E-02	9.118E-02	9.118E-02	9.118E-02	9.113E-02
Th-231	2.490E-08	9.669E-02	9.669E-02	9.669E-02	9.669E-02	9.669E-02	9.669E-02	9.668E-02	9.664E-02
Th-232	3.580E-10	1.018E-01	1.018E-01	1.018E-01	1.018E-01	1.017E-01	1.017E-01	1.017E-01	1.017E-01
Th-234	1.780E-08	9.032E-02	9.032E-02	9.032E-02	9.032E-02	9.032E-02	9.032E-02	9.032E-02	9.030E-02
Tl-206	6.110E-09	8.760E-02	8.760E-02	8.760E-02	8.760E-02	8.761E-02	8.763E-02	8.770E-02	8.784E-02
Tl-207	1.590E-08	8.687E-02	8.687E-02	8.687E-02	8.687E-02	8.686E-02	8.684E-02	8.677E-02	8.620E-02
Tl-208	1.750E-05	8.227E-02	8.226E-02	8.226E-02	8.224E-02	8.219E-02	8.202E-02	8.148E-02	7.900E-02
Tl-210	1.340E-05	8.455E-02	8.455E-02	8.454E-02	8.453E-02	8.450E-02	8.439E-02	8.404E-02	8.228E-02
U-234	2.530E-10	1.025E-01	1.025E-01	1.025E-01	1.025E-01	1.025E-01	1.025E-01	1.025E-01	1.025E-01
U-235	5.510E-07	9.009E-02	9.009E-02	9.009E-02	9.009E-02	9.009E-02	9.009E-02	9.007E-02	8.986E-02
U-238	1.240E-10	9.462E-02	9.462E-02	9.462E-02	9.462E-02	9.462E-02	9.463E-02	9.462E-02	9.450E-02

\* - Units are 1/yr per (pCi/g) at infinite depth and area. Multiplication by ETEG(i,t) converts to site conditions.

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
 As pCi/yr at t= 0.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	6.698E-03	0.000E+00	0.000E+00	0.000E+00	9.654E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.654E-01
Pa-231	4.820E-03	0.000E+00	0.000E+00	0.000E+00	6.948E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.948E-01
Pb-210	4.732E-02	0.000E+00	0.000E+00	0.000E+00	6.821E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.821E+00
Ra-226	1.972E-02	0.000E+00	0.000E+00	0.000E+00	2.842E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.842E+00
Ra-228	1.189E-03	0.000E+00	0.000E+00	0.000E+00	1.714E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.714E-01
Th-228	1.064E-03	0.000E+00	0.000E+00	0.000E+00	1.534E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.534E-01
Th-230	5.988E-01	0.000E+00	0.000E+00	0.000E+00	8.631E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.631E+01
Th-232	6.197E-03	0.000E+00	0.000E+00	0.000E+00	8.933E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.933E-01
U-234	1.052E-02	0.000E+00	0.000E+00	0.000E+00	1.516E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.516E+00
U-235	5.634E-04	0.000E+00	0.000E+00	0.000E+00	8.121E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.121E-02
U-238	1.052E-02	0.000E+00	0.000E+00	0.000E+00	1.516E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.516E+00

\* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of Radon and its Decay Products as pCi/yr at t= 0.000E+00 years  
 Radionuclides

0

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00							
Water-dep.	0.000E+00							
Total	0.000E+00							

Water-ind. == Water-independent Water-dep. == Water-dependent

Intrisk : NC Suburban Resident 5YR Outdoor Surface EPCs

File : C:\RESRAD\_FAMILY\ONSITE\7.2\USERFILES\NC 5YR OUTDOOR SURF EPCS.RAD

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 0.000E+00 years

0  
0

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	2.274E-06	0.0258	2.093E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.251E-09	0.0001
Pa-231	1.917E-07	0.0022	8.051E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.437E-09	0.0000
Pb-210	6.324E-08	0.0007	3.045E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.901E-07	0.0056
Ra-226	6.427E-05	0.7280	1.603E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.216E-08	0.0005
Ra-228	7.331E-06	0.0830	5.830E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.743E-08	0.0003
Th-228	1.181E-05	0.1338	1.755E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.410E-09	0.0001
Th-230	2.210E-07	0.0025	6.118E-07	0.0069	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.083E-07	0.0035
Th-232	1.082E-09	0.0000	8.046E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.568E-09	0.0000
U-234	9.553E-10	0.0000	6.414E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.172E-09	0.0000
U-235	1.027E-07	0.0012	3.089E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.737E-10	0.0000
U-238	3.801E-07	0.0043	5.457E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.005E-09	0.0000
Total	8.665E-05	0.9815	7.308E-07	0.0083	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.989E-07	0.0102

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Plant		Meat		Milk		All Pathways**	
	risk	fract.	risk	fract.								
Ac-227	0.000E+00	0.0000	2.304E-06	0.0261								
Pa-231	0.000E+00	0.0000	2.032E-07	0.0023								
Pb-210	0.000E+00	0.0000	5.837E-07	0.0066								
Ra-226	0.000E+00	0.0000	6.433E-05	0.7287								
Ra-228	0.000E+00	0.0000	7.364E-06	0.0834								
Th-228	0.000E+00	0.0000	1.184E-05	0.1341								
Th-230	0.000E+00	0.0000	1.141E-06	0.0129								
Th-232	0.000E+00	0.0000	1.270E-08	0.0001								
U-234	0.000E+00	0.0000	1.054E-08	0.0001								
U-235	0.000E+00	0.0000	1.032E-07	0.0012								
U-238	0.000E+00	0.0000	3.896E-07	0.0044								
Total	0.000E+00	0.0000	8.828E-05	1.0000								

\*\* Sum of water independent ground, inhalation, plant, meat, milk, soil  
and water dependent water, fish, plant, meat, milk pathways

Intrisk : NC Suburban Resident 5YR Outdoor Surface EPCs

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Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of Radon and its Decay Products at t= 0.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00							
Water-dep.	0.000E+00							
<b>Total</b>	<b>0.000E+00</b>							

Water-ind. == Water-independent Water-dep. == Water-dependent

0 Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 0.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.												
Ac-227	1.656E-06	0.0188	1.524E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.734E-09	0.0001
Pa-231	8.103E-07	0.0092	1.374E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.953E-09	0.0001
Pb-210	5.149E-08	0.0006	2.479E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.990E-07	0.0045
Ra-226	5.299E-05	0.6002	1.813E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.139E-07	0.0013
Ra-228	1.296E-06	0.0147	1.601E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.281E-09	0.0000
Th-228	2.854E-07	0.0032	4.239E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.789E-10	0.0000
Th-230	1.152E-05	0.1305	6.153E-07	0.0070	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.276E-07	0.0037
Th-232	1.756E-05	0.1989	2.941E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.595E-08	0.0004
U-234	9.719E-10	0.0000	6.415E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.173E-09	0.0000
U-235	1.027E-07	0.0012	3.093E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.739E-10	0.0000
U-238	3.801E-07	0.0043	5.458E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.005E-09	0.0000
<b>Total</b>	<b>8.665E-05</b>	<b>0.9815</b>	<b>7.308E-07</b>	<b>0.0083</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>8.989E-07</b>	<b>0.0102</b>

Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p)  
 and Fraction of Total Risk at t= 0.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.												
Ac-227	0.000E+00	0.0000	1.677E-06	0.0190										
Pa-231	0.000E+00	0.0000	8.300E-07	0.0094										
Pb-210	0.000E+00	0.0000	4.752E-07	0.0054										
Ra-226	0.000E+00	0.0000	5.312E-05	0.6017										
Ra-228	0.000E+00	0.0000	1.300E-06	0.0147										
Th-228	0.000E+00	0.0000	2.860E-07	0.0032										
Th-230	0.000E+00	0.0000	1.246E-05	0.1412										
Th-232	0.000E+00	0.0000	1.763E-05	0.1997										
U-234	0.000E+00	0.0000	1.056E-08	0.0001										
U-235	0.000E+00	0.0000	1.032E-07	0.0012										
U-238	0.000E+00	0.0000	3.896E-07	0.0044										
<b>Total</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>8.828E-05</b>	<b>1.0000</b>										

\*\*\*CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
 As pCi/yr at t= 1.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	6.286E-03	0.000E+00	0.000E+00	0.000E+00	9.061E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.061E-01
Pa-231	4.714E-03	0.000E+00	0.000E+00	0.000E+00	6.795E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.795E-01
Pb-210	4.596E-02	0.000E+00	0.000E+00	0.000E+00	6.625E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.625E+00
Ra-226	1.966E-02	0.000E+00	0.000E+00	0.000E+00	2.833E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.833E+00
Ra-228	1.736E-03	0.000E+00	0.000E+00	0.000E+00	2.502E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.502E-01
Th-228	1.192E-03	0.000E+00	0.000E+00	0.000E+00	1.719E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.719E-01
Th-230	5.988E-01	0.000E+00	0.000E+00	0.000E+00	8.631E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.631E+01
Th-232	6.197E-03	0.000E+00	0.000E+00	0.000E+00	8.932E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.932E-01
U-234	1.029E-02	0.000E+00	0.000E+00	0.000E+00	1.483E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.483E+00
U-235	5.510E-04	0.000E+00	0.000E+00	0.000E+00	7.943E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.943E-02
U-238	1.029E-02	0.000E+00	0.000E+00	0.000E+00	1.483E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.483E+00

\* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of Radon and its Decay Products as pCi/yr at t= 1.000E+00 years  
 Radionuclides

0

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00							
Water-dep.	0.000E+00							
Total	0.000E+00							

Water-ind. == Water-independent Water-dep. == Water-dependent

Intrisk : NC Suburban Resident 5YR Outdoor Surface EPCs

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 1.000E+00 years

0  
0

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.										
Ac-227	2.159E-06	0.0244	1.987E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.782E-09	0.0001
Pa-231	1.875E-07	0.0021	7.875E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.362E-09	0.0000
Pb-210	6.173E-08	0.0007	2.972E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.784E-07	0.0054
Ra-226	6.411E-05	0.7236	1.599E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.205E-08	0.0005
Ra-228	7.547E-06	0.0852	6.002E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.824E-08	0.0003
Th-228	1.223E-05	0.1380	1.817E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.669E-09	0.0001
Th-230	2.210E-07	0.0025	6.118E-07	0.0069	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.083E-07	0.0035
Th-232	1.082E-09	0.0000	8.046E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.568E-09	0.0000
U-234	9.344E-10	0.0000	6.274E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.103E-09	0.0000
U-235	1.005E-07	0.0011	3.022E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.699E-10	0.0000
U-238	3.718E-07	0.0042	5.338E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.917E-09	0.0000
<b>Total</b>	<b>8.698E-05</b>	<b>0.9818</b>	<b>7.293E-07</b>	<b>0.0082</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>8.875E-07</b>	<b>0.0100</b>

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 1.000E+00 years

0

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Plant		Meat		Milk		All Pathways**	
	risk	fract.										
Ac-227	0.000E+00	0.0000	2.187E-06	0.0247								
Pa-231	0.000E+00	0.0000	1.987E-07	0.0022								
Pb-210	0.000E+00	0.0000	5.698E-07	0.0064								
Ra-226	0.000E+00	0.0000	6.416E-05	0.7242								
Ra-228	0.000E+00	0.0000	7.582E-06	0.0856								
Th-228	0.000E+00	0.0000	1.225E-05	0.1383								
Th-230	0.000E+00	0.0000	1.141E-06	0.0129								
Th-232	0.000E+00	0.0000	1.270E-08	0.0001								
U-234	0.000E+00	0.0000	1.031E-08	0.0001								
U-235	0.000E+00	0.0000	1.009E-07	0.0011								
U-238	0.000E+00	0.0000	3.810E-07	0.0043								
<b>Total</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>8.860E-05</b>	<b>1.0000</b>								

\*\* Sum of water independent ground, inhalation, plant, meat, milk, soil  
and water dependent water, fish, plant, meat, milk pathways

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Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of Radon and its Decay Products at t= 1.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00							
Water-dep.	0.000E+00							
<b>Total</b>	<b>0.000E+00</b>							

Water-ind. == Water-independent Water-dep. == Water-dependent

0 Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 1.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.												
Ac-227	1.518E-06	0.0171	1.397E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.174E-09	0.0001
Pa-231	8.284E-07	0.0094	1.377E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.969E-09	0.0001
Pb-210	4.936E-08	0.0006	2.376E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.824E-07	0.0043
Ra-226	5.213E-05	0.5884	1.815E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.171E-07	0.0013
Ra-228	1.221E-06	0.0138	1.531E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.047E-09	0.0000
Th-228	1.986E-07	0.0022	2.950E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.245E-10	0.0000
Th-230	1.221E-05	0.1378	6.155E-07	0.0069	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.291E-07	0.0037
Th-232	1.835E-05	0.2072	3.039E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.731E-08	0.0004
U-234	9.525E-10	0.0000	6.275E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.103E-09	0.0000
U-235	1.005E-07	0.0011	3.026E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.701E-10	0.0000
U-238	3.718E-07	0.0042	5.338E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.917E-09	0.0000
<b>Total</b>	<b>8.698E-05</b>	<b>0.9818</b>	<b>7.293E-07</b>	<b>0.0082</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>8.875E-07</b>	<b>0.0100</b>

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Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 1.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.												
Ac-227	0.000E+00	0.0000	1.538E-06	0.0174										
Pa-231	0.000E+00	0.0000	8.482E-07	0.0096										
Pb-210	0.000E+00	0.0000	4.556E-07	0.0051										
Ra-226	0.000E+00	0.0000	5.227E-05	0.5899										
Ra-228	0.000E+00	0.0000	1.225E-06	0.0138										
Th-228	0.000E+00	0.0000	1.990E-07	0.0022										
Th-230	0.000E+00	0.0000	1.315E-05	0.1485										
Th-232	0.000E+00	0.0000	1.842E-05	0.2079										
U-234	0.000E+00	0.0000	1.033E-08	0.0001										
U-235	0.000E+00	0.0000	1.009E-07	0.0011										
U-238	0.000E+00	0.0000	3.810E-07	0.0043										
<b>Total</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>8.860E-05</b>	<b>1.0000</b>										

\*\*\*CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Intrisk : NC Suburban Resident 5YR Outdoor Surface EPCs

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Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
As pCi/yr at t= 3.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	5.554E-03	0.000E+00	0.000E+00	0.000E+00	8.005E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.005E-01
Pa-231	4.510E-03	0.000E+00	0.000E+00	0.000E+00	6.501E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.501E-01
Pb-210	4.341E-02	0.000E+00	0.000E+00	0.000E+00	6.257E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.257E+00
Ra-226	1.954E-02	0.000E+00	0.000E+00	0.000E+00	2.816E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.816E+00
Ra-228	2.629E-03	0.000E+00	0.000E+00	0.000E+00	3.790E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.790E-01
Th-228	1.741E-03	0.000E+00	0.000E+00	0.000E+00	2.509E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.509E-01
Th-230	5.987E-01	0.000E+00	0.000E+00	0.000E+00	8.630E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.630E+01
Th-232	6.197E-03	0.000E+00	0.000E+00	0.000E+00	8.932E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.932E-01
U-234	9.841E-03	0.000E+00	0.000E+00	0.000E+00	1.418E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.418E+00
U-235	5.272E-04	0.000E+00	0.000E+00	0.000E+00	7.599E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.599E-02
U-238	9.841E-03	0.000E+00	0.000E+00	0.000E+00	1.418E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.418E+00

\* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of Radon and its Decay Products as pCi/yr at t= 3.000E+00 years  
Radionuclides

0

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00							
Water-dep.	0.000E+00							
Total	0.000E+00							

Water-ind. == Water-independent      Water-dep. == Water-dependent

Intrisk : NC Suburban Resident 5YR Outdoor Surface EPCs

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 3.000E+00 years

0  
0

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.										
Ac-227	1.952E-06	0.0219	1.796E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.939E-09	0.0001
Pa-231	1.793E-07	0.0020	7.534E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.216E-09	0.0000
Pb-210	5.889E-08	0.0007	2.835E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.563E-07	0.0051
Ra-226	6.379E-05	0.7156	1.591E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.184E-08	0.0005
Ra-228	7.901E-06	0.0886	6.284E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.957E-08	0.0003
Th-228	1.299E-05	0.1458	1.931E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.149E-09	0.0001
Th-230	2.210E-07	0.0025	6.117E-07	0.0069	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.082E-07	0.0035
Th-232	1.082E-09	0.0000	8.045E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.568E-09	0.0000
U-234	8.940E-10	0.0000	6.002E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.968E-09	0.0000
U-235	9.610E-08	0.0011	2.891E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.625E-10	0.0000
U-238	3.557E-07	0.0040	5.107E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.748E-09	0.0000
<b>Total</b>	<b>8.754E-05</b>	<b>0.9821</b>	<b>7.265E-07</b>	<b>0.0082</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>8.657E-07</b>	<b>0.0097</b>

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 3.000E+00 years

0

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Plant		Meat		Milk		All Pathways**	
	risk	fract.										
Ac-227	0.000E+00	0.0000	1.977E-06	0.0222								
Pa-231	0.000E+00	0.0000	1.901E-07	0.0021								
Pb-210	0.000E+00	0.0000	5.436E-07	0.0061								
Ra-226	0.000E+00	0.0000	6.384E-05	0.7163								
Ra-228	0.000E+00	0.0000	7.937E-06	0.0890								
Th-228	0.000E+00	0.0000	1.302E-05	0.1461								
Th-230	0.000E+00	0.0000	1.141E-06	0.0128								
Th-232	0.000E+00	0.0000	1.270E-08	0.0001								
U-234	0.000E+00	0.0000	9.864E-09	0.0001								
U-235	0.000E+00	0.0000	9.655E-08	0.0011								
U-238	0.000E+00	0.0000	3.645E-07	0.0041								
<b>Total</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>8.913E-05</b>	<b>1.0000</b>								

\*\* Sum of water independent ground, inhalation, plant, meat, milk, soil  
and water dependent water, fish, plant, meat, milk pathways

Intrisk : NC Suburban Resident 5YR Outdoor Surface EPCs

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Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of Radon and its Decay Products at t= 3.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00							
Water-dep.	0.000E+00							
<b>Total</b>	<b>0.000E+00</b>							

Water-ind. == Water-independent Water-dep. == Water-dependent

0 Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 3.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.												
Ac-227	1.276E-06	0.0143	1.174E-08	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.190E-09	0.0001
Pa-231	8.549E-07	0.0096	1.375E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.964E-09	0.0001
Pb-210	4.535E-08	0.0005	2.183E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.514E-07	0.0039
Ra-226	5.046E-05	0.5661	1.815E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.227E-07	0.0014
Ra-228	1.028E-06	0.0115	1.312E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.620E-09	0.0000
Th-228	9.614E-08	0.0011	1.428E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.029E-11	0.0000
Th-230	1.356E-05	0.1521	6.160E-07	0.0069	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.323E-07	0.0037
Th-232	1.977E-05	0.2218	3.218E-08	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.960E-08	0.0004
U-234	9.153E-10	0.0000	6.003E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.969E-09	0.0000
U-235	9.613E-08	0.0011	2.896E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.627E-10	0.0000
U-238	3.557E-07	0.0040	5.107E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.748E-09	0.0000
<b>Total</b>	<b>8.754E-05</b>	<b>0.9821</b>	<b>7.265E-07</b>	<b>0.0082</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>8.657E-07</b>	<b>0.0097</b>

Intrisk : NC Suburban Resident 5YR Outdoor Surface EPCs

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Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 3.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.												
Ac-227	0.000E+00	0.0000	1.293E-06	0.0145										
Pa-231	0.000E+00	0.0000	8.747E-07	0.0098										
Pb-210	0.000E+00	0.0000	4.186E-07	0.0047										
Ra-226	0.000E+00	0.0000	5.060E-05	0.5677										
Ra-228	0.000E+00	0.0000	1.031E-06	0.0116										
Th-228	0.000E+00	0.0000	9.635E-08	0.0011										
Th-230	0.000E+00	0.0000	1.451E-05	0.1627										
Th-232	0.000E+00	0.0000	1.984E-05	0.2226										
U-234	0.000E+00	0.0000	9.887E-09	0.0001										
U-235	0.000E+00	0.0000	9.658E-08	0.0011										
U-238	0.000E+00	0.0000	3.645E-07	0.0041										
<b>Total</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>8.913E-05</b>	<b>1.0000</b>										

\*\*\*CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Intrisk : NC Suburban Resident 5YR Outdoor Surface EPCs

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Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
As pCi/yr at t= 1.000E+01 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	3.717E-03	0.000E+00	0.000E+00	0.000E+00	5.358E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.358E-01
Pa-231	3.862E-03	0.000E+00	0.000E+00	0.000E+00	5.567E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.567E-01
Pb-210	3.594E-02	0.000E+00	0.000E+00	0.000E+00	5.180E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.180E+00
Ra-226	1.915E-02	0.000E+00	0.000E+00	0.000E+00	2.761E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.761E+00
Ra-228	4.381E-03	0.000E+00	0.000E+00	0.000E+00	6.315E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.315E-01
Th-228	3.785E-03	0.000E+00	0.000E+00	0.000E+00	5.456E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.456E-01
Th-230	5.986E-01	0.000E+00	0.000E+00	0.000E+00	8.629E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.629E+01
Th-232	6.196E-03	0.000E+00	0.000E+00	0.000E+00	8.931E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.931E-01
U-234	8.429E-03	0.000E+00	0.000E+00	0.000E+00	1.215E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.215E+00
U-235	4.515E-04	0.000E+00	0.000E+00	0.000E+00	6.509E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.509E-02
U-238	8.429E-03	0.000E+00	0.000E+00	0.000E+00	1.215E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.215E+00

\* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of Radon and its Decay Products as pCi/yr at t= 1.000E+01 years  
Radionuclides

0

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00							
Water-dep.	0.000E+00							
Total	0.000E+00							

Water-ind. == Water-independent Water-dep. == Water-dependent

Intrisk : NC Suburban Resident 5YR Outdoor Surface EPCs

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 1.000E+01 years

0  
0

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.										
Ac-227	1.414E-06	0.0157	1.302E-08	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.754E-09	0.0001
Pa-231	1.536E-07	0.0017	6.452E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.754E-09	0.0000
Pb-210	5.056E-08	0.0006	2.434E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.918E-07	0.0044
Ra-226	6.274E-05	0.6984	1.565E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.116E-08	0.0005
Ra-228	8.593E-06	0.0957	6.835E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.216E-08	0.0004
Th-228	1.475E-05	0.1642	2.192E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.254E-09	0.0001
Th-230	2.210E-07	0.0025	6.116E-07	0.0068	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.082E-07	0.0034
Th-232	1.081E-09	0.0000	8.044E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.568E-09	0.0000
U-234	7.657E-10	0.0000	5.141E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.542E-09	0.0000
U-235	8.231E-08	0.0009	2.476E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.392E-10	0.0000
U-238	3.046E-07	0.0034	4.374E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.210E-09	0.0000
<b>Total</b>	<b>8.831E-05</b>	<b>0.9831</b>	<b>7.176E-07</b>	<b>0.0080</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>8.005E-07</b>	<b>0.0089</b>

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 1.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Plant		Meat		Milk		All Pathways**	
	risk	fract.										
Ac-227	0.000E+00	0.0000	1.433E-06	0.0160								
Pa-231	0.000E+00	0.0000	1.628E-07	0.0018								
Pb-210	0.000E+00	0.0000	4.667E-07	0.0052								
Ra-226	0.000E+00	0.0000	6.280E-05	0.6991								
Ra-228	0.000E+00	0.0000	8.632E-06	0.0961								
Th-228	0.000E+00	0.0000	1.478E-05	0.1646								
Th-230	0.000E+00	0.0000	1.141E-06	0.0127								
Th-232	0.000E+00	0.0000	1.269E-08	0.0001								
U-234	0.000E+00	0.0000	8.449E-09	0.0001								
U-235	0.000E+00	0.0000	8.270E-08	0.0009								
U-238	0.000E+00	0.0000	3.122E-07	0.0035								
<b>Total</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>8.983E-05</b>	<b>1.0000</b>								

\*\* Sum of water independent ground, inhalation, plant, meat, milk, soil  
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of  
 Radon and its Decay Products at t= 1.000E+01 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00							
Water-dep.	0.000E+00							
<b>Total</b>	<b>0.000E+00</b>							

Water-ind. == Water-independent Water-dep. == Water-dependent

0 Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p)  
 and Fraction of Total Risk at t= 1.000E+01 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.												
Ac-227	6.949E-07	0.0077	6.396E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.827E-09	0.0000
Pa-231	8.731E-07	0.0097	1.307E-08	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.681E-09	0.0001
Pb-210	3.373E-08	0.0004	1.624E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.613E-07	0.0029
Ra-226	4.503E-05	0.5013	1.782E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.356E-07	0.0015
Ra-228	4.485E-07	0.0050	5.833E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.567E-10	0.0000
Th-228	7.594E-09	0.0001	1.128E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.763E-12	0.0000
Th-230	1.795E-05	0.1998	6.175E-07	0.0069	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.442E-07	0.0038
Th-232	2.289E-05	0.2548	3.621E-08	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.432E-08	0.0005
U-234	8.006E-10	0.0000	5.142E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.543E-09	0.0000
U-235	8.235E-08	0.0009	2.482E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.395E-10	0.0000
U-238	3.046E-07	0.0034	4.374E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.210E-09	0.0000
<b>Total</b>	<b>8.831E-05</b>	<b>0.9831</b>	<b>7.176E-07</b>	<b>0.0080</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>8.005E-07</b>	<b>0.0089</b>

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Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 1.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.												
Ac-227	0.000E+00	0.0000	7.041E-07	0.0078										
Pa-231	0.000E+00	0.0000	8.918E-07	0.0099										
Pb-210	0.000E+00	0.0000	3.113E-07	0.0035										
Ra-226	0.000E+00	0.0000	4.519E-05	0.5030										
Ra-228	0.000E+00	0.0000	4.498E-07	0.0050										
Th-228	0.000E+00	0.0000	7.610E-09	0.0001										
Th-230	0.000E+00	0.0000	1.891E-05	0.2105										
Th-232	0.000E+00	0.0000	2.297E-05	0.2557										
U-234	0.000E+00	0.0000	8.486E-09	0.0001										
U-235	0.000E+00	0.0000	8.274E-08	0.0009										
U-238	0.000E+00	0.0000	3.122E-07	0.0035										
<b>Total</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>8.983E-05</b>	<b>1.0000</b>										

\*\*\*CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
 As pCi/yr at t= 3.000E+01 years

Radio- Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	1.541E-03	0.000E+00	0.000E+00	0.000E+00	2.221E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.221E-01
Pa-231	2.480E-03	0.000E+00	0.000E+00	0.000E+00	3.575E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.575E-01
Pb-210	2.326E-02	0.000E+00	0.000E+00	0.000E+00	3.354E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.354E+00
Ra-226	1.826E-02	0.000E+00	0.000E+00	0.000E+00	2.632E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.632E+00
Ra-228	5.404E-03	0.000E+00	0.000E+00	0.000E+00	7.789E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.789E-01
Th-228	5.361E-03	0.000E+00	0.000E+00	0.000E+00	7.727E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.727E-01
Th-230	5.983E-01	0.000E+00	0.000E+00	0.000E+00	8.624E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.624E+01
Th-232	6.194E-03	0.000E+00	0.000E+00	0.000E+00	8.928E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.928E-01
U-234	5.414E-03	0.000E+00	0.000E+00	0.000E+00	7.805E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.805E-01
U-235	2.901E-04	0.000E+00	0.000E+00	0.000E+00	4.181E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.181E-02
U-238	5.414E-03	0.000E+00	0.000E+00	0.000E+00	7.805E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.805E-01

\* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil  
 and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of  
 Radon and its Decay Products as pCi/yr at t= 3.000E+01 years  
 Radionuclides

0

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00							
Water-dep.	0.000E+00							
Total	0.000E+00							

Water-ind. == Water-independent      Water-dep. == Water-dependent

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 3.000E+01 years

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	6.992E-07	0.0080	6.436E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.844E-09	0.0000
Pa-231	9.862E-08	0.0011	4.143E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.769E-09	0.0000
Pb-210	3.631E-08	0.0004	1.748E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.814E-07	0.0032
Ra-226	6.032E-05	0.6864	1.505E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.959E-08	0.0005
Ra-228	8.994E-06	0.1023	7.155E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.367E-08	0.0004
Th-228	1.587E-05	0.1806	2.360E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.962E-09	0.0001
Th-230	2.208E-07	0.0025	6.113E-07	0.0070	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.080E-07	0.0035
Th-232	1.081E-09	0.0000	8.041E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.566E-09	0.0000
U-234	4.919E-10	0.0000	3.302E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.633E-09	0.0000
U-235	5.288E-08	0.0006	1.591E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.942E-11	0.0000
U-238	1.957E-07	0.0022	2.810E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.062E-09	0.0000
Total	8.649E-05	0.9842	6.994E-07	0.0080	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.846E-07	0.0078

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 3.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Plant		Meat		Milk		All Pathways**	
	risk	fract.	risk	fract.								
Ac-227	0.000E+00	0.0000	7.085E-07	0.0081								
Pa-231	0.000E+00	0.0000	1.045E-07	0.0012								
Pb-210	0.000E+00	0.0000	3.352E-07	0.0038								
Ra-226	0.000E+00	0.0000	6.037E-05	0.6871								
Ra-228	0.000E+00	0.0000	9.035E-06	0.1028								
Th-228	0.000E+00	0.0000	1.590E-05	0.1810								
Th-230	0.000E+00	0.0000	1.140E-06	0.0130								
Th-232	0.000E+00	0.0000	1.269E-08	0.0001								
U-234	0.000E+00	0.0000	5.428E-09	0.0001								
U-235	0.000E+00	0.0000	5.313E-08	0.0006								
U-238	0.000E+00	0.0000	2.005E-07	0.0023								
Total	0.000E+00	0.0000	8.787E-05	1.0000								

\*\* Sum of water independent ground, inhalation, plant, meat, milk, soil  
and water dependent water, fish, plant, meat, milk pathways

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Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of Radon and its Decay Products at t= 3.000E+01 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00							
Water-dep.	0.000E+00							
<b>Total</b>	<b>0.000E+00</b>							

Water-ind. == Water-independent Water-dep. == Water-dependent

0 Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 3.000E+01 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.												
Ac-227	1.224E-07	0.0014	1.127E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.981E-10	0.0000
Pa-231	6.753E-07	0.0077	9.451E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.115E-09	0.0000
Pb-210	1.447E-08	0.0002	6.966E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.121E-07	0.0013
Ra-226	3.252E-05	0.3701	1.525E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.363E-07	0.0016
Ra-228	3.019E-08	0.0003	3.944E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.349E-11	0.0000
Th-228	5.377E-12	0.0000	7.994E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.374E-15	0.0000
Th-230	2.804E-05	0.3191	6.216E-07	0.0071	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.806E-07	0.0043
Th-232	2.484E-05	0.2826	3.876E-08	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.715E-08	0.0005
U-234	5.759E-10	0.0000	3.305E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.635E-09	0.0000
U-235	5.293E-08	0.0006	1.599E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.979E-11	0.0000
U-238	1.957E-07	0.0022	2.810E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.062E-09	0.0000
<b>Total</b>	<b>8.649E-05</b>	<b>0.9842</b>	<b>6.994E-07</b>	<b>0.0080</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>6.846E-07</b>	<b>0.0078</b>

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Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 3.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.												
Ac-227	0.000E+00	0.0000	1.241E-07	0.0014										
Pa-231	0.000E+00	0.0000	6.889E-07	0.0078										
Pb-210	0.000E+00	0.0000	1.336E-07	0.0015										
Ra-226	0.000E+00	0.0000	3.268E-05	0.3719										
Ra-228	0.000E+00	0.0000	3.028E-08	0.0003										
Th-228	0.000E+00	0.0000	5.389E-12	0.0000										
Th-230	0.000E+00	0.0000	2.904E-05	0.3305										
Th-232	0.000E+00	0.0000	2.492E-05	0.2836										
U-234	0.000E+00	0.0000	5.515E-09	0.0001										
U-235	0.000E+00	0.0000	5.318E-08	0.0006										
U-238	0.000E+00	0.0000	2.005E-07	0.0023										
<b>Total</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>8.787E-05</b>	<b>1.0000</b>										

\*\*\*CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Intrisk : NC Suburban Resident 5YR Outdoor Surface EPCs

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Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
As pCi/yr at t= 1.000E+02 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	2.599E-04	0.000E+00	0.000E+00	0.000E+00	3.746E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.746E-02
Pa-231	5.263E-04	0.000E+00	0.000E+00	0.000E+00	7.586E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.586E-02
Pb-210	1.310E-02	0.000E+00	0.000E+00	0.000E+00	1.889E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.889E+00
Ra-226	1.667E-02	0.000E+00	0.000E+00	0.000E+00	2.403E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.403E+00
Ra-228	5.468E-03	0.000E+00	0.000E+00	0.000E+00	7.882E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.882E-01
Th-228	5.468E-03	0.000E+00	0.000E+00	0.000E+00	7.882E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.882E-01
Th-230	5.971E-01	0.000E+00	0.000E+00	0.000E+00	8.607E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.607E+01
Th-232	6.185E-03	0.000E+00	0.000E+00	0.000E+00	8.916E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.916E-01
U-234	1.150E-03	0.000E+00	0.000E+00	0.000E+00	1.658E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.658E-01
U-235	6.163E-05	0.000E+00	0.000E+00	0.000E+00	8.884E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.884E-03
U-238	1.150E-03	0.000E+00	0.000E+00	0.000E+00	1.658E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.658E-01

\* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of Radon and its Decay Products as pCi/yr at t= 1.000E+02 years  
Radionuclides

0

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00							
Water-dep.	0.000E+00							
Total	0.000E+00							

Water-ind. == Water-independent Water-dep. == Water-dependent

Intrisk : NC Suburban Resident 5YR Outdoor Surface EPCs

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 1.000E+02 years

0  
0

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	1.317E-07	0.0016	1.213E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.361E-10	0.0000
Pa-231	2.092E-08	0.0003	8.791E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.753E-10	0.0000
Pb-210	2.443E-08	0.0003	1.176E-08	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.893E-07	0.0023
Ra-226	5.596E-05	0.6777	1.398E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.677E-08	0.0004
Ra-228	9.002E-06	0.1090	7.169E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.373E-08	0.0004
Th-228	1.590E-05	0.1926	2.369E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.999E-09	0.0001
Th-230	2.204E-07	0.0027	6.101E-07	0.0074	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.074E-07	0.0037
Th-232	1.080E-09	0.0000	8.031E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.562E-09	0.0000
U-234	1.045E-10	0.0000	7.017E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.470E-10	0.0000
U-235	1.123E-08	0.0001	3.380E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.900E-11	0.0000
U-238	4.155E-08	0.0005	5.970E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.381E-10	0.0000
Total	8.131E-05	0.9847	6.781E-07	0.0082	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.825E-07	0.0071

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Plant		Meat		Milk		All Pathways**	
	risk	fract.	risk	fract.								
Ac-227	0.000E+00	0.0000	1.335E-07	0.0016								
Pa-231	0.000E+00	0.0000	2.218E-08	0.0003								
Pb-210	0.000E+00	0.0000	2.255E-07	0.0027								
Ra-226	0.000E+00	0.0000	5.601E-05	0.6783								
Ra-228	0.000E+00	0.0000	9.043E-06	0.1095								
Th-228	0.000E+00	0.0000	1.593E-05	0.1930								
Th-230	0.000E+00	0.0000	1.138E-06	0.0138								
Th-232	0.000E+00	0.0000	1.267E-08	0.0002								
U-234	0.000E+00	0.0000	1.153E-09	0.0000								
U-235	0.000E+00	0.0000	1.129E-08	0.0001								
U-238	0.000E+00	0.0000	4.259E-08	0.0005								
Total	0.000E+00	0.0000	8.257E-05	1.0000								

\*\* Sum of water independent ground, inhalation, plant, meat, milk, soil  
and water dependent water, fish, plant, meat, milk pathways

Intrisk : NC Suburban Resident 5YR Outdoor Surface EPCs

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Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of Radon and its Decay Products at t= 1.000E+02 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00							
Water-dep.	0.000E+00							
<b>Total</b>	<b>0.000E+00</b>							

Water-ind. == Water-independent Water-dep. == Water-dependent

0 Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 1.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.												
Ac-227	2.812E-10	0.0000	2.588E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.144E-12	0.0000
Pa-231	1.523E-07	0.0018	2.089E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.100E-10	0.0000
Pb-210	7.486E-10	0.0000	3.604E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.800E-09	0.0001
Ra-226	1.041E-05	0.1261	5.822E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.871E-08	0.0007
Ra-228	2.155E-12	0.0000	2.821E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.109E-15	0.0000
Th-228	5.080E-23	0.0000	7.567E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.194E-26	0.0000
Th-230	4.579E-05	0.5546	6.296E-07	0.0076	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.690E-07	0.0057
Th-232	2.490E-05	0.3016	3.889E-08	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.729E-08	0.0006
U-234	3.560E-10	0.0000	7.057E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.498E-10	0.0000
U-235	1.127E-08	0.0001	3.434E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.924E-11	0.0000
U-238	4.155E-08	0.0005	5.973E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.382E-10	0.0000
<b>Total</b>	<b>8.131E-05</b>	<b>0.9847</b>	<b>6.781E-07</b>	<b>0.0082</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>5.825E-07</b>	<b>0.0071</b>

Intrisk : NC Suburban Resident 5YR Outdoor Surface EPCs

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Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.												
Ac-227	0.000E+00	0.0000	2.849E-10	0.0000										
Pa-231	0.000E+00	0.0000	1.553E-07	0.0019										
Pb-210	0.000E+00	0.0000	6.909E-09	0.0001										
Ra-226	0.000E+00	0.0000	1.047E-05	0.1269										
Ra-228	0.000E+00	0.0000	2.161E-12	0.0000										
Th-228	0.000E+00	0.0000	5.091E-23	0.0000										
Th-230	0.000E+00	0.0000	4.689E-05	0.5679										
Th-232	0.000E+00	0.0000	2.499E-05	0.3026										
U-234	0.000E+00	0.0000	1.411E-09	0.0000										
U-235	0.000E+00	0.0000	1.133E-08	0.0001										
U-238	0.000E+00	0.0000	4.259E-08	0.0005										
<b>Total</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>8.257E-05</b>	<b>1.0000</b>										

\*\*\*CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Intrisk : NC Suburban Resident 5YR Outdoor Surface EPCs

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Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
As pCi/yr at t= 3.000E+02 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	3.090E-06	0.000E+00	0.000E+00	0.000E+00	4.454E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.454E-04
Pa-231	6.275E-06	0.000E+00	0.000E+00	0.000E+00	9.046E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.046E-04
Pb-210	1.174E-02	0.000E+00	0.000E+00	0.000E+00	1.692E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.692E+00
Ra-226	1.588E-02	0.000E+00	0.000E+00	0.000E+00	2.289E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.289E+00
Ra-228	5.448E-03	0.000E+00	0.000E+00	0.000E+00	7.853E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.853E-01
Th-228	5.448E-03	0.000E+00	0.000E+00	0.000E+00	7.853E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.853E-01
Th-230	5.938E-01	0.000E+00	0.000E+00	0.000E+00	8.560E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.560E+01
Th-232	6.163E-03	0.000E+00	0.000E+00	0.000E+00	8.883E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.883E-01
U-234	1.377E-05	0.000E+00	0.000E+00	0.000E+00	1.985E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.985E-03
U-235	7.376E-07	0.000E+00	0.000E+00	0.000E+00	1.063E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.063E-04
U-238	1.377E-05	0.000E+00	0.000E+00	0.000E+00	1.985E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.985E-03

\* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of Radon and its Decay Products as pCi/yr at t= 3.000E+02 years  
Radionuclides

0

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00							
Water-dep.	0.000E+00							
Total	0.000E+00							

Water-ind. == Water-independent Water-dep. == Water-dependent

Intrisk : NC Suburban Resident 5YR Outdoor Surface EPCs

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 3.000E+02 years

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	1.567E-09	0.0000	1.444E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.383E-12	0.0000
Pa-231	2.493E-10	0.0000	1.048E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.475E-12	0.0000
Pb-210	2.253E-08	0.0003	1.084E-08	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.745E-07	0.0022
Ra-226	5.354E-05	0.6717	1.343E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.533E-08	0.0004
Ra-228	8.940E-06	0.1122	7.142E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.360E-08	0.0004
Th-228	1.575E-05	0.1976	2.360E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.962E-09	0.0001
Th-230	2.192E-07	0.0027	6.067E-07	0.0076	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.057E-07	0.0038
Th-232	1.076E-09	0.0000	8.001E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.549E-09	0.0000
U-234	1.251E-12	0.0000	8.398E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.153E-12	0.0000
U-235	1.344E-10	0.0000	4.045E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.274E-13	0.0000
U-238	4.964E-10	0.0000	7.145E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.243E-12	0.0000
Total	7.847E-05	0.9845	6.698E-07	0.0084	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.627E-07	0.0071

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 3.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Plant		Meat		Milk		All Pathways**	
	risk	fract.	risk	fract.								
Ac-227	0.000E+00	0.0000	1.588E-09	0.0000								
Pa-231	0.000E+00	0.0000	2.643E-10	0.0000								
Pb-210	0.000E+00	0.0000	2.079E-07	0.0026								
Ra-226	0.000E+00	0.0000	5.359E-05	0.6723								
Ra-228	0.000E+00	0.0000	8.980E-06	0.1127								
Th-228	0.000E+00	0.0000	1.578E-05	0.1980								
Th-230	0.000E+00	0.0000	1.132E-06	0.0142								
Th-232	0.000E+00	0.0000	1.263E-08	0.0002								
U-234	0.000E+00	0.0000	1.380E-11	0.0000								
U-235	0.000E+00	0.0000	1.351E-10	0.0000								
U-238	0.000E+00	0.0000	5.088E-10	0.0000								
Total	0.000E+00	0.0000	7.970E-05	1.0000								

\*\* Sum of water independent ground, inhalation, plant, meat, milk, soil  
and water dependent water, fish, plant, meat, milk pathways

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Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of Radon and its Decay Products at t= 3.000E+02 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00							
Water-dep.	0.000E+00							
<b>Total</b>	<b>0.000E+00</b>							

Water-ind. == Water-independent Water-dep. == Water-dependent

0 Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 3.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.												
Ac-227	8.108E-18	0.0000	7.471E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.302E-20	0.0000
Pa-231	1.815E-09	0.0000	2.491E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.085E-11	0.0000
Pb-210	1.583E-13	0.0000	7.616E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.226E-12	0.0000
Ra-226	4.013E-07	0.0050	2.323E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.384E-09	0.0000
Ra-228	3.064E-24	0.0000	4.031E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.443E-27	0.0000
Th-228	0.000E+00	0.0000												
Th-230	5.338E-05	0.6697	6.307E-07	0.0079	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.132E-07	0.0064
Th-232	2.469E-05	0.3098	3.875E-08	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.712E-08	0.0006
U-234	3.857E-10	0.0000	1.299E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.866E-12	0.0000
U-235	1.358E-10	0.0000	4.233E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.356E-13	0.0000
U-238	4.964E-10	0.0000	7.153E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.248E-12	0.0000
<b>Total</b>	<b>7.847E-05</b>	<b>0.9845</b>	<b>6.698E-07</b>	<b>0.0084</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>5.627E-07</b>	<b>0.0071</b>

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Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 3.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.												
Ac-227	0.000E+00	0.0000	8.216E-18	0.0000										
Pa-231	0.000E+00	0.0000	1.851E-09	0.0000										
Pb-210	0.000E+00	0.0000	1.460E-12	0.0000										
Ra-226	0.000E+00	0.0000	4.040E-07	0.0051										
Ra-228	0.000E+00	0.0000	3.073E-24	0.0000										
Th-228	0.000E+00	0.0000												
Th-230	0.000E+00	0.0000	5.452E-05	0.6841										
Th-232	0.000E+00	0.0000	2.478E-05	0.3108										
U-234	0.000E+00	0.0000	4.066E-10	0.0000										
U-235	0.000E+00	0.0000	1.364E-10	0.0000										
U-238	0.000E+00	0.0000	5.088E-10	0.0000										
<b>Total</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>7.970E-05</b>	<b>1.0000</b>										

\*\*\*CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Intrisk : NC Suburban Resident 5YR Outdoor Surface EPCs

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Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
As pCi/yr at t= 1.000E+03 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	5.720E-13	0.000E+00	0.000E+00	0.000E+00	8.244E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.244E-11
Pa-231	1.162E-12	0.000E+00	0.000E+00	0.000E+00	1.674E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.674E-10
Pb-210	1.148E-02	0.000E+00	0.000E+00	0.000E+00	1.655E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.655E+00
Ra-226	1.555E-02	0.000E+00	0.000E+00	0.000E+00	2.241E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.241E+00
Ra-228	5.378E-03	0.000E+00	0.000E+00	0.000E+00	7.752E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.752E-01
Th-228	5.378E-03	0.000E+00	0.000E+00	0.000E+00	7.752E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.752E-01
Th-230	5.824E-01	0.000E+00	0.000E+00	0.000E+00	8.395E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.395E+01
Th-232	6.083E-03	0.000E+00	0.000E+00	0.000E+00	8.769E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.769E-01
U-234	2.582E-12	0.000E+00	0.000E+00	0.000E+00	3.722E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.722E-10
U-235	1.383E-13	0.000E+00	0.000E+00	0.000E+00	1.994E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.994E-11
U-238	2.582E-12	0.000E+00	0.000E+00	0.000E+00	3.722E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.722E-10

\* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of Radon and its Decay Products as pCi/yr at t= 1.000E+03 years  
Radionuclides

0

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00							
Water-dep.	0.000E+00							
Total	0.000E+00							

Water-ind. == Water-independent      Water-dep. == Water-dependent

Intrisk : NC Suburban Resident 5YR Outdoor Surface EPCs

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 1.000E+03 years

0  
0

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	2.885E-16	0.0000	2.673E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.182E-18	0.0000
Pa-231	4.590E-17	0.0000	1.940E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.283E-19	0.0000
Pb-210	2.206E-08	0.0003	1.061E-08	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.708E-07	0.0022
Ra-226	5.133E-05	0.6704	1.316E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.460E-08	0.0005
Ra-228	8.674E-06	0.1133	7.050E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.317E-08	0.0004
Th-228	1.512E-05	0.1974	2.330E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.834E-09	0.0001
Th-230	2.149E-07	0.0028	5.951E-07	0.0078	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.998E-07	0.0039
Th-232	1.062E-09	0.0000	7.898E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.503E-09	0.0000
U-234	2.345E-19	0.0000	1.575E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.789E-19	0.0000
U-235	2.515E-17	0.0000	7.585E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.265E-20	0.0000
U-238	9.210E-17	0.0000	1.340E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.833E-19	0.0000
Total	7.536E-05	0.9842	6.571E-07	0.0086	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.518E-07	0.0072

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Plant		Meat		Milk		All Pathways**	
	risk	fract.	risk	fract.								
Ac-227	0.000E+00	0.0000	2.923E-16	0.0000								
Pa-231	0.000E+00	0.0000	4.866E-17	0.0000								
Pb-210	0.000E+00	0.0000	2.035E-07	0.0027								
Ra-226	0.000E+00	0.0000	5.138E-05	0.6710								
Ra-228	0.000E+00	0.0000	8.714E-06	0.1138								
Th-228	0.000E+00	0.0000	1.515E-05	0.1979								
Th-230	0.000E+00	0.0000	1.110E-06	0.0145								
Th-232	0.000E+00	0.0000	1.246E-08	0.0002								
U-234	0.000E+00	0.0000	2.588E-18	0.0000								
U-235	0.000E+00	0.0000	2.527E-17	0.0000								
U-238	0.000E+00	0.0000	9.443E-17	0.0000								
Total	0.000E+00	0.0000	7.657E-05	1.0000								

\*\* Sum of water independent ground, inhalation, plant, meat, milk, soil  
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of  
 Radon and its Decay Products at t= 1.000E+03 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00							
Water-dep.	0.000E+00							
<b>Total</b>	<b>0.000E+00</b>							

Water-ind. == Water-independent Water-dep. == Water-dependent

0 Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p)  
 and Fraction of Total Risk at t= 1.000E+03 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.												
Ac-227	0.000E+00	0.0000												
Pa-231	3.335E-16	0.0000	4.602E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.005E-18	0.0000
Pb-210	2.172E-26	0.0000	1.045E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.682E-25	0.0000
Ra-226	4.485E-12	0.0000	2.653E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.723E-14	0.0000
Ra-228	0.000E+00	0.0000												
Th-228	0.000E+00	0.0000												
Th-230	5.157E-05	0.6735	6.188E-07	0.0081	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.052E-07	0.0066
Th-232	2.379E-05	0.3107	3.825E-08	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.651E-08	0.0006
U-234	3.768E-10	0.0000	4.521E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.692E-12	0.0000
U-235	2.599E-17	0.0000	8.741E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.768E-20	0.0000
U-238	4.823E-14	0.0000	5.790E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.726E-16	0.0000
<b>Total</b>	<b>7.536E-05</b>	<b>0.9842</b>	<b>6.571E-07</b>	<b>0.0086</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>5.518E-07</b>	<b>0.0072</b>

Intrisk : NC Suburban Resident 5YR Outdoor Surface EPCs

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Total Excess Cancer Risk CNRS(i,p,t)\*\*\* for Initially Existent Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t= 1.000E+03 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.												
Ac-227	0.000E+00	0.0000												
Pa-231	0.000E+00	0.0000	3.401E-16	0.0000										
Pb-210	0.000E+00	0.0000	2.004E-25	0.0000										
Ra-226	0.000E+00	0.0000	4.515E-12	0.0000										
Ra-228	0.000E+00	0.0000												
Th-228	0.000E+00	0.0000												
Th-230	0.000E+00	0.0000	5.269E-05	0.6881										
Th-232	0.000E+00	0.0000	2.388E-05	0.3118										
U-234	0.000E+00	0.0000	3.850E-10	0.0000										
U-235	0.000E+00	0.0000	2.612E-17	0.0000										
U-238	0.000E+00	0.0000	4.928E-14	0.0000										
<b>Total</b>	<b>0.000E+00</b>	<b>0.0000</b>	<b>7.657E-05</b>	<b>1.0000</b>										

\*\*\*CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

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Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Dose Conversion Factor (and Related) Parameter Summary

Current Library: DCFPAK3.02

Default Library: DCFPAK3.02

0 Menu	Parameter	Current Value	Default	Parameter Name
DCSF	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
DCSF	Ac-227 (Source: DCFPAK3.02)	2.615E-04	2.615E-04	DCFEXT ( 1)
DCSF	Ac-228 (Source: DCFPAK3.02)	5.044E+00	5.044E+00	DCFEXT ( 2)
DCSF	At-218 (Source: DCFPAK3.02)	5.567E-05	5.567E-05	DCFEXT ( 3)
DCSF	At-219 (Source: DCFPAK3.02)	0.000E+00	0.000E+00	DCFEXT ( 4)
DCSF	Bi-210 (Source: DCFPAK3.02)	5.473E-03	5.473E-03	DCFEXT ( 5)
DCSF	Bi-211 (Source: DCFPAK3.02)	2.410E-01	2.410E-01	DCFEXT ( 6)
DCSF	Bi-212 (Source: DCFPAK3.02)	6.258E-01	6.258E-01	DCFEXT ( 7)
DCSF	Bi-214 (Source: DCFPAK3.02)	9.135E+00	9.135E+00	DCFEXT ( 8)
DCSF	Bi-215 (Source: DCFPAK3.02)	1.369E+00	1.369E+00	DCFEXT ( 9)
DCSF	Fr-223 (Source: DCFPAK3.02)	1.758E-01	1.758E-01	DCFEXT ( 10)
DCSF	Hg-206 (Source: DCFPAK3.02)	6.127E-01	6.127E-01	DCFEXT ( 11)
DCSF	Pa-231 (Source: DCFPAK3.02)	1.608E-01	1.608E-01	DCFEXT ( 12)
DCSF	Pa-234 (Source: DCFPAK3.02)	8.275E+00	8.275E+00	DCFEXT ( 13)
DCSF	Pa-234m (Source: DCFPAK3.02)	1.257E-01	1.257E-01	DCFEXT ( 14)
DCSF	Pb-210 (Source: DCFPAK3.02)	2.092E-03	2.092E-03	DCFEXT ( 15)
DCSF	Pb-211 (Source: DCFPAK3.02)	3.680E-01	3.680E-01	DCFEXT ( 16)
DCSF	Pb-212 (Source: DCFPAK3.02)	6.314E-01	6.314E-01	DCFEXT ( 17)
DCSF	Pb-214 (Source: DCFPAK3.02)	1.257E+00	1.257E+00	DCFEXT ( 18)
DCSF	Po-210 (Source: DCFPAK3.02)	5.641E-05	5.641E-05	DCFEXT ( 19)
DCSF	Po-211 (Source: DCFPAK3.02)	4.707E-02	4.707E-02	DCFEXT ( 20)
DCSF	Po-212 (Source: DCFPAK3.02)	0.000E+00	0.000E+00	DCFEXT ( 21)
DCSF	Po-214 (Source: DCFPAK3.02)	4.801E-04	4.801E-04	DCFEXT ( 22)
DCSF	Po-215 (Source: DCFPAK3.02)	9.452E-04	9.452E-04	DCFEXT ( 23)
DCSF	Po-216 (Source: DCFPAK3.02)	8.873E-05	8.873E-05	DCFEXT ( 24)
DCSF	Po-218 (Source: DCFPAK3.02)	9.228E-09	9.228E-09	DCFEXT ( 25)
DCSF	Ra-223 (Source: DCFPAK3.02)	5.791E-01	5.791E-01	DCFEXT ( 26)
DCSF	Ra-224 (Source: DCFPAK3.02)	4.950E-02	4.950E-02	DCFEXT ( 27)
DCSF	Ra-226 (Source: DCFPAK3.02)	3.176E-02	3.176E-02	DCFEXT ( 28)
DCSF	Ra-228 (Source: DCFPAK3.02)	6.575E-05	6.575E-05	DCFEXT ( 29)
DCSF	Rn-218 (Source: DCFPAK3.02)	4.259E-03	4.259E-03	DCFEXT ( 30)
DCSF	Rn-219 (Source: DCFPAK3.02)	2.970E-01	2.970E-01	DCFEXT ( 31)
DCSF	Rn-220 (Source: DCFPAK3.02)	3.474E-03	3.474E-03	DCFEXT ( 32)
DCSF	Rn-222 (Source: DCFPAK3.02)	2.130E-03	2.130E-03	DCFEXT ( 33)
DCSF	Th-227 (Source: DCFPAK3.02)	5.641E-01	5.641E-01	DCFEXT ( 34)
DCSF	Th-228 (Source: DCFPAK3.02)	7.248E-03	7.248E-03	DCFEXT ( 35)
DCSF	Th-230 (Source: DCFPAK3.02)	1.106E-03	1.106E-03	DCFEXT ( 36)
DCSF	Th-231 (Source: DCFPAK3.02)	3.250E-02	3.250E-02	DCFEXT ( 37)
DCSF	Th-232 (Source: DCFPAK3.02)	4.782E-04	4.782E-04	DCFEXT ( 38)
DCSF	Th-234 (Source: DCFPAK3.02)	2.316E-02	2.316E-02	DCFEXT ( 39)
DCSF	Tl-206 (Source: DCFPAK3.02)	1.278E-02	1.278E-02	DCFEXT ( 40)
DCSF	Tl-207 (Source: DCFPAK3.02)	2.391E-02	2.391E-02	DCFEXT ( 41)
DCSF	Tl-208 (Source: DCFPAK3.02)	2.167E+01	2.167E+01	DCFEXT ( 42)
DCSF	Tl-210 (Source: DCFPAK3.02)	1.677E+01	1.677E+01	DCFEXT ( 43)
DCSF	U-234 (Source: DCFPAK3.02)	3.456E-04	3.456E-04	DCFEXT ( 44)

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Dose Conversion Factor (and Related) Parameter Summary (continued)

Current Library: DCFPAK3.02

Default Library: DCFPAK3.02

0 Menu	Parameter	Current Value	Default	Parameter Name
DCSF	U-235 (Source: DCFPAK3.02)	7.005E-01	7.005E-01	DCFEXT ( 45)
DCSF	U-238 (Source: DCFPAK3.02)	1.713E-04	1.713E-04	DCFEXT ( 46)

Current Library: DCFPAK3.02 (Age 10)

Default Library: DCFPAK3.02 (Age 10)

0 Menu	Parameter	Current Value	Default	Parameter Name
DCSF	Dose conversion factors for inhalation, mrem/pCi:			
DCSF	Ac-227+D	7.496E-01	7.496E-01	DCF2 (1)
DCSF	Pa-231	9.778E-01	9.778E-01	DCF2 (2)
DCSF	Pb-210+D	4.899E-02	4.899E-02	DCF2 (3)
DCSF	Ra-226+D	4.570E-02	4.570E-02	DCF2 (4)
DCSF	Ra-228+D	7.292E-02	7.292E-02	DCF2 (5)
DCSF	Th-228+D	2.217E-01	2.217E-01	DCF2 (6)
DCSF	Th-230	4.177E-01	4.177E-01	DCF2 (7)
DCSF	Th-232	4.961E-01	4.961E-01	DCF2 (8)
DCSF	U-234	4.499E-02	4.499E-02	DCF2 (9)
DCSF	U-235+D	4.058E-02	4.058E-02	DCF2 (10)
DCSF	U-238	3.848E-02	3.848E-02	DCF2 (11)
DCSF	U-238+D	3.852E-02	3.852E-02	DCF2 (12)
DCSF	Dose conversion factors for ingestion, mrem/pCi:			
DCSF	Ac-227+D	3.150E-03	3.150E-03	DCF3 (1)
DCSF	Pa-231	2.091E-03	2.091E-03	DCF3 (2)
DCSF	Pb-210+D	1.681E-02	1.681E-02	DCF3 (3)
DCSF	Ra-226+D	2.969E-03	2.969E-03	DCF3 (4)
DCSF	Ra-228+D	1.450E-02	1.450E-02	DCF3 (5)
DCSF	Th-228+D	1.531E-03	1.531E-03	DCF3 (6)
DCSF	Th-230	9.102E-04	9.102E-04	DCF3 (7)
DCSF	Th-232	1.069E-03	1.069E-03	DCF3 (8)
DCSF	U-234	2.757E-04	2.757E-04	DCF3 (9)
DCSF	U-235+D	2.665E-04	2.665E-04	DCF3 (10)
DCSF	U-238	2.505E-04	2.505E-04	DCF3 (11)
DCSF	U-238+D	2.781E-04	2.781E-04	DCF3 (12)

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Dose Conversion Factor (and Related) Parameter Summary (continued)

Current Library: RESRAD Default Transfer factors

Default Library: RESRAD Default Transfer factors

0 Menu	Parameter	Current Value	Default	Parameter Name
TF	Soil to plant transfer factors:			
TF	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF (1,1)
TF	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF (1,2)
TF	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF (1,3)
TF	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF (1,4)
TF	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF (2,1)
TF	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF (2,2)
TF	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF (2,3)
TF	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF (2,4)
TF	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF (3,1)
TF	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF (3,2)
TF	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF (3,3)
TF	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF (3,4)
TF	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF (4,1)
TF	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF (4,2)
TF	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF (4,3)
TF	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF (4,4)
TF	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF (5,1)
TF	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF (5,2)
TF	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF (5,3)
TF	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF (5,4)
TF	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF (6,1)
TF	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF (6,2)
TF	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF (6,3)
TF	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF (6,4)
TF	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF (7,1)
TF	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF (7,2)
TF	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF (7,3)
TF	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF (7,4)
TF	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF (8,1)
TF	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF (8,2)
TF	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF (8,3)
TF	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF (8,4)
TF	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF (9,1)
TF	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF (9,2)
TF	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF (9,3)
TF	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF (9,4)

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Dose Conversion Factor (and Related) Parameter Summary (continued)

Current Library: RESRAD Default Transfer factors

Default Library: RESRAD Default Transfer factors

0 Menu	Parameter	Current Value	Default	Parameter Name
TF	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
TF	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,2)
TF	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,3)
TF	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,4)
TF	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(11,1)
TF	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(11,2)
TF	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(11,3)
TF	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(11,4)
TF	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(12,1)
TF	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(12,2)
TF	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(12,3)
TF	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(12,4)
TF	intake to meat/milk transfer factors:			
TF	Ac-227+D , beef/livestock-intake ratio, (pCi/kg) / (pCi/d)	2.000E-05	2.000E-05	I_M(1,1)
TF	Ac-227+D , milk/livestock-intake ratio, (pCi/L) / (pCi/d)	2.000E-05	2.000E-05	I_M(1,2)
TF	Pa-231 , beef/livestock-intake ratio, (pCi/kg) / (pCi/d)	5.000E-03	5.000E-03	I_M(2,1)
TF	Pa-231 , milk/livestock-intake ratio, (pCi/L) / (pCi/d)	5.000E-06	5.000E-06	I_M(2,2)
TF	Pb-210+D , beef/livestock-intake ratio, (pCi/kg) / (pCi/d)	8.000E-04	8.000E-04	I_M(3,1)
TF	Pb-210+D , milk/livestock-intake ratio, (pCi/L) / (pCi/d)	3.000E-04	3.000E-04	I_M(3,2)
TF	Ra-226+D , beef/livestock-intake ratio, (pCi/kg) / (pCi/d)	1.000E-03	1.000E-03	I_M(4,1)
TF	Ra-226+D , milk/livestock-intake ratio, (pCi/L) / (pCi/d)	1.000E-03	1.000E-03	I_M(4,2)
TF	Ra-228+D , beef/livestock-intake ratio, (pCi/kg) / (pCi/d)	1.000E-03	1.000E-03	I_M(5,1)
TF	Ra-228+D , milk/livestock-intake ratio, (pCi/L) / (pCi/d)	1.000E-03	1.000E-03	I_M(5,2)
TF	Th-228+D , beef/livestock-intake ratio, (pCi/kg) / (pCi/d)	1.000E-04	1.000E-04	I_M(6,1)
TF	Th-228+D , milk/livestock-intake ratio, (pCi/L) / (pCi/d)	5.000E-06	5.000E-06	I_M(6,2)
TF	Th-230 , beef/livestock-intake ratio, (pCi/kg) / (pCi/d)	1.000E-04	1.000E-04	I_M(7,1)
TF	Th-230 , milk/livestock-intake ratio, (pCi/L) / (pCi/d)	5.000E-06	5.000E-06	I_M(7,2)
TF	Th-232 , beef/livestock-intake ratio, (pCi/kg) / (pCi/d)	1.000E-04	1.000E-04	I_M(8,1)
TF	Th-232 , milk/livestock-intake ratio, (pCi/L) / (pCi/d)	5.000E-06	5.000E-06	I_M(8,2)
TF	U-234 , beef/livestock-intake ratio, (pCi/kg) / (pCi/d)	3.400E-04	3.400E-04	I_M(9,1)
TF	U-234 , milk/livestock-intake ratio, (pCi/L) / (pCi/d)	6.000E-04	6.000E-04	I_M(9,2)
TF	U-235+D , beef/livestock-intake ratio, (pCi/kg) / (pCi/d)	3.400E-04	3.400E-04	I_M(10,1)
TF	U-235+D , milk/livestock-intake ratio, (pCi/L) / (pCi/d)	6.000E-04	6.000E-04	I_M(10,2)

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Dose Conversion Factor (and Related) Parameter Summary (continued)

Current Library: RESRAD Default Transfer factors

Default Library: RESRAD Default Transfer factors

0 Menu	Parameter	Current Value	Default	Parameter Name
TF	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	I_M(11,1)
TF	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	I_M(11,2)
TF				
TF	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	I_M(12,1)
TF	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	I_M(12,2)
TF				
TF	Bioaccumulation factors, fresh water, L/kg:			
TF	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFA(1,1)
TF	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFA(1,2)
TF				
TF	Pa-231 , fish	1.000E+01	1.000E+01	BIOFA(2,1)
TF	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFA(2,2)
TF				
TF	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFA(3,1)
TF	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFA(3,2)
TF				
TF	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFA(4,1)
TF	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFA(4,2)
TF				
TF	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFA(5,1)
TF	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFA(5,2)
TF				
TF	Th-228+D , fish	1.000E+02	1.000E+02	BIOFA(6,1)
TF	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFA(6,2)
TF				
TF	Th-230 , fish	1.000E+02	1.000E+02	BIOFA(7,1)
TF	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFA(7,2)
TF				
TF	Th-232 , fish	1.000E+02	1.000E+02	BIOFA(8,1)
TF	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFA(8,2)
TF				
TF	U-234 , fish	1.000E+01	1.000E+01	BIOFA(9,1)
TF	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFA(9,2)
TF				
TF	U-235+D , fish	1.000E+01	1.000E+01	BIOFA(10,1)
TF	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFA(10,2)
TF				
TF	U-238 , fish	1.000E+01	1.000E+01	BIOFA(11,1)
TF	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFA(11,2)
TF				
TF	U-238+D , fish	1.000E+01	1.000E+01	BIOFA(12,1)
TF	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFA(12,2)

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Site-Specific Parameter Summary

0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
FSTI	Exposure duration for risk	3.000E+01	3.000E+01	---	ED
FSTI	Basic radiation dose limit (mrem/yr)	2.500E+01	2.500E+01	---	BRDL
RELT	1st release time (years)	0.000E+00		---	RelTime(1)
CONC	Initial concentration of Ac-227 (pCi/g)	5.090E+00	0.000E+00	---	S1(1)
CONC	Initial concentration of Pa-231 (pCi/g)	4.790E+00	0.000E+00	---	S1(2)
CONC	Initial concentration of Pb-210 (pCi/g)	2.294E+01	0.000E+00	---	S1(3)
CONC	Initial concentration of Ra-226 (pCi/g)	9.560E+00	0.000E+00	---	S1(4)
CONC	Initial concentration of Ra-228 (pCi/g)	3.500E-01	0.000E+00	---	S1(5)
CONC	Initial concentration of Th-228 (pCi/g)	1.400E-01	0.000E+00	---	S1(6)
CONC	Initial concentration of Th-230 (pCi/g)	3.597E+02	0.000E+00	---	S1(7)
CONC	Initial concentration of Th-232 (pCi/g)	1.130E+00	0.000E+00	---	S1(8)
CONC	Initial concentration of U-234 (pCi/g)	7.822E+01	0.000E+00	---	S1(9)
CONC	Initial concentration of U-235 (pCi/g)	3.530E+00	0.000E+00	---	S1(10)
CONC	Initial concentration of U-238 (pCi/g)	7.822E+01	0.000E+00	---	S1(11)
VDEP	Deposition velocity of Ac-227 on total particulates	1.000E-03	1.000E-03	---	DEPVEL(1)
VDEP	Dep. velocity of Ac-227 on respirable particulates	1.000E-03	1.000E-03	---	DEPVELT(1)
VDEP	Deposition velocity of Pa-231 on total particulates	1.000E-03	1.000E-03	---	DEPVEL(2)
VDEP	Dep. velocity of Pa-231 on respirable particulates	1.000E-03	1.000E-03	---	DEPVELT(2)
VDEP	Deposition velocity of Pb-210 on total particulates	1.000E-03	1.000E-03	---	DEPVEL(3)
VDEP	Dep. velocity of Pb-210 on respirable particulates	1.000E-03	1.000E-03	---	DEPVELT(3)
VDEP	Deposition velocity of Ra-226 on total particulates	1.000E-03	1.000E-03	---	DEPVEL(4)
VDEP	Dep. velocity of Ra-226 on respirable particulates	1.000E-03	1.000E-03	---	DEPVELT(4)
VDEP	Deposition velocity of Ra-228 on total particulates	1.000E-03	1.000E-03	---	DEPVEL(5)
VDEP	Dep. velocity of Ra-228 on respirable particulates	1.000E-03	1.000E-03	---	DEPVELT(5)
VDEP	Deposition velocity of Th-228 on total particulates	1.000E-03	1.000E-03	---	DEPVEL(6)
VDEP	Dep. velocity of Th-228 on respirable particulates	1.000E-03	1.000E-03	---	DEPVELT(6)
VDEP	Deposition velocity of Th-230 on total particulates	1.000E-03	1.000E-03	---	DEPVEL(7)
VDEP	Dep. velocity of Th-230 on respirable particulates	1.000E-03	1.000E-03	---	DEPVELT(7)
VDEP	Deposition velocity of Th-232 on total particulates	1.000E-03	1.000E-03	---	DEPVEL(8)
VDEP	Dep. velocity of Th-232 on respirable particulates	1.000E-03	1.000E-03	---	DEPVELT(8)
VDEP	Deposition velocity of U-234 on total particulates	1.000E-03	1.000E-03	---	DEPVEL(9)
VDEP	Dep. velocity of U-234 on respirable particulates	1.000E-03	1.000E-03	---	DEPVELT(9)
VDEP	Deposition velocity of U-235 on total particulates	1.000E-03	1.000E-03	---	DEPVEL(10)
VDEP	Dep. velocity of U-235 on respirable particulates	1.000E-03	1.000E-03	---	DEPVELT(10)
VDEP	Deposition velocity of U-238 on total particulates	1.000E-03	1.000E-03	---	DEPVEL(11)
VDEP	Dep. velocity of U-238 on respirable particulates	1.000E-03	1.000E-03	---	DEPVELT(11)

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
DCLR	Distribution coefficients for Ac-227				
DCLR	Contaminated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCC (1)
DCLR	Unsaturated zone 1 (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCU (1,1)
DCLR	Saturated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCS (1)
DCLR	Bottom sediment in surface water body (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCSWB (1)
DCLR	Suspended sediment in surface water body (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCSWS (1)
DCLR	Agricultural area 1 (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCOF (1,1)
DCLR	Agricultural area 2 (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCOF (1,2)
DCLR	Agricultural area 3 (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCOF (1,3)
DCLR	Agricultural area 4 (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCOF (1,4)
DCLR	Offsite Dwelling (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCDWE (1)
DCLR	Leach rate constant of Ac-227 (/yr)	0.000E+00	0.000E+00	5.497E-02	Rleach (1,1)
DCLR	Distribution coefficients for Pa-231				
DCLR	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC (2)
DCLR	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU (2,1)
DCLR	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS (2)
DCLR	Bottom sediment in surface water body (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCSWB (2)
DCLR	Suspended sediment in surface water body (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCSWS (2)
DCLR	Agricultural area 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCOF (2,1)
DCLR	Agricultural area 2 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCOF (2,2)
DCLR	Agricultural area 3 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCOF (2,3)
DCLR	Agricultural area 4 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCOF (2,4)
DCLR	Offsite Dwelling (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCDWE (2)
DCLR	Leach rate constant of Pa-231 (/yr)	0.000E+00	0.000E+00	2.213E-02	Rleach (1,2)
DCLR	Distribution coefficients for Pb-210				
DCLR	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (3)
DCLR	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU (3,1)
DCLR	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS (3)
DCLR	Bottom sediment in surface water body (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCSWB (3)
DCLR	Suspended sediment in surface water body (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCSWS (3)
DCLR	Agricultural area 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCOF (3,1)
DCLR	Agricultural area 2 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCOF (3,2)
DCLR	Agricultural area 3 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCOF (3,3)
DCLR	Agricultural area 4 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCOF (3,4)
DCLR	Offsite Dwelling (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCDWE (3)
DCLR	Leach rate constant of Pb-210 (/yr)	0.000E+00	0.000E+00	1.109E-02	Rleach (1,3)

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
DCLR	Distribution coefficients for Ra-226				
DCLR	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC (4)
DCLR	Unsaturated zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU (4,1)
DCLR	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS (4)
DCLR	Bottom sediment in surface water body (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCSWB (4)
DCLR	Suspended sediment in surface water body (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCSWS (4)
DCLR	Agricultural area 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCOF (4,1)
DCLR	Agricultural area 2 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCOF (4,2)
DCLR	Agricultural area 3 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCOF (4,3)
DCLR	Agricultural area 4 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCOF (4,4)
DCLR	Offsite Dwelling (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCDWE (4)
DCLR	Leach rate constant of Ra-226 (/yr)	0.000E+00	0.000E+00	1.582E-02	Rleach(1,4)
DCLR	Distribution coefficients for Ra-228				
DCLR	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC (5)
DCLR	Unsaturated zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU (5,1)
DCLR	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS (5)
DCLR	Bottom sediment in surface water body (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCSWB (5)
DCLR	Suspended sediment in surface water body (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCSWS (5)
DCLR	Agricultural area 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCOF (5,1)
DCLR	Agricultural area 2 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCOF (5,2)
DCLR	Agricultural area 3 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCOF (5,3)
DCLR	Agricultural area 4 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCOF (5,4)
DCLR	Offsite Dwelling (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCDWE (5)
DCLR	Leach rate constant of Ra-228 (/yr)	0.000E+00	0.000E+00	1.582E-02	Rleach(1,5)
DCLR	Distribution coefficients for Th-228				
DCLR	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC (6)
DCLR	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU (6,1)
DCLR	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS (6)
DCLR	Bottom sediment in surface water body (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCSWB (6)
DCLR	Suspended sediment in surface water body (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCSWS (6)
DCLR	Agricultural area 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCOF (6,1)
DCLR	Agricultural area 2 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCOF (6,2)
DCLR	Agricultural area 3 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCOF (6,3)
DCLR	Agricultural area 4 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCOF (6,4)
DCLR	Offsite Dwelling (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCDWE (6)
DCLR	Leach rate constant of Th-228 (/yr)	0.000E+00	0.000E+00	1.852E-05	Rleach(1,6)

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Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
DCLR	Distribution coefficients for Th-230				
DCLR	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC (7)
DCLR	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU (7,1)
DCLR	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS (7)
DCLR	Bottom sediment in surface water body (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCSWB (7)
DCLR	Suspended sediment in surface water body (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCSWS (7)
DCLR	Agricultural area 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCOF (7,1)
DCLR	Agricultural area 2 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCOF (7,2)
DCLR	Agricultural area 3 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCOF (7,3)
DCLR	Agricultural area 4 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCOF (7,4)
DCLR	Offsite Dwelling (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCDWE (7)
DCLR	Leach rate constant of Th-230 (/yr)	0.000E+00	0.000E+00	1.852E-05	Rleach(1,7)
DCLR	Distribution coefficients for Th-232				
DCLR	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC (8)
DCLR	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU (8,1)
DCLR	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS (8)
DCLR	Bottom sediment in surface water body (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCSWB (8)
DCLR	Suspended sediment in surface water body (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCSWS (8)
DCLR	Agricultural area 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCOF (8,1)
DCLR	Agricultural area 2 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCOF (8,2)
DCLR	Agricultural area 3 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCOF (8,3)
DCLR	Agricultural area 4 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCOF (8,4)
DCLR	Offsite Dwelling (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCDWE (8)
DCLR	Leach rate constant of Th-232 (/yr)	0.000E+00	0.000E+00	1.852E-05	Rleach(1,8)
DCLR	Distribution coefficients for U-234				
DCLR	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC (9)
DCLR	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU (9,1)
DCLR	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS (9)
DCLR	Bottom sediment in surface water body (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCSWB (9)
DCLR	Suspended sediment in surface water body (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCSWS (9)
DCLR	Agricultural area 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCOF (9,1)
DCLR	Agricultural area 2 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCOF (9,2)
DCLR	Agricultural area 3 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCOF (9,3)
DCLR	Agricultural area 4 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCOF (9,4)
DCLR	Offsite Dwelling (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCDWE (9)
DCLR	Leach rate constant of U-234 (/yr)	0.000E+00	0.000E+00	2.213E-02	Rleach(1,9)

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0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
DCLR	Distribution coefficients for U-235				
DCLR	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC (10)
DCLR	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU (10,1)
DCLR	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS (10)
DCLR	Bottom sediment in surface water body (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCSWB (10)
DCLR	Suspended sediment in surface water body (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCSWS (10)
DCLR	Agricultural area 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCOF (10,1)
DCLR	Agricultural area 2 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCOF (10,2)
DCLR	Agricultural area 3 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCOF (10,3)
DCLR	Agricultural area 4 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCOF (10,4)
DCLR	Offsite Dwelling (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCDWE (10)
DCLR	Leach rate constant of U-235 (/yr)	0.000E+00	0.000E+00	2.213E-02	Rleach (1,10)
DCLR	Distribution coefficients for U-238				
DCLR	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC (11)
DCLR	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU (11,1)
DCLR	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS (11)
DCLR	Bottom sediment in surface water body (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCSWB (11)
DCLR	Suspended sediment in surface water body (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCSWS (11)
DCLR	Agricultural area 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCOF (11,1)
DCLR	Agricultural area 2 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCOF (11,2)
DCLR	Agricultural area 3 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCOF (11,3)
DCLR	Agricultural area 4 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCOF (11,4)
DCLR	Offsite Dwelling (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCDWE (11)
DCLR	Leach rate constant of U-238 (/yr)	0.000E+00	0.000E+00	2.213E-02	Rleach (1,11)
LYOT	Bearing of X axis (clockwise angle N-->X in degrees)	9.000E+01	9.000E+01	---	DNXBEARING
LYOT	Length of Primary contamination in X Direction	3.125E+01	1.000E+02	---	SOURCEXY (1)
LYOT	Length of Primary contamination in Y Direction	6.400E+00	1.000E+02	---	SOURCEXY (2)
LYOT	Smaller X coordinate of Agricultural Area 1	3.438E+01	3.438E+01	---	AGRIXY (1,1)
LYOT	Larger X coordinate of Agricultural Area 1	6.562E+01	6.562E+01	---	AGRIXY (2,1)
LYOT	Smaller Y coordinate of Agricultural Area 1	2.340E+02	2.340E+02	---	AGRIXY (3,1)
LYOT	Larger Y coordinate of Agricultural Area 1	2.660E+02	2.660E+02	---	AGRIXY (4,1)
LYOT	Smaller X coordinate of Agricultural Area 2	3.438E+01	3.438E+01	---	AGRIXY (1,2)
LYOT	Larger X coordinate of Agricultural Area 2	6.562E+01	6.562E+01	---	AGRIXY (2,2)
LYOT	Smaller Y coordinate of Agricultural Area 2	2.680E+02	2.680E+02	---	AGRIXY (3,2)
LYOT	Larger Y coordinate of Agricultural Area 2	3.000E+02	3.000E+02	---	AGRIXY (4,2)
LYOT	Smaller X coordinate of Agricultural Area 3	0.000E+00	0.000E+00	---	AGRIXY (1,3)
LYOT	Larger X coordinate of Agricultural Area 3	1.000E+02	1.000E+02	---	AGRIXY (2,3)
LYOT	Smaller Y coordinate of Agricultural Area 3	4.500E+02	4.500E+02	---	AGRIXY (3,3)
LYOT	Larger Y coordinate of Agricultural Area 3	5.500E+02	5.500E+02	---	AGRIXY (4,3)
LYOT	Smaller X coordinate of Agricultural Area 4	0.000E+00	0.000E+00	---	AGRIXY (1,4)
LYOT	Larger X coordinate of Agricultural Area 4	1.000E+02	1.000E+02	---	AGRIXY (2,4)
LYOT	Smaller Y coordinate of Agricultural Area 4	3.000E+02	3.000E+02	---	AGRIXY (3,4)
LYOT	Larger Y coordinate of Agricultural Area 4	4.000E+02	4.000E+02	---	AGRIXY (4,4)
LYOT	Smaller X coordinate of Dwelling Area	0.000E+00	3.438E+01	---	DWELLXY (1)
LYOT	Larger X coordinate of Dwelling Area	3.125E+01	6.562E+01	---	DWELLXY (2)

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0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
LYOT	Smaller Y coordinate of Dwelling Area	6.400E+00	1.340E+02	---	DWELLXY (3)
LYOT	Larger Y coordinate of Dwelling Area	3.840E+01	1.660E+02	---	DWELLXY (4)
LYOT	Smaller X coordinate of Surface water body	-1.000E+02	-1.000E+02	---	SWXY (1)
LYOT	Larger X coordinate of Surface water body	2.000E+02	2.000E+02	---	SWXY (2)
LYOT	Smaller Y coordinate of Surface water body	5.500E+02	5.500E+02	---	SWXY (3)
LYOT	Larger Y coordinate of Surface water body	8.500E+02	8.500E+02	---	SWXY (4)
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T (1)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T (2)
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T (3)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T (4)
STOR	Livestock feed - pasture or silage	1.000E+00	1.000E+00	---	STOR_T (5)
STOR	Livestock feed - grain	4.500E+01	4.500E+01	---	STOR_T (6)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T (7)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T (8)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T (9)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T (10)
TIME	Times at which dose/risk are to be reported (yr)	1.000E+00	1.000E+00	---	T (2)
TIME	Times at which dose/risk are to be reported (yr)	3.000E+00	3.000E+00	---	T (3)
TIME	Times at which dose/risk are to be reported (yr)	6.000E+00	6.000E+00	---	T (4)
TIME	Times at which dose/risk are to be reported (yr)	1.200E+01	1.200E+01	---	T (5)
TIME	Times at which dose/risk are to be reported (yr)	3.000E+01	3.000E+01	---	T (6)
TIME	Times at which dose/risk are to be reported (yr)	7.500E+01	7.500E+01	---	T (7)
TIME	Times at which dose/risk are to be reported (yr)	1.750E+02	1.750E+02	---	T (8)
TIME	Times at which dose/risk are to be reported (yr)	4.200E+02	4.200E+02	---	T (9)
TIME	Times at which dose/risk are to be reported (yr)	9.700E+02	9.700E+02	---	T (10)
SITE	Precipitation (m/yr)	1.000E+00	1.000E+00	---	PRECIP
SITE	Rainfall Erosion Index	1.600E+02	1.600E+02	---	RAINEROS
PRCZ	Area of primary contamination (m**2)	2.000E+02	1.000E+04	---	AREA
PRCZ	Length parallel to aquifer flow (m)	6.400E+00	1.000E+02	---	LCZPAQ
PRCZ	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
PRCZ	Mass loading of all particulates for release(g/m**3)	1.000E-04	1.000E-04	---	MLFD
PRCZ	DepositionVelocityOfAllParticulates for release(m/s)	1.000E-03	1.000E-03	---	DEPVEL_DUSTT
PRCZ	Respirable particulates as a fraction of total	1.000E+00	1.000E+00	---	RESPFRACPC
PRCZ	DepositionVelocityOfRespirableParticulatesForRe(m/s)	1.000E-03	1.000E-03	---	DEPVEL_DUST
PRCZ	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
PRCZ	Evapotranspiration coefficient	5.000E-01	5.000E-01	---	EVAPTR
PRCZ	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
PRCZ	Slope-length-steepness factor of prim. contamination	4.000E-01	4.000E-01	---	SLPLENSTPPC
PRCZ	Cropping-management factor of primary contamination	3.000E-03	3.000E-03	---	CRPMANGPC
PRCZ	Conservation practice factor of prim. contamination	1.000E+00	1.000E+00	---	CONVRACPC
PRCZ	Fraction of primary contamination that is submerged	0.000E+00	0.000E+00	---	SUBMERGEDF
PRCZ	Thickness of primary contamination (m)	3.000E-01	2.000E+00	---	THICKO

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0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
PRCZ	Soil erodibility factor of contamination (tons/acre)	4.000E-01	4.000E-01	---	ERODIBILITYCZ
PRCZ	Density of primary contamination (g/cm**3)	1.500E+00	1.500E+00	---	DENSCZ
PRCZ	Computed erosion rate of contamination (m/yr)	1.147E-05	1.147E-05	---	VCZ
PRCZ	Total porosity of primary contamination	4.000E-01	4.000E-01	---	TPCZ
PRCZ	Field capacity of primary contamination	3.000E-01	3.000E-01	---	FCCZ
PRCZ	Effective porosity of primary contamination	4.000E-01	4.000E-01	---	EPCZ
PRCZ	Hydraulic conductivity of prime contamination (m/yr)	1.000E+01	1.000E+01	---	HCCZ
PRCZ	b parameter of primary contamination	5.300E+00	5.300E+00	---	BCZ
PRCZ	longitudinal dispersivity of prime contamination (m)	5.000E-02	5.000E-02	---	ALPHALCZ
PRCZ	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
PRCZ	Soil erodibility factor of cover (tons/acre)	not used	4.000E-01	---	ERODIBILITYCV
PRCZ	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
PRCZ	Computed erosion rate of cover material (m/yr)	not used	1.147E-05	---	VCV
PRCZ	Total porosity of the cover material	not used	4.000E-01	---	TPCV
PRCZ	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
PSDR	Sediment Delivery Ratio, SDR				
PSDR	from primary contamination to surface water body	0.000E+00	0.000E+00	---	SDRDWELL
PSDR	from primary contamination to non-leafy veg. field	0.000E+00	0.000E+00	---	SDROF (1)
PSDR	from primary contamination to leafy veg. field	0.000E+00	0.000E+00	---	SDROF (2)
PSDR	from primary contamination to pasture	0.000E+00	0.000E+00	---	SDROF (3)
PSDR	from primary contamination to feed grain field	0.000E+00	0.000E+00	---	SDROF (4)
PSDR	from primary contamination to surface water body	1.000E+00	1.000E+00	---	SDR
AGRI	Areal extent of Agricultural Area 1 (m**2)	1.000E+03	1.000E+03	---	AREAO (1)
AGRI	Fraction of Agri. Area 1 directly over the c.z.	not used	0.000E+00	---	FAREA_PLANT (1)
AGRI	Evapotranspiration coefficient in Agri. Area 1	5.000E-01	5.000E-01	---	EVAPTRN (1)
AGRI	Runoff coefficient in Agricultural Area 1	2.000E-01	2.000E-01	---	RUNOF (1)
AGRI	Mixing depth/plow layer of Agricultural Area 1	1.500E-01	1.500E-01	---	DPTHMIXG (1)
AGRI	Water filled porosity of soil in Agri. Area 1	3.000E-01	3.000E-01	---	TMOF (1)
AGRI	Computed erosion rate of soil in Agri. Area 1	1.147E-05	1.147E-05	---	EROSN (1)
AGRI	Dry Bulk Density of soil in Agricultural Area 1	1.500E+00	1.500E+00	---	RHOB (1)
AGRI	Soil erodibility factor of Agricultural Area 1	4.000E-01	4.000E-01	---	ERODIBILITY (1)
AGRI	Slope-length-steepness factor, Agricultural Area 1	4.000E-01	4.000E-01	---	SLPLENSTP (1)
AGRI	Cropping-management factor of Agricultural Area 1	3.000E-03	3.000E-03	---	CRPMANG (1)
AGRI	Conservation practice factor of Agricultural Area 1	1.000E+00	1.000E+00	---	CONVPRAC (1)
AGRI	Total porosity of soil in Agricultural Area 1	not used	4.000E-01	---	TPOF (1)
AGRI	Areal extent of Agricultural Area 2 (m**2)	1.000E+03	1.000E+03	---	AREAO (2)
AGRI	Fraction of Agri. Area 2 directly over the c.z.	not used	0.000E+00	---	FAREA_PLANT (2)
AGRI	Evapotranspiration coefficient in Agri. Area 2	5.000E-01	5.000E-01	---	EVAPTRN (2)
AGRI	Runoff coefficient in Agricultural Area 2	2.000E-01	2.000E-01	---	RUNOF (2)
AGRI	Mixing depth/plow layer of Agricultural Area 2	1.500E-01	1.500E-01	---	DPTHMIXG (2)
AGRI	Water filled porosity of soil in Agri. Area 2	3.000E-01	3.000E-01	---	TMOF (2)
AGRI	Computed erosion rate of soil in Agri. Area 2	1.147E-05	1.147E-05	---	EROSN (2)
AGRI	Dry Bulk Density of soil in Agricultural Area 2	1.500E+00	1.500E+00	---	RHOB (2)
AGRI	Soil erodibility factor of Agricultural Area 2	4.000E-01	4.000E-01	---	ERODIBILITY (2)
AGRI	Slope-length-steepness factor, Agricultural Area 2	4.000E-01	4.000E-01	---	SLPLENSTP (2)

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0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
AGRI	Cropping-management factor of Agricultural Area 2	3.000E-03	3.000E-03	---	CRPMANG (2)
AGRI	Conservation practice factor of Agricultural Area 2	1.000E+00	1.000E+00	---	CONVPRAC (2)
AGRI	Total porosity of soil in Agricultural Area 2	not used	4.000E-01	---	TPOF (2)
AGRI	Areal extent of Agricultural Area 3 (m**2)	1.000E+04	1.000E+04	---	AREAO (3)
AGRI	Fraction of Agri. Area 3 directly over the c.z.	not used	0.000E+00	---	FAREA_PLANT (3)
AGRI	Evapotranspiration coefficient in Agri. Area 3	5.000E-01	5.000E-01	---	EVAPTRN (3)
AGRI	Runoff coefficient in Agricultural Area 3	2.000E-01	2.000E-01	---	RUNOF (3)
AGRI	Mixing depth/plow layer of Agricultural Area 3	1.500E-01	1.500E-01	---	DPTHMIXG (3)
AGRI	Water filled porosity of soil in Agri. Area 3	3.000E-01	3.000E-01	---	TMOF (3)
AGRI	Computed erosion rate of soil in Agri. Area 3	1.147E-05	1.147E-05	---	EROSN (3)
AGRI	Dry Bulk Density of soil in Agricultural Area 3	1.500E+00	1.500E+00	---	RHOB (3)
AGRI	Soil erodibility factor of Agricultural Area 3	4.000E-01	4.000E-01	---	ERODIBILITY (3)
AGRI	Slope-length-steepness factor, Agricultural Area 3	4.000E-01	4.000E-01	---	SLPLENSTP (3)
AGRI	Cropping-management factor of Agricultural Area 3	3.000E-03	3.000E-03	---	CRPMANG (3)
AGRI	Conservation practice factor of Agricultural Area 3	1.000E+00	1.000E+00	---	CONVPRAC (3)
AGRI	Total porosity of soil in Agricultural Area 3	not used	4.000E-01	---	TPOF (3)
AGRI	Areal extent of Agricultural Area 4 (m**2)	1.000E+04	1.000E+04	---	AREAO (4)
AGRI	Fraction of Agri. Area 4 directly over the c.z.	not used	0.000E+00	---	FAREA_PLANT (4)
AGRI	Evapotranspiration coefficient in Agri. Area 4	5.000E-01	5.000E-01	---	EVAPTRN (4)
AGRI	Runoff coefficient in Agricultural Area 4	2.000E-01	2.000E-01	---	RUNOF (4)
AGRI	Mixing depth/plow layer of Agricultural Area 4	1.500E-01	1.500E-01	---	DPTHMIXG (4)
AGRI	Water filled porosity of soil in Agri. Area 4	3.000E-01	3.000E-01	---	TMOF (4)
AGRI	Computed erosion rate of soil in Agri. Area 4	1.147E-05	1.147E-05	---	EROSN (4)
AGRI	Dry Bulk Density of soil in Agricultural Area 4	1.500E+00	1.500E+00	---	RHOB (4)
AGRI	Soil erodibility factor of Agricultural Area 4	4.000E-01	4.000E-01	---	ERODIBILITY (4)
AGRI	Slope-length-steepness factor, Agricultural Area 4	4.000E-01	4.000E-01	---	SLPLENSTP (4)
AGRI	Cropping-management factor of Agricultural Area 4	3.000E-03	3.000E-03	---	CRPMANG (4)
AGRI	Conservation practice factor of Agricultural Area 4	1.000E+00	1.000E+00	---	CONVPRAC (4)
AGRI	Total porosity of soil in Agricultural Area 4	not used	4.000E-01	---	TPOF (4)
DWEL	Areal extent of Offsite dwelling site (m**2)	1.000E+03	1.000E+03	---	AREAODWELL
DWEL	Evapotranspiration coefficient in dwelling (Off)site	5.000E-01	5.000E-01	---	EVAPTRNDWELL
DWEL	Runoff coefficient in Offsite dwelling site	2.000E-01	2.000E-01	---	RUNOFDWELL
DWEL	Mixing depth of Offsite dwelling site	1.500E-01	1.500E-01	---	DPTHMIXGDWELL
DWEL	Water filled porosity of soil in Offsite Dwelling	3.000E-01	3.000E-01	---	TMOFDWELL
DWEL	Computed erosion rate of soil in Offsite Dwelling	0.000E+00	0.000E+00	---	EROSNDWELL
DWEL	Dry Bulk Density of soil in Offsite dwelling site	1.500E+00	1.500E+00	---	RHODWELL
DWEL	Soil erodibility factor of soil in Dwelling site	0.000E+00	0.000E+00	---	ERODIBILITYDWELL
DWEL	Slope-length-steepness factor of Dwelling site	4.000E-01	4.000E-01	---	SLPLENSTPDWELL
DWEL	Cropping-management factor of Dwelling site	3.000E-03	3.000E-03	---	CRPMANGDWELL
DWEL	Conservation practice factor of Offsite Dwelling sit	1.000E+00	1.000E+00	---	CONVPRACDWELL
DWEL	Total porosity of soil in Offsite Dwelling	not used	4.000E-01	---	TPOFDWELL
AIRT	Dispersion Coefficients; 1 = Pasquill-Gifford	1	1	---	IDISPMOD
AIRT	Population zone; 2 = Urban, 1 = Rural	2	1	---	IZONE
AIRT	Release height, (m)	1.000E+00	1.000E+00	---	AIRRELHT
AIRT	Heat flux for buoyant plume (cal/s),	0.000E+00	0.000E+00	---	HEATFLX

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Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
AIRT	Anemometer height, (m)	1.000E+01	1.000E+01	---	ANH
AIRT	Absolute temperature (Kelvin)	2.850E+02	2.850E+02	---	TABK
AIRT	AM atmospheric mixing height (m)	4.000E+02	4.000E+02	---	AMIX
AIRT	PM atmospheric mixing height (m)	1.600E+03	1.600E+03	---	PMIX
AIRT	Elevation of Agricultural Area 1 above primary cont.	0.000E+00	0.000E+00	---	AGRIELEV(1)
AIRT	Elevation of Agricultural Area 2 above primary cont.	0.000E+00	0.000E+00	---	AGRIELEV(2)
AIRT	Elevation of Agricultural Area 3 above primary cont.	0.000E+00	0.000E+00	---	AGRIELEV(3)
AIRT	Elevation of Agricultural Area 4 above primary cont.	0.000E+00	0.000E+00	---	AGRIELEV(4)
AIRT	Elevation of Dwelling Site relative to primary cont.	0.000E+00	0.000E+00	---	DWELLELEV
AIRT	Elevation of Surf.Wtr body relative to primary cont.	0.000E+00	0.000E+00	---	SWELEV
AIRT	Joint frequency Meteorological data:				
AIRT	Upper limit for windspeed class 1 (m/s)	8.900E-01	8.900E-01	---	WINDSPEED(1)
AIRT	Upper limit for windspeed class 2 (m/s)	2.460E+00	2.460E+00	---	WINDSPEED(2)
AIRT	Upper limit for windspeed class 3 (m/s)	4.470E+00	4.470E+00	---	WINDSPEED(3)
AIRT	Upper limit for windspeed class 4 (m/s)	6.930E+00	6.930E+00	---	WINDSPEED(4)
AIRT	Upper limit for windspeed class 5 (m/s)	9.610E+00	9.610E+00	---	WINDSPEED(5)
AIRT	Upper limit for windspeed class 6 (m/s)	1.252E+01	1.252E+01	---	WINDSPEED(6)
AIRT	Joint Frequency in N Sector				
AIRT	for wind speed class 1 and stability class A	3.600E-04	0.000E+00	---	DFREQ(1,1,1)
AIRT	for wind speed class 1 and stability class B	1.250E-03	0.000E+00	---	DFREQ(1,2,1)
AIRT	for wind speed class 1 and stability class C	1.210E-03	0.000E+00	---	DFREQ(1,3,1)
AIRT	for wind speed class 1 and stability class D	1.570E-03	1.000E-01	---	DFREQ(1,4,1)
AIRT	for wind speed class 1 and stability class E	9.700E-03	2.000E-01	---	DFREQ(1,5,1)
AIRT	for wind speed class 1 and stability class F	0.000E+00	7.000E-01	---	DFREQ(1,6,1)
AIRT	Joint Frequency in N Sector				
AIRT	for wind speed class 2 and stability class A	1.800E-04	0.000E+00	---	DFREQ(2,1,1)
AIRT	for wind speed class 2 and stability class B	1.670E-03	0.000E+00	---	DFREQ(2,2,1)
AIRT	for wind speed class 2 and stability class C	2.080E-03	0.000E+00	---	DFREQ(2,3,1)
AIRT	for wind speed class 2 and stability class D	5.760E-03	0.000E+00	---	DFREQ(2,4,1)
AIRT	for wind speed class 2 and stability class E	2.247E-02	0.000E+00	---	DFREQ(2,5,1)
AIRT	for wind speed class 2 and stability class F	0.000E+00	0.000E+00	---	DFREQ(2,6,1)
AIRT	Joint Frequency in N Sector				
AIRT	for wind speed class 3 and stability class A	0.000E+00	0.000E+00	---	DFREQ(3,1,1)
AIRT	for wind speed class 3 and stability class B	1.460E-03	0.000E+00	---	DFREQ(3,2,1)
AIRT	for wind speed class 3 and stability class C	5.160E-03	0.000E+00	---	DFREQ(3,3,1)
AIRT	for wind speed class 3 and stability class D	1.496E-02	0.000E+00	---	DFREQ(3,4,1)
AIRT	for wind speed class 3 and stability class E	9.960E-03	0.000E+00	---	DFREQ(3,5,1)
AIRT	for wind speed class 3 and stability class F	0.000E+00	0.000E+00	---	DFREQ(3,6,1)

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Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
AIRT	Joint Frequency in N Sector				
AIRT	for wind speed class 4 and stability class A	0.000E+00	0.000E+00	---	DFREQ (4,1,1)
AIRT	for wind speed class 4 and stability class B	0.000E+00	0.000E+00	---	DFREQ (4,2,1)
AIRT	for wind speed class 4 and stability class C	1.070E-03	0.000E+00	---	DFREQ (4,3,1)
AIRT	for wind speed class 4 and stability class D	2.336E-02	0.000E+00	---	DFREQ (4,4,1)
AIRT	for wind speed class 4 and stability class E	0.000E+00	0.000E+00	---	DFREQ (4,5,1)
AIRT	for wind speed class 4 and stability class F	0.000E+00	0.000E+00	---	DFREQ (4,6,1)
AIRT	Joint Frequency in N Sector				
AIRT	for wind speed class 5 and stability class A	0.000E+00	0.000E+00	---	DFREQ (5,1,1)
AIRT	for wind speed class 5 and stability class B	0.000E+00	0.000E+00	---	DFREQ (5,2,1)
AIRT	for wind speed class 5 and stability class C	7.000E-05	0.000E+00	---	DFREQ (5,3,1)
AIRT	for wind speed class 5 and stability class D	3.630E-03	0.000E+00	---	DFREQ (5,4,1)
AIRT	for wind speed class 5 and stability class E	0.000E+00	0.000E+00	---	DFREQ (5,5,1)
AIRT	for wind speed class 5 and stability class F	0.000E+00	0.000E+00	---	DFREQ (5,6,1)
AIRT	Joint Frequency in N Sector				
AIRT	for wind speed class 6 and stability class A	0.000E+00	0.000E+00	---	DFREQ (6,1,1)
AIRT	for wind speed class 6 and stability class B	0.000E+00	0.000E+00	---	DFREQ (6,2,1)
AIRT	for wind speed class 6 and stability class C	0.000E+00	0.000E+00	---	DFREQ (6,3,1)
AIRT	for wind speed class 6 and stability class D	5.000E-04	0.000E+00	---	DFREQ (6,4,1)
AIRT	for wind speed class 6 and stability class E	0.000E+00	0.000E+00	---	DFREQ (6,5,1)
AIRT	for wind speed class 6 and stability class F	0.000E+00	0.000E+00	---	DFREQ (6,6,1)
AIRT	Joint Frequency in NNE Sector				
AIRT	for wind speed class 1 and stability class A	5.500E-04	0.000E+00	---	DFREQ (1,1,2)
AIRT	for wind speed class 1 and stability class B	1.060E-03	0.000E+00	---	DFREQ (1,2,2)
AIRT	for wind speed class 1 and stability class C	5.700E-04	0.000E+00	---	DFREQ (1,3,2)
AIRT	for wind speed class 1 and stability class D	9.500E-04	1.000E-01	---	DFREQ (1,4,2)
AIRT	for wind speed class 1 and stability class E	5.760E-03	2.000E-01	---	DFREQ (1,5,2)
AIRT	for wind speed class 1 and stability class F	0.000E+00	7.000E-01	---	DFREQ (1,6,2)
AIRT	Joint Frequency in NNE Sector				
AIRT	for wind speed class 2 and stability class A	2.300E-04	0.000E+00	---	DFREQ (2,1,2)
AIRT	for wind speed class 2 and stability class B	1.280E-03	0.000E+00	---	DFREQ (2,2,2)
AIRT	for wind speed class 2 and stability class C	2.380E-03	0.000E+00	---	DFREQ (2,3,2)
AIRT	for wind speed class 2 and stability class D	3.630E-03	0.000E+00	---	DFREQ (2,4,2)
AIRT	for wind speed class 2 and stability class E	1.441E-02	0.000E+00	---	DFREQ (2,5,2)
AIRT	for wind speed class 2 and stability class F	0.000E+00	0.000E+00	---	DFREQ (2,6,2)
AIRT	Joint Frequency in NNE Sector				
AIRT	for wind speed class 3 and stability class A	0.000E+00	0.000E+00	---	DFREQ (3,1,2)
AIRT	for wind speed class 3 and stability class B	1.530E-03	0.000E+00	---	DFREQ (3,2,2)
AIRT	for wind speed class 3 and stability class C	6.580E-03	0.000E+00	---	DFREQ (3,3,2)
AIRT	for wind speed class 3 and stability class D	1.341E-02	0.000E+00	---	DFREQ (3,4,2)
AIRT	for wind speed class 3 and stability class E	1.119E-02	0.000E+00	---	DFREQ (3,5,2)
AIRT	for wind speed class 3 and stability class F	0.000E+00	0.000E+00	---	DFREQ (3,6,2)

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Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
AIRT	Joint Frequency in NNE Sector				
AIRT	for wind speed class 4 and stability class A	0.000E+00	0.000E+00	---	DFREQ (4,1,2)
AIRT	for wind speed class 4 and stability class B	0.000E+00	0.000E+00	---	DFREQ (4,2,2)
AIRT	for wind speed class 4 and stability class C	1.640E-03	0.000E+00	---	DFREQ (4,3,2)
AIRT	for wind speed class 4 and stability class D	2.683E-02	0.000E+00	---	DFREQ (4,4,2)
AIRT	for wind speed class 4 and stability class E	0.000E+00	0.000E+00	---	DFREQ (4,5,2)
AIRT	for wind speed class 4 and stability class F	0.000E+00	0.000E+00	---	DFREQ (4,6,2)
AIRT	Joint Frequency in NNE Sector				
AIRT	for wind speed class 5 and stability class A	0.000E+00	0.000E+00	---	DFREQ (5,1,2)
AIRT	for wind speed class 5 and stability class B	0.000E+00	0.000E+00	---	DFREQ (5,2,2)
AIRT	for wind speed class 5 and stability class C	1.400E-04	0.000E+00	---	DFREQ (5,3,2)
AIRT	for wind speed class 5 and stability class D	5.390E-03	0.000E+00	---	DFREQ (5,4,2)
AIRT	for wind speed class 5 and stability class E	0.000E+00	0.000E+00	---	DFREQ (5,5,2)
AIRT	for wind speed class 5 and stability class F	0.000E+00	0.000E+00	---	DFREQ (5,6,2)
AIRT	Joint Frequency in NNE Sector				
AIRT	for wind speed class 6 and stability class A	0.000E+00	0.000E+00	---	DFREQ (6,1,2)
AIRT	for wind speed class 6 and stability class B	0.000E+00	0.000E+00	---	DFREQ (6,2,2)
AIRT	for wind speed class 6 and stability class C	0.000E+00	0.000E+00	---	DFREQ (6,3,2)
AIRT	for wind speed class 6 and stability class D	6.400E-04	0.000E+00	---	DFREQ (6,4,2)
AIRT	for wind speed class 6 and stability class E	0.000E+00	0.000E+00	---	DFREQ (6,5,2)
AIRT	for wind speed class 6 and stability class F	0.000E+00	0.000E+00	---	DFREQ (6,6,2)
AIRT	Joint Frequency in NE Sector				
AIRT	for wind speed class 1 and stability class A	5.200E-04	0.000E+00	---	DFREQ (1,1,3)
AIRT	for wind speed class 1 and stability class B	1.570E-03	0.000E+00	---	DFREQ (1,2,3)
AIRT	for wind speed class 1 and stability class C	8.900E-04	0.000E+00	---	DFREQ (1,3,3)
AIRT	for wind speed class 1 and stability class D	1.200E-03	1.000E-01	---	DFREQ (1,4,3)
AIRT	for wind speed class 1 and stability class E	5.920E-03	2.000E-01	---	DFREQ (1,5,3)
AIRT	for wind speed class 1 and stability class F	0.000E+00	7.000E-01	---	DFREQ (1,6,3)
AIRT	Joint Frequency in NE Sector				
AIRT	for wind speed class 2 and stability class A	2.500E-04	0.000E+00	---	DFREQ (2,1,3)
AIRT	for wind speed class 2 and stability class B	1.600E-03	0.000E+00	---	DFREQ (2,2,3)
AIRT	for wind speed class 2 and stability class C	1.740E-03	0.000E+00	---	DFREQ (2,3,3)
AIRT	for wind speed class 2 and stability class D	3.610E-03	0.000E+00	---	DFREQ (2,4,3)
AIRT	for wind speed class 2 and stability class E	9.250E-03	0.000E+00	---	DFREQ (2,5,3)
AIRT	for wind speed class 2 and stability class F	0.000E+00	0.000E+00	---	DFREQ (2,6,3)
AIRT	Joint Frequency in NE Sector				
AIRT	for wind speed class 3 and stability class A	0.000E+00	0.000E+00	---	DFREQ (3,1,3)
AIRT	for wind speed class 3 and stability class B	1.280E-03	0.000E+00	---	DFREQ (3,2,3)
AIRT	for wind speed class 3 and stability class C	4.160E-03	0.000E+00	---	DFREQ (3,3,3)
AIRT	for wind speed class 3 and stability class D	5.730E-03	0.000E+00	---	DFREQ (3,4,3)
AIRT	for wind speed class 3 and stability class E	5.710E-03	0.000E+00	---	DFREQ (3,5,3)
AIRT	for wind speed class 3 and stability class F	0.000E+00	0.000E+00	---	DFREQ (3,6,3)

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AIRT	Joint Frequency in NE Sector				
AIRT	for wind speed class 4 and stability class A	0.000E+00	0.000E+00	---	DFREQ (4,1,3)
AIRT	for wind speed class 4 and stability class B	0.000E+00	0.000E+00	---	DFREQ (4,2,3)
AIRT	for wind speed class 4 and stability class C	1.230E-03	0.000E+00	---	DFREQ (4,3,3)
AIRT	for wind speed class 4 and stability class D	1.343E-02	0.000E+00	---	DFREQ (4,4,3)
AIRT	for wind speed class 4 and stability class E	0.000E+00	0.000E+00	---	DFREQ (4,5,3)
AIRT	for wind speed class 4 and stability class F	0.000E+00	0.000E+00	---	DFREQ (4,6,3)
AIRT	Joint Frequency in NE Sector				
AIRT	for wind speed class 5 and stability class A	0.000E+00	0.000E+00	---	DFREQ (5,1,3)
AIRT	for wind speed class 5 and stability class B	0.000E+00	0.000E+00	---	DFREQ (5,2,3)
AIRT	for wind speed class 5 and stability class C	1.400E-04	0.000E+00	---	DFREQ (5,3,3)
AIRT	for wind speed class 5 and stability class D	3.380E-03	0.000E+00	---	DFREQ (5,4,3)
AIRT	for wind speed class 5 and stability class E	0.000E+00	0.000E+00	---	DFREQ (5,5,3)
AIRT	for wind speed class 5 and stability class F	0.000E+00	0.000E+00	---	DFREQ (5,6,3)
AIRT	Joint Frequency in NE Sector				
AIRT	for wind speed class 6 and stability class A	0.000E+00	0.000E+00	---	DFREQ (6,1,3)
AIRT	for wind speed class 6 and stability class B	0.000E+00	0.000E+00	---	DFREQ (6,2,3)
AIRT	for wind speed class 6 and stability class C	7.000E-05	0.000E+00	---	DFREQ (6,3,3)
AIRT	for wind speed class 6 and stability class D	8.000E-04	0.000E+00	---	DFREQ (6,4,3)
AIRT	for wind speed class 6 and stability class E	0.000E+00	0.000E+00	---	DFREQ (6,5,3)
AIRT	for wind speed class 6 and stability class F	0.000E+00	0.000E+00	---	DFREQ (6,6,3)
AIRT	Joint Frequency in ENE Sector				
AIRT	for wind speed class 1 and stability class A	3.400E-04	0.000E+00	---	DFREQ (1,1,4)
AIRT	for wind speed class 1 and stability class B	6.200E-04	0.000E+00	---	DFREQ (1,2,4)
AIRT	for wind speed class 1 and stability class C	3.400E-04	0.000E+00	---	DFREQ (1,3,4)
AIRT	for wind speed class 1 and stability class D	3.700E-04	1.000E-01	---	DFREQ (1,4,4)
AIRT	for wind speed class 1 and stability class E	2.210E-03	2.000E-01	---	DFREQ (1,5,4)
AIRT	for wind speed class 1 and stability class F	0.000E+00	7.000E-01	---	DFREQ (1,6,4)
AIRT	Joint Frequency in ENE Sector				
AIRT	for wind speed class 2 and stability class A	1.600E-04	0.000E+00	---	DFREQ (2,1,4)
AIRT	for wind speed class 2 and stability class B	1.190E-03	0.000E+00	---	DFREQ (2,2,4)
AIRT	for wind speed class 2 and stability class C	1.120E-03	0.000E+00	---	DFREQ (2,3,4)
AIRT	for wind speed class 2 and stability class D	1.740E-03	0.000E+00	---	DFREQ (2,4,4)
AIRT	for wind speed class 2 and stability class E	4.660E-03	0.000E+00	---	DFREQ (2,5,4)
AIRT	for wind speed class 2 and stability class F	0.000E+00	0.000E+00	---	DFREQ (2,6,4)
AIRT	Joint Frequency in ENE Sector				
AIRT	for wind speed class 3 and stability class A	0.000E+00	0.000E+00	---	DFREQ (3,1,4)
AIRT	for wind speed class 3 and stability class B	8.000E-04	0.000E+00	---	DFREQ (3,2,4)
AIRT	for wind speed class 3 and stability class C	3.490E-03	0.000E+00	---	DFREQ (3,3,4)
AIRT	for wind speed class 3 and stability class D	3.970E-03	0.000E+00	---	DFREQ (3,4,4)
AIRT	for wind speed class 3 and stability class E	2.900E-03	0.000E+00	---	DFREQ (3,5,4)
AIRT	for wind speed class 3 and stability class F	0.000E+00	0.000E+00	---	DFREQ (3,6,4)

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0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
AIRT	Joint Frequency in ENE Sector				
AIRT	for wind speed class 4 and stability class A	0.000E+00	0.000E+00	---	DFREQ (4,1,4)
AIRT	for wind speed class 4 and stability class B	0.000E+00	0.000E+00	---	DFREQ (4,2,4)
AIRT	for wind speed class 4 and stability class C	7.500E-04	0.000E+00	---	DFREQ (4,3,4)
AIRT	for wind speed class 4 and stability class D	1.076E-02	0.000E+00	---	DFREQ (4,4,4)
AIRT	for wind speed class 4 and stability class E	0.000E+00	0.000E+00	---	DFREQ (4,5,4)
AIRT	for wind speed class 4 and stability class F	0.000E+00	0.000E+00	---	DFREQ (4,6,4)
AIRT	Joint Frequency in ENE Sector				
AIRT	for wind speed class 5 and stability class A	0.000E+00	0.000E+00	---	DFREQ (5,1,4)
AIRT	for wind speed class 5 and stability class B	0.000E+00	0.000E+00	---	DFREQ (5,2,4)
AIRT	for wind speed class 5 and stability class C	0.000E+00	0.000E+00	---	DFREQ (5,3,4)
AIRT	for wind speed class 5 and stability class D	2.920E-03	0.000E+00	---	DFREQ (5,4,4)
AIRT	for wind speed class 5 and stability class E	0.000E+00	0.000E+00	---	DFREQ (5,5,4)
AIRT	for wind speed class 5 and stability class F	0.000E+00	0.000E+00	---	DFREQ (5,6,4)
AIRT	Joint Frequency in ENE Sector				
AIRT	for wind speed class 6 and stability class A	0.000E+00	0.000E+00	---	DFREQ (6,1,4)
AIRT	for wind speed class 6 and stability class B	0.000E+00	0.000E+00	---	DFREQ (6,2,4)
AIRT	for wind speed class 6 and stability class C	2.000E-05	0.000E+00	---	DFREQ (6,3,4)
AIRT	for wind speed class 6 and stability class D	1.530E-03	0.000E+00	---	DFREQ (6,4,4)
AIRT	for wind speed class 6 and stability class E	0.000E+00	0.000E+00	---	DFREQ (6,5,4)
AIRT	for wind speed class 6 and stability class F	0.000E+00	0.000E+00	---	DFREQ (6,6,4)
AIRT	Joint Frequency in E Sector				
AIRT	for wind speed class 1 and stability class A	4.300E-04	0.000E+00	---	DFREQ (1,1,5)
AIRT	for wind speed class 1 and stability class B	7.200E-04	0.000E+00	---	DFREQ (1,2,5)
AIRT	for wind speed class 1 and stability class C	6.200E-04	0.000E+00	---	DFREQ (1,3,5)
AIRT	for wind speed class 1 and stability class D	9.900E-04	1.000E-01	---	DFREQ (1,4,5)
AIRT	for wind speed class 1 and stability class E	3.540E-03	2.000E-01	---	DFREQ (1,5,5)
AIRT	for wind speed class 1 and stability class F	0.000E+00	7.000E-01	---	DFREQ (1,6,5)
AIRT	Joint Frequency in E Sector				
AIRT	for wind speed class 2 and stability class A	1.100E-04	0.000E+00	---	DFREQ (2,1,5)
AIRT	for wind speed class 2 and stability class B	1.160E-03	0.000E+00	---	DFREQ (2,2,5)
AIRT	for wind speed class 2 and stability class C	1.260E-03	0.000E+00	---	DFREQ (2,3,5)
AIRT	for wind speed class 2 and stability class D	2.510E-03	0.000E+00	---	DFREQ (2,4,5)
AIRT	for wind speed class 2 and stability class E	6.050E-03	0.000E+00	---	DFREQ (2,5,5)
AIRT	for wind speed class 2 and stability class F	0.000E+00	0.000E+00	---	DFREQ (2,6,5)
AIRT	Joint Frequency in E Sector				
AIRT	for wind speed class 3 and stability class A	0.000E+00	0.000E+00	---	DFREQ (3,1,5)
AIRT	for wind speed class 3 and stability class B	6.400E-04	0.000E+00	---	DFREQ (3,2,5)
AIRT	for wind speed class 3 and stability class C	2.330E-03	0.000E+00	---	DFREQ (3,3,5)
AIRT	for wind speed class 3 and stability class D	4.220E-03	0.000E+00	---	DFREQ (3,4,5)
AIRT	for wind speed class 3 and stability class E	2.830E-03	0.000E+00	---	DFREQ (3,5,5)
AIRT	for wind speed class 3 and stability class F	0.000E+00	0.000E+00	---	DFREQ (3,6,5)

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File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
AIRT	Joint Frequency in E Sector				
AIRT	for wind speed class 4 and stability class A	0.000E+00	0.000E+00	---	DFREQ (4,1,5)
AIRT	for wind speed class 4 and stability class B	0.000E+00	0.000E+00	---	DFREQ (4,2,5)
AIRT	for wind speed class 4 and stability class C	5.700E-04	0.000E+00	---	DFREQ (4,3,5)
AIRT	for wind speed class 4 and stability class D	8.630E-03	0.000E+00	---	DFREQ (4,4,5)
AIRT	for wind speed class 4 and stability class E	0.000E+00	0.000E+00	---	DFREQ (4,5,5)
AIRT	for wind speed class 4 and stability class F	0.000E+00	0.000E+00	---	DFREQ (4,6,5)
AIRT	Joint Frequency in E Sector				
AIRT	for wind speed class 5 and stability class A	0.000E+00	0.000E+00	---	DFREQ (5,1,5)
AIRT	for wind speed class 5 and stability class B	0.000E+00	0.000E+00	---	DFREQ (5,2,5)
AIRT	for wind speed class 5 and stability class C	7.000E-05	0.000E+00	---	DFREQ (5,3,5)
AIRT	for wind speed class 5 and stability class D	3.400E-03	0.000E+00	---	DFREQ (5,4,5)
AIRT	for wind speed class 5 and stability class E	0.000E+00	0.000E+00	---	DFREQ (5,5,5)
AIRT	for wind speed class 5 and stability class F	0.000E+00	0.000E+00	---	DFREQ (5,6,5)
AIRT	Joint Frequency in E Sector				
AIRT	for wind speed class 6 and stability class A	0.000E+00	0.000E+00	---	DFREQ (6,1,5)
AIRT	for wind speed class 6 and stability class B	0.000E+00	0.000E+00	---	DFREQ (6,2,5)
AIRT	for wind speed class 6 and stability class C	0.000E+00	0.000E+00	---	DFREQ (6,3,5)
AIRT	for wind speed class 6 and stability class D	2.150E-03	0.000E+00	---	DFREQ (6,4,5)
AIRT	for wind speed class 6 and stability class E	0.000E+00	0.000E+00	---	DFREQ (6,5,5)
AIRT	for wind speed class 6 and stability class F	0.000E+00	0.000E+00	---	DFREQ (6,6,5)
AIRT	Joint Frequency in ESE Sector				
AIRT	for wind speed class 1 and stability class A	3.000E-04	0.000E+00	---	DFREQ (1,1,6)
AIRT	for wind speed class 1 and stability class B	9.800E-04	0.000E+00	---	DFREQ (1,2,6)
AIRT	for wind speed class 1 and stability class C	3.700E-04	0.000E+00	---	DFREQ (1,3,6)
AIRT	for wind speed class 1 and stability class D	9.000E-04	1.000E-01	---	DFREQ (1,4,6)
AIRT	for wind speed class 1 and stability class E	2.610E-03	2.000E-01	---	DFREQ (1,5,6)
AIRT	for wind speed class 1 and stability class F	0.000E+00	7.000E-01	---	DFREQ (1,6,6)
AIRT	Joint Frequency in ESE Sector				
AIRT	for wind speed class 2 and stability class A	2.100E-04	0.000E+00	---	DFREQ (2,1,6)
AIRT	for wind speed class 2 and stability class B	1.000E-03	0.000E+00	---	DFREQ (2,2,6)
AIRT	for wind speed class 2 and stability class C	1.140E-03	0.000E+00	---	DFREQ (2,3,6)
AIRT	for wind speed class 2 and stability class D	2.630E-03	0.000E+00	---	DFREQ (2,4,6)
AIRT	for wind speed class 2 and stability class E	6.170E-03	0.000E+00	---	DFREQ (2,5,6)
AIRT	for wind speed class 2 and stability class F	0.000E+00	0.000E+00	---	DFREQ (2,6,6)
AIRT	Joint Frequency in ESE Sector				
AIRT	for wind speed class 3 and stability class A	0.000E+00	0.000E+00	---	DFREQ (3,1,6)
AIRT	for wind speed class 3 and stability class B	6.900E-04	0.000E+00	---	DFREQ (3,2,6)
AIRT	for wind speed class 3 and stability class C	2.970E-03	0.000E+00	---	DFREQ (3,3,6)
AIRT	for wind speed class 3 and stability class D	7.400E-03	0.000E+00	---	DFREQ (3,4,6)
AIRT	for wind speed class 3 and stability class E	5.120E-03	0.000E+00	---	DFREQ (3,5,6)
AIRT	for wind speed class 3 and stability class F	0.000E+00	0.000E+00	---	DFREQ (3,6,6)

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Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
AIRT	Joint Frequency in ESE Sector				
AIRT	for wind speed class 4 and stability class A	0.000E+00	0.000E+00	---	DFREQ (4,1,6)
AIRT	for wind speed class 4 and stability class B	0.000E+00	0.000E+00	---	DFREQ (4,2,6)
AIRT	for wind speed class 4 and stability class C	1.030E-03	0.000E+00	---	DFREQ (4,3,6)
AIRT	for wind speed class 4 and stability class D	1.905E-02	0.000E+00	---	DFREQ (4,4,6)
AIRT	for wind speed class 4 and stability class E	0.000E+00	0.000E+00	---	DFREQ (4,5,6)
AIRT	for wind speed class 4 and stability class F	0.000E+00	0.000E+00	---	DFREQ (4,6,6)
AIRT	Joint Frequency in ESE Sector				
AIRT	for wind speed class 5 and stability class A	0.000E+00	0.000E+00	---	DFREQ (5,1,6)
AIRT	for wind speed class 5 and stability class B	0.000E+00	0.000E+00	---	DFREQ (5,2,6)
AIRT	for wind speed class 5 and stability class C	9.000E-05	0.000E+00	---	DFREQ (5,3,6)
AIRT	for wind speed class 5 and stability class D	1.156E-02	0.000E+00	---	DFREQ (5,4,6)
AIRT	for wind speed class 5 and stability class E	0.000E+00	0.000E+00	---	DFREQ (5,5,6)
AIRT	for wind speed class 5 and stability class F	0.000E+00	0.000E+00	---	DFREQ (5,6,6)
AIRT	Joint Frequency in ESE Sector				
AIRT	for wind speed class 6 and stability class A	0.000E+00	0.000E+00	---	DFREQ (6,1,6)
AIRT	for wind speed class 6 and stability class B	0.000E+00	0.000E+00	---	DFREQ (6,2,6)
AIRT	for wind speed class 6 and stability class C	5.000E-05	0.000E+00	---	DFREQ (6,3,6)
AIRT	for wind speed class 6 and stability class D	4.660E-03	0.000E+00	---	DFREQ (6,4,6)
AIRT	for wind speed class 6 and stability class E	0.000E+00	0.000E+00	---	DFREQ (6,5,6)
AIRT	for wind speed class 6 and stability class F	0.000E+00	0.000E+00	---	DFREQ (6,6,6)
AIRT	Joint Frequency in SE Sector				
AIRT	for wind speed class 1 and stability class A	5.200E-04	0.000E+00	---	DFREQ (1,1,7)
AIRT	for wind speed class 1 and stability class B	1.560E-03	0.000E+00	---	DFREQ (1,2,7)
AIRT	for wind speed class 1 and stability class C	7.800E-04	0.000E+00	---	DFREQ (1,3,7)
AIRT	for wind speed class 1 and stability class D	1.350E-03	1.000E-01	---	DFREQ (1,4,7)
AIRT	for wind speed class 1 and stability class E	5.350E-03	2.000E-01	---	DFREQ (1,5,7)
AIRT	for wind speed class 1 and stability class F	0.000E+00	7.000E-01	---	DFREQ (1,6,7)
AIRT	Joint Frequency in SE Sector				
AIRT	for wind speed class 2 and stability class A	3.000E-04	0.000E+00	---	DFREQ (2,1,7)
AIRT	for wind speed class 2 and stability class B	1.480E-03	0.000E+00	---	DFREQ (2,2,7)
AIRT	for wind speed class 2 and stability class C	2.310E-03	0.000E+00	---	DFREQ (2,3,7)
AIRT	for wind speed class 2 and stability class D	4.000E-03	0.000E+00	---	DFREQ (2,4,7)
AIRT	for wind speed class 2 and stability class E	1.242E-02	0.000E+00	---	DFREQ (2,5,7)
AIRT	for wind speed class 2 and stability class F	0.000E+00	0.000E+00	---	DFREQ (2,6,7)
AIRT	Joint Frequency in SE Sector				
AIRT	for wind speed class 3 and stability class A	0.000E+00	0.000E+00	---	DFREQ (3,1,7)
AIRT	for wind speed class 3 and stability class B	9.800E-04	0.000E+00	---	DFREQ (3,2,7)
AIRT	for wind speed class 3 and stability class C	4.000E-03	0.000E+00	---	DFREQ (3,3,7)
AIRT	for wind speed class 3 and stability class D	1.124E-02	0.000E+00	---	DFREQ (3,4,7)
AIRT	for wind speed class 3 and stability class E	6.810E-03	0.000E+00	---	DFREQ (3,5,7)
AIRT	for wind speed class 3 and stability class F	0.000E+00	0.000E+00	---	DFREQ (3,6,7)

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Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
AIRT	Joint Frequency in SE Sector				
AIRT	for wind speed class 4 and stability class A	0.000E+00	0.000E+00	---	DFREQ (4,1,7)
AIRT	for wind speed class 4 and stability class B	0.000E+00	0.000E+00	---	DFREQ (4,2,7)
AIRT	for wind speed class 4 and stability class C	9.100E-04	0.000E+00	---	DFREQ (4,3,7)
AIRT	for wind speed class 4 and stability class D	3.298E-02	0.000E+00	---	DFREQ (4,4,7)
AIRT	for wind speed class 4 and stability class E	0.000E+00	0.000E+00	---	DFREQ (4,5,7)
AIRT	for wind speed class 4 and stability class F	0.000E+00	0.000E+00	---	DFREQ (4,6,7)
AIRT	Joint Frequency in SE Sector				
AIRT	for wind speed class 5 and stability class A	0.000E+00	0.000E+00	---	DFREQ (5,1,7)
AIRT	for wind speed class 5 and stability class B	0.000E+00	0.000E+00	---	DFREQ (5,2,7)
AIRT	for wind speed class 5 and stability class C	1.100E-04	0.000E+00	---	DFREQ (5,3,7)
AIRT	for wind speed class 5 and stability class D	1.585E-02	0.000E+00	---	DFREQ (5,4,7)
AIRT	for wind speed class 5 and stability class E	0.000E+00	0.000E+00	---	DFREQ (5,5,7)
AIRT	for wind speed class 5 and stability class F	0.000E+00	0.000E+00	---	DFREQ (5,6,7)
AIRT	Joint Frequency in SE Sector				
AIRT	for wind speed class 6 and stability class A	0.000E+00	0.000E+00	---	DFREQ (6,1,7)
AIRT	for wind speed class 6 and stability class B	0.000E+00	0.000E+00	---	DFREQ (6,2,7)
AIRT	for wind speed class 6 and stability class C	5.000E-05	0.000E+00	---	DFREQ (6,3,7)
AIRT	for wind speed class 6 and stability class D	4.570E-03	0.000E+00	---	DFREQ (6,4,7)
AIRT	for wind speed class 6 and stability class E	0.000E+00	0.000E+00	---	DFREQ (6,5,7)
AIRT	for wind speed class 6 and stability class F	0.000E+00	0.000E+00	---	DFREQ (6,6,7)
AIRT	Joint Frequency in SSE Sector				
AIRT	for wind speed class 1 and stability class A	1.400E-04	0.000E+00	---	DFREQ (1,1,8)
AIRT	for wind speed class 1 and stability class B	7.000E-04	0.000E+00	---	DFREQ (1,2,8)
AIRT	for wind speed class 1 and stability class C	2.800E-04	0.000E+00	---	DFREQ (1,3,8)
AIRT	for wind speed class 1 and stability class D	5.500E-04	1.000E-01	---	DFREQ (1,4,8)
AIRT	for wind speed class 1 and stability class E	1.760E-03	2.000E-01	---	DFREQ (1,5,8)
AIRT	for wind speed class 1 and stability class F	0.000E+00	7.000E-01	---	DFREQ (1,6,8)
AIRT	Joint Frequency in SSE Sector				
AIRT	for wind speed class 2 and stability class A	9.000E-05	0.000E+00	---	DFREQ (2,1,8)
AIRT	for wind speed class 2 and stability class B	9.800E-04	0.000E+00	---	DFREQ (2,2,8)
AIRT	for wind speed class 2 and stability class C	6.600E-04	0.000E+00	---	DFREQ (2,3,8)
AIRT	for wind speed class 2 and stability class D	2.530E-03	0.000E+00	---	DFREQ (2,4,8)
AIRT	for wind speed class 2 and stability class E	4.360E-03	0.000E+00	---	DFREQ (2,5,8)
AIRT	for wind speed class 2 and stability class F	0.000E+00	0.000E+00	---	DFREQ (2,6,8)
AIRT	Joint Frequency in SSE Sector				
AIRT	for wind speed class 3 and stability class A	0.000E+00	0.000E+00	---	DFREQ (3,1,8)
AIRT	for wind speed class 3 and stability class B	5.500E-04	0.000E+00	---	DFREQ (3,2,8)
AIRT	for wind speed class 3 and stability class C	2.330E-03	0.000E+00	---	DFREQ (3,3,8)
AIRT	for wind speed class 3 and stability class D	6.970E-03	0.000E+00	---	DFREQ (3,4,8)
AIRT	for wind speed class 3 and stability class E	5.050E-03	0.000E+00	---	DFREQ (3,5,8)
AIRT	for wind speed class 3 and stability class F	0.000E+00	0.000E+00	---	DFREQ (3,6,8)

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Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
AIRT	Joint Frequency in SSE Sector				
AIRT	for wind speed class 4 and stability class A	0.000E+00	0.000E+00	---	DFREQ (4,1,8)
AIRT	for wind speed class 4 and stability class B	0.000E+00	0.000E+00	---	DFREQ (4,2,8)
AIRT	for wind speed class 4 and stability class C	1.160E-03	0.000E+00	---	DFREQ (4,3,8)
AIRT	for wind speed class 4 and stability class D	1.907E-02	0.000E+00	---	DFREQ (4,4,8)
AIRT	for wind speed class 4 and stability class E	0.000E+00	0.000E+00	---	DFREQ (4,5,8)
AIRT	for wind speed class 4 and stability class F	0.000E+00	0.000E+00	---	DFREQ (4,6,8)
AIRT	Joint Frequency in SSE Sector				
AIRT	for wind speed class 5 and stability class A	0.000E+00	0.000E+00	---	DFREQ (5,1,8)
AIRT	for wind speed class 5 and stability class B	0.000E+00	0.000E+00	---	DFREQ (5,2,8)
AIRT	for wind speed class 5 and stability class C	1.100E-04	0.000E+00	---	DFREQ (5,3,8)
AIRT	for wind speed class 5 and stability class D	8.840E-03	0.000E+00	---	DFREQ (5,4,8)
AIRT	for wind speed class 5 and stability class E	0.000E+00	0.000E+00	---	DFREQ (5,5,8)
AIRT	for wind speed class 5 and stability class F	0.000E+00	0.000E+00	---	DFREQ (5,6,8)
AIRT	Joint Frequency in SSE Sector				
AIRT	for wind speed class 6 and stability class A	0.000E+00	0.000E+00	---	DFREQ (6,1,8)
AIRT	for wind speed class 6 and stability class B	0.000E+00	0.000E+00	---	DFREQ (6,2,8)
AIRT	for wind speed class 6 and stability class C	0.000E+00	0.000E+00	---	DFREQ (6,3,8)
AIRT	for wind speed class 6 and stability class D	2.080E-03	0.000E+00	---	DFREQ (6,4,8)
AIRT	for wind speed class 6 and stability class E	0.000E+00	0.000E+00	---	DFREQ (6,5,8)
AIRT	for wind speed class 6 and stability class F	0.000E+00	0.000E+00	---	DFREQ (6,6,8)
AIRT	Joint Frequency in S Sector				
AIRT	for wind speed class 1 and stability class A	2.500E-04	0.000E+00	---	DFREQ (1,1,9)
AIRT	for wind speed class 1 and stability class B	6.300E-04	0.000E+00	---	DFREQ (1,2,9)
AIRT	for wind speed class 1 and stability class C	2.500E-04	0.000E+00	---	DFREQ (1,3,9)
AIRT	for wind speed class 1 and stability class D	7.900E-04	1.000E-01	---	DFREQ (1,4,9)
AIRT	for wind speed class 1 and stability class E	2.260E-03	2.000E-01	---	DFREQ (1,5,9)
AIRT	for wind speed class 1 and stability class F	0.000E+00	7.000E-01	---	DFREQ (1,6,9)
AIRT	Joint Frequency in S Sector				
AIRT	for wind speed class 2 and stability class A	1.100E-04	0.000E+00	---	DFREQ (2,1,9)
AIRT	for wind speed class 2 and stability class B	9.800E-04	0.000E+00	---	DFREQ (2,2,9)
AIRT	for wind speed class 2 and stability class C	9.800E-04	0.000E+00	---	DFREQ (2,3,9)
AIRT	for wind speed class 2 and stability class D	2.420E-03	0.000E+00	---	DFREQ (2,4,9)
AIRT	for wind speed class 2 and stability class E	5.620E-03	0.000E+00	---	DFREQ (2,5,9)
AIRT	for wind speed class 2 and stability class F	0.000E+00	0.000E+00	---	DFREQ (2,6,9)
AIRT	Joint Frequency in S Sector				
AIRT	for wind speed class 3 and stability class A	0.000E+00	0.000E+00	---	DFREQ (3,1,9)
AIRT	for wind speed class 3 and stability class B	2.700E-04	0.000E+00	---	DFREQ (3,2,9)
AIRT	for wind speed class 3 and stability class C	1.230E-03	0.000E+00	---	DFREQ (3,3,9)
AIRT	for wind speed class 3 and stability class D	5.800E-03	0.000E+00	---	DFREQ (3,4,9)
AIRT	for wind speed class 3 and stability class E	2.600E-03	0.000E+00	---	DFREQ (3,5,9)
AIRT	for wind speed class 3 and stability class F	0.000E+00	0.000E+00	---	DFREQ (3,6,9)

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Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
AIRT	Joint Frequency in S Sector				
AIRT	for wind speed class 4 and stability class A	0.000E+00	0.000E+00	---	DFREQ (4,1,9)
AIRT	for wind speed class 4 and stability class B	0.000E+00	0.000E+00	---	DFREQ (4,2,9)
AIRT	for wind speed class 4 and stability class C	3.700E-04	0.000E+00	---	DFREQ (4,3,9)
AIRT	for wind speed class 4 and stability class D	1.242E-02	0.000E+00	---	DFREQ (4,4,9)
AIRT	for wind speed class 4 and stability class E	0.000E+00	0.000E+00	---	DFREQ (4,5,9)
AIRT	for wind speed class 4 and stability class F	0.000E+00	0.000E+00	---	DFREQ (4,6,9)
AIRT	Joint Frequency in S Sector				
AIRT	for wind speed class 5 and stability class A	0.000E+00	0.000E+00	---	DFREQ (5,1,9)
AIRT	for wind speed class 5 and stability class B	0.000E+00	0.000E+00	---	DFREQ (5,2,9)
AIRT	for wind speed class 5 and stability class C	0.000E+00	0.000E+00	---	DFREQ (5,3,9)
AIRT	for wind speed class 5 and stability class D	4.320E-03	0.000E+00	---	DFREQ (5,4,9)
AIRT	for wind speed class 5 and stability class E	0.000E+00	0.000E+00	---	DFREQ (5,5,9)
AIRT	for wind speed class 5 and stability class F	0.000E+00	0.000E+00	---	DFREQ (5,6,9)
AIRT	Joint Frequency in S Sector				
AIRT	for wind speed class 6 and stability class A	0.000E+00	0.000E+00	---	DFREQ (6,1,9)
AIRT	for wind speed class 6 and stability class B	0.000E+00	0.000E+00	---	DFREQ (6,2,9)
AIRT	for wind speed class 6 and stability class C	0.000E+00	0.000E+00	---	DFREQ (6,3,9)
AIRT	for wind speed class 6 and stability class D	7.100E-04	0.000E+00	---	DFREQ (6,4,9)
AIRT	for wind speed class 6 and stability class E	0.000E+00	0.000E+00	---	DFREQ (6,5,9)
AIRT	for wind speed class 6 and stability class F	0.000E+00	0.000E+00	---	DFREQ (6,6,9)
AIRT	Joint Frequency in SSW Sector				
AIRT	for wind speed class 1 and stability class A	1.600E-04	0.000E+00	---	DFREQ (1,1,10)
AIRT	for wind speed class 1 and stability class B	5.200E-04	0.000E+00	---	DFREQ (1,2,10)
AIRT	for wind speed class 1 and stability class C	1.700E-04	0.000E+00	---	DFREQ (1,3,10)
AIRT	for wind speed class 1 and stability class D	6.200E-04	1.000E-01	---	DFREQ (1,4,10)
AIRT	for wind speed class 1 and stability class E	2.030E-03	2.000E-01	---	DFREQ (1,5,10)
AIRT	for wind speed class 1 and stability class F	0.000E+00	7.000E-01	---	DFREQ (1,6,10)
AIRT	Joint Frequency in SSW Sector				
AIRT	for wind speed class 2 and stability class A	1.100E-04	0.000E+00	---	DFREQ (2,1,10)
AIRT	for wind speed class 2 and stability class B	6.200E-04	0.000E+00	---	DFREQ (2,2,10)
AIRT	for wind speed class 2 and stability class C	8.200E-04	0.000E+00	---	DFREQ (2,3,10)
AIRT	for wind speed class 2 and stability class D	2.720E-03	0.000E+00	---	DFREQ (2,4,10)
AIRT	for wind speed class 2 and stability class E	4.000E-03	0.000E+00	---	DFREQ (2,5,10)
AIRT	for wind speed class 2 and stability class F	0.000E+00	0.000E+00	---	DFREQ (2,6,10)
AIRT	Joint Frequency in SSW Sector				
AIRT	for wind speed class 3 and stability class A	0.000E+00	0.000E+00	---	DFREQ (3,1,10)
AIRT	for wind speed class 3 and stability class B	6.900E-04	0.000E+00	---	DFREQ (3,2,10)
AIRT	for wind speed class 3 and stability class C	1.530E-03	0.000E+00	---	DFREQ (3,3,10)
AIRT	for wind speed class 3 and stability class D	6.490E-03	0.000E+00	---	DFREQ (3,4,10)
AIRT	for wind speed class 3 and stability class E	2.400E-03	0.000E+00	---	DFREQ (3,5,10)
AIRT	for wind speed class 3 and stability class F	0.000E+00	0.000E+00	---	DFREQ (3,6,10)

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Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
AIRT	Joint Frequency in SSW Sector				
AIRT	for wind speed class 4 and stability class A	0.000E+00	0.000E+00	---	DFREQ (4,1,10)
AIRT	for wind speed class 4 and stability class B	0.000E+00	0.000E+00	---	DFREQ (4,2,10)
AIRT	for wind speed class 4 and stability class C	2.700E-04	0.000E+00	---	DFREQ (4,3,10)
AIRT	for wind speed class 4 and stability class D	9.890E-03	0.000E+00	---	DFREQ (4,4,10)
AIRT	for wind speed class 4 and stability class E	0.000E+00	0.000E+00	---	DFREQ (4,5,10)
AIRT	for wind speed class 4 and stability class F	0.000E+00	0.000E+00	---	DFREQ (4,6,10)
AIRT	Joint Frequency in SSW Sector				
AIRT	for wind speed class 5 and stability class A	0.000E+00	0.000E+00	---	DFREQ (5,1,10)
AIRT	for wind speed class 5 and stability class B	0.000E+00	0.000E+00	---	DFREQ (5,2,10)
AIRT	for wind speed class 5 and stability class C	2.000E-05	0.000E+00	---	DFREQ (5,3,10)
AIRT	for wind speed class 5 and stability class D	3.310E-03	0.000E+00	---	DFREQ (5,4,10)
AIRT	for wind speed class 5 and stability class E	0.000E+00	0.000E+00	---	DFREQ (5,5,10)
AIRT	for wind speed class 5 and stability class F	0.000E+00	0.000E+00	---	DFREQ (5,6,10)
AIRT	Joint Frequency in SSW Sector				
AIRT	for wind speed class 6 and stability class A	0.000E+00	0.000E+00	---	DFREQ (6,1,10)
AIRT	for wind speed class 6 and stability class B	0.000E+00	0.000E+00	---	DFREQ (6,2,10)
AIRT	for wind speed class 6 and stability class C	0.000E+00	0.000E+00	---	DFREQ (6,3,10)
AIRT	for wind speed class 6 and stability class D	6.200E-04	0.000E+00	---	DFREQ (6,4,10)
AIRT	for wind speed class 6 and stability class E	0.000E+00	0.000E+00	---	DFREQ (6,5,10)
AIRT	for wind speed class 6 and stability class F	0.000E+00	0.000E+00	---	DFREQ (6,6,10)
AIRT	Joint Frequency in SW Sector				
AIRT	for wind speed class 1 and stability class A	6.600E-04	0.000E+00	---	DFREQ (1,1,11)
AIRT	for wind speed class 1 and stability class B	1.450E-03	0.000E+00	---	DFREQ (1,2,11)
AIRT	for wind speed class 1 and stability class C	5.700E-04	0.000E+00	---	DFREQ (1,3,11)
AIRT	for wind speed class 1 and stability class D	1.840E-03	1.000E-01	---	DFREQ (1,4,11)
AIRT	for wind speed class 1 and stability class E	5.700E-03	2.000E-01	---	DFREQ (1,5,11)
AIRT	for wind speed class 1 and stability class F	0.000E+00	7.000E-01	---	DFREQ (1,6,11)
AIRT	Joint Frequency in SW Sector				
AIRT	for wind speed class 2 and stability class A	3.000E-04	0.000E+00	---	DFREQ (2,1,11)
AIRT	for wind speed class 2 and stability class B	1.100E-03	0.000E+00	---	DFREQ (2,2,11)
AIRT	for wind speed class 2 and stability class C	1.460E-03	0.000E+00	---	DFREQ (2,3,11)
AIRT	for wind speed class 2 and stability class D	5.000E-03	0.000E+00	---	DFREQ (2,4,11)
AIRT	for wind speed class 2 and stability class E	9.590E-03	0.000E+00	---	DFREQ (2,5,11)
AIRT	for wind speed class 2 and stability class F	0.000E+00	0.000E+00	---	DFREQ (2,6,11)
AIRT	Joint Frequency in SW Sector				
AIRT	for wind speed class 3 and stability class A	0.000E+00	0.000E+00	---	DFREQ (3,1,11)
AIRT	for wind speed class 3 and stability class B	4.600E-04	0.000E+00	---	DFREQ (3,2,11)
AIRT	for wind speed class 3 and stability class C	2.330E-03	0.000E+00	---	DFREQ (3,3,11)
AIRT	for wind speed class 3 and stability class D	7.450E-03	0.000E+00	---	DFREQ (3,4,11)
AIRT	for wind speed class 3 and stability class E	2.900E-03	0.000E+00	---	DFREQ (3,5,11)
AIRT	for wind speed class 3 and stability class F	0.000E+00	0.000E+00	---	DFREQ (3,6,11)

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Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
AIRT	Joint Frequency in SW Sector				
AIRT	for wind speed class 4 and stability class A	0.000E+00	0.000E+00	---	DFREQ (4,1,11)
AIRT	for wind speed class 4 and stability class B	0.000E+00	0.000E+00	---	DFREQ (4,2,11)
AIRT	for wind speed class 4 and stability class C	2.500E-04	0.000E+00	---	DFREQ (4,3,11)
AIRT	for wind speed class 4 and stability class D	8.860E-03	0.000E+00	---	DFREQ (4,4,11)
AIRT	for wind speed class 4 and stability class E	0.000E+00	0.000E+00	---	DFREQ (4,5,11)
AIRT	for wind speed class 4 and stability class F	0.000E+00	0.000E+00	---	DFREQ (4,6,11)
AIRT	Joint Frequency in SW Sector				
AIRT	for wind speed class 5 and stability class A	0.000E+00	0.000E+00	---	DFREQ (5,1,11)
AIRT	for wind speed class 5 and stability class B	0.000E+00	0.000E+00	---	DFREQ (5,2,11)
AIRT	for wind speed class 5 and stability class C	2.000E-05	0.000E+00	---	DFREQ (5,3,11)
AIRT	for wind speed class 5 and stability class D	1.990E-03	0.000E+00	---	DFREQ (5,4,11)
AIRT	for wind speed class 5 and stability class E	0.000E+00	0.000E+00	---	DFREQ (5,5,11)
AIRT	for wind speed class 5 and stability class F	0.000E+00	0.000E+00	---	DFREQ (5,6,11)
AIRT	Joint Frequency in SW Sector				
AIRT	for wind speed class 6 and stability class A	0.000E+00	0.000E+00	---	DFREQ (6,1,11)
AIRT	for wind speed class 6 and stability class B	0.000E+00	0.000E+00	---	DFREQ (6,2,11)
AIRT	for wind speed class 6 and stability class C	0.000E+00	0.000E+00	---	DFREQ (6,3,11)
AIRT	for wind speed class 6 and stability class D	2.000E-05	0.000E+00	---	DFREQ (6,4,11)
AIRT	for wind speed class 6 and stability class E	0.000E+00	0.000E+00	---	DFREQ (6,5,11)
AIRT	for wind speed class 6 and stability class F	0.000E+00	0.000E+00	---	DFREQ (6,6,11)
AIRT	Joint Frequency in WSW Sector				
AIRT	for wind speed class 1 and stability class A	2.700E-04	0.000E+00	---	DFREQ (1,1,12)
AIRT	for wind speed class 1 and stability class B	5.900E-04	0.000E+00	---	DFREQ (1,2,12)
AIRT	for wind speed class 1 and stability class C	2.700E-04	0.000E+00	---	DFREQ (1,3,12)
AIRT	for wind speed class 1 and stability class D	1.140E-03	1.000E-01	---	DFREQ (1,4,12)
AIRT	for wind speed class 1 and stability class E	2.730E-03	2.000E-01	---	DFREQ (1,5,12)
AIRT	for wind speed class 1 and stability class F	0.000E+00	7.000E-01	---	DFREQ (1,6,12)
AIRT	Joint Frequency in WSW Sector				
AIRT	for wind speed class 2 and stability class A	1.800E-04	0.000E+00	---	DFREQ (2,1,12)
AIRT	for wind speed class 2 and stability class B	8.200E-04	0.000E+00	---	DFREQ (2,2,12)
AIRT	for wind speed class 2 and stability class C	8.200E-04	0.000E+00	---	DFREQ (2,3,12)
AIRT	for wind speed class 2 and stability class D	2.790E-03	0.000E+00	---	DFREQ (2,4,12)
AIRT	for wind speed class 2 and stability class E	6.460E-03	0.000E+00	---	DFREQ (2,5,12)
AIRT	for wind speed class 2 and stability class F	0.000E+00	0.000E+00	---	DFREQ (2,6,12)
AIRT	Joint Frequency in WSW Sector				
AIRT	for wind speed class 3 and stability class A	0.000E+00	0.000E+00	---	DFREQ (3,1,12)
AIRT	for wind speed class 3 and stability class B	7.100E-04	0.000E+00	---	DFREQ (3,2,12)
AIRT	for wind speed class 3 and stability class C	1.800E-03	0.000E+00	---	DFREQ (3,3,12)
AIRT	for wind speed class 3 and stability class D	5.570E-03	0.000E+00	---	DFREQ (3,4,12)
AIRT	for wind speed class 3 and stability class E	2.120E-03	0.000E+00	---	DFREQ (3,5,12)
AIRT	for wind speed class 3 and stability class F	0.000E+00	0.000E+00	---	DFREQ (3,6,12)

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Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
AIRT	Joint Frequency in WSW Sector				
AIRT	for wind speed class 4 and stability class A	0.000E+00	0.000E+00	---	DFREQ (4,1,12)
AIRT	for wind speed class 4 and stability class B	0.000E+00	0.000E+00	---	DFREQ (4,2,12)
AIRT	for wind speed class 4 and stability class C	2.100E-04	0.000E+00	---	DFREQ (4,3,12)
AIRT	for wind speed class 4 and stability class D	6.600E-03	0.000E+00	---	DFREQ (4,4,12)
AIRT	for wind speed class 4 and stability class E	0.000E+00	0.000E+00	---	DFREQ (4,5,12)
AIRT	for wind speed class 4 and stability class F	0.000E+00	0.000E+00	---	DFREQ (4,6,12)
AIRT	Joint Frequency in WSW Sector				
AIRT	for wind speed class 5 and stability class A	0.000E+00	0.000E+00	---	DFREQ (5,1,12)
AIRT	for wind speed class 5 and stability class B	0.000E+00	0.000E+00	---	DFREQ (5,2,12)
AIRT	for wind speed class 5 and stability class C	0.000E+00	0.000E+00	---	DFREQ (5,3,12)
AIRT	for wind speed class 5 and stability class D	1.280E-03	0.000E+00	---	DFREQ (5,4,12)
AIRT	for wind speed class 5 and stability class E	0.000E+00	0.000E+00	---	DFREQ (5,5,12)
AIRT	for wind speed class 5 and stability class F	0.000E+00	0.000E+00	---	DFREQ (5,6,12)
AIRT	Joint Frequency in WSW Sector				
AIRT	for wind speed class 6 and stability class A	0.000E+00	0.000E+00	---	DFREQ (6,1,12)
AIRT	for wind speed class 6 and stability class B	0.000E+00	0.000E+00	---	DFREQ (6,2,12)
AIRT	for wind speed class 6 and stability class C	0.000E+00	0.000E+00	---	DFREQ (6,3,12)
AIRT	for wind speed class 6 and stability class D	1.400E-04	0.000E+00	---	DFREQ (6,4,12)
AIRT	for wind speed class 6 and stability class E	0.000E+00	0.000E+00	---	DFREQ (6,5,12)
AIRT	for wind speed class 6 and stability class F	0.000E+00	0.000E+00	---	DFREQ (6,6,12)
AIRT	Joint Frequency in W Sector				
AIRT	for wind speed class 1 and stability class A	3.000E-04	0.000E+00	---	DFREQ (1,1,13)
AIRT	for wind speed class 1 and stability class B	1.270E-03	0.000E+00	---	DFREQ (1,2,13)
AIRT	for wind speed class 1 and stability class C	5.500E-04	0.000E+00	---	DFREQ (1,3,13)
AIRT	for wind speed class 1 and stability class D	1.520E-03	1.000E-01	---	DFREQ (1,4,13)
AIRT	for wind speed class 1 and stability class E	5.430E-03	2.000E-01	---	DFREQ (1,5,13)
AIRT	for wind speed class 1 and stability class F	0.000E+00	7.000E-01	---	DFREQ (1,6,13)
AIRT	Joint Frequency in W Sector				
AIRT	for wind speed class 2 and stability class A	7.000E-05	0.000E+00	---	DFREQ (2,1,13)
AIRT	for wind speed class 2 and stability class B	8.200E-04	0.000E+00	---	DFREQ (2,2,13)
AIRT	for wind speed class 2 and stability class C	1.260E-03	0.000E+00	---	DFREQ (2,3,13)
AIRT	for wind speed class 2 and stability class D	3.630E-03	0.000E+00	---	DFREQ (2,4,13)
AIRT	for wind speed class 2 and stability class E	1.021E-02	0.000E+00	---	DFREQ (2,5,13)
AIRT	for wind speed class 2 and stability class F	0.000E+00	0.000E+00	---	DFREQ (2,6,13)
AIRT	Joint Frequency in W Sector				
AIRT	for wind speed class 3 and stability class A	0.000E+00	0.000E+00	---	DFREQ (3,1,13)
AIRT	for wind speed class 3 and stability class B	4.100E-04	0.000E+00	---	DFREQ (3,2,13)
AIRT	for wind speed class 3 and stability class C	1.990E-03	0.000E+00	---	DFREQ (3,3,13)
AIRT	for wind speed class 3 and stability class D	5.850E-03	0.000E+00	---	DFREQ (3,4,13)
AIRT	for wind speed class 3 and stability class E	2.630E-03	0.000E+00	---	DFREQ (3,5,13)
AIRT	for wind speed class 3 and stability class F	0.000E+00	0.000E+00	---	DFREQ (3,6,13)

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Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
AIRT	Joint Frequency in W Sector				
AIRT	for wind speed class 4 and stability class A	0.000E+00	0.000E+00	---	DFREQ (4,1,13)
AIRT	for wind speed class 4 and stability class B	0.000E+00	0.000E+00	---	DFREQ (4,2,13)
AIRT	for wind speed class 4 and stability class C	2.100E-04	0.000E+00	---	DFREQ (4,3,13)
AIRT	for wind speed class 4 and stability class D	7.790E-03	0.000E+00	---	DFREQ (4,4,13)
AIRT	for wind speed class 4 and stability class E	0.000E+00	0.000E+00	---	DFREQ (4,5,13)
AIRT	for wind speed class 4 and stability class F	0.000E+00	0.000E+00	---	DFREQ (4,6,13)
AIRT	Joint Frequency in W Sector				
AIRT	for wind speed class 5 and stability class A	0.000E+00	0.000E+00	---	DFREQ (5,1,13)
AIRT	for wind speed class 5 and stability class B	0.000E+00	0.000E+00	---	DFREQ (5,2,13)
AIRT	for wind speed class 5 and stability class C	5.000E-05	0.000E+00	---	DFREQ (5,3,13)
AIRT	for wind speed class 5 and stability class D	1.800E-03	0.000E+00	---	DFREQ (5,4,13)
AIRT	for wind speed class 5 and stability class E	0.000E+00	0.000E+00	---	DFREQ (5,5,13)
AIRT	for wind speed class 5 and stability class F	0.000E+00	0.000E+00	---	DFREQ (5,6,13)
AIRT	Joint Frequency in W Sector				
AIRT	for wind speed class 6 and stability class A	0.000E+00	0.000E+00	---	DFREQ (6,1,13)
AIRT	for wind speed class 6 and stability class B	0.000E+00	0.000E+00	---	DFREQ (6,2,13)
AIRT	for wind speed class 6 and stability class C	0.000E+00	0.000E+00	---	DFREQ (6,3,13)
AIRT	for wind speed class 6 and stability class D	4.300E-04	0.000E+00	---	DFREQ (6,4,13)
AIRT	for wind speed class 6 and stability class E	0.000E+00	0.000E+00	---	DFREQ (6,5,13)
AIRT	for wind speed class 6 and stability class F	0.000E+00	0.000E+00	---	DFREQ (6,6,13)
AIRT	Joint Frequency in WNW Sector				
AIRT	for wind speed class 1 and stability class A	2.000E-04	0.000E+00	---	DFREQ (1,1,14)
AIRT	for wind speed class 1 and stability class B	6.400E-04	0.000E+00	---	DFREQ (1,2,14)
AIRT	for wind speed class 1 and stability class C	4.300E-04	0.000E+00	---	DFREQ (1,3,14)
AIRT	for wind speed class 1 and stability class D	9.000E-04	1.000E-01	---	DFREQ (1,4,14)
AIRT	for wind speed class 1 and stability class E	2.170E-03	2.000E-01	---	DFREQ (1,5,14)
AIRT	for wind speed class 1 and stability class F	0.000E+00	7.000E-01	---	DFREQ (1,6,14)
AIRT	Joint Frequency in WNW Sector				
AIRT	for wind speed class 2 and stability class A	2.100E-04	0.000E+00	---	DFREQ (2,1,14)
AIRT	for wind speed class 2 and stability class B	8.400E-04	0.000E+00	---	DFREQ (2,2,14)
AIRT	for wind speed class 2 and stability class C	7.100E-04	0.000E+00	---	DFREQ (2,3,14)
AIRT	for wind speed class 2 and stability class D	2.880E-03	0.000E+00	---	DFREQ (2,4,14)
AIRT	for wind speed class 2 and stability class E	5.370E-03	0.000E+00	---	DFREQ (2,5,14)
AIRT	for wind speed class 2 and stability class F	0.000E+00	0.000E+00	---	DFREQ (2,6,14)
AIRT	Joint Frequency in WNW Sector				
AIRT	for wind speed class 3 and stability class A	0.000E+00	0.000E+00	---	DFREQ (3,1,14)
AIRT	for wind speed class 3 and stability class B	4.600E-04	0.000E+00	---	DFREQ (3,2,14)
AIRT	for wind speed class 3 and stability class C	1.530E-03	0.000E+00	---	DFREQ (3,3,14)
AIRT	for wind speed class 3 and stability class D	6.760E-03	0.000E+00	---	DFREQ (3,4,14)
AIRT	for wind speed class 3 and stability class E	3.360E-03	0.000E+00	---	DFREQ (3,5,14)
AIRT	for wind speed class 3 and stability class F	0.000E+00	0.000E+00	---	DFREQ (3,6,14)

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Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
AIRT	Joint Frequency in WNW Sector				
AIRT	for wind speed class 4 and stability class A	0.000E+00	0.000E+00	---	DFREQ (4,1,14)
AIRT	for wind speed class 4 and stability class B	0.000E+00	0.000E+00	---	DFREQ (4,2,14)
AIRT	for wind speed class 4 and stability class C	1.600E-04	0.000E+00	---	DFREQ (4,3,14)
AIRT	for wind speed class 4 and stability class D	9.450E-03	0.000E+00	---	DFREQ (4,4,14)
AIRT	for wind speed class 4 and stability class E	0.000E+00	0.000E+00	---	DFREQ (4,5,14)
AIRT	for wind speed class 4 and stability class F	0.000E+00	0.000E+00	---	DFREQ (4,6,14)
AIRT	Joint Frequency in WNW Sector				
AIRT	for wind speed class 5 and stability class A	0.000E+00	0.000E+00	---	DFREQ (5,1,14)
AIRT	for wind speed class 5 and stability class B	0.000E+00	0.000E+00	---	DFREQ (5,2,14)
AIRT	for wind speed class 5 and stability class C	2.000E-05	0.000E+00	---	DFREQ (5,3,14)
AIRT	for wind speed class 5 and stability class D	2.560E-03	0.000E+00	---	DFREQ (5,4,14)
AIRT	for wind speed class 5 and stability class E	0.000E+00	0.000E+00	---	DFREQ (5,5,14)
AIRT	for wind speed class 5 and stability class F	0.000E+00	0.000E+00	---	DFREQ (5,6,14)
AIRT	Joint Frequency in WNW Sector				
AIRT	for wind speed class 6 and stability class A	0.000E+00	0.000E+00	---	DFREQ (6,1,14)
AIRT	for wind speed class 6 and stability class B	0.000E+00	0.000E+00	---	DFREQ (6,2,14)
AIRT	for wind speed class 6 and stability class C	0.000E+00	0.000E+00	---	DFREQ (6,3,14)
AIRT	for wind speed class 6 and stability class D	3.900E-04	0.000E+00	---	DFREQ (6,4,14)
AIRT	for wind speed class 6 and stability class E	0.000E+00	0.000E+00	---	DFREQ (6,5,14)
AIRT	for wind speed class 6 and stability class F	0.000E+00	0.000E+00	---	DFREQ (6,6,14)
AIRT	Joint Frequency in NW Sector				
AIRT	for wind speed class 1 and stability class A	5.700E-04	0.000E+00	---	DFREQ (1,1,15)
AIRT	for wind speed class 1 and stability class B	1.320E-03	0.000E+00	---	DFREQ (1,2,15)
AIRT	for wind speed class 1 and stability class C	6.400E-04	0.000E+00	---	DFREQ (1,3,15)
AIRT	for wind speed class 1 and stability class D	1.980E-03	1.000E-01	---	DFREQ (1,4,15)
AIRT	for wind speed class 1 and stability class E	5.520E-03	2.000E-01	---	DFREQ (1,5,15)
AIRT	for wind speed class 1 and stability class F	0.000E+00	7.000E-01	---	DFREQ (1,6,15)
AIRT	Joint Frequency in NW Sector				
AIRT	for wind speed class 2 and stability class A	2.100E-04	0.000E+00	---	DFREQ (2,1,15)
AIRT	for wind speed class 2 and stability class B	1.370E-03	0.000E+00	---	DFREQ (2,2,15)
AIRT	for wind speed class 2 and stability class C	2.030E-03	0.000E+00	---	DFREQ (2,3,15)
AIRT	for wind speed class 2 and stability class D	4.570E-03	0.000E+00	---	DFREQ (2,4,15)
AIRT	for wind speed class 2 and stability class E	1.450E-02	0.000E+00	---	DFREQ (2,5,15)
AIRT	for wind speed class 2 and stability class F	0.000E+00	0.000E+00	---	DFREQ (2,6,15)
AIRT	Joint Frequency in NW Sector				
AIRT	for wind speed class 3 and stability class A	0.000E+00	0.000E+00	---	DFREQ (3,1,15)
AIRT	for wind speed class 3 and stability class B	1.000E-03	0.000E+00	---	DFREQ (3,2,15)
AIRT	for wind speed class 3 and stability class C	2.900E-03	0.000E+00	---	DFREQ (3,3,15)
AIRT	for wind speed class 3 and stability class D	1.005E-02	0.000E+00	---	DFREQ (3,4,15)
AIRT	for wind speed class 3 and stability class E	6.390E-03	0.000E+00	---	DFREQ (3,5,15)
AIRT	for wind speed class 3 and stability class F	0.000E+00	0.000E+00	---	DFREQ (3,6,15)

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Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
AIRT	Joint Frequency in NW Sector				
AIRT	for wind speed class 4 and stability class A	0.000E+00	0.000E+00	---	DFREQ (4,1,15)
AIRT	for wind speed class 4 and stability class B	0.000E+00	0.000E+00	---	DFREQ (4,2,15)
AIRT	for wind speed class 4 and stability class C	4.100E-04	0.000E+00	---	DFREQ (4,3,15)
AIRT	for wind speed class 4 and stability class D	1.432E-02	0.000E+00	---	DFREQ (4,4,15)
AIRT	for wind speed class 4 and stability class E	0.000E+00	0.000E+00	---	DFREQ (4,5,15)
AIRT	for wind speed class 4 and stability class F	0.000E+00	0.000E+00	---	DFREQ (4,6,15)
AIRT	Joint Frequency in NW Sector				
AIRT	for wind speed class 5 and stability class A	0.000E+00	0.000E+00	---	DFREQ (5,1,15)
AIRT	for wind speed class 5 and stability class B	0.000E+00	0.000E+00	---	DFREQ (5,2,15)
AIRT	for wind speed class 5 and stability class C	0.000E+00	0.000E+00	---	DFREQ (5,3,15)
AIRT	for wind speed class 5 and stability class D	2.720E-03	0.000E+00	---	DFREQ (5,4,15)
AIRT	for wind speed class 5 and stability class E	0.000E+00	0.000E+00	---	DFREQ (5,5,15)
AIRT	for wind speed class 5 and stability class F	0.000E+00	0.000E+00	---	DFREQ (5,6,15)
AIRT	Joint Frequency in NW Sector				
AIRT	for wind speed class 6 and stability class A	0.000E+00	0.000E+00	---	DFREQ (6,1,15)
AIRT	for wind speed class 6 and stability class B	0.000E+00	0.000E+00	---	DFREQ (6,2,15)
AIRT	for wind speed class 6 and stability class C	0.000E+00	0.000E+00	---	DFREQ (6,3,15)
AIRT	for wind speed class 6 and stability class D	5.500E-04	0.000E+00	---	DFREQ (6,4,15)
AIRT	for wind speed class 6 and stability class E	0.000E+00	0.000E+00	---	DFREQ (6,5,15)
AIRT	for wind speed class 6 and stability class F	0.000E+00	0.000E+00	---	DFREQ (6,6,15)
AIRT	Joint Frequency in NNW Sector				
AIRT	for wind speed class 1 and stability class A	3.600E-04	0.000E+00	---	DFREQ (1,1,16)
AIRT	for wind speed class 1 and stability class B	1.020E-03	0.000E+00	---	DFREQ (1,2,16)
AIRT	for wind speed class 1 and stability class C	4.700E-04	0.000E+00	---	DFREQ (1,3,16)
AIRT	for wind speed class 1 and stability class D	9.200E-04	1.000E-01	---	DFREQ (1,4,16)
AIRT	for wind speed class 1 and stability class E	4.990E-03	2.000E-01	---	DFREQ (1,5,16)
AIRT	for wind speed class 1 and stability class F	0.000E+00	7.000E-01	---	DFREQ (1,6,16)
AIRT	Joint Frequency in NNW Sector				
AIRT	for wind speed class 2 and stability class A	2.700E-04	0.000E+00	---	DFREQ (2,1,16)
AIRT	for wind speed class 2 and stability class B	1.370E-03	0.000E+00	---	DFREQ (2,2,16)
AIRT	for wind speed class 2 and stability class C	1.850E-03	0.000E+00	---	DFREQ (2,3,16)
AIRT	for wind speed class 2 and stability class D	5.480E-03	0.000E+00	---	DFREQ (2,4,16)
AIRT	for wind speed class 2 and stability class E	1.491E-02	0.000E+00	---	DFREQ (2,5,16)
AIRT	for wind speed class 2 and stability class F	0.000E+00	0.000E+00	---	DFREQ (2,6,16)
AIRT	Joint Frequency in NNW Sector				
AIRT	for wind speed class 3 and stability class A	0.000E+00	0.000E+00	---	DFREQ (3,1,16)
AIRT	for wind speed class 3 and stability class B	1.120E-03	0.000E+00	---	DFREQ (3,2,16)
AIRT	for wind speed class 3 and stability class C	4.750E-03	0.000E+00	---	DFREQ (3,3,16)
AIRT	for wind speed class 3 and stability class D	1.621E-02	0.000E+00	---	DFREQ (3,4,16)
AIRT	for wind speed class 3 and stability class E	9.480E-03	0.000E+00	---	DFREQ (3,5,16)
AIRT	for wind speed class 3 and stability class F	0.000E+00	0.000E+00	---	DFREQ (3,6,16)

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Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
AIRT	Joint Frequency in NNW Sector				
AIRT	for wind speed class 4 and stability class A	0.000E+00	0.000E+00	---	DFREQ (4,1,16)
AIRT	for wind speed class 4 and stability class B	0.000E+00	0.000E+00	---	DFREQ (4,2,16)
AIRT	for wind speed class 4 and stability class C	6.600E-04	0.000E+00	---	DFREQ (4,3,16)
AIRT	for wind speed class 4 and stability class D	2.476E-02	0.000E+00	---	DFREQ (4,4,16)
AIRT	for wind speed class 4 and stability class E	0.000E+00	0.000E+00	---	DFREQ (4,5,16)
AIRT	for wind speed class 4 and stability class F	0.000E+00	0.000E+00	---	DFREQ (4,6,16)
AIRT	Joint Frequency in NNW Sector				
AIRT	for wind speed class 5 and stability class A	0.000E+00	0.000E+00	---	DFREQ (5,1,16)
AIRT	for wind speed class 5 and stability class B	0.000E+00	0.000E+00	---	DFREQ (5,2,16)
AIRT	for wind speed class 5 and stability class C	1.400E-04	0.000E+00	---	DFREQ (5,3,16)
AIRT	for wind speed class 5 and stability class D	4.890E-03	0.000E+00	---	DFREQ (5,4,16)
AIRT	for wind speed class 5 and stability class E	0.000E+00	0.000E+00	---	DFREQ (5,5,16)
AIRT	for wind speed class 5 and stability class F	0.000E+00	0.000E+00	---	DFREQ (5,6,16)
AIRT	Joint Frequency in NNW Sector				
AIRT	for wind speed class 6 and stability class A	0.000E+00	0.000E+00	---	DFREQ (6,1,16)
AIRT	for wind speed class 6 and stability class B	0.000E+00	0.000E+00	---	DFREQ (6,2,16)
AIRT	for wind speed class 6 and stability class C	0.000E+00	0.000E+00	---	DFREQ (6,3,16)
AIRT	for wind speed class 6 and stability class D	7.300E-04	0.000E+00	---	DFREQ (6,4,16)
AIRT	for wind speed class 6 and stability class E	0.000E+00	0.000E+00	---	DFREQ (6,5,16)
AIRT	for wind speed class 6 and stability class F	0.000E+00	0.000E+00	---	DFREQ (6,6,16)
AIRT	Average annual wind speed (m/sec)	4.763E+00	8.900E-01	---	WIND
AIRT	Spacing of points used for areal integration, (m)	1.000E+01	1.000E+01	---	ATGRID
GWTR	convergence criterion for groundwater transport calc	1.000E-03	1.000E-03	---	EPS
GWTR	Distance from d/g edge of contamination to Well, (m)	1.468E+02	1.000E+02	---	OFFLPAQW
GWTR	Contamination to Well c/c distance normal to flow, m	0.000E+00	0.000E+00	---	OFFLNAQW
GWTR	Distance from d/g edge of cz to surface water, (m)	5.436E+02	4.500E+02	---	OFFLPAQS
GWTR	Contamination to near edge of swb,c/c normal to flow	-1.844E+02	-1.500E+02	---	OFFLNAQSN
GWTR	Contamination to far edge of swb, c/c normal to flow	1.156E+02	1.500E+02	---	OFFLNAQSF
GWTR	Number of main sub zones in contaminated medium	1	1	---	NPCM
GWTR	Number of minor sub zones in last main CM sub zone	1	1	---	NPCMF
GWTR	Number of main sub zones in primary contamination	1	1	---	NPCZ
GWTR	Number of minor sub zones in last main PC sub zone	1	1	---	NPCZF
GWTR	Number of main sub zones in submerged prim. contami.	1	1	---	NSPCZ
GWTR	Number of minor sub zones in last main SPC sub zone	1	1	---	NSPCZF
GWTR	Number of main sub zones in each unsaturated stratum	1	1	---	NPSS
GWTR	Number of minor sub zones in last main UZ sub zone	1	1	---	NPSSF
GWTR	Number of main sub zones in saturated stratum	1	1	---	NAQS
GWTR	Number of minor sub zones in last main SZ sub zone	1	1	---	NAQSF
GWTR	Distribution coefficient and longitudinal dispersion	1	1	---	
	1 = Nuclide specific distribution coefficients in all subzones.				Longitudinal dispersion in all but the subzone of transformation.
GWTR	Retardation factor flag for groundwater transport	0	0	---	
	0 = (total porosity + distribution coefficient*dry bulk density) / total porosity				

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Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
USZN	Number of unsaturated zone strata	1	1	---	NS
USZN	Unsat. zone 1, thickness (m)	4.000E+00	4.000E+00	---	H (1)
USZN	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ (1)
USZN	Unsat. zone 1, total porosity	4.000E-01	4.000E-01	---	TPUZ (1)
USZN	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ (1)
USZN	Unsat. zone 1, field capacity	3.000E-01	3.000E-01	---	FCUZ (1)
USZN	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCUZ (1)
USZN	Unsat. zone 1, soil-specific b parameter	5.300E+00	5.300E+00	---	BUZ (1)
USZN	Unsat. zone 1, longitudinal dispersivity (m)	1.000E-01	1.000E-01	---	ALPHALU (1)
SZNE	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
SZNE	Depth of aquifer contributing to surface water body	1.000E+01	5.000E+00	---	DPTHAQSW
SZNE	Thickness of saturated zone (m)	1.000E+02	1.000E+02	---	DPTHAQ
SZNE	Density of saturated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSAQ
SZNE	Saturated zone total porosity	4.000E-01	4.000E-01	---	TPSZ
SZNE	Saturated zone effective porosity	2.000E-01	2.000E-01	---	EPSZ
SZNE	Saturated zone hydraulic conductivity (m/yr)	1.000E+02	1.000E+02	---	HCSZ
SZNE	Saturated zone hydraulic gradient to well	2.000E-02	2.000E-02	---	HGW
SZNE	Satur. zone hydraulic gradient to surface water body	2.000E-02	2.000E-02	---	HGSW
SZNE	longitudinal dispersivity to well (m)	3.000E+00	3.000E+00	---	ALPHALOW
SZNE	longitudinal dispersivity to SWB (m)	1.000E+01	1.000E+01	---	ALPHALOSW
SZNE	lateral (horizontal) dispersivity to well (m)	4.000E-01	4.000E-01	---	ALPHATW
SZNE	lateral (horizontal) dispersivity to SWB (m)	1.000E+00	1.000E+00	---	ALPHATSW
SZNE	lateral (vertical) dispersivity to well (m)	2.000E-02	2.000E-02	---	ALPHAVW
SZNE	lateral (vertical) dispersivity to SWB (m)	6.000E-02	6.000E-02	---	ALPHAVSW
SZNE	Irrigation rate over aquifer to well (m/yr)	not used	0.000E+00	---	RIAQW
SZNE	Irrigation rate over aquifer to SWB (m/yr)	not used	0.000E+00	---	RIAQSW
SZNE	Evapotranspiration coefficient over aquifer to well	not used	1.000E+00	---	EVAPTRAQW
SZNE	Evapotranspiration coefficient over aquifer to SWB	not used	1.000E+00	---	EVAPTRAQSW
SZNE	Runoff coefficient over aquifer to well	not used	1.000E+00	---	RUNOFFAQW
SZNE	Runoff coefficient over aquifer to SWB	not used	1.000E+00	---	RUNOFFAQSW
SZNE	Concentration of mobile colloids in the aquifer	0.000E+00	0.000E+00	---	CCOL
SZNE	Water - Soil Distribution coefficient of colloids	0.000E+00	0.000E+00	---	K1Col
SZNE	Water - Mobile Colloids Distribution coefficient	0.000E+00	0.000E+00	---	K3Col
WTRU	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
WTRU	Fraction of drinking water from surface water	not used	0.000E+00	---	FSWD
WTRU	Fraction of drinking water from well water	not used	1.000E+00	---	FWWD
WTRU	Fraction of household water from surface water	0.000E+00	0.000E+00	---	FSWHH
WTRU	Fraction of household water from well water	1.000E+00	1.000E+00	---	FWWHH
WTRU	Livestock water intake for meat 1 (L/day)	not used	5.000E+01	---	LWI (1)
WTRU	Fraction of livestock water 1 from surface water	not used	0.000E+00	---	FSWLV (1)
WTRU	Fraction of livestock water 1 from well water	not used	1.000E+00	---	FWWLV (1)
WTRU	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI (2)
WTRU	Fraction of dairy cow water from surface water	not used	0.000E+00	---	FSWLV (2)
WTRU	Fraction of dairy cow water from well water	not used	1.000E+00	---	FWWLV (2)
WTRU	Irrigation rate in Agricultural Area 1 (m/yr)	2.000E-01	2.000E-01	---	RIRRIG (1)

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Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
WTRU	Fraction of irrigation water 1 from surface water	0.000E+00	0.000E+00	---	FSWIR(1)
WTRU	Fraction of irrigation water 1 from well water	1.000E+00	1.000E+00	---	FWWIR(1)
WTRU	Irrigation rate in Agricultural Area 2 (m/yr)	2.000E-01	2.000E-01	---	RIRRIG(2)
WTRU	Fraction of irrigation water 2 from surface water	0.000E+00	0.000E+00	---	FSWIR(2)
WTRU	Fraction of irrigation water 2 from well water	1.000E+00	1.000E+00	---	FWWIR(2)
WTRU	Irrigation rate in Agricultural Area 3 (m/yr)	2.000E-01	2.000E-01	---	RIRRIG(3)
WTRU	Fraction of irrigation water 3 from surface water	0.000E+00	0.000E+00	---	FSWIR(3)
WTRU	Fraction of irrigation water 3 from well water	1.000E+00	1.000E+00	---	FWWIR(3)
WTRU	Irrigation rate in Agricultural Area 4 (m/yr)	2.000E-01	2.000E-01	---	RIRRIG(4)
WTRU	Fraction of irrigation water 4 from surface water	0.000E+00	0.000E+00	---	FSWIR(4)
WTRU	Fraction of irrigation water 4 from well water	1.000E+00	1.000E+00	---	FWWIR(4)
WTRU	Irrigation rate in Offsite dwelling site (m/yr)	2.000E-01	2.000E-01	---	RIRRIGDWELL
WTRU	Fraction of irrigation water from surface water	0.000E+00	0.000E+00	---	FSWIRDWELL
WTRU	Fraction of irrigation water from well water	1.000E+00	1.000E+00	---	FWWIRDWELL
WTRU	Well pumping rate (m**3/yr)	5.100E+03	5.100E+03	---	UW
SWBY	Surface area of water in surface water body, m**2	9.000E+04	9.000E+04	---	ALAKE
SWBY	Volume of surface water body, m**3	1.500E+05	1.500E+05	---	VLAKE
SWBY	Potential evaporation, m/y	1.000E+00	1.000E+00	---	EVAPOT
SWBY	Stream outflow as a fraction of seepage+stm outflows	9.983E-01	9.983E-01	---	FSTMFLOW
SWBY	Use inflow ratio for outflow ratio, 1 yes, 0 no	1	1	---	FSTMFLOWIN
SWBY	Settling velocity of suspended sediments, cm/s	1.000E-01	1.000E-01	---	Vsettle
SWBY	Dry bulk density of bottom sediments, g/cm**3	1.500E+00	1.500E+00	---	RhobSed
SWBY	Thickness of bottom sediment absorbing nuclides, m	5.000E-02	5.000E-02	---	ThickSed
SWBY	Number of distinct catchments	1	1	---	NCATCH
SWBY	Catchment 1, smaller X coordinate (m)	-1.450E+03	-1.450E+03	---	CATCHXY(1,1)
SWBY	Catchment 1, larger X coordinate (m)	1.550E+03	1.550E+03	---	CATCHXY(2,1)
SWBY	Catchment 1, smaller Y coordinate (m)	-2.450E+03	-2.450E+03	---	CATCHXY(3,1)
SWBY	Catchment 1, larger Y coordinate (m)	5.500E+02	5.500E+02	---	CATCHXY(4,1)
SWBY	Catchment 1, area, m**2	9.000E+06	9.000E+06	---	AREACA(1)
SWBY	Catchment 1, runoff coefficient	2.000E-01	2.000E-01	---	RUNOFFCA(1)
SWBY	Catchment 1, soil erodibility factor, tons/acre	4.000E-01	4.000E-01	---	ERODIBILITYCA(1)
SWBY	Catchment 1, Slope-length-steepness factor	4.000E-01	4.000E-01	---	SLPLENSTPCA(1)
SWBY	Catchment 1, Cover and management factor	3.000E-03	3.000E-03	---	CRPMANGCA(1)
SWBY	Catchment 1, support practice factor	1.000E+00	1.000E+00	---	CONVPRACTCA(1)
SWBY	Catchment 1, sediment delivery ratio	2.121E-01	2.121E-01	---	SDRCA(1)
SWBY	Catchment 1, use SRD - Area correlation, 1 yes, 0 no	1	1	---	SDRACOR
SWBY	Catchment 1, deposited radionuclide delivery ratio	2.000E-02	2.000E-02	---	DDRCA(1)
SWBY	Compute atmospheric deposition on catchment	yes	no	---	ComputeDep
SWBY	Convergence criterion for deposition calculations	1.000E-03	1.000E-03	---	ConvCritAtm
INGE	Fish consumption (kg/yr)	not used	5.400E+00	---	DFI(1)
INGE	Fraction of Fish from affected area	not used	5.000E-01	---	FFISH(1)
INGE	Other Aquatic food consumption (kg/yr)	not used	9.000E-01	---	DFI(2)
INGE	Fraction of Aquatic food from affected area	not used	5.000E-01	---	FFISH(2)
INGE	Non-Leafy vegetables consumption (kg/yr)	not used	1.600E+02	---	DVI(1)
INGE	Fraction of vegetable 1 from affected area	not used	5.000E-01	---	FVEG(1)

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Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
INGE	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DVI (2)
INGE	Fraction of vegetable 2 from affected area	not used	5.000E-01	---	FVEG (2)
INGE	Meat 1 consumption (kg/yr)	not used	6.300E+01	---	DMI (1)
INGE	Fraction of meat 1 from affected area	not used	1.000E+00	---	FMEMI (1)
INGE	Milk consumption (L/yr)	not used	9.200E+01	---	DMI (2)
INGE	Fraction of milk from affected area	not used	1.000E+00	---	FMEMI (2)
INGE	Soil ingestion rate (g/yr)	4.380E+01	3.650E+01	---	SOIL
VEGE	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YIELD (1)
VEGE	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	GROWTIME (1)
VEGE	Translocation Factor for Non-Leafy	not used	1.000E-01	---	FOLI_F (1)
VEGE	Weathering Removal Constant for Non-Leafy	not used	2.000E+01	---	RWEATHER (1)
VEGE	Foliar Interception Fraction for dust Non-Leafy	not used	2.500E-01	---	FINTCEPT (1,1)
VEGE	Foliar Intercept-n Fract-n for irrigation Non-Leafy	not used	2.500E-01	---	FINTCEPT (1,2)
VEGE	Depth of roots for Non-Leafy (m)	not used	1.200E+00	---	DROOT (1)
VEGE	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YIELD (2)
VEGE	Growing Season for Leafy (years)	not used	2.500E-01	---	GROWTIME (2)
VEGE	Translocation Factor for Leafy	not used	1.000E+00	---	FOLI_F (2)
VEGE	Weathering Removal Constant for Leafy	not used	2.000E+01	---	RWEATHER (2)
VEGE	Foliar Interception Fraction for dust Leafy	not used	2.500E-01	---	FINTCEPT (2,1)
VEGE	Foliar Intercept-n Fract-n for irrigation Leafy	not used	2.500E-01	---	FINTCEPT (2,2)
VEGE	Depth of roots for Leafy (m)	not used	9.000E-01	---	DROOT (2)
VEGE	Wet weight crop yield for Pasture (kg/m**2)	not used	1.100E+00	---	YIELD (3)
VEGE	Growing Season for Pasture (years)	not used	8.000E-02	---	GROWTIME (3)
VEGE	Translocation Factor for Pasture	not used	1.000E+00	---	FOLI_F (3)
VEGE	Weathering Removal Constant for Pasture	not used	2.000E+01	---	RWEATHER (3)
VEGE	Foliar Interception Fraction for dust Pasture	not used	2.500E-01	---	FINTCEPT (3,1)
VEGE	Foliar Intercept-n Fract-n for irrigation Pasture	not used	2.500E-01	---	FINTCEPT (3,2)
VEGE	Depth of roots for Pasture (m)	not used	9.000E-01	---	DROOT (3)
VEGE	Wet weight crop yield for Grain (kg/m**2)	not used	7.000E-01	---	YIELD (4)
VEGE	Growing Season for Grain (years)	not used	1.700E-01	---	GROWTIME (4)
VEGE	Translocation Factor for Grain	not used	1.000E-01	---	FOLI_F (4)
VEGE	Weathering Removal Constant for Grain	not used	2.000E+01	---	RWEATHER (4)
VEGE	Foliar Interception Fraction for dust Grain	not used	2.500E-01	---	FINTCEPT (4,1)
VEGE	Foliar Intercept-n Fract-n for irrigation Grain	not used	2.500E-01	---	FINTCEPT (4,2)
VEGE	Depth of roots for Grain (m)	not used	1.200E+00	---	DROOT (4)
LINT	Feed 1 intake by livestock 1 (kg/day)	not used	1.400E+01	---	LFI (1,1)
LINT	Soil intake with feed 1 by livestock 1 (kg/day)	not used	1.000E-01	---	LSI (1,1)
LINT	Feed 1 intake by dairy cow (kg/day)	not used	4.400E+01	---	LFI (2,1)
LINT	Soil intake with feed 1 by dairy cow (kg/day)	not used	4.000E-01	---	LSI (2,1)
LINT	Feed 2 intake by livestock 1 (kg/day)	not used	5.400E+01	---	LFI (1,2)
LINT	Soil intake with feed 2 by livestock 1 (kg/day)	not used	4.000E-01	---	LSI (1,2)
LINT	Feed 2 intake by dairy cow (kg/day)	not used	1.100E+01	---	LFI (2,2)
LINT	Soil intake with feed 2 by dairy cow (kg/day)	not used	1.000E-01	---	LSI (2,2)

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0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
INHE	Inhalation rate (m**3/yr)	5.402E+03	8.400E+03	---	INHALR
INHE	Mass loading of all particulates from Primary contam	1.000E-04	1.000E-04	---	MLFD
INHE	Respirable particulates as a fraction of total	1.000E+00	1.000E+00	---	RESPFRACPC
INHE	Offsite mass loading same as onsite mass loading?	0.000E+00		---	SAMEMLRF
INHE	Total mass loading at agricultural area 1 (g/m**3)	1.000E-04	1.000E-04	---	MLTOTOF (1)
INHE	Respirable fraction at agricultural area 1	1.000E+00	1.000E+00	---	RESPFRACOF (1)
INHE	Total mass loading at agricultural area 2 (g/m**3)	1.000E-04	1.000E-04	---	MLTOTOF (2)
INHE	Respirable fraction at agricultural area 2	1.000E+00	1.000E+00	---	RESPFRACOF (2)
INHE	Total mass loading at agricultural area 3 (g/m**3)	1.000E-04	1.000E-04	---	MLTOTOF (3)
INHE	Respirable fraction at agricultural area 3	1.000E+00	1.000E+00	---	RESPFRACOF (3)
INHE	Total mass loading at agricultural area 4 (g/m**3)	1.000E-04	1.000E-04	---	MLTOTOF (4)
INHE	Respirable fraction at agricultural area 4	1.000E+00	1.000E-04	---	RESPFRACOF (4)
INHE	Total mass loading at offsite dwelling(g/m**3)	1.000E-04	1.000E-04	---	MLTOTDWELL
INHE	Respirable fraction at offsite dwelling(g/m**3)	1.000E+00	1.000E+00	---	RESPFRACDWELL
INHE	Indoor dust filtration factor, inhalation	4.000E-01	4.000E-01	---	SHF3
INHE	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
INHE	Shape factor flag, external gamma	-1.000E+00	1.000E+00	noncircular	FS
SEXT	Onsite shape factor array (used if non-circular):				
SEXT	Radii of shape factor array (used if non-circular):				
SEXT	Outer annular radius (m), ring 1:	1.417E+00	6.000E+00	---	RAD_SHAPE ( 1)
SEXT	Outer annular radius (m), ring 2:	2.833E+00	1.200E+01	---	RAD_SHAPE ( 2)
SEXT	Outer annular radius (m), ring 3:	4.250E+00	1.800E+01	---	RAD_SHAPE ( 3)
SEXT	Outer annular radius (m), ring 4:	5.667E+00	2.400E+01	---	RAD_SHAPE ( 4)
SEXT	Outer annular radius (m), ring 5:	7.083E+00	3.000E+01	---	RAD_SHAPE ( 5)
SEXT	Outer annular radius (m), ring 6:	8.500E+00	3.600E+01	---	RAD_SHAPE ( 6)
SEXT	Outer annular radius (m), ring 7:	9.917E+00	4.200E+01	---	RAD_SHAPE ( 7)
SEXT	Outer annular radius (m), ring 8:	1.133E+01	4.800E+01	---	RAD_SHAPE ( 8)
SEXT	Outer annular radius (m), ring 9:	1.275E+01	5.400E+01	---	RAD_SHAPE ( 9)
SEXT	Outer annular radius (m), ring 10:	1.417E+01	6.000E+01	---	RAD_SHAPE (10)
SEXT	Outer annular radius (m), ring 11:	1.558E+01	6.600E+01	---	RAD_SHAPE (11)
SEXT	Outer annular radius (m), ring 12:	1.700E+01	7.200E+01	---	RAD_SHAPE (12)
SEXT	Fractions of annular areas within AREA:				
SEXT	Ring 1	1.000E+00	1.000E+00	---	FRACA ( 1)
SEXT	Ring 2	1.000E+00	1.000E+00	---	FRACA ( 2)
SEXT	Ring 3	7.000E-01	1.000E+00	---	FRACA ( 3)
SEXT	Ring 4	4.000E-01	1.000E+00	---	FRACA ( 4)
SEXT	Ring 5	3.100E-01	1.000E+00	---	FRACA ( 5)
SEXT	Ring 6	2.300E-01	1.000E+00	---	FRACA ( 6)
SEXT	Ring 7	2.500E-01	1.000E+00	---	FRACA ( 7)
SEXT	Ring 8	1.900E-01	1.000E+00	---	FRACA ( 8)
SEXT	Ring 9	1.600E-01	7.700E-01	---	FRACA ( 9)
SEXT	Ring 10	1.300E-01	3.700E-01	---	FRACA (10)
SEXT	Ring 11	1.200E-01	1.700E-01	---	FRACA (11)
SEXT	Ring 12	0.000E+00	3.100E-02	---	FRACA (12)

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
SEXT	Shape factor array from offsite dwelling:				
SEXT	Radii of shape factor array (used if non-circular):				
SEXT	Outer annular radius (m), ring 13:	2.333E+00	1.325E+01	---	RAD_SHAPE (13)
SEXT	Outer annular radius (m), ring 14:	4.667E+00	2.650E+01	---	RAD_SHAPE (14)
SEXT	Outer annular radius (m), ring 15:	7.000E+00	3.975E+01	---	RAD_SHAPE (15)
SEXT	Outer annular radius (m), ring 16:	9.333E+00	5.300E+01	---	RAD_SHAPE (16)
SEXT	Outer annular radius (m), ring 17:	1.167E+01	6.625E+01	---	RAD_SHAPE (17)
SEXT	Outer annular radius (m), ring 18:	1.400E+01	7.950E+01	---	RAD_SHAPE (18)
SEXT	Outer annular radius (m), ring 19:	1.633E+01	9.275E+01	---	RAD_SHAPE (19)
SEXT	Outer annular radius (m), ring 20:	1.867E+01	1.060E+02	---	RAD_SHAPE (20)
SEXT	Outer annular radius (m), ring 21:	2.100E+01	1.192E+02	---	RAD_SHAPE (21)
SEXT	Outer annular radius (m), ring 22:	2.333E+01	1.325E+02	---	RAD_SHAPE (22)
SEXT	Outer annular radius (m), ring 23:	2.567E+01	1.458E+02	---	RAD_SHAPE (23)
SEXT	Outer annular radius (m), ring 24:	2.800E+01	1.590E+02	---	RAD_SHAPE (24)
SEXT	Fractions of annular areas within AREA:				
SEXT	Ring 13	0.000E+00	0.000E+00	---	FRACA (13)
SEXT	Ring 14	0.000E+00	0.000E+00	---	FRACA (14)
SEXT	Ring 15	0.000E+00	0.000E+00	---	FRACA (15)
SEXT	Ring 16	0.000E+00	2.400E-02	---	FRACA (16)
SEXT	Ring 17	0.000E+00	1.900E-01	---	FRACA (17)
SEXT	Ring 18	0.000E+00	2.400E-01	---	FRACA (18)
SEXT	Ring 19	1.800E-02	2.000E-01	---	FRACA (19)
SEXT	Ring 20	1.400E-01	1.700E-01	---	FRACA (20)
SEXT	Ring 21	2.200E-01	1.500E-01	---	FRACA (21)
SEXT	Ring 22	1.800E-01	1.300E-01	---	FRACA (22)
SEXT	Ring 23	6.400E-02	1.200E-01	---	FRACA (23)
SEXT	Ring 24	6.700E-03	5.200E-02	---	FRACA (24)
SEXT	Shape factor array from offsite area 1:				
SEXT	Radii of shape factor array (used if non-circular):				
SEXT	Outer annular radius (m), ring 25:	1.000E+01	1.000E+01	---	RAD_SHAPE (25)
SEXT	Outer annular radius (m), ring 26:	1.000E+01	1.000E+01	---	RAD_SHAPE (26)
SEXT	Outer annular radius (m), ring 27:	1.000E+01	1.000E+01	---	RAD_SHAPE (27)
SEXT	Outer annular radius (m), ring 28:	1.000E+01	1.000E+01	---	RAD_SHAPE (28)
SEXT	Outer annular radius (m), ring 29:	1.000E+01	1.000E+01	---	RAD_SHAPE (29)
SEXT	Outer annular radius (m), ring 30:	1.000E+01	1.000E+01	---	RAD_SHAPE (30)
SEXT	Outer annular radius (m), ring 31:	1.000E+01	1.000E+01	---	RAD_SHAPE (31)
SEXT	Outer annular radius (m), ring 32:	1.000E+01	1.000E+01	---	RAD_SHAPE (32)
SEXT	Outer annular radius (m), ring 33:	1.000E+01	1.000E+01	---	RAD_SHAPE (33)
SEXT	Outer annular radius (m), ring 34:	1.000E+01	1.000E+01	---	RAD_SHAPE (34)
SEXT	Outer annular radius (m), ring 35:	1.000E+01	1.000E+01	---	RAD_SHAPE (35)
SEXT	Outer annular radius (m), ring 36:	1.000E+01	1.000E+01	---	RAD_SHAPE (36)

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
SEXT	Fractions of annular areas within AREA:				
SEXT	Ring 25	0.000E+00	0.000E+00	---	FRACA (25)
SEXT	Ring 26	0.000E+00	0.000E+00	---	FRACA (26)
SEXT	Ring 27	0.000E+00	0.000E+00	---	FRACA (27)
SEXT	Ring 28	0.000E+00	0.000E+00	---	FRACA (28)
SEXT	Ring 29	0.000E+00	0.000E+00	---	FRACA (29)
SEXT	Ring 30	0.000E+00	0.000E+00	---	FRACA (30)
SEXT	Ring 31	0.000E+00	0.000E+00	---	FRACA (31)
SEXT	Ring 32	0.000E+00	0.000E+00	---	FRACA (32)
SEXT	Ring 33	0.000E+00	0.000E+00	---	FRACA (33)
SEXT	Ring 34	0.000E+00	0.000E+00	---	FRACA (34)
SEXT	Ring 35	0.000E+00	0.000E+00	---	FRACA (35)
SEXT	Ring 36	0.000E+00	0.000E+00	---	FRACA (36)
SEXT	Shape factor array from offsite area 2:				
SEXT	Radii of shape factor array (used if non-circular):				
SEXT	Outer annular radius (m), ring 37:	1.000E+01	1.000E+01	---	RAD_SHAPE (37)
SEXT	Outer annular radius (m), ring 38:	1.000E+01	1.000E+01	---	RAD_SHAPE (38)
SEXT	Outer annular radius (m), ring 39:	1.000E+01	1.000E+01	---	RAD_SHAPE (39)
SEXT	Outer annular radius (m), ring 40:	1.000E+01	1.000E+01	---	RAD_SHAPE (40)
SEXT	Outer annular radius (m), ring 41:	1.000E+01	1.000E+01	---	RAD_SHAPE (41)
SEXT	Outer annular radius (m), ring 42:	1.000E+01	1.000E+01	---	RAD_SHAPE (42)
SEXT	Outer annular radius (m), ring 43:	1.000E+01	1.000E+01	---	RAD_SHAPE (43)
SEXT	Outer annular radius (m), ring 44:	1.000E+01	1.000E+01	---	RAD_SHAPE (44)
SEXT	Outer annular radius (m), ring 45:	1.000E+01	1.000E+01	---	RAD_SHAPE (45)
SEXT	Outer annular radius (m), ring 46:	1.000E+01	1.000E+01	---	RAD_SHAPE (46)
SEXT	Outer annular radius (m), ring 47:	1.000E+01	1.000E+01	---	RAD_SHAPE (47)
SEXT	Outer annular radius (m), ring 48:	1.000E+01	1.000E+01	---	RAD_SHAPE (48)
SEXT	Fractions of annular areas within AREA:				
SEXT	Ring 37	0.000E+00	0.000E+00	---	FRACA (37)
SEXT	Ring 38	0.000E+00	0.000E+00	---	FRACA (38)
SEXT	Ring 39	0.000E+00	0.000E+00	---	FRACA (39)
SEXT	Ring 40	0.000E+00	0.000E+00	---	FRACA (40)
SEXT	Ring 41	0.000E+00	0.000E+00	---	FRACA (41)
SEXT	Ring 42	0.000E+00	0.000E+00	---	FRACA (42)
SEXT	Ring 43	0.000E+00	0.000E+00	---	FRACA (43)
SEXT	Ring 44	0.000E+00	0.000E+00	---	FRACA (44)
SEXT	Ring 45	0.000E+00	0.000E+00	---	FRACA (45)
SEXT	Ring 46	0.000E+00	0.000E+00	---	FRACA (46)
SEXT	Ring 47	0.000E+00	0.000E+00	---	FRACA (47)
SEXT	Ring 48	0.000E+00	0.000E+00	---	FRACA (48)

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
SEXT	Shape factor array from offsite area 3:				
SEXT	Radii of shape factor array (used if non-circular):				
SEXT	Outer annular radius (m), ring 49:	1.000E+01	1.000E+01	---	RAD_SHAPE (49)
SEXT	Outer annular radius (m), ring 50:	1.000E+01	1.000E+01	---	RAD_SHAPE (50)
SEXT	Outer annular radius (m), ring 51:	1.000E+01	1.000E+01	---	RAD_SHAPE (51)
SEXT	Outer annular radius (m), ring 52:	1.000E+01	1.000E+01	---	RAD_SHAPE (52)
SEXT	Outer annular radius (m), ring 53:	1.000E+01	1.000E+01	---	RAD_SHAPE (53)
SEXT	Outer annular radius (m), ring 54:	1.000E+01	1.000E+01	---	RAD_SHAPE (54)
SEXT	Outer annular radius (m), ring 55:	1.000E+01	1.000E+01	---	RAD_SHAPE (55)
SEXT	Outer annular radius (m), ring 56:	1.000E+01	1.000E+01	---	RAD_SHAPE (56)
SEXT	Outer annular radius (m), ring 57:	1.000E+01	1.000E+01	---	RAD_SHAPE (57)
SEXT	Outer annular radius (m), ring 58:	1.000E+01	1.000E+01	---	RAD_SHAPE (58)
SEXT	Outer annular radius (m), ring 59:	1.000E+01	1.000E+01	---	RAD_SHAPE (59)
SEXT	Outer annular radius (m), ring 60:	1.000E+01	1.000E+01	---	RAD_SHAPE (60)
SEXT	Fractions of annular areas within AREA:				
SEXT	Ring 49	0.000E+00	0.000E+00	---	FRACA (49)
SEXT	Ring 50	0.000E+00	0.000E+00	---	FRACA (50)
SEXT	Ring 51	0.000E+00	0.000E+00	---	FRACA (51)
SEXT	Ring 52	0.000E+00	0.000E+00	---	FRACA (52)
SEXT	Ring 53	0.000E+00	0.000E+00	---	FRACA (53)
SEXT	Ring 54	0.000E+00	0.000E+00	---	FRACA (54)
SEXT	Ring 55	0.000E+00	0.000E+00	---	FRACA (55)
SEXT	Ring 56	0.000E+00	0.000E+00	---	FRACA (56)
SEXT	Ring 57	0.000E+00	0.000E+00	---	FRACA (57)
SEXT	Ring 58	0.000E+00	0.000E+00	---	FRACA (58)
SEXT	Ring 59	0.000E+00	0.000E+00	---	FRACA (59)
SEXT	Ring 60	0.000E+00	0.000E+00	---	FRACA (60)
SEXT	Shape factor array from offsite area 4:				
SEXT	Radii of shape factor array (used if non-circular):				
SEXT	Outer annular radius (m), ring 61:	1.000E+01	1.000E+01	---	RAD_SHAPE (61)
SEXT	Outer annular radius (m), ring 62:	1.000E+01	1.000E+01	---	RAD_SHAPE (62)
SEXT	Outer annular radius (m), ring 63:	1.000E+01	1.000E+01	---	RAD_SHAPE (63)
SEXT	Outer annular radius (m), ring 64:	1.000E+01	1.000E+01	---	RAD_SHAPE (64)
SEXT	Outer annular radius (m), ring 65:	1.000E+01	1.000E+01	---	RAD_SHAPE (65)
SEXT	Outer annular radius (m), ring 66:	1.000E+01	1.000E+01	---	RAD_SHAPE (66)
SEXT	Outer annular radius (m), ring 67:	1.000E+01	1.000E+01	---	RAD_SHAPE (67)
SEXT	Outer annular radius (m), ring 68:	1.000E+01	1.000E+01	---	RAD_SHAPE (68)
SEXT	Outer annular radius (m), ring 69:	1.000E+01	1.000E+01	---	RAD_SHAPE (69)
SEXT	Outer annular radius (m), ring 70:	1.000E+01	1.000E+01	---	RAD_SHAPE (70)
SEXT	Outer annular radius (m), ring 71:	1.000E+01	1.000E+01	---	RAD_SHAPE (71)
SEXT	Outer annular radius (m), ring 72:	1.000E+01	1.000E+01	---	RAD_SHAPE (72)

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

## Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
SEXT	Fractions of annular areas within AREA:				
SEXT	Ring 61	0.000E+00	0.000E+00	---	FRACA (61)
SEXT	Ring 62	0.000E+00	0.000E+00	---	FRACA (62)
SEXT	Ring 63	0.000E+00	0.000E+00	---	FRACA (63)
SEXT	Ring 64	0.000E+00	0.000E+00	---	FRACA (64)
SEXT	Ring 65	0.000E+00	0.000E+00	---	FRACA (65)
SEXT	Ring 66	0.000E+00	0.000E+00	---	FRACA (66)
SEXT	Ring 67	0.000E+00	0.000E+00	---	FRACA (67)
SEXT	Ring 68	0.000E+00	0.000E+00	---	FRACA (68)
SEXT	Ring 69	0.000E+00	0.000E+00	---	FRACA (69)
SEXT	Ring 70	0.000E+00	0.000E+00	---	FRACA (70)
SEXT	Ring 71	0.000E+00	0.000E+00	---	FRACA (71)
SEXT	Ring 72	0.000E+00	0.000E+00	---	FRACA (72)
OCCU	Fraction of time spent indoors on contaminated site	0.000E+00	0.000E+00	---	FIND
OCCU	Fraction of time spent outdoors on contaminated site	0.000E+00	0.000E+00	---	FOTD
OCCU	Fraction of time spent indoors in Offsite Dwelling	6.390E-01	5.000E-01	---	FINDDWELL
OCCU	Fraction of time spent outdoors in Offsite Dwelling	0.000E+00	1.000E-01	---	FOTDDWELL
OCCU	Fraction of time spent outdoors in agri. area 1	0.000E+00	1.000E-01	---	OCCUPANCY (1)
OCCU	Fraction of time spent outdoors in agri. area 2	0.000E+00	1.000E-01	---	OCCUPANCY (2)
OCCU	Fraction of time spent outdoors in agri. area 3	0.000E+00	1.000E-01	---	OCCUPANCY (3)
OCCU	Fraction of time spent outdoors in agri. area 4	0.000E+00	1.000E-01	---	OCCUPANCY (4)
RADN	Diffusion coefficient for radon gas (m/sec):				
RADN	in cover material	not used	2.000E-06	---	DIFCV
RADN	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
RADN	in fruit, grain and non-leafy vegetable field	not used	2.000E-06	---	DIFOS (1)
RADN	in leafy vegetable field	not used	2.000E-06	---	DIFOS (2)
RADN	in pature	not used	2.000E-06	---	DIFOS (3)
RADN	in livestock grain field	not used	2.000E-06	---	DIFOS (4)
RADN	in offsite dwelling site	not used	2.000E-06	---	DIFOS (5)
RADN	in foundation material	not used	3.000E-07	---	DIFFL
RADN	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
RADN	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
RADN	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
RADN	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
RADN	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
RADN	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
RADN	Height of the building (room) (m)	not used	2.500E+00	---	HRM
RADN	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
RADN	Building interior area factor	not used	0.000E+00	---	FAI
RADN	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA (1)
RADN	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA (2)
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	Vertical dimension of mixing for vegetation (m)	not used	1.000E+00	---	HMIXV
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	C14EVSN

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	RESRAD computed	Parameter Name
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	C12EVSN
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C12	C-12 concentration in the atmosphere (g/m <sup>3</sup> )	not used	1.800E-01	---	C12AIR
C12	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C12	C-12 concentration in water (g/cm <sup>3</sup> )	not used	2.000E-05	---	C12WTR
C12	C-12 concentration in meat 1 (g/g)	not used	2.400E-01	---	C12MEAT_MILK(1)
C12	C-12 concentration in milk (g/g)	not used	7.000E-02	---	C12MEAT_MILK(2)
C12	C-12 concentration in vegetable 1 (g/g)	not used	4.000E-01	---	C12PLANT(1)
C12	C-12 concentration in vegetable 2 (g/g)	not used	9.000E-02	---	C12PLANT(2)
C12	C-12 concentration in livestock feed 1 (g/g)	not used	9.000E-02	---	C12PLANT(3)
C12	C-12 concentration in livestock feed 2 (g/g)	not used	4.000E-01	---	C12PLANT(4)
H3	Humidity in air (g/cm <sup>3</sup> )	not used	8.000E+00	---	HUMID
H3	Mass fraction of water in meat 1 (g/g)	not used	6.000E-01	---	H2OMEAT_MILK(1)
H3	Mass fraction of water in milk (g/g)	not used	8.800E-01	---	H2OMEAT_MILK(2)
H3	Mass fraction of water in vegetable 1 (g/g)	not used	8.000E-01	---	H2OPLANT(1)
H3	Mass fraction of water in vegetable 2 (g/g)	not used	8.000E-01	---	H2OPLANT(2)
H3	Mass fraction of water in livestock feed 1 (g/g)	not used	8.000E-01	---	H2OPLANT(3)
H3	Mass fraction of water in livestock feed 2 (g/g)	not used	8.000E-01	---	H2OPLANT(4)

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	200.00 square meters	Ac-227	5.090E+00
Thickness:	0.30 meters	Pa-231	4.790E+00
Cover Depth:	0.00 meters	Pb-210	2.294E+01
		Ra-226	9.560E+00
		Ra-228	3.500E-01
		Th-228	1.400E-01
		Th-230	3.597E+02
		Th-232	1.130E+00
		U-234	7.822E+01
		U-235	3.530E+00
		U-238	7.822E+01

0

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	6.000E+00	1.200E+01	3.000E+01	7.500E+01	1.750E+02	4.200E+02	9.700E+02
TDOSE(t):	9.704E-02	9.725E-02	9.760E-02	9.787E-02	9.757E-02	9.470E-02	9.010E-02	8.759E-02	8.683E-02	8.574E-02
M(t):	3.882E-03	3.890E-03	3.904E-03	3.915E-03	3.903E-03	3.788E-03	3.604E-03	3.504E-03	3.473E-03	3.430E-03

0Maximum TDOSE(t): 9.789E-02 mrem/yr at t = 7.4 years

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
in mrem/yr and as a Percentage of Total Dose at t = 0 years  
From releases to ground water and to surface water

Radio- Nuclide	Ground		Fish		Radon		Plant		Meat		Milk		Soil		Water	
	Dose	%														
Ac-227	0.00E+00	0														
Pa-231	0.00E+00	0														
Pb-210	0.00E+00	0														
Ra-226	0.00E+00	0														
Ra-228	0.00E+00	0														
Th-228	0.00E+00	0														
Th-230	0.00E+00	0														
Th-232	0.00E+00	0														
U-234	0.00E+00	0														
U-235	0.00E+00	0														
U-238	0.00E+00	0														
Total	0.00E+00	0														

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
in mrem/yr and as a Percentage of Total Dose at t = 0 years

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil		All Pathways*	
	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%
Ac-227	5.77E-03	6	1.35E-04	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	7.53E-10	0	5.91E-03	6
Pa-231	5.16E-04	1	1.73E-04	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.33E-10	0	6.89E-04	1
Pb-210	7.93E-05	0	4.07E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.93E-08	0	1.20E-04	0
Ra-226	7.09E-02	73	1.63E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.71E-09	0	7.09E-02	73
Ra-228	1.50E-03	2	1.29E-06	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.39E-10	0	1.50E-03	2
Th-228	7.65E-04	1	9.74E-07	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	7.94E-12	0	7.66E-04	1
Th-230	7.75E-04	1	5.56E-03	6	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.72E-08	0	6.34E-03	7
Th-232	2.96E-04	0	2.10E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.61E-10	0	3.17E-04	0
U-234	4.48E-07	0	1.29E-04	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.10E-09	0	1.29E-04	0
U-235	1.31E-03	1	5.25E-06	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.79E-11	0	1.32E-03	1
U-238	8.94E-03	9	1.10E-04	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.11E-09	0	9.05E-03	9
Total	9.08E-02	94	6.19E-03	6	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.22E-08	0	9.70E-02	100

0\*Sum of dose from all releases and from primary contamination.

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
in mrem/yr and as a Percentage of Total Dose at t = 1 years  
From releases to ground water and to surface water

Radio- Nuclide	Ground		Fish		Radon		Plant		Meat		Milk		Soil		Water	
	Dose	%														
Ac-227	0.00E+00	0														
Pa-231	0.00E+00	0														
Pb-210	0.00E+00	0														
Ra-226	0.00E+00	0														
Ra-228	0.00E+00	0														
Th-228	0.00E+00	0														
Th-230	0.00E+00	0														
Th-232	0.00E+00	0														
U-234	0.00E+00	0														
U-235	0.00E+00	0														
U-238	0.00E+00	0														
<b>Total</b>	<b>0.00E+00</b>	<b>0</b>														

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
in mrem/yr and as a Percentage of Total Dose at t = 1 years

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil		All Pathways*	
	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%
Ac-227	5.29E-03	5	1.24E-04	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.10E-09	0	5.41E-03	6
Pa-231	6.68E-04	1	1.74E-04	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.61E-09	0	8.42E-04	1
Pb-210	7.60E-05	0	3.90E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.62E-08	0	1.15E-04	0
Ra-226	6.98E-02	72	1.66E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.54E-09	0	6.98E-02	72
Ra-228	1.85E-03	2	1.82E-06	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	6.65E-10	0	1.85E-03	2
Th-228	5.33E-04	1	6.78E-07	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.90E-11	0	5.33E-04	1
Th-230	1.92E-03	2	5.56E-03	6	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.18E-08	0	7.48E-03	8
Th-232	9.56E-04	1	2.16E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	6.58E-10	0	9.77E-04	1
U-234	4.40E-07	0	1.26E-04	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.22E-09	0	1.26E-04	0
U-235	1.29E-03	1	5.13E-06	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.41E-10	0	1.29E-03	1
U-238	8.74E-03	9	1.08E-04	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.25E-09	0	8.85E-03	9
<b>Total</b>	<b>9.11E-02</b>	<b>94</b>	<b>6.18E-03</b>	<b>6</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>1.25E-07</b>	<b>0</b>	<b>9.72E-02</b>	<b>100</b>

0\*Sum of dose from all releases and from primary contamination.

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
in mrem/yr and as a Percentage of Total Dose at t = 3 years  
From releases to ground water and to surface water

Radio- Nuclide	Ground		Fish		Radon		Plant		Meat		Milk		Soil		Water	
	Dose	%														
Ac-227	0.00E+00	0														
Pa-231	0.00E+00	0														
Pb-210	0.00E+00	0														
Ra-226	0.00E+00	0														
Ra-228	0.00E+00	0														
Th-228	0.00E+00	0														
Th-230	0.00E+00	0														
Th-232	0.00E+00	0														
U-234	0.00E+00	0														
U-235	0.00E+00	0														
U-238	0.00E+00	0														
<b>Total</b>	<b>0.00E+00</b>	<b>0</b>														

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
in mrem/yr and as a Percentage of Total Dose at t = 3 years

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil		All Pathways*	
	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%
Ac-227	4.45E-03	5	1.04E-04	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.94E-09	0	4.55E-03	5
Pa-231	9.24E-04	1	1.73E-04	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.76E-09	0	1.10E-03	1
Pb-210	6.99E-05	0	3.59E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.20E-07	0	1.06E-04	0
Ra-226	6.75E-02	69	1.70E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.54E-08	0	6.75E-02	69
Ra-228	2.00E-03	2	2.13E-06	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.23E-09	0	2.00E-03	2
Th-228	2.58E-04	0	3.28E-07	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.22E-11	0	2.58E-04	0
Th-230	4.16E-03	4	5.56E-03	6	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.21E-07	0	9.72E-03	10
Th-232	2.49E-03	3	2.32E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.55E-09	0	2.51E-03	3
U-234	4.33E-07	0	1.21E-04	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	7.06E-09	0	1.21E-04	0
U-235	1.23E-03	1	4.92E-06	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.08E-10	0	1.24E-03	1
U-238	8.36E-03	9	1.03E-04	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	7.12E-09	0	8.47E-03	9
<b>Total</b>	<b>9.15E-02</b>	<b>94</b>	<b>6.15E-03</b>	<b>6</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>2.82E-07</b>	<b>0</b>	<b>9.76E-02</b>	<b>100</b>

0\*Sum of dose from all releases and from primary contamination.

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
 in mrem/yr and as a Percentage of Total Dose at t = 6 years  
 From releases to ground water and to surface water

Radio- Nuclide	Ground		Fish		Radon		Plant		Meat		Milk		Soil		Water	
	Dose	%														
Ac-227	0.00E+00	0														
Pa-231	0.00E+00	0														
Pb-210	0.00E+00	0														
Ra-226	0.00E+00	0														
Ra-228	0.00E+00	0														
Th-228	0.00E+00	0														
Th-230	0.00E+00	0														
Th-232	0.00E+00	0														
U-234	0.00E+00	0														
U-235	0.00E+00	0														
U-238	0.00E+00	0														
<b>Total</b>	<b>0.00E+00</b>	<b>0</b>														

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
 in mrem/yr and as a Percentage of Total Dose at t = 6 years

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil		All Pathways*	
	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%
Ac-227	3.43E-03	4	8.05E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.22E-09	0	3.51E-03	4
Pa-231	1.20E-03	1	1.70E-04	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	6.83E-09	0	1.37E-03	1
Pb-210	6.16E-05	0	3.16E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.93E-07	0	9.34E-05	0
Ra-226	6.43E-02	66	1.75E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.44E-08	0	6.43E-02	66
Ra-228	1.66E-03	2	1.85E-06	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.53E-09	0	1.67E-03	2
Th-228	8.82E-05	0	1.12E-07	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.41E-11	0	8.83E-05	0
Th-230	7.38E-03	8	5.56E-03	6	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.27E-07	0	1.29E-02	13
Th-232	4.65E-03	5	2.56E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	6.90E-09	0	4.67E-03	5
U-234	4.39E-07	0	1.13E-04	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.19E-08	0	1.13E-04	0
U-235	1.15E-03	1	4.61E-06	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.19E-10	0	1.16E-03	1
U-238	7.83E-03	8	9.66E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.20E-08	0	7.92E-03	8
<b>Total</b>	<b>9.18E-02</b>	<b>94</b>	<b>6.10E-03</b>	<b>6</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>4.99E-07</b>	<b>0</b>	<b>9.79E-02</b>	<b>100</b>

0\*Sum of dose from all releases and from primary contamination.

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
in mrem/yr and as a Percentage of Total Dose at t = 12 years  
From releases to ground water and to surface water

Radio- Nuclide	Ground		Fish		Radon		Plant		Meat		Milk		Soil		Water	
	Dose	%														
Ac-227	0.00E+00	0														
Pa-231	0.00E+00	0														
Pb-210	0.00E+00	0														
Ra-226	0.00E+00	0														
Ra-228	0.00E+00	0														
Th-228	0.00E+00	0														
Th-230	0.00E+00	0														
Th-232	0.00E+00	0														
U-234	0.00E+00	0														
U-235	0.00E+00	0														
U-238	0.00E+00	0														
<b>Total</b>	<b>0.00E+00</b>	<b>0</b>														

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
in mrem/yr and as a Percentage of Total Dose at t = 12 years

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil		All Pathways*	
	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%
Ac-227	2.05E-03	2	4.82E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.13E-09	0	2.10E-03	2
Pa-231	1.50E-03	2	1.59E-04	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.19E-08	0	1.65E-03	2
Pb-210	4.78E-05	0	2.46E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.77E-07	0	7.27E-05	0
Ra-226	5.84E-02	60	1.79E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	8.08E-08	0	5.84E-02	60
Ra-228	8.61E-04	1	9.74E-07	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.28E-09	0	8.62E-04	1
Th-228	1.12E-05	0	1.42E-08	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.36E-12	0	1.12E-05	0
Th-230	1.34E-02	14	5.56E-03	6	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.43E-07	0	1.89E-02	19
Th-232	7.49E-03	8	2.88E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.78E-08	0	7.52E-03	8
U-234	5.04E-07	0	9.90E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.87E-08	0	9.95E-05	0
U-235	1.01E-03	1	4.05E-06	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	8.18E-10	0	1.01E-03	1
U-238	6.86E-03	7	8.46E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.89E-08	0	6.94E-03	7
<b>Total</b>	<b>9.15E-02</b>	<b>94</b>	<b>6.03E-03</b>	<b>6</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>8.76E-07</b>	<b>0</b>	<b>9.76E-02</b>	<b>100</b>

0\*Sum of dose from all releases and from primary contamination.

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
 in mrem/yr and as a Percentage of Total Dose at t = 30 years  
 From releases to ground water and to surface water

Radio- Nuclide	Ground		Fish		Radon		Plant		Meat		Milk		Soil		Water	
	Dose	%														
Ac-227	0.00E+00	0														
Pa-231	0.00E+00	0														
Pb-210	0.00E+00	0														
Ra-226	0.00E+00	0														
Ra-228	0.00E+00	0														
Th-228	0.00E+00	0														
Th-230	0.00E+00	0														
Th-232	0.00E+00	0														
U-234	0.00E+00	0														
U-235	0.00E+00	0														
U-238	0.00E+00	0														
<b>Total</b>	<b>0.00E+00</b>	<b>0</b>														

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
 in mrem/yr and as a Percentage of Total Dose at t = 30 years

Directly from primary contamination and from release to atmosphere (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil		All Pathways*	
	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%
Ac-227	4.37E-04	0	1.02E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.81E-09	0	4.47E-04	0
Pa-231	1.44E-03	2	1.17E-04	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.79E-08	0	1.56E-03	2
Pb-210	2.24E-05	0	1.15E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.89E-07	0	3.42E-05	0
Ra-226	4.36E-02	46	1.68E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.14E-07	0	4.36E-02	46
Ra-228	8.02E-05	0	9.13E-08	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.51E-10	0	8.03E-05	0
Th-228	1.86E-08	0	2.37E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.55E-14	0	1.86E-08	0
Th-230	2.82E-02	30	5.57E-03	6	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.14E-06	0	3.37E-02	36
Th-232	9.80E-03	10	3.14E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.04E-08	0	9.83E-03	10
U-234	9.82E-07	0	6.67E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.56E-08	0	6.77E-05	0
U-235	6.79E-04	1	2.76E-06	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.12E-09	0	6.81E-04	1
U-238	4.61E-03	5	5.69E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.58E-08	0	4.67E-03	5
<b>Total</b>	<b>8.88E-02</b>	<b>94</b>	<b>5.88E-03</b>	<b>6</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>1.77E-06</b>	<b>0</b>	<b>9.47E-02</b>	<b>100</b>

0\*Sum of dose from all releases and from primary contamination.

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
in mrem/yr and as a Percentage of Total Dose at t = 75 years  
From releases to ground water and to surface water

Radio- Nuclide	Ground		Fish		Radon		Plant		Meat		Milk		Soil		Water	
	Dose	%														
Ac-227	0.00E+00	0														
Pa-231	0.00E+00	0														
Pb-210	0.00E+00	0														
Ra-226	0.00E+00	0														
Ra-228	0.00E+00	0														
Th-228	0.00E+00	0														
Th-230	0.00E+00	0														
Th-232	0.00E+00	0														
U-234	0.00E+00	0														
U-235	0.00E+00	0														
U-238	0.00E+00	0														
Total	0.00E+00	0														

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
in mrem/yr and as a Percentage of Total Dose at t = 75 years

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil		All Pathways*	
	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%
Ac-227	1.01E-05	0	2.38E-07	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.47E-11	0	1.04E-05	0
Pa-231	6.07E-04	1	4.52E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.13E-08	0	6.53E-04	1
Pb-210	3.45E-06	0	1.77E-06	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	8.79E-08	0	5.31E-06	0
Ra-226	2.11E-02	23	1.00E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.81E-07	0	2.11E-02	23
Ra-228	2.52E-07	0	2.87E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.55E-12	0	2.53E-07	0
Th-228	1.55E-14	0	1.97E-17	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.72E-20	0	1.55E-14	0
Th-230	5.07E-02	56	5.57E-03	6	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.08E-06	0	5.63E-02	62
Th-232	1.00E-02	11	3.16E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.25E-07	0	1.00E-02	11
U-234	2.79E-06	0	2.52E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.60E-08	0	2.80E-05	0
U-235	2.53E-04	0	1.06E-06	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	7.00E-10	0	2.54E-04	0
U-238	1.72E-03	2	2.12E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.59E-08	0	1.74E-03	2
Total	8.44E-02	94	5.71E-03	6	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.62E-06	0	9.01E-02	100

0\*Sum of dose from all releases and from primary contamination.

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
 in mrem/yr and as a Percentage of Total Dose at t = 175 years  
 From releases to ground water and to surface water

Radio- Nuclide	Ground		Fish		Radon		Plant		Meat		Milk		Soil		Water	
	Dose	%														
Ac-227	0.00E+00	0														
Pa-231	0.00E+00	0														
Pb-210	0.00E+00	0														
Ra-226	0.00E+00	0														
Ra-228	0.00E+00	0														
Th-228	0.00E+00	0														
Th-230	0.00E+00	0														
Th-232	0.00E+00	0														
U-234	0.00E+00	0														
U-235	0.00E+00	0														
U-238	0.00E+00	0														
<b>Total</b>	<b>0.00E+00</b>	<b>0</b>														

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
 in mrem/yr and as a Percentage of Total Dose at t = 175 years

Directly from primary contamination and from release to atmosphere (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil		All Pathways*	
	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%
Ac-227	1.91E-09	0	4.47E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.69E-14	0	1.95E-09	0
Pa-231	6.82E-05	0	5.05E-06	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.56E-09	0	7.32E-05	0
Pb-210	5.29E-08	0	2.72E-08	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.21E-09	0	8.23E-08	0
Ra-226	4.20E-03	5	2.15E-06	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	8.92E-08	0	4.20E-03	5
Ra-228	3.20E-13	0	3.65E-16	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	6.43E-18	0	3.21E-13	0
Th-228	9.81E-31	0	1.51E-33	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.53E-34	0	9.83E-31	0
Th-230	6.75E-02	77	5.57E-03	6	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	7.39E-06	0	7.31E-02	83
Th-232	1.00E-02	11	3.16E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.87E-07	0	1.00E-02	11
U-234	5.44E-06	0	3.26E-06	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.76E-09	0	8.70E-06	0
U-235	2.84E-05	0	1.26E-07	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	9.95E-11	0	2.85E-05	0
U-238	1.92E-04	0	2.37E-06	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.21E-09	0	1.94E-04	0
<b>Total</b>	<b>8.20E-02</b>	<b>94</b>	<b>5.62E-03</b>	<b>6</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>7.78E-06</b>	<b>0</b>	<b>8.76E-02</b>	<b>100</b>

0\*Sum of dose from all releases and from primary contamination.

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
 in mrem/yr and as a Percentage of Total Dose at t = 420 years  
 From releases to ground water and to surface water

Radio- Nuclide	Ground		Fish		Radon		Plant		Meat		Milk		Soil		Water	
	Dose	%														
Ac-227	2.08E-23	0	0.00E+00	0	1.57E-24	0	0.00E+00	0								
Pa-231	0.00E+00	0														
Pb-210	0.00E+00	0														
Ra-226	0.00E+00	0														
Ra-228	0.00E+00	0														
Th-228	0.00E+00	0														
Th-230	0.00E+00	0														
Th-232	0.00E+00	0														
U-234	0.00E+00	0														
U-235	0.00E+00	0														
U-238	0.00E+00	0														
<b>Total</b>	<b>2.08E-23</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>1.57E-24</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>								

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
 in mrem/yr and as a Percentage of Total Dose at t = 420 years

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil		All Pathways*	
	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%
Ac-227	1.97E-17	0	4.63E-19	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.40E-21	0	2.02E-17	0
Pa-231	4.27E-07	0	3.16E-08	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.16E-11	0	4.59E-07	0
Pb-210	4.83E-12	0	2.48E-12	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.63E-13	0	7.67E-12	0
Ra-226	9.53E-05	0	4.92E-08	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.38E-09	0	9.53E-05	0
Ra-228	1.38E-25	0	1.69E-28	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.12E-28	0	1.38E-25	0
Th-228	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0
Th-230	7.12E-02	82	5.56E-03	6	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.73E-05	0	7.67E-02	88
Th-232	9.96E-03	11	3.16E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	6.82E-07	0	1.00E-02	12
U-234	6.42E-06	0	5.20E-07	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.50E-09	0	6.94E-06	0
U-235	1.80E-07	0	8.98E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	7.84E-13	0	1.81E-07	0
U-238	1.21E-06	0	1.50E-08	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.68E-11	0	1.22E-06	0
<b>Total</b>	<b>8.12E-02</b>	<b>94</b>	<b>5.59E-03</b>	<b>6</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>1.80E-05</b>	<b>0</b>	<b>8.68E-02</b>	<b>100</b>

0\*Sum of dose from all releases and from primary contamination.

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
 in mrem/yr and as a Percentage of Total Dose at t = 970 years  
 From releases to ground water and to surface water

Radio- Nuclide	Ground		Fish		Radon		Plant		Meat		Milk		Soil		Water	
	Dose	%														
Ac-227	6.38E-17	0	0.00E+00	0	4.82E-18	0	0.00E+00	0								
Pa-231	4.52E-14	0	0.00E+00	0	3.41E-15	0	0.00E+00	0								
Pb-210	0.00E+00	0														
Ra-226	0.00E+00	0														
Ra-228	0.00E+00	0														
Th-228	0.00E+00	0														
Th-230	0.00E+00	0														
Th-232	0.00E+00	0														
U-234	0.00E+00	0														
U-235	2.08E-16	0	0.00E+00	0	1.57E-17	0	0.00E+00	0								
U-238	0.00E+00	0														
<b>Total</b>	<b>4.55E-14</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>3.44E-15</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>								

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
 in mrem/yr and as a Percentage of Total Dose at t = 970 years

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil		All Pathways*	
	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%	Dose	%
Ac-227	1.50E-34	0	5.66E-18	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.33E-36	0	7.43E-17	0
Pa-231	7.40E-12	0	5.51E-13	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.26E-16	0	8.01E-12	0
Pb-210	1.09E-20	0	5.65E-21	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	7.06E-21	0	2.36E-20	0
Ra-226	2.41E-08	0	1.25E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	9.32E-13	0	2.41E-08	0
Ra-228	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0
Th-228	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0
Th-230	7.03E-02	82	5.51E-03	6	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.87E-05	0	7.58E-02	88
Th-232	9.88E-03	12	3.15E-05	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.55E-06	0	9.91E-03	12
U-234	6.36E-06	0	4.99E-07	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.42E-09	0	6.86E-06	0
U-235	3.20E-12	0	1.96E-14	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.17E-17	0	3.22E-12	0
U-238	8.33E-10	0	6.40E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.22E-13	0	8.98E-10	0
<b>Total</b>	<b>8.02E-02</b>	<b>93</b>	<b>5.55E-03</b>	<b>6</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>4.02E-05</b>	<b>0</b>	<b>8.57E-02</b>	<b>100</b>

0\*Sum of dose from all releases and from primary contamination.

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Dose/Source Ratios Summed Over All Pathways  
Parent and Progeny Principal Radionuclide Contributions Indicated

0	Parent (i)	Product (j)	Thread Fraction	DSR(j,t) (mrem/yr)/(pCi/g)									
				0.000E+00	1.000E+00	3.000E+00	6.000E+00	1.200E+01	3.000E+01	7.500E+01	1.750E+02	4.200E+02	9.700E+02
	Ac-227+D	Ac-227+D	1.000E+00	1.160E-03	1.064E-03	8.943E-04	6.899E-04	4.127E-04	8.779E-05	2.041E-06	3.835E-10	3.961E-18	1.460E-17
	0Pa-231	Pa-231	1.000E+00	1.256E-04	1.229E-04	1.176E-04	1.100E-04	9.637E-05	6.477E-05	2.411E-05	2.686E-06	1.683E-08	2.917E-13
	Pa-231	Ac-227+D	1.000E+00	1.825E-05	5.284E-05	1.113E-04	1.766E-04	2.490E-04	2.607E-04	1.121E-04	1.260E-05	7.896E-08	1.380E-12
	Pa-231	EDSR(j)		1.439E-04	1.757E-04	2.289E-04	2.866E-04	3.454E-04	3.255E-04	1.363E-04	1.529E-05	9.579E-08	1.671E-12
	0Pb-210+D	Pb-210+D	1.000E+00	5.234E-06	5.019E-06	4.615E-06	4.070E-06	3.168E-06	1.492E-06	2.315E-07	3.586E-09	3.342E-13	1.029E-21
	0Ra-226+D	Ra-226+D	1.000E+00	7.417E-03	7.298E-03	7.064E-03	6.728E-03	6.105E-03	4.559E-03	2.204E-03	4.387E-04	9.961E-06	2.523E-09
	Ra-226+D	Pb-210+D	1.000E+00	8.105E-08	2.385E-07	5.269E-07	8.978E-07	1.452E-06	2.150E-06	1.641E-06	3.800E-07	8.757E-09	2.249E-12
	Ra-226	EDSR(j)		7.417E-03	7.298E-03	7.065E-03	6.729E-03	6.106E-03	4.561E-03	2.205E-03	4.391E-04	9.970E-06	2.525E-09
	0Ra-228+D	Ra-228+D	1.000E+00	3.366E-03	2.937E-03	2.236E-03	1.488E-03	6.681E-04	5.924E-05	1.861E-07	2.363E-13	1.019E-25	0.000E+00
	Ra-228+D	Th-228+D	1.000E+00	9.140E-04	2.347E-03	3.479E-03	3.273E-03	1.795E-03	1.703E-04	5.357E-07	6.799E-13	2.923E-25	0.000E+00
	Ra-228	EDSR(j)		4.280E-03	5.284E-03	5.715E-03	4.761E-03	2.463E-03	2.295E-04	7.218E-07	9.162E-13	3.941E-25	0.000E+00
	0Th-228+D	Th-228+D	1.000E+00	5.474E-03	3.809E-03	1.844E-03	6.307E-04	7.985E-05	1.330E-07	1.106E-13	7.021E-30	0.000E+00	0.000E+00
	0Th-230	Th-230	1.000E+00	1.601E-05	1.601E-05	1.601E-05	1.601E-05	1.601E-05	1.600E-05	1.600E-05	1.599E-05	1.595E-05	1.588E-05
	Th-230	Ra-226+D	1.000E+00	1.607E-06	4.794E-06	1.101E-05	1.997E-05	3.659E-05	7.776E-05	1.404E-04	1.870E-04	1.973E-04	1.948E-04
	Th-230	Pb-210+D	1.000E+00	1.773E-11	8.730E-11	4.215E-10	1.362E-09	4.507E-09	1.937E-08	5.859E-08	9.797E-08	1.107E-07	1.169E-07
	Th-230	EDSR(j)		1.761E-05	2.080E-05	2.702E-05	3.598E-05	5.260E-05	9.378E-05	1.565E-04	2.031E-04	2.133E-04	2.108E-04
	0Th-232	Th-232	1.000E+00	1.838E-05	1.838E-05	1.838E-05	1.838E-05	1.838E-05	1.838E-05	1.838E-05	1.839E-05	1.839E-05	1.840E-05
	Th-232	Ra-228+D	1.000E+00	2.026E-04	5.819E-04	1.202E-03	1.862E-03	2.587E-03	3.125E-03	3.175E-03	3.170E-03	3.159E-03	3.133E-03
	Th-232	Th-228+D	1.000E+00	5.990E-05	2.645E-04	1.001E-03	2.256E-03	4.049E-03	5.554E-03	5.700E-03	5.691E-03	5.669E-03	5.618E-03
	Th-232	EDSR(j)		2.809E-04	8.648E-04	2.221E-03	4.137E-03	6.655E-03	8.697E-03	8.893E-03	8.880E-03	8.846E-03	8.768E-03
	0U-234	U-234	1.000E+00	1.653E-06	1.617E-06	1.547E-06	1.448E-06	1.268E-06	8.528E-07	3.179E-07	3.546E-08	2.230E-10	3.898E-15
	U-234	Th-230	1.000E+00	7.279E-11	2.168E-10	4.954E-10	8.905E-10	1.605E-09	3.259E-09	5.388E-09	6.506E-09	6.633E-09	6.603E-09
	U-234	Ra-226+D	1.000E+00	7.352E-12	3.639E-11	1.777E-10	5.849E-10	2.008E-09	9.496E-09	3.440E-08	6.921E-08	8.179E-08	8.105E-08
	U-234	Pb-210+D	1.000E+00	5.431E-17	4.803E-16	4.685E-15	2.758E-14	1.756E-13	1.770E-12	1.202E-11	3.432E-11	4.570E-11	4.852E-11
	U-234	EDSR(j)		1.653E-06	1.617E-06	1.547E-06	1.449E-06	1.272E-06	8.656E-07	3.577E-07	1.112E-07	8.869E-08	8.771E-08
	0U-235+D	U-235+D	1.000E+00	3.739E-04	3.657E-04	3.499E-04	3.274E-04	2.868E-04	1.928E-04	7.187E-05	8.021E-06	5.050E-08	8.840E-13
	U-235+D	Pa-231	1.000E+00	1.314E-09	3.886E-09	8.692E-09	1.511E-08	2.538E-08	4.160E-08	3.808E-08	9.854E-09	1.390E-10	5.215E-15
	U-235+D	Ac-227+D	1.000E+00	1.952E-10	9.428E-10	4.355E-09	1.310E-08	3.761E-08	1.099E-07	1.419E-07	4.210E-08	6.263E-10	2.408E-14
	U-235	EDSR(j)		3.739E-04	3.657E-04	3.499E-04	3.274E-04	2.869E-04	1.930E-04	7.205E-05	8.073E-06	5.127E-08	9.133E-13
	0U-238	U-238	5.450E-07	8.045E-13	7.869E-13	7.529E-13	7.046E-13	6.174E-13	4.152E-13	1.548E-13	1.727E-14	1.087E-16	1.902E-21

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Dose/Source Ratios Summed Over All Pathways  
Parent and Progeny Principal Radionuclide Contributions Indicated

0 Parent (i)	Product (j)	Thread Fraction	DSR(j,t) (mrem/yr)/(pCi/g)									
			0.000E+00	1.000E+00	3.000E+00	6.000E+00	1.200E+01	3.000E+01	7.500E+01	1.750E+02	4.200E+02	9.700E+02
U-238+D	U-238+D	1.000E+00	1.157E-04	1.131E-04	1.082E-04	1.013E-04	8.874E-05	5.966E-05	2.223E-05	2.481E-06	1.561E-08	2.730E-13
U-238+D	U-234	1.000E+00	2.307E-12	6.821E-12	1.526E-11	2.652E-11	4.457E-11	7.308E-11	6.693E-11	1.733E-11	2.450E-13	9.224E-18
U-238+D	Th-230	1.000E+00	1.024E-16	5.059E-16	2.462E-15	8.057E-15	2.734E-14	1.251E-13	4.214E-13	7.617E-13	8.459E-13	8.431E-13
U-238+D	Ra-226+D	1.000E+00	6.903E-18	6.130E-17	6.031E-16	3.599E-15	2.357E-14	2.561E-13	2.030E-12	7.085E-12	1.035E-11	1.035E-11
U-238+D	Pb-210+D	1.000E+00	3.832E-23	6.392E-22	1.221E-20	1.303E-19	1.608E-18	3.812E-17	6.030E-16	3.270E-15	5.733E-15	6.174E-15
U-238	EDSR(j)		1.157E-04	1.131E-04	1.082E-04	1.013E-04	8.874E-05	5.966E-05	2.223E-05	2.481E-06	1.562E-08	1.148E-11

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

0

Single Radionuclide Soil Guidelines G(i,t) in pCi/g  
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide (i)	t=	0.000E+00	1.000E+00	3.000E+00	6.000E+00	1.200E+01	3.000E+01	7.500E+01	1.750E+02	4.200E+02	9.700E+02
Ac-227		2.155E+04	2.350E+04	2.796E+04	3.624E+04	6.057E+04	2.848E+05	1.225E+07	6.519E+10	*7.232E+13	*7.232E+13
Pa-231		1.737E+05	1.423E+05	1.092E+05	8.724E+04	7.238E+04	7.682E+04	1.835E+05	1.635E+06	2.610E+08	*4.723E+10
Pb-210		4.776E+06	4.981E+06	5.417E+06	6.143E+06	7.891E+06	1.675E+07	1.080E+08	6.972E+09	7.480E+13	*7.632E+13
Ra-226		3.370E+03	3.426E+03	3.539E+03	3.715E+03	4.094E+03	5.481E+03	1.134E+04	5.694E+04	2.508E+06	9.901E+09
Ra-228		5.841E+03	4.731E+03	4.375E+03	5.251E+03	1.015E+04	1.089E+05	3.464E+07	2.729E+13	*2.726E+14	*2.726E+14
Th-228		4.567E+03	6.563E+03	1.355E+04	3.964E+04	3.131E+05	1.880E+08	2.261E+14	*8.201E+14	*8.201E+14	*8.201E+14
Th-230		1.419E+06	1.202E+06	9.251E+05	6.949E+05	4.753E+05	2.666E+05	1.598E+05	1.231E+05	1.172E+05	1.186E+05
Th-232		8.901E+04	2.891E+04	1.125E+04	6.043E+03	3.757E+03	2.874E+03	2.811E+03	2.815E+03	2.826E+03	2.851E+03
U-234		1.513E+07	1.546E+07	1.616E+07	1.725E+07	1.966E+07	2.888E+07	6.990E+07	2.248E+08	2.819E+08	2.850E+08
U-235		6.687E+04	6.837E+04	7.146E+04	7.635E+04	8.714E+04	1.295E+05	3.470E+05	*2.160E+06	*2.160E+06	*2.160E+06
U-238		2.161E+05	2.210E+05	2.310E+05	2.468E+05	2.817E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05

\*At specific activity limit

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)  
 and Single Radionuclide Soil Guidelines G(i,t) in pCi/g  
 at tmin = time of minimum single radionuclide soil guideline  
 and at tmax = time of maximum total dose = 7.4 years

ONuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
Ac-227	5.090E+00	0	1.160E-03	2.155E+04	6.109E-04	4.092E+04
Pa-231	4.790E+00	16.2	3.592E-04	6.960E+04	3.063E-04	8.162E+04
Pb-210	2.294E+01	0	5.234E-06	4.776E+06	3.837E-06	6.516E+06
Ra-226	9.560E+00	0	7.417E-03	3.370E+03	6.578E-03	3.801E+03
Ra-228	3.500E-01	3	5.715E-03	4.375E+03	4.160E-03	6.010E+03
Th-228	1.400E-01	0	5.474E-03	4.567E+03	3.801E-04	6.577E+04
Th-230	3.597E+02	375	2.134E-04	1.172E+05	4.002E-05	6.247E+05
Th-232	1.130E+00	64.1	8.894E-03	2.811E+03	4.890E-03	5.113E+03
U-234	7.822E+01	0	1.653E-06	1.513E+07	1.405E-06	1.779E+07
U-235	3.530E+00	0	3.739E-04	6.687E+04	3.174E-04	7.875E+04
U-238	7.822E+01	0	1.157E-04	2.161E+05	9.820E-05	2.546E+05

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Individual Nuclide Dose Summed Over All Pathways  
Parent Nuclide and Thread Fraction Indicated

ONuclide	Parent (j)	THF(i)	DOSE (j, t), mrem/yr									
			t= 0.000E+00	1.000E+00	3.000E+00	6.000E+00	1.200E+01	3.000E+01	7.500E+01	1.750E+02	4.200E+02	9.700E+02
Ac-227	Ac-227	1.000E+00	5.906E-03	5.415E-03	4.552E-03	3.511E-03	2.101E-03	4.469E-04	1.039E-05	1.952E-09	2.016E-17	7.432E-17
Ac-227	Pa-231	1.000E+00	8.743E-05	2.531E-04	5.333E-04	8.457E-04	1.193E-03	1.249E-03	5.372E-04	6.036E-05	3.782E-07	6.608E-12
Ac-227	U-235	1.000E+00	6.890E-10	3.328E-09	1.537E-08	4.626E-08	1.328E-07	3.878E-07	5.010E-07	1.486E-07	2.211E-09	8.499E-14
Ac-227	ΣDOSE (j) :		5.993E-03	5.668E-03	5.085E-03	4.357E-03	3.294E-03	1.696E-03	5.481E-04	6.051E-05	3.804E-07	6.693E-12
0Pa-231	Pa-231	1.000E+00	6.018E-04	5.886E-04	5.631E-04	5.270E-04	4.616E-04	3.102E-04	1.155E-04	1.286E-05	8.061E-08	1.397E-12
Pa-231	U-235	1.000E+00	4.640E-09	1.372E-08	3.068E-08	5.332E-08	8.960E-08	1.469E-07	1.344E-07	3.478E-08	4.908E-10	1.841E-14
Pa-231	ΣDOSE (j) :		6.018E-04	5.886E-04	5.631E-04	5.270E-04	4.617E-04	3.104E-04	1.156E-04	1.290E-05	8.110E-08	1.416E-12
0Pb-210	Pb-210	1.000E+00	1.201E-04	1.151E-04	1.059E-04	9.336E-05	7.268E-05	3.423E-05	5.311E-06	8.226E-08	7.667E-12	2.360E-20
Pb-210	Ra-226	1.000E+00	7.748E-07	2.280E-06	5.037E-06	8.583E-06	1.388E-05	2.055E-05	1.568E-05	3.633E-06	8.372E-08	2.150E-11
Pb-210	Th-230	1.000E+00	6.377E-09	3.140E-08	1.516E-07	4.898E-07	1.621E-06	6.965E-06	2.107E-05	3.524E-05	3.982E-05	4.206E-05
Pb-210	U-234	1.000E+00	4.248E-15	3.757E-14	3.665E-13	2.157E-12	1.373E-11	1.384E-10	9.402E-10	2.685E-09	3.574E-09	3.795E-09
Pb-210	U-238	1.000E+00	2.997E-21	5.000E-20	9.554E-19	1.019E-17	1.258E-16	2.982E-15	4.717E-14	2.558E-13	4.485E-13	4.830E-13
Pb-210	ΣDOSE (j) :		1.209E-04	1.175E-04	1.111E-04	1.024E-04	8.818E-05	6.175E-05	4.207E-05	3.895E-05	3.991E-05	4.207E-05
0Ra-226	Ra-226	1.000E+00	7.091E-02	6.977E-02	6.753E-02	6.432E-02	5.836E-02	4.358E-02	2.107E-02	4.194E-03	9.523E-05	2.412E-08
Ra-226	Th-230	1.000E+00	5.778E-04	1.724E-03	3.962E-03	7.182E-03	1.316E-02	2.797E-02	5.050E-02	6.727E-02	7.095E-02	7.008E-02
Ra-226	U-234	1.000E+00	5.751E-10	2.846E-09	1.390E-08	4.575E-08	1.571E-07	7.428E-07	2.690E-06	5.413E-06	6.398E-06	6.340E-06
Ra-226	U-238	1.000E+00	5.400E-16	4.795E-15	4.718E-14	2.815E-13	1.844E-12	2.003E-11	1.588E-10	5.542E-10	8.096E-10	8.099E-10
Ra-226	ΣDOSE (j) :		7.149E-02	7.149E-02	7.150E-02	7.151E-02	7.152E-02	7.155E-02	7.157E-02	7.147E-02	7.105E-02	7.008E-02
0Ra-228	Ra-228	1.000E+00	1.178E-03	1.028E-03	7.826E-04	5.209E-04	2.338E-04	2.073E-05	6.515E-08	8.270E-14	3.565E-26	0.000E+00
Ra-228	Th-232	1.000E+00	2.289E-04	6.575E-04	1.358E-03	2.104E-03	2.924E-03	3.531E-03	3.588E-03	3.582E-03	3.569E-03	3.540E-03
Ra-228	ΣDOSE (j) :		1.407E-03	1.686E-03	2.140E-03	2.625E-03	3.158E-03	3.552E-03	3.588E-03	3.582E-03	3.569E-03	3.540E-03
0Th-228	Ra-228	1.000E+00	3.199E-04	8.216E-04	1.218E-03	1.145E-03	6.281E-04	5.959E-05	1.875E-07	2.380E-13	1.023E-25	0.000E+00
Th-228	Th-228	1.000E+00	7.664E-04	5.333E-04	2.582E-04	8.830E-05	1.118E-05	1.861E-08	1.548E-14	9.829E-31	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	6.769E-05	2.989E-04	1.131E-03	2.549E-03	4.576E-03	6.276E-03	6.441E-03	6.431E-03	6.406E-03	6.348E-03
Th-228	ΣDOSE (j) :		1.154E-03	1.654E-03	2.607E-03	3.783E-03	5.215E-03	6.336E-03	6.441E-03	6.431E-03	6.406E-03	6.348E-03
0Th-230	Th-230	1.000E+00	5.758E-03	5.758E-03	5.758E-03	5.757E-03	5.757E-03	5.756E-03	5.754E-03	5.750E-03	5.738E-03	5.711E-03
Th-230	U-234	1.000E+00	5.694E-09	1.696E-08	3.875E-08	6.966E-08	1.255E-07	2.549E-07	4.214E-07	5.089E-07	5.189E-07	5.165E-07
Th-230	U-238	1.000E+00	8.009E-15	3.958E-14	1.926E-13	6.302E-13	2.138E-12	9.787E-12	3.296E-11	5.958E-11	6.617E-11	6.594E-11
Th-230	ΣDOSE (j) :		5.758E-03	5.758E-03	5.758E-03	5.757E-03	5.757E-03	5.757E-03	5.755E-03	5.750E-03	5.738E-03	5.712E-03
0Th-232	Th-232	1.000E+00	2.077E-05	2.077E-05	2.077E-05	2.077E-05	2.077E-05	2.077E-05	2.077E-05	2.078E-05	2.078E-05	2.080E-05
0U-234	U-234	1.000E+00	1.293E-04	1.264E-04	1.210E-04	1.132E-04	9.921E-05	6.671E-05	2.486E-05	2.774E-06	1.744E-08	3.049E-13
U-234	U-238	1.000E+00	1.805E-10	5.335E-10	1.194E-09	2.075E-09	3.486E-09	5.716E-09	5.235E-09	1.356E-09	1.916E-11	7.215E-16
U-234	ΣDOSE (j) :		1.293E-04	1.264E-04	1.210E-04	1.132E-04	9.921E-05	6.671E-05	2.487E-05	2.775E-06	1.746E-08	3.056E-13
0U-235	U-235	1.000E+00	1.320E-03	1.291E-03	1.235E-03	1.156E-03	1.013E-03	6.807E-04	2.537E-04	2.831E-05	1.783E-07	3.121E-12

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Individual Nuclide Dose Summed Over All Pathways  
 Parent Nuclide and Thread Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr									
			t= 0.000E+00	1.000E+00	3.000E+00	6.000E+00	1.200E+01	3.000E+01	7.500E+01	1.750E+02	4.200E+02	9.700E+02
U-238	U-238	5.450E-07	6.293E-11	6.155E-11	5.889E-11	5.512E-11	4.829E-11	3.248E-11	1.211E-11	1.351E-12	8.501E-15	1.488E-19
U-238	U-238	1.000E+00	9.047E-03	8.849E-03	8.466E-03	7.923E-03	6.942E-03	4.667E-03	1.739E-03	1.940E-04	1.221E-06	2.135E-11
U-238	ΣDOSE(j):		9.047E-03	8.849E-03	8.466E-03	7.923E-03	6.942E-03	4.667E-03	1.739E-03	1.940E-04	1.221E-06	2.135E-11

THF(i) is the thread fraction of the parent nuclide.

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Individual Nuclide Soil Concentration  
Parent Nuclide and Thread Fraction Indicated

ONuclide	Parent (j)	THF(i)	S(j,t), pCi/g									
			t= 0.000E+00	1.000E+00	3.000E+00	6.000E+00	1.200E+01	3.000E+01	7.500E+01	1.750E+02	4.200E+02	9.700E+02
Ac-227	Ac-227	1.000E+00	5.090E+00	4.667E+00	3.923E+00	3.025E+00	1.805E+00	3.818E-01	8.788E-03	1.632E-06	1.672E-14	8.944E-32
Ac-227	Pa-231	1.000E+00	0.000E+00	1.444E-01	3.891E-01	6.636E-01	9.721E-01	1.038E+00	4.477E-01	5.020E-02	3.136E-04	5.412E-09
Ac-227	U-235	1.000E+00	0.000E+00	1.138E-06	9.395E-06	3.311E-05	1.031E-04	3.164E-04	4.151E-04	1.234E-04	1.833E-06	6.997E-11
Ac-227	ΣS(j) :		5.090E+00	4.811E+00	4.312E+00	3.688E+00	2.778E+00	1.420E+00	4.569E-01	5.033E-02	3.154E-04	5.482E-09
0Pa-231	Pa-231	1.000E+00	4.790E+00	4.685E+00	4.482E+00	4.194E+00	3.673E+00	2.467E+00	9.175E-01	1.020E-01	6.368E-04	1.099E-08
Pa-231	U-235	1.000E+00	0.000E+00	7.305E-05	2.097E-04	3.923E-04	6.856E-04	1.151E-03	1.063E-03	2.753E-04	3.876E-06	1.448E-10
Pa-231	ΣS(j) :		4.790E+00	4.685E+00	4.482E+00	4.194E+00	3.674E+00	2.468E+00	9.185E-01	1.022E-01	6.407E-04	1.114E-08
0Pb-210	Pb-210	1.000E+00	2.294E+01	2.199E+01	2.021E+01	1.780E+01	1.382E+01	6.470E+00	9.921E-01	1.513E-02	1.372E-06	3.069E-15
Pb-210	Ra-226	1.000E+00	0.000E+00	2.899E-01	8.204E-01	1.503E+00	2.524E+00	3.808E+00	2.905E+00	6.685E-01	1.532E-02	3.867E-06
Pb-210	Th-230	1.000E+00	0.000E+00	2.386E-03	2.065E-02	7.814E-02	2.802E-01	1.260E+00	3.851E+00	6.379E+00	6.992E+00	6.901E+00
Pb-210	U-234	1.000E+00	0.000E+00	1.589E-09	4.122E-08	3.124E-07	2.256E-06	2.456E-05	1.708E-04	4.862E-04	6.292E-04	6.244E-04
Pb-210	U-238	1.000E+00	0.000E+00	1.121E-15	8.717E-14	1.327E-12	1.950E-11	5.166E-10	8.509E-09	4.631E-08	7.926E-08	7.977E-08
Pb-210	ΣS(j) :		2.294E+01	2.228E+01	2.105E+01	1.938E+01	1.663E+01	1.154E+01	7.748E+00	7.063E+00	7.008E+00	6.902E+00
0Ra-226	Ra-226	1.000E+00	9.560E+00	9.406E+00	9.105E+00	8.723E+00	7.867E+00	5.873E+00	2.837E+00	5.641E-01	1.278E-02	3.227E-06
Ra-226	Th-230	1.000E+00	0.000E+00	1.546E-01	4.562E-01	8.906E-01	1.697E+00	3.694E+00	6.731E+00	8.987E+00	9.476E+00	9.346E+00
Ra-226	U-234	1.000E+00	0.000E+00	1.538E-07	1.349E-06	5.206E-06	1.940E-05	9.660E-05	3.571E-04	7.228E-04	8.545E-04	8.456E-04
Ra-226	U-238	1.000E+00	0.000E+00	1.444E-13	3.783E-12	2.911E-11	2.166E-10	2.554E-09	2.095E-08	7.390E-08	1.081E-07	1.080E-07
Ra-226	ΣS(j) :		9.560E+00	9.560E+00	9.561E+00	9.562E+00	9.564E+00	9.568E+00	9.569E+00	9.552E+00	9.490E+00	9.347E+00
0Ra-228	Ra-228	1.000E+00	3.500E-01	3.054E-01	2.325E-01	1.545E-01	6.900E-02	6.041E-03	1.866E-05	2.330E-11	9.776E-24	0.000E+00
Ra-228	Th-232	1.000E+00	0.000E+00	1.273E-01	3.354E-01	5.578E-01	8.018E-01	9.812E-01	9.976E-01	9.958E-01	9.913E-01	9.812E-01
Ra-228	ΣS(j) :		3.500E-01	4.327E-01	5.679E-01	7.123E-01	8.708E-01	9.873E-01	9.976E-01	9.958E-01	9.913E-01	9.812E-01
0Th-228	Ra-228	1.000E+00	0.000E+00	9.910E-02	1.836E-01	1.836E-01	1.027E-01	9.669E-03	2.991E-05	3.734E-11	1.567E-23	0.000E+00
Th-228	Th-228	1.000E+00	1.400E-01	9.742E-02	4.717E-02	1.599E-02	1.966E-03	3.103E-06	2.485E-12	1.470E-28	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	2.097E-02	1.383E-01	3.607E-01	6.916E-01	9.708E-01	9.975E-01	9.958E-01	9.913E-01	9.812E-01
Th-228	ΣS(j) :		1.400E-01	2.175E-01	3.691E-01	5.603E-01	7.963E-01	9.805E-01	9.976E-01	9.958E-01	9.913E-01	9.812E-01
0Th-230	Th-230	1.000E+00	3.597E+02	3.597E+02	3.596E+02	3.596E+02	3.596E+02	3.594E+02	3.589E+02	3.579E+02	3.555E+02	3.501E+02
Th-230	U-234	1.000E+00	0.000E+00	7.114E-04	2.088E-03	4.040E-03	7.570E-03	1.574E-02	2.623E-02	3.169E-02	3.216E-02	3.168E-02
Th-230	U-238	1.000E+00	0.000E+00	1.001E-09	8.744E-09	3.354E-08	1.235E-07	5.949E-07	2.043E-06	3.709E-06	4.104E-06	4.047E-06
Th-230	ΣS(j) :		3.597E+02	3.597E+02	3.596E+02	3.596E+02	3.596E+02	3.594E+02	3.589E+02	3.580E+02	3.555E+02	3.502E+02
0Th-232	Th-232	1.000E+00	1.130E+00	1.130E+00	1.130E+00	1.130E+00	1.130E+00	1.129E+00	1.128E+00	1.126E+00	1.121E+00	1.110E+00
0U-234	U-234	1.000E+00	7.822E+01	7.651E+01	7.320E+01	6.850E+01	6.000E+01	4.031E+01	1.500E+01	1.670E+00	1.047E-02	1.823E-07
U-234	U-238	1.000E+00	0.000E+00	2.160E-04	6.200E-04	1.160E-03	2.028E-03	3.404E-03	3.144E-03	8.154E-04	1.150E-05	4.314E-10
U-234	ΣS(j) :		7.822E+01	7.651E+01	7.320E+01	6.850E+01	6.000E+01	4.031E+01	1.501E+01	1.671E+00	1.048E-02	1.827E-07
0U-235	U-235	1.000E+00	3.530E+00	3.453E+00	3.303E+00	3.091E+00	2.708E+00	1.819E+00	6.772E-01	7.541E-02	4.732E-04	8.245E-09

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Individual Nuclide Soil Concentration  
 Parent Nuclide and Thread Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g									
			t= 0.000E+00	1.000E+00	3.000E+00	6.000E+00	1.200E+01	3.000E+01	7.500E+01	1.750E+02	4.200E+02	9.700E+02
U-238	U-238	5.450E-07	4.263E-05	4.170E-05	3.989E-05	3.733E-05	3.270E-05	2.197E-05	8.178E-06	9.107E-07	5.714E-09	9.957E-14
U-238	U-238	1.000E+00	7.822E+01	7.651E+01	7.320E+01	6.850E+01	6.000E+01	4.031E+01	1.501E+01	1.671E+00	1.048E-02	1.827E-07
U-238	ΣS(j):		7.822E+01	7.651E+01	7.320E+01	6.850E+01	6.000E+01	4.031E+01	1.501E+01	1.671E+00	1.048E-02	1.827E-07

THF(i) is the thread fraction of the parent nuclide.

Parent Dose Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Run Time Information

ResOCalc.EXE execution began at 07:33 on 07/15/2024

ResOCalc.EXE execution ended at 07:33 on 07/15/2024

ResOCalc.EXE execution time .840 seconds

Risk Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

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Time = 6.000E+00 .....	13
Time = 1.200E+01 .....	16
Time = 3.000E+01 .....	19
Time = 7.500E+01 .....	22
Time = 1.750E+02 .....	25
Time = 4.200E+02 .....	28
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## Risk Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

## Cancer Risk Slope Factors Summary Table

Current library: DCFPAK3.02 Morbidity

Default library: DCFPAK3.02 Morbidity

0	Menu	Parameter	Current Value	Default	Parameter Name
	DCSF	Ground external radiation slope factors, 1/yr per (pCi/g):			
	DCSF	Ac-227+D	1.63E-06	1.63E-06	SLPF(1,1)
	DCSF	Pa-231	1.27E-07	1.27E-07	SLPF(2,1)
	DCSF	Pb-210+D	4.30E-09	4.30E-09	SLPF(3,1)
	DCSF	Ra-226+D	8.37E-06	8.37E-06	SLPF(4,1)
	DCSF	Ra-228+D	4.04E-06	4.04E-06	SLPF(5,1)
	DCSF	Th-228+D	7.33E-06	7.33E-06	SLPF(6,1)
	DCSF	Th-230	8.45E-10	8.45E-10	SLPF(7,1)
	DCSF	Th-232	3.58E-10	3.58E-10	SLPF(8,1)
	DCSF	U-234	2.53E-10	2.53E-10	SLPF(9,1)
	DCSF	U-235+D	5.76E-07	5.76E-07	SLPF(10,1)
	DCSF	U-238	1.24E-10	1.24E-10	SLPF(11,1)
	DCSF	U-238+D	1.19E-07	1.19E-07	SLPF(12,1)
	DCSF	Inhalation, slope factors, 1/(pCi):			
	DCSF	Ac-227+D	2.13E-07	2.13E-07	SLPF(1,2)
	DCSF	Pa-231	7.62E-08	7.62E-08	SLPF(2,2)
	DCSF	Pb-210+D	3.08E-08	3.08E-08	SLPF(3,2)
	DCSF	Ra-226+D	2.82E-08	2.82E-08	SLPF(4,2)
	DCSF	Ra-228+D	4.37E-08	4.37E-08	SLPF(5,2)
	DCSF	Th-228+D	1.44E-07	1.44E-07	SLPF(6,2)
	DCSF	Th-230	3.41E-08	3.41E-08	SLPF(7,2)
	DCSF	Th-232	4.33E-08	4.33E-08	SLPF(8,2)
	DCSF	U-234	2.78E-08	2.78E-08	SLPF(9,2)
	DCSF	U-235+D	2.50E-08	2.50E-08	SLPF(10,2)
	DCSF	U-238	2.36E-08	2.36E-08	SLPF(11,2)
	DCSF	U-238+D	2.37E-08	2.37E-08	SLPF(12,2)
	DCSF	Food ingestion, slope factors, 1/(pCi):			
	DCSF	Ac-227+D	6.54E-10	6.54E-10	SLPF(1,3)
	DCSF	Pa-231	2.26E-10	2.26E-10	SLPF(2,3)
	DCSF	Pb-210+D	3.44E-09	3.44E-09	SLPF(3,3)
	DCSF	Ra-226+D	5.15E-10	5.15E-10	SLPF(4,3)
	DCSF	Ra-228+D	1.43E-09	1.43E-09	SLPF(5,3)
	DCSF	Th-228+D	4.23E-10	4.23E-10	SLPF(6,3)
	DCSF	Th-230	1.19E-10	1.19E-10	SLPF(7,3)
	DCSF	Th-232	1.33E-10	1.33E-10	SLPF(8,3)
	DCSF	U-234	9.55E-11	9.55E-11	SLPF(9,3)
	DCSF	U-235+D	9.76E-11	9.76E-11	SLPF(10,3)
	DCSF	U-238	8.66E-11	8.66E-11	SLPF(11,3)
	DCSF	U-238+D	1.21E-10	1.21E-10	SLPF(12,3)
	DCSF	Water ingestion, slope factors, 1/(pCi):			
	DCSF	Ac-227+D	4.87E-10	4.87E-10	SLPF(1,4)
	DCSF	Pa-231	1.72E-10	1.72E-10	SLPF(2,4)

Risk Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Cancer Risk Slope Factors Summary Table (continued)

Current library: DCFPAK3.02 Morbidity

Default library: DCFPAK3.02 Morbidity

0	Menu	Parameter	Current Value	Default	Parameter Name
	DCSF	Pb-210+D	2.67E-09	2.67E-09	SLPF (3,4)
	DCSF	Ra-226+D	3.85E-10	3.85E-10	SLPF (4,4)
	DCSF	Ra-228+D	1.04E-09	1.04E-09	SLPF (5,4)
	DCSF	Th-228+D	3.00E-10	3.00E-10	SLPF (6,4)
	DCSF	Th-230	9.14E-11	9.14E-11	SLPF (7,4)
	DCSF	Th-232	1.01E-10	1.01E-10	SLPF (8,4)
	DCSF	U-234	7.07E-11	7.07E-11	SLPF (9,4)
	DCSF	U-235+D	7.17E-11	7.17E-11	SLPF (10,4)
	DCSF	U-238	6.40E-11	6.40E-11	SLPF (11,4)
	DCSF	U-238+D	8.71E-11	8.71E-11	SLPF (12,4)
	DCSF	Soil ingestion, slope factors, 1/(pCi):			
	DCSF	Ac-227+D	6.54E-10	6.54E-10	SLPF (1,5)
	DCSF	Pa-231	2.26E-10	2.26E-10	SLPF (2,5)
	DCSF	Pb-210+D	3.44E-09	3.44E-09	SLPF (3,5)
	DCSF	Ra-226+D	5.15E-10	5.15E-10	SLPF (4,5)
	DCSF	Ra-228+D	1.43E-09	1.43E-09	SLPF (5,5)
	DCSF	Th-228+D	4.23E-10	4.23E-10	SLPF (6,5)
	DCSF	Th-230	1.19E-10	1.19E-10	SLPF (7,5)
	DCSF	Th-232	1.33E-10	1.33E-10	SLPF (8,5)
	DCSF	U-234	9.55E-11	9.55E-11	SLPF (9,5)
	DCSF	U-235+D	9.76E-11	9.76E-11	SLPF (10,5)
	DCSF	U-238	8.66E-11	8.66E-11	SLPF (11,5)
	DCSF	U-238+D	1.21E-10	1.21E-10	SLPF (12,5)
	Sf-Rn	Radon Inhalation slope factors, 1/(pCi):			
	Sf-Rn	Rn-222	1.80E-12	1.80E-12	SLPFRN (1,1)
	Sf-Rn	Po-218	3.70E-12	3.70E-12	SLPFRN (1,2)
	Sf-Rn	Pb-214	6.20E-12	6.20E-12	SLPFRN (1,3)
	Sf-Rn	Bi-214	1.50E-11	1.50E-11	SLPFRN (1,4)
	Sf-Rn	Rn-220	1.90E-13	1.90E-13	SLPFRN (2,1)
	Sf-Rn	Po-216	3.00E-15	3.00E-15	SLPFRN (2,2)
	Sf-Rn	Pb-212	3.90E-11	3.90E-11	SLPFRN (2,3)
	Sf-Rn	Bi-212	3.70E-11	3.70E-11	SLPFRN (2,4)
	Sf-Rn	Radon K factors, (mrem/WLM):			
	Sf-Rn	Rn-222 Indoor	3.88E+02	3.88E+02	KFACTR (1,1)
	Sf-Rn	Rn-222 Outdoor	3.88E+02	3.88E+02	KFACTR (1,2)
	Sf-Rn	Rn-220 Indoor	1.88E+02	1.88E+02	KFACTR (2,1)
	Sf-Rn	Rn-220 Outdoor	1.88E+02	1.88E+02	KFACTR (2,2)

Risk Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t = 0 years

0  
0

From releases to ground water and to surface water

Radio- Nuclide	Ground		Fish		Plant		Meat		Milk		Soil		Water	
	risk	%												
Ac-227	0.00E+00	0												
Pa-231	0.00E+00	0												
Pb-210	0.00E+00	0												
Ra-226	0.00E+00	0												
Ra-228	0.00E+00	0												
Th-228	0.00E+00	0												
Th-230	0.00E+00	0												
Th-232	0.00E+00	0												
U-234	0.00E+00	0												
U-235	0.00E+00	0												
U-238	0.00E+00	0												
Total	0.00E+00	0												

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t = 0 years

0  
0

Directly from primary contamination and from release to atmosphere (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil		All Pathways*	
	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%
Ac-227	7.54E-08	3	6.39E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.53E-14	0	7.60E-08	3
Pa-231	7.55E-09	0	2.96E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.73E-14	0	7.85E-09	0
Pb-210	8.75E-10	0	5.50E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.08E-12	0	1.43E-09	0
Ra-226	1.72E-06	79	3.00E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.04E-13	0	1.72E-06	79
Ra-228	7.27E-08	3	4.09E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.85E-14	0	7.27E-08	3
Th-228	1.19E-07	5	1.23E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.68E-14	0	1.19E-07	5
Th-230	4.52E-09	0	1.36E-08	1	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.03E-12	0	1.81E-08	1
Th-232	5.19E-13	0	5.43E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	7.12E-15	0	5.48E-11	0
U-234	7.27E-12	0	1.77E-09	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.88E-13	0	1.77E-09	0
U-235	2.29E-08	1	7.17E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	8.69E-15	0	2.30E-08	1
U-238	1.45E-07	7	1.50E-09	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.38E-13	0	1.47E-07	7
Total	2.17E-06	99	1.89E-08	1	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.90E-12	0	2.19E-06	100

\* Sum of risk from all releases and from primary contamination via all but the Radon pathway.



Risk Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Total Excess Cancer Risk CNRSI(i,p,t)\*\* for Initially Existent Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t = 0 years

Radio-Nuclide	Directly from primary contamination and from release to atmosphere (Inhalation excludes radon)															
	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil		All Pathways***	
	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%
Ac-227	5.07E-08	2	4.30E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.37E-14	0	5.11E-08	2
Pa-231	3.22E-08	1	5.05E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.89E-14	0	3.27E-08	1
Pb-210	7.08E-10	0	4.45E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.53E-12	0	1.16E-09	0
Ra-226	1.36E-06	62	3.25E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.99E-13	0	1.36E-06	62
Ra-228	2.03E-08	1	1.75E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.34E-15	0	2.03E-08	1
Th-228	2.03E-09	0	2.09E-12	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.78E-17	0	2.04E-09	0
Th-230	3.64E-07	17	1.37E-08	1	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.19E-12	0	3.78E-07	17
Th-232	1.69E-07	8	1.98E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	7.90E-14	0	1.70E-07	8
U-234	1.38E-11	0	1.77E-09	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.88E-13	0	1.78E-09	0
U-235	2.29E-08	1	7.18E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	8.70E-15	0	2.30E-08	1
U-238	1.45E-07	7	1.50E-09	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.38E-13	0	1.47E-07	7
<b>Total</b>	<b>2.17E-06</b>	<b>99</b>	<b>1.89E-08</b>	<b>1</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>4.90E-12</b>	<b>0</b>	<b>2.19E-06</b>	<b>100</b>

\*\*CNRSI(i,p,t) includes contribution from progeny radionuclides

\*\*\* Sum of risk from all releases and from primary contamination via all pathways.

Risk Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t = 1 years

0  
0

From releases to ground water and to surface water

Radio- Nuclide	Ground		Fish		Plant		Meat		Milk		Soil		Water	
	risk	%												
Ac-227	0.00E+00	0												
Pa-231	0.00E+00	0												
Pb-210	0.00E+00	0												
Ra-226	0.00E+00	0												
Ra-228	0.00E+00	0												
Th-228	0.00E+00	0												
Th-230	0.00E+00	0												
Th-232	0.00E+00	0												
U-234	0.00E+00	0												
U-235	0.00E+00	0												
U-238	0.00E+00	0												
Total	0.00E+00	0												

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t = 1 years

0  
0

Directly from primary contamination and from release to atmosphere (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil		All Pathways*	
	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%
Ac-227	7.20E-08	3	6.11E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.68E-14	0	7.27E-08	3
Pa-231	7.39E-09	0	2.90E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.85E-14	0	7.68E-09	0
Pb-210	8.54E-10	0	5.37E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.18E-12	0	1.39E-09	0
Ra-226	1.72E-06	79	3.00E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.16E-13	0	1.72E-06	79
Ra-228	7.44E-08	3	4.18E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	6.26E-14	0	7.44E-08	3
Th-228	1.23E-07	6	1.27E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.80E-14	0	1.23E-07	6
Th-230	4.52E-09	0	1.36E-08	1	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.16E-12	0	1.81E-08	1
Th-232	5.19E-13	0	5.43E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	7.60E-15	0	5.48E-11	0
U-234	7.11E-12	0	1.73E-09	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.97E-13	0	1.74E-09	0
U-235	2.24E-08	1	7.01E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	9.08E-15	0	2.25E-08	1
U-238	1.42E-07	6	1.47E-09	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.49E-13	0	1.43E-07	7
Total	2.17E-06	99	1.88E-08	1	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.18E-12	0	2.19E-06	100

\* Sum of risk from all releases and from primary contamination via all but the Radon pathway.



Risk Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Total Excess Cancer Risk CNRSI(i,p,t)\*\* for Initially Existent Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t = 1 years

Radio- Nuclide	Directly from primary contamination and from release to atmosphere (Inhalation excludes radon)															
	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil		All Pathways***	
	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%
Ac-227	4.65E-08	2	3.94E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.39E-14	0	4.69E-08	2
Pa-231	3.29E-08	2	5.06E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.14E-14	0	3.34E-08	2
Pb-210	6.79E-10	0	4.27E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.58E-12	0	1.11E-09	0
Ra-226	1.34E-06	61	3.26E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	6.41E-13	0	1.34E-06	61
Ra-228	1.91E-08	1	1.67E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.35E-15	0	1.92E-08	1
Th-228	1.42E-09	0	1.46E-12	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.56E-17	0	1.42E-09	0
Th-230	3.86E-07	18	1.37E-08	1	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.34E-12	0	4.00E-07	18
Th-232	1.77E-07	8	2.05E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	8.48E-14	0	1.77E-07	8
U-234	1.42E-11	0	1.73E-09	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.97E-13	0	1.74E-09	0
U-235	2.24E-08	1	7.02E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	9.09E-15	0	2.25E-08	1
U-238	1.42E-07	6	1.47E-09	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.49E-13	0	1.43E-07	7
<b>Total</b>	<b>2.17E-06</b>	<b>99</b>	<b>1.88E-08</b>	<b>1</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>5.18E-12</b>	<b>0</b>	<b>2.19E-06</b>	<b>100</b>

\*\*CNRSI(i,p,t) includes contribution from progeny radionuclides

\*\*\* Sum of risk from all releases and from primary contamination via all pathways.

Risk Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t = 3 years

0  
0

From releases to ground water and to surface water

Radio- Nuclide	Ground		Fish		Plant		Meat		Milk		Soil		Water	
	risk	%												
Ac-227	0.00E+00	0												
Pa-231	0.00E+00	0												
Pb-210	0.00E+00	0												
Ra-226	0.00E+00	0												
Ra-228	0.00E+00	0												
Th-228	0.00E+00	0												
Th-230	0.00E+00	0												
Th-232	0.00E+00	0												
U-234	0.00E+00	0												
U-235	0.00E+00	0												
U-238	0.00E+00	0												
Total	0.00E+00	0												

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t = 3 years

0  
0

Directly from primary contamination and from release to atmosphere (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil		All Pathways*	
	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%
Ac-227	6.61E-08	3	5.60E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.89E-14	0	6.66E-08	3
Pa-231	7.07E-09	0	2.77E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.06E-14	0	7.35E-09	0
Pb-210	8.16E-10	0	5.13E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.37E-12	0	1.33E-09	0
Ra-226	1.72E-06	79	3.00E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.41E-13	0	1.72E-06	79
Ra-228	7.72E-08	4	4.34E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	7.10E-14	0	7.72E-08	4
Th-228	1.30E-07	6	1.34E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.06E-14	0	1.31E-07	6
Th-230	4.52E-09	0	1.36E-08	1	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.43E-12	0	1.81E-08	1
Th-232	5.19E-13	0	5.43E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	8.55E-15	0	5.48E-11	0
U-234	6.80E-12	0	1.65E-09	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.12E-13	0	1.66E-09	0
U-235	2.14E-08	1	6.71E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	9.76E-15	0	2.15E-08	1
U-238	1.36E-07	6	1.41E-09	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.67E-13	0	1.37E-07	6
Total	2.17E-06	99	1.86E-08	1	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.71E-12	0	2.18E-06	100

\* Sum of risk from all releases and from primary contamination via all but the Radon pathway.



Risk Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Total Excess Cancer Risk CNRSI(i,p,t)\*\* for Initially Existent Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t = 3 years

Radio-Nuclide	Directly from primary contamination and from release to atmosphere (Inhalation excludes radon)															
	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil		All Pathways***	
	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%
Ac-227	3.91E-08	2	3.32E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.35E-14	0	3.95E-08	2
Pa-231	3.40E-08	2	5.06E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.60E-14	0	3.45E-08	2
Pb-210	6.24E-10	0	3.92E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.67E-12	0	1.02E-09	0
Ra-226	1.30E-06	59	3.26E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	7.26E-13	0	1.30E-06	59
Ra-228	1.62E-08	1	1.44E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.22E-15	0	1.62E-08	1
Th-228	6.89E-10	0	7.09E-13	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.42E-17	0	6.90E-10	0
Th-230	4.29E-07	20	1.37E-08	1	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.65E-12	0	4.43E-07	20
Th-232	1.91E-07	9	2.17E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	9.69E-14	0	1.91E-07	9
U-234	1.52E-11	0	1.65E-09	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.12E-13	0	1.67E-09	0
U-235	2.15E-08	1	6.72E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	9.78E-15	0	2.15E-08	1
U-238	1.36E-07	6	1.41E-09	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.67E-13	0	1.37E-07	6
<b>Total</b>	<b>2.17E-06</b>	<b>99</b>	<b>1.86E-08</b>	<b>1</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>5.71E-12</b>	<b>0</b>	<b>2.18E-06</b>	<b>100</b>

\*\*CNRSI(i,p,t) includes contribution from progeny radionuclides

\*\*\* Sum of risk from all releases and from primary contamination via all pathways.

Risk Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t = 6 years

0  
0

From releases to ground water and to surface water

Radio- Nuclide	Ground		Fish		Plant		Meat		Milk		Soil		Water	
	risk	%												
Ac-227	0.00E+00	0												
Pa-231	0.00E+00	0												
Pb-210	0.00E+00	0												
Ra-226	0.00E+00	0												
Ra-228	0.00E+00	0												
Th-228	0.00E+00	0												
Th-230	0.00E+00	0												
Th-232	0.00E+00	0												
U-234	0.00E+00	0												
U-235	0.00E+00	0												
U-238	0.00E+00	0												
<b>Total</b>	<b>0.00E+00</b>	<b>0</b>												

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t = 6 years

0  
0

Directly from primary contamination and from release to atmosphere (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil		All Pathways*	
	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%
Ac-227	5.84E-08	3	4.95E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.03E-14	0	5.89E-08	3
Pa-231	6.62E-09	0	2.60E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.31E-14	0	6.88E-09	0
Pb-210	7.65E-10	0	4.81E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.60E-12	0	1.25E-09	0
Ra-226	1.72E-06	79	3.00E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.78E-13	0	1.72E-06	79
Ra-228	8.02E-08	4	4.51E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	8.38E-14	0	8.02E-08	4
Th-228	1.39E-07	6	1.43E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.45E-14	0	1.39E-07	6
Th-230	4.52E-09	0	1.36E-08	1	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.84E-12	0	1.81E-08	1
Th-232	5.19E-13	0	5.43E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	9.97E-15	0	5.48E-11	0
U-234	6.37E-12	0	1.55E-09	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.29E-13	0	1.55E-09	0
U-235	2.01E-08	1	6.28E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.06E-14	0	2.01E-08	1
U-238	1.27E-07	6	1.32E-09	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.89E-13	0	1.28E-07	6
<b>Total</b>	<b>2.16E-06</b>	<b>99</b>	<b>1.83E-08</b>	<b>1</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>6.45E-12</b>	<b>0</b>	<b>2.18E-06</b>	<b>100</b>

\* Sum of risk from all releases and from primary contamination via all but the Radon pathway.



Risk Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Total Excess Cancer Risk CNRSI(i,p,t)\*\* for Initially Existent Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t = 6 years

Radio- Nuclide	Directly from primary contamination and from release to atmosphere (Inhalation excludes radon)															
	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil		All Pathways***	
	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%
Ac-227	3.02E-08	1	2.56E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.16E-14	0	3.05E-08	1
Pa-231	3.48E-08	2	4.98E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	6.19E-14	0	3.53E-08	2
Pb-210	5.50E-10	0	3.46E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.74E-12	0	8.98E-10	0
Ra-226	1.24E-06	57	3.24E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	8.54E-13	0	1.24E-06	57
Ra-228	1.17E-08	1	1.05E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.81E-15	0	1.17E-08	1
Th-228	2.37E-10	0	2.44E-13	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.78E-17	0	2.37E-10	0
Th-230	4.91E-07	23	1.37E-08	1	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.12E-12	0	5.04E-07	23
Th-232	2.07E-07	10	2.31E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.15E-13	0	2.07E-07	10
U-234	1.69E-11	0	1.55E-09	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.29E-13	0	1.57E-09	0
U-235	2.01E-08	1	6.29E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.06E-14	0	2.01E-08	1
U-238	1.27E-07	6	1.32E-09	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.89E-13	0	1.28E-07	6
<b>Total</b>	<b>2.16E-06</b>	<b>99</b>	<b>1.83E-08</b>	<b>1</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>6.45E-12</b>	<b>0</b>	<b>2.18E-06</b>	<b>100</b>

\*\*CNRSI(i,p,t) includes contribution from progeny radionuclides

\*\*\* Sum of risk from all releases and from primary contamination via all pathways.

Risk Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t = 12 years

0  
0

From releases to ground water and to surface water

Radio- Nuclide	Ground		Fish		Plant		Meat		Milk		Soil		Water	
	risk	%												
Ac-227	0.00E+00	0												
Pa-231	0.00E+00	0												
Pb-210	0.00E+00	0												
Ra-226	0.00E+00	0												
Ra-228	0.00E+00	0												
Th-228	0.00E+00	0												
Th-230	0.00E+00	0												
Th-232	0.00E+00	0												
U-234	0.00E+00	0												
U-235	0.00E+00	0												
U-238	0.00E+00	0												
Total	0.00E+00	0												

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t = 12 years

0  
0

Directly from primary contamination and from release to atmosphere (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil		All Pathways*	
	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%
Ac-227	4.67E-08	2	3.96E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.99E-14	0	4.71E-08	2
Pa-231	5.80E-09	0	2.28E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.61E-14	0	6.03E-09	0
Pb-210	6.81E-10	0	4.28E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.96E-12	0	1.11E-09	0
Ra-226	1.72E-06	80	3.00E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.47E-13	0	1.72E-06	80
Ra-228	8.35E-08	4	4.69E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.09E-13	0	8.35E-08	4
Th-228	1.48E-07	7	1.52E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.24E-14	0	1.48E-07	7
Th-230	4.52E-09	0	1.36E-08	1	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.65E-12	0	1.81E-08	1
Th-232	5.19E-13	0	5.43E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.28E-14	0	5.48E-11	0
U-234	5.58E-12	0	1.36E-09	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.49E-13	0	1.36E-09	0
U-235	1.76E-08	1	5.50E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.15E-14	0	1.76E-08	1
U-238	1.11E-07	5	1.15E-09	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.15E-13	0	1.13E-07	5
Total	2.14E-06	99	1.78E-08	1	0.00E+00	0	0.00E+00	0	0.00E+00	0	7.77E-12	0	2.16E-06	100

\* Sum of risk from all releases and from primary contamination via all but the Radon pathway.



Risk Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Total Excess Cancer Risk CNRSI(i,p,t)\*\* for Initially Existent Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t = 12 years

Radio- Nuclide	Directly from primary contamination and from release to atmosphere (Inhalation excludes radon)															
	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil		All Pathways***	
	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%
Ac-227	1.81E-08	1	1.54E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.61E-14	0	1.83E-08	1
Pa-231	3.43E-08	2	4.69E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	6.98E-14	0	3.48E-08	2
Pb-210	4.28E-10	0	2.69E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.76E-12	0	6.99E-10	0
Ra-226	1.12E-06	52	3.16E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.10E-12	0	1.12E-06	52
Ra-228	5.58E-09	0	5.06E-12	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.81E-15	0	5.59E-09	0
Th-228	3.07E-11	0	3.16E-14	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.80E-18	0	3.07E-11	0
Th-230	6.05E-07	28	1.37E-08	1	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.10E-12	0	6.19E-07	29
Th-232	2.26E-07	10	2.48E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.53E-13	0	2.26E-07	10
U-234	2.10E-11	0	1.36E-09	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.49E-13	0	1.38E-09	0
U-235	1.76E-08	1	5.52E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.15E-14	0	1.77E-08	1
U-238	1.11E-07	5	1.15E-09	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.15E-13	0	1.13E-07	5
<b>Total</b>	<b>2.14E-06</b>	<b>99</b>	<b>1.78E-08</b>	<b>1</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>7.77E-12</b>	<b>0</b>	<b>2.16E-06</b>	<b>100</b>

\*\*CNRSI(i,p,t) includes contribution from progeny radionuclides

\*\*\* Sum of risk from all releases and from primary contamination via all pathways.

Risk Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t = 30 years

0  
0

From releases to ground water and to surface water

Radio- Nuclide	Ground		Fish		Plant		Meat		Milk		Soil		Water	
	risk	%												
Ac-227	0.00E+00	0												
Pa-231	0.00E+00	0												
Pb-210	0.00E+00	0												
Ra-226	0.00E+00	0												
Ra-228	0.00E+00	0												
Th-228	0.00E+00	0												
Th-230	0.00E+00	0												
Th-232	0.00E+00	0												
U-234	0.00E+00	0												
U-235	0.00E+00	0												
U-238	0.00E+00	0												
<b>Total</b>	<b>0.00E+00</b>	<b>0</b>												

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t = 30 years

0  
0

Directly from primary contamination and from release to atmosphere (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil		All Pathways*	
	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%
Ac-227	2.70E-08	1	2.29E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.10E-14	0	2.72E-08	1
Pa-231	3.90E-09	0	1.53E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.53E-14	0	4.06E-09	0
Pb-210	5.24E-10	0	3.30E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.58E-12	0	8.57E-10	0
Ra-226	1.72E-06	82	3.00E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.35E-13	0	1.72E-06	82
Ra-228	8.59E-08	4	4.83E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.84E-13	0	8.60E-08	4
Th-228	1.55E-07	7	1.59E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.48E-14	0	1.55E-07	7
Th-230	4.52E-09	0	1.36E-08	1	0.00E+00	0	0.00E+00	0	0.00E+00	0	6.07E-12	0	1.81E-08	1
Th-232	5.19E-13	0	5.43E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.14E-14	0	5.48E-11	0
U-234	3.76E-12	0	9.13E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.44E-13	0	9.17E-10	0
U-235	1.18E-08	1	3.71E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.13E-14	0	1.19E-08	1
U-238	7.50E-08	4	7.77E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.08E-13	0	7.58E-08	4
<b>Total</b>	<b>2.09E-06</b>	<b>99</b>	<b>1.66E-08</b>	<b>1</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>1.11E-11</b>	<b>0</b>	<b>2.10E-06</b>	<b>100</b>

\* Sum of risk from all releases and from primary contamination via all but the Radon pathway.



Risk Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Total Excess Cancer Risk CNRSI(i,p,t)\*\* for Initially Existent Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t = 30 years

Radio- Nuclide	Directly from primary contamination and from release to atmosphere (Inhalation excludes radon)															
	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil		All Pathways***	
	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%
Ac-227	3.94E-09	0	3.34E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.67E-15	0	3.97E-09	0
Pa-231	2.69E-08	1	3.48E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	7.16E-14	0	2.73E-08	1
Pb-210	2.02E-10	0	1.27E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.33E-12	0	3.30E-10	0
Ra-226	8.38E-07	40	2.74E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.59E-12	0	8.39E-07	40
Ra-228	5.28E-10	0	4.80E-13	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.96E-16	0	5.28E-10	0
Th-228	6.34E-14	0	6.53E-17	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.92E-20	0	6.35E-14	0
Th-230	8.89E-07	42	1.38E-08	1	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	7.27E-12	0	9.03E-07	43
Th-232	2.40E-07	11	2.62E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.60E-13	0	2.41E-07	11
U-234	3.68E-11	0	9.14E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.44E-13	0	9.51E-10	0
U-235	1.19E-08	1	3.73E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.13E-14	0	1.19E-08	1
U-238	7.50E-08	4	7.77E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.08E-13	0	7.58E-08	4
<b>Total</b>	<b>2.09E-06</b>	<b>99</b>	<b>1.66E-08</b>	<b>1</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>1.11E-11</b>	<b>0</b>	<b>2.10E-06</b>	<b>100</b>

\*\*CNRSI(i,p,t) includes contribution from progeny radionuclides

\*\*\* Sum of risk from all releases and from primary contamination via all pathways.

Risk Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t = 75 years

0  
0

From releases to ground water and to surface water

Radio- Nuclide	Ground		Fish		Plant		Meat		Milk		Soil		Water	
	risk	%												
Ac-227	0.00E+00	0												
Pa-231	0.00E+00	0												
Pb-210	0.00E+00	0												
Ra-226	0.00E+00	0												
Ra-228	0.00E+00	0												
Th-228	0.00E+00	0												
Th-230	0.00E+00	0												
Th-232	0.00E+00	0												
U-234	0.00E+00	0												
U-235	0.00E+00	0												
U-238	0.00E+00	0												
<b>Total</b>	<b>0.00E+00</b>	<b>0</b>												

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t = 75 years

0  
0

Directly from primary contamination and from release to atmosphere (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil		All Pathways*	
	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%
Ac-227	9.40E-09	0	7.97E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.97E-14	0	9.48E-09	0
Pa-231	1.47E-09	0	5.76E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.86E-14	0	1.52E-09	0
Pb-210	4.07E-10	0	2.56E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.67E-12	0	6.67E-10	0
Ra-226	1.72E-06	85	3.00E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	9.33E-13	0	1.72E-06	85
Ra-228	8.61E-08	4	4.85E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.65E-13	0	8.62E-08	4
Th-228	1.55E-07	8	1.60E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.09E-13	0	1.56E-07	8
Th-230	4.51E-09	0	1.36E-08	1	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.21E-11	0	1.81E-08	1
Th-232	5.20E-13	0	5.43E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.27E-14	0	5.49E-11	0
U-234	1.41E-12	0	3.43E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.29E-13	0	3.45E-10	0
U-235	4.45E-09	0	1.39E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.94E-15	0	4.47E-09	0
U-238	2.82E-08	1	2.92E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.63E-13	0	2.85E-08	1
<b>Total</b>	<b>2.01E-06</b>	<b>99</b>	<b>1.52E-08</b>	<b>1</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>1.86E-11</b>	<b>0</b>	<b>2.03E-06</b>	<b>100</b>

\* Sum of risk from all releases and from primary contamination via all but the Radon pathway.



Risk Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Total Excess Cancer Risk CNRSI(i,p,t)\*\* for Initially Existent Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t = 75 years

Radio-Nuclide	Directly from primary contamination and from release to atmosphere (Inhalation excludes radon)															
	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil		All Pathways***	
	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%
Ac-227	1.01E-10	0	8.58E-13	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.47E-16	0	1.02E-10	0
Pa-231	1.08E-08	1	1.36E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.81E-14	0	1.09E-08	1
Pb-210	3.19E-11	0	2.01E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.51E-13	0	5.24E-11	0
Ra-226	4.07E-07	20	1.54E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.53E-12	0	4.07E-07	20
Ra-228	2.02E-12	0	1.84E-15	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.03E-18	0	2.02E-12	0
Th-228	9.15E-20	0	9.43E-23	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	9.70E-26	0	9.16E-20	0
Th-230	1.32E-06	65	1.40E-08	1	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.59E-11	0	1.33E-06	66
Th-232	2.42E-07	12	2.63E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.16E-13	0	2.42E-07	12
U-234	7.99E-11	0	3.44E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.30E-13	0	4.24E-10	0
U-235	4.46E-09	0	1.41E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.99E-15	0	4.48E-09	0
U-238	2.82E-08	1	2.92E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.63E-13	0	2.85E-08	1
<b>Total</b>	<b>2.01E-06</b>	<b>99</b>	<b>1.52E-08</b>	<b>1</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>1.86E-11</b>	<b>0</b>	<b>2.03E-06</b>	<b>100</b>

\*\*CNRSI(i,p,t) includes contribution from progeny radionuclides

\*\*\* Sum of risk from all releases and from primary contamination via all pathways.

Risk Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t = 175 years

0  
0

From releases to ground water and to surface water

Radio- Nuclide	Ground		Fish		Plant		Meat		Milk		Soil		Water	
	risk	%												
Ac-227	0.00E+00	0												
Pa-231	0.00E+00	0												
Pb-210	0.00E+00	0												
Ra-226	0.00E+00	0												
Ra-228	0.00E+00	0												
Th-228	0.00E+00	0												
Th-230	0.00E+00	0												
Th-232	0.00E+00	0												
U-234	0.00E+00	0												
U-235	0.00E+00	0												
U-238	0.00E+00	0												
Total	0.00E+00	0												

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t = 175 years

0  
0

Directly from primary contamination and from release to atmosphere (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil		All Pathways*	
	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%
Ac-227	1.09E-09	0	9.23E-12	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.68E-15	0	1.10E-09	0
Pa-231	1.71E-10	0	6.70E-12	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.58E-15	0	1.78E-10	0
Pb-210	3.85E-10	0	2.42E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	7.63E-12	0	6.34E-10	0
Ra-226	1.72E-06	87	3.00E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.73E-12	0	1.72E-06	87
Ra-228	8.60E-08	4	4.84E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	7.65E-13	0	8.60E-08	4
Th-228	1.55E-07	8	1.60E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.27E-13	0	1.55E-07	8
Th-230	4.50E-09	0	1.36E-08	1	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.55E-11	0	1.81E-08	1
Th-232	5.20E-13	0	5.43E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	8.98E-14	0	5.49E-11	0
U-234	1.65E-13	0	4.00E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.78E-14	0	4.02E-11	0
U-235	5.19E-10	0	1.62E-12	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	8.23E-16	0	5.21E-10	0
U-238	3.29E-09	0	3.40E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.25E-14	0	3.32E-09	0
Total	1.97E-06	99	1.45E-08	1	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.60E-11	0	1.99E-06	100

\* Sum of risk from all releases and from primary contamination via all but the Radon pathway.



Risk Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Total Excess Cancer Risk CNRSI(i,p,t)\*\* for Initially Existent Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t = 175 years

Radio-Nuclide	Directly from primary contamination and from release to atmosphere (Inhalation excludes radon)															
	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil		All Pathways***	
	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%
Ac-227	2.79E-14	0	2.37E-16	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	6.60E-20	0	2.81E-14	0
Pa-231	1.26E-09	0	1.59E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.24E-15	0	1.27E-09	0
Pb-210	5.61E-13	0	3.53E-13	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	9.46E-15	0	9.23E-13	0
Ra-226	8.31E-08	4	3.32E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.48E-13	0	8.31E-08	4
Ra-228	4.69E-18	0	4.27E-21	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.47E-23	0	4.69E-18	0
Th-228	1.43E-35	0	1.79E-38	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.27E-39	0	1.43E-35	0
Th-230	1.64E-06	83	1.41E-08	1	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.44E-11	0	1.66E-06	83
Th-232	2.41E-07	12	2.63E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.08E-12	0	2.41E-07	12
U-234	1.35E-10	0	4.12E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.05E-14	0	1.76E-10	0
U-235	5.22E-10	0	1.67E-12	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	8.37E-16	0	5.24E-10	0
U-238	3.29E-09	0	3.41E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.25E-14	0	3.32E-09	0
<b>Total</b>	<b>1.97E-06</b>	<b>99</b>	<b>1.45E-08</b>	<b>1</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>3.60E-11</b>	<b>0</b>	<b>1.99E-06</b>	<b>100</b>

\*\*CNRSI(i,p,t) includes contribution from progeny radionuclides

\*\*\* Sum of risk from all releases and from primary contamination via all pathways.

Risk Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t = 420 years

0  
0

From releases to ground water and to surface water

Radio- Nuclide	Ground		Fish		Plant		Meat		Milk		Soil		Water	
	risk	%												
Ac-227	1.47E-26	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.94E-28	0	0.00E+00	0
Pa-231	0.00E+00	0												
Pb-210	0.00E+00	0												
Ra-226	0.00E+00	0												
Ra-228	0.00E+00	0												
Th-228	0.00E+00	0												
Th-230	0.00E+00	0												
Th-232	0.00E+00	0												
U-234	0.00E+00	0												
U-235	0.00E+00	0												
U-238	0.00E+00	0												
<b>Total</b>	<b>1.47E-26</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>2.94E-28</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t = 420 years

0  
0

Directly from primary contamination and from release to atmosphere (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil		All Pathways*	
	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%
Ac-227	7.49E-12	0	6.35E-14	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.18E-17	0	7.55E-12	0
Pa-231	1.18E-12	0	4.61E-14	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.11E-17	0	1.22E-12	0
Pb-210	3.82E-10	0	2.40E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.50E-11	0	6.38E-10	0
Ra-226	1.71E-06	87	2.98E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.62E-12	0	1.71E-06	87
Ra-228	8.57E-08	4	4.84E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.74E-12	0	8.57E-08	4
Th-228	1.55E-07	8	1.60E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.15E-13	0	1.55E-07	8
Th-230	4.48E-09	0	1.35E-08	1	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.79E-11	0	1.81E-08	1
Th-232	5.20E-13	0	5.42E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.04E-13	0	5.49E-11	0
U-234	1.14E-15	0	2.75E-13	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.46E-16	0	2.77E-13	0
U-235	3.57E-12	0	1.12E-14	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	6.74E-18	0	3.59E-12	0
U-238	2.26E-11	0	2.34E-13	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.85E-16	0	2.29E-11	0
<b>Total</b>	<b>1.95E-06</b>	<b>99</b>	<b>1.43E-08</b>	<b>1</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>7.90E-11</b>	<b>0</b>	<b>1.97E-06</b>	<b>100</b>

\* Sum of risk from all releases and from primary contamination via all but the Radon pathway.

Risk Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of  
Radon and its Decay Products at t = 420 years  
Radionuclides

0

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Airborne	0.000E+00							
Waterborne	0.000E+00							
<b>Total</b>	<b>0.000E+00</b>							

Airborne == Radon that diffused from contaminated soil      Waterborne == Radon derived from household water

0

Total Excess Cancer Risk CNRSI(i,p,t)\*\* for Initially Existent Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t = 420 years

0

From releases to ground water and to surface water

Radio-Nuclide	Ground		Fish		Radon		Plant		Meat		Milk		Soil		Water	
	risk	%														
Ac-227	1.47E-26	0	0.00E+00	0	2.94E-28	0	0.00E+00	0								
Pa-231	0.00E+00	0														
Pb-210	0.00E+00	0														
Ra-226	0.00E+00	0														
Ra-228	0.00E+00	0														
Th-228	0.00E+00	0														
Th-230	0.00E+00	0														
Th-232	0.00E+00	0														
U-234	0.00E+00	0														
U-235	0.00E+00	0														
U-238	0.00E+00	0														
<b>Total</b>	<b>1.47E-26</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>2.94E-28</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>								

Risk Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Total Excess Cancer Risk CNRSI(i,p,t)\*\* for Initially Existent Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t = 420 years

Directly from primary contamination and from release to atmosphere (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil		All Pathways***	
	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%
Ac-227	3.82E-22	0	3.24E-24	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	7.17E-27	0	3.85E-22	0
Pa-231	8.61E-12	0	1.09E-13	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.26E-17	0	8.72E-12	0
Pb-210	6.16E-17	0	3.87E-17	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.85E-18	0	1.02E-16	0
Ra-226	2.00E-09	0	8.04E-13	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.26E-14	0	2.00E-09	0
Ra-228	2.73E-30	0	2.67E-33	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.47E-34	0	2.73E-30	0
Th-228	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0
Th-230	1.71E-06	87	1.41E-08	1	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	7.65E-11	0	1.73E-06	88
Th-232	2.40E-07	12	2.62E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.45E-12	0	2.41E-07	12
U-234	1.54E-10	0	1.55E-12	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	6.71E-15	0	1.56E-10	0
U-235	3.63E-12	0	1.18E-14	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	6.99E-18	0	3.64E-12	0
U-238	2.26E-11	0	2.35E-13	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.85E-16	0	2.29E-11	0
<b>Total</b>	<b>1.95E-06</b>	<b>99</b>	<b>1.43E-08</b>	<b>1</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>7.90E-11</b>	<b>0</b>	<b>1.97E-06</b>	<b>100</b>

\*\*CNRSI(i,p,t) includes contribution from progeny radionuclides

\*\*\* Sum of risk from all releases and from primary contamination via all pathways.

Risk Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t = 970 years

0  
0

From releases to ground water and to surface water

Radio- Nuclide	Ground		Fish		Plant		Meat		Milk		Soil		Water	
	risk	%												
Ac-227	1.07E-18	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.13E-20	0	0.00E+00	0
Pa-231	0.00E+00	0												
Pb-210	0.00E+00	0												
Ra-226	0.00E+00	0												
Ra-228	0.00E+00	0												
Th-228	0.00E+00	0												
Th-230	0.00E+00	0												
Th-232	0.00E+00	0												
U-234	0.00E+00	0												
U-235	0.00E+00	0												
U-238	0.00E+00	0												
<b>Total</b>	<b>1.07E-18</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>2.13E-20</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t = 970 years

0  
0

Directly from primary contamination and from release to atmosphere (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil		All Pathways*	
	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%
Ac-227	1.42E-16	0	1.24E-18	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	8.61E-22	0	1.44E-16	0
Pa-231	2.23E-17	0	8.73E-19	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	8.51E-22	0	2.32E-17	0
Pb-210	3.78E-10	0	2.38E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.08E-11	0	6.46E-10	0
Ra-226	1.69E-06	87	2.95E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	7.65E-12	0	1.69E-06	87
Ra-228	8.50E-08	4	4.82E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.82E-12	0	8.50E-08	4
Th-228	1.53E-07	8	1.59E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.13E-12	0	1.53E-07	8
Th-230	4.42E-09	0	1.34E-08	1	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.27E-10	0	1.80E-08	1
Th-232	5.21E-13	0	5.41E-11	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.50E-13	0	5.50E-11	0
U-234	2.17E-20	0	5.23E-18	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.90E-21	0	5.25E-18	0
U-235	6.79E-17	0	2.12E-19	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.72E-22	0	6.82E-17	0
U-238	4.30E-16	0	4.45E-18	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	7.45E-21	0	4.34E-16	0
<b>Total</b>	<b>1.93E-06</b>	<b>99</b>	<b>1.42E-08</b>	<b>1</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>1.71E-10</b>	<b>0</b>	<b>1.94E-06</b>	<b>100</b>

\* Sum of risk from all releases and from primary contamination via all but the Radon pathway.

Risk Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of Radon and its Decay Products at t = 970 years Radionuclides

0

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Airborne	0.000E+00							
Waterborne	0.000E+00							
Total	0.000E+00							

Airborne == Radon that diffused from contaminated soil      Waterborne == Radon derived from household water

0

Total Excess Cancer Risk CNRSI(i,p,t)\*\* for Initially Existent Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t = 970 years

0

From releases to ground water and to surface water

Radio-Nuclide	Ground		Fish		Radon		Plant		Meat		Milk		Soil		Water	
	risk	%														
Ac-227	1.42E-21	0	0.00E+00	0	2.83E-23	0	0.00E+00	0								
Pa-231	1.06E-18	0	0.00E+00	0	2.12E-20	0	0.00E+00	0								
Pb-210	0.00E+00	0														
Ra-226	0.00E+00	0														
Ra-228	0.00E+00	0														
Th-228	0.00E+00	0														
Th-230	0.00E+00	0														
Th-232	0.00E+00	0														
U-234	0.00E+00	0														
U-235	4.91E-21	0	0.00E+00	0	9.78E-23	0	0.00E+00	0								
U-238	0.00E+00	0														
Total	1.07E-18	0	0.00E+00	0	2.13E-20	0	0.00E+00	0								

Risk Report

Title : NC 5YR Offsite EPCs

File : NC FYR PROTECTIVENESS ZERO METERS AWAY.ROF

Total Excess Cancer Risk CNRSI(i,p,t)\*\* for Initially Existent Radionuclides (i) and Pathways (p)  
and Fraction of Total Risk at t = 970 years

Radio- Nuclide	Directly from primary contamination and from release to atmosphere (Inhalation excludes radon)															
	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil		All Pathways***	
	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%	risk	%
Ac-227	3.25E-39	0	4.55E-23	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.90E-41	0	1.49E-21	0
Pa-231	1.62E-16	0	2.08E-18	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.69E-21	0	1.65E-16	0
Pb-210	1.54E-25	0	9.80E-26	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.99E-26	0	2.92E-25	0
Ra-226	5.46E-13	0	2.19E-16	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.31E-18	0	5.46E-13	0
Ra-228	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0
Th-228	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0
Th-230	1.69E-06	87	1.40E-08	1	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.65E-10	0	1.71E-06	88
Th-232	2.38E-07	12	2.62E-10	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.40E-12	0	2.38E-07	12
U-234	1.53E-10	0	1.26E-12	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.46E-14	0	1.54E-10	0
U-235	7.00E-17	0	2.39E-19	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.92E-22	0	7.03E-17	0
U-238	2.00E-14	0	1.66E-16	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.81E-18	0	2.01E-14	0
<b>Total</b>	<b>1.93E-06</b>	<b>99</b>	<b>1.42E-08</b>	<b>1</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>0.00E+00</b>	<b>0</b>	<b>1.71E-10</b>	<b>0</b>	<b>1.94E-06</b>	<b>100</b>

\*\*CNRSI(i,p,t) includes contribution from progeny radionuclides

\*\*\* Sum of risk from all releases and from primary contamination via all pathways.