



March 25, 2005
AET 05-0010

Mr. Jack R. Strosnider
Director, Office of Nuclear Material Safety and Safeguards
Attention: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

**American Centrifuge Plant
Docket Number 70-7004
Responses to Request for Additional Information on the Environmental Report (TAC No. L32307)**

Dear Mr. Strosnider:

The purpose of this letter is to submit USEC Inc.'s (USEC) responses to the U. S. Nuclear Regulatory Commission (NRC) Request for Additional Information (RAI) regarding the Environmental Report for the American Centrifuge Plant (Reference 1).

As requested, USEC submits our 30-day response to the RAIs as Enclosure 1 to this letter. Enclosure 2 provides the March 2, 2004 consultation letter to the State Historic Preservation Officer in support of NRC Question ER 1-3. Enclosure 3 provides well data in support of NRC Question ER 3-1. Enclosure 4 provides the last five years of radiation levels in support of NRC Question ER 3-3. Enclosure 5 provides the data inputs in support of NRC Question ER 3-4.

USEC completed the review of the enclosures in accordance with the December 21, 2004 NRC Review Criteria to Identify Sensitive Information in Fuel Cycle Documents.

USEC plans to submit a revised Environmental Report and other affected documents that incorporate the proposed changes described in Enclosure 1 to the NRC by April 15, 2005. As specified in Enclosure 1, additional information regarding a number of NRC questions will be provided by April 15, 2005.

USEC looks forward to continued open, candid, and clear communications with the NRC as the technical review progresses. We will make ourselves available to the NRC staff to discuss our responses.

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If there are any questions regarding this matter, please contact, Mr. Peter J. Miner, at (301) 564-3470.

Sincerely,

A handwritten signature in black ink, appearing to read 'Steve Toelle', with a stylized flourish at the end.

Steven A. Toelle
Director, Nuclear Regulatory Affairs

cc: M. Blevins, NRC HQ
J. Davis, NRC HQ
Y. Faraz, NRC HQ
J. Henson, NRC Region II
B. Smith, NRC HQ

Enclosures: As Stated

References:

1. NRC letter from Jennifer Davis (NRC) to S.A. Toelle (USEC), "Request for Additional Information on the USEC Inc. Proposed American Centrifuge Plant Environmental Report (TAC NO. L32307)," dated February 23, 2005.

Enclosure 1 to AET 05-0010

Responses to Request for Additional Information on the Environmental Report

Enclosure 1 of AET 05-0010
Responses to NRC Request for Additional Information for the
American Centrifuge Plant (ACP) Environmental Report

ER 1-1 Maps and Figures:

- A. Provide hard copy maps (5 sets) in "E" size (34" by 44") with a north arrow and scale that display the following features. These maps would not be released to the public (and thus do not need to be purged of proprietary or secure information), but are required to assist in assessing impacts on specific resources.
- 1.) All existing buildings and cylinder storage yards that will be used for the ACP and all new buildings and cylinder storage yards that will be constructed for the ACP; please provide hatching to distinguish the location of the existing facilities from the new facilities.
 - 2.) Figure 1.0.1-2 originally included in the ER modified to also show the locations of water supply wells, water supply pipelines to the onsite distribution center, and power lines.
 - 3.) The location of the 14 archaeological sites and two historic area cemeteries that may be eligible for listing in the national register, as referenced in Section 3.8.1, page 3-62.
 - 4.) Figure 3.5.4-1 originally included in the ER modified to show the locations of the Indiana Bat Habitat in relation to the closest ground-disturbing activity associated with the proposed action (e.g., construction of cylinder storage yard X-745H).

USEC Response

The requested maps are being provided to the NRC under separate cover (AET-05-0013).

- B. Provide a series of maps that have the same background information shown on Figure 3.4.2-1, including the north arrow and scale, minus any proprietary information, plus all existing building and cylinder storage yards that will be used for the ACP hatched one way, plus all new buildings and cylinder storage yards that will be constructed for the ACP hatched another way, and plus the specific features listed below. If possible, please provide electronic files in AutoCAD format; if that is not possible, please provide jpg images that can be inserted into a WordPerfect file. The following maps should be appropriate for release to the public in the DEIS.
- 1.) Figure 1: Proposed location of DOE's UF₆ conversion facility on the reservation (adapted from Figure 3.1-2).
 - 2.) Figure 2: Stormwater drainage associated with the proposed action (adapted from Figure 4.4.3-1).
 - 3.) Figure 3: National Pollutant Discharge Elimination System (NPDES) discharge locations and associated buildings/areas that discharge/drain to those outfalls (adapted from Figure 3.4.2-2).

Information contained within does
not contain Export Controlled
Information

Richard L. Coriell
03-28-05

- 4.) Figure 4: Locations of point source airborne emissions from all buildings associated with the proposed action (there is not a comparable figure currently in the ER).
- 5.) Figure 5: Locations of tenant organizations (e.g., the Ohio National Guard and the OVEC office building) on the DOE Reservation (there is not a comparable figure currently in the ER).
- 6.) Figure 6: Boundaries of the environmental restoration quadrants together with the location of Phase I and Phase II Cultural Resource Surveys completed on the reservation (adapted from Figure 3.4.1-1).
- 7.) Figure 7: Location of environmentally sensitive areas on the reservation, with separate hatchings or symbols used to denote wetlands, floodplains, and sensitive or unique habitats (but not a specific symbol for rare, threatened, or endangered species habitat, which cannot be disclosed in a public document) (adapted from Figures 3.5.4-1 and 4.5.3-1).

USEC Response

The requested maps are being provided to the NRC under separate cover (AET-05-0014) and will be incorporated into the revised Environmental Report.

ER 1-2 Permits, Licenses, and Approvals:

- A. Provide an update on the status of the following permits and discussions listed in Table 1.3-1 of the ER, especially as they apply to the construction of cylinder storage yard X-745H and other new cylinder storage yards.
 - 1.) Clean Water Act Section 404 (Dredge and Fill) Permit and related discussions with the U.S. Army Corps of Engineers, as noted on page 1-19 of the ER.
 - 2.) Ohio General Permit for Filling Category 1 and Category 2 Isolated Wetlands and related discussions with the Ohio Environmental Protection Agency (OEPA), as noted on page 1-19 of the ER.
 - 3.) Ohio Individual Isolated Wetland Permit and related discussions with the OEPA, as noted on page 1-20 of the ER.

USEC Response

Construction of the ACP will not result in dredging or placement of fill material into wetlands within the jurisdiction of the U.S. Army Corps of Engineers. Unnecessary text in Table 1.3-1 of the Environmental Report will be deleted to more definitively reflect that wetlands will not be affected by construction activities.

- B. Provide a copy of the existing Spill Prevention Control and Countermeasures (SPCC) Plan referenced on page 1-20 in Table 1.3-1 of the ER. Also provide any revisions made to that plan to include ACP operations, if available. If such revisions are not yet available, provide information on the anticipated content of the revisions to include the ACP.

USEC Response

A copy of the Spill Prevention Control and Countermeasures (SPCC) Plan for the United States Enrichment Corporation's Portsmouth Gaseous Diffusion Plant (dated June 2004) and Best Management Practices for the United States Enrichment Corporation (dated March 2, 2005) are being provided to the NRC under separate cover (AET 05-0013).

The United States Enrichment Corporation's SPCC plan is currently being revised to incorporate changes in the plant operation and to reflect new requirements mandated in the *Federal Register* on July 17, 2002. The U.S. Environmental Protection Agency requires plan approval by August 17, 2005 and implementation by February 18, 2006.

The existing SPCC Plan has not been revised to include the ACP. USEC will revise the existing SPCC utilized successfully by the United States Enrichment Corporation to include ACP operations at the appropriate time.

ER 1-3 Informal Consultations:

- A. Provide a copy of the March 2, 2004 consultation letter to the State Historic Preservation Officer (SHPO).

USEC Response

A copy of the referenced letter was inadvertently omitted from our submittal on August 23, 2004. A copy is being provided to the NRC as Enclosure 2 of this letter and will be added to Appendix B of the Environmental Report.

ER 2-1 Manufacturing Activities:

- A. Provide a complete description of the centrifuge manufacturing activities that would occur as part of the proposed action, as referenced on page 2-4 and elsewhere in the ER. This description should include the location(s) of the proposed manufacturing facility(ies), any new construction activities (including new construction footprints), the proposed manufacturing operations (including the quantities and contaminant concentrations of planned air emissions and liquid effluents), the potentially affected environment at the proposed manufacturing site(s), the impact on the environment, and any related mitigation measures and environmental measurement and monitoring programs.

USEC Response

Response contains Export Controlled Information; therefore, is being submitted under separate cover (AET 05-0013).

- B. Clarify whether all the machine components listed in Table 4.2.3.1-6 on page 4-26 of the ER would be manufactured and tested at the same site(s) addressed in response to the preceding question or at different sites. If different sites, provide the same information requested in the preceding question for each affected site.

USEC Response

The centrifuge machine components will be manufactured in various locations in the United States. Rotor tubes will be manufactured at one or more of the locations listed in USEC's response to NRC Question ER 2-1A. Other components will be manufactured by vendors in existing facilities in conjunction with normal business operations. Centrifuge machines will be assembled and tested in the X-7725 building.

Appropriate changes to the Environmental Report will be made to incorporate this information.

ER 2-2 Cylinder Storage Yards:

- A. Specify which cylinder storage yards already exist and which will be constructed.

USEC Response

The description of the storage yards in the License Application is written prospectively in the as-licensed condition. The License Application will be revised to add the square footage and ensure clarity regarding existing and planned storage yards. New construction for the ACP will include the following seven cylinder storage yards: X-745H, X-7756S, X-7766S, X-7746N, X-7746S, X-7746E, and X-7746W totaling 1,470,881 ft². Table 2.1.2.1-1 of the Environmental Report will be revised to more clearly depict which cylinder storage yards currently exist and those that will be constructed.

- B. Clarify the description of cylinder storage yard square footage.

USEC Response

Eight cylinder storage yards, X-745G-2, X-745H, X-7756S, X-7766S, X-7746N, X-7746S, X-7746E, and X-7746W, totaling 1,605,938 ft² will support the ACP. Table 2.1.2.1-2 of the Environmental Report will be revised to identify the X-745H as a new facility supporting the 7 M SWU capacity plant. A portion of this yard will be constructed to support the 3.5 M SWU capacity plant.

ER 2-3 Sewage Treatment Plant:

Clarify whether building X-6619 is considered a primary or secondary facility. Provide a detailed description of building X-6619, including design, capacity, treatment methods, outfall locations, discharge limits, and volumes of treated wastewater discharged.

USEC Response

The X-6619 Sewage Treatment Plant (STP) is described in the Environmental Report in Section 3.4.2, Surface Water. The STP services the entire DOE reservation and currently operates under the United States Enrichment Corporation NPDES permit; therefore, this facility is neither a primary or secondary ACP facility. Sewage treatment is a procured service and USEC does not currently plan to lease this facility.

Sewage from the reservation facilities is fed into a series of underground sanitary sewers. The gaseous diffusion plant sanitary sewers feed into one of several lift stations located around the gaseous diffusion plant site. Sewage from the ACP facilities flow into lift stations where it is pumped to X-6614E, and then to the STP.

X-6619 is an activated-sludge facility utilizing the plug flow process, aerobic digestion, secondary clarification, and granular-media filtration for effluent polishing (tertiary treatment). Post-chlorination followed by de-chlorination with sulfur dioxide is used to meet NPDES effluent standards. The treated effluent is discharged to the Scioto River. As discussed in Section 3.4.2, in accordance with the United States Enrichment Corporation NPDES permit, the design capacity of the STP is 2,275,032 liters per day (L/d) (601,000 gallons per day [GPD]) and is currently operating at 27 percent of that capacity.

No changes to the Environmental Report are planned.

ER 2-4 Interplant Transfer Corridor:

Describe the specific modifications to be made to the X-7727H Interplant Transfer Corridor during construction of the ACP, including earthmoving activities that could result in environmental impacts.

USEC Response

The X-7727H Interplant Transfer Corridor currently exists for the 3.5 M SWU plant. For the 7 M SWU plant, the corridor would be extended, involving minor excavation and construction of an additional 26,078 ft², extending the corridor from the X-3001 building to the X-3003 building. The corridor's designation would continue to be the X-7727H Interplant Transfer Corridor. Table 2.1.2.1-2 of the Environmental Report will be revised to reflect the new construction, along with appropriate revision to Section 4.1.3 and Table 4.3.3-1.

ER 2-5 Other Support Facilities:

- A. Provide the size, location, and primary function of the existing X-112 Data Processing Building, X-1020 Emergency Operation Center, X-6002 Boiler System, and X-6002A Oil Storage Facility. Also, provide the size of the proposed X-2215A Power Ductbank System, X-2220D Communications Ductbank System, and any other support facilities not described in detail.

USEC Response

X-112 Data Processing Building

As described in Section 1.1.4.1 of the License Application, the X-112 building provides secure housing for the data systems and personnel required to support ACP data processing. The building is approximately 30,000 ft², located east of the X-3002 building.

X-1020 Emergency Operations Center

As described in Section 1.1.4.5 of the License Application, the X-1020 building serves as the central location to coordinate responses to any emergencies that occur on the DOE reservation. The X-1020 is a 7,180-ft² building, located east of the X-3002 building.

X-6002 Boiler System

Section 1.1.4.9 of the License Application describes the X-6002 Boiler System. The X-6002 system is a gas-fired boiler system currently housed in the X-3002 building. It will be relocated between the X-6002A Oil Storage Facility and the X-7721 building just northeast of the X-3002 building. The X-6002A facility is located east of the X-3002 building. The X-6002A facility supplies fuel oil to the X-6002 system when required. The boiler is normally operated on natural gas, but can use fuel oil as an alternate fuel.

The system consists of two gas/oil-fired package boilers. The boilers are used to provide recirculating hot water for building and process heat. The equipment is not operated above the boiling point of water. Each boiler is rated at 81.1 million british thermal unit per hour (mmbtu/hr) of heat input on natural gas and 78.9 mmbtu of heat input on No. 2 fuel oil. It is expected that natural gas will be used approximately 90 percent of the time and fuel oil for approximately 10 percent of the time.

The relocation effort will consist of the removal/relocation of system components and piping. Construction will take place between the X-6002A Oil Storage Facility and the X-7721 building, just northeast of the X-3002 building with soil disturbance of approximately four acres anticipated. Utilizing the modification process, appropriate design reviews will be performed to identify detailed scope of the project effort. The DOE air permits will be transferred to USEC and incorporated in the Title V permit. USEC will also utilize applicable erosion control measures and storm water run off controls to minimize these effects through the relocation/removal effort.

X-2215A Power Ductbank System

This system includes 18 pre-cast concrete power manholes and approximately 4,225 feet (ft) of underground trench.

The approximate size of an average power manhole is estimated to be 11 ft long by 16 ft wide by 8 ft deep and the excavation would be approximately 12 ft long by 17 ft wide by 11 ft deep. This

results in excavation of approximately 1,494 cubic yards (y^3), spoils of 954 y^3 , and backfill of 540 y^3 .

The power ductbank trench is estimated to be 4,225 ft long by 3 ft wide by 7 ft deep and the concrete envelope is approximately 4,225 ft long by 3 ft wide by 2.5 ft deep. This results in excavation of approximately 3,285 y^3 , spoils of 1,174 y^3 , and backfill of 2,111 y^3 .

The approximate total excavation is 4,779 y^3 , total spoils of 2,128 y^3 , and total backfill is 2,651 y^3 .

X-2220D Communications Ductbank System

This system includes four pre-cast concrete communications manholes and approximately 3,200 ft of underground trench.

The approximate size of an average communications manhole is estimated to be 7 ft long by 9 ft wide by 7 ft deep and the excavation would include an excavation of approximately 8 ft long by 10 ft wide by 10 ft deep. This results in excavation of approximately 120 y^3 , spoils of 72 y^3 , and backfill of 48 y^3 .

The Communications Ductbank trench is estimated to be 3,200 ft long by 3 ft wide by 7 ft deep and the concrete envelope is approximately 3,200 ft long by 2.5 ft wide by 2 ft deep. This results in excavation of approximately 2,500 y^3 , spoils of 600 y^3 , and backfill of 1,900 y^3 .

The approximate total excavation is 2,620 y^3 , total spoils of 672 y^3 , and total backfill is 1,948 y^3 .

No changes to the Environmental Report are planned.

- B. Clarify an inconsistency in the square footage totals for support facilities.

USEC Response

Construction of two process buildings (each encompassing approximately 303,680 ft^2) and support facilities and a number of cylinder yards (totaling approximately 2,239,269 ft^2) will be constructed to meet specified operational objectives of a 7 M SWU plant. Appropriate changes to the Environmental Report, including Table 2.1.2.1-2, will be made for clarity.

ER 2-6 Process Piping:

Provide details on the location of the proposed 5,000 feet of additional process piping and its primary function.

USEC Response

The X-2232C, Interconnecting Process Piping, consists of three runs of approximately 1,700 ft each. This additional process piping provides service to the X-3003, X-3004, and X-3366 buildings.

ER 2-7 Heat Plant:

Describe the process of relocating the X-6002 Heat Plant from the X-3002 building to an area adjacent to X-6002A (part of the refurbishment activities described on page 2-7 of the ER). If construction is involved, indicate how much land will be disturbed and the methods employed to limit erosion and surface water sedimentation and contamination.

USEC Response

See USEC's response to NRC Question ER 2-5.

ER 2-8 Feed and Customer Services Building:

- A. Clarify whether heated cylinders in the feed area would be raised by crane up and over other heated cylinders when the cylinders are moved between rows of feed ovens.

USEC Response

The X-3346 Feed Area and Sampling and Transfer Area are configured in a manner such that cylinders will not be moved over feed ovens, autoclaves, or other cylinders.

- B. Verify that liquid UF₆ cylinders in the customer services area will not be moved and will not be in an area where they may be hit by heavy equipment moving in their vicinity.

USEC Response

The information within this response has been withheld pursuant to 10 CFR 2.390 and is being submitted under separate cover (AET 05-0013).

ER 2-9 Utilities and Other Services

Provide additional detail on suppliers of utilities and services and how these services are to be provided for the proposed action through existing buildings and services. (See related question 4-8F.)

USEC Response

The DOE reservation is fully developed with existing infrastructure for electrical power, firewater, sanitary water, sanitary sewer, communications, and non-potable cooling water. The

increase in usage of these systems is well within the existing capacities and historical utilization of these systems. These infrastructure services and other services will be procured from the service provider, currently the United States Enrichment Corporation, through task orders and/or service contracts.

ER 3-1 Geology and Soils:

With respect to page 3-13 in Section 3.3.2 of the ER, provide information on existing chemical or radiological contamination of soils and groundwater observed in wells STSW-103G, F-23G, and X-749-58g.

USEC Response

USEC has provided the requested well data in Enclosure 3 to this letter. Section 3.5.5.2 of the Environmental Report will be revised to describe groundwater monitoring.

ER 3-2 Ecological Resources:

Provide a description of the site-specific terrestrial resources and wildlife within and adjacent to new cylinder storage yard X-745H.

USEC Response

Section 3.5.2 of the Environmental Report discusses wildlife on the reservation. The area planned for the X-745H cylinder storage yard is encompassed by this discussion of wildlife species. There are no rare, threatened, or endangered species within the planned construction area for the X-745H cylinder storage yard.

No changes to the Environmental Report are planned.

ER 3-3 External Gamma Radiation Monitoring:

With respect to Section 3.5.5.2 starting on page 3-39 of the ER, provide the last five years of results of the external gamma radiation monitoring program described on pages 4-79 and 6-4 of the ER, along with a map showing the location of monitoring stations.

USEC Response

Table 9.2-8 (page 9-36) of the License Application summarizes external gamma radiation levels from 1998-2002. Preceding tables in Chapter 9.0 of the License Application provide summaries of surface water, sediments, soil, and vegetation samples over the same period. Maps of the Thermoluminescence dosimeters (TLD) locations are depicted in Figures 9.2-6 (on-site locations) and 9.2-7 (off-site locations) of the License Application. Preceding figures in Chapter 9.0 of the License Application show maps of the other sampling locations.

The cited tables in the Environmental Report summarize data from Reference DOE 2003a (DOE/OR/11-3132&D1, Portsmouth Annual Environmental Report for 2002, October 2003). DOE does not monitor ambient gamma radiation levels. Radiation levels from 1998-2002 are provided in Enclosure 4 to this letter.

ER 3-4 Meteorology, Climatology, and Air Quality:

- A. Provide the site-specific population and joint frequency data files used to generate the National Emission Standards for Hazardous Air Pollutants (NESHAPs) compliance analysis using CAP88, as described in Section 3.6.3.2 starting on page 3-55 of the ER.
- B. Also with respect to the NESHAPs compliance analysis described in Section 3.6.3.2 starting on page 3-55 of the ER, provide the distances used for the manual grid input when running CAP88 for NESHAPs compliance cases using individual assessments rather than population assessments. Alternatively, provide the CAP88 input files for individual assessments.

USEC Response

The requested data inputs are provided as Enclosure 5 to this letter. USEC recommends utilizing the PC version of CAP88 (CAP88PC) since we believe the mainframe version is no longer being distributed by EPA, although it remains certified for demonstration of compliance with EPA regulations.

Two important notes regarding the CAP88PC model:

1. The model will define the "local" area for agricultural use/food sources based on the input grid distances (IDIST). Therefore, the distance array must include distances out to 80,000 meters (i.e., 80 km, 50 mi) to include food produced within this radius in accordance with Environmental Protection Agency guidance. Using only the distances to the DOE property line (from the XLS file) will cause the model to assume essentially all locally produced food is produced on the DOE reservation. See the model reports for examples of entered distances.
2. There is no mechanism to tell the model that a given location is not accessible to the public. Consequently, the model will insist that the most exposed member of the public to ACP gaseous effluents is a person residing near the physical center of the DOE reservation (the south end of the X-326 Process Building). Picking out the most exposed member of the public that actually or potentially exists will require printing the dose table for the entire grid, eliminating the points that are inside the reservation boundary, and manually selecting the most exposed location from the remaining points.

Enclosed files for CAP88PC modeling:

- PORTS2000.POP (Portsmouth area population file, based on 2000 census data {CAP88PC is distributed with a library of population files based on 1980 census data}),
- 30meter.str (5-year joint frequency file {STAR} at 30 meters height based on onsite meteorological data, CAP88PC includes a preprocessor to convert STR files into WND actually format used by CAP88.
- CAP88 Source Terms.xls (Excel spreadsheet with tables input source terms for various scenarios, dispersion data, agricultural data (EPA recommended default values supplied with the model), and distances from the center of the ACP to the reservation boundary in different directions.)
- CAP88PC Output files (Adobe Acrobat (PDF) files documenting the model results for various scenarios as provided to USEC by its modeling consultant).

3-5 Historic and Cultural Resources:

- B. Provide a copy of the following material cited on pages 3-62 and 3-63 in Sections 3.8.1 and 3.8.2 of the ER:
- 1) DOE 2001b – The Environmental Assessment Reindustrialization Program at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio.
 - 2.) Dobson-Brown et al 1996 – Dobson-Brown, D., Church, F., and Schweikart, J., Management Summary for the PORTS Cultural Resource Literature Review, Predictive Model, and Preliminary Reconnaissance Survey in Scioto and Seal Townships, Pike County Ohio.
 - 3.) Schweikart et al 1997 – Schweikart, J.F., Coleman, K., and Charles F., Phase I Archaeological Survey for the Portsmouth Gaseous Diffusion Plant (PORTS Facility) in Scioto and Seal Townships, Pike County, Ohio.
 - 4.) Coleman et al 1997 – Coleman, K., Dobson-Brown, and Herr, D. Phase I Architectural Survey for the Portsmouth Gaseous Diffusion Plant (PORTS Facility) in Scioto and Seal Townships, Pike County, Ohio.

USEC Response

The citations to the requested reports were incorporated into the Environmental Report by reference from other DOE documents. USEC has requested copies of the documents from DOE and will provide them to the NRC upon receipt.

ER 3-6 Socioeconomics:

- A. With respect to page 3-74 in Section 3.10 of the ER, provide additional detail on the institutional, transient, and seasonal populations in the region of influence (ROI) and whether these populations are likely to be affected by the proposed action.

USEC Response

The institutional populations are discussed in Section 3.10 of the Environmental Report. In addition to the institutional population, there are transient and seasonal populations in the area. The transient population consists of visitors participating in various seasonal, social, and recreation activities within the local area. As discussed in Section 3.1 of the Environmental Report, seasonal populations are also present. For example, usage of Lake White State Park, located approximately 9.7 km (6 mi) north of the DOE reservation, is occasionally heavy and concentrated on the 37 ha (92 acres) of land closest to the lake. Most of the land surrounding the lake is privately owned. The 136 ha (337-acre) Lake White offers recreation (i.e., boating, fishing, water skiing, and swimming). There are 10 non-electric campsites for primitive overnight camping. These populations are likely to be unaffected by the proposed action due to the distance from the ACP. This clarifying information will be incorporated into Section 3.10 of the Environmental Report.

- B. With respect to page 3-74 of Section 3.10 of the ER, clarify whether Pike Community Hospital, the closest hospital to the DOE Reservation, will provide healthcare services to workers at the proposed ACP.

USEC Response

The health protection program provides services for individuals to meet regulatory requirements and to maintain a high level of employee health. The X-1007 Fire Station maintains a first aid room and provides ambulance service for emergency conditions. Pike Community Hospital will provide healthcare services to ACP workers. This clarifying information will be added to Sections 3.10 and 4.12.3.2.2 of the Environmental Report.

ER 3-7 Traffic:

- A. Provide information on the likely schedules of the new employees who will work in the proposed facility. What percentage of the new workers will likely have a day shift and what would a typical day shift be? Are there likely to be staggered schedules? If there are other shifts, what are they likely to be? What percentage of the new work force will work on the other shifts?

USEC Response

Round-the-clock (24/7) operations will most likely utilize a 12 hour per day, five shift rotation. Shifts will likely be from 7 a.m. to 7 p.m. and 7 p.m. to 7 a.m. It is estimated that 75 percent of the work force will be on rotating shifts. Of the five shift rotation, one shift would be in training/day shift support (7 a.m. to 7 p.m.), one shift would be on the day rotation, one shift would be on the night rotation, and two shifts would be off. Support organizations comprise the remaining 25 percent of the workforce and will most likely utilize a Monday through Friday, eight hour per day non-rotating shift from approximately 7:30 a.m. to 4:00 p.m.

- B. Will all the employees be required to exit the facility through the access road to Route 23? What other routes are there and what percent of the employees may be expected to use other routes?

USEC Response

ACP employees will utilize the west access road for access from and egress to U.S. 23. All Construction workers and delivery of construction material will utilize the southwest access road to U.S. 23 or the North access road to State Highway 32.

ER 4-2Geology, Soils, and Seismicity Impacts:

With respect to Site Preparation activities listed in Table 4.3.3-1 in Section 4.3.3 of the ER, provide soil quality data (along with a map showing corresponding sampling locations) for each of the areas to demonstrate that materials to be excavated and transported during the construction phase of the proposed action pose no unacceptable risk to workers or the environment. If no soil quality data are available, or data indicate potential contamination, provide a description of how soil will be managed to minimize release.

USEC Response

There is no soil quality data available for the proposed construction areas. Accordingly, prior to, and in some cases during excavation, USEC will utilize personnel trained in radiation protection and industrial hygiene to conduct radiological/industrial hygiene surveys to determine if the excavation site is contaminated, whether the contamination is radiological or chemical, and to what extent. These personnel would evaluate the excavation site, perform appropriate surveys, and if required collect samples to determine personnel protection requirements. The level of contamination found, if any, would dictate the mitigative/protective activities needed. These would likely include appropriate personnel protective equipment, control and disposal methodologies for excavated material, job coverage and oversight requirements, and air sampling requirements. Work in the area would be controlled by the appropriate radiation, and safety and health work permits. Excavation activities will also be administered through a proceduralized Excavation/Surface Penetration Permit program, with radiation protection/industrial hygiene participation in the development of the permits. These measures will help ensure the excavated soil is managed to minimize releases.

Section 4.3.3 of the Environmental Report will be revised to clarify plans for minimizing the release of any contaminated material.

ER 4-3 Water Resources Impacts:

- B. With respect to Section 4.4.3 starting on page 4-59 of the ER, provide:
- 1.) Existing permit conditions for the NPDES outfalls potentially impacted by the proposed action.
 - 2.) Results of non-radiological and radiological analyses of samples taken from those NPDES outfalls during current plant activities, distinguishing to the extent possible what is due to DOE versus United States Enrichment Corporation discharges.
 - 3.) Estimated concentrations of non-radiological and radiological contaminants at the NPDES outfalls under the proposed action.

USEC Response

1. Current permit conditions for NPDES Outfalls 012 (X-2230M), and 013 (X-2230N) are listed in Table 2.3 of DOE/OR/11-3133&D1, Portsmouth Annual Environmental Data for 2002, October 2003. This document is available at website <http://www.bechteljacobs.com/pdf/port/aser/2002Report.pdf>. The U.S. Department of Energy NPDES Permit was updated effective December 2002. Table 2.2 lists the permit conditions from the prior permit. The specific permit conditions for NPDES permitted Outfall 003 (X-6619 Sewage Treatment Plant), Outfall 004 (GDP RCW Blowdown), and Outfall 009 (X-230L North Holding Pond) are shown in DOE/OR/11-3133&D1.
2. Radiological data for all five of these NPDES permitted Outfalls are summarized in Table 2.1 of DOE/OR/11-3133&D1.

Non-radiological data for U.S. Department of Energy Outfalls 012 and 013 are summarized in Table 2.4 of DOE/OR/11-3133&D1. Non-radiological data for United States Enrichment Corporation Outfalls 003, 004, and 009 are summarized in Table 2.5 of DOE/OR/11-3133&D1.

Essentially all discharges from Outfalls 012 and 013 are due to U.S. Department of Energy activities. Essentially all discharges from Outfall 004 are due to USEC activities. Both organizations make contributions to Outfalls 003 and 009.

3. Estimated concentrations of non-radiological and radiological contaminants at the NPDES outfalls under the proposed action are not expected to be different than those produced by existing reservation activities.

Corresponding information for calendar years 2000 and 2001 can be found in DOE/OR/11-3078&D1 and DOE/OR/11-3107&D1, respectively.

- C. With respect to the West and Southwest Drainage Ditches described on page 4-52 of the ER, clarify whether water in those ditches is used (e.g., for agricultural, drinking, commercial/industrial, or recreational purposes) between the points

where they receive effluent from the DOE site and the points where they discharge into the Scioto River.

USEC Response

The West and Southwest Drainage Ditches continue west and ultimately discharge into the Scioto River, approximately 3.2 km (2 mi) west of the U.S. Department of Energy reservation. There are no known public or private water supply connections from the drainage ditches. The only known use is for agriculture.

Section 3.4.2 of the Environmental Report will be revised to reflect where the ditches discharge.

- D. Provide information and analysis regarding the potential for the TCE plume associated with X-749/X-120/Peter Kiewit Landfill to generate unacceptable volatile organic vapors during construction or operation.

USEC Response

Figure 6.2 of Reference DOE 2003a to the Environmental Report and References 3 and 4 of Chapter 9.0 of the License Application show annual updates of this plume with the maximum concentrations of trichloroethene (TCE) measured in the groundwater at each of the area's groundwater monitoring wells. The area proposed for the ACP is north of and outside of the perimeter of the contamination plume. USEC has no plans to excavate within the plume. Three groundwater wells between the plume and the ACP area had no detectable TCE in 2002. The northern edge of the plume is controlled by a horizontal well associated with a DOE pump-and-treat facility, which prevents the plume from spreading toward the ACP area in the future. Consequently, no surface vapors are expected to be generated during either construction or operation of the ACP.

The Construction and Operations portions of Section 4.4.3 of the Environmental Report will be revised for clarification.

ER 4-4 Ecological Resources Impacts:

- A. Provide a site-specific description of the ecological effects associated with construction and operation of the cylinder storage yard X-745H.

USEC Response

Construction of the X-745H cylinder storage yard would result in the loss of about 10 ha (24 acres) of previously disturbed managed grassland and old field vegetation. Wildlife would be disturbed by land clearing, noise, and human presence. Construction noise, estimated to be up to 91.5 dBA at 15 m (50 ft), would disturb wildlife in the vicinity of the construction site during daylight construction hours. Section 3.5.2 of the Environmental Report discusses wildlife on the reservation. Wildlife species with restricted mobility, such as burrowing species or juveniles of nesting species, could be impacted during land clearing activities. More mobile individuals

would relocate to adjacent available areas with suitable habitat. Population densities, and competition for food and nesting sites, would increase in these areas, potentially reducing the survivability or reproductive capacity of some of the displaced individuals. Some wildlife species would be expected to recolonize replanted areas near the cylinder storage yard following completion of construction. Construction could also affect the habitat of woodland species, such as neotropical migratory birds. Construction of the X-745H cylinder storage yard is not expected to threaten the local population of any wildlife species because similar habitat would be abundant near the construction area. Moreover, the construction would not impact natural habitat for any rare, threatened, or endangered species or designated wetlands. If trees (either live or dead) with exfoliating bark are encountered on the construction area, they will be saved if possible to avoid destroying potential habitat for the Indiana bat. If necessary, trees would be cut before April 15 or after September 15.

Appropriate changes to the text in Section 4.5.3 of the Environmental Report will be made to clarify the potential impacts of the construction activities related to the X-745H cylinder storage yard.

- B. In Section 4.5.3 (page 4-62) and Section 5 (pages 5-1 and 5-2), elaborate on any mitigation measures that would be implemented in addition to required best management practices (BMPs) for mitigating impacts to ecological resources. Such mitigation measures may include: flexible construction schedules to avoid sensitive wildlife breeding or rearing periods, revegetating temporarily disturbed areas with native vegetation, enhancing bat habitat by installing bat houses, and using natural material for slope stabilization instead of engineered materials (concrete retaining walls).

USEC Response

Additional mitigation measures that may be implemented in accordance with best management practices may include: flexible construction schedules to avoid sensitive wildlife breeding or rearing periods; revegetating temporarily disturbed areas with native vegetation; enhancing bat habitat by installing bat houses; and using natural material for slope stabilization instead of engineered materials (concrete retaining walls).

Section 4.5.3 of the Environmental Report will be revised for clarification.

ER 4-6Noise Impacts:

With respect to the noise impact analysis on page 4-86 in Section 4.7.3 of the ER, clarify whether the proposed ACP construction will occur only during normal working hours in the day or may also occur at night. If construction activities may occur at night, provide estimated noise levels at the closest DOE Reservation boundary during night-time construction activities.

USEC Response

Most construction activities would be limited to daylight hours, when noise is better tolerated due to the masking effect of background noise. Nighttime noise levels would be that of a rural environment. In the event that nighttime construction activity is undertaken, industrial hygiene personnel would periodically monitor noise levels. If the noise levels exceed the U.S. Environmental Protection Agency guidelines for environmental noise protection to prevent interference with activity, annoyance, or hearing impairment, the construction activity would be curtailed below the guidelines or limited to daytime shifts.

Section 4.7.3 of the Environmental Report will be revised for clarification.

USEC's Response to the following Requests for Additional Information will be submitted to the NRC by April 15, 2005.

Environmental Report Section Number	Question Number	Description
Section 3 – Description of the Affected Environment	ER 3-5 (A)	Historical and Cultural Resources
Section 4 – Environmental Impacts	ER 4-1 (A through F)	Transportation Impacts
	ER 4-3 (A)	Water Resource Impacts
	ER 4-5 (A through H)	Air Quality Impacts
	ER 4-7	Historical and Cultural Resources Impacts
	ER 4-8 (A through F)	Socioeconomic Impacts
	ER 4-10 (A through E)	Waste Management Impacts
Section 7 – Cost Benefit Analysis	ER 7A through E	

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**March 2, 2004 Consultation Letter to the State Historic Preservation Officer
in Support of NRC Question ER 1-3**



A Global Energy Company

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DIRECTOR, SECURITY & LICENSING

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MINERP@USEC.COM

March 2, 2004

Mr. David Snyder
Archaeology Reviews Manager
Resource Protection and Review
567 East Hudson Street
Columbus, Ohio 43211-1030

Subject: National Historic Preservation Act, Section 106 Compliance, Installation and
Operation of the American Centrifuge Plant in Piketon, Ohio

Dear Mr. Snyder:

This letter is in response to your correspondence dated January 28, 2004, on the above subject pertaining to the potential adverse affect of the American Centrifuge Plant (ACP) that will enrich uranium using centrifuge technology on historic properties. As you are aware the Portsmouth Gaseous Diffusion Plant (PORTS) is an industrial site that has been used to enrich uranium since the 1950s. Gaseous diffusion technology has been used for such enrichment throughout the life of PORTS. In the 1980s a centrifuge plant was constructed and centrifuge technology was demonstrated at PORTS. The ACP will utilize the existing centrifuge plant constructed in the 1980s and will also utilize an area adjacent to the existing plant for construction of additional centrifuge process buildings. USEC Inc. has reviewed 36 *Code of Federal Regulations* 800.5 and is providing the following for your consideration in determining whether there is an adverse effect due to the construction of new buildings for the ACP.

- There will be no physical destruction of existing buildings. As part of earlier construction in the 1980s of a centrifuge uranium enrichment plant, adjacent areas were set aside for future plant expansion. The development of these areas included site grading, roadways, storm sewers, and utilities. New buildings for the ACP will be constructed in these areas that have been designated and designed for future plant expansion and will be consistent with existing site architectural features.
- Any alteration to existing property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and handicapped

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access will be consistent with the Secretary's standards for the treatment of historic properties (36 CFR Part 68) and applicable guidelines.

- The area in which the new ACP buildings are to be constructed is vacant land adjacent to the existing centrifuge plant facilities that was developed with utilities and other infrastructure in the 1980s to support construction of additional centrifuge process buildings. Consequently, there will be no removal of property, such as existing buildings or archeological data from the site, as part of the construction of new buildings for the ACP.
- New buildings for the ACP will be consistent with the character of the adjoining buildings. Architectural features will follow established guidelines consistent with the existing building color schemes, styling, and construction within the property's setting that contribute to its historic significance.
- There will be no introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features. Under the Proposed Action, existing and new facilities used for uranium enrichment would be used for the commercial centrifuge uranium enrichment project. Noise levels would be consistent with previous uranium enrichment activities. Ground disturbance and exterior renovation would be temporary. Changes to existing facilities and construction of new uranium enrichment process buildings would be consistent with existing site architectural features. Neither these changes nor the new construction would alter the existing visual characteristics of the site or environs; thus, no impacts to visual/scenic resources would occur.
- The U.S. Bureau of Land Management (BLM) has developed a Visual Resource Management (VRM) rating system to aid in the preservation of scenic areas of the United States. This rating system is as follows:
 - Class I areas: Preserve the existing character of landscapes
 - Class II areas: Retain the existing character of landscapes
 - Class III areas: Partially retain the existing character of landscapes
 - Class IV areas: Allow major modifications of existing character of landscapes.
- The area has no existing state nature preserves or scenic rivers. The developed areas and utility corridors (e.g., transmission lines and support facilities) on the U.S. Department of Energy (DOE) reservation at PORTS are consistent with a VRM Class IV designation. The remainder of the PORTS reservation is consistent with VRM Class III or IV.
- Restoration, rehabilitation, new construction and operation of the ACP will be consistent with nationally recognized standards and subject to regulatory oversight by the U.S. Nuclear Regulatory Commission. This regulatory oversight will ensure neglect of the property will not occur. Construction and refurbishment activities will be conducted in previously disturbed areas devoid of

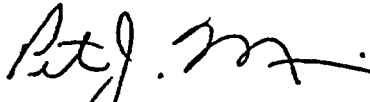
Mr. David Snyder
March 2, 2004
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cultural and historical resources where neglect and deterioration are recognized qualities.

- A lease agreement between the DOE and the United States Enrichment Corporation is currently in place concerning the temporary lease of certain facilities in support of the American Centrifuge Lead Cascade. An agreement between the DOE and the United States Enrichment Corporation will be entered into for the ACP. The lease agreement has legally enforceable restrictions and conditions to ensure the long-term preservation of the property.
- There are no known areas of historic significance that will be disturbed by the construction of the new ACP buildings.
- There are no known American Indian religious or cultural areas on site that could be potentially disturbed by new ACP construction activities.

If you need further information on this proposed action, please contact Greg Fout at 740-897-3823.

Sincerely,



Peter J. Miner
Regulatory Manager

PM:lmg

cc:
Kelly Coriell, ACP
John Hortel, PORTS
Greg Fout, ACP
T.J. Justice, Governor's Economic Development Office
James Morgan, ACP
Carol O'Claire, Chief Radiological Branch
Mark Smith, HQ
Kristi Wiehle, DOE-PORTS
File - RO-390-04-002E

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Well Data in Support of NRC Question ER 3-1

STATION	DATE COLLECTED	BOTTOM SAMPLE DEPTH (ft)	MATRIX	MEDIA	FRACTION	ANALYTE
F-23G	11/9/1988	0	WATER	WG	VOA	1,2-Dichloroethene
F-23G	11/9/1988	0	WATER	WG	METAL	Uranium
F-23G	11/9/1988	0	WATER	WG	RADS	Beta activity (RAD)
F-23G	11/9/1988	0	WATER	WG	VOA	Methylene chloride
F-23G	11/9/1988	0	WATER	WG	VOA	1,1,2-Trichloro-1,2,2-trifluoroethane
F-23G	11/9/1988	0	WATER	WG	ANION	Sulfate
F-23G	11/9/1988	0	WATER	WG	RADS	Alpha activity (RAD)
F-23G	6/5/1990	0	WATER	WG	METAL	Chromium
F-23G	9/17/1990	0	WATER	WG	METAL	Chromium
F-23G	1/18/1991	0	WATER	WG	METAL	Chromium
F-23G	12/21/1993	0	WATER	WG	METAL	Vanadium
F-23G	12/21/1993	0	WATER	WG	METAL	Zinc - Total Mobile
F-23G	12/21/1993	0	WATER	WG	METAL	Zinc
F-23G	12/21/1993	0	WATER	WG	METAL	Arsenic
F-23G	12/21/1993	0	WATER	WG	METAL	Barium - Total Mobile
F-23G	12/21/1993	0	WATER	WG	METAL	Barium
F-23G	12/21/1993	0	WATER	WG	METAL	Chromium
STSW-103G	12/28/1993	0	WATER	WG	METAL	Chromium
STSW-103G	12/28/1993	0	WATER	WG	METAL	Copper
STSW-103G	12/28/1993	0	WATER	WG	METAL	Vanadium - Total Mobile
STSW-103G	12/28/1993	0	WATER	WG	METAL	Vanadium
STSW-103G	12/28/1993	0	WATER	WG	METAL	Zinc - Total Mobile
STSW-103G	12/28/1993	0	WATER	WG	METAL	Zinc
STSW-103G	12/28/1993	0	WATER	WG	METAL	Arsenic
STSW-103G	12/28/1993	0	WATER	WG	METAL	Barium - Total Mobile
STSW-103G	12/28/1993	0	WATER	WG	METAL	Barium
STSW-103G	12/28/1993	0	WATER	WG	RADS	Alpha activity (RAD)
STSW-103G	12/28/1993	0	WATER	WG	METAL	Lead
STSW-103G	12/28/1993	0	WATER	WG	METAL	Nickel
X749-58G	11/9/1988	0	WATER	WG	VOA	1,1,2-Trichloro-1,2,2-trifluoroethane
X749-58G	11/9/1988	0	WATER	WG	ANION	Sulfate
X749-58G	11/9/1988	0	WATER	WG	METAL	Uranium
X749-58G	11/9/1988	0	WATER	WG	RADS	Alpha activity (RAD)
X749-58G	11/9/1988	0	WATER	WG	RADS	Beta activity (RAD)
X749-58G	11/9/1988	0	WATER	WG	RADS	Technetium-99 (RAD)
X749-58G	11/9/1988	0	WATER	WG	VOA	Chloroform
X749-58G	7/25/1991	0	WATER	WG	METAL	Vanadium
X749-58G	7/25/1991	0	WATER	WG	METAL	Zinc
X749-58G	7/25/1991	0	WATER	WG	METAL	Chromium
X749-58G	7/25/1991	0	WATER	WG	METAL	Cobalt
X749-58G	7/25/1991	0	WATER	WG	METAL	Copper
X749-58G	7/25/1991	0	WATER	WG	METAL	Arsenic
X749-58G	7/25/1991	0	WATER	WG	METAL	Barium - Filtered
X749-58G	7/25/1991	0	WATER	WG	METAL	Barium

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X749-58G	7/25/1991	0	WATER	WG	METAL	Lead
X749-58G	7/25/1991	0	WATER	WG	METAL	Mercury
X749-58G	7/25/1991	0	WATER	WG	METAL	Nickel
X749-58G	7/25/1991	0	WATER	WG	RADS	Alpha activity (RAD)
X749-58G	7/25/1991	0	WATER	WG	RADS	Beta activity (RAD)
X749-58G	12/14/1993	0	WATER	WG	METAL	Vanadium - Total Mobile
X749-58G	12/14/1993	0	WATER	WG	METAL	Vanadium
X749-58G	12/14/1993	0	WATER	WG	METAL	Zinc - Total Mobile
X749-58G	12/14/1993	0	WATER	WG	METAL	Zinc
X749-58G	12/14/1993	0	WATER	WG	METAL	Arsenic
X749-58G	12/14/1993	0	WATER	WG	METAL	Barium - Total Mobile
X749-58G	12/14/1993	0	WATER	WG	METAL	Barium
X749-58G	12/14/1993	0	WATER	WG	METAL	Chromium - Total Mobile
X749-58G	12/14/1993	0	WATER	WG	METAL	Chromium
X749-58G	12/14/1993	0	WATER	WG	METAL	Cobalt
X749-58G	12/14/1993	0	WATER	WG	METAL	Copper
X749-58G	12/14/1993	0	WATER	WG	METAL	Nickel
X749-58G	12/14/1993	0	WATER	WG	METAL	Arsenic - Total Mobile
X749-58G	12/14/1993	0	WATER	WG	METAL	Lead
X749-58G	12/14/1993	0	WATER	WG	METAL	Mercury

RESULT	UNITS	RESULT QUALIFIER	DETECTION LIMIT	DETECT
6	ug/L		5	D
5	ug/L		1	D
43	pCi/L	J	60	D
2	ug/L	J	5	D
35	ug/L	J	5	D
929000	ug/L	J	1	D
19	pCi/L	J	30	D
2200	ug/L		0	D
230	ug/L		1	D
370	ug/L		0	D
21	ug/L		10	D
29	ug/L		20	D
45	ug/L		20	D
14	ug/L		10	D
30	ug/L		10	D
66	ug/L		10	D
32	ug/L		10	D
48	ug/L	J	10	D
31	ug/L		25	D
11	ug/L		10	D
91	ug/L		10	D
25	ug/L		20	D
120	ug/L		20	D
10	ug/L		10	D
150	ug/L		10	D
240	ug/L		10	D
104	pCi/L		48	D
22	ug/L		5	D
45	ug/L		40	D
5	ug/L	P	5	D
52800	ug/L	J	1	D
23	ug/L		1	D
21	pCi/L	J	30	D
39	pCi/L	J	60	D
6	pCi/L	J	25	D
5	ug/L		5	D
190	ug/L		10	D
390	ug/L		20	D
190	ug/L		10	D
63	ug/L		10	D
55	ug/L		25	D
16	ug/L		10	D
180	ug/L		10	D
470	ug/L		10	D

36	ug/L		5	D
0.3	ug/L		0.2	D
130	ug/L		40	D
46	pCi/L		33	D
76	pCi/L		46	D
14	ug/L		10	D
220	ug/L		10	D
37	ug/L		20	D
510	ug/L		20	D
19	ug/L		10	D
180	ug/L		10	D
550	ug/L		10	D
12	ug/L		10	D
330	ug/L		10	D
86	ug/L		10	D
85	ug/L	J	25	D
190	ug/L		40	D
13	ug/L		10	D
55	ug/L	J	5	D
1.1	ug/L		0.2	D

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Radiation Levels from 1998 through 2002 in Support of NRC Question ER 3-3

**Table 9.2-8 Environmental Baseline Radiation Levels
1998-2002**

Area of Readings	Average	Minimum	Maximum
Reservation	10.6 μ Rad/hr	6.2 μ Rad/hr	17.9 μ Rad/hr
X-746 Cylinder Yard	70.8 μ Rad/hr	60.1 μ Rad/hr	85.3 μ Rad/hr
Boundary	10.6 μ Rad/hr	6.2 μ Rad/hr	25.3 μ Rad/hr
Piketon	8.8 μ Rad/hr	6.1 μ Rad/hr	13.9 μ Rad/hr
Camp Creek	9.4 μ Rad/hr	6.0 μ Rad/hr	14.9 μ Rad/hr

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Data Inputs in Support of NRC Question ER 3-4

A N 0.001750.002770.000000.000000.000000.000000
A NNE 0.001660.002440.000050.000000.000000.000000
A NE 0.001330.002700.000000.000000.000000.000000
A ENE 0.001200.002170.000000.000000.000000.000000
A E 0.001110.001430.000000.000000.000000.000000
A ESE 0.001220.001130.000000.000000.000000.000000
A SE 0.001610.001130.000020.000000.000000.000000
A SSE 0.001840.001470.000050.000000.000000.000000
A S 0.002370.002320.000160.000000.000000.000000
A SSW 0.003310.002700.000140.000000.000000.000000
A SW 0.003170.002650.000090.000000.000000.000000
A WSW 0.002710.002560.000050.000000.000000.000000
A W 0.002690.001800.000020.000000.000000.000000
A WNW 0.002340.001890.000090.000000.000000.000000
A NW 0.001750.002330.000020.000000.000000.000000
A NNW 0.001540.002230.000040.000000.000000.000000
B N 0.001470.001860.001200.000000.000000.000000
B NNE 0.001510.001860.000650.000000.000000.000000
B NE 0.001030.001910.000850.000000.000000.000000
B ENE 0.000850.001380.001080.000000.000000.000000
B E 0.000910.001080.000390.000000.000000.000000
B ESE 0.000730.001240.000250.000000.000000.000000
B SE 0.001120.001030.000210.000000.000000.000000
B SSE 0.001130.001240.000180.000000.000000.000000
B S 0.002180.002800.000760.000020.000000.000000
B SSW 0.002070.002530.001190.000140.000000.000000
B SW 0.001910.002660.001150.000070.000000.000000
B WSW 0.001720.002250.001010.000000.000000.000000
B W 0.001240.001860.000990.000000.000000.000000
B WNW 0.001180.001490.000980.000020.000000.000000
B NW 0.000780.001680.000710.000000.000000.000000
B NNW 0.001310.001630.000760.000000.000000.000000
C N 0.000070.002430.002800.000210.000000.000000
C NNE 0.000090.002430.001610.000020.000000.000000
C NE 0.000160.001920.002180.000160.000000.000000
C ENE 0.000090.001330.001350.000180.000000.000000
C E 0.000120.001140.000640.000090.000000.000000
C ESE 0.000050.001310.000460.000020.000000.000000
C SE 0.000140.001010.000510.000020.000000.000000
C SSE 0.000210.001860.000710.000020.000000.000000
C S 0.000480.004420.001540.000340.000090.000000
C SSW 0.000370.003400.002850.000640.000160.000000
C SW 0.000320.003280.003310.001470.000590.00005
C WSW 0.000250.001740.003080.001170.000110.00000
C W 0.000110.001420.002060.001220.000000.00000
C WNW 0.000070.001420.001450.000640.000000.00000
C NW 0.000070.001360.001910.000600.000050.00000
C NNW 0.000050.000990.001450.000250.000000.00000
D N 0.003420.010130.011890.003520.000320.00002
D NNE 0.005000.010680.007310.001470.000050.00000
D NE 0.003550.007010.005010.003200.000270.00002
D ENE 0.002820.004330.003180.003130.000430.00005
D E 0.002960.003410.002370.002470.000210.00011
D ESE 0.003230.004260.003290.001690.000140.00002
D SE 0.003280.004140.003360.001600.000250.00005
D SSE 0.004240.006910.004100.001330.000090.00007
D S 0.007770.018160.009210.001130.000180.00007

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D SSW 0.008430.015250.006450.000960.000280.00002
D SW 0.007130.012660.010100.004140.001590.00072
D WSW 0.005170.009390.009360.004140.001570.00090
D W 0.003540.007030.006510.003400.000900.00028
D WNW 0.003140.007370.005770.002630.000640.00012
D NW 0.003100.009520.007670.002440.000370.00000
D NNW 0.002410.008700.006680.001630.000190.00000
E N 0.002980.003900.000740.000050.000000.00000
E NNE 0.004290.008020.002590.000090.000000.00000
E NE 0.003280.004410.000230.000000.000000.00000
E ENE 0.002590.002360.000160.000000.000000.00000
E E 0.003790.001770.000110.000000.000000.00000
E ESE 0.004840.002270.000250.000000.000000.00000
E SE 0.004590.002620.000250.000050.000000.00000
E SSE 0.005510.004340.000570.000050.000020.00000
E S 0.009330.013450.004040.000440.000000.00000
E SSW 0.010450.009480.001540.000460.000070.00000
E SW 0.008790.007180.002020.000920.000140.00000
E WSW 0.006850.004670.002090.000420.000000.00000
E W 0.004340.002940.001310.000280.000000.00000
E WNW 0.002520.002640.001010.000160.000000.00000
E NW 0.002590.003510.001040.000260.000000.00000
E NNW 0.002250.004450.000970.000020.000000.00000
F N 0.009760.003240.000370.000000.000000.00000
F NNE 0.011700.004800.000230.000000.000000.00000
F NE 0.009750.002870.000020.000000.000000.00000
F ENE 0.009390.001590.000000.000000.000000.00000
F E 0.010760.001050.000020.000000.000000.00000
F ESE 0.013150.002130.000000.000000.000000.00000
F SE 0.015840.001170.000020.000000.000000.00000
F SSE 0.017340.001930.000160.000000.000000.00000
F S 0.020080.005370.000620.000000.000000.00000
F SSW 0.021750.004150.000250.000000.000000.00000
F SW 0.022310.003110.000370.000000.000000.00000
F WSW 0.018300.002540.000340.000000.000000.00000
F W 0.013190.001790.000070.000000.000000.00000
F WNW 0.009530.001940.000180.000000.000000.00000
F NW 0.007530.002070.000320.000000.000000.00000
F NNW 0.007550.002140.000230.000000.000000.00000

[illegible]

INFORMATION CONTAINED WITHIN
DOES NOT CONTAIN
EXPORT CONTROLLED INFORMATION

Richard L. Coriell
03-28-05

Release Data	U-234	U-235	U-238	
Solubility Class	D	D	D	
AMAD	1	1	1	micron

Two Process Building Scenario					Stack Ht	Stack Dia	Plume Rise	
Feed	7.80E-04	3.43E-05	7.46E-04	Curies per yr	12	0.05	0.0	m
Process Buildings (2)	2.98E-02	1.37E-03	1.04E-02	Curies per yr	23	0.05	0.0	m
Withdrawal	1.12E-03	5.15E-05	3.90E-04	Curies per yr	12	0.05	0.0	m
Customer Support	1.37E-03	4.84E-05	1.45E-04	Curies per yr	12	0.05	0.0	m
Total Plant	3.31E-02	1.51E-03	1.17E-02	Curies per yr				
Four Process Building Scenario					Stack Ht	Stack Dia	Plume Rise	
Feed	7.80E-04	3.43E-05	7.46E-04	Curies per yr	12	0.05	0.0	m
Process Buildings (4)	5.97E-02	2.75E-03	2.08E-02	Curies per yr	23	0.05	0.0	m
Withdrawal	1.12E-03	5.15E-05	3.90E-04	Curies per yr	12	0.05	0.0	m
Customer Support	1.37E-03	4.84E-05	1.45E-04	Curies per yr	12	0.05	0.0	m
Total Plant	6.29E-02	2.88E-03	2.21E-02	Curies per yr				

Agricultural Data (Rural Default)	Vegetable	Milk	Meat
Fraction Home Produced:	0.700	0.399	0.442
Fraction from Assessment Area:	0.300	0.601	0.558
Fraction Imported:	0.000	0.000	0.000

Direction	Distance	Direction	Distance
N	3,350	S	1,050
NNW	2,012	SSE	1,230
NW	1,344	SE	1,344
WNW	1,062	ESE	1,342
W	950	E	1,875
WSW	1,062	ENE	2,404
SW	1,308	NE	4,137
SSW	1,118	NNE	4,891
Ohio National Guard		E	555
OVEC Office Building		NNW	1,526

Richard S. Givell
 03-28-05
 INFORMATION CONTAINED WITHIN
 DOES NOT CONTAIN
 EXPORT CONTROLLED INFORMATION

CAP88 Source Terms.xls

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

S Y N O P S I S R E P O R T

Non-Radon Individual Assessment
Nov 11, 2003 10:07 am

Facility: Portsmouth American Centrifuge
Address:
City: Piketon
State: OH Zip:

Source Category: Facility and Process Ventilation System
Source Type: Stack
Emission Year: 2003

Comments:

Effective Dose Equivalent
(mrem/year)

4.43E-01

At This Location: 555 Meters North
Dataset Name: 4PBION
Dataset Date: Nov 11, 2003 10:07 am
Wind File: C:\CAP88PC2\CAP88PC2\PORTS30.WND

INFORMATION CONTAINED WITHIN
DOES NOT CONTAIN
EXPORT CONTROLLED INFORMATION

Richard L. Coriell
03-28-05

Nov 11, 2003 10:07 am

SYNOPSIS

Page 1

MAXIMALLY EXPOSED INDIVIDUAL

Location Of The Individual: 555 Meters North
Lifetime Fatal Cancer Risk: 2.86E-06

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Dose Equivalent (mrem/y)
GONADS	3.35E-02
BREAST	4.27E-02
R MAR	4.35E-01
LUNGS	1.59E-01
THYROID	3.18E-02
ENDOST	6.37E+00
RMNDR	5.49E-01
EFFEC	4.43E-01

Nov 11, 2003 10:07 am

SYNOPSIS

Page 2

RADIONUCLIDE EMISSIONS DURING THE YEAR 2003

Nuclide	Class	Size	Source	Source	Source	Source	Source	TOTAL
			#1	#2	#3	#4	#5	
			Ci/y	Ci/y	Ci/y	Ci/y	Ci/y	Ci/y
U-234	D	1.00	7.8E-04	6.0E-02	1.1E-03	1.4E-03	6.3E-03	6.9E-02
U-235	D	1.00	3.4E-05	2.7E-03	5.1E-05	4.8E-05	2.9E-04	3.2E-03
U-238	D	1.00	7.5E-04	2.1E-02	3.9E-04	1.4E-04	2.2E-03	2.4E-02

SITE INFORMATION

Temperature: 10 degrees C
Precipitation: 102 cm/y
Mixing Height: 1000 m

SOURCE INFORMATION

Source Number:	1	2	3	4	5		
Stack Height (m):	12.	23.	12.	12.	9.		
Diameter (m):	0.	0.	0.	0.	0.		
Plume Rise							
Pasquill Cat:	A	B	C	D	E	F	G
Zero:	0.	0.	0.	0.	0.	0.	0.

AGRICULTURAL DATA

	Vegetable	Milk	Meat
Fraction Home Produced:	0.000	0.000	0.000
Fraction From Assessment Area:	1.000	1.000	1.000
Fraction Imported:	0.000	0.000	0.000

Food Arrays were not generated for this run.
Default Values used.

DISTANCES (M) USED FOR MAXIMUM INDIVIDUAL ASSESSMENT

555	1526	2000	2500	5000	10000	15000	20000	25000	30000
35000	40000	45000	50000	55000	60000	65000	70000	75000	80000

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

D O S E A N D R I S K E Q U I V A L E N T S U M M A R I E S

Non-Radon Individual Assessment

Nov 11, 2003 10:07 am

Facility: Portsmouth American Centrifuge

Address:

City: Piketon

State: OH Zip:

Source Category: Facility and Process Ventilation System

Source Type: Stack

Emission Year: 2003

Comments:

Dataset Name: 4PBION

Dataset Date: Nov 11, 2003 10:07 am

Wind File: C:\CAP88PC2\CAP88PC2\PORTS30.WND

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)
GONADS	3.35E-02
BREAST	4.27E-02
R MAR	4.35E-01
LUNGS	1.59E-01
THYROID	3.18E-02
ENDOST	6.37E+00
RMNDR	5.49E-01
EFFEC	4.43E-01

PATHWAY EFFECTIVE DOSE EQUIVALENT SUMMARY

Pathway	Selected Individual (mrem/y)
INGESTION	9.05E-02
INHALATION	3.36E-01
AIR IMMERSION	3.87E-07
GROUND SURFACE	1.62E-02
INTERNAL	4.27E-01
EXTERNAL	1.62E-02
TOTAL	4.43E-01

Nov 11, 2003 10:07 am

SUMMARY
Page 2

NUCLIDE EFFECTIVE DOSE EQUIVALENT SUMMARY

Nuclide	Selected Individual (mrem/y)
U-234	3.15E-01
U-235	2.79E-02
U-238	9.99E-02
TOTAL	4.43E-01

CANCER RISK SUMMARY

Cancer	Selected Individual Total Lifetime Fatal Cancer Risk
LEUKEMIA	4.82E-07
BONE	3.40E-07
THYROID	1.02E-08
BREAST	1.30E-07
LUNG	4.60E-07
STOMACH	5.47E-08
BOWEL	3.25E-08
LIVER	5.80E-08
PANCREAS	3.70E-08
URINARY	1.22E-06
OTHER	4.52E-08
TOTAL	2.86E-06

PATHWAY RISK SUMMARY

Pathway	Selected Individual Total Lifetime Fatal Cancer Risk
INGESTION	4.67E-07
INHALATION	2.02E-06
AIR IMMERSION	9.00E-12
GROUND SURFACE	3.75E-07
INTERNAL	2.49E-06
EXTERNAL	3.75E-07
TOTAL	2.86E-06

Nov 11, 2003 10:07 am

SUMMARY

Page 4

NUCLIDE RISK SUMMARY

Nuclide	Selected Individual Total Lifetime Fatal Cancer Risk
U-234	1.83E-06
U-235	4.13E-07
U-238	6.25E-07
TOTAL	2.86E-06

INDIVIDUAL EFFECTIVE DOSE EQUIVALENT RATE (mrem/y)
(All Radionuclides and Pathways)

Distance (m)							
Direction	555	1526	2000	2500	5000	10000	15000
N	4.4E-01	2.4E-01	1.9E-01	1.7E-01	1.2E-01	1.0E-01	9.6E-02
NNW	2.8E-01	1.8E-01	1.6E-01	1.4E-01	1.1E-01	9.7E-02	9.4E-02
NW	2.5E-01	1.7E-01	1.5E-01	1.3E-01	1.1E-01	9.6E-02	9.4E-02
WNW	2.4E-01	1.6E-01	1.4E-01	1.3E-01	1.1E-01	9.5E-02	9.3E-02
W	2.1E-01	1.5E-01	1.3E-01	1.2E-01	1.0E-01	9.4E-02	9.3E-02
WSW	2.1E-01	1.4E-01	1.3E-01	1.2E-01	1.0E-01	9.4E-02	9.3E-02
SW	2.4E-01	1.5E-01	1.4E-01	1.2E-01	1.0E-01	9.5E-02	9.3E-02
SSW	3.0E-01	1.8E-01	1.5E-01	1.4E-01	1.1E-01	9.6E-02	9.4E-02
S	2.7E-01	1.6E-01	1.4E-01	1.3E-01	1.0E-01	9.5E-02	9.3E-02
SSE	2.2E-01	1.4E-01	1.3E-01	1.2E-01	1.0E-01	9.4E-02	9.3E-02
SE	2.4E-01	1.5E-01	1.3E-01	1.2E-01	1.0E-01	9.4E-02	9.3E-02
ESE	2.3E-01	1.5E-01	1.3E-01	1.2E-01	1.0E-01	9.5E-02	9.3E-02
E	2.7E-01	1.7E-01	1.5E-01	1.3E-01	1.1E-01	9.6E-02	9.3E-02
ENE	3.4E-01	2.0E-01	1.7E-01	1.5E-01	1.1E-01	9.8E-02	9.5E-02
NE	4.1E-01	2.3E-01	1.9E-01	1.6E-01	1.2E-01	1.0E-01	9.6E-02
NNE	4.4E-01	2.4E-01	1.9E-01	1.7E-01	1.2E-01	1.0E-01	9.6E-02

Distance (m)							
Direction	20000	25000	30000	35000	40000	45000	50000
N	9.4E-02	9.3E-02	9.2E-02	9.2E-02	9.2E-02	9.1E-02	9.1E-02
NNW	9.3E-02	9.2E-02	9.2E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02
NW	9.2E-02	9.2E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02
WNW	9.2E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02
W	9.2E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02
WSW	9.2E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02
SW	9.2E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02
SSW	9.3E-02	9.2E-02	9.2E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02
S	9.2E-02	9.2E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02
SSE	9.2E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02
SE	9.2E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02
ESE	9.2E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02
E	9.2E-02	9.2E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02
ENE	9.3E-02	9.2E-02	9.2E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02
NE	9.4E-02	9.2E-02	9.2E-02	9.2E-02	9.1E-02	9.1E-02	9.1E-02
NNE	9.4E-02	9.3E-02	9.2E-02	9.2E-02	9.1E-02	9.1E-02	9.1E-02

INDIVIDUAL EFFECTIVE DOSE EQUIVALENT RATE (mrem/y)
(All Radionuclides and Pathways)

Distance (m)						
Direction	55000	60000	65000	70000	75000	80000
N	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02
NNW	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02
NW	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02
WNW	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02
W	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02
WSW	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02
SW	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02
SSW	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02
S	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02
SSE	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02
SE	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02
ESE	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02
E	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02
ENE	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02
NE	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02
NNE	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02	9.1E-02

INDIVIDUAL LIFETIME RISK (deaths)
(All Radionuclides and Pathways)

Distance (m)							
Direction	555	1526	2000	2500	5000	10000	15000
N	2.9E-06	1.5E-06	1.2E-06	9.9E-07	6.6E-07	5.3E-07	5.1E-07
NNW	1.8E-06	1.1E-06	9.3E-07	8.1E-07	6.0E-07	5.1E-07	4.9E-07
NW	1.5E-06	9.9E-07	8.6E-07	7.6E-07	5.8E-07	5.0E-07	4.9E-07
WNW	1.5E-06	9.5E-07	8.2E-07	7.3E-07	5.7E-07	5.0E-07	4.9E-07
W	1.3E-06	8.6E-07	7.5E-07	6.8E-07	5.5E-07	4.9E-07	4.8E-07
WSW	1.3E-06	8.3E-07	7.3E-07	6.6E-07	5.4E-07	4.9E-07	4.8E-07
SW	1.5E-06	9.0E-07	7.8E-07	7.0E-07	5.5E-07	5.0E-07	4.8E-07
SSW	1.9E-06	1.0E-06	8.8E-07	7.8E-07	5.8E-07	5.1E-07	4.9E-07
S	1.7E-06	9.4E-07	8.0E-07	7.2E-07	5.6E-07	5.0E-07	4.9E-07
SSE	1.4E-06	8.3E-07	7.2E-07	6.6E-07	5.4E-07	4.9E-07	4.8E-07
SE	1.5E-06	8.5E-07	7.4E-07	6.7E-07	5.4E-07	4.9E-07	4.8E-07
ESE	1.4E-06	8.7E-07	7.6E-07	6.8E-07	5.5E-07	4.9E-07	4.8E-07
E	1.7E-06	9.9E-07	8.4E-07	7.5E-07	5.7E-07	5.0E-07	4.9E-07
ENE	2.2E-06	1.2E-06	1.0E-06	8.7E-07	6.2E-07	5.2E-07	5.0E-07
NE	2.7E-06	1.4E-06	1.1E-06	9.7E-07	6.6E-07	5.3E-07	5.0E-07
NNE	2.8E-06	1.5E-06	1.2E-06	9.9E-07	6.6E-07	5.3E-07	5.0E-07

Distance (m)							
Direction	20000	25000	30000	35000	40000	45000	50000
N	4.9E-07	4.8E-07	4.8E-07	4.8E-07	4.7E-07	4.7E-07	4.7E-07
NNW	4.8E-07	4.8E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
NW	4.8E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
WNW	4.8E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
W	4.8E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
WSW	4.8E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
SW	4.8E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
SSW	4.8E-07	4.8E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
S	4.8E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
SSE	4.8E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
SE	4.8E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
ESE	4.8E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
E	4.8E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
ENE	4.8E-07	4.8E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
NE	4.9E-07	4.8E-07	4.8E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
NNE	4.9E-07	4.8E-07	4.8E-07	4.8E-07	4.7E-07	4.7E-07	4.7E-07

INDIVIDUAL LIFETIME RISK (deaths)
(All Radionuclides and Pathways)

	Distance (m)					
Direction	55000	60000	65000	70000	75000	80000
N	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
NNW	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
NW	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
WNW	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
W	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
WSW	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
SW	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
SSW	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
S	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
SSE	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
SE	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
ESE	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
E	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
ENE	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
NE	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07
NNE	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07	4.7E-07

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Version 2.00

Clean Air Act Assessment Package - 1988

D O S E A N D R I S K C O N V E R S I O N F A C T O R S

Non-Radon Individual Assessment

Nov 11, 2003 10:07 am

Facility: Portsmouth American Centrifuge
Address:
City: Piketon
State: OH Zip:

Source Category: Facility and Process Ventilation System
Source Type: Stack
Emission Year: 2003

Comments:

Dataset Name: 4PBION
Dataset Date: Nov 11, 2003 10:07 am
Wind File: C:\CAP88PC2\CAP88PC2\PORTS30.WND

DOSE AND RISK FACTOR UNITS

The units for each type of dose rate conversion factor are shown below, by pathway:

Pathway	Units
Ingestion	millirem/picoCurie
Inhalation	millirem/picoCurie
Immersion	millirem-cubic cm/microCurie-year
Surface	millirem-square cm/microCurie-year

Risks for internal exposures (inhalation and ingestion) are the lifetime risk of premature death in a birth cohort of 100,000 people for a 1 picoCurie/year intake rate, where the average lifetime is 70.7565 years.

This is simplified to lifetime risk per 100,000 picoCuries.

The units for each type of risk conversion factor are shown below, by pathway:

Pathway	Units
Ingestion	lifetime risk/100,000 picoCuries
Inhalation	lifetime risk/100,000 picoCuries
Immersion	lifetime risk-cubic cm/100,000 picoCurie-years
Surface	lifetime risk-square cm/100,000 picoCurie-years

 * NUCLIDE U-234 *

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
GONADS	3.851E-05	9.856E-05	8.140E+05	7.067E+02
BREAST	3.851E-05	9.856E-05	2.046E+06	3.585E+03
R MAR	1.031E-03	2.637E-03	2.760E+05	9.139E+01
LUNGS	3.851E-05	1.200E-03	4.107E+05	1.735E+02
THYROID	3.851E-05	9.856E-05	6.068E+05	2.305E+02
ENDOST	1.625E-02	4.161E-02	7.104E+05	2.949E+02
RMNDR	1.396E-03	3.473E-03	3.777E+05	1.251E+02
EFFEC	1.051E-03	2.793E-03	7.456E+05	7.996E+02

GENETIC EFFECT DOSE RATE CONVERSION FACTORS

TESTES	1.058E-03	2.708E-03	2.442E+07	2.120E+04
OVARIES	1.058E-03	2.708E-03	9.102E+06	3.408E+03
AVERAGE	1.058E-03	2.708E-03	1.676E+07	1.230E+04

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
LEUKEMIA	1.006E-04	2.576E-04	8.742E-02	2.895E-05
BONE	8.532E-05	2.184E-04	1.257E-02	5.219E-06
THYROID	6.663E-07	1.706E-06	2.760E-02	1.048E-05
BREAST	5.605E-06	1.435E-05	8.014E-01	1.404E-03
LUNG	7.126E-06	3.280E-04	2.036E-01	8.603E-05
STOMACH	5.173E-06	1.193E-05	1.096E-01	3.621E-05
BOWEL	7.559E-06	6.746E-06	5.172E-02	1.577E-05
LIVER	5.015E-06	1.284E-05	1.212E-01	3.269E-05
PANCREAS	3.500E-06	8.958E-06	6.471E-02	2.715E-05
URINARY	3.044E-04	7.793E-04	4.689E-02	1.258E-05
OTHER	4.280E-06	1.096E-05	7.915E-02	3.321E-05

GENETIC EFFECT RISK CONVERSION FACTORS

AVERAGE	3.657E-11	9.355E-11	4.358E+00	3.198E-03
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 * NUCLIDE U-235 *

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
GONADS	3.811E-05	9.589E-05	8.732E+08	1.939E+05
BREAST	3.779E-05	9.661E-05	9.546E+08	2.198E+05
R MAR	1.013E-03	2.592E-03	6.068E+08	1.336E+05
LUNGS	3.767E-05	1.115E-03	6.327E+08	1.391E+05
THYROID	3.754E-05	9.613E-05	8.510E+08	1.876E+05
ENDOST	1.572E-02	4.025E-02	9.361E+08	2.068E+05
RMNDR	1.299E-03	3.221E-03	6.231E+08	1.372E+05
EFFEC	1.004E-03	2.659E-03	7.508E+08	1.672E+05

GENETIC EFFECT DOSE RATE CONVERSION FACTORS

TESTES	1.021E-03	2.608E-03	2.620E+10	5.816E+06
OVARIES	1.041E-03	2.615E-03	1.510E+10	3.330E+06
AVERAGE	1.031E-03	2.612E-03	2.065E+10	4.573E+06

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
LEUKEMIA	1.074E-04	2.749E-04	1.920E+02	4.231E-02
BONE	8.775E-05	2.246E-04	1.656E+01	3.661E-03
THYROID	6.655E-07	1.704E-06	3.869E+01	8.533E-03
BREAST	5.647E-06	1.439E-05	3.730E+02	8.609E-02
LUNG	7.138E-06	3.052E-04	3.129E+02	6.897E-02
STOMACH	5.160E-06	1.173E-05	1.852E+02	4.090E-02
BOWEL	9.027E-06	6.945E-06	9.162E+01	2.018E-02
LIVER	4.107E-06	1.049E-05	2.022E+02	4.462E-02
PANCREAS	3.535E-06	9.009E-06	1.185E+02	2.625E-02
URINARY	2.829E-04	7.241E-04	7.427E+01	1.639E-02
OTHER	4.323E-06	1.102E-05	1.450E+02	3.210E-02

GENETIC EFFECT RISK CONVERSION FACTORS

AVERAGE	4.125E-11	9.858E-11	5.369E+03	1.189E+00
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 * NUCLIDE U-238 *

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
GONADS	3.464E-05	8.866E-05	5.365E+05	5.550E+02
BREAST	3.467E-05	8.881E-05	1.550E+06	2.967E+03
R MAR	1.087E-03	2.784E-03	1.413E+05	5.550E+01
LUNGS	3.464E-05	1.061E-03	2.505E+05	1.214E+02
THYROID	3.461E-05	8.861E-05	3.774E+05	1.572E+02
ENDOST	1.408E-02	3.605E-02	4.514E+05	2.094E+02
RMNDR	1.248E-03	3.104E-03	2.247E+05	8.303E+01
EFFEC	9.465E-04	2.512E-03	5.060E+05	6.410E+02

GENETIC EFFECT DOSE RATE CONVERSION FACTORS

TESTES	9.502E-04	2.432E-03	1.609E+07	1.665E+04
OVARIES	9.509E-04	2.431E-03	5.395E+06	2.287E+03
AVERAGE	9.506E-04	2.432E-03	1.074E+07	9.468E+03

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
LEUKEMIA	1.364E-04	3.494E-04	4.477E-02	1.758E-05
BONE	7.601E-05	1.946E-04	7.989E-03	3.706E-06
THYROID	6.076E-07	1.557E-06	1.717E-02	7.153E-06
BREAST	5.123E-06	1.313E-05	6.072E-01	1.162E-03
LUNG	6.509E-06	2.901E-04	1.242E-01	6.017E-05
STOMACH	4.656E-06	1.076E-05	6.460E-02	2.346E-05
BOWEL	7.207E-06	6.158E-06	2.964E-02	9.812E-06
LIVER	3.860E-06	9.951E-06	7.238E-02	1.985E-05
PANCREAS	3.197E-06	8.190E-06	3.638E-02	1.846E-05
URINARY	2.760E-04	7.065E-04	2.748E-02	7.335E-06
OTHER	3.909E-06	1.002E-05	4.450E-02	2.258E-05

GENETIC EFFECT RISK CONVERSION FACTORS

AVERAGE	3.504E-11	8.986E-11	2.792E+00	2.462E-03
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Version 2.00

Clean Air Act Assessment Package - 1988

G E N E R A L D A T A

Non-Radon Individual Assessment

Nov 11, 2003 10:07 am

Facility: Portsmouth American Centrifuge

Address:

City: Piketon

State: OH

Zip:

Source Category: Facility and Process Ventilation System

Source Type: Stack

Emission Year: 2003

Comments:

Dataset Name: 4PBION

Dataset Date: Nov 11, 2003 10:07 am

Wind File: C:\CAP88PC2\CAP88PC2\PORTS30.WND

VALUES FOR RADIONUCLIDE-DEPENDENT PARAMETERS

Nuclide	Clearance Class	Particle Size (microns)	Scavenging Coefficient (per second)	Dry Deposition Velocity (m/s)
U-234	D	1.0	1.02E-05	1.80E-03
U-235	D	1.0	1.02E-05	1.80E-03
U-238	D	1.0	1.02E-05	1.80E-03

VALUES FOR RADIONUCLIDE-DEPENDENT PARAMETERS

Nuclide	DECAY CONSTANT (PER DAY)			TRANSFER COEFFICIENT	
	Radio- active (1)	Surface	Water	Milk (2)	Meat (3)
U-234	0.00E+00	5.48E-05	0.00E+00	6.00E-04	2.00E-04
U-235	0.00E+00	5.48E-05	0.00E+00	6.00E-04	2.00E-04
U-238	0.00E+00	5.48E-05	0.00E+00	6.00E-04	2.00E-04

FOOTNOTES: (1) Effective radioactive decay constant in plume;
set to zero if less than 1.0E-2

(2) Fraction of animal's daily intake of nuclide
which appears in each L of milk (days/L)

(3) Fraction of animal's daily intake of nuclide
which appears in each kg of meat (days/kg)

VALUES FOR RADIONUCLIDE-DEPENDENT PARAMETERS

Nuclide	CONCENTRATION UPTAKE FACTOR		GI UPTAKE FRACTION	
	Forage (1)	Edible (2)	Inhalation	Ingestion
U-234	8.50E-03	1.71E-03	2.00E-03	2.00E-01
U-235	8.50E-03	1.71E-03	2.00E-03	2.00E-01
U-238	8.50E-03	1.71E-03	2.00E-03	2.00E-01

FOOTNOTES: (1) Concentration factor for uptake of nuclide
from soil for pasture and forage
(in pCi/kg dry weight per pCi/kg dry soil)

(2) Concentration factor for uptake of nuclide
from soil by edible parts of crops
(in pCi/kg wet weight per pCi/kg dry soil)

VALUES FOR RADIONUCLIDE-INDEPENDENT PARAMETERS

HUMAN INHALATION RATE
Cubic centimeters/hr

9.17E+05

SOIL PARAMETERS

Effective surface density (kg/sq m, dry weight)
(Assumes 15 cm plow layer)

2.15E+02

BUILDUP TIMES

For activity in soil (years)

1.00E+02

For radionuclides deposited on ground/water (days) 3.65E+04

DELAY TIMES

Ingestion of pasture grass by animals (hr)

0.00E+00

Ingestion of stored feed by animals (hr)

2.16E+03

Ingestion of leafy vegetables by man (hr)

3.36E+02

Ingestion of produce by man (hr)

3.36E+02

Transport time from animal feed-milk-man (day)

2.00E+00

Time from slaughter to consumption (day)

2.00E+01

WEATHERING

Removal rate constant for physical loss (per hr)

2.90E-03

CROP EXPOSURE DURATION

Pasture grass (hr)

7.20E+02

Crops/leafy vegetables (hr)

1.44E+03

AGRICULTURAL PRODUCTIVITY

Grass-cow-milk-man pathway (kg/sq m)

2.80E-01

Produce/leafy veg for human consumption (kg/sq m)

7.16E-01

FALLOUT INTERCEPTION FRACTIONS

Vegetables

2.00E-01

Pasture

5.70E-01

GRAZING PARAMETERS

Fraction of year animals graze on pasture

4.00E-01

Fraction of daily feed that is pasture grass
when animal grazes on pasture4.30E-01

VALUES FOR RADIONUCLIDE-INDEPENDENT PARAMETERS

ANIMAL FEED CONSUMPTION FACTORS

Contaminated feed/forage (kg/day, dry weight)	1.56E+01
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DAIRY PRODUCTIVITY

Milk production of cow (L/day)	1.10E+01
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MEAT ANIMAL SLAUGHTER PARAMETERS

Muscle mass of animal at slaughter (kg)	2.00E+02
Fraction of herd slaughtered (per day)	3.81E-03

DECONTAMINATION

Fraction of radioactivity retained after washing for leafy vegetables and produce	5.00E-01
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FRACTIONS GROWN IN GARDEN OF INTEREST

Produce ingested	1.00E+00
Leafy vegetables ingested	1.00E+00

INGESTION RATIOS:

IMMEDIATE SURROUNDING AREA/TOTAL WITHIN AREA

Vegetables	0.00E+00
Meat	0.00E+00
Milk	0.00E+00

MINIMUM INGESTION FRACTIONS FROM OUTSIDE AREA

(Minimum fractions of food types from outside
area listed below are actual fixed values.)

Vegetables	0.00E+00
Meat	0.00E+00
Milk	0.00E+00

HUMAN FOOD UTILIZATION FACTORS

Produce ingestion (kg/y)	1.76E+02
Milk ingestion (L/y)	1.12E+02
Meat ingestion (kg/y)	8.50E+01
Leafy vegetable ingestion (kg/y)	1.80E+01

SWIMMING PARAMETERS

Fraction of time spent swimming	0.00E+00
Dilution factor for water (cm)	1.00E+00

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Clean Air Act Assessment Package - 1988

C O N C E N T R A T I O N T A B L E S

Non-Radon Individual Assessment

Nov 11, 2003 10:07 am

Facility: Portsmouth American Centrifuge

Address:

City: Piketon

State: OH

Zip:

Source Category: Facility and Process Ventilation System

Source Type: Stack

Emission Year: 2003

Comments:

Dataset Name: 4PBION

Dataset Date: Nov 11, 2003 10:07 am

Wind File: C:\CAP88PC2\CAP88PC2\PORTS30.WND

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
N	555	U-234	1.1E-02	2.0E-09	7.7E-10	2.8E-09
N	555	U-235	5.0E-04	9.0E-11	3.5E-11	1.3E-10
N	555	U-238	3.9E-03	7.0E-10	2.7E-10	9.7E-10
N	1526	U-234	4.6E-03	8.2E-10	2.7E-10	1.1E-09
N	1526	U-235	2.1E-04	3.7E-11	1.2E-11	5.0E-11
N	1526	U-238	1.6E-03	2.9E-10	9.5E-11	3.8E-10
N	2000	U-234	3.3E-03	5.9E-10	2.0E-10	7.9E-10
N	2000	U-235	1.5E-04	2.7E-11	9.3E-12	3.6E-11
N	2000	U-238	1.1E-03	2.1E-10	7.1E-11	2.8E-10
N	2500	U-234	2.4E-03	4.4E-10	1.6E-10	6.0E-10
N	2500	U-235	1.1E-04	2.0E-11	7.4E-12	2.7E-11
N	2500	U-238	8.5E-04	1.5E-10	5.6E-11	2.1E-10
N	5000	U-234	9.0E-04	1.6E-10	7.5E-11	2.4E-10
N	5000	U-235	4.1E-05	7.4E-12	3.4E-12	1.1E-11
N	5000	U-238	3.2E-04	5.7E-11	2.6E-11	8.3E-11
N	10000	U-234	3.1E-04	5.5E-11	3.3E-11	8.8E-11
N	10000	U-235	1.4E-05	2.5E-12	1.5E-12	4.0E-12
N	10000	U-238	1.1E-04	1.9E-11	1.2E-11	3.1E-11
N	15000	U-234	1.7E-04	3.1E-11	2.0E-11	5.2E-11
N	15000	U-235	8.0E-06	1.4E-12	9.4E-13	2.4E-12
N	15000	U-238	6.1E-05	1.1E-11	7.2E-12	1.8E-11
N	20000	U-234	1.1E-04	2.0E-11	1.4E-11	3.4E-11
N	20000	U-235	5.0E-06	9.1E-13	6.4E-13	1.6E-12
N	20000	U-238	3.9E-05	7.0E-12	4.9E-12	1.2E-11
N	25000	U-234	6.8E-05	1.2E-11	9.8E-12	2.2E-11
N	25000	U-235	3.1E-06	5.6E-13	4.5E-13	1.0E-12
N	25000	U-238	2.4E-05	4.3E-12	3.4E-12	7.7E-12
N	30000	U-234	5.2E-05	9.3E-12	7.8E-12	1.7E-11
N	30000	U-235	2.4E-06	4.3E-13	3.6E-13	7.8E-13
N	30000	U-238	1.8E-05	3.3E-12	2.7E-12	6.0E-12
N	35000	U-234	4.0E-05	7.3E-12	6.3E-12	1.4E-11
N	35000	U-235	1.9E-06	3.3E-13	2.9E-13	6.2E-13
N	35000	U-238	1.4E-05	2.5E-12	2.2E-12	4.8E-12
N	40000	U-234	3.2E-05	5.8E-12	5.3E-12	1.1E-11
N	40000	U-235	1.5E-06	2.7E-13	2.4E-13	5.1E-13
N	40000	U-238	1.1E-05	2.0E-12	1.8E-12	3.9E-12
N	45000	U-234	2.6E-05	4.7E-12	4.4E-12	9.1E-12
N	45000	U-235	1.2E-06	2.1E-13	2.0E-13	4.2E-13
N	45000	U-238	9.1E-06	1.6E-12	1.5E-12	3.2E-12
N	50000	U-234	2.1E-05	3.8E-12	3.7E-12	7.5E-12
N	50000	U-235	9.6E-07	1.7E-13	1.7E-13	3.4E-13
N	50000	U-238	7.3E-06	1.3E-12	1.3E-12	2.6E-12
N	55000	U-234	1.7E-05	3.0E-12	3.1E-12	6.1E-12
N	55000	U-235	7.6E-07	1.4E-13	1.4E-13	2.8E-13

N	55000	U-238	5.8E-06	1.0E-12	1.1E-12	2.1E-12
N	60000	U-234	1.1E-05	1.9E-12	2.5E-12	4.4E-12
N	60000	U-235	4.9E-07	8.8E-14	1.1E-13	2.0E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m ³)	Dry Deposition Rate (pCi/cm ² /s)	Wet Deposition Rate (pCi/cm ² /s)	Ground Deposition Rate (pCi/cm ² /s)
N	60000	U-238	3.7E-06	6.7E-13	8.7E-13	1.5E-12
N	65000	U-234	9.2E-06	1.7E-12	2.2E-12	3.8E-12
N	65000	U-235	4.2E-07	7.6E-14	1.0E-13	1.8E-13
N	65000	U-238	3.2E-06	5.8E-13	7.7E-13	1.3E-12
N	70000	U-234	7.9E-06	1.4E-12	1.9E-12	3.4E-12
N	70000	U-235	3.6E-07	6.5E-14	8.9E-14	1.5E-13
N	70000	U-238	2.8E-06	5.0E-13	6.8E-13	1.2E-12
N	75000	U-234	6.8E-06	1.2E-12	1.7E-12	3.0E-12
N	75000	U-235	3.1E-07	5.7E-14	8.0E-14	1.4E-13
N	75000	U-238	2.4E-06	4.3E-13	6.1E-13	1.0E-12
N	80000	U-234	5.9E-06	1.1E-12	1.6E-12	2.6E-12
N	80000	U-235	2.7E-07	4.9E-14	7.1E-14	1.2E-13
N	80000	U-238	2.1E-06	3.7E-13	5.4E-13	9.1E-13
NNW	555	U-234	6.0E-03	1.1E-09	4.8E-10	1.6E-09
NNW	555	U-235	2.7E-04	4.9E-11	2.2E-11	7.1E-11
NNW	555	U-238	2.1E-03	3.8E-10	1.7E-10	5.5E-10
NNW	1526	U-234	2.9E-03	5.2E-10	1.7E-10	6.9E-10
NNW	1526	U-235	1.3E-04	2.4E-11	7.7E-12	3.2E-11
NNW	1526	U-238	1.0E-03	1.8E-10	5.9E-11	2.4E-10
NNW	2000	U-234	2.1E-03	3.8E-10	1.3E-10	5.1E-10
NNW	2000	U-235	9.7E-05	1.7E-11	5.7E-12	2.3E-11
NNW	2000	U-238	7.4E-04	1.3E-10	4.4E-11	1.8E-10
NNW	2500	U-234	1.6E-03	2.9E-10	9.9E-11	3.8E-10
NNW	2500	U-235	7.3E-05	1.3E-11	4.5E-12	1.8E-11
NNW	2500	U-238	5.6E-04	1.0E-10	3.5E-11	1.4E-10
NNW	5000	U-234	6.0E-04	1.1E-10	4.5E-11	1.5E-10
NNW	5000	U-235	2.7E-05	4.9E-12	2.1E-12	7.0E-12
NNW	5000	U-238	2.1E-04	3.8E-11	1.6E-11	5.4E-11
NNW	10000	U-234	2.0E-04	3.6E-11	1.9E-11	5.5E-11
NNW	10000	U-235	9.1E-06	1.6E-12	8.8E-13	2.5E-12
NNW	10000	U-238	7.0E-05	1.3E-11	6.7E-12	1.9E-11
NNW	15000	U-234	1.1E-04	2.0E-11	1.2E-11	3.2E-11
NNW	15000	U-235	5.2E-06	9.3E-13	5.4E-13	1.5E-12
NNW	15000	U-238	3.9E-05	7.1E-12	4.1E-12	1.1E-11
NNW	20000	U-234	7.0E-05	1.3E-11	7.9E-12	2.1E-11
NNW	20000	U-235	3.2E-06	5.8E-13	3.6E-13	9.4E-13
NNW	20000	U-238	2.5E-05	4.4E-12	2.8E-12	7.2E-12
NNW	25000	U-234	4.1E-05	7.4E-12	5.3E-12	1.3E-11
NNW	25000	U-235	1.9E-06	3.4E-13	2.4E-13	5.8E-13
NNW	25000	U-238	1.4E-05	2.6E-12	1.9E-12	4.4E-12
NNW	30000	U-234	3.1E-05	5.6E-12	4.2E-12	9.7E-12
NNW	30000	U-235	1.4E-06	2.6E-13	1.9E-13	4.5E-13
NNW	30000	U-238	1.1E-05	2.0E-12	1.5E-12	3.4E-12
NNW	35000	U-234	2.4E-05	4.3E-12	3.4E-12	7.7E-12

NNW	35000	U-235	1.1E-06	2.0E-13	1.5E-13	3.5E-13
NNW	35000	U-238	8.4E-06	1.5E-12	1.2E-12	2.7E-12
NNW	40000	U-234	1.9E-05	3.4E-12	2.8E-12	6.2E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
NNW	40000	U-235	8.7E-07	1.6E-13	1.3E-13	2.8E-13
NNW	40000	U-238	6.6E-06	1.2E-12	9.7E-13	2.2E-12
NNW	45000	U-234	1.5E-05	2.7E-12	2.3E-12	5.0E-12
NNW	45000	U-235	6.9E-07	1.2E-13	1.1E-13	2.3E-13
NNW	45000	U-238	5.3E-06	9.5E-13	8.0E-13	1.8E-12
NNW	50000	U-234	1.2E-05	2.2E-12	1.9E-12	4.1E-12
NNW	50000	U-235	5.5E-07	9.9E-14	8.8E-14	1.9E-13
NNW	50000	U-238	4.2E-06	7.5E-13	6.7E-13	1.4E-12
NNW	55000	U-234	9.2E-06	1.7E-12	1.6E-12	3.2E-12
NNW	55000	U-235	4.2E-07	7.6E-14	7.3E-14	1.5E-13
NNW	55000	U-238	3.2E-06	5.8E-13	5.5E-13	1.1E-12
NNW	60000	U-234	5.3E-06	9.5E-13	1.2E-12	2.1E-12
NNW	60000	U-235	2.4E-07	4.3E-14	5.4E-14	9.8E-14
NNW	60000	U-238	1.8E-06	3.3E-13	4.1E-13	7.5E-13
NNW	65000	U-234	4.5E-06	8.1E-13	1.0E-12	1.8E-12
NNW	65000	U-235	2.1E-07	3.7E-14	4.8E-14	8.5E-14
NNW	65000	U-238	1.6E-06	2.8E-13	3.6E-13	6.5E-13
NNW	70000	U-234	3.8E-06	6.9E-13	9.2E-13	1.6E-12
NNW	70000	U-235	1.8E-07	3.2E-14	4.2E-14	7.4E-14
NNW	70000	U-238	1.3E-06	2.4E-13	3.2E-13	5.6E-13
NNW	75000	U-234	3.3E-06	5.9E-13	8.2E-13	1.4E-12
NNW	75000	U-235	1.5E-07	2.7E-14	3.7E-14	6.4E-14
NNW	75000	U-238	1.1E-06	2.1E-13	2.9E-13	4.9E-13
NNW	80000	U-234	2.8E-06	5.0E-13	7.2E-13	1.2E-12
NNW	80000	U-235	1.3E-07	2.3E-14	3.3E-14	5.6E-14
NNW	80000	U-238	9.6E-07	1.7E-13	2.5E-13	4.3E-13
NW	555	U-234	4.8E-03	8.7E-10	4.0E-10	1.3E-09
NW	555	U-235	2.2E-04	4.0E-11	1.8E-11	5.8E-11
NW	555	U-238	1.7E-03	3.1E-10	1.4E-10	4.5E-10
NW	1526	U-234	2.4E-03	4.4E-10	1.4E-10	5.8E-10
NW	1526	U-235	1.1E-04	2.0E-11	6.4E-12	2.7E-11
NW	1526	U-238	8.6E-04	1.5E-10	4.9E-11	2.0E-10
NW	2000	U-234	1.8E-03	3.2E-10	1.0E-10	4.3E-10
NW	2000	U-235	8.2E-05	1.5E-11	4.8E-12	2.0E-11
NW	2000	U-238	6.3E-04	1.1E-10	3.7E-11	1.5E-10
NW	2500	U-234	1.4E-03	2.4E-10	8.2E-11	3.3E-10
NW	2500	U-235	6.2E-05	1.1E-11	3.8E-12	1.5E-11
NW	2500	U-238	4.7E-04	8.5E-11	2.9E-11	1.1E-10
NW	5000	U-234	5.1E-04	9.2E-11	3.7E-11	1.3E-10
NW	5000	U-235	2.3E-05	4.2E-12	1.7E-12	5.9E-12
NW	5000	U-238	1.8E-04	3.2E-11	1.3E-11	4.5E-11
NW	10000	U-234	1.7E-04	3.0E-11	1.6E-11	4.6E-11
NW	10000	U-235	7.7E-06	1.4E-12	7.2E-13	2.1E-12
NW	10000	U-238	5.9E-05	1.1E-11	5.5E-12	1.6E-11

NW	15000	U-234	9.4E-05	1.7E-11	9.6E-12	2.6E-11
NW	15000	U-235	4.3E-06	7.8E-13	4.4E-13	1.2E-12
NW	15000	U-238	3.3E-05	5.9E-12	3.3E-12	9.3E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
NW	20000	U-234	5.8E-05	1.0E-11	6.4E-12	1.7E-11
NW	20000	U-235	2.7E-06	4.8E-13	2.9E-13	7.7E-13
NW	20000	U-238	2.0E-05	3.7E-12	2.2E-12	5.9E-12
NW	25000	U-234	3.3E-05	6.0E-12	4.2E-12	1.0E-11
NW	25000	U-235	1.5E-06	2.8E-13	1.9E-13	4.7E-13
NW	25000	U-238	1.2E-05	2.1E-12	1.5E-12	3.6E-12
NW	30000	U-234	2.5E-05	4.5E-12	3.3E-12	7.8E-12
NW	30000	U-235	1.1E-06	2.1E-13	1.5E-13	3.6E-13
NW	30000	U-238	8.8E-06	1.6E-12	1.2E-12	2.7E-12
NW	35000	U-234	1.9E-05	3.5E-12	2.6E-12	6.1E-12
NW	35000	U-235	8.9E-07	1.6E-13	1.2E-13	2.8E-13
NW	35000	U-238	6.8E-06	1.2E-12	9.3E-13	2.1E-12
NW	40000	U-234	1.5E-05	2.7E-12	2.2E-12	4.9E-12
NW	40000	U-235	7.0E-07	1.3E-13	9.9E-14	2.2E-13
NW	40000	U-238	5.3E-06	9.6E-13	7.6E-13	1.7E-12
NW	45000	U-234	1.2E-05	2.2E-12	1.8E-12	3.9E-12
NW	45000	U-235	5.5E-07	9.9E-14	8.2E-14	1.8E-13
NW	45000	U-238	4.2E-06	7.6E-13	6.3E-13	1.4E-12
NW	50000	U-234	9.4E-06	1.7E-12	1.5E-12	3.2E-12
NW	50000	U-235	4.3E-07	7.8E-14	6.8E-14	1.5E-13
NW	50000	U-238	3.3E-06	6.0E-13	5.2E-13	1.1E-12
NW	55000	U-234	7.2E-06	1.3E-12	1.2E-12	2.5E-12
NW	55000	U-235	3.3E-07	5.9E-14	5.6E-14	1.2E-13
NW	55000	U-238	2.5E-06	4.5E-13	4.3E-13	8.8E-13
NW	60000	U-234	4.0E-06	7.1E-13	9.0E-13	1.6E-12
NW	60000	U-235	1.8E-07	3.3E-14	4.1E-14	7.4E-14
NW	60000	U-238	1.4E-06	2.5E-13	3.2E-13	5.7E-13
NW	65000	U-234	3.4E-06	6.0E-13	7.9E-13	1.4E-12
NW	65000	U-235	1.5E-07	2.8E-14	3.6E-14	6.4E-14
NW	65000	U-238	1.2E-06	2.1E-13	2.8E-13	4.9E-13
NW	70000	U-234	2.9E-06	5.1E-13	7.0E-13	1.2E-12
NW	70000	U-235	1.3E-07	2.4E-14	3.2E-14	5.6E-14
NW	70000	U-238	1.0E-06	1.8E-13	2.4E-13	4.2E-13
NW	75000	U-234	2.4E-06	4.3E-13	6.2E-13	1.1E-12
NW	75000	U-235	1.1E-07	2.0E-14	2.8E-14	4.8E-14
NW	75000	U-238	8.5E-07	1.5E-13	2.2E-13	3.7E-13
NW	80000	U-234	2.0E-06	3.7E-13	5.5E-13	9.1E-13
NW	80000	U-235	9.3E-08	1.7E-14	2.5E-14	4.2E-14
NW	80000	U-238	7.1E-07	1.3E-13	1.9E-13	3.2E-13
WNW	555	U-234	4.6E-03	8.2E-10	3.6E-10	1.2E-09
WNW	555	U-235	2.1E-04	3.7E-11	1.7E-11	5.4E-11
WNW	555	U-238	1.6E-03	2.9E-10	1.3E-10	4.2E-10
WNW	1526	U-234	2.2E-03	4.0E-10	1.3E-10	5.3E-10
WNW	1526	U-235	1.0E-04	1.8E-11	5.8E-12	2.4E-11

WNW	1526	U-238	7.8E-04	1.4E-10	4.4E-11	1.8E-10
WNW	2000	U-234	1.6E-03	2.9E-10	9.5E-11	3.9E-10
WNW	2000	U-235	7.4E-05	1.3E-11	4.3E-12	1.8E-11

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration Rate (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
WNW	2000	U-238	5.7E-04	1.0E-10	3.3E-11	1.4E-10
WNW	2500	U-234	1.2E-03	2.2E-10	7.4E-11	2.9E-10
WNW	2500	U-235	5.6E-05	1.0E-11	3.4E-12	1.3E-11
WNW	2500	U-238	4.3E-04	7.7E-11	2.6E-11	1.0E-10
WNW	5000	U-234	4.6E-04	8.2E-11	3.4E-11	1.2E-10
WNW	5000	U-235	2.1E-05	3.8E-12	1.6E-12	5.3E-12
WNW	5000	U-238	1.6E-04	2.9E-11	1.2E-11	4.1E-11
WNW	10000	U-234	1.5E-04	2.7E-11	1.4E-11	4.2E-11
WNW	10000	U-235	6.9E-06	1.2E-12	6.6E-13	1.9E-12
WNW	10000	U-238	5.3E-05	9.6E-12	5.0E-12	1.5E-11
WNW	15000	U-234	8.5E-05	1.5E-11	8.7E-12	2.4E-11
WNW	15000	U-235	3.9E-06	7.0E-13	4.0E-13	1.1E-12
WNW	15000	U-238	3.0E-05	5.4E-12	3.1E-12	8.4E-12
WNW	20000	U-234	5.3E-05	9.5E-12	5.9E-12	1.5E-11
WNW	20000	U-235	2.4E-06	4.3E-13	2.7E-13	7.0E-13
WNW	20000	U-238	1.8E-05	3.3E-12	2.1E-12	5.4E-12
WNW	25000	U-234	3.1E-05	5.5E-12	3.9E-12	9.4E-12
WNW	25000	U-235	1.4E-06	2.5E-13	1.8E-13	4.3E-13
WNW	25000	U-238	1.1E-05	1.9E-12	1.4E-12	3.3E-12
WNW	30000	U-234	2.3E-05	4.1E-12	3.0E-12	7.2E-12
WNW	30000	U-235	1.1E-06	1.9E-13	1.4E-13	3.3E-13
WNW	30000	U-238	8.0E-06	1.4E-12	1.1E-12	2.5E-12
WNW	35000	U-234	1.8E-05	3.2E-12	2.5E-12	5.6E-12
WNW	35000	U-235	8.1E-07	1.5E-13	1.1E-13	2.6E-13
WNW	35000	U-238	6.2E-06	1.1E-12	8.6E-13	2.0E-12
WNW	40000	U-234	1.4E-05	2.5E-12	2.0E-12	4.5E-12
WNW	40000	U-235	6.4E-07	1.1E-13	9.2E-14	2.1E-13
WNW	40000	U-238	4.9E-06	8.8E-13	7.0E-13	1.6E-12
WNW	45000	U-234	1.1E-05	2.0E-12	1.7E-12	3.6E-12
WNW	45000	U-235	5.0E-07	9.1E-14	7.6E-14	1.7E-13
WNW	45000	U-238	3.8E-06	6.9E-13	5.8E-13	1.3E-12
WNW	50000	U-234	8.7E-06	1.6E-12	1.4E-12	2.9E-12
WNW	50000	U-235	4.0E-07	7.1E-14	6.3E-14	1.3E-13
WNW	50000	U-238	3.0E-06	5.5E-13	4.8E-13	1.0E-12
WNW	55000	U-234	6.6E-06	1.2E-12	1.1E-12	2.3E-12
WNW	55000	U-235	3.0E-07	5.5E-14	5.2E-14	1.1E-13
WNW	55000	U-238	2.3E-06	4.2E-13	4.0E-13	8.2E-13
WNW	60000	U-234	3.7E-06	6.7E-13	8.5E-13	1.5E-12
WNW	60000	U-235	1.7E-07	3.1E-14	3.9E-14	7.0E-14
WNW	60000	U-238	1.3E-06	2.4E-13	3.0E-13	5.3E-13
WNW	65000	U-234	3.2E-06	5.7E-13	7.5E-13	1.3E-12
WNW	65000	U-235	1.5E-07	2.6E-14	3.4E-14	6.0E-14
WNW	65000	U-238	1.1E-06	2.0E-13	2.6E-13	4.6E-13
WNW	70000	U-234	2.7E-06	4.8E-13	6.6E-13	1.1E-12

WNW	70000	U-235	1.2E-07	2.2E-14	3.0E-14	5.2E-14
WNW	70000	U-238	9.4E-07	1.7E-13	2.3E-13	4.0E-13
WNW	75000	U-234	2.3E-06	4.1E-13	5.9E-13	9.9E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
WNW	75000	U-235	1.0E-07	1.9E-14	2.7E-14	4.6E-14
WNW	75000	U-238	8.0E-07	1.4E-13	2.1E-13	3.5E-13
WNW	80000	U-234	1.9E-06	3.4E-13	5.2E-13	8.6E-13
WNW	80000	U-235	8.8E-08	1.6E-14	2.4E-14	4.0E-14
WNW	80000	U-238	6.7E-07	1.2E-13	1.8E-13	3.0E-13
W	555	U-234	3.9E-03	7.0E-10	3.0E-10	1.0E-09
W	555	U-235	1.8E-04	3.2E-11	1.4E-11	4.6E-11
W	555	U-238	1.4E-03	2.5E-10	1.1E-10	3.5E-10
W	1526	U-234	1.8E-03	3.3E-10	1.1E-10	4.3E-10
W	1526	U-235	8.3E-05	1.5E-11	4.9E-12	2.0E-11
W	1526	U-238	6.4E-04	1.2E-10	3.7E-11	1.5E-10
W	2000	U-234	1.3E-03	2.4E-10	8.0E-11	3.2E-10
W	2000	U-235	6.1E-05	1.1E-11	3.7E-12	1.5E-11
W	2000	U-238	4.7E-04	8.4E-11	2.8E-11	1.1E-10
W	2500	U-234	9.9E-04	1.8E-10	6.3E-11	2.4E-10
W	2500	U-235	4.5E-05	8.2E-12	2.9E-12	1.1E-11
W	2500	U-238	3.5E-04	6.3E-11	2.2E-11	8.5E-11
W	5000	U-234	3.7E-04	6.7E-11	2.9E-11	9.6E-11
W	5000	U-235	1.7E-05	3.1E-12	1.3E-12	4.4E-12
W	5000	U-238	1.3E-04	2.3E-11	1.0E-11	3.4E-11
W	10000	U-234	1.2E-04	2.2E-11	1.2E-11	3.4E-11
W	10000	U-235	5.6E-06	1.0E-12	5.6E-13	1.6E-12
W	10000	U-238	4.3E-05	7.7E-12	4.3E-12	1.2E-11
W	15000	U-234	6.9E-05	1.2E-11	7.5E-12	2.0E-11
W	15000	U-235	3.2E-06	5.7E-13	3.4E-13	9.1E-13
W	15000	U-238	2.4E-05	4.3E-12	2.6E-12	7.0E-12
W	20000	U-234	4.3E-05	7.7E-12	5.1E-12	1.3E-11
W	20000	U-235	2.0E-06	3.5E-13	2.3E-13	5.8E-13
W	20000	U-238	1.5E-05	2.7E-12	1.8E-12	4.5E-12
W	25000	U-234	2.5E-05	4.5E-12	3.4E-12	7.9E-12
W	25000	U-235	1.1E-06	2.0E-13	1.6E-13	3.6E-13
W	25000	U-238	8.7E-06	1.6E-12	1.2E-12	2.8E-12
W	30000	U-234	1.9E-05	3.4E-12	2.7E-12	6.0E-12
W	30000	U-235	8.5E-07	1.5E-13	1.2E-13	2.8E-13
W	30000	U-238	6.5E-06	1.2E-12	9.4E-13	2.1E-12
W	35000	U-234	1.4E-05	2.6E-12	2.2E-12	4.7E-12
W	35000	U-235	6.6E-07	1.2E-13	9.9E-14	2.2E-13
W	35000	U-238	5.0E-06	9.1E-13	7.6E-13	1.7E-12
W	40000	U-234	1.1E-05	2.0E-12	1.8E-12	3.8E-12
W	40000	U-235	5.2E-07	9.4E-14	8.1E-14	1.7E-13
W	40000	U-238	4.0E-06	7.1E-13	6.2E-13	1.3E-12
W	45000	U-234	9.0E-06	1.6E-12	1.5E-12	3.1E-12
W	45000	U-235	4.1E-07	7.4E-14	6.8E-14	1.4E-13
W	45000	U-238	3.1E-06	5.7E-13	5.2E-13	1.1E-12

W	50000	U-234	7.1E-06	1.3E-12	1.2E-12	2.5E-12
W	50000	U-235	3.3E-07	5.9E-14	5.7E-14	1.2E-13
W	50000	U-238	2.5E-06	4.5E-13	4.3E-13	8.8E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m ³)	Dry Deposition Rate (pCi/cm ² /s)	Wet Deposition Rate (pCi/cm ² /s)	Ground Deposition Rate (pCi/cm ² /s)
W	55000	U-234	5.4E-06	9.8E-13	1.0E-12	2.0E-12
W	55000	U-235	2.5E-07	4.5E-14	4.7E-14	9.2E-14
W	55000	U-238	1.9E-06	3.4E-13	3.6E-13	7.0E-13
W	60000	U-234	3.1E-06	5.6E-13	7.8E-13	1.3E-12
W	60000	U-235	1.4E-07	2.5E-14	3.6E-14	6.1E-14
W	60000	U-238	1.1E-06	1.9E-13	2.7E-13	4.7E-13
W	65000	U-234	2.6E-06	4.7E-13	6.9E-13	1.2E-12
W	65000	U-235	1.2E-07	2.2E-14	3.1E-14	5.3E-14
W	65000	U-238	9.2E-07	1.7E-13	2.4E-13	4.1E-13
W	70000	U-234	2.2E-06	4.0E-13	6.1E-13	1.0E-12
W	70000	U-235	1.0E-07	1.8E-14	2.8E-14	4.6E-14
W	70000	U-238	7.8E-07	1.4E-13	2.1E-13	3.5E-13
W	75000	U-234	1.9E-06	3.4E-13	5.4E-13	8.8E-13
W	75000	U-235	8.7E-08	1.6E-14	2.5E-14	4.0E-14
W	75000	U-238	6.6E-07	1.2E-13	1.9E-13	3.1E-13
W	80000	U-234	1.6E-06	2.9E-13	4.8E-13	7.7E-13
W	80000	U-235	7.3E-08	1.3E-14	2.2E-14	3.5E-14
W	80000	U-238	5.6E-07	1.0E-13	1.7E-13	2.7E-13
WSW	555	U-234	3.7E-03	6.7E-10	2.9E-10	9.6E-10
WSW	555	U-235	1.7E-04	3.0E-11	1.3E-11	4.4E-11
WSW	555	U-238	1.3E-03	2.4E-10	1.0E-10	3.4E-10
WSW	1526	U-234	1.7E-03	3.0E-10	1.0E-10	4.0E-10
WSW	1526	U-235	7.6E-05	1.4E-11	4.7E-12	1.8E-11
WSW	1526	U-238	5.8E-04	1.1E-10	3.6E-11	1.4E-10
WSW	2000	U-234	1.2E-03	2.2E-10	7.6E-11	2.9E-10
WSW	2000	U-235	5.5E-05	9.9E-12	3.5E-12	1.3E-11
WSW	2000	U-238	4.2E-04	7.6E-11	2.7E-11	1.0E-10
WSW	2500	U-234	9.0E-04	1.6E-10	6.0E-11	2.2E-10
WSW	2500	U-235	4.1E-05	7.4E-12	2.8E-12	1.0E-11
WSW	2500	U-238	3.2E-04	5.7E-11	2.1E-11	7.8E-11
WSW	5000	U-234	3.4E-04	6.1E-11	2.8E-11	8.9E-11
WSW	5000	U-235	1.5E-05	2.8E-12	1.3E-12	4.1E-12
WSW	5000	U-238	1.2E-04	2.1E-11	9.8E-12	3.1E-11
WSW	10000	U-234	1.1E-04	2.0E-11	1.2E-11	3.2E-11
WSW	10000	U-235	5.1E-06	9.3E-13	5.5E-13	1.5E-12
WSW	10000	U-238	3.9E-05	7.1E-12	4.2E-12	1.1E-11
WSW	15000	U-234	6.3E-05	1.1E-11	7.5E-12	1.9E-11
WSW	15000	U-235	2.9E-06	5.2E-13	3.4E-13	8.6E-13
WSW	15000	U-238	2.2E-05	4.0E-12	2.6E-12	6.6E-12
WSW	20000	U-234	3.9E-05	7.1E-12	5.1E-12	1.2E-11
WSW	20000	U-235	1.8E-06	3.2E-13	2.3E-13	5.6E-13
WSW	20000	U-238	1.4E-05	2.5E-12	1.8E-12	4.3E-12
WSW	25000	U-234	2.3E-05	4.2E-12	3.5E-12	7.7E-12
WSW	25000	U-235	1.1E-06	1.9E-13	1.6E-13	3.5E-13

WSW	25000	U-238	8.1E-06	1.5E-12	1.2E-12	2.7E-12
WSW	30000	U-234	1.7E-05	3.1E-12	2.8E-12	5.9E-12
WSW	30000	U-235	8.0E-07	1.4E-13	1.3E-13	2.7E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
WSW	30000	U-238	6.1E-06	1.1E-12	9.7E-13	2.1E-12
WSW	35000	U-234	1.4E-05	2.4E-12	2.3E-12	4.7E-12
WSW	35000	U-235	6.2E-07	1.1E-13	1.0E-13	2.2E-13
WSW	35000	U-238	4.7E-06	8.5E-13	7.9E-13	1.6E-12
WSW	40000	U-234	1.1E-05	1.9E-12	1.9E-12	3.8E-12
WSW	40000	U-235	4.9E-07	8.8E-14	8.6E-14	1.7E-13
WSW	40000	U-238	3.7E-06	6.7E-13	6.6E-13	1.3E-12
WSW	45000	U-234	8.5E-06	1.5E-12	1.6E-12	3.1E-12
WSW	45000	U-235	3.9E-07	7.0E-14	7.2E-14	1.4E-13
WSW	45000	U-238	3.0E-06	5.4E-13	5.5E-13	1.1E-12
WSW	50000	U-234	6.8E-06	1.2E-12	1.3E-12	2.5E-12
WSW	50000	U-235	3.1E-07	5.6E-14	6.1E-14	1.2E-13
WSW	50000	U-238	2.4E-06	4.3E-13	4.7E-13	8.9E-13
WSW	55000	U-234	5.2E-06	9.4E-13	1.1E-12	2.1E-12
WSW	55000	U-235	2.4E-07	4.3E-14	5.1E-14	9.5E-14
WSW	55000	U-238	1.8E-06	3.3E-13	3.9E-13	7.2E-13
WSW	60000	U-234	3.1E-06	5.7E-13	8.9E-13	1.5E-12
WSW	60000	U-235	1.4E-07	2.6E-14	4.1E-14	6.7E-14
WSW	60000	U-238	1.1E-06	2.0E-13	3.1E-13	5.1E-13
WSW	65000	U-234	2.7E-06	4.8E-13	7.9E-13	1.3E-12
WSW	65000	U-235	1.2E-07	2.2E-14	3.6E-14	5.8E-14
WSW	65000	U-238	9.4E-07	1.7E-13	2.8E-13	4.4E-13
WSW	70000	U-234	2.3E-06	4.1E-13	7.0E-13	1.1E-12
WSW	70000	U-235	1.1E-07	1.9E-14	3.2E-14	5.1E-14
WSW	70000	U-238	8.1E-07	1.5E-13	2.5E-13	3.9E-13
WSW	75000	U-234	2.0E-06	3.5E-13	6.3E-13	9.8E-13
WSW	75000	U-235	9.0E-08	1.6E-14	2.9E-14	4.5E-14
WSW	75000	U-238	6.9E-07	1.2E-13	2.2E-13	3.4E-13
WSW	80000	U-234	1.7E-06	3.0E-13	5.6E-13	8.7E-13
WSW	80000	U-235	7.7E-08	1.4E-14	2.6E-14	4.0E-14
WSW	80000	U-238	5.9E-07	1.1E-13	2.0E-13	3.0E-13
SW	555	U-234	4.8E-03	8.7E-10	3.5E-10	1.2E-09
SW	555	U-235	2.2E-04	3.9E-11	1.6E-11	5.6E-11
SW	555	U-238	1.7E-03	3.1E-10	1.2E-10	4.3E-10
SW	1526	U-234	2.0E-03	3.6E-10	1.2E-10	4.9E-10
SW	1526	U-235	9.2E-05	1.7E-11	5.7E-12	2.2E-11
SW	1526	U-238	7.1E-04	1.3E-10	4.4E-11	1.7E-10
SW	2000	U-234	1.4E-03	2.6E-10	9.4E-11	3.5E-10
SW	2000	U-235	6.6E-05	1.2E-11	4.3E-12	1.6E-11
SW	2000	U-238	5.1E-04	9.1E-11	3.3E-11	1.2E-10
SW	2500	U-234	1.1E-03	1.9E-10	7.4E-11	2.7E-10
SW	2500	U-235	4.9E-05	8.9E-12	3.4E-12	1.2E-11
SW	2500	U-238	3.8E-04	6.8E-11	2.6E-11	9.4E-11
SW	5000	U-234	4.0E-04	7.2E-11	3.4E-11	1.1E-10

SW	5000	U-235	1.8E-05	3.3E-12	1.6E-12	4.9E-12
SW	5000	U-238	1.4E-04	2.5E-11	1.2E-11	3.7E-11
SW	10000	U-234	1.4E-04	2.4E-11	1.5E-11	4.0E-11

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
SW	10000	U-235	6.2E-06	1.1E-12	7.0E-13	1.8E-12
SW	10000	U-238	4.8E-05	8.6E-12	5.3E-12	1.4E-11
SW	15000	U-234	7.7E-05	1.4E-11	9.4E-12	2.3E-11
SW	15000	U-235	3.5E-06	6.3E-13	4.3E-13	1.1E-12
SW	15000	U-238	2.7E-05	4.8E-12	3.3E-12	8.1E-12
SW	20000	U-234	4.8E-05	8.7E-12	6.5E-12	1.5E-11
SW	20000	U-235	2.2E-06	4.0E-13	3.0E-13	7.0E-13
SW	20000	U-238	1.7E-05	3.0E-12	2.3E-12	5.3E-12
SW	25000	U-234	2.9E-05	5.3E-12	4.6E-12	9.8E-12
SW	25000	U-235	1.3E-06	2.4E-13	2.1E-13	4.5E-13
SW	25000	U-238	1.0E-05	1.9E-12	1.6E-12	3.4E-12
SW	30000	U-234	2.2E-05	4.0E-12	3.6E-12	7.6E-12
SW	30000	U-235	1.0E-06	1.8E-13	1.7E-13	3.5E-13
SW	30000	U-238	7.8E-06	1.4E-12	1.3E-12	2.7E-12
SW	35000	U-234	1.7E-05	3.1E-12	3.0E-12	6.1E-12
SW	35000	U-235	7.9E-07	1.4E-13	1.4E-13	2.8E-13
SW	35000	U-238	6.1E-06	1.1E-12	1.0E-12	2.1E-12
SW	40000	U-234	1.4E-05	2.5E-12	2.5E-12	4.9E-12
SW	40000	U-235	6.3E-07	1.1E-13	1.1E-13	2.3E-13
SW	40000	U-238	4.8E-06	8.7E-13	8.6E-13	1.7E-12
SW	45000	U-234	1.1E-05	2.0E-12	2.1E-12	4.1E-12
SW	45000	U-235	5.1E-07	9.1E-14	9.5E-14	1.9E-13
SW	45000	U-238	3.9E-06	7.0E-13	7.3E-13	1.4E-12
SW	50000	U-234	8.8E-06	1.6E-12	1.8E-12	3.4E-12
SW	50000	U-235	4.1E-07	7.3E-14	8.1E-14	1.5E-13
SW	50000	U-238	3.1E-06	5.6E-13	6.2E-13	1.2E-12
SW	55000	U-234	7.0E-06	1.3E-12	1.5E-12	2.7E-12
SW	55000	U-235	3.2E-07	5.7E-14	6.8E-14	1.3E-13
SW	55000	U-238	2.4E-06	4.4E-13	5.2E-13	9.6E-13
SW	60000	U-234	4.4E-06	7.8E-13	1.2E-12	2.0E-12
SW	60000	U-235	2.0E-07	3.6E-14	5.5E-14	9.0E-14
SW	60000	U-238	1.5E-06	2.8E-13	4.2E-13	6.9E-13
SW	65000	U-234	3.7E-06	6.7E-13	1.1E-12	1.7E-12
SW	65000	U-235	1.7E-07	3.1E-14	4.8E-14	7.9E-14
SW	65000	U-238	1.3E-06	2.4E-13	3.7E-13	6.1E-13
SW	70000	U-234	3.2E-06	5.8E-13	9.4E-13	1.5E-12
SW	70000	U-235	1.5E-07	2.7E-14	4.3E-14	7.0E-14
SW	70000	U-238	1.1E-06	2.0E-13	3.3E-13	5.3E-13
SW	75000	U-234	2.8E-06	5.0E-13	8.5E-13	1.3E-12
SW	75000	U-235	1.3E-07	2.3E-14	3.9E-14	6.2E-14
SW	75000	U-238	9.7E-07	1.7E-13	3.0E-13	4.7E-13
SW	80000	U-234	2.4E-06	4.3E-13	7.6E-13	1.2E-12
SW	80000	U-235	1.1E-07	2.0E-14	3.5E-14	5.5E-14
SW	80000	U-238	8.3E-07	1.5E-13	2.7E-13	4.2E-13

SSW	555	U-234	6.5E-03	1.2E-09	4.6E-10	1.6E-09
SSW	555	U-235	3.0E-04	5.4E-11	2.1E-11	7.5E-11
SSW	555	U-238	2.3E-03	4.1E-10	1.6E-10	5.8E-10

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m ³)	Dry Deposition Rate (pCi/cm ² /s)	Wet Deposition Rate (pCi/cm ² /s)	Ground Deposition Rate (pCi/cm ² /s)
SSW	1526	U-234	2.7E-03	4.8E-10	1.6E-10	6.5E-10
SSW	1526	U-235	1.2E-04	2.2E-11	7.5E-12	3.0E-11
SSW	1526	U-238	9.4E-04	1.7E-10	5.7E-11	2.3E-10
SSW	2000	U-234	1.9E-03	3.5E-10	1.2E-10	4.7E-10
SSW	2000	U-235	8.8E-05	1.6E-11	5.6E-12	2.1E-11
SSW	2000	U-238	6.8E-04	1.2E-10	4.3E-11	1.6E-10
SSW	2500	U-234	1.4E-03	2.6E-10	9.7E-11	3.5E-10
SSW	2500	U-235	6.5E-05	1.2E-11	4.5E-12	1.6E-11
SSW	2500	U-238	5.0E-04	9.0E-11	3.4E-11	1.2E-10
SSW	5000	U-234	5.4E-04	9.7E-11	4.5E-11	1.4E-10
SSW	5000	U-235	2.5E-05	4.4E-12	2.1E-12	6.5E-12
SSW	5000	U-238	1.9E-04	3.4E-11	1.6E-11	5.0E-11
SSW	10000	U-234	1.8E-04	3.3E-11	2.0E-11	5.3E-11
SSW	10000	U-235	8.4E-06	1.5E-12	9.3E-13	2.4E-12
SSW	10000	U-238	6.4E-05	1.2E-11	7.1E-12	1.9E-11
SSW	15000	U-234	1.0E-04	1.9E-11	1.3E-11	3.1E-11
SSW	15000	U-235	4.8E-06	8.6E-13	5.8E-13	1.4E-12
SSW	15000	U-238	3.7E-05	6.6E-12	4.4E-12	1.1E-11
SSW	20000	U-234	6.7E-05	1.2E-11	8.7E-12	2.1E-11
SSW	20000	U-235	3.1E-06	5.5E-13	4.0E-13	9.5E-13
SSW	20000	U-238	2.3E-05	4.2E-12	3.1E-12	7.3E-12
SSW	25000	U-234	4.1E-05	7.5E-12	6.1E-12	1.4E-11
SSW	25000	U-235	1.9E-06	3.4E-13	2.8E-13	6.2E-13
SSW	25000	U-238	1.5E-05	2.6E-12	2.1E-12	4.8E-12
SSW	30000	U-234	3.2E-05	5.7E-12	4.9E-12	1.1E-11
SSW	30000	U-235	1.4E-06	2.6E-13	2.2E-13	4.8E-13
SSW	30000	U-238	1.1E-05	2.0E-12	1.7E-12	3.7E-12
SSW	35000	U-234	2.5E-05	4.5E-12	4.0E-12	8.4E-12
SSW	35000	U-235	1.1E-06	2.0E-13	1.8E-13	3.9E-13
SSW	35000	U-238	8.7E-06	1.6E-12	1.4E-12	3.0E-12
SSW	40000	U-234	2.0E-05	3.6E-12	3.3E-12	6.9E-12
SSW	40000	U-235	9.1E-07	1.6E-13	1.5E-13	3.2E-13
SSW	40000	U-238	6.9E-06	1.2E-12	1.2E-12	2.4E-12
SSW	45000	U-234	1.6E-05	2.9E-12	2.8E-12	5.7E-12
SSW	45000	U-235	7.3E-07	1.3E-13	1.3E-13	2.6E-13
SSW	45000	U-238	5.6E-06	1.0E-12	9.8E-13	2.0E-12
SSW	50000	U-234	1.3E-05	2.3E-12	2.4E-12	4.7E-12
SSW	50000	U-235	5.9E-07	1.1E-13	1.1E-13	2.2E-13
SSW	50000	U-238	4.5E-06	8.2E-13	8.3E-13	1.6E-12
SSW	55000	U-234	1.0E-05	1.9E-12	2.0E-12	3.9E-12
SSW	55000	U-235	4.7E-07	8.5E-14	9.2E-14	1.8E-13
SSW	55000	U-238	3.6E-06	6.5E-13	7.0E-13	1.4E-12
SSW	60000	U-234	6.7E-06	1.2E-12	1.6E-12	2.8E-12
SSW	60000	U-235	3.1E-07	5.5E-14	7.3E-14	1.3E-13

SSW	60000	U-238	2.3E-06	4.2E-13	5.6E-13	9.8E-13
SSW	65000	U-234	5.8E-06	1.0E-12	1.4E-12	2.4E-12
SSW	65000	U-235	2.6E-07	4.8E-14	6.5E-14	1.1E-13

The following table shows the results of the analysis of the data from the SSW 60000, 65000, and 65000 experiments. The data are presented in the form of a table with columns for the experiment number, the isotope, the concentration, and the standard deviation. The data are presented in the form of a table with columns for the experiment number, the isotope, the concentration, and the standard deviation.

Experiment	Isotope	Concentration	Standard Deviation
SSW 60000	U-238	2.3E-06	4.2E-13
SSW 65000	U-234	5.8E-06	1.0E-12
SSW 65000	U-235	2.6E-07	4.8E-14

The data are presented in the form of a table with columns for the experiment number, the isotope, the concentration, and the standard deviation. The data are presented in the form of a table with columns for the experiment number, the isotope, the concentration, and the standard deviation.

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
SSW	65000	U-238	2.0E-06	3.6E-13	4.9E-13	8.6E-13
SSW	70000	U-234	5.0E-06	9.0E-13	1.3E-12	2.2E-12
SSW	70000	U-235	2.3E-07	4.1E-14	5.8E-14	9.9E-14
SSW	70000	U-238	1.7E-06	3.1E-13	4.4E-13	7.6E-13
SSW	75000	U-234	4.3E-06	7.8E-13	1.1E-12	1.9E-12
SSW	75000	U-235	2.0E-07	3.6E-14	5.2E-14	8.7E-14
SSW	75000	U-238	1.5E-06	2.7E-13	3.9E-13	6.7E-13
SSW	80000	U-234	3.7E-06	6.7E-13	1.0E-12	1.7E-12
SSW	80000	U-235	1.7E-07	3.1E-14	4.6E-14	7.7E-14
SSW	80000	U-238	1.3E-06	2.4E-13	3.5E-13	5.9E-13
S	555	U-234	5.5E-03	9.9E-10	3.9E-10	1.4E-09
S	555	U-235	2.5E-04	4.5E-11	1.8E-11	6.3E-11
S	555	U-238	1.9E-03	3.5E-10	1.4E-10	4.9E-10
S	1526	U-234	2.2E-03	3.9E-10	1.4E-10	5.3E-10
S	1526	U-235	9.9E-05	1.8E-11	6.4E-12	2.4E-11
S	1526	U-238	7.6E-04	1.4E-10	4.9E-11	1.9E-10
S	2000	U-234	1.5E-03	2.8E-10	1.0E-10	3.8E-10
S	2000	U-235	7.1E-05	1.3E-11	4.8E-12	1.8E-11
S	2000	U-238	5.4E-04	9.8E-11	3.7E-11	1.3E-10
S	2500	U-234	1.1E-03	2.1E-10	8.3E-11	2.9E-10
S	2500	U-235	5.3E-05	9.5E-12	3.8E-12	1.3E-11
S	2500	U-238	4.0E-04	7.2E-11	2.9E-11	1.0E-10
S	5000	U-234	4.3E-04	7.7E-11	3.9E-11	1.2E-10
S	5000	U-235	2.0E-05	3.5E-12	1.8E-12	5.3E-12
S	5000	U-238	1.5E-04	2.7E-11	1.4E-11	4.1E-11
S	10000	U-234	1.5E-04	2.6E-11	1.7E-11	4.4E-11
S	10000	U-235	6.7E-06	1.2E-12	8.0E-13	2.0E-12
S	10000	U-238	5.1E-05	9.2E-12	6.1E-12	1.5E-11
S	15000	U-234	8.2E-05	1.5E-11	1.1E-11	2.6E-11
S	15000	U-235	3.8E-06	6.8E-13	5.0E-13	1.2E-12
S	15000	U-238	2.9E-05	5.2E-12	3.8E-12	9.0E-12
S	20000	U-234	5.2E-05	9.4E-12	7.6E-12	1.7E-11
S	20000	U-235	2.4E-06	4.3E-13	3.5E-13	7.8E-13
S	20000	U-238	1.8E-05	3.3E-12	2.6E-12	5.9E-12
S	25000	U-234	3.2E-05	5.8E-12	5.4E-12	1.1E-11
S	25000	U-235	1.5E-06	2.7E-13	2.5E-13	5.1E-13
S	25000	U-238	1.1E-05	2.0E-12	1.9E-12	3.9E-12
S	30000	U-234	2.4E-05	4.4E-12	4.3E-12	8.7E-12
S	30000	U-235	1.1E-06	2.0E-13	2.0E-13	4.0E-13
S	30000	U-238	8.5E-06	1.5E-12	1.5E-12	3.0E-12
S	35000	U-234	1.9E-05	3.4E-12	3.5E-12	6.9E-12
S	35000	U-235	8.7E-07	1.6E-13	1.6E-13	3.2E-13
S	35000	U-238	6.7E-06	1.2E-12	1.2E-12	2.4E-12
S	40000	U-234	1.5E-05	2.7E-12	2.9E-12	5.7E-12

S	40000	U-235	7.0E-07	1.3E-13	1.3E-13	2.6E-13
S	40000	U-238	5.3E-06	9.6E-13	1.0E-12	2.0E-12
S	45000	U-234	1.2E-05	2.2E-12	2.5E-12	4.7E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
S	45000	U-235	5.6E-07	1.0E-13	1.1E-13	2.2E-13
S	45000	U-238	4.3E-06	7.7E-13	8.7E-13	1.6E-12
S	50000	U-234	9.9E-06	1.8E-12	2.1E-12	3.9E-12
S	50000	U-235	4.5E-07	8.1E-14	9.8E-14	1.8E-13
S	50000	U-238	3.5E-06	6.2E-13	7.5E-13	1.4E-12
S	55000	U-234	7.8E-06	1.4E-12	1.8E-12	3.2E-12
S	55000	U-235	3.6E-07	6.5E-14	8.3E-14	1.5E-13
S	55000	U-238	2.7E-06	4.9E-13	6.4E-13	1.1E-12
S	60000	U-234	5.1E-06	9.1E-13	1.5E-12	2.4E-12
S	60000	U-235	2.3E-07	4.2E-14	6.8E-14	1.1E-13
S	60000	U-238	1.8E-06	3.2E-13	5.2E-13	8.4E-13
S	65000	U-234	4.3E-06	7.8E-13	1.3E-12	2.1E-12
S	65000	U-235	2.0E-07	3.6E-14	6.0E-14	9.6E-14
S	65000	U-238	1.5E-06	2.7E-13	4.6E-13	7.4E-13
S	70000	U-234	3.8E-06	6.8E-13	1.2E-12	1.9E-12
S	70000	U-235	1.7E-07	3.1E-14	5.4E-14	8.5E-14
S	70000	U-238	1.3E-06	2.4E-13	4.1E-13	6.5E-13
S	75000	U-234	3.3E-06	5.9E-13	1.1E-12	1.7E-12
S	75000	U-235	1.5E-07	2.7E-14	4.9E-14	7.6E-14
S	75000	U-238	1.1E-06	2.1E-13	3.7E-13	5.8E-13
S	80000	U-234	2.8E-06	5.1E-13	9.6E-13	1.5E-12
S	80000	U-235	1.3E-07	2.3E-14	4.4E-14	6.7E-14
S	80000	U-238	9.8E-07	1.8E-13	3.4E-13	5.1E-13
SSE	555	U-234	4.1E-03	7.5E-10	3.0E-10	1.0E-09
SSE	555	U-235	1.9E-04	3.4E-11	1.4E-11	4.8E-11
SSE	555	U-238	1.5E-03	2.6E-10	1.1E-10	3.7E-10
SSE	1526	U-234	1.7E-03	3.0E-10	1.1E-10	4.0E-10
SSE	1526	U-235	7.6E-05	1.4E-11	4.9E-12	1.9E-11
SSE	1526	U-238	5.8E-04	1.0E-10	3.7E-11	1.4E-10
SSE	2000	U-234	1.2E-03	2.1E-10	8.0E-11	2.9E-10
SSE	2000	U-235	5.4E-05	9.8E-12	3.7E-12	1.3E-11
SSE	2000	U-238	4.2E-04	7.5E-11	2.8E-11	1.0E-10
SSE	2500	U-234	8.8E-04	1.6E-10	6.3E-11	2.2E-10
SSE	2500	U-235	4.0E-05	7.2E-12	2.9E-12	1.0E-11
SSE	2500	U-238	3.1E-04	5.6E-11	2.2E-11	7.8E-11
SSE	5000	U-234	3.3E-04	5.9E-11	3.0E-11	8.9E-11
SSE	5000	U-235	1.5E-05	2.7E-12	1.4E-12	4.1E-12
SSE	5000	U-238	1.2E-04	2.1E-11	1.0E-11	3.1E-11
SSE	10000	U-234	1.1E-04	2.0E-11	1.3E-11	3.3E-11
SSE	10000	U-235	5.1E-06	9.2E-13	6.1E-13	1.5E-12
SSE	10000	U-238	3.9E-05	7.1E-12	4.6E-12	1.2E-11
SSE	15000	U-234	6.3E-05	1.1E-11	8.3E-12	2.0E-11
SSE	15000	U-235	2.9E-06	5.2E-13	3.8E-13	9.0E-13
SSE	15000	U-238	2.2E-05	4.0E-12	2.9E-12	6.9E-12

SSE	20000	U-234	4.0E-05	7.2E-12	5.8E-12	1.3E-11
SSE	20000	U-235	1.8E-06	3.3E-13	2.6E-13	6.0E-13
SSE	20000	U-238	1.4E-05	2.5E-12	2.0E-12	4.6E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
SSE	25000	U-234	2.5E-05	4.5E-12	4.1E-12	8.6E-12
SSE	25000	U-235	1.1E-06	2.0E-13	1.9E-13	3.9E-13
SSE	25000	U-238	8.7E-06	1.6E-12	1.4E-12	3.0E-12
SSE	30000	U-234	1.9E-05	3.4E-12	3.3E-12	6.6E-12
SSE	30000	U-235	8.6E-07	1.6E-13	1.5E-13	3.0E-13
SSE	30000	U-238	6.6E-06	1.2E-12	1.1E-12	2.3E-12
SSE	35000	U-234	1.5E-05	2.7E-12	2.7E-12	5.3E-12
SSE	35000	U-235	6.8E-07	1.2E-13	1.2E-13	2.4E-13
SSE	35000	U-238	5.2E-06	9.3E-13	9.4E-13	1.9E-12
SSE	40000	U-234	1.2E-05	2.1E-12	2.2E-12	4.3E-12
SSE	40000	U-235	5.4E-07	9.7E-14	1.0E-13	2.0E-13
SSE	40000	U-238	4.1E-06	7.4E-13	7.8E-13	1.5E-12
SSE	45000	U-234	9.5E-06	1.7E-12	1.9E-12	3.6E-12
SSE	45000	U-235	4.4E-07	7.8E-14	8.6E-14	1.6E-13
SSE	45000	U-238	3.3E-06	6.0E-13	6.6E-13	1.3E-12
SSE	50000	U-234	7.7E-06	1.4E-12	1.6E-12	3.0E-12
SSE	50000	U-235	3.5E-07	6.3E-14	7.4E-14	1.4E-13
SSE	50000	U-238	2.7E-06	4.8E-13	5.6E-13	1.0E-12
SSE	55000	U-234	6.1E-06	1.1E-12	1.4E-12	2.5E-12
SSE	55000	U-235	2.8E-07	5.0E-14	6.3E-14	1.1E-13
SSE	55000	U-238	2.1E-06	3.8E-13	4.8E-13	8.6E-13
SSE	60000	U-234	4.0E-06	7.2E-13	1.1E-12	1.8E-12
SSE	60000	U-235	1.8E-07	3.3E-14	5.1E-14	8.4E-14
SSE	60000	U-238	1.4E-06	2.5E-13	3.9E-13	6.4E-13
SSE	65000	U-234	3.4E-06	6.2E-13	9.9E-13	1.6E-12
SSE	65000	U-235	1.6E-07	2.8E-14	4.5E-14	7.4E-14
SSE	65000	U-238	1.2E-06	2.2E-13	3.5E-13	5.6E-13
SSE	70000	U-234	3.0E-06	5.3E-13	8.8E-13	1.4E-12
SSE	70000	U-235	1.4E-07	2.4E-14	4.0E-14	6.5E-14
SSE	70000	U-238	1.0E-06	1.9E-13	3.1E-13	5.0E-13
SSE	75000	U-234	2.6E-06	4.6E-13	7.9E-13	1.3E-12
SSE	75000	U-235	1.2E-07	2.1E-14	3.6E-14	5.8E-14
SSE	75000	U-238	9.0E-07	1.6E-13	2.8E-13	4.4E-13
SSE	80000	U-234	2.2E-06	4.0E-13	7.1E-13	1.1E-12
SSE	80000	U-235	1.0E-07	1.8E-14	3.3E-14	5.1E-14
SSE	80000	U-238	7.8E-07	1.4E-13	2.5E-13	3.9E-13
SE	555	U-234	4.5E-03	8.1E-10	3.2E-10	1.1E-09
SE	555	U-235	2.1E-04	3.7E-11	1.5E-11	5.2E-11
SE	555	U-238	1.6E-03	2.9E-10	1.1E-10	4.0E-10
SE	1526	U-234	1.7E-03	3.1E-10	1.1E-10	4.3E-10
SE	1526	U-235	8.0E-05	1.4E-11	5.1E-12	2.0E-11
SE	1526	U-238	6.1E-04	1.1E-10	3.9E-11	1.5E-10
SE	2000	U-234	1.2E-03	2.2E-10	8.4E-11	3.1E-10
SE	2000	U-235	5.7E-05	1.0E-11	3.9E-12	1.4E-11

SE	2000	U-238	4.4E-04	7.9E-11	3.0E-11	1.1E-10
SE	2500	U-234	9.2E-04	1.7E-10	6.7E-11	2.3E-10
SE	2500	U-235	4.2E-05	7.6E-12	3.1E-12	1.1E-11

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration Rate (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
SE	2500	U-238	3.2E-04	5.8E-11	2.3E-11	8.2E-11
SE	5000	U-234	3.4E-04	6.2E-11	3.1E-11	9.3E-11
SE	5000	U-235	1.6E-05	2.8E-12	1.4E-12	4.3E-12
SE	5000	U-238	1.2E-04	2.2E-11	1.1E-11	3.3E-11
SE	10000	U-234	1.2E-04	2.1E-11	1.4E-11	3.5E-11
SE	10000	U-235	5.3E-06	9.6E-13	6.4E-13	1.6E-12
SE	10000	U-238	4.1E-05	7.4E-12	4.9E-12	1.2E-11
SE	15000	U-234	6.6E-05	1.2E-11	8.8E-12	2.1E-11
SE	15000	U-235	3.0E-06	5.4E-13	4.0E-13	9.5E-13
SE	15000	U-238	2.3E-05	4.2E-12	3.1E-12	7.2E-12
SE	20000	U-234	4.2E-05	7.5E-12	6.1E-12	1.4E-11
SE	20000	U-235	1.9E-06	3.4E-13	2.8E-13	6.2E-13
SE	20000	U-238	1.5E-05	2.6E-12	2.1E-12	4.8E-12
SE	25000	U-234	2.6E-05	4.6E-12	4.4E-12	9.0E-12
SE	25000	U-235	1.2E-06	2.1E-13	2.0E-13	4.1E-13
SE	25000	U-238	9.0E-06	1.6E-12	1.5E-12	3.2E-12
SE	30000	U-234	2.0E-05	3.5E-12	3.5E-12	7.0E-12
SE	30000	U-235	9.0E-07	1.6E-13	1.6E-13	3.2E-13
SE	30000	U-238	6.8E-06	1.2E-12	1.2E-12	2.5E-12
SE	35000	U-234	1.5E-05	2.7E-12	2.9E-12	5.6E-12
SE	35000	U-235	7.0E-07	1.3E-13	1.3E-13	2.6E-13
SE	35000	U-238	5.4E-06	9.6E-13	1.0E-12	2.0E-12
SE	40000	U-234	1.2E-05	2.2E-12	2.4E-12	4.6E-12
SE	40000	U-235	5.6E-07	1.0E-13	1.1E-13	2.1E-13
SE	40000	U-238	4.3E-06	7.7E-13	8.4E-13	1.6E-12
SE	45000	U-234	9.8E-06	1.8E-12	2.0E-12	3.8E-12
SE	45000	U-235	4.5E-07	8.1E-14	9.3E-14	1.7E-13
SE	45000	U-238	3.4E-06	6.2E-13	7.1E-13	1.3E-12
SE	50000	U-234	7.9E-06	1.4E-12	1.7E-12	3.2E-12
SE	50000	U-235	3.6E-07	6.6E-14	7.9E-14	1.4E-13
SE	50000	U-238	2.8E-06	5.0E-13	6.1E-13	1.1E-12
SE	55000	U-234	6.3E-06	1.1E-12	1.5E-12	2.6E-12
SE	55000	U-235	2.9E-07	5.2E-14	6.8E-14	1.2E-13
SE	55000	U-238	2.2E-06	4.0E-13	5.2E-13	9.2E-13
SE	60000	U-234	4.2E-06	7.5E-13	1.2E-12	2.0E-12
SE	60000	U-235	1.9E-07	3.4E-14	5.5E-14	8.9E-14
SE	60000	U-238	1.5E-06	2.6E-13	4.2E-13	6.8E-13
SE	65000	U-234	3.6E-06	6.4E-13	1.1E-12	1.7E-12
SE	65000	U-235	1.6E-07	3.0E-14	4.9E-14	7.9E-14
SE	65000	U-238	1.3E-06	2.3E-13	3.8E-13	6.0E-13
SE	70000	U-234	3.1E-06	5.6E-13	9.6E-13	1.5E-12
SE	70000	U-235	1.4E-07	2.6E-14	4.4E-14	7.0E-14
SE	70000	U-238	1.1E-06	2.0E-13	3.4E-13	5.3E-13
SE	75000	U-234	2.7E-06	4.8E-13	8.7E-13	1.3E-12

SE	75000	U-235	1.2E-07	2.2E-14	4.0E-14	6.2E-14
SE	75000	U-238	9.4E-07	1.7E-13	3.0E-13	4.7E-13
SE	80000	U-234	2.3E-06	4.2E-13	7.8E-13	1.2E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
SE	80000	U-235	1.1E-07	1.9E-14	3.6E-14	5.5E-14
SE	80000	U-238	8.1E-07	1.5E-13	2.7E-13	4.2E-13
ESE	555	U-234	4.4E-03	8.0E-10	3.4E-10	1.1E-09
ESE	555	U-235	2.0E-04	3.6E-11	1.5E-11	5.2E-11
ESE	555	U-238	1.6E-03	2.8E-10	1.2E-10	4.0E-10
ESE	1526	U-234	1.8E-03	3.3E-10	1.2E-10	4.5E-10
ESE	1526	U-235	8.4E-05	1.5E-11	5.4E-12	2.1E-11
ESE	1526	U-238	6.5E-04	1.2E-10	4.2E-11	1.6E-10
ESE	2000	U-234	1.3E-03	2.4E-10	8.9E-11	3.3E-10
ESE	2000	U-235	6.1E-05	1.1E-11	4.1E-12	1.5E-11
ESE	2000	U-238	4.7E-04	8.4E-11	3.1E-11	1.2E-10
ESE	2500	U-234	9.9E-04	1.8E-10	7.0E-11	2.5E-10
ESE	2500	U-235	4.5E-05	8.2E-12	3.2E-12	1.1E-11
ESE	2500	U-238	3.5E-04	6.2E-11	2.5E-11	8.7E-11
ESE	5000	U-234	3.7E-04	6.7E-11	3.3E-11	9.9E-11
ESE	5000	U-235	1.7E-05	3.1E-12	1.5E-12	4.6E-12
ESE	5000	U-238	1.3E-04	2.3E-11	1.1E-11	3.5E-11
ESE	10000	U-234	1.2E-04	2.2E-11	1.4E-11	3.7E-11
ESE	10000	U-235	5.7E-06	1.0E-12	6.6E-13	1.7E-12
ESE	10000	U-238	4.4E-05	7.8E-12	5.1E-12	1.3E-11
ESE	15000	U-234	7.0E-05	1.3E-11	9.0E-12	2.2E-11
ESE	15000	U-235	3.2E-06	5.8E-13	4.1E-13	9.9E-13
ESE	15000	U-238	2.5E-05	4.4E-12	3.2E-12	7.6E-12
ESE	20000	U-234	4.4E-05	7.9E-12	6.2E-12	1.4E-11
ESE	20000	U-235	2.0E-06	3.6E-13	2.8E-13	6.5E-13
ESE	20000	U-238	1.5E-05	2.8E-12	2.2E-12	4.9E-12
ESE	25000	U-234	2.7E-05	4.8E-12	4.4E-12	9.1E-12
ESE	25000	U-235	1.2E-06	2.2E-13	2.0E-13	4.2E-13
ESE	25000	U-238	9.3E-06	1.7E-12	1.5E-12	3.2E-12
ESE	30000	U-234	2.0E-05	3.6E-12	3.5E-12	7.1E-12
ESE	30000	U-235	9.2E-07	1.7E-13	1.6E-13	3.2E-13
ESE	30000	U-238	7.0E-06	1.3E-12	1.2E-12	2.5E-12
ESE	35000	U-234	1.6E-05	2.8E-12	2.8E-12	5.6E-12
ESE	35000	U-235	7.1E-07	1.3E-13	1.3E-13	2.6E-13
ESE	35000	U-238	5.5E-06	9.8E-13	9.9E-13	2.0E-12
ESE	40000	U-234	1.2E-05	2.2E-12	2.3E-12	4.6E-12
ESE	40000	U-235	5.7E-07	1.0E-13	1.1E-13	2.1E-13
ESE	40000	U-238	4.3E-06	7.8E-13	8.2E-13	1.6E-12
ESE	45000	U-234	9.9E-06	1.8E-12	2.0E-12	3.8E-12
ESE	45000	U-235	4.5E-07	8.2E-14	9.1E-14	1.7E-13
ESE	45000	U-238	3.5E-06	6.2E-13	6.9E-13	1.3E-12
ESE	50000	U-234	7.9E-06	1.4E-12	1.7E-12	3.1E-12
ESE	50000	U-235	3.6E-07	6.6E-14	7.7E-14	1.4E-13
ESE	50000	U-238	2.8E-06	5.0E-13	5.9E-13	1.1E-12

ESE	55000	U-234	6.2E-06	1.1E-12	1.4E-12	2.5E-12
ESE	55000	U-235	2.9E-07	5.1E-14	6.5E-14	1.2E-13
ESE	55000	U-238	2.2E-06	3.9E-13	5.0E-13	8.9E-13

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ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m ³)	Dry Deposition Rate (pCi/cm ² /s)	Wet Deposition Rate (pCi/cm ² /s)	Ground Deposition Rate (pCi/cm ² /s)
ESE	60000	U-234	3.9E-06	7.0E-13	1.1E-12	1.9E-12
ESE	60000	U-235	1.8E-07	3.2E-14	5.3E-14	8.5E-14
ESE	60000	U-238	1.4E-06	2.5E-13	4.0E-13	6.5E-13
ESE	65000	U-234	3.4E-06	6.0E-13	1.0E-12	1.6E-12
ESE	65000	U-235	1.5E-07	2.8E-14	4.7E-14	7.4E-14
ESE	65000	U-238	1.2E-06	2.1E-13	3.6E-13	5.7E-13
ESE	70000	U-234	2.9E-06	5.2E-13	9.1E-13	1.4E-12
ESE	70000	U-235	1.3E-07	2.4E-14	4.2E-14	6.6E-14
ESE	70000	U-238	1.0E-06	1.8E-13	3.2E-13	5.0E-13
ESE	75000	U-234	2.5E-06	4.5E-13	8.2E-13	1.3E-12
ESE	75000	U-235	1.1E-07	2.1E-14	3.7E-14	5.8E-14
ESE	75000	U-238	8.7E-07	1.6E-13	2.9E-13	4.4E-13
ESE	80000	U-234	2.1E-06	3.9E-13	7.3E-13	1.1E-12
ESE	80000	U-235	9.8E-08	1.8E-14	3.4E-14	5.1E-14
ESE	80000	U-238	7.5E-07	1.4E-13	2.6E-13	3.9E-13
E	555	U-234	5.5E-03	9.9E-10	4.2E-10	1.4E-09
E	555	U-235	2.5E-04	4.5E-11	1.9E-11	6.5E-11
E	555	U-238	1.9E-03	3.5E-10	1.5E-10	5.0E-10
E	1526	U-234	2.4E-03	4.3E-10	1.5E-10	5.8E-10
E	1526	U-235	1.1E-04	2.0E-11	6.9E-12	2.7E-11
E	1526	U-238	8.5E-04	1.5E-10	5.2E-11	2.0E-10
E	2000	U-234	1.7E-03	3.1E-10	1.1E-10	4.3E-10
E	2000	U-235	8.0E-05	1.4E-11	5.1E-12	2.0E-11
E	2000	U-238	6.1E-04	1.1E-10	3.9E-11	1.5E-10
E	2500	U-234	1.3E-03	2.3E-10	8.8E-11	3.2E-10
E	2500	U-235	6.0E-05	1.1E-11	4.1E-12	1.5E-11
E	2500	U-238	4.6E-04	8.2E-11	3.1E-11	1.1E-10
E	5000	U-234	4.9E-04	8.7E-11	4.1E-11	1.3E-10
E	5000	U-235	2.2E-05	4.0E-12	1.9E-12	5.9E-12
E	5000	U-238	1.7E-04	3.1E-11	1.4E-11	4.5E-11
E	10000	U-234	1.6E-04	2.9E-11	1.8E-11	4.7E-11
E	10000	U-235	7.4E-06	1.3E-12	8.2E-13	2.2E-12
E	10000	U-238	5.7E-05	1.0E-11	6.2E-12	1.6E-11
E	15000	U-234	9.1E-05	1.6E-11	1.1E-11	2.7E-11
E	15000	U-235	4.2E-06	7.5E-13	5.0E-13	1.3E-12
E	15000	U-238	3.2E-05	5.7E-12	3.9E-12	9.6E-12
E	20000	U-234	5.7E-05	1.0E-11	7.5E-12	1.8E-11
E	20000	U-235	2.6E-06	4.7E-13	3.4E-13	8.1E-13
E	20000	U-238	2.0E-05	3.6E-12	2.6E-12	6.2E-12
E	25000	U-234	3.4E-05	6.1E-12	5.2E-12	1.1E-11
E	25000	U-235	1.5E-06	2.8E-13	2.4E-13	5.2E-13
E	25000	U-238	1.2E-05	2.1E-12	1.8E-12	3.9E-12
E	30000	U-234	2.5E-05	4.6E-12	4.1E-12	8.7E-12
E	30000	U-235	1.2E-06	2.1E-13	1.9E-13	4.0E-13

E	30000	U-238	8.9E-06	1.6E-12	1.4E-12	3.0E-12
E	35000	U-234	2.0E-05	3.6E-12	3.3E-12	6.9E-12
E	35000	U-235	9.1E-07	1.6E-13	1.5E-13	3.2E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
E	35000	U-238	6.9E-06	1.2E-12	1.2E-12	2.4E-12
E	40000	U-234	1.6E-05	2.8E-12	2.8E-12	5.6E-12
E	40000	U-235	7.2E-07	1.3E-13	1.3E-13	2.6E-13
E	40000	U-238	5.5E-06	9.8E-13	9.7E-13	2.0E-12
E	45000	U-234	1.2E-05	2.2E-12	2.3E-12	4.6E-12
E	45000	U-235	5.7E-07	1.0E-13	1.1E-13	2.1E-13
E	45000	U-238	4.4E-06	7.9E-13	8.1E-13	1.6E-12
E	50000	U-234	9.9E-06	1.8E-12	2.0E-12	3.8E-12
E	50000	U-235	4.6E-07	8.2E-14	9.0E-14	1.7E-13
E	50000	U-238	3.5E-06	6.3E-13	6.9E-13	1.3E-12
E	55000	U-234	7.7E-06	1.4E-12	1.7E-12	3.0E-12
E	55000	U-235	3.5E-07	6.4E-14	7.6E-14	1.4E-13
E	55000	U-238	2.7E-06	4.9E-13	5.8E-13	1.1E-12
E	60000	U-234	4.7E-06	8.5E-13	1.3E-12	2.2E-12
E	60000	U-235	2.2E-07	3.9E-14	6.0E-14	9.9E-14
E	60000	U-238	1.7E-06	3.0E-13	4.6E-13	7.6E-13
E	65000	U-234	4.0E-06	7.3E-13	1.2E-12	1.9E-12
E	65000	U-235	1.9E-07	3.3E-14	5.3E-14	8.7E-14
E	65000	U-238	1.4E-06	2.6E-13	4.1E-13	6.6E-13
E	70000	U-234	3.5E-06	6.2E-13	1.0E-12	1.7E-12
E	70000	U-235	1.6E-07	2.9E-14	4.7E-14	7.6E-14
E	70000	U-238	1.2E-06	2.2E-13	3.6E-13	5.8E-13
E	75000	U-234	3.0E-06	5.4E-13	9.3E-13	1.5E-12
E	75000	U-235	1.4E-07	2.5E-14	4.2E-14	6.7E-14
E	75000	U-238	1.0E-06	1.9E-13	3.2E-13	5.1E-13
E	80000	U-234	2.6E-06	4.6E-13	8.3E-13	1.3E-12
E	80000	U-235	1.2E-07	2.1E-14	3.8E-14	5.9E-14
E	80000	U-238	8.9E-07	1.6E-13	2.9E-13	4.5E-13
ENE	555	U-234	7.9E-03	1.4E-09	5.9E-10	2.0E-09
ENE	555	U-235	3.6E-04	6.4E-11	2.7E-11	9.1E-11
ENE	555	U-238	2.8E-03	5.0E-10	2.1E-10	7.1E-10
ENE	1526	U-234	3.4E-03	6.2E-10	2.1E-10	8.3E-10
ENE	1526	U-235	1.6E-04	2.8E-11	9.5E-12	3.8E-11
ENE	1526	U-238	1.2E-03	2.2E-10	7.3E-11	2.9E-10
ENE	2000	U-234	2.5E-03	4.5E-10	1.6E-10	6.0E-10
ENE	2000	U-235	1.1E-04	2.0E-11	7.2E-12	2.8E-11
ENE	2000	U-238	8.7E-04	1.6E-10	5.5E-11	2.1E-10
ENE	2500	U-234	1.9E-03	3.3E-10	1.2E-10	4.6E-10
ENE	2500	U-235	8.5E-05	1.5E-11	5.6E-12	2.1E-11
ENE	2500	U-238	6.5E-04	1.2E-10	4.3E-11	1.6E-10
ENE	5000	U-234	6.9E-04	1.2E-10	5.7E-11	1.8E-10
ENE	5000	U-235	3.2E-05	5.7E-12	2.6E-12	8.3E-12
ENE	5000	U-238	2.4E-04	4.4E-11	2.0E-11	6.4E-11
ENE	10000	U-234	2.3E-04	4.2E-11	2.5E-11	6.6E-11

ENE	10000	U-235	1.1E-05	1.9E-12	1.1E-12	3.0E-12
ENE	10000	U-238	8.1E-05	1.5E-11	8.7E-12	2.3E-11
ENE	15000	U-234	1.3E-04	2.3E-11	1.5E-11	3.9E-11

The following table shows the results of the analysis of the data from the U-235, U-238, and U-234 isotopes. The data is presented in a table with 7 columns: ENE, U-235, U-238, U-234, and three columns of numerical values. The data is presented in a table with 7 columns: ENE, U-235, U-238, U-234, and three columns of numerical values.

U-235	1.1E-05	1.9E-12	1.1E-12	3.0E-12
U-238	8.1E-05	1.5E-11	8.7E-12	2.3E-11
U-234	1.3E-04	2.3E-11	1.5E-11	3.9E-11

The following table shows the results of the analysis of the data from the U-235, U-238, and U-234 isotopes. The data is presented in a table with 7 columns: ENE, U-235, U-238, U-234, and three columns of numerical values. The data is presented in a table with 7 columns: ENE, U-235, U-238, U-234, and three columns of numerical values.

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
ENE	15000	U-235	6.0E-06	1.1E-12	7.0E-13	1.8E-12
ENE	15000	U-238	4.6E-05	8.2E-12	5.4E-12	1.4E-11
ENE	20000	U-234	8.1E-05	1.5E-11	1.0E-11	2.5E-11
ENE	20000	U-235	3.7E-06	6.7E-13	4.8E-13	1.1E-12
ENE	20000	U-238	2.9E-05	5.1E-12	3.7E-12	8.8E-12
ENE	25000	U-234	4.9E-05	8.7E-12	7.2E-12	1.6E-11
ENE	25000	U-235	2.2E-06	4.0E-13	3.3E-13	7.3E-13
ENE	25000	U-238	1.7E-05	3.1E-12	2.5E-12	5.6E-12
ENE	30000	U-234	3.7E-05	6.6E-12	5.7E-12	1.2E-11
ENE	30000	U-235	1.7E-06	3.0E-13	2.6E-13	5.6E-13
ENE	30000	U-238	1.3E-05	2.3E-12	2.0E-12	4.3E-12
ENE	35000	U-234	2.8E-05	5.1E-12	4.6E-12	9.8E-12
ENE	35000	U-235	1.3E-06	2.3E-13	2.1E-13	4.5E-13
ENE	35000	U-238	1.0E-05	1.8E-12	1.6E-12	3.4E-12
ENE	40000	U-234	2.2E-05	4.0E-12	3.8E-12	7.9E-12
ENE	40000	U-235	1.0E-06	1.9E-13	1.8E-13	3.6E-13
ENE	40000	U-238	7.9E-06	1.4E-12	1.3E-12	2.8E-12
ENE	45000	U-234	1.8E-05	3.2E-12	3.2E-12	6.5E-12
ENE	45000	U-235	8.2E-07	1.5E-13	1.5E-13	3.0E-13
ENE	45000	U-238	6.3E-06	1.1E-12	1.1E-12	2.3E-12
ENE	50000	U-234	1.4E-05	2.6E-12	2.7E-12	5.3E-12
ENE	50000	U-235	6.6E-07	1.2E-13	1.2E-13	2.4E-13
ENE	50000	U-238	5.0E-06	9.0E-13	9.5E-13	1.9E-12
ENE	55000	U-234	1.1E-05	2.0E-12	2.3E-12	4.3E-12
ENE	55000	U-235	5.1E-07	9.2E-14	1.1E-13	2.0E-13
ENE	55000	U-238	3.9E-06	7.0E-13	8.0E-13	1.5E-12
ENE	60000	U-234	6.9E-06	1.2E-12	1.8E-12	3.0E-12
ENE	60000	U-235	3.1E-07	5.7E-14	8.3E-14	1.4E-13
ENE	60000	U-238	2.4E-06	4.3E-13	6.3E-13	1.1E-12
ENE	65000	U-234	5.9E-06	1.1E-12	1.6E-12	2.7E-12
ENE	65000	U-235	2.7E-07	4.8E-14	7.3E-14	1.2E-13
ENE	65000	U-238	2.1E-06	3.7E-13	5.6E-13	9.3E-13
ENE	70000	U-234	5.0E-06	9.1E-13	1.4E-12	2.3E-12
ENE	70000	U-235	2.3E-07	4.2E-14	6.5E-14	1.1E-13
ENE	70000	U-238	1.8E-06	3.2E-13	5.0E-13	8.2E-13
ENE	75000	U-234	4.3E-06	7.8E-13	1.3E-12	2.1E-12
ENE	75000	U-235	2.0E-07	3.6E-14	5.9E-14	9.4E-14
ENE	75000	U-238	1.5E-06	2.7E-13	4.5E-13	7.2E-13
ENE	80000	U-234	3.7E-06	6.7E-13	1.1E-12	1.8E-12
ENE	80000	U-235	1.7E-07	3.1E-14	5.3E-14	8.3E-14
ENE	80000	U-238	1.3E-06	2.3E-13	4.0E-13	6.4E-13
NE	555	U-234	1.0E-02	1.8E-09	7.4E-10	2.5E-09
NE	555	U-235	4.6E-04	8.2E-11	3.4E-11	1.2E-10
NE	555	U-238	3.5E-03	6.4E-10	2.6E-10	9.0E-10

NE	1526	U-234	4.3E-03	7.8E-10	2.6E-10	1.0E-09
NE	1526	U-235	2.0E-04	3.6E-11	1.2E-11	4.8E-11
NE	1526	U-238	1.5E-03	2.7E-10	9.1E-11	3.7E-10

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
NE	2000	U-234	3.1E-03	5.6E-10	2.0E-10	7.6E-10
NE	2000	U-235	1.4E-04	2.6E-11	9.0E-12	3.5E-11
NE	2000	U-238	1.1E-03	2.0E-10	6.8E-11	2.7E-10
NE	2500	U-234	2.3E-03	4.2E-10	1.5E-10	5.7E-10
NE	2500	U-235	1.1E-04	1.9E-11	7.1E-12	2.6E-11
NE	2500	U-238	8.2E-04	1.5E-10	5.4E-11	2.0E-10
NE	5000	U-234	8.7E-04	1.6E-10	7.1E-11	2.3E-10
NE	5000	U-235	4.0E-05	7.1E-12	3.3E-12	1.0E-11
NE	5000	U-238	3.0E-04	5.5E-11	2.5E-11	8.0E-11
NE	10000	U-234	2.9E-04	5.2E-11	3.1E-11	8.3E-11
NE	10000	U-235	1.3E-05	2.4E-12	1.4E-12	3.8E-12
NE	10000	U-238	1.0E-04	1.8E-11	1.1E-11	2.9E-11
NE	15000	U-234	1.6E-04	2.9E-11	1.9E-11	4.8E-11
NE	15000	U-235	7.5E-06	1.3E-12	8.8E-13	2.2E-12
NE	15000	U-238	5.7E-05	1.0E-11	6.7E-12	1.7E-11
NE	20000	U-234	1.0E-04	1.8E-11	1.3E-11	3.1E-11
NE	20000	U-235	4.7E-06	8.4E-13	6.0E-13	1.4E-12
NE	20000	U-238	3.6E-05	6.4E-12	4.6E-12	1.1E-11
NE	25000	U-234	6.1E-05	1.1E-11	9.0E-12	2.0E-11
NE	25000	U-235	2.8E-06	5.0E-13	4.1E-13	9.2E-13
NE	25000	U-238	2.1E-05	3.8E-12	3.2E-12	7.0E-12
NE	30000	U-234	4.6E-05	8.3E-12	7.1E-12	1.5E-11
NE	30000	U-235	2.1E-06	3.8E-13	3.3E-13	7.1E-13
NE	30000	U-238	1.6E-05	2.9E-12	2.5E-12	5.4E-12
NE	35000	U-234	3.6E-05	6.4E-12	5.8E-12	1.2E-11
NE	35000	U-235	1.6E-06	2.9E-13	2.7E-13	5.6E-13
NE	35000	U-238	1.3E-05	2.3E-12	2.0E-12	4.3E-12
NE	40000	U-234	2.8E-05	5.1E-12	4.8E-12	9.9E-12
NE	40000	U-235	1.3E-06	2.3E-13	2.2E-13	4.5E-13
NE	40000	U-238	9.9E-06	1.8E-12	1.7E-12	3.5E-12
NE	45000	U-234	2.3E-05	4.1E-12	4.0E-12	8.1E-12
NE	45000	U-235	1.0E-06	1.9E-13	1.9E-13	3.7E-13
NE	45000	U-238	7.9E-06	1.4E-12	1.4E-12	2.8E-12
NE	50000	U-234	1.8E-05	3.2E-12	3.4E-12	6.7E-12
NE	50000	U-235	8.3E-07	1.5E-13	1.6E-13	3.1E-13
NE	50000	U-238	6.3E-06	1.1E-12	1.2E-12	2.3E-12
NE	55000	U-234	1.4E-05	2.5E-12	2.9E-12	5.4E-12
NE	55000	U-235	6.5E-07	1.2E-13	1.3E-13	2.5E-13
NE	55000	U-238	4.9E-06	8.9E-13	1.0E-12	1.9E-12
NE	60000	U-234	8.8E-06	1.6E-12	2.3E-12	3.8E-12
NE	60000	U-235	4.0E-07	7.2E-14	1.0E-13	1.8E-13
NE	60000	U-238	3.1E-06	5.5E-13	7.9E-13	1.3E-12
NE	65000	U-234	7.5E-06	1.3E-12	2.0E-12	3.4E-12
NE	65000	U-235	3.4E-07	6.2E-14	9.2E-14	1.5E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
NE	70000	U-238	2.3E-06	4.1E-13	6.3E-13	1.0E-12
NE	75000	U-234	5.5E-06	1.0E-12	1.6E-12	2.6E-12
NE	75000	U-235	2.5E-07	4.6E-14	7.3E-14	1.2E-13
NE	75000	U-238	1.9E-06	3.5E-13	5.6E-13	9.1E-13
NE	80000	U-234	4.7E-06	8.5E-13	1.4E-12	2.3E-12
NE	80000	U-235	2.2E-07	3.9E-14	6.6E-14	1.0E-13
NE	80000	U-238	1.7E-06	3.0E-13	5.0E-13	8.0E-13
NNE	555	U-234	1.1E-02	1.9E-09	7.8E-10	2.7E-09
NNE	555	U-235	4.9E-04	8.9E-11	3.6E-11	1.2E-10
NNE	555	U-238	3.8E-03	6.9E-10	2.7E-10	9.6E-10
NNE	1526	U-234	4.6E-03	8.2E-10	2.7E-10	1.1E-09
NNE	1526	U-235	2.1E-04	3.8E-11	1.3E-11	5.0E-11
NNE	1526	U-238	1.6E-03	2.9E-10	9.6E-11	3.8E-10
NNE	2000	U-234	3.3E-03	5.9E-10	2.1E-10	7.9E-10
NNE	2000	U-235	1.5E-04	2.7E-11	9.4E-12	3.6E-11
NNE	2000	U-238	1.1E-03	2.1E-10	7.2E-11	2.8E-10
NNE	2500	U-234	2.4E-03	4.4E-10	1.6E-10	6.0E-10
NNE	2500	U-235	1.1E-04	2.0E-11	7.4E-12	2.7E-11
NNE	2500	U-238	8.5E-04	1.5E-10	5.7E-11	2.1E-10
NNE	5000	U-234	9.0E-04	1.6E-10	7.5E-11	2.4E-10
NNE	5000	U-235	4.1E-05	7.5E-12	3.4E-12	1.1E-11
NNE	5000	U-238	3.2E-04	5.7E-11	2.6E-11	8.3E-11
NNE	10000	U-234	3.0E-04	5.4E-11	3.3E-11	8.7E-11
NNE	10000	U-235	1.4E-05	2.5E-12	1.5E-12	4.0E-12
NNE	10000	U-238	1.1E-04	1.9E-11	1.1E-11	3.0E-11
NNE	15000	U-234	1.7E-04	3.1E-11	2.0E-11	5.1E-11
NNE	15000	U-235	7.8E-06	1.4E-12	9.2E-13	2.3E-12
NNE	15000	U-238	6.0E-05	1.1E-11	7.0E-12	1.8E-11
NNE	20000	U-234	1.1E-04	1.9E-11	1.4E-11	3.3E-11
NNE	20000	U-235	4.9E-06	8.8E-13	6.3E-13	1.5E-12
NNE	20000	U-238	3.7E-05	6.7E-12	4.8E-12	1.2E-11
NNE	25000	U-234	6.4E-05	1.2E-11	9.4E-12	2.1E-11
NNE	25000	U-235	3.0E-06	5.3E-13	4.3E-13	9.6E-13
NNE	25000	U-238	2.3E-05	4.1E-12	3.3E-12	7.4E-12
NNE	30000	U-234	4.9E-05	8.7E-12	7.4E-12	1.6E-11
NNE	30000	U-235	2.2E-06	4.0E-13	3.4E-13	7.4E-13
NNE	30000	U-238	1.7E-05	3.1E-12	2.6E-12	5.7E-12
NNE	35000	U-234	3.8E-05	6.8E-12	6.0E-12	1.3E-11
NNE	35000	U-235	1.7E-06	3.1E-13	2.8E-13	5.9E-13
NNE	35000	U-238	1.3E-05	2.4E-12	2.1E-12	4.5E-12
NNE	40000	U-234	3.0E-05	5.4E-12	5.0E-12	1.0E-11
NNE	40000	U-235	1.4E-06	2.5E-13	2.3E-13	4.7E-13
NNE	40000	U-238	1.0E-05	1.9E-12	1.7E-12	3.6E-12
NNE	45000	U-234	2.4E-05	4.3E-12	4.2E-12	8.4E-12

NNE	45000	U-235	1.1E-06	2.0E-13	1.9E-13	3.9E-13
NNE	45000	U-238	8.4E-06	1.5E-12	1.5E-12	3.0E-12
NNE	50000	U-234	1.9E-05	3.4E-12	3.5E-12	6.9E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate* (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
NNE	50000	U-235	8.7E-07	1.6E-13	1.6E-13	3.2E-13
NNE	50000	U-238	6.7E-06	1.2E-12	1.2E-12	2.4E-12
NNE	55000	U-234	1.5E-05	2.7E-12	2.9E-12	5.6E-12
NNE	55000	U-235	6.8E-07	1.2E-13	1.3E-13	2.6E-13
NNE	55000	U-238	5.2E-06	9.4E-13	1.0E-12	2.0E-12
NNE	60000	U-234	9.2E-06	1.7E-12	2.3E-12	3.9E-12
NNE	60000	U-235	4.2E-07	7.6E-14	1.0E-13	1.8E-13
NNE	60000	U-238	3.2E-06	5.8E-13	8.0E-13	1.4E-12
NNE	65000	U-234	7.9E-06	1.4E-12	2.0E-12	3.4E-12
NNE	65000	U-235	3.6E-07	6.5E-14	9.2E-14	1.6E-13
NNE	65000	U-238	2.8E-06	5.0E-13	7.0E-13	1.2E-12
NNE	70000	U-234	6.7E-06	1.2E-12	1.8E-12	3.0E-12
NNE	70000	U-235	3.1E-07	5.6E-14	8.1E-14	1.4E-13
NNE	70000	U-238	2.4E-06	4.3E-13	6.2E-13	1.0E-12
NNE	75000	U-234	5.8E-06	1.0E-12	1.6E-12	2.6E-12
NNE	75000	U-235	2.7E-07	4.8E-14	7.2E-14	1.2E-13
NNE	75000	U-238	2.0E-06	3.6E-13	5.5E-13	9.2E-13
NNE	80000	U-234	4.9E-06	8.9E-13	1.4E-12	2.3E-12
NNE	80000	U-235	2.3E-07	4.1E-14	6.4E-14	1.1E-13
NNE	80000	U-238	1.7E-06	3.1E-13	4.9E-13	8.0E-13

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

C H I / Q T A B L E S

Non-Radon Individual Assessment

Nov 11, 2003 10:07 am

Facility: Portsmouth American Centrifuge
Address: 1000 ...
City: Piketon
State: OH Zip: 43120

Source Category: Facility and Process Ventilation System
Source Type: Stack
Emission Year: 2003

Comments:

Dataset Name: 4PBION
Dataset Date: Nov 11, 2003 10:07 am
Wind File: C:\CAP88PC2\CAP88PC2\PORTS30.WND

Nov 11, 2003 10:07 am

CHIQ
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GROUND-LEVEL CHI/Q VALUES FOR U-234
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)							
Dir	555	1526	2000	2500	5000	10000	15000
N	5.014E-06	2.072E-06	1.484E-06	1.100E-06	4.112E-07	1.393E-07	7.912E-08
NNW	2.747E-06	1.322E-06	9.658E-07	7.243E-07	2.729E-07	9.067E-08	5.119E-08
NW	2.201E-06	1.114E-06	8.186E-07	6.157E-07	2.320E-07	7.630E-08	4.285E-08
WNW	2.079E-06	1.011E-06	7.391E-07	5.542E-07	2.085E-07	6.893E-08	3.869E-08
W	1.765E-06	8.278E-07	6.031E-07	4.514E-07	1.691E-07	5.584E-08	3.136E-08
WSW	1.693E-06	7.562E-07	5.491E-07	4.103E-07	1.537E-07	5.116E-08	2.873E-08
SW	2.188E-06	9.137E-07	6.577E-07	4.891E-07	1.831E-07	6.177E-08	3.491E-08
SSW	2.975E-06	1.222E-06	8.765E-07	6.507E-07	2.444E-07	8.358E-08	4.762E-08
S	2.494E-06	9.844E-07	7.047E-07	5.224E-07	1.952E-07	6.641E-08	3.754E-08
SSE	1.888E-06	7.541E-07	5.400E-07	4.004E-07	1.496E-07	5.091E-08	2.886E-08
SE	2.058E-06	7.960E-07	5.673E-07	4.194E-07	1.561E-07	5.305E-08	2.995E-08
ESE	2.016E-06	8.397E-07	6.052E-07	4.503E-07	1.684E-07	5.664E-08	3.190E-08
E	2.505E-06	1.097E-06	7.939E-07	5.919E-07	2.213E-07	7.372E-08	4.146E-08
ENE	3.575E-06	1.567E-06	1.133E-06	8.441E-07	3.156E-07	1.053E-07	5.926E-08
NE	4.565E-06	1.971E-06	1.421E-06	1.058E-06	3.947E-07	1.316E-07	7.409E-08
NNE	4.926E-06	2.075E-06	1.490E-06	1.105E-06	4.114E-07	1.375E-07	7.752E-08

Distance (meters)							
Dir	20000	25000	30000	35000	40000	45000	50000
N	5.016E-08	3.097E-08	2.351E-08	1.839E-08	1.466E-08	1.181E-08	9.526E-09
NNW	3.190E-08	1.865E-08	1.408E-08	1.092E-08	8.625E-09	6.864E-09	5.443E-09
NW	2.648E-08	1.518E-08	1.140E-08	8.801E-09	6.907E-09	5.460E-09	4.296E-09
WNW	2.397E-08	1.394E-08	1.045E-08	8.062E-09	6.324E-09	5.000E-09	3.938E-09
W	1.944E-08	1.129E-08	8.486E-09	6.560E-09	5.159E-09	4.089E-09	3.229E-09
WSW	1.788E-08	1.056E-08	7.949E-09	6.158E-09	4.857E-09	3.868E-09	3.076E-09
SW	2.198E-08	1.335E-08	1.010E-08	7.874E-09	6.253E-09	5.018E-09	4.028E-09
SSW	3.034E-08	1.887E-08	1.437E-08	1.127E-08	9.010E-09	7.286E-09	5.901E-09
S	2.374E-08	1.463E-08	1.109E-08	8.668E-09	6.908E-09	5.568E-09	4.497E-09
SSE	1.829E-08	1.130E-08	8.575E-09	6.709E-09	5.354E-09	4.321E-09	3.494E-09
SE	1.895E-08	1.174E-08	8.896E-09	6.952E-09	5.543E-09	4.472E-09	3.616E-09
ESE	2.001E-08	1.207E-08	9.113E-09	7.091E-09	5.623E-09	4.507E-09	3.614E-09
E	2.587E-08	1.537E-08	1.159E-08	8.991E-09	7.105E-09	5.669E-09	4.519E-09
ENE	3.703E-08	2.211E-08	1.667E-08	1.294E-08	1.023E-08	8.167E-09	6.516E-09
NE	4.634E-08	2.778E-08	2.095E-08	1.627E-08	1.287E-08	1.029E-08	8.215E-09
NNE	4.859E-08	2.933E-08	2.213E-08	1.718E-08	1.359E-08	1.086E-08	8.668E-09

Nov 11, 2003 10:07 am

CHIQ
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GROUND-LEVEL CHI/Q VALUES FOR U-234
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)						
Dir	55000	60000	65000	70000	75000	80000
N	7.539E-09	4.865E-09	4.183E-09	3.610E-09	3.118E-09	2.682E-09
NNW	4.192E-09	2.396E-09	2.039E-09	1.739E-09	1.482E-09	1.254E-09
NW	3.274E-09	1.807E-09	1.530E-09	1.298E-09	1.100E-09	9.249E-10
WNW	3.012E-09	1.704E-09	1.442E-09	1.223E-09	1.036E-09	8.716E-10
W	2.475E-09	1.405E-09	1.192E-09	1.014E-09	8.622E-10	7.280E-10
WSW	2.388E-09	1.432E-09	1.222E-09	1.047E-09	8.975E-10	7.659E-10
SW	3.168E-09	1.985E-09	1.702E-09	1.465E-09	1.262E-09	1.083E-09
SSW	4.696E-09	3.045E-09	2.624E-09	2.270E-09	1.966E-09	1.697E-09
S	3.569E-09	2.301E-09	1.980E-09	1.711E-09	1.481E-09	1.278E-09
SSE	2.778E-09	1.811E-09	1.561E-09	1.351E-09	1.171E-09	1.013E-09
SE	2.877E-09	1.891E-09	1.629E-09	1.409E-09	1.221E-09	1.056E-09
ESE	2.841E-09	1.783E-09	1.530E-09	1.318E-09	1.136E-09	9.772E-10
E	3.521E-09	2.153E-09	1.841E-09	1.580E-09	1.358E-09	1.161E-09
ENE	5.081E-09	3.125E-09	2.673E-09	2.294E-09	1.971E-09	1.686E-09
NE	6.418E-09	3.984E-09	3.409E-09	2.928E-09	2.517E-09	2.155E-09
NNE	6.766E-09	4.200E-09	3.586E-09	3.072E-09	2.632E-09	2.244E-09

GROUND-LEVEL CHI/Q VALUES FOR U-235
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)							
Dir	555	1526	2000	2500	5000	10000	15000
N	4.987E-06	2.069E-06	1.483E-06	1.099E-06	4.111E-07	1.393E-07	7.913E-08
NNW	2.729E-06	1.319E-06	9.644E-07	7.236E-07	2.729E-07	9.068E-08	5.119E-08
NW	2.185E-06	1.111E-06	8.174E-07	6.150E-07	2.319E-07	7.631E-08	4.285E-08
WNW	2.065E-06	1.009E-06	7.381E-07	5.537E-07	2.084E-07	6.893E-08	3.870E-08
W	1.754E-06	8.261E-07	6.023E-07	4.509E-07	1.691E-07	5.585E-08	3.137E-08
WSW	1.683E-06	7.546E-07	5.483E-07	4.099E-07	1.537E-07	5.116E-08	2.873E-08
SW	2.176E-06	9.119E-07	6.569E-07	4.886E-07	1.830E-07	6.177E-08	3.491E-08
SSW	2.959E-06	1.219E-06	8.754E-07	6.501E-07	2.444E-07	8.358E-08	4.763E-08
S	2.482E-06	9.826E-07	7.038E-07	5.219E-07	1.952E-07	6.641E-08	3.754E-08
SSE	1.879E-06	7.527E-07	5.393E-07	4.000E-07	1.496E-07	5.091E-08	2.886E-08
SE	2.048E-06	7.946E-07	5.667E-07	4.190E-07	1.561E-07	5.305E-08	2.995E-08
ESE	2.005E-06	8.380E-07	6.045E-07	4.499E-07	1.684E-07	5.664E-08	3.190E-08
E	2.490E-06	1.095E-06	7.928E-07	5.914E-07	2.212E-07	7.373E-08	4.147E-08
ENE	3.554E-06	1.564E-06	1.131E-06	8.433E-07	3.155E-07	1.053E-07	5.926E-08
NE	4.538E-06	1.967E-06	1.420E-06	1.057E-06	3.946E-07	1.316E-07	7.410E-08
NNE	4.898E-06	2.071E-06	1.488E-06	1.104E-06	4.113E-07	1.375E-07	7.753E-08

Distance (meters)							
Dir	20000	25000	30000	35000	40000	45000	50000
N	5.017E-08	3.098E-08	2.352E-08	1.839E-08	1.466E-08	1.181E-08	9.529E-09
NNW	3.191E-08	1.865E-08	1.408E-08	1.093E-08	8.628E-09	6.866E-09	5.445E-09
NW	2.648E-08	1.518E-08	1.141E-08	8.804E-09	6.910E-09	5.463E-09	4.298E-09
WNW	2.398E-08	1.394E-08	1.046E-08	8.064E-09	6.326E-09	5.002E-09	3.940E-09
W	1.945E-08	1.129E-08	8.489E-09	6.563E-09	5.161E-09	4.091E-09	3.230E-09
WSW	1.789E-08	1.056E-08	7.952E-09	6.160E-09	4.859E-09	3.869E-09	3.077E-09
SW	2.198E-08	1.336E-08	1.011E-08	7.876E-09	6.255E-09	5.020E-09	4.030E-09
SSW	3.034E-08	1.888E-08	1.437E-08	1.127E-08	9.013E-09	7.288E-09	5.903E-09
S	2.375E-08	1.464E-08	1.110E-08	8.671E-09	6.910E-09	5.570E-09	4.498E-09
SSE	1.829E-08	1.130E-08	8.577E-09	6.711E-09	5.355E-09	4.322E-09	3.495E-09
SE	1.896E-08	1.174E-08	8.898E-09	6.954E-09	5.544E-09	4.473E-09	3.617E-09
ESE	2.001E-08	1.207E-08	9.116E-09	7.093E-09	5.625E-09	4.508E-09	3.615E-09
E	2.587E-08	1.538E-08	1.159E-08	8.994E-09	7.107E-09	5.671E-09	4.521E-09
ENE	3.704E-08	2.212E-08	1.668E-08	1.294E-08	1.023E-08	8.170E-09	6.518E-09
NE	4.634E-08	2.779E-08	2.096E-08	1.628E-08	1.288E-08	1.029E-08	8.218E-09
NNE	4.860E-08	2.934E-08	2.213E-08	1.719E-08	1.360E-08	1.086E-08	8.670E-09

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CHIQ
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GROUND-LEVEL CHI/Q VALUES FOR U-235
CHI/Q TOWARD INDICATED DIRECTION. (SEC/CUBIC METER)

Distance (meters)						
Dir	55000	60000	65000	70000	75000	80000
N	7.541E-09	4.867E-09	4.185E-09	3.611E-09	3.119E-09	2.683E-09
NNW	4.193E-09	2.397E-09	2.040E-09	1.740E-09	1.482E-09	1.254E-09
NW	3.276E-09	1.808E-09	1.531E-09	1.299E-09	1.101E-09	9.254E-10
WNW	3.013E-09	1.705E-09	1.443E-09	1.224E-09	1.037E-09	8.720E-10
W	2.476E-09	1.406E-09	1.193E-09	1.015E-09	8.626E-10	7.284E-10
WSW	2.389E-09	1.433E-09	1.223E-09	1.048E-09	8.978E-10	7.662E-10
SW	3.169E-09	1.986E-09	1.703E-09	1.466E-09	1.263E-09	1.084E-09
SSW	4.697E-09	3.046E-09	2.625E-09	2.271E-09	1.967E-09	1.697E-09
S	3.570E-09	2.302E-09	1.981E-09	1.712E-09	1.481E-09	1.279E-09
SSE	2.779E-09	1.812E-09	1.562E-09	1.352E-09	1.172E-09	1.013E-09
SE	2.878E-09	1.891E-09	1.629E-09	1.410E-09	1.222E-09	1.057E-09
ESE	2.842E-09	1.784E-09	1.530E-09	1.318E-09	1.137E-09	9.776E-10
E	3.522E-09	2.154E-09	1.842E-09	1.581E-09	1.358E-09	1.162E-09
ENE	5.083E-09	3.126E-09	2.674E-09	2.295E-09	1.971E-09	1.686E-09
NE	6.420E-09	3.985E-09	3.411E-09	2.929E-09	2.518E-09	2.155E-09
NNE	6.768E-09	4.202E-09	3.587E-09	3.073E-09	2.633E-09	2.245E-09

GROUND-LEVEL CHI/Q VALUES FOR U-238
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)							
Dir	555	1526	2000	2500	5000	10000	15000
N	5.046E-06	2.077E-06	1.487E-06	1.102E-06	4.114E-07	1.393E-07	7.911E-08
NNW	2.769E-06	1.325E-06	9.674E-07	7.251E-07	2.730E-07	9.066E-08	5.118E-08
NW	2.220E-06	1.117E-06	8.200E-07	6.164E-07	2.321E-07	7.629E-08	4.284E-08
WNW	2.096E-06	1.014E-06	7.403E-07	5.549E-07	2.086E-07	6.892E-08	3.868E-08
W	1.779E-06	8.299E-07	6.041E-07	4.519E-07	1.692E-07	5.583E-08	3.136E-08
WSW	1.705E-06	7.580E-07	5.500E-07	4.107E-07	1.538E-07	5.115E-08	2.872E-08
SW	2.202E-06	9.158E-07	6.587E-07	4.896E-07	1.831E-07	6.176E-08	3.490E-08
SSW	2.994E-06	1.224E-06	8.777E-07	6.513E-07	2.445E-07	8.358E-08	4.762E-08
S	2.509E-06	9.866E-07	7.057E-07	5.229E-07	1.953E-07	6.640E-08	3.753E-08
SSE	1.900E-06	7.557E-07	5.408E-07	4.008E-07	1.497E-07	5.090E-08	2.885E-08
SE	2.070E-06	7.977E-07	5.681E-07	4.198E-07	1.562E-07	5.305E-08	2.995E-08
ESE	2.029E-06	8.416E-07	6.062E-07	4.508E-07	1.685E-07	5.663E-08	3.189E-08
E	2.522E-06	1.100E-06	7.951E-07	5.926E-07	2.214E-07	7.371E-08	4.145E-08
ENE	3.600E-06	1.571E-06	1.135E-06	8.450E-07	3.157E-07	1.052E-07	5.925E-08
NE	4.596E-06	1.976E-06	1.424E-06	1.059E-06	3.948E-07	1.316E-07	7.408E-08
NNE	4.959E-06	2.080E-06	1.492E-06	1.107E-06	4.116E-07	1.375E-07	7.751E-08

Distance (meters)							
Dir	20000	25000	30000	35000	40000	45000	50000
N	5.015E-08	3.096E-08	2.351E-08	1.838E-08	1.465E-08	1.181E-08	9.524E-09
NNW	3.189E-08	1.864E-08	1.407E-08	1.092E-08	8.621E-09	6.861E-09	5.440E-09
NW	2.647E-08	1.517E-08	1.140E-08	8.797E-09	6.904E-09	5.458E-09	4.294E-09
WNW	2.397E-08	1.393E-08	1.045E-08	8.058E-09	6.321E-09	4.998E-09	3.937E-09
W	1.944E-08	1.128E-08	8.482E-09	6.558E-09	5.157E-09	4.087E-09	3.227E-09
WSW	1.788E-08	1.056E-08	7.946E-09	6.155E-09	4.855E-09	3.866E-09	3.075E-09
SW	2.197E-08	1.335E-08	1.010E-08	7.871E-09	6.251E-09	5.017E-09	4.027E-09
SSW	3.034E-08	1.887E-08	1.436E-08	1.126E-08	9.008E-09	7.284E-09	5.900E-09
S	2.374E-08	1.463E-08	1.109E-08	8.666E-09	6.906E-09	5.567E-09	4.495E-09
SSE	1.829E-08	1.129E-08	8.573E-09	6.707E-09	5.352E-09	4.320E-09	3.493E-09
SE	1.895E-08	1.173E-08	8.894E-09	6.950E-09	5.541E-09	4.470E-09	3.615E-09
ESE	2.000E-08	1.206E-08	9.110E-09	7.088E-09	5.621E-09	4.505E-09	3.613E-09
E	2.586E-08	1.537E-08	1.158E-08	8.987E-09	7.102E-09	5.667E-09	4.518E-09
ENE	3.702E-08	2.210E-08	1.667E-08	1.294E-08	1.023E-08	8.164E-09	6.513E-09
NE	4.633E-08	2.777E-08	2.095E-08	1.627E-08	1.287E-08	1.028E-08	8.212E-09
NNE	4.858E-08	2.932E-08	2.212E-08	1.718E-08	1.359E-08	1.085E-08	8.665E-09

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GROUND-LEVEL CHI/Q VALUES FOR U-238
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)						
Dir	55000	60000	65000	70000	75000	80000
N	7.537E-09	4.863E-09	4.182E-09	3.609E-09	3.117E-09	2.681E-09
NNW	4.190E-09	2.395E-09	2.038E-09	1.738E-09	1.481E-09	1.253E-09
NW	3.273E-09	1.806E-09	1.529E-09	1.297E-09	1.099E-09	9.244E-10
WNW	3.011E-09	1.703E-09	1.441E-09	1.222E-09	1.036E-09	8.711E-10
W	2.474E-09	1.404E-09	1.192E-09	1.014E-09	8.617E-10	7.276E-10
WSW	2.387E-09	1.431E-09	1.222E-09	1.047E-09	8.970E-10	7.656E-10
SW	3.167E-09	1.984E-09	1.702E-09	1.465E-09	1.262E-09	1.083E-09
SSW	4.695E-09	3.044E-09	2.623E-09	2.270E-09	1.966E-09	1.696E-09
S	3.568E-09	2.300E-09	1.979E-09	1.710E-09	1.480E-09	1.278E-09
SSE	2.778E-09	1.811E-09	1.561E-09	1.351E-09	1.171E-09	1.012E-09
SE	2.876E-09	1.890E-09	1.628E-09	1.409E-09	1.221E-09	1.056E-09
ESE	2.840E-09	1.782E-09	1.529E-09	1.317E-09	1.136E-09	9.769E-10
E	3.520E-09	2.152E-09	1.840E-09	1.580E-09	1.357E-09	1.161E-09
ENE	5.080E-09	3.124E-09	2.672E-09	2.293E-09	1.970E-09	1.685E-09
NE	6.416E-09	3.982E-09	3.408E-09	2.927E-09	2.516E-09	2.154E-09
NNE	6.764E-09	4.198E-09	3.585E-09	3.071E-09	2.631E-09	2.243E-09

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

W E A T H E R D A T A

Non-Radon Individual Assessment

Nov 11, 2003 10:07 am

Facility: Portsmouth American Centrifuge

Address:

City: Piketon

State: OH

Zip:

Source Category: Facility and Process Ventilation System

Source Type: Stack

Emission Year: 2003

Comments:

Dataset Name: 4PBION

Dataset Date: Nov 11, 2003 10:07 am

Wind File: C:\CAP88PC2\CAP88PC2\PORTS30.WND

HARMONIC AVERAGE WIND SPEEDS (WIND TOWARDS)

Pasquill Stability Class								
Dir	A	B	C	D	E	F	G	Wind Freq
N	1.210	1.408	2.498	1.880	1.489	0.923	0.000	0.107
NNW	1.132	1.283	2.413	1.795	1.170	0.835	0.000	0.055
NW	1.091	1.242	2.422	1.841	1.068	0.811	0.000	0.044
WNW	1.163	1.495	2.697	1.843	1.021	0.855	0.000	0.042
W	1.274	1.410	2.625	1.893	1.008	0.824	0.000	0.036
WSW	1.405	1.756	3.046	2.124	1.185	0.859	0.000	0.040
SW	1.453	1.668	2.996	2.127	1.316	0.919	0.000	0.052
SSW	1.334	1.421	2.897	1.958	1.615	0.979	0.000	0.068
S	1.351	1.561	3.230	2.519	1.381	0.956	0.000	0.065
SSE	1.327	1.477	3.353	2.366	1.579	0.930	0.000	0.047
SE	1.290	1.736	3.476	2.342	1.481	0.933	0.000	0.052
ESE	1.141	1.571	3.357	2.259	1.392	0.886	0.000	0.049
E	1.076	1.600	3.586	2.301	1.248	0.845	0.000	0.059
ENE	1.177	1.493	3.370	2.291	1.249	0.855	0.000	0.082
NE	1.146	1.531	3.312	2.102	1.288	0.854	0.000	0.102
NNE	1.145	1.498	2.897	1.697	1.246	0.876	0.000	0.099

ARITHMETIC AVERAGE WIND SPEEDS (WIND TOWARDS)

Pasquill Stability Class								
Dir	A	B	C	D	E	F	G	
N	1.752	2.144	3.161	2.832	2.293	1.228	0.000	
NNW	1.613	1.901	2.925	2.982	1.759	0.980	0.000	
NW	1.535	1.878	3.021	3.314	1.561	0.900	0.000	
WNW	1.637	2.183	3.021	3.260	1.449	1.023	0.000	
W	1.785	2.179	3.240	3.636	1.404	0.938	0.000	
WSW	1.931	2.697	3.608	3.856	1.716	1.032	0.000	
SW	1.978	2.487	3.553	3.556	1.879	1.186	0.000	
SSW	1.874	2.187	3.253	3.019	2.394	1.338	0.000	
S	1.875	2.465	3.631	3.703	2.075	1.308	0.000	
SSE	1.863	2.305	3.891	3.398	2.284	1.244	0.000	
SE	1.812	2.532	4.150	3.506	2.349	1.264	0.000	
ESE	1.634	2.498	4.048	3.688	2.253	1.127	0.000	
E	1.506	2.462	4.411	3.924	2.095	1.003	0.000	
ENE	1.672	2.316	4.305	4.056	2.092	1.045	0.000	
NE	1.634	2.389	4.404	3.716	2.196	1.040	0.000	

NNE 1.644 2.408 3.706 2.663 1.957 1.092 0.000

FREQUENCIES OF STABILITY CLASSES (WIND TOWARDS)

Pasquill Stability Class							
Dir	A	B	C	D	E	F	G

N	0.0452	0.0537	0.0640	0.3403	0.2540	0.2429	0.0000
NNW	0.0607	0.0461	0.0506	0.3023	0.1895	0.3509	0.0000
NW	0.0627	0.0536	0.0382	0.2881	0.1706	0.3869	0.0000
WNW	0.0564	0.0533	0.0441	0.3030	0.1766	0.3666	0.0000
W	0.0707	0.0662	0.0554	0.3208	0.1578	0.3292	0.0000
WSW	0.0850	0.0835	0.0744	0.3515	0.1288	0.2769	0.0000
SW	0.0777	0.0731	0.0852	0.3675	0.1527	0.2437	0.0000
SSW	0.0605	0.0586	0.0605	0.3575	0.2187	0.2441	0.0000
S	0.0696	0.0698	0.0849	0.4515	0.1182	0.2060	0.0000
SSE	0.0803	0.0779	0.0577	0.4131	0.1620	0.2090	0.0000
SE	0.0793	0.0613	0.0772	0.4470	0.1432	0.1920	0.0000
ESE	0.0878	0.0746	0.0727	0.3996	0.1286	0.2367	0.0000
E	0.0765	0.0693	0.0815	0.3672	0.1504	0.2551	0.0000
ENE	0.0646	0.0604	0.0771	0.3706	0.1703	0.2571	0.0000
NE	0.0580	0.0568	0.0885	0.3566	0.1869	0.2531	0.0000
NNE	0.0621	0.0599	0.0749	0.3169	0.2221	0.2640	0.0000
TOTAL	0.0661	0.0622	0.0701	0.3592	0.1793	0.2630	0.0000

ADDITIONAL WEATHER INFORMATION

Average Air Temperature: 10.3 degrees C
283.49 K
Precipitation: 101.6 cm/y
Lid Height: 1000 meters
Surface Roughness Length: 0.010 meters
Height Of Wind Measurements: 10.0 meters
Average Wind Speed: 2.413 m/s

Vertical Temperature Gradients:

STABILITY E 0.073 k/m
STABILITY F 0.109 k/m
STABILITY G 0.146 k/m

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

S Y N O P S I S R E P O R T

Non-Radon Population Assessment

Nov 11, 2003 08:28 am

Facility: Portsmouth American Centrifuge
Address:
City: Piketon
State: OH Zip:

Source Category: Facility and Process Ventilation Sys
Source Type: Stack
Emission Year: 2003

Comments:

Effective Dose Equivalent
(mrem/year)

7.57E-01

At This Location: 805 Meters East Northeast
Dataset Name: N4BP30M
Dataset Date: Nov 11, 2003 08:27 am
Wind File: C:\CAP88PC2\CAP88PC2\PORTS30.WND
Population File: C:\CAP88PC2\CAP88PC2\PORTS.POP

INFORMATION CONTAINED WITHIN

DOES NOT CONTAIN

EXPORT CONTROLLED INFORMATION

Richard L. Coriell
03-28-05

MAXIMALLY EXPOSED INDIVIDUAL

Location Of The Individual: 805 Meters East Northeast
 Lifetime Fatal Cancer Risk: 4.23E-06

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)	Collective Population (person-rem/y)
GONADS	3.73E-02	1.45E-01
BREAST	4.23E-02	1.61E-01
R MAR	7.63E-01	3.18E+00
LUNGS	1.08E-01	3.14E-01
THYROID	3.63E-02	1.42E-01
ENDOST	1.14E+01	4.74E+01
RMNDR	9.82E-01	4.10E+00
EFFEC	7.57E-01	3.14E+00

FREQUENCY DISTRIBUTION OF LIFETIME FATAL CANCER RISKS

Risk Range	# of People	# of People in This Risk Range or Higher	Deaths/Year in This Risk Range	Deaths/Year in This Risk Range or Higher
1.0E+00 TO 1.0E-01	0	0	0.00E+00	0.00E+00
1.0E-01 TO 1.0E-02	0	0	0.00E+00	0.00E+00
1.0E-02 TO 1.0E-03	0	0	0.00E+00	0.00E+00
1.0E-03 TO 1.0E-04	0	0	0.00E+00	0.00E+00
1.0E-04 TO 1.0E-05	0	0	0.00E+00	0.00E+00
1.0E-05 TO 1.0E-06	290	290	8.80E-06	8.80E-06
LESS THAN 1.0E-06	661931	662221	2.33E-04	2.41E-04

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SYNOPSIS

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RADIONUCLIDE EMISSIONS DURING THE YEAR 2003

Nuclide	Class	Size	Source	Source	Source	Source	Source	TOTAL
			#1	#2	#3	#4	#5	
			Ci/y	Ci/y	Ci/y	Ci/y	Ci/y	Ci/y
U-234	D	1.00	7.8E-04	6.0E-02	1.1E-03	1.4E-03	6.3E-03	6.9E-02
U-235	D	1.00	3.4E-05	2.7E-03	5.1E-05	4.8E-05	2.9E-04	3.2E-03
U-238	D	1.00	7.5E-04	2.1E-02	3.9E-04	1.4E-04	2.2E-03	2.4E-02

SITE INFORMATION

Temperature: 10 degrees C
Precipitation: 102 cm/y
Mixing Height: 1000 m

SOURCE INFORMATION

Source Number:	1	2	3	4	5		
Stack Height (m):	12.	23.	12.	12.	9.		
Diameter (m):	0.	0.	0.	0.	0.		
Plume Rise							
Pasquill Cat:	A	B	C	D	E	F	G
Zero:	0.	0.	0.	0.	0.	0.	0.

AGRICULTURAL DATA

	Vegetable	Milk	Meat
Fraction Home Produced:	0.700	0.399	0.442
Fraction From Assessment Area:	0.300	0.601	0.558
Fraction Imported:	0.000	0.000	0.000

Beef Cattle Density: 2.03E-01
Milk Cattle Density: 4.56E-02
Land Fraction Cultivated
for Vegetable Crops: 1.70E-02

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SYNOPSIS

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POPULATION DATA

Distance (m)							
Direction	805	2415	4025	5635	7245	12075	24150
N	0	0	19	443	803	3785	0
NNW	0	9	14	10	34	1069	3248
NW	0	121	0	371	141	1106	2284
WNW	0	0	0	0	33	922	1600
W	30	0	40	57	46	876	1348
WSW	57	6	9	16	20	569	1674
SW	46	7	57	224	20	707	1375
SSW	38	0	173	40	71	1631	3183
S	7	18	207	144	36	3518	30593
SSE	0	104	18	35	170	1656	13613
SE	7	39	10	3	75	986	4587
ESE	2	12	5	57	63	878	1980
E	6	54	40	2	96	1102	5808
ENE	1	65	37	93	95	1023	2435
NE	0	12	20	63	225	359	2329
NNE	0	10	82	79	567	2780	2266

Distance (m)			
Direction	40250	56350	72200
N	42304	7518	26978
NNW	4628	4028	21176
NW	4111	12150	7605
WNW	6021	13838	9880
W	5591	7376	18285
WSW	2464	11058	17205
SW	1923	2702	5657
SSW	3732	6222	4633
S	4489	3037	14068
SSE	14145	43111	76266
SE	4108	4698	14064
ESE	6106	5645	25178
E	7400	4997	8015
ENE	11823	5583	9245
NE	2653	3232	16780
NNE	3879	7594	12216

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

D O S E A N D R I S K E Q U I V A L E N T S U M M A R I E S

Non-Radon Population Assessment

Nov 11, 2003 08:28 am

Facility: Portsmouth American Centrifuge

Address:

City: Piketon

State: OH Zip:

Source Category: Facility and Process Ventilation Sys

Source Type: Stack

Emission Year: 2003

Comments:

Dataset Name: N4BP30M

Dataset Date: Nov 11, 2003 08:27 am

Wind File: C:\CAP88PC2\CAP88PC2\PORTS30.WND

Population File: C:\CAP88PC2\CAP88PC2\PORTS.POP

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)	Collective Population (person-rem/y)
GONADS	3.73E-02	1.45E-01
BREAST	4.23E-02	1.61E-01
R MAR	7.63E-01	3.18E+00
LUNGS	1.08E-01	3.14E-01
THYROID	3.63E-02	1.42E-01
ENDOST	1.14E+01	4.74E+01
RMNDR	9.82E-01	4.10E+00
EFFEC	7.57E-01	3.14E+00

PATHWAY EFFECTIVE DOSE EQUIVALENT SUMMARY

Pathway	Selected Individual (mrem/y)	Collective Population (person-rem/y)
INGESTION	5.61E-01	2.65E+00
INHALATION	1.88E-01	4.56E-01
AIR IMMERSION	2.16E-07	5.28E-07
GROUND SURFACE	8.93E-03	2.84E-02
INTERNAL	7.48E-01	3.11E+00
EXTERNAL	8.93E-03	2.84E-02
TOTAL	7.57E-01	3.14E+00

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SUMMARY
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NUCLIDE EFFECTIVE DOSE EQUIVALENT SUMMARY

Nuclides	Selected Individual (mrem/y)	Collective Population (person-rem/y)
U-234	5.51E-01	2.29E+00
U-235	3.18E-02	1.25E-01
U-238	1.75E-01	7.22E-01
TOTAL	7.57E-01	3.14E+00

CANCER RISK SUMMARY

Cancer	Selected Individual Total Lifetime Fatal Cancer Risk	Total Collective Population Fatal Cancer Risk (Deaths/y)
LEUKEMIA	8.17E-07	4.78E-05
BONE	6.04E-07	3.56E-05
THYROID	8.87E-09	4.65E-07
BREAST	9.90E-08	5.00E-06
LUNG	2.91E-07	1.16E-05
STOMACH	5.54E-08	3.01E-06
BOWEL	5.55E-08	3.35E-06
LIVER	5.55E-08	2.97E-06
PANCREAS	3.75E-08	2.03E-06
URINARY	2.16E-06	1.27E-04
OTHER	4.59E-08	2.49E-06
TOTAL	4.23E-06	2.41E-04

PATHWAY RISK SUMMARY

Pathway	Selected Individual Total Lifetime Fatal Cancer Risk	Total Collective Population Fatal Cancer Risk (Deaths/y)
INGESTION	2.89E-06	1.93E-04
INHALATION	1.13E-06	3.88E-05
AIR IMMERSION	5.03E-12	1.74E-10
GROUND SURFACE	2.06E-07	9.25E-06
INTERNAL	4.02E-06	2.32E-04
EXTERNAL	2.06E-07	9.25E-06
TOTAL	4.23E-06	2.41E-04

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SUMMARY
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PATHWAY GENETIC RISK SUMMARY
(Collective Population)

Pathway	Genetic Risk (person-rem/y)
INGESTION	1.21E-02
INHALATION	1.99E-03
AIR IMMERSION	4.82E-07
GROUND SURFACE	2.45E-02
INTERNAL	1.41E-02
EXTERNAL	2.45E-02
TOTAL	3.86E-02

NUCLIDE RISK SUMMARY

Nuclide	Selected Individual	Total Collective
	Total Lifetime Fatal Cancer Risk	Population Fatal Cancer Risk (Deaths/y)
U-234	2.91E-06	1.68E-04
U-235	3.12E-07	1.57E-05
U-238	1.01E-06	5.79E-05
TOTAL	4.23E-06	2.41E-04

INDIVIDUAL EFFECTIVE DOSE EQUIVALENT RATE (mrem/y)
(All Radionuclides and Pathways)

Distance (m)							
Direction	805	2415	4025	5635	7245	12075	24150
N	0.0E+00	0.0E+00	1.6E-01	1.0E-01	7.0E-02	3.5E-02	0.0E+00
NNW	0.0E+00	2.0E-01	1.0E-01	6.5E-02	4.5E-02	2.2E-02	8.0E-03
NW	0.0E+00	1.7E-01	0.0E+00	5.5E-02	3.8E-02	1.9E-02	6.7E-03
WNW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	3.5E-02	1.7E-02	6.3E-03
W	3.9E-01	0.0E+00	6.5E-02	4.1E-02	2.9E-02	1.4E-02	5.4E-03
WSW	3.6E-01	1.2E-01	6.0E-02	3.8E-02	2.7E-02	1.3E-02	5.3E-03
SW	4.5E-01	1.4E-01	7.1E-02	4.6E-02	3.2E-02	1.6E-02	6.4E-03
SSW	6.1E-01	0.0E+00	9.5E-02	6.0E-02	4.3E-02	2.1E-02	8.3E-03
S	5.0E-01	1.5E-01	7.7E-02	4.9E-02	3.5E-02	1.8E-02	7.0E-03
SSE	0.0E+00	1.2E-01	5.9E-02	3.8E-02	2.7E-02	1.4E-02	5.7E-03
SE	4.1E-01	1.2E-01	6.2E-02	4.0E-02	2.8E-02	1.4E-02	5.9E-03
ESE	4.2E-01	1.3E-01	6.6E-02	4.2E-02	3.0E-02	1.5E-02	6.0E-03
E	5.3E-01	1.7E-01	8.6E-02	5.5E-02	3.8E-02	1.9E-02	7.1E-03
ENE	7.6E-01	2.4E-01	1.2E-01	7.7E-02	5.3E-02	2.6E-02	9.5E-03
NE	0.0E+00	3.0E-01	1.5E-01	9.6E-02	6.7E-02	3.3E-02	1.2E-02
NNE	0.0E+00	3.1E-01	1.6E-01	1.0E-01	7.0E-02	3.4E-02	1.2E-02

Distance (m)			
Direction	40250	56350	72200
N	6.4E-03	4.0E-03	2.8E-03
NNW	4.2E-03	2.7E-03	2.0E-03
NW	3.6E-03	2.4E-03	1.8E-03
WNW	3.4E-03	2.3E-03	1.8E-03
W	3.1E-03	2.2E-03	1.8E-03
WSW	3.1E-03	2.2E-03	1.8E-03
SW	3.6E-03	2.5E-03	2.0E-03
SSW	4.5E-03	3.0E-03	2.2E-03
S	3.9E-03	2.7E-03	2.1E-03
SSE	3.3E-03	2.4E-03	1.9E-03
SE	3.4E-03	2.4E-03	2.0E-03
ESE	3.4E-03	2.4E-03	1.9E-03
E	3.9E-03	2.6E-03	2.0E-03
ENE	4.9E-03	3.2E-03	2.3E-03
NE	5.9E-03	3.6E-03	2.6E-03
NNE	6.1E-03	3.7E-03	2.6E-03

COLLECTIVE EFFECTIVE DOSE EQUIVALENT (person rem/y)
(All Radionuclides and Pathways)

Distance (m)							
Direction	805	2415	4025	5635	7245	12075	24150
N	0.0E+00	0.0E+00	3.0E-03	4.4E-02	5.6E-02	1.3E-01	0.0E+00
NNW	0.0E+00	1.8E-03	1.4E-03	6.5E-04	1.5E-03	2.4E-02	2.6E-02
NW	0.0E+00	2.1E-02	0.0E+00	2.1E-02	5.4E-03	2.1E-02	1.5E-02
WNW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	1.1E-03	1.6E-02	1.0E-02
W	1.2E-02	0.0E+00	2.6E-03	2.3E-03	1.3E-03	1.3E-02	7.3E-03
WSW	2.1E-02	7.0E-04	5.4E-04	6.1E-04	5.3E-04	7.7E-03	8.9E-03
SW	2.1E-02	9.8E-04	4.1E-03	1.0E-02	6.4E-04	1.1E-02	8.7E-03
SSW	2.3E-02	0.0E+00	1.6E-02	2.4E-03	3.0E-03	3.5E-02	2.6E-02
S	3.5E-03	2.7E-03	1.6E-02	7.1E-03	1.3E-03	6.2E-02	2.1E-01
SSE	0.0E+00	1.2E-02	1.1E-03	1.3E-03	4.6E-03	2.3E-02	7.7E-02
SE	2.9E-03	4.8E-03	6.2E-04	1.2E-04	2.1E-03	1.4E-02	2.7E-02
ESE	8.4E-04	1.6E-03	3.3E-04	2.4E-03	1.9E-03	1.3E-02	1.2E-02
E	3.2E-03	9.2E-03	3.4E-03	1.1E-04	3.7E-03	2.1E-02	4.1E-02
ENE	7.6E-04	1.6E-02	4.5E-03	7.1E-03	5.1E-03	2.7E-02	2.3E-02
NE	0.0E+00	3.6E-03	3.0E-03	6.0E-03	1.5E-02	1.2E-02	2.7E-02
NNE	0.0E+00	3.1E-03	1.3E-02	7.9E-03	3.9E-02	9.5E-02	2.8E-02

Distance (m)			
Direction	40250	56350	72200
N	2.7E-01	3.0E-02	7.4E-02
NNW	1.9E-02	1.1E-02	4.3E-02
NW	1.5E-02	2.9E-02	1.4E-02
WNW	2.1E-02	3.2E-02	1.8E-02
W	1.7E-02	1.6E-02	3.2E-02
WSW	7.6E-03	2.4E-02	3.1E-02
SW	6.9E-03	6.8E-03	1.1E-02
SSW	1.7E-02	1.9E-02	1.0E-02
S	1.8E-02	8.2E-03	3.0E-02
SSE	4.7E-02	1.0E-01	1.5E-01
SE	1.4E-02	1.1E-02	2.8E-02
ESE	2.1E-02	1.4E-02	4.8E-02
E	2.9E-02	1.3E-02	1.6E-02
ENE	5.8E-02	1.8E-02	2.1E-02
NE	1.6E-02	1.2E-02	4.3E-02
NNE	2.4E-02	2.8E-02	3.2E-02

AVERAGE COLLECTIVE GENETIC DOSE EQUIVALENT
(person rem)
(All Radionuclides and Pathways)

Distance (m)							
Direction	805	2415	4025	5635	7245	12075	24150
N	0.0E+00	0.0E+00	3.9E-03	5.7E-02	7.3E-02	1.7E-01	0.0E+00
NNW	0.0E+00	2.4E-03	1.9E-03	8.4E-04	2.0E-03	3.1E-02	3.3E-02
NW	0.0E+00	2.7E-02	0.0E+00	2.6E-02	7.0E-03	2.7E-02	1.9E-02
WNW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	1.5E-03	2.0E-02	1.3E-02
W	1.5E-02	0.0E+00	3.3E-03	3.0E-03	1.7E-03	1.6E-02	9.1E-03
WSW	2.7E-02	9.1E-04	6.9E-04	7.9E-04	6.9E-04	9.8E-03	1.1E-02
SW	2.7E-02	1.3E-03	5.3E-03	1.3E-02	8.3E-04	1.5E-02	1.1E-02
SSW	3.0E-02	0.0E+00	2.1E-02	3.1E-03	3.9E-03	4.5E-02	3.3E-02
S	4.5E-03	3.5E-03	2.1E-02	9.2E-03	1.6E-03	8.0E-02	2.7E-01
SSE	0.0E+00	1.6E-02	1.4E-03	1.7E-03	5.9E-03	2.9E-02	9.6E-02
SE	3.7E-03	6.2E-03	8.0E-04	1.5E-04	2.7E-03	1.8E-02	3.4E-02
ESE	1.1E-03	2.0E-03	4.3E-04	3.1E-03	2.4E-03	1.7E-02	1.5E-02
E	4.1E-03	1.2E-02	4.4E-03	1.4E-04	4.7E-03	2.7E-02	5.2E-02
ENE	9.8E-04	2.0E-02	5.8E-03	9.3E-03	6.6E-03	3.5E-02	3.0E-02
NE	0.0E+00	4.7E-03	3.9E-03	7.8E-03	1.9E-02	1.5E-02	3.5E-02
NNE	0.0E+00	4.1E-03	1.7E-02	1.0E-02	5.1E-02	1.2E-01	3.5E-02

Distance (m)			
Direction	40250	56350	72200
N	3.4E-01	3.6E-02	8.7E-02
NNW	2.4E-02	1.3E-02	4.7E-02
NW	1.8E-02	3.4E-02	1.5E-02
WNW	2.5E-02	3.7E-02	2.0E-02
W	2.0E-02	1.8E-02	3.5E-02
WSW	8.9E-03	2.8E-02	3.4E-02
SW	8.3E-03	7.8E-03	1.2E-02
SSW	2.1E-02	2.2E-02	1.2E-02
S	2.1E-02	9.6E-03	3.3E-02
SSE	5.6E-02	1.2E-01	1.6E-01
SE	1.7E-02	1.3E-02	3.1E-02
ESE	2.5E-02	1.6E-02	5.4E-02
E	3.5E-02	1.5E-02	1.8E-02
ENE	7.2E-02	2.1E-02	2.4E-02
NE	1.9E-02	1.4E-02	5.0E-02
NNE	2.9E-02	3.4E-02	3.7E-02

INDIVIDUAL LIFETIME RISK (deaths)
(All Radionuclides and Pathways)

Distance (m)							
Direction	805	2415	4025	5635	7245	12075	24150
N	0.0E+00	0.0E+00	8.8E-07	5.6E-07	3.9E-07	1.9E-07	0.0E+00
NNW	0.0E+00	1.1E-06	5.7E-07	3.6E-07	2.5E-07	1.2E-07	4.4E-08
NW	0.0E+00	9.6E-07	0.0E+00	3.1E-07	2.1E-07	1.0E-07	3.7E-08
WNW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	1.9E-07	9.5E-08	3.4E-08
W	2.2E-06	0.0E+00	3.6E-07	2.3E-07	1.6E-07	7.9E-08	3.0E-08
WSW	2.0E-06	6.6E-07	3.3E-07	2.1E-07	1.5E-07	7.4E-08	2.9E-08
SW	2.5E-06	7.8E-07	4.0E-07	2.5E-07	1.8E-07	9.0E-08	3.5E-08
SSW	3.4E-06	0.0E+00	5.3E-07	3.4E-07	2.4E-07	1.2E-07	4.5E-08
S	2.8E-06	8.5E-07	4.3E-07	2.7E-07	1.9E-07	9.8E-08	3.8E-08
SSE	0.0E+00	6.5E-07	3.3E-07	2.1E-07	1.5E-07	7.6E-08	3.1E-08
SE	2.3E-06	6.8E-07	3.5E-07	2.2E-07	1.6E-07	8.0E-08	3.2E-08
ESE	2.3E-06	7.3E-07	3.7E-07	2.4E-07	1.7E-07	8.4E-08	3.3E-08
E	3.0E-06	9.5E-07	4.8E-07	3.0E-07	2.1E-07	1.0E-07	3.9E-08
ENE	4.2E-06	1.3E-06	6.8E-07	4.3E-07	3.0E-07	1.5E-07	5.3E-08
NE	0.0E+00	1.7E-06	8.4E-07	5.3E-07	3.7E-07	1.8E-07	6.4E-08
NNE	0.0E+00	1.8E-06	8.8E-07	5.6E-07	3.9E-07	1.9E-07	6.7E-08

Distance (m)			
Direction	40250	56350	72200
N	3.5E-08	2.1E-08	1.5E-08
NNW	2.3E-08	1.5E-08	1.1E-08
NW	2.0E-08	1.3E-08	9.7E-09
WNW	1.8E-08	1.2E-08	9.5E-09
W	1.7E-08	1.2E-08	9.2E-09
WSW	1.6E-08	1.2E-08	9.4E-09
SW	1.9E-08	1.3E-08	1.0E-08
SSW	2.4E-08	1.6E-08	1.2E-08
S	2.1E-08	1.4E-08	1.1E-08
SSE	1.8E-08	1.3E-08	1.0E-08
SE	1.8E-08	1.3E-08	1.0E-08
ESE	1.8E-08	1.3E-08	1.0E-08
E	2.1E-08	1.4E-08	1.1E-08
ENE	2.7E-08	1.7E-08	1.2E-08
NE	3.2E-08	2.0E-08	1.4E-08
NNE	3.3E-08	2.0E-08	1.4E-08

COLLECTIVE FATAL CANCER RATE (deaths/y)
(All Radionuclides and Pathways)

Distance (m)							
Direction	805	2415	4025	5635	7245	12075	24150
N	0.0E+00	0.0E+00	2.4E-07	3.5E-06	4.4E-06	1.0E-05	0.0E+00
NNW	0.0E+00	1.4E-07	1.1E-07	5.1E-08	1.2E-07	1.9E-06	2.0E-06
NW	0.0E+00	1.6E-06	0.0E+00	1.6E-06	4.2E-07	1.6E-06	1.2E-06
WNW	0.0E+00	0.0E+00	0.0E+00	0.0E+00	9.0E-08	1.2E-06	7.8E-07
W	9.2E-07	0.0E+00	2.0E-07	1.8E-07	1.0E-07	9.8E-07	5.7E-07
WSW	1.6E-06	5.6E-08	4.2E-08	4.8E-08	4.2E-08	6.0E-07	6.8E-07
SW	1.6E-06	7.8E-08	3.2E-07	8.0E-07	5.0E-08	9.0E-07	6.8E-07
SSW	1.8E-06	0.0E+00	1.3E-06	1.9E-07	2.4E-07	2.7E-06	2.0E-06
S	2.8E-07	2.1E-07	1.3E-06	5.6E-07	9.8E-08	4.8E-06	1.6E-05
SSE	0.0E+00	9.5E-07	8.4E-08	1.0E-07	3.6E-07	1.8E-06	5.9E-06
SE	2.3E-07	3.8E-07	4.9E-08	9.4E-09	1.7E-07	1.1E-06	2.1E-06
ESE	6.6E-08	1.2E-07	2.6E-08	1.9E-07	1.5E-07	1.0E-06	9.1E-07
E	2.5E-07	7.2E-07	2.7E-07	8.6E-09	2.9E-07	1.6E-06	3.2E-06
ENE	6.0E-08	1.2E-06	3.5E-07	5.6E-07	4.0E-07	2.1E-06	1.8E-06
NE	0.0E+00	2.8E-07	2.4E-07	4.7E-07	1.2E-06	9.2E-07	2.1E-06
NNE	0.0E+00	2.5E-07	1.0E-06	6.2E-07	3.1E-06	7.4E-06	2.1E-06

Distance (m)			
Direction	40250	56350	72200
N	2.1E-05	2.3E-06	5.6E-06
NNW	1.5E-06	8.3E-07	3.2E-06
NW	1.1E-06	2.2E-06	1.0E-06
WNW	1.6E-06	2.4E-06	1.3E-06
W	1.3E-06	1.2E-06	2.4E-06
WSW	5.7E-07	1.8E-06	2.3E-06
SW	5.3E-07	5.1E-07	8.3E-07
SSW	1.3E-06	1.4E-06	7.8E-07
S	1.3E-06	6.2E-07	2.2E-06
SSE	3.6E-06	7.7E-06	1.1E-05
SE	1.1E-06	8.6E-07	2.1E-06
ESE	1.6E-06	1.0E-06	3.6E-06
E	2.2E-06	9.9E-07	1.2E-06
ENE	4.5E-06	1.3E-06	1.6E-06
NE	1.2E-06	9.0E-07	3.2E-06
NNE	1.8E-06	2.2E-06	2.4E-06

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Clean Air Act Assessment Package - 1988

D O S E A N D R I S K C O N V E R S I O N F A C T O R S

Non-Radon Population Assessment

Nov 11, 2003 08:28 am

Facility: Portsmouth American Centrifuge

Address:

City: Piketon

State: OH Zip:

Source Category: Facility and Process Ventilation Sys

Source Type: Stack

Emission Year: 2003

Comments:

Dataset Name: N4BP30M

Dataset Date: Nov 11, 2003 08:27 am

Wind File: C:\CAP88PC2\CAP88PC2\PORTS30.WND

Population File: C:\CAP88PC2\CAP88PC2\PORTS.POP

DOSE AND RISK FACTOR UNITS

The units for each type of dose rate conversion factor are shown below, by pathway:

Pathway	Units
Ingestion	millirem/picoCurie
Inhalation	millirem/picoCurie
Immersion	millirem-cubic cm/microCurie-year
Surface	millirem-square cm/microCurie-year

Risks for internal exposures (inhalation and ingestion) are the lifetime risk of premature death in a birth cohort of 100,000 people for a 1 picoCurie/year intake rate, where the average lifetime is 70.7565 years.

This is simplified to lifetime risk per 100,000 picoCuries.

The units for each type of risk conversion factor are shown below, by pathway:

Pathway	Units
Ingestion	lifetime risk/100,000 picoCuries
Inhalation	lifetime risk/100,000 picoCuries
Immersion	lifetime risk-cubic cm/100,000 picoCurie-years
Surface	lifetime risk-square cm/100,000 picoCurie-years

 * NUCLIDE U-234 *

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
GONADS	3.851E-05	9.856E-05	8.140E+05	7.067E+02
BREAST	3.851E-05	9.856E-05	2.046E+06	3.585E+03
R MAR	1.031E-03	2.637E-03	2.760E+05	9.139E+01
LUNGS	3.851E-05	1.200E-03	4.107E+05	1.735E+02
THYROID	3.851E-05	9.856E-05	6.068E+05	2.305E+02
ENDOST	1.625E-02	4.161E-02	7.104E+05	2.949E+02
RMNDR	1.396E-03	3.473E-03	3.777E+05	1.251E+02
EFFEC	1.051E-03	2.793E-03	7.456E+05	7.996E+02

GENETIC EFFECT DOSE RATE CONVERSION FACTORS

TESTES	1.058E-03	2.708E-03	2.442E+07	2.120E+04
OVARIES	1.058E-03	2.708E-03	9.102E+06	3.408E+03
AVERAGE	1.058E-03	2.708E-03	1.676E+07	1.230E+04

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
LEUKEMIA	1.006E-04	2.576E-04	8.742E-02	2.895E-05
BONE	8.532E-05	2.184E-04	1.257E-02	5.219E-06
THYROID	6.663E-07	1.706E-06	2.760E-02	1.048E-05
BREAST	5.605E-06	1.435E-05	8.014E-01	1.404E-03
LUNG	7.126E-06	3.280E-04	2.036E-01	8.603E-05
STOMACH	5.173E-06	1.193E-05	1.096E-01	3.621E-05
BOWEL	7.559E-06	6.746E-06	5.172E-02	1.577E-05
LIVER	5.015E-06	1.284E-05	1.212E-01	3.269E-05
PANCREAS	3.500E-06	8.958E-06	6.471E-02	2.715E-05
URINARY	3.044E-04	7.793E-04	4.689E-02	1.258E-05
OTHER	4.280E-06	1.096E-05	7.915E-02	3.321E-05

GENETIC EFFECT RISK CONVERSION FACTORS

AVERAGE	3.657E-11	9.355E-11	4.358E+00	3.198E-03
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 * NUCLIDE U-235 *

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
GONADS	3.811E-05	9.589E-05	8.732E+08	1.939E+05
BREAST	3.779E-05	9.661E-05	9.546E+08	2.198E+05
R MAR	1.013E-03	2.592E-03	6.068E+08	1.336E+05
LUNGS	3.767E-05	1.115E-03	6.327E+08	1.391E+05
THYROID	3.754E-05	9.613E-05	8.510E+08	1.876E+05
ENDOST	1.572E-02	4.025E-02	9.361E+08	2.068E+05
RMNDR	1.299E-03	3.221E-03	6.231E+08	1.372E+05
EFFEC	1.004E-03	2.659E-03	7.508E+08	1.672E+05

GENETIC EFFECT DOSE RATE CONVERSION FACTORS

TESTES	1.021E-03	2.608E-03	2.620E+10	5.816E+06
OVARIES	1.041E-03	2.615E-03	1.510E+10	3.330E+06
AVERAGE	1.031E-03	2.612E-03	2.065E+10	4.573E+06

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
LEUKEMIA	1.074E-04	2.749E-04	1.920E+02	4.231E-02
BONE	8.775E-05	2.246E-04	1.656E+01	3.661E-03
THYROID	6.655E-07	1.704E-06	3.869E+01	8.533E-03
BREAST	5.647E-06	1.439E-05	3.730E+02	8.609E-02
LUNG	7.138E-06	3.052E-04	3.129E+02	6.897E-02
STOMACH	5.160E-06	1.173E-05	1.852E+02	4.090E-02
BOWEL	9.027E-06	6.945E-06	9.162E+01	2.018E-02
LIVER	4.107E-06	1.049E-05	2.022E+02	4.462E-02
PANCREAS	3.535E-06	9.009E-06	1.185E+02	2.625E-02
URINARY	2.829E-04	7.241E-04	7.427E+01	1.639E-02
OTHER	4.323E-06	1.102E-05	1.450E+02	3.210E-02

GENETIC EFFECT RISK CONVERSION FACTORS

AVERAGE	4.125E-11	9.858E-11	5.369E+03	1.189E+00
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* NUCLIDE U-238 *

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
GONADS	3.464E-05	8.866E-05	5.365E+05	5.550E+02
BREAST	3.467E-05	8.881E-05	1.550E+06	2.967E+03
R MAR	1.087E-03	2.784E-03	1.413E+05	5.550E+01
LUNGS	3.464E-05	1.061E-03	2.505E+05	1.214E+02
THYROID	3.461E-05	8.861E-05	3.774E+05	1.572E+02
ENDOST	1.408E-02	3.605E-02	4.514E+05	2.094E+02
RMNDR	1.248E-03	3.104E-03	2.247E+05	8.303E+01
EFFEC	9.465E-04	2.512E-03	5.060E+05	6.410E+02

GENETIC EFFECT DOSE RATE CONVERSION FACTORS

TESTES	9.502E-04	2.432E-03	1.609E+07	1.665E+04
OVARIES	9.509E-04	2.431E-03	5.395E+06	2.287E+03
AVERAGE	9.506E-04	2.432E-03	1.074E+07	9.468E+03

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
LEUKEMIA	1.364E-04	3.494E-04	4.477E-02	1.758E-05
BONE	7.601E-05	1.946E-04	7.989E-03	3.706E-06
THYROID	6.076E-07	1.557E-06	1.717E-02	7.153E-06
BREAST	5.123E-06	1.313E-05	6.072E-01	1.162E-03
LUNG	6.509E-06	2.901E-04	1.242E-01	6.017E-05
STOMACH	4.656E-06	1.076E-05	6.460E-02	2.346E-05
BOWEL	7.207E-06	6.158E-06	2.964E-02	9.812E-06
LIVER	3.860E-06	9.951E-06	7.238E-02	1.985E-05
PANCREAS	3.197E-06	8.190E-06	3.638E-02	1.846E-05
URINARY	2.760E-04	7.065E-04	2.748E-02	7.335E-06
OTHER	3.909E-06	1.002E-05	4.450E-02	2.258E-05

GENETIC EFFECT RISK CONVERSION FACTORS

AVERAGE	3.504E-11	8.986E-11	2.792E+00	2.462E-03
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Version 2.00

Clean Air Act Assessment Package - 1988

GENERAL DATA

Non-Radon Population Assessment

Nov 11, 2003 08:28 am

Facility: Portsmouth American Centrifuge

Address:

City: Piketon

State: OH

Zip:

Source Category: Facility and Process Ventilation Sys

Source Type: Stack

Emission Year: 2003

Comments:

Dataset Name: N4BP30M

Dataset Date: Nov 11, 2003 08:27 am

Wind File: C:\CAP88PC2\CAP88PC2\PORTS30.WND

Population File: C:\CAP88PC2\CAP88PC2\PORTS.POP

Nov 11, 2003 08:28 am

GENERAL
Page 1

VALUES FOR RADIONUCLIDE-DEPENDENT PARAMETERS

Nuclide	Clearance Class	Particle Size (microns)	Scavenging Coefficient (per second)	Dry Deposition Velocity (m/s)
U-234	D	1.0	1.02E-05	1.80E-03
U-235	D	1.0	1.02E-05	1.80E-03
U-238	D	1.0	1.02E-05	1.80E-03

VALUES FOR RADIONUCLIDE-DEPENDENT PARAMETERS

Nuclide	DECAY CONSTANT (PER DAY)			TRANSFER COEFFICIENT	
	Radio- active (1)	Surface	Water	Milk (2)	Meat (3)
U-234	0.00E+00	5.48E-05	0.00E+00	6.00E-04	2.00E-04
U-235	0.00E+00	5.48E-05	0.00E+00	6.00E-04	2.00E-04
U-238	0.00E+00	5.48E-05	0.00E+00	6.00E-04	2.00E-04

FOOTNOTES: (1) Effective radioactive decay constant in plume;
set to zero if less than 1.0E-2

(2) Fraction of animal's daily intake of nuclide
which appears in each L of milk (days/L)

(3) Fraction of animal's daily intake of nuclide
which appears in each kg of meat (days/kg)

VALUES FOR RADIONUCLIDE-DEPENDENT PARAMETERS

Nuclide	CONCENTRATION UPTAKE FACTOR		GI UPTAKE FRACTION	
	Forage (1)	Edible (2)	Inhalation	Ingestion
U-234	8.50E-03	1.71E-03	2.00E-03	2.00E-01
U-235	8.50E-03	1.71E-03	2.00E-03	2.00E-01
U-238	8.50E-03	1.71E-03	2.00E-03	2.00E-01

FOOTNOTES: (1) Concentration factor for uptake of nuclide
from soil for pasture and forage
(in pCi/kg dry weight per pCi/kg dry soil)

(2) Concentration factor for uptake of nuclide
from soil by edible parts of crops
(in pCi/kg wet weight per pCi/kg dry soil)

NUMBER OF BEEF CATTLE

Distance (meters)							
Direction	805	2415	4025	5635	7245	12075	24150
N	10	31	52	72	93	775	3100
NNW	10	31	52	72	93	775	3100
NW	10	31	52	72	93	775	3100
WNW	10	31	52	72	93	775	3100
W	10	31	52	72	93	775	3100
WSW	10	31	52	72	93	775	3100
SW	10	31	52	72	93	775	3100
SSW	10	31	52	72	93	775	3100
S	10	31	52	72	93	775	3100
SSE	10	31	52	72	93	775	3100
SE	10	31	52	72	93	775	3100
ESE	10	31	52	72	93	775	3100
E	10	31	52	72	93	775	3100
ENE	10	31	52	72	93	775	3100
NE	10	31	52	72	93	775	3100
NNE	10	31	52	72	93	775	3100

Distance (meters)			
Direction	40250	56350	72200
N	5166	7232	8979
NNW	5166	7232	8979
NW	5166	7232	8979
WNW	5166	7232	8979
W	5166	7232	8979
WSW	5166	7232	8979
SW	5166	7232	8979
SSW	5166	7232	8979
S	5166	7232	8979
SSE	5166	7232	8979
SE	5166	7232	8979
ESE	5166	7232	8979
E	5166	7232	8979
ENE	5166	7232	8979
NE	5166	7232	8979
NNE	5166	7232	8979

NUMBER OF MILK CATTLE

Distance (meters)							
Direction	805	2415	4025	5635	7245	12075	24150
N	2	7	12	16	21	174	696
NNW	2	7	12	16	21	174	696
NW	2	7	12	16	21	174	696
WNW	2	7	12	16	21	174	696
W	2	7	12	16	21	174	696
WSW	2	7	12	16	21	174	696
SW	2	7	12	16	21	174	696
SSW	2	7	12	16	21	174	696
S	2	7	12	16	21	174	696
SSE	2	7	12	16	21	174	696
SE	2	7	12	16	21	174	696
ESE	2	7	12	16	21	174	696
E	2	7	12	16	21	174	696
ENE	2	7	12	16	21	174	696
NE	2	7	12	16	21	174	696
NNE	2	7	12	16	21	174	696

Distance (meters)			
Direction	40250	56350	72200
N	1160	1625	2017
NNW	1160	1625	2017
NW	1160	1625	2017
WNW	1160	1625	2017
W	1160	1625	2017
WSW	1160	1625	2017
SW	1160	1625	2017
SSW	1160	1625	2017
S	1160	1625	2017
SSE	1160	1625	2017
SE	1160	1625	2017
ESE	1160	1625	2017
E	1160	1625	2017
ENE	1160	1625	2017
NE	1160	1625	2017
NNE	1160	1625	2017

AREA OF VEGETABLE CROP PRODUCTION (M**2)

Distance (meters)							
Direction	805	2415	4025	5635	7245	12075	24150
N	8.7E+03	2.6E+04	4.3E+04	6.1E+04	7.8E+04	6.5E+05	2.6E+06
NNW	8.7E+03	2.6E+04	4.3E+04	6.1E+04	7.8E+04	6.5E+05	2.6E+06
NW	8.7E+03	2.6E+04	4.3E+04	6.1E+04	7.8E+04	6.5E+05	2.6E+06
WNW	8.7E+03	2.6E+04	4.3E+04	6.1E+04	7.8E+04	6.5E+05	2.6E+06
W	8.7E+03	2.6E+04	4.3E+04	6.1E+04	7.8E+04	6.5E+05	2.6E+06
WSW	8.7E+03	2.6E+04	4.3E+04	6.1E+04	7.8E+04	6.5E+05	2.6E+06
SW	8.7E+03	2.6E+04	4.3E+04	6.1E+04	7.8E+04	6.5E+05	2.6E+06
SSW	8.7E+03	2.6E+04	4.3E+04	6.1E+04	7.8E+04	6.5E+05	2.6E+06
S	8.7E+03	2.6E+04	4.3E+04	6.1E+04	7.8E+04	6.5E+05	2.6E+06
SSE	8.7E+03	2.6E+04	4.3E+04	6.1E+04	7.8E+04	6.5E+05	2.6E+06
SE	8.7E+03	2.6E+04	4.3E+04	6.1E+04	7.8E+04	6.5E+05	2.6E+06
ESE	8.7E+03	2.6E+04	4.3E+04	6.1E+04	7.8E+04	6.5E+05	2.6E+06
E	8.7E+03	2.6E+04	4.3E+04	6.1E+04	7.8E+04	6.5E+05	2.6E+06
ENE	8.7E+03	2.6E+04	4.3E+04	6.1E+04	7.8E+04	6.5E+05	2.6E+06
NE	8.7E+03	2.6E+04	4.3E+04	6.1E+04	7.8E+04	6.5E+05	2.6E+06
NNE	8.7E+03	2.6E+04	4.3E+04	6.1E+04	7.8E+04	6.5E+05	2.6E+06

Distance (meters)			
Direction	40250	56350	72200
N	4.3E+06	6.1E+06	7.5E+06
NNW	4.3E+06	6.1E+06	7.5E+06
NW	4.3E+06	6.1E+06	7.5E+06
WNW	4.3E+06	6.1E+06	7.5E+06
W	4.3E+06	6.1E+06	7.5E+06
WSW	4.3E+06	6.1E+06	7.5E+06
SW	4.3E+06	6.1E+06	7.5E+06
SSW	4.3E+06	6.1E+06	7.5E+06
S	4.3E+06	6.1E+06	7.5E+06
SSE	4.3E+06	6.1E+06	7.5E+06
SE	4.3E+06	6.1E+06	7.5E+06
ESE	4.3E+06	6.1E+06	7.5E+06
E	4.3E+06	6.1E+06	7.5E+06
ENE	4.3E+06	6.1E+06	7.5E+06
NE	4.3E+06	6.1E+06	7.5E+06
NNE	4.3E+06	6.1E+06	7.5E+06

VALUES FOR RADIONUCLIDE-INDEPENDENT PARAMETERS

HUMAN INHALATION RATE

Cubic centimeters/hr	9.17E+05
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SOIL PARAMETERS

Effective surface density (kg/sq m, dry weight) (Assumes 15 cm plow layer)	2.15E+02
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BUILDUP TIMES

For activity in soil (years)	1.00E+02
For radionuclides deposited on ground/water (days)	3.65E+04

DELAY TIMES

Ingestion of pasture grass by animals (hr)	0.00E+00
Ingestion of stored feed by animals (hr)	2.16E+03
Ingestion of leafy vegetables by man (hr)	3.36E+02
Ingestion of produce by man (hr)	3.36E+02
Transport time from animal feed-milk-man (day)	2.00E+00
Time from slaughter to consumption (day)	2.00E+01

WEATHERING

Removal rate constant for physical loss (per hr)	2.90E-03
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CROP EXPOSURE DURATION

Pasture grass (hr)	7.20E+02
Crops/leafy vegetables (hr)	1.44E+03

AGRICULTURAL PRODUCTIVITY

Grass-cow-milk-man pathway (kg/sq m)	2.80E-01
Produce/leafy veg for human consumption (kg/sq m)	7.16E-01

FALLOUT INTERCEPTION FRACTIONS

Vegetables	2.00E-01
Pasture	5.70E-01

GRAZING PARAMETERS

Fraction of year animals graze on pasture	4.00E-01
Fraction of daily feed that is pasture grass when animal grazes on pasture	4.30E-01

VALUES FOR RADIONUCLIDE-INDEPENDENT PARAMETERS

ANIMAL FEED CONSUMPTION FACTORS

Contaminated feed/forage (kg/day, dry weight)	1.56E+01
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DAIRY PRODUCTIVITY

Milk production of cow (L/day)	1.10E+01
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MEAT ANIMAL SLAUGHTER PARAMETERS

Muscle mass of animal at slaughter (kg)	2.00E+02
Fraction of herd slaughtered (per day)	3.81E-03

DECONTAMINATION

Fraction of radioactivity retained after washing for leafy vegetables and produce	5.00E-01
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FRACTIONS GROWN IN GARDEN OF INTEREST

Produce ingested	1.00E+00
Leafy vegetables ingested	1.00E+00

INGESTION RATIOS:

IMMEDIATE SURROUNDING AREA/TOTAL WITHIN AREA	
Vegetables	7.00E-01
Meat	4.42E-01
Milk	3.99E-01

MINIMUM INGESTION FRACTIONS FROM OUTSIDE AREA

(Actual fractions of food types from outside area can
be greater than the minimum fractions listed below.)

Vegetables	0.00E+00
Meat	0.00E+00
Milk	0.00E+00

HUMAN FOOD UTILIZATION FACTORS

Produce ingestion (kg/y)	1.76E+02
Milk ingestion (L/y)	1.12E+02
Meat ingestion (kg/y)	8.50E+01
Leafy vegetable ingestion (kg/y)	1.80E+01

SWIMMING PARAMETERS

Fraction of time spent swimming	0.00E+00
Dilution factor for water (cm)	1.00E+00

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

C O N C E N T R A T I O N T A B L E S

Non-Radon Population Assessment

Nov 11, 2003 08:28 am

Facility: Portsmouth American Centrifuge

Address:

City: Piketon

State: OH

Zip:

Source Category: Facility and Process Ventilation Sys

Source Type: Stack

Emission Year: 2003

Comments:

Dataset Name: N4BP30M

Dataset Date: Nov 11, 2003 08:27 am

Wind File: C:\CAP88PC2\CAP88PC2\PORTS30.WND

Population File: C:\CAP88PC2\CAP88PC2\PORTS.POP

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m ³)	Dry Deposition Rate (pCi/cm ² /s)	Wet Deposition Rate (pCi/cm ² /s)	Ground Deposition Rate (pCi/cm ² /s)
N	805	U-234	8.5E-03	1.5E-09	5.3E-10	2.1E-09
N	805	U-235	3.9E-04	7.0E-11	2.4E-11	9.4E-11
N	805	U-238	3.0E-03	5.4E-10	1.8E-10	7.2E-10
N	2415	U-234	2.5E-03	4.6E-10	1.7E-10	6.2E-10
N	2415	U-235	1.2E-04	2.1E-11	7.6E-12	2.9E-11
N	2415	U-238	8.9E-04	1.6E-10	5.8E-11	2.2E-10
N	4025	U-234	1.2E-03	2.2E-10	9.5E-11	3.2E-10
N	4025	U-235	5.6E-05	1.0E-11	4.4E-12	1.5E-11
N	4025	U-238	4.3E-04	7.8E-11	3.3E-11	1.1E-10
N	5635	U-234	7.6E-04	1.4E-10	6.5E-11	2.0E-10
N	5635	U-235	3.5E-05	6.2E-12	3.0E-12	9.2E-12
N	5635	U-238	2.7E-04	4.8E-11	2.3E-11	7.1E-11
N	7245	U-234	5.1E-04	9.2E-11	4.9E-11	1.4E-10
N	7245	U-235	2.3E-05	4.2E-12	2.2E-12	6.5E-12
N	7245	U-238	1.8E-04	3.2E-11	1.7E-11	4.9E-11
N	12075	U-234	2.4E-04	4.3E-11	2.7E-11	6.9E-11
N	12075	U-235	1.1E-05	2.0E-12	1.2E-12	3.2E-12
N	12075	U-238	8.3E-05	1.5E-11	9.3E-12	2.4E-11
N	24150	U-234	7.5E-05	1.4E-11	1.1E-11	2.4E-11
N	24150	U-235	3.4E-06	6.2E-13	4.8E-13	1.1E-12
N	24150	U-238	2.6E-05	4.7E-12	3.7E-12	8.4E-12
N	40250	U-234	3.2E-05	5.7E-12	5.2E-12	1.1E-11
N	40250	U-235	1.5E-06	2.6E-13	2.4E-13	5.0E-13
N	40250	U-238	1.1E-05	2.0E-12	1.8E-12	3.8E-12
N	56350	U-234	1.5E-05	2.8E-12	3.0E-12	5.8E-12
N	56350	U-235	7.1E-07	1.3E-13	1.4E-13	2.6E-13
N	56350	U-238	5.4E-06	9.7E-13	1.0E-12	2.0E-12
N	72200	U-234	7.4E-06	1.3E-12	1.8E-12	3.2E-12
N	72200	U-235	3.4E-07	6.1E-14	8.5E-14	1.5E-13
N	72200	U-238	2.6E-06	4.7E-13	6.5E-13	1.1E-12
NNW	805	U-234	4.9E-03	8.9E-10	3.3E-10	1.2E-09
NNW	805	U-235	2.2E-04	4.0E-11	1.5E-11	5.5E-11
NNW	805	U-238	1.7E-03	3.1E-10	1.1E-10	4.3E-10
NNW	2415	U-234	1.7E-03	3.0E-10	1.0E-10	4.0E-10
NNW	2415	U-235	7.6E-05	1.4E-11	4.7E-12	1.8E-11
NNW	2415	U-238	5.8E-04	1.1E-10	3.6E-11	1.4E-10
NNW	4025	U-234	8.2E-04	1.5E-10	5.8E-11	2.0E-10
NNW	4025	U-235	3.7E-05	6.7E-12	2.6E-12	9.4E-12
NNW	4025	U-238	2.9E-04	5.1E-11	2.0E-11	7.2E-11
NNW	5635	U-234	5.0E-04	9.0E-11	3.9E-11	1.3E-10
NNW	5635	U-235	2.3E-05	4.1E-12	1.8E-12	5.9E-12
NNW	5635	U-238	1.8E-04	3.2E-11	1.4E-11	4.5E-11
NNW	7245	U-234	3.4E-04	6.1E-11	2.9E-11	9.0E-11
NNW	7245	U-235	1.5E-05	2.8E-12	1.3E-12	4.1E-12

NNW	7245	U-238	1.2E-04	2.1E-11	1.0E-11	3.1E-11
NNW	12075	U-234	1.5E-04	2.8E-11	1.5E-11	4.3E-11
NNW	12075	U-235	7.1E-06	1.3E-12	7.1E-13	2.0E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m ³)	Dry Deposition Rate (pCi/cm ² /s)	Wet Deposition Rate (pCi/cm ² /s)	Ground Deposition Rate (pCi/cm ² /s)
NNW	12075	U-238	5.4E-05	9.7E-12	5.4E-12	1.5E-11
NNW	24150	U-234	4.6E-05	8.3E-12	5.7E-12	1.4E-11
NNW	24150	U-235	2.1E-06	3.8E-13	2.6E-13	6.4E-13
NNW	24150	U-238	1.6E-05	2.9E-12	2.0E-12	4.9E-12
NNW	40250	U-234	1.9E-05	3.4E-12	2.7E-12	6.1E-12
NNW	40250	U-235	8.6E-07	1.5E-13	1.3E-13	2.8E-13
NNW	40250	U-238	6.6E-06	1.2E-12	9.6E-13	2.1E-12
NNW	56350	U-234	8.5E-06	1.5E-12	1.5E-12	3.0E-12
NNW	56350	U-235	3.9E-07	7.0E-14	6.9E-14	1.4E-13
NNW	56350	U-238	3.0E-06	5.3E-13	5.2E-13	1.1E-12
NNW	72200	U-234	3.6E-06	6.4E-13	8.7E-13	1.5E-12
NNW	72200	U-235	1.6E-07	2.9E-14	4.0E-14	6.9E-14
NNW	72200	U-238	1.2E-06	2.2E-13	3.1E-13	5.3E-13
NW	805	U-234	4.0E-03	7.3E-10	2.7E-10	1.0E-09
NW	805	U-235	1.8E-04	3.3E-11	1.3E-11	4.6E-11
NW	805	U-238	1.4E-03	2.6E-10	9.6E-11	3.5E-10
NW	2415	U-234	1.4E-03	2.5E-10	8.5E-11	3.4E-10
NW	2415	U-235	6.5E-05	1.2E-11	3.9E-12	1.6E-11
NW	2415	U-238	5.0E-04	8.9E-11	3.0E-11	1.2E-10
NW	4025	U-234	6.9E-04	1.2E-10	4.8E-11	1.7E-10
NW	4025	U-235	3.2E-05	5.7E-12	2.2E-12	7.9E-12
NW	4025	U-238	2.4E-04	4.4E-11	1.7E-11	6.1E-11
NW	5635	U-234	4.3E-04	7.7E-11	3.2E-11	1.1E-10
NW	5635	U-235	2.0E-05	3.5E-12	1.5E-12	5.0E-12
NW	5635	U-238	1.5E-04	2.7E-11	1.1E-11	3.8E-11
NW	7245	U-234	2.9E-04	5.1E-11	2.4E-11	7.5E-11
NW	7245	U-235	1.3E-05	2.4E-12	1.1E-12	3.4E-12
NW	7245	U-238	1.0E-04	1.8E-11	8.3E-12	2.6E-11
NW	12075	U-234	1.3E-04	2.3E-11	1.3E-11	3.6E-11
NW	12075	U-235	5.9E-06	1.1E-12	5.8E-13	1.6E-12
NW	12075	U-238	4.5E-05	8.2E-12	4.4E-12	1.3E-11
NW	24150	U-234	3.8E-05	6.8E-12	4.6E-12	1.1E-11
NW	24150	U-235	1.7E-06	3.1E-13	2.1E-13	5.2E-13
NW	24150	U-238	1.3E-05	2.4E-12	1.6E-12	4.0E-12
NW	40250	U-234	1.5E-05	2.7E-12	2.1E-12	4.8E-12
NW	40250	U-235	6.9E-07	1.2E-13	9.8E-14	2.2E-13
NW	40250	U-238	5.3E-06	9.5E-13	7.5E-13	1.7E-12
NW	56350	U-234	6.6E-06	1.2E-12	1.2E-12	2.3E-12
NW	56350	U-235	3.0E-07	5.4E-14	5.3E-14	1.1E-13
NW	56350	U-238	2.3E-06	4.1E-13	4.0E-13	8.2E-13
NW	72200	U-234	2.7E-06	4.8E-13	6.6E-13	1.1E-12
NW	72200	U-235	1.2E-07	2.2E-14	3.0E-14	5.2E-14
NW	72200	U-238	9.3E-07	1.7E-13	2.3E-13	4.0E-13
WNW	805	U-234	3.8E-03	6.8E-10	2.5E-10	9.2E-10

WNW	805	U-235	1.7E-04	3.1E-11	1.1E-11	4.2E-11
WNW	805	U-238	1.3E-03	2.4E-10	8.7E-11	3.3E-10
WNW	2415	U-234	1.3E-03	2.3E-10	7.7E-11	3.1E-10

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m ³)	Dry Deposition Rate (pCi/cm ² /s)	Wet Deposition Rate (pCi/cm ² /s)	Ground Deposition Rate (pCi/cm ² /s)
WNW	2415	U-235	5.8E-05	1.1E-11	3.5E-12	1.4E-11
WNW	2415	U-238	4.5E-04	8.1E-11	2.7E-11	1.1E-10
WNW	4025	U-234	6.2E-04	1.1E-10	4.3E-11	1.6E-10
WNW	4025	U-235	2.9E-05	5.1E-12	2.0E-12	7.1E-12
WNW	4025	U-238	2.2E-04	3.9E-11	1.5E-11	5.5E-11
WNW	5635	U-234	3.8E-04	6.9E-11	2.9E-11	9.8E-11
WNW	5635	U-235	1.8E-05	3.2E-12	1.4E-12	4.5E-12
WNW	5635	U-238	1.3E-04	2.4E-11	1.0E-11	3.5E-11
WNW	7245	U-234	2.6E-04	4.6E-11	2.2E-11	6.8E-11
WNW	7245	U-235	1.2E-05	2.1E-12	9.9E-13	3.1E-12
WNW	7245	U-238	9.0E-05	1.6E-11	7.6E-12	2.4E-11
WNW	12075	U-234	1.2E-04	2.1E-11	1.1E-11	3.2E-11
WNW	12075	U-235	5.3E-06	9.6E-13	5.3E-13	1.5E-12
WNW	12075	U-238	4.1E-05	7.4E-12	4.0E-12	1.1E-11
WNW	24150	U-234	3.4E-05	6.2E-12	4.2E-12	1.0E-11
WNW	24150	U-235	1.6E-06	2.8E-13	1.9E-13	4.8E-13
WNW	24150	U-238	1.2E-05	2.2E-12	1.5E-12	3.7E-12
WNW	40250	U-234	1.4E-05	2.5E-12	2.0E-12	4.5E-12
WNW	40250	U-235	6.3E-07	1.1E-13	9.1E-14	2.0E-13
WNW	40250	U-238	4.8E-06	8.7E-13	7.0E-13	1.6E-12
WNW	56350	U-234	6.1E-06	1.1E-12	1.1E-12	2.2E-12
WNW	56350	U-235	2.8E-07	5.0E-14	4.9E-14	9.9E-14
WNW	56350	U-238	2.1E-06	3.8E-13	3.8E-13	7.6E-13
WNW	72200	U-234	2.5E-06	4.5E-13	6.3E-13	1.1E-12
WNW	72200	U-235	1.1E-07	2.1E-14	2.9E-14	4.9E-14
WNW	72200	U-238	8.8E-07	1.6E-13	2.2E-13	3.8E-13
W	805	U-234	3.1E-03	5.6E-10	2.1E-10	7.7E-10
W	805	U-235	1.4E-04	2.6E-11	9.6E-12	3.5E-11
W	805	U-238	1.1E-03	2.0E-10	7.3E-11	2.7E-10
W	2415	U-234	1.0E-03	1.9E-10	6.5E-11	2.5E-10
W	2415	U-235	4.8E-05	8.6E-12	3.0E-12	1.2E-11
W	2415	U-238	3.6E-04	6.6E-11	2.3E-11	8.9E-11
W	4025	U-234	5.1E-04	9.1E-11	3.7E-11	1.3E-10
W	4025	U-235	2.3E-05	4.2E-12	1.7E-12	5.9E-12
W	4025	U-238	1.8E-04	3.2E-11	1.3E-11	4.5E-11
W	5635	U-234	3.1E-04	5.6E-11	2.5E-11	8.1E-11
W	5635	U-235	1.4E-05	2.6E-12	1.1E-12	3.7E-12
W	5635	U-238	1.1E-04	2.0E-11	8.8E-12	2.8E-11
W	7245	U-234	2.1E-04	3.8E-11	1.8E-11	5.6E-11
W	7245	U-235	9.6E-06	1.7E-12	8.4E-13	2.6E-12
W	7245	U-238	7.3E-05	1.3E-11	6.5E-12	2.0E-11
W	12075	U-234	9.5E-05	1.7E-11	9.8E-12	2.7E-11
W	12075	U-235	4.3E-06	7.8E-13	4.5E-13	1.2E-12
W	12075	U-238	3.3E-05	6.0E-12	3.4E-12	9.4E-12

W	24150	U-234	2.8E-05	5.0E-12	3.7E-12	8.7E-12
W	24150	U-235	1.3E-06	2.3E-13	1.7E-13	4.0E-13
W	24150	U-238	9.8E-06	1.8E-12	1.3E-12	3.0E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m ³)	Dry Deposition Rate (pCi/cm ² /s)	Wet Deposition Rate (pCi/cm ² /s)	Ground Deposition Rate (pCi/cm ² /s)
W	40250	U-234	1.1E-05	2.0E-12	1.8E-12	3.8E-12
W	40250	U-235	5.1E-07	9.2E-14	8.1E-14	1.7E-13
W	40250	U-238	3.9E-06	7.1E-13	6.2E-13	1.3E-12
W	56350	U-234	5.0E-06	9.0E-13	9.7E-13	1.9E-12
W	56350	U-235	2.3E-07	4.1E-14	4.4E-14	8.6E-14
W	56350	U-238	1.7E-06	3.1E-13	3.4E-13	6.5E-13
W	72200	U-234	2.1E-06	3.7E-13	5.8E-13	9.5E-13
W	72200	U-235	9.5E-08	1.7E-14	2.6E-14	4.4E-14
W	72200	U-238	7.3E-07	1.3E-13	2.0E-13	3.3E-13
WSW	805	U-234	2.9E-03	5.3E-10	2.0E-10	7.2E-10
WSW	805	U-235	1.3E-04	2.4E-11	9.1E-12	3.3E-11
WSW	805	U-238	1.0E-03	1.9E-10	6.9E-11	2.5E-10
WSW	2415	U-234	9.4E-04	1.7E-10	6.3E-11	2.3E-10
WSW	2415	U-235	4.3E-05	7.8E-12	2.9E-12	1.1E-11
WSW	2415	U-238	3.3E-04	6.0E-11	2.2E-11	8.2E-11
WSW	4025	U-234	4.6E-04	8.3E-11	3.6E-11	1.2E-10
WSW	4025	U-235	2.1E-05	3.8E-12	1.6E-12	5.4E-12
WSW	4025	U-238	1.6E-04	2.9E-11	1.2E-11	4.1E-11
WSW	5635	U-234	2.8E-04	5.1E-11	2.4E-11	7.5E-11
WSW	5635	U-235	1.3E-05	2.3E-12	1.1E-12	3.4E-12
WSW	5635	U-238	9.9E-05	1.8E-11	8.5E-12	2.6E-11
WSW	7245	U-234	1.9E-04	3.4E-11	1.8E-11	5.2E-11
WSW	7245	U-235	8.7E-06	1.6E-12	8.2E-13	2.4E-12
WSW	7245	U-238	6.7E-05	1.2E-11	6.3E-12	1.8E-11
WSW	12075	U-234	8.7E-05	1.6E-11	9.7E-12	2.5E-11
WSW	12075	U-235	4.0E-06	7.1E-13	4.5E-13	1.2E-12
WSW	12075	U-238	3.0E-05	5.5E-12	3.4E-12	8.9E-12
WSW	24150	U-234	2.6E-05	4.7E-12	3.8E-12	8.4E-12
WSW	24150	U-235	1.2E-06	2.1E-13	1.7E-13	3.9E-13
WSW	24150	U-238	9.1E-06	1.6E-12	1.3E-12	3.0E-12
WSW	40250	U-234	1.1E-05	1.9E-12	1.9E-12	3.8E-12
WSW	40250	U-235	4.8E-07	8.7E-14	8.5E-14	1.7E-13
WSW	40250	U-238	3.7E-06	6.7E-13	6.5E-13	1.3E-12
WSW	56350	U-234	4.8E-06	8.7E-13	1.1E-12	1.9E-12
WSW	56350	U-235	2.2E-07	4.0E-14	4.9E-14	8.9E-14
WSW	56350	U-238	1.7E-06	3.1E-13	3.7E-13	6.8E-13
WSW	72200	U-234	2.1E-06	3.9E-13	6.7E-13	1.1E-12
WSW	72200	U-235	9.9E-08	1.8E-14	3.1E-14	4.8E-14
WSW	72200	U-238	7.5E-07	1.4E-13	2.3E-13	3.7E-13
SW	805	U-234	3.7E-03	6.6E-10	2.4E-10	9.0E-10
SW	805	U-235	1.7E-04	3.0E-11	1.1E-11	4.1E-11
SW	805	U-238	1.3E-03	2.3E-10	8.5E-11	3.2E-10
SW	2415	U-234	1.1E-03	2.0E-10	7.7E-11	2.8E-10
SW	2415	U-235	5.2E-05	9.3E-12	3.5E-12	1.3E-11

SW	2415	U-238	4.0E-04	7.1E-11	2.7E-11	9.8E-11
SW	4025	U-234	5.5E-04	9.9E-11	4.4E-11	1.4E-10
SW	4025	U-235	2.5E-05	4.5E-12	2.0E-12	6.5E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m ³)	Dry Deposition Rate (pCi/cm ² /s)	Wet Deposition Rate (pCi/cm ² /s)	Ground Deposition Rate (pCi/cm ² /s)
SW	4025	U-238	1.9E-04	3.5E-11	1.5E-11	5.0E-11
SW	5635	U-234	3.4E-04	6.1E-11	3.0E-11	9.1E-11
SW	5635	U-235	1.5E-05	2.8E-12	1.4E-12	4.2E-12
SW	5635	U-238	1.2E-04	2.1E-11	1.1E-11	3.2E-11
SW	7245	U-234	2.3E-04	4.1E-11	2.2E-11	6.3E-11
SW	7245	U-235	1.0E-05	1.9E-12	1.0E-12	2.9E-12
SW	7245	U-238	8.0E-05	1.4E-11	7.9E-12	2.2E-11
SW	12075	U-234	1.0E-04	1.9E-11	1.2E-11	3.1E-11
SW	12075	U-235	4.8E-06	8.6E-13	5.6E-13	1.4E-12
SW	12075	U-238	3.7E-05	6.6E-12	4.3E-12	1.1E-11
SW	24150	U-234	3.3E-05	5.9E-12	4.9E-12	1.1E-11
SW	24150	U-235	1.5E-06	2.7E-13	2.2E-13	4.9E-13
SW	24150	U-238	1.1E-05	2.1E-12	1.7E-12	3.8E-12
SW	40250	U-234	1.4E-05	2.4E-12	2.4E-12	4.9E-12
SW	40250	U-235	6.2E-07	1.1E-13	1.1E-13	2.2E-13
SW	40250	U-238	4.8E-06	8.6E-13	8.6E-13	1.7E-12
SW	56350	U-234	6.4E-06	1.2E-12	1.4E-12	2.6E-12
SW	56350	U-235	3.0E-07	5.3E-14	6.5E-14	1.2E-13
SW	56350	U-238	2.3E-06	4.1E-13	5.0E-13	9.1E-13
SW	72200	U-234	3.0E-06	5.4E-13	9.0E-13	1.4E-12
SW	72200	U-235	1.4E-07	2.5E-14	4.1E-14	6.6E-14
SW	72200	U-238	1.1E-06	1.9E-13	3.2E-13	5.1E-13
SSW	805	U-234	5.0E-03	9.0E-10	3.2E-10	1.2E-09
SSW	805	U-235	2.3E-04	4.1E-11	1.5E-11	5.5E-11
SSW	805	U-238	1.8E-03	3.2E-10	1.1E-10	4.3E-10
SSW	2415	U-234	1.5E-03	2.7E-10	1.0E-10	3.7E-10
SSW	2415	U-235	6.9E-05	1.2E-11	4.6E-12	1.7E-11
SSW	2415	U-238	5.3E-04	9.5E-11	3.5E-11	1.3E-10
SSW	4025	U-234	7.3E-04	1.3E-10	5.8E-11	1.9E-10
SSW	4025	U-235	3.3E-05	6.0E-12	2.6E-12	8.7E-12
SSW	4025	U-238	2.6E-04	4.6E-11	2.0E-11	6.6E-11
SSW	5635	U-234	4.5E-04	8.1E-11	4.0E-11	1.2E-10
SSW	5635	U-235	2.1E-05	3.7E-12	1.8E-12	5.5E-12
SSW	5635	U-238	1.6E-04	2.8E-11	1.4E-11	4.2E-11
SSW	7245	U-234	3.1E-04	5.5E-11	3.0E-11	8.5E-11
SSW	7245	U-235	1.4E-05	2.5E-12	1.4E-12	3.9E-12
SSW	7245	U-238	1.1E-04	1.9E-11	1.0E-11	3.0E-11
SSW	12075	U-234	1.4E-04	2.6E-11	1.6E-11	4.2E-11
SSW	12075	U-235	6.5E-06	1.2E-12	7.5E-13	1.9E-12
SSW	12075	U-238	5.0E-05	9.0E-12	5.7E-12	1.5E-11
SSW	24150	U-234	4.6E-05	8.2E-12	6.5E-12	1.5E-11
SSW	24150	U-235	2.1E-06	3.8E-13	3.0E-13	6.8E-13
SSW	24150	U-238	1.6E-05	2.9E-12	2.3E-12	5.2E-12
SSW	40250	U-234	2.0E-05	3.5E-12	3.3E-12	6.8E-12

SSW	40250	U-235	9.0E-07	1.6E-13	1.5E-13	3.1E-13
SSW	40250	U-238	6.9E-06	1.2E-12	1.2E-12	2.4E-12
SSW	56350	U-234	9.6E-06	1.7E-12	1.9E-12	3.6E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m ³)	Dry Deposition Rate (pCi/cm ² /s)	Wet Deposition Rate (pCi/cm ² /s)	Ground Deposition Rate (pCi/cm ² /s)
SSW	56350	U-235	4.4E-07	7.9E-14	8.8E-14	1.7E-13
SSW	56350	U-238	3.4E-06	6.1E-13	6.7E-13	1.3E-12
SSW	72200	U-234	4.7E-06	8.4E-13	1.2E-12	2.0E-12
SSW	72200	U-235	2.1E-07	3.9E-14	5.5E-14	9.4E-14
SSW	72200	U-238	1.6E-06	3.0E-13	4.2E-13	7.2E-13
S	805	U-234	4.1E-03	7.3E-10	2.7E-10	1.0E-09
S	805	U-235	1.9E-04	3.3E-11	1.2E-11	4.6E-11
S	805	U-238	1.4E-03	2.6E-10	9.4E-11	3.5E-10
S	2415	U-234	1.2E-03	2.2E-10	8.6E-11	3.0E-10
S	2415	U-235	5.5E-05	9.9E-12	3.9E-12	1.4E-11
S	2415	U-238	4.2E-04	7.6E-11	3.0E-11	1.1E-10
S	4025	U-234	5.8E-04	1.1E-10	4.9E-11	1.5E-10
S	4025	U-235	2.7E-05	4.8E-12	2.3E-12	7.1E-12
S	4025	U-238	2.0E-04	3.7E-11	1.7E-11	5.4E-11
S	5635	U-234	3.6E-04	6.5E-11	3.4E-11	9.9E-11
S	5635	U-235	1.6E-05	3.0E-12	1.6E-12	4.5E-12
S	5635	U-238	1.3E-04	2.3E-11	1.2E-11	3.5E-11
S	7245	U-234	2.4E-04	4.4E-11	2.5E-11	6.9E-11
S	7245	U-235	1.1E-05	2.0E-12	1.2E-12	3.2E-12
S	7245	U-238	8.5E-05	1.5E-11	8.9E-12	2.4E-11
S	12075	U-234	1.1E-04	2.0E-11	1.4E-11	3.4E-11
S	12075	U-235	5.2E-06	9.3E-13	6.4E-13	1.6E-12
S	12075	U-238	3.9E-05	7.1E-12	4.9E-12	1.2E-11
S	24150	U-234	3.6E-05	6.4E-12	5.7E-12	1.2E-11
S	24150	U-235	1.6E-06	2.9E-13	2.6E-13	5.6E-13
S	24150	U-238	1.2E-05	2.2E-12	2.0E-12	4.2E-12
S	40250	U-234	1.5E-05	2.7E-12	2.9E-12	5.6E-12
S	40250	U-235	6.9E-07	1.2E-13	1.3E-13	2.6E-13
S	40250	U-238	5.3E-06	9.5E-13	1.0E-12	2.0E-12
S	56350	U-234	7.3E-06	1.3E-12	1.7E-12	3.1E-12
S	56350	U-235	3.3E-07	6.0E-14	8.0E-14	1.4E-13
S	56350	U-238	2.6E-06	4.6E-13	6.1E-13	1.1E-12
S	72200	U-234	3.5E-06	6.3E-13	1.1E-12	1.8E-12
S	72200	U-235	1.6E-07	2.9E-14	5.2E-14	8.1E-14
S	72200	U-238	1.2E-06	2.2E-13	4.0E-13	6.2E-13
SSE	805	U-234	3.1E-03	5.6E-10	2.1E-10	7.7E-10
SSE	805	U-235	1.4E-04	2.6E-11	9.4E-12	3.5E-11
SSE	805	U-238	1.1E-03	2.0E-10	7.2E-11	2.7E-10
SSE	2415	U-234	9.2E-04	1.7E-10	6.6E-11	2.3E-10
SSE	2415	U-235	4.2E-05	7.6E-12	3.0E-12	1.1E-11
SSE	2415	U-238	3.2E-04	5.8E-11	2.3E-11	8.1E-11
SSE	4025	U-234	4.5E-04	8.1E-11	3.8E-11	1.2E-10
SSE	4025	U-235	2.0E-05	3.7E-12	1.7E-12	5.4E-12
SSE	4025	U-238	1.6E-04	2.8E-11	1.3E-11	4.1E-11

SSE	5635	U-234	2.8E-04	5.0E-11	2.6E-11	7.6E-11
SSE	5635	U-235	1.3E-05	2.3E-12	1.2E-12	3.5E-12
SSE	5635	U-238	9.7E-05	1.7E-11	9.1E-12	2.6E-11

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
SSE	7245	U-234	1.9E-04	3.4E-11	1.9E-11	5.3E-11
SSE	7245	U-235	8.6E-06	1.5E-12	8.9E-13	2.4E-12
SSE	7245	U-238	6.5E-05	1.2E-11	6.8E-12	1.9E-11
SSE	12075	U-234	8.6E-05	1.6E-11	1.1E-11	2.6E-11
SSE	12075	U-235	4.0E-06	7.1E-13	4.9E-13	1.2E-12
SSE	12075	U-238	3.0E-05	5.5E-12	3.8E-12	9.2E-12
SSE	24150	U-234	2.7E-05	4.9E-12	4.4E-12	9.3E-12
SSE	24150	U-235	1.3E-06	2.3E-13	2.0E-13	4.3E-13
SSE	24150	U-238	9.6E-06	1.7E-12	1.5E-12	3.3E-12
SSE	40250	U-234	1.2E-05	2.1E-12	2.2E-12	4.3E-12
SSE	40250	U-235	5.3E-07	9.6E-14	1.0E-13	2.0E-13
SSE	40250	U-238	4.1E-06	7.3E-13	7.7E-13	1.5E-12
SSE	56350	U-234	5.7E-06	1.0E-12	1.3E-12	2.3E-12
SSE	56350	U-235	2.6E-07	4.7E-14	6.0E-14	1.1E-13
SSE	56350	U-238	2.0E-06	3.6E-13	4.6E-13	8.2E-13
SSE	72200	U-234	2.8E-06	5.0E-13	8.4E-13	1.3E-12
SSE	72200	U-235	1.3E-07	2.3E-14	3.9E-14	6.2E-14
SSE	72200	U-238	9.8E-07	1.8E-13	3.0E-13	4.7E-13
SE	805	U-234	3.3E-03	6.0E-10	2.2E-10	8.2E-10
SE	805	U-235	1.5E-04	2.8E-11	1.0E-11	3.7E-11
SE	805	U-238	1.2E-03	2.1E-10	7.6E-11	2.9E-10
SE	2415	U-234	9.7E-04	1.7E-10	6.9E-11	2.4E-10
SE	2415	U-235	4.4E-05	8.0E-12	3.2E-12	1.1E-11
SE	2415	U-238	3.4E-04	6.1E-11	2.4E-11	8.5E-11
SE	4025	U-234	4.7E-04	8.4E-11	4.0E-11	1.2E-10
SE	4025	U-235	2.1E-05	3.9E-12	1.8E-12	5.7E-12
SE	4025	U-238	1.6E-04	2.9E-11	1.4E-11	4.3E-11
SE	5635	U-234	2.9E-04	5.2E-11	2.7E-11	7.9E-11
SE	5635	U-235	1.3E-05	2.4E-12	1.3E-12	3.6E-12
SE	5635	U-238	1.0E-04	1.8E-11	9.6E-12	2.8E-11
SE	7245	U-234	1.9E-04	3.5E-11	2.1E-11	5.6E-11
SE	7245	U-235	8.9E-06	1.6E-12	9.4E-13	2.5E-12
SE	7245	U-238	6.8E-05	1.2E-11	7.2E-12	1.9E-11
SE	12075	U-234	9.0E-05	1.6E-11	1.1E-11	2.8E-11
SE	12075	U-235	4.1E-06	7.4E-13	5.2E-13	1.3E-12
SE	12075	U-238	3.2E-05	5.7E-12	4.0E-12	9.6E-12
SE	24150	U-234	2.8E-05	5.1E-12	4.6E-12	9.8E-12
SE	24150	U-235	1.3E-06	2.3E-13	2.1E-13	4.5E-13
SE	24150	U-238	1.0E-05	1.8E-12	1.6E-12	3.4E-12
SE	40250	U-234	1.2E-05	2.2E-12	2.4E-12	4.5E-12
SE	40250	U-235	5.5E-07	9.9E-14	1.1E-13	2.1E-13
SE	40250	U-238	4.2E-06	7.6E-13	8.3E-13	1.6E-12
SE	56350	U-234	5.9E-06	1.1E-12	1.4E-12	2.5E-12
SE	56350	U-235	2.7E-07	4.9E-14	6.5E-14	1.1E-13

SE	56350	U-238	2.1E-06	3.7E-13	5.0E-13	8.7E-13
SE	72200	U-234	2.9E-06	5.2E-13	9.2E-13	1.4E-12
SE	72200	U-235	1.3E-07	2.4E-14	4.2E-14	6.6E-14

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
SE	72200	U-238	1.0E-06	1.8E-13	3.2E-13	5.0E-13
ESE	805	U-234	3.4E-03	6.1E-10	2.3E-10	8.4E-10
ESE	805	U-235	1.5E-04	2.8E-11	1.1E-11	3.8E-11
ESE	805	U-238	1.2E-03	2.1E-10	8.1E-11	2.9E-10
ESE	2415	U-234	1.0E-03	1.9E-10	7.3E-11	2.6E-10
ESE	2415	U-235	4.7E-05	8.5E-12	3.3E-12	1.2E-11
ESE	2415	U-238	3.6E-04	6.6E-11	2.6E-11	9.1E-11
ESE	4025	U-234	5.0E-04	9.1E-11	4.2E-11	1.3E-10
ESE	4025	U-235	2.3E-05	4.2E-12	1.9E-12	6.1E-12
ESE	4025	U-238	1.8E-04	3.2E-11	1.5E-11	4.6E-11
ESE	5635	U-234	3.1E-04	5.6E-11	2.9E-11	8.4E-11
ESE	5635	U-235	1.4E-05	2.6E-12	1.3E-12	3.9E-12
ESE	5635	U-238	1.1E-04	2.0E-11	1.0E-11	3.0E-11
ESE	7245	U-234	2.1E-04	3.8E-11	2.1E-11	5.9E-11
ESE	7245	U-235	9.6E-06	1.7E-12	9.8E-13	2.7E-12
ESE	7245	U-238	7.3E-05	1.3E-11	7.5E-12	2.1E-11
ESE	12075	U-234	9.6E-05	1.7E-11	1.2E-11	2.9E-11
ESE	12075	U-235	4.4E-06	7.9E-13	5.3E-13	1.3E-12
ESE	12075	U-238	3.4E-05	6.1E-12	4.1E-12	1.0E-11
ESE	24150	U-234	2.9E-05	5.3E-12	4.6E-12	1.0E-11
ESE	24150	U-235	1.4E-06	2.4E-13	2.1E-13	4.6E-13
ESE	24150	U-238	1.0E-05	1.9E-12	1.6E-12	3.5E-12
ESE	40250	U-234	1.2E-05	2.2E-12	2.3E-12	4.5E-12
ESE	40250	U-235	5.6E-07	1.0E-13	1.1E-13	2.1E-13
ESE	40250	U-238	4.3E-06	7.7E-13	8.2E-13	1.6E-12
ESE	56350	U-234	5.8E-06	1.0E-12	1.4E-12	2.4E-12
ESE	56350	U-235	2.7E-07	4.8E-14	6.2E-14	1.1E-13
ESE	56350	U-238	2.0E-06	3.6E-13	4.8E-13	8.4E-13
ESE	72200	U-234	2.7E-06	4.9E-13	8.7E-13	1.4E-12
ESE	72200	U-235	1.2E-07	2.2E-14	4.0E-14	6.2E-14
ESE	72200	U-238	9.5E-07	1.7E-13	3.0E-13	4.7E-13
E	805	U-234	4.3E-03	7.7E-10	2.9E-10	1.1E-09
E	805	U-235	2.0E-04	3.5E-11	1.3E-11	4.9E-11
E	805	U-238	1.5E-03	2.7E-10	1.0E-10	3.7E-10
E	2415	U-234	1.4E-03	2.5E-10	9.2E-11	3.4E-10
E	2415	U-235	6.2E-05	1.1E-11	4.2E-12	1.5E-11
E	2415	U-238	4.8E-04	8.6E-11	3.2E-11	1.2E-10
E	4025	U-234	6.6E-04	1.2E-10	5.2E-11	1.7E-10
E	4025	U-235	3.0E-05	5.5E-12	2.4E-12	7.8E-12
E	4025	U-238	2.3E-04	4.2E-11	1.8E-11	6.0E-11
E	5635	U-234	4.1E-04	7.3E-11	3.6E-11	1.1E-10
E	5635	U-235	1.9E-05	3.4E-12	1.6E-12	5.0E-12
E	5635	U-238	1.4E-04	2.6E-11	1.2E-11	3.8E-11
E	7245	U-234	2.7E-04	4.9E-11	2.6E-11	7.6E-11

E	7245	U-235	1.3E-05	2.3E-12	1.2E-12	3.5E-12
E	7245	U-238	9.6E-05	1.7E-11	9.3E-12	2.7E-11
E	12075	U-234	1.2E-04	2.2E-11	1.4E-11	3.7E-11

1.0E-05 1.0E-05 1.0E-05
 1.0E-05 1.0E-05 1.0E-05

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
E	12075	U-235	5.7E-06	1.0E-12	6.6E-13	1.7E-12
E	12075	U-238	4.4E-05	7.9E-12	5.0E-12	1.3E-11
E	24150	U-234	3.8E-05	6.8E-12	5.6E-12	1.2E-11
E	24150	U-235	1.7E-06	3.1E-13	2.6E-13	5.7E-13
E	24150	U-238	1.3E-05	2.4E-12	2.0E-12	4.3E-12
E	40250	U-234	1.5E-05	2.8E-12	2.7E-12	5.5E-12
E	40250	U-235	7.1E-07	1.3E-13	1.3E-13	2.5E-13
E	40250	U-238	5.4E-06	9.7E-13	9.6E-13	1.9E-12
E	56350	U-234	7.1E-06	1.3E-12	1.6E-12	2.9E-12
E	56350	U-235	3.3E-07	5.9E-14	7.2E-14	1.3E-13
E	56350	U-238	2.5E-06	4.5E-13	5.5E-13	1.0E-12
E	72200	U-234	3.2E-06	5.8E-13	9.9E-13	1.6E-12
E	72200	U-235	1.5E-07	2.7E-14	4.5E-14	7.2E-14
E	72200	U-238	1.1E-06	2.0E-13	3.5E-13	5.5E-13
ENE	805	U-234	6.2E-03	1.1E-09	4.0E-10	1.5E-09
ENE	805	U-235	2.8E-04	5.1E-11	1.9E-11	6.9E-11
ENE	805	U-238	2.2E-03	3.9E-10	1.4E-10	5.3E-10
ENE	2415	U-234	1.9E-03	3.5E-10	1.3E-10	4.8E-10
ENE	2415	U-235	8.9E-05	1.6E-11	5.9E-12	2.2E-11
ENE	2415	U-238	6.8E-04	1.2E-10	4.5E-11	1.7E-10
ENE	4025	U-234	9.4E-04	1.7E-10	7.3E-11	2.4E-10
ENE	4025	U-235	4.3E-05	7.8E-12	3.3E-12	1.1E-11
ENE	4025	U-238	3.3E-04	6.0E-11	2.5E-11	8.5E-11
ENE	5635	U-234	5.8E-04	1.0E-10	5.0E-11	1.5E-10
ENE	5635	U-235	2.7E-05	4.8E-12	2.3E-12	7.1E-12
ENE	5635	U-238	2.0E-04	3.7E-11	1.7E-11	5.4E-11
ENE	7245	U-234	3.9E-04	7.0E-11	3.7E-11	1.1E-10
ENE	7245	U-235	1.8E-05	3.2E-12	1.7E-12	4.9E-12
ENE	7245	U-238	1.4E-04	2.5E-11	1.3E-11	3.8E-11
ENE	12075	U-234	1.8E-04	3.2E-11	2.0E-11	5.2E-11
ENE	12075	U-235	8.2E-06	1.5E-12	9.1E-13	2.4E-12
ENE	12075	U-238	6.3E-05	1.1E-11	7.0E-12	1.8E-11
ENE	24150	U-234	5.4E-05	9.8E-12	7.7E-12	1.7E-11
ENE	24150	U-235	2.5E-06	4.5E-13	3.5E-13	8.0E-13
ENE	24150	U-238	1.9E-05	3.4E-12	2.7E-12	6.1E-12
ENE	40250	U-234	2.2E-05	4.0E-12	3.8E-12	7.8E-12
ENE	40250	U-235	1.0E-06	1.8E-13	1.7E-13	3.6E-13
ENE	40250	U-238	7.8E-06	1.4E-12	1.3E-12	2.7E-12
ENE	56350	U-234	1.0E-05	1.9E-12	2.2E-12	4.0E-12
ENE	56350	U-235	4.7E-07	8.5E-14	1.0E-13	1.9E-13
ENE	56350	U-238	3.6E-06	6.5E-13	7.6E-13	1.4E-12
ENE	72200	U-234	4.7E-06	8.5E-13	1.4E-12	2.2E-12
ENE	72200	U-235	2.2E-07	3.9E-14	6.2E-14	1.0E-13
ENE	72200	U-238	1.7E-06	3.0E-13	4.8E-13	7.7E-13

NE	805	U-234	7.8E-03	1.4E-09	5.1E-10	1.9E-09
NE	805	U-235	3.6E-04	6.4E-11	2.3E-11	8.7E-11
NE	805	U-238	2.8E-03	5.0E-10	1.8E-10	6.7E-10

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m ³)	Dry Deposition Rate (pCi/cm ² /s)	Wet Deposition Rate (pCi/cm ² /s)	Ground Deposition Rate (pCi/cm ² /s)
NE	2415	U-234	2.4E-03	4.4E-10	1.6E-10	6.0E-10
NE	2415	U-235	1.1E-04	2.0E-11	7.3E-12	2.7E-11
NE	2415	U-238	8.5E-04	1.5E-10	5.6E-11	2.1E-10
NE	4025	U-234	1.2E-03	2.1E-10	9.1E-11	3.0E-10
NE	4025	U-235	5.4E-05	9.7E-12	4.2E-12	1.4E-11
NE	4025	U-238	4.1E-04	7.5E-11	3.2E-11	1.1E-10
NE	5635	U-234	7.3E-04	1.3E-10	6.2E-11	1.9E-10
NE	5635	U-235	3.3E-05	6.0E-12	2.8E-12	8.8E-12
NE	5635	U-238	2.5E-04	4.6E-11	2.2E-11	6.8E-11
NE	7245	U-234	4.9E-04	8.8E-11	4.6E-11	1.3E-10
NE	7245	U-235	2.2E-05	4.0E-12	2.1E-12	6.1E-12
NE	7245	U-238	1.7E-04	3.1E-11	1.6E-11	4.7E-11
NE	12075	U-234	2.2E-04	4.0E-11	2.5E-11	6.5E-11
NE	12075	U-235	1.0E-05	1.8E-12	1.1E-12	3.0E-12
NE	12075	U-238	7.8E-05	1.4E-11	8.7E-12	2.3E-11
NE	24150	U-234	6.8E-05	1.2E-11	9.7E-12	2.2E-11
NE	24150	U-235	3.1E-06	5.6E-13	4.4E-13	1.0E-12
NE	24150	U-238	2.4E-05	4.3E-12	3.4E-12	7.7E-12
NE	40250	U-234	2.8E-05	5.0E-12	4.8E-12	9.8E-12
NE	40250	U-235	1.3E-06	2.3E-13	2.2E-13	4.5E-13
NE	40250	U-238	9.8E-06	1.8E-12	1.7E-12	3.4E-12
NE	56350	U-234	1.3E-05	2.3E-12	2.7E-12	5.1E-12
NE	56350	U-235	6.0E-07	1.1E-13	1.3E-13	2.3E-13
NE	56350	U-238	4.6E-06	8.2E-13	9.6E-13	1.8E-12
NE	72200	U-234	6.0E-06	1.1E-12	1.7E-12	2.8E-12
NE	72200	U-235	2.8E-07	5.0E-14	7.8E-14	1.3E-13
NE	72200	U-238	2.1E-06	3.8E-13	6.0E-13	9.7E-13
NNE	805	U-234	8.4E-03	1.5E-09	5.3E-10	2.0E-09
NNE	805	U-235	3.8E-04	6.9E-11	2.4E-11	9.3E-11
NNE	805	U-238	3.0E-03	5.3E-10	1.9E-10	7.2E-10
NNE	2415	U-234	2.5E-03	4.6E-10	1.7E-10	6.3E-10
NNE	2415	U-235	1.2E-04	2.1E-11	7.7E-12	2.9E-11
NNE	2415	U-238	8.9E-04	1.6E-10	5.9E-11	2.2E-10
NNE	4025	U-234	1.2E-03	2.2E-10	9.5E-11	3.2E-10
NNE	4025	U-235	5.6E-05	1.0E-11	4.4E-12	1.5E-11
NNE	4025	U-238	4.3E-04	7.8E-11	3.3E-11	1.1E-10
NNE	5635	U-234	7.6E-04	1.4E-10	6.5E-11	2.0E-10
NNE	5635	U-235	3.5E-05	6.2E-12	3.0E-12	9.2E-12
NNE	5635	U-238	2.7E-04	4.8E-11	2.3E-11	7.1E-11
NNE	7245	U-234	5.1E-04	9.2E-11	4.8E-11	1.4E-10
NNE	7245	U-235	2.3E-05	4.2E-12	2.2E-12	6.4E-12
NNE	7245	U-238	1.8E-04	3.2E-11	1.7E-11	4.9E-11
NNE	12075	U-234	2.3E-04	4.2E-11	2.6E-11	6.8E-11
NNE	12075	U-235	1.1E-05	1.9E-12	1.2E-12	3.1E-12

NNE	12075	U-238	8.2E-05	1.5E-11	9.2E-12	2.4E-11
NNE	24150	U-234	7.2E-05	1.3E-11	1.0E-11	2.3E-11
NNE	24150	U-235	3.3E-06	5.9E-13	4.6E-13	1.1E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
NNE	24150	U-238	2.5E-05	4.5E-12	3.5E-12	8.1E-12
NNE	40250	U-234	3.0E-05	5.3E-12	4.9E-12	1.0E-11
NNE	40250	U-235	1.4E-06	2.4E-13	2.3E-13	4.7E-13
NNE	40250	U-238	1.0E-05	1.9E-12	1.7E-12	3.6E-12
NNE	56350	U-234	1.4E-05	2.5E-12	2.8E-12	5.2E-12
NNE	56350	U-235	6.3E-07	1.1E-13	1.3E-13	2.4E-13
NNE	56350	U-238	4.8E-06	8.7E-13	9.7E-13	1.8E-12
NNE	72200	U-234	6.3E-06	1.1E-12	1.7E-12	2.8E-12
NNE	72200	U-235	2.9E-07	5.2E-14	7.7E-14	1.3E-13
NNE	72200	U-238	2.2E-06	4.0E-13	5.9E-13	9.9E-13

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Version 2.00

Clean Air Act Assessment Package - 1988

C H I / Q T A B L E S

Non-Radon Population Assessment

Nov 11, 2003 08:28 am

Facility: Portsmouth American Centrifuge

Address:

City: Piketon

State: OH

Zip:

Source Category: Facility and Process Ventilation Sys

Source Type: Stack

Emission Year: 2003

Comments:

Dataset Name: N4BP30M

Dataset Date: Nov 11, 2003 08:27 am

Wind File: C:\CAP88PC2\CAP88PC2\PORTS30.WND

Population File: C:\CAP88PC2\CAP88PC2\PORTS.POP

Nov 11, 2003 08:28 am

CHIQ
Page 1

GROUND-LEVEL CHI/Q VALUES FOR U-234
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)							
Dir	805	2415	4025	5635	7245	12075	24150
N	3.859E-06	1.155E-06	5.598E-07	3.447E-07	2.334E-07	1.078E-07	3.422E-08
NNW	2.244E-06	7.588E-07	3.712E-07	2.285E-07	1.538E-07	7.007E-08	2.097E-08
NW	1.838E-06	6.448E-07	3.157E-07	1.941E-07	1.302E-07	5.885E-08	1.717E-08
WNW	1.711E-06	5.806E-07	2.838E-07	1.745E-07	1.172E-07	5.314E-08	1.568E-08
W	1.424E-06	4.730E-07	2.304E-07	1.415E-07	9.498E-08	4.306E-08	1.271E-08
WSW	1.328E-06	4.300E-07	2.094E-07	1.287E-07	8.661E-08	3.942E-08	1.183E-08
SW	1.673E-06	5.129E-07	2.492E-07	1.534E-07	1.037E-07	4.770E-08	1.483E-08
SSW	2.271E-06	6.825E-07	3.322E-07	2.051E-07	1.394E-07	6.475E-08	2.082E-08
S	1.856E-06	5.481E-07	2.657E-07	1.637E-07	1.110E-07	5.126E-08	1.618E-08
SSE	1.416E-06	4.200E-07	2.036E-07	1.255E-07	8.505E-08	3.935E-08	1.248E-08
SE	1.524E-06	4.402E-07	2.126E-07	1.309E-07	8.869E-08	4.092E-08	1.295E-08
ESE	1.531E-06	4.723E-07	2.293E-07	1.411E-07	9.528E-08	4.367E-08	1.343E-08
E	1.954E-06	6.206E-07	3.014E-07	1.852E-07	1.247E-07	5.685E-08	1.718E-08
ENE	2.801E-06	8.851E-07	4.299E-07	2.642E-07	1.780E-07	8.120E-08	2.467E-08
NE	3.560E-06	1.109E-06	5.379E-07	3.303E-07	2.225E-07	1.015E-07	3.096E-08
NNE	3.817E-06	1.160E-06	5.609E-07	3.444E-07	2.321E-07	1.061E-07	3.261E-08

Distance (meters)			
Dir	40250	56350	72200
N	1.450E-08	7.004E-09	3.385E-09
NNW	8.526E-09	3.849E-09	1.621E-09
NW	6.826E-09	2.994E-09	1.207E-09
WNW	6.249E-09	2.760E-09	1.137E-09
W	5.099E-09	2.269E-09	9.447E-10
WSW	4.802E-09	2.202E-09	9.785E-10
SW	6.184E-09	2.936E-09	1.372E-09
SSW	8.913E-09	4.370E-09	2.131E-09
S	6.833E-09	3.319E-09	1.606E-09
SSE	5.296E-09	2.586E-09	1.269E-09
SE	5.483E-09	2.679E-09	1.323E-09
ESE	5.560E-09	2.633E-09	1.235E-09
E	7.024E-09	3.252E-09	1.478E-09
ENE	1.011E-08	4.694E-09	2.146E-09
NE	1.273E-08	5.933E-09	2.740E-09
NNE	1.344E-08	6.253E-09	2.870E-09

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CHIQ
Page 2

GROUND-LEVEL CHI/Q VALUES FOR U-235
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)							
Dir	805	2415	4025	5635	7245	12075	24150
N	3.843E-06	1.153E-06	5.596E-07	3.446E-07	2.334E-07	1.078E-07	3.423E-08
NNW	2.232E-06	7.580E-07	3.711E-07	2.285E-07	1.538E-07	7.008E-08	2.098E-08
NW	1.827E-06	6.441E-07	3.156E-07	1.940E-07	1.301E-07	5.886E-08	1.717E-08
WNW	1.702E-06	5.800E-07	2.837E-07	1.744E-07	1.172E-07	5.315E-08	1.569E-08
W	1.417E-06	4.725E-07	2.303E-07	1.415E-07	9.497E-08	4.306E-08	1.271E-08
WSW	1.322E-06	4.296E-07	2.093E-07	1.287E-07	8.661E-08	3.943E-08	1.183E-08
SW	1.666E-06	5.124E-07	2.491E-07	1.534E-07	1.037E-07	4.770E-08	1.483E-08
SSW	2.261E-06	6.819E-07	3.320E-07	2.051E-07	1.393E-07	6.475E-08	2.083E-08
S	1.848E-06	5.475E-07	2.656E-07	1.636E-07	1.110E-07	5.126E-08	1.619E-08
SSE	1.410E-06	4.196E-07	2.035E-07	1.254E-07	8.504E-08	3.935E-08	1.249E-08
SE	1.518E-06	4.398E-07	2.125E-07	1.308E-07	8.868E-08	4.092E-08	1.296E-08
ESE	1.525E-06	4.718E-07	2.292E-07	1.411E-07	9.528E-08	4.368E-08	1.343E-08
E	1.945E-06	6.200E-07	3.013E-07	1.852E-07	1.247E-07	5.685E-08	1.719E-08
ENE	2.788E-06	8.842E-07	4.297E-07	2.641E-07	1.779E-07	8.121E-08	2.468E-08
NE	3.543E-06	1.108E-06	5.376E-07	3.302E-07	2.225E-07	1.015E-07	3.096E-08
NNE	3.800E-06	1.159E-06	5.607E-07	3.443E-07	2.321E-07	1.061E-07	3.262E-08

Distance (meters)			
Dir	40250	56350	72200
N	1.450E-08	7.005E-09	3.386E-09
NNW	8.529E-09	3.850E-09	1.622E-09
NW	6.829E-09	2.996E-09	1.208E-09
WNW	6.252E-09	2.761E-09	1.138E-09
W	5.101E-09	2.270E-09	9.451E-10
WSW	4.803E-09	2.203E-09	9.789E-10
SW	6.186E-09	2.937E-09	1.373E-09
SSW	8.916E-09	4.371E-09	2.132E-09
S	6.835E-09	3.320E-09	1.606E-09
SSE	5.297E-09	2.587E-09	1.269E-09
SE	5.484E-09	2.680E-09	1.324E-09
ESE	5.562E-09	2.634E-09	1.235E-09
E	7.026E-09	3.253E-09	1.479E-09
ENE	1.012E-08	4.696E-09	2.147E-09
NE	1.273E-08	5.935E-09	2.741E-09
NNE	1.344E-08	6.255E-09	2.871E-09

GROUND-LEVEL CHI/Q VALUES FOR U-238
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)							
Dir	805	2415	4025	5635	7245	12075	24150
N	3.878E-06	1.156E-06	5.600E-07	3.448E-07	2.334E-07	1.078E-07	3.421E-08
NNW	2.258E-06	7.597E-07	3.714E-07	2.286E-07	1.538E-07	7.005E-08	2.096E-08
NW	1.850E-06	6.456E-07	3.159E-07	1.941E-07	1.302E-07	5.884E-08	1.716E-08
WNW	1.722E-06	5.813E-07	2.840E-07	1.745E-07	1.172E-07	5.313E-08	1.568E-08
W	1.433E-06	4.735E-07	2.305E-07	1.415E-07	9.498E-08	4.305E-08	1.271E-08
WSW	1.336E-06	4.305E-07	2.095E-07	1.287E-07	8.661E-08	3.942E-08	1.183E-08
SW	1.682E-06	5.135E-07	2.493E-07	1.535E-07	1.037E-07	4.769E-08	1.483E-08
SSW	2.282E-06	6.832E-07	3.323E-07	2.052E-07	1.394E-07	6.475E-08	2.082E-08
S	1.864E-06	5.486E-07	2.658E-07	1.637E-07	1.110E-07	5.125E-08	1.618E-08
SSE	1.423E-06	4.205E-07	2.037E-07	1.255E-07	8.506E-08	3.934E-08	1.248E-08
SE	1.531E-06	4.406E-07	2.127E-07	1.309E-07	8.870E-08	4.092E-08	1.295E-08
ESE	1.539E-06	4.728E-07	2.294E-07	1.411E-07	9.529E-08	4.367E-08	1.343E-08
E	1.965E-06	6.213E-07	3.016E-07	1.853E-07	1.247E-07	5.684E-08	1.718E-08
ENE	2.817E-06	8.861E-07	4.301E-07	2.642E-07	1.780E-07	8.119E-08	2.467E-08
NE	3.579E-06	1.110E-06	5.381E-07	3.304E-07	2.225E-07	1.015E-07	3.095E-08
NNE	3.836E-06	1.161E-06	5.612E-07	3.444E-07	2.322E-07	1.061E-07	3.260E-08

Distance (meters)			
Dir	40250	56350	72200
N	1.449E-08	7.002E-09	3.384E-09
NNW	8.523E-09	3.847E-09	1.620E-09
NW	6.823E-09	2.993E-09	1.207E-09
WNW	6.246E-09	2.759E-09	1.137E-09
W	5.097E-09	2.268E-09	9.441E-10
WSW	4.800E-09	2.201E-09	9.781E-10
SW	6.182E-09	2.935E-09	1.372E-09
SSW	8.911E-09	4.369E-09	2.131E-09
S	6.831E-09	3.318E-09	1.605E-09
SSE	5.294E-09	2.585E-09	1.268E-09
SE	5.481E-09	2.679E-09	1.323E-09
ESE	5.558E-09	2.632E-09	1.234E-09
E	7.021E-09	3.250E-09	1.478E-09
ENE	1.011E-08	4.692E-09	2.145E-09
NE	1.272E-08	5.931E-09	2.739E-09
NNE	1.343E-08	6.251E-09	2.869E-09

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

W E A T H E R D A T A

Non-Radon Population Assessment

Nov 11, 2003 08:38 am

Facility: USEC American Centrifuge

Address:

City: Piketon

State: OH

Zip:

Source Category: Facility and Process Ventilation Sys

Source Type: Stack

Emission Year: 2003

Comments:

Dataset Name: N2PBP30M

Dataset Date: Nov 11, 2003 08:38 am

Wind File: C:\CAP88PC2\CAP88PC2\PORTS30.WND

Population File: C:\CAP88PC2\CAP88PC2\PORTS.POP

Nov 11, 2003 08:38 am

WEATHER
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HARMONIC AVERAGE WIND SPEEDS (WIND TOWARDS)

Pasquill Stability Class								Wind Freq
Dir	A	B	C	D	E	F	G	
N	1.210	1.408	2.498	1.880	1.489	0.923	0.000	0.107
NNW	1.132	1.283	2.413	1.795	1.170	0.835	0.000	0.055
NW	1.091	1.242	2.422	1.841	1.068	0.811	0.000	0.044
WNW	1.163	1.495	2.697	1.843	1.021	0.855	0.000	0.042
W	1.274	1.410	2.625	1.893	1.008	0.824	0.000	0.036
WSW	1.405	1.756	3.046	2.124	1.185	0.859	0.000	0.040
SW	1.453	1.668	2.996	2.127	1.316	0.919	0.000	0.052
SSW	1.334	1.421	2.897	1.958	1.615	0.979	0.000	0.068
S	1.351	1.561	3.230	2.519	1.381	0.956	0.000	0.065
SSE	1.327	1.477	3.353	2.366	1.579	0.930	0.000	0.047
SE	1.290	1.736	3.476	2.342	1.481	0.933	0.000	0.052
ESE	1.141	1.571	3.357	2.259	1.392	0.886	0.000	0.049
E	1.076	1.600	3.586	2.301	1.248	0.845	0.000	0.059
ENE	1.177	1.493	3.370	2.291	1.249	0.855	0.000	0.082
NE	1.146	1.531	3.312	2.102	1.288	0.854	0.000	0.102
NNE	1.145	1.498	2.897	1.697	1.246	0.876	0.000	0.099

ARITHMETIC AVERAGE WIND SPEEDS (WIND TOWARDS)

Pasquill Stability Class							
Dir	A	B	C	D	E	F	G
N	1.752	2.144	3.161	2.832	2.293	1.228	0.000
NNW	1.613	1.901	2.925	2.982	1.759	0.980	0.000
NW	1.535	1.878	3.021	3.314	1.561	0.900	0.000
WNW	1.637	2.183	3.021	3.260	1.449	1.023	0.000
W	1.785	2.179	3.240	3.636	1.404	0.938	0.000
WSW	1.931	2.697	3.608	3.856	1.716	1.032	0.000
SW	1.978	2.487	3.553	3.556	1.879	1.186	0.000
SSW	1.874	2.187	3.253	3.019	2.394	1.338	0.000
S	1.875	2.465	3.631	3.703	2.075	1.308	0.000
SSE	1.863	2.305	3.891	3.398	2.284	1.244	0.000
SE	1.812	2.532	4.150	3.506	2.349	1.264	0.000
ESE	1.634	2.498	4.048	3.688	2.253	1.127	0.000
E	1.506	2.462	4.411	3.924	2.095	1.003	0.000
ENE	1.672	2.316	4.305	4.056	2.092	1.045	0.000
NE	1.634	2.389	4.404	3.716	2.196	1.040	0.000

FREQUENCIES OF STABILITY CLASSES (WIND TOWARDS)

Pasquill Stability Class							
Dir	A	B	C	D	E	F	G
N	0.0452	0.0537	0.0640	0.3403	0.2540	0.2429	0.0000
NNW	0.0607	0.0461	0.0506	0.3023	0.1895	0.3509	0.0000
NW	0.0627	0.0536	0.0382	0.2881	0.1706	0.3869	0.0000
WNW	0.0564	0.0533	0.0441	0.3030	0.1766	0.3666	0.0000
W	0.0707	0.0662	0.0554	0.3208	0.1578	0.3292	0.0000
WSW	0.0850	0.0835	0.0744	0.3515	0.1288	0.2769	0.0000
SW	0.0777	0.0731	0.0852	0.3675	0.1527	0.2437	0.0000
SSW	0.0605	0.0586	0.0605	0.3575	0.2187	0.2441	0.0000
S	0.0696	0.0698	0.0849	0.4515	0.1182	0.2060	0.0000
SSE	0.0803	0.0779	0.0577	0.4131	0.1620	0.2090	0.0000
SE	0.0793	0.0613	0.0772	0.4470	0.1432	0.1920	0.0000
ESE	0.0878	0.0746	0.0727	0.3996	0.1286	0.2367	0.0000
E	0.0765	0.0693	0.0815	0.3672	0.1504	0.2551	0.0000
ENE	0.0646	0.0604	0.0771	0.3706	0.1703	0.2571	0.0000
NE	0.0580	0.0568	0.0885	0.3566	0.1869	0.2531	0.0000
NNE	0.0621	0.0599	0.0749	0.3169	0.2221	0.2640	0.0000
TOTAL	0.0661	0.0622	0.0701	0.3592	0.1793	0.2630	0.0000

ADDITIONAL WEATHER INFORMATION

Average Air Temperature: 10.3 degrees C
283.49 K
Precipitation: 101.6 cm/y
Lid Height: 1000 meters
Surface Roughness Length: 0.010 meters
Height Of Wind Measurements: 10.0 meters
Average Wind Speed: 2.413 m/s

Vertical Temperature Gradients:

STABILITY E 0.073 k/m
STABILITY F 0.109 k/m
STABILITY G 0.146 k/m

NNE 1.644 2.408 3.706 2.663 1.957 1.092 0.000

C A P 8.8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

S Y N O P S I S R E P O R T

Non-Radon Individual Assessment
Nov 11, 2003 10:04 am

Facility: Portsmouth American Centrifuge
Address:
City: Piketon
State: OH Zip:

Source Category: Facility and Process Ventilation System
Source Type: Stack
Emission Year: 2003

Comments:

Effective Dose Equivalent
(mrem/year)

1.47E+00

At This Location: 555 Meters North
Dataset Name: N4PBIOFF
Dataset Date: Nov 11, 2003 10:04 am
Wind File: C:\CAP88PC2\CAP88PC2\PORTS30.WND

INFORMATION CONTAINED WITHIN
DOES NOT CONTAIN
EXPORT CONTROLLED INFORMATION

Richard L. Coriell
03-28-05

Nov 11, 2003 10:04 am

SYNOPSIS
Page 1

MAXIMALLY EXPOSED INDIVIDUAL

Location Of The Individual: 555 Meters North
Lifetime Fatal Cancer Risk: 8.14E-06

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Dose Equivalent (mrem/y)
GONADS	7.10E-02
BREAST	8.02E-02
R MAR	1.48E+00
LUNGS	1.97E-01
THYROID	6.93E-02
ENDOST	2.21E+01
RMNDR	1.91E+00
EFFEC	1.47E+00

Nov 11, 2003 10:04 am

SYNOPSIS

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RADIONUCLIDE EMISSIONS DURING THE YEAR 2003

Nuclide	Class	Size	Source	Source	Source	Source	Source	TOTAL
			#1	#2	#3	#4	#5	
			Ci/y	Ci/y	Ci/y	Ci/y	Ci/y	Ci/y
U-234	D	1.00	7.8E-04	6.0E-02	1.1E-03	1.4E-03	6.3E-03	6.9E-02
U-235	D	1.00	3.4E-05	2.7E-03	5.1E-05	4.8E-05	2.9E-04	3.2E-03
U-238	D	1.00	7.5E-04	2.1E-02	3.9E-04	1.4E-04	2.2E-03	2.4E-02

SITE INFORMATION

Temperature: 10 degrees C
Precipitation: 102 cm/y
Mixing Height: 1000 m

Nov 11, 2003 10:04 am

SYNOPSIS
Page 3

SOURCE INFORMATION

Source Number:	1	2	3	4	5		
Stack Height (m):	12.	23.	12.	12.	9.		
Diameter (m):	0.	0.	0.	0.	0.		
Plume Rise							
Pasquill Cat:	A	B	C	D	E	F	G
Zero:	0.	0.	0.	0.	0.	0.	0.

AGRICULTURAL DATA

	Vegetable	Milk	Meat
Fraction Home Produced:	0.700	0.399	0.442
Fraction From Assessment Area:	0.300	0.601	0.558
Fraction Imported:	0.000	0.000	0.000

Food Arrays were not generated for this run.
Default Values used.

DISTANCES (M) USED FOR MAXIMUM INDIVIDUAL ASSESSMENT

555	950	1050	1062	1118	1230	1308	1342	1344	1526
1875	2012	2404	3350	4137	4892	10000	40000	60000	80000

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

D O S E A N D R I S K E Q U I V A L E N T S U M M A R I E S

Non-Radon Individual Assessment

Nov 11, 2003 10:04 am

Facility: Portsmouth American Centrifuge

Address:

City: Piketon

State: OH Zip:

Source Category: Facility and Process Ventilation System

Source Type: Stack

Emission Year: 2003

Comments:

Dataset Name: N4PBIOFF

Dataset Date: Nov 11, 2003 10:04 am

Wind File: C:\CAP88PC2\CAP88PC2\PORTS30.WND

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)
GONADS	7.10E-02
BREAST	8.02E-02
R MAR	1.48E+00
LUNGS	1.97E-01
THYROID	6.93E-02
ENDOST	2.21E+01
RMNDR	1.91E+00
EFFEC	1.47E+00

PATHWAY EFFECTIVE DOSE EQUIVALENT SUMMARY

Pathway	Selected Individual (mrem/y)
INGESTION	1.11E+00
INHALATION	3.36E-01
AIR IMMERSION	3.87E-07
GROUND SURFACE	1.62E-02
INTERNAL	1.45E+00
EXTERNAL	1.62E-02
TOTAL	1.47E+00

Nov 11, 2003 10:04 am

SUMMARY
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NUCLIDE EFFECTIVE DOSE EQUIVALENT SUMMARY

Nuclide	Selected Individual (mrem/y)
U-234	1.07E+00
U-235	6.07E-02
U-238	3.38E-01
TOTAL	1.47E+00

CANCER RISK SUMMARY

Cancer	Selected Individual Total Lifetime Fatal Cancer Risk
LEUKEMIA	1.58E-06
BONE	1.17E-06
THYROID	1.67E-08
BREAST	1.85E-07
LUNG	5.30E-07
STOMACH	1.05E-07
BOWEL	1.08E-07
LIVER	1.05E-07
PANCREAS	7.12E-08
URINARY	4.18E-06
OTHER	8.71E-08
TOTAL	8.14E-06

PATHWAY RISK SUMMARY

Pathway	Selected Individual Total Lifetime Fatal Cancer Risk
INGESTION	5.74E-06
INHALATION	2.02E-06
AIR IMMERSION	9.00E-12
GROUND SURFACE	3.75E-07
INTERNAL	7.77E-06
EXTERNAL	3.75E-07
TOTAL	8.14E-06

Nov 11, 2003 10:04 am

SUMMARY
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NUCLIDE RISK SUMMARY

Nuclide	Selected Individual Total Lifetime Fatal Cancer Risk
U-234	5.62E-06
U-235	5.82E-07
U-238	1.94E-06
TOTAL	8.14E-06

INDIVIDUAL EFFECTIVE DOSE EQUIVALENT RATE (mrem/y)
(All Radionuclides and Pathways)

Distance (m)							
Direction	555	950	1050	1062	1118	1230	1308
N	1.5E+00	9.9E-01	9.1E-01	9.0E-01	8.6E-01	7.9E-01	7.5E-01
NNW	8.7E-01	6.4E-01	6.0E-01	5.9E-01	5.7E-01	5.3E-01	5.0E-01
NW	7.2E-01	5.5E-01	5.1E-01	5.1E-01	4.9E-01	4.6E-01	4.4E-01
WNW	6.8E-01	5.1E-01	4.8E-01	4.7E-01	4.6E-01	4.3E-01	4.1E-01
W	5.9E-01	4.4E-01	4.1E-01	4.1E-01	4.0E-01	3.7E-01	3.5E-01
WSW	5.7E-01	4.2E-01	3.9E-01	3.9E-01	3.7E-01	3.5E-01	3.3E-01
SW	7.0E-01	4.9E-01	4.6E-01	4.5E-01	4.4E-01	4.0E-01	3.9E-01
SSW	9.1E-01	6.3E-01	5.8E-01	5.7E-01	5.5E-01	5.1E-01	4.8E-01
S	7.8E-01	5.3E-01	4.9E-01	4.9E-01	4.7E-01	4.3E-01	4.1E-01
SSE	6.2E-01	4.3E-01	4.0E-01	4.0E-01	3.8E-01	3.5E-01	3.4E-01
SE	6.6E-01	4.5E-01	4.2E-01	4.1E-01	4.0E-01	3.7E-01	3.5E-01
ESE	6.6E-01	4.6E-01	4.3E-01	4.3E-01	4.1E-01	3.8E-01	3.6E-01
E	8.0E-01	5.6E-01	5.3E-01	5.2E-01	5.0E-01	4.6E-01	4.4E-01
ENE	1.1E+00	7.6E-01	7.1E-01	7.0E-01	6.7E-01	6.2E-01	5.9E-01
NE	1.4E+00	9.4E-01	8.7E-01	8.6E-01	8.2E-01	7.5E-01	7.1E-01
NNE	1.5E+00	9.9E-01	9.1E-01	9.0E-01	8.6E-01	7.9E-01	7.5E-01

Distance (m)							
Direction	1342	1344	1526	1875	2012	2404	3350
N	7.3E-01	7.3E-01	6.5E-01	5.3E-01	4.9E-01	4.1E-01	3.0E-01
NNW	4.9E-01	4.9E-01	4.4E-01	3.7E-01	3.5E-01	3.0E-01	2.3E-01
NW	4.3E-01	4.3E-01	3.9E-01	3.3E-01	3.1E-01	2.7E-01	2.1E-01
WNW	4.0E-01	4.0E-01	3.6E-01	3.1E-01	2.9E-01	2.5E-01	2.0E-01
W	3.5E-01	3.5E-01	3.2E-01	2.7E-01	2.6E-01	2.2E-01	1.8E-01
WSW	3.3E-01	3.3E-01	3.0E-01	2.6E-01	2.4E-01	2.1E-01	1.7E-01
SW	3.8E-01	3.8E-01	3.4E-01	2.9E-01	2.7E-01	2.4E-01	1.9E-01
SSW	4.7E-01	4.7E-01	4.2E-01	3.5E-01	3.3E-01	2.8E-01	2.2E-01
S	4.0E-01	4.0E-01	3.6E-01	3.0E-01	2.9E-01	2.5E-01	1.9E-01
SSE	3.3E-01	3.3E-01	3.0E-01	2.6E-01	2.4E-01	2.1E-01	1.7E-01
SE	3.4E-01	3.4E-01	3.1E-01	2.6E-01	2.5E-01	2.2E-01	1.7E-01
ESE	3.6E-01	3.6E-01	3.2E-01	2.7E-01	2.6E-01	2.3E-01	1.8E-01
E	4.3E-01	4.3E-01	3.9E-01	3.3E-01	3.1E-01	2.7E-01	2.1E-01
ENE	5.7E-01	5.7E-01	5.1E-01	4.2E-01	4.0E-01	3.4E-01	2.5E-01
NE	7.0E-01	7.0E-01	6.2E-01	5.1E-01	4.7E-01	4.0E-01	2.9E-01
NNE	7.3E-01	7.3E-01	6.5E-01	5.3E-01	4.9E-01	4.1E-01	3.0E-01

INDIVIDUAL EFFECTIVE DOSE EQUIVALENT RATE (mrem/y)
(All Radionuclides and Pathways)

	Distance (m)					
Direction	4137	4892	10000	40000	60000	80000
N	2.5E-01	2.2E-01	1.4E-01	1.0E-01	9.9E-02	9.8E-02
NNW	1.9E-01	1.7E-01	1.2E-01	9.9E-02	9.8E-02	9.7E-02
NW	1.8E-01	1.6E-01	1.2E-01	9.9E-02	9.7E-02	9.7E-02
WNW	1.7E-01	1.6E-01	1.2E-01	9.9E-02	9.7E-02	9.7E-02
W	1.6E-01	1.5E-01	1.1E-01	9.8E-02	9.7E-02	9.7E-02
WSW	1.5E-01	1.4E-01	1.1E-01	9.8E-02	9.7E-02	9.7E-02
SW	1.6E-01	1.5E-01	1.2E-01	9.9E-02	9.7E-02	9.7E-02
SSW	1.9E-01	1.7E-01	1.2E-01	1.0E-01	9.8E-02	9.7E-02
S	1.7E-01	1.5E-01	1.2E-01	9.9E-02	9.8E-02	9.7E-02
SSE	1.5E-01	1.4E-01	1.1E-01	9.9E-02	9.7E-02	9.7E-02
SE	1.6E-01	1.4E-01	1.1E-01	9.9E-02	9.7E-02	9.7E-02
ESE	1.6E-01	1.5E-01	1.1E-01	9.9E-02	9.7E-02	9.7E-02
E	1.8E-01	1.6E-01	1.2E-01	9.9E-02	9.8E-02	9.7E-02
ENE	2.1E-01	1.9E-01	1.3E-01	1.0E-01	9.8E-02	9.7E-02
NE	2.4E-01	2.1E-01	1.4E-01	1.0E-01	9.8E-02	9.8E-02
NNE	2.5E-01	2.2E-01	1.4E-01	1.0E-01	9.8E-02	9.8E-02

INDIVIDUAL LIFETIME RISK (deaths)
(All Radionuclides and Pathways)

Distance (m)							
Direction	555	950	1050	1062	1118	1230	1308
N	8.1E-06	5.5E-06	5.1E-06	5.0E-06	4.8E-06	4.4E-06	4.1E-06
NNW	4.8E-06	3.5E-06	3.3E-06	3.3E-06	3.1E-06	2.9E-06	2.8E-06
NW	4.0E-06	3.0E-06	2.8E-06	2.8E-06	2.7E-06	2.5E-06	2.4E-06
WNW	3.8E-06	2.8E-06	2.6E-06	2.6E-06	2.5E-06	2.3E-06	2.2E-06
W	3.3E-06	2.4E-06	2.3E-06	2.2E-06	2.2E-06	2.0E-06	1.9E-06
WSW	3.1E-06	2.3E-06	2.1E-06	2.1E-06	2.0E-06	1.9E-06	1.8E-06
SW	3.9E-06	2.7E-06	2.5E-06	2.5E-06	2.4E-06	2.2E-06	2.1E-06
SSW	5.0E-06	3.5E-06	3.2E-06	3.2E-06	3.0E-06	2.8E-06	2.6E-06
S	4.3E-06	2.9E-06	2.7E-06	2.7E-06	2.6E-06	2.4E-06	2.2E-06
SSE	3.4E-06	2.3E-06	2.2E-06	2.2E-06	2.1E-06	1.9E-06	1.8E-06
SE	3.6E-06	2.5E-06	2.3E-06	2.3E-06	2.2E-06	2.0E-06	1.9E-06
ESE	3.6E-06	2.5E-06	2.4E-06	2.3E-06	2.2E-06	2.1E-06	2.0E-06
E	4.4E-06	3.1E-06	2.9E-06	2.9E-06	2.8E-06	2.5E-06	2.4E-06
ENE	6.0E-06	4.2E-06	3.9E-06	3.9E-06	3.7E-06	3.4E-06	3.2E-06
NE	7.5E-06	5.2E-06	4.8E-06	4.7E-06	4.5E-06	4.2E-06	3.9E-06
NNE	8.1E-06	5.5E-06	5.1E-06	5.0E-06	4.8E-06	4.4E-06	4.1E-06

Distance (m)							
Direction	1342	1344	1526	1875	2012	2404	3350
N	4.0E-06	4.0E-06	3.6E-06	2.9E-06	2.7E-06	2.2E-06	1.6E-06
NNW	2.7E-06	2.7E-06	2.4E-06	2.0E-06	1.9E-06	1.6E-06	1.2E-06
NW	2.4E-06	2.4E-06	2.1E-06	1.8E-06	1.7E-06	1.5E-06	1.1E-06
WNW	2.2E-06	2.2E-06	2.0E-06	1.7E-06	1.6E-06	1.4E-06	1.1E-06
W	1.9E-06	1.9E-06	1.7E-06	1.5E-06	1.4E-06	1.2E-06	9.5E-07
WSW	1.8E-06	1.8E-06	1.6E-06	1.4E-06	1.3E-06	1.1E-06	9.2E-07
SW	2.1E-06	2.1E-06	1.9E-06	1.6E-06	1.5E-06	1.3E-06	1.0E-06
SSW	2.6E-06	2.6E-06	2.3E-06	1.9E-06	1.8E-06	1.5E-06	1.2E-06
S	2.2E-06	2.2E-06	2.0E-06	1.7E-06	1.6E-06	1.3E-06	1.0E-06
SSE	1.8E-06	1.8E-06	1.6E-06	1.4E-06	1.3E-06	1.1E-06	9.1E-07
SE	1.9E-06	1.9E-06	1.7E-06	1.4E-06	1.4E-06	1.2E-06	9.3E-07
ESE	1.9E-06	1.9E-06	1.8E-06	1.5E-06	1.4E-06	1.2E-06	9.6E-07
E	2.4E-06	2.4E-06	2.1E-06	1.8E-06	1.7E-06	1.4E-06	1.1E-06
ENE	3.2E-06	3.2E-06	2.8E-06	2.3E-06	2.2E-06	1.8E-06	1.4E-06
NE	3.9E-06	3.8E-06	3.4E-06	2.8E-06	2.6E-06	2.2E-06	1.6E-06
NNE	4.0E-06	4.0E-06	3.6E-06	2.9E-06	2.7E-06	2.3E-06	1.6E-06

INDIVIDUAL LIFETIME RISK (deaths)
(All Radionuclides and Pathways)

Distance (m)						
Direction	4137	4892	10000	40000	60000	80000
N	1.3E-06	1.2E-06	7.3E-07	5.3E-07	5.1E-07	5.0E-07
NNW	1.0E-06	9.3E-07	6.5E-07	5.1E-07	5.0E-07	5.0E-07
NW	9.6E-07	8.7E-07	6.2E-07	5.1E-07	5.0E-07	5.0E-07
WNW	9.1E-07	8.3E-07	6.1E-07	5.1E-07	5.0E-07	5.0E-07
W	8.4E-07	7.7E-07	5.9E-07	5.1E-07	5.0E-07	5.0E-07
WSW	8.1E-07	7.5E-07	5.8E-07	5.1E-07	5.0E-07	5.0E-07
SW	8.7E-07	8.0E-07	6.0E-07	5.1E-07	5.0E-07	5.0E-07
SSW	1.0E-06	9.0E-07	6.4E-07	5.2E-07	5.0E-07	5.0E-07
S	9.0E-07	8.2E-07	6.1E-07	5.1E-07	5.0E-07	5.0E-07
SSE	8.1E-07	7.5E-07	5.9E-07	5.1E-07	5.0E-07	5.0E-07
SE	8.2E-07	7.6E-07	5.9E-07	5.1E-07	5.0E-07	5.0E-07
ESE	8.5E-07	7.8E-07	6.0E-07	5.1E-07	5.0E-07	5.0E-07
E	9.5E-07	8.6E-07	6.2E-07	5.1E-07	5.0E-07	5.0E-07
ENE	1.1E-06	1.0E-06	6.8E-07	5.2E-07	5.1E-07	5.0E-07
NE	1.3E-06	1.1E-06	7.2E-07	5.2E-07	5.1E-07	5.0E-07
NNE	1.3E-06	1.2E-06	7.3E-07	5.2E-07	5.1E-07	5.0E-07

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Version 2.00

Clean Air Act Assessment Package - 1988

D O S E A N D R I S K C O N V E R S I O N F A C T O R S

Non-Radon Individual Assessment

Nov 11, 2003 10:04 am

Facility: Portsmouth American Centrifuge

Address:

City: Piketon

State: OH

Zip:

Source Category: Facility and Process Ventilation System

Source Type: Stack

Emission Year: 2003

Comments:

Dataset Name: N4PBIOFF

Dataset Date: Nov 11, 2003 10:04 am

Wind File: C:\CAP88PC2\CAP88PC2\PORTS30.WND

DOSE AND RISK FACTOR UNITS

The units for each type of dose rate conversion factor are shown below, by pathway:

Pathway	Units
Ingestion	millirem/picoCurie
Inhalation	millirem/picoCurie
Immersion	millirem-cubic cm/microCurie-year
Surface	millirem-square cm/microCurie-year

Risks for internal exposures (inhalation and ingestion) are the lifetime risk of premature death in a birth cohort of 100,000 people for a 1 picoCurie/year intake rate, where the average lifetime is 70.7565 years.

This is simplified to lifetime risk per 100,000 picoCuries.

The units for each type of risk conversion factor are shown below, by pathway:

Pathway	Units
Ingestion	lifetime risk/100,000 picoCuries
Inhalation	lifetime risk/100,000 picoCuries
Immersion	lifetime risk-cubic cm/100,000 picoCurie-years
Surface	lifetime risk-square cm/100,000 picoCurie-years

 * NUCLIDE U-234 *

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
GONADS	3.851E-05	9.856E-05	8.140E+05	7.067E+02
BREAST	3.851E-05	9.856E-05	2.046E+06	3.585E+03
R MAR	1.031E-03	2.637E-03	2.760E+05	9.139E+01
LUNGS	3.851E-05	1.200E-03	4.107E+05	1.735E+02
THYROID	3.851E-05	9.856E-05	6.068E+05	2.305E+02
ENDOST	1.625E-02	4.161E-02	7.104E+05	2.949E+02
RMNDR	1.396E-03	3.473E-03	3.777E+05	1.251E+02
EFFEC	1.051E-03	2.793E-03	7.456E+05	7.996E+02

GENETIC EFFECT DOSE RATE CONVERSION FACTORS

TESTES	1.058E-03	2.708E-03	2.442E+07	2.120E+04
OVARIES	1.058E-03	2.708E-03	9.102E+06	3.408E+03
AVERAGE	1.058E-03	2.708E-03	1.676E+07	1.230E+04

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
LEUKEMIA	1.006E-04	2.576E-04	8.742E-02	2.895E-05
BONE	8.532E-05	2.184E-04	1.257E-02	5.219E-06
THYROID	6.663E-07	1.706E-06	2.760E-02	1.048E-05
BREAST	5.605E-06	1.435E-05	8.014E-01	1.404E-03
LUNG	7.126E-06	3.280E-04	2.036E-01	8.603E-05
STOMACH	5.173E-06	1.193E-05	1.096E-01	3.621E-05
BOWEL	7.559E-06	6.746E-06	5.172E-02	1.577E-05
LIVER	5.015E-06	1.284E-05	1.212E-01	3.269E-05
PANCREAS	3.500E-06	8.958E-06	6.471E-02	2.715E-05
URINARY	3.044E-04	7.793E-04	4.689E-02	1.258E-05
OTHER	4.280E-06	1.096E-05	7.915E-02	3.321E-05

GENETIC EFFECT RISK CONVERSION FACTORS

AVERAGE	3.657E-11	9.355E-11	4.358E+00	3.198E-03
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 * NUCLIDE U-235 *

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
GONADS	3.811E-05	9.589E-05	8.732E+08	1.939E+05
BREAST	3.779E-05	9.661E-05	9.546E+08	2.198E+05
R MAR	1.013E-03	2.592E-03	6.068E+08	1.336E+05
LUNGS	3.767E-05	1.115E-03	6.327E+08	1.391E+05
THYROID	3.754E-05	9.613E-05	8.510E+08	1.876E+05
ENDOST	1.572E-02	4.025E-02	9.361E+08	2.068E+05
RMNDR	1.299E-03	3.221E-03	6.231E+08	1.372E+05
EFFEC	1.004E-03	2.659E-03	7.508E+08	1.672E+05

GENETIC EFFECT DOSE RATE CONVERSION FACTORS

TESTES	1.021E-03	2.608E-03	2.620E+10	5.816E+06
OVARIES	1.041E-03	2.615E-03	1.510E+10	3.330E+06
AVERAGE	1.031E-03	2.612E-03	2.065E+10	4.573E+06

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
LEUKEMIA	1.074E-04	2.749E-04	1.920E+02	4.231E-02
BONE	8.775E-05	2.246E-04	1.656E+01	3.661E-03
THYROID	6.655E-07	1.704E-06	3.869E+01	8.533E-03
BREAST	5.647E-06	1.439E-05	3.730E+02	8.609E-02
LUNG	7.138E-06	3.052E-04	3.129E+02	6.897E-02
STOMACH	5.160E-06	1.173E-05	1.852E+02	4.090E-02
BOWEL	9.027E-06	6.945E-06	9.162E+01	2.018E-02
LIVER	4.107E-06	1.049E-05	2.022E+02	4.462E-02
PANCREAS	3.535E-06	9.009E-06	1.185E+02	2.625E-02
URINARY	2.829E-04	7.241E-04	7.427E+01	1.639E-02
OTHER	4.323E-06	1.102E-05	1.450E+02	3.210E-02

GENETIC EFFECT RISK CONVERSION FACTORS

AVERAGE	4.125E-11	9.858E-11	5.369E+03	1.189E+00
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 * NUCLIDE U-238 *

DOSE RATE CONVERSION FACTORS

Organ	Ingestion	Inhalation	Air Immersion	Ground Surface
GONADS	3.464E-05	8.866E-05	5.365E+05	5.550E+02
BREAST	3.467E-05	8.881E-05	1.550E+06	2.967E+03
R MAR	1.087E-03	2.784E-03	1.413E+05	5.550E+01
LUNGS	3.464E-05	1.061E-03	2.505E+05	1.214E+02
THYROID	3.461E-05	8.861E-05	3.774E+05	1.572E+02
ENDOST	1.408E-02	3.605E-02	4.514E+05	2.094E+02
RMNDR	1.248E-03	3.104E-03	2.247E+05	8.303E+01
EFFEC	9.465E-04	2.512E-03	5.060E+05	6.410E+02

GENETIC EFFECT DOSE RATE CONVERSION FACTORS

TESTES	9.502E-04	2.432E-03	1.609E+07	1.665E+04
OVARIES	9.509E-04	2.431E-03	5.395E+06	2.287E+03
AVERAGE	9.506E-04	2.432E-03	1.074E+07	9.468E+03

RISK CONVERSION FACTORS

Cancer	Ingestion	Inhalation	Air Immersion	Ground Surface
LEUKEMIA	1.364E-04	3.494E-04	4.477E-02	1.758E-05
BONE	7.601E-05	1.946E-04	7.989E-03	3.706E-06
THYROID	6.076E-07	1.557E-06	1.717E-02	7.153E-06
BREAST	5.123E-06	1.313E-05	6.072E-01	1.162E-03
LUNG	6.509E-06	2.901E-04	1.242E-01	6.017E-05
STOMACH	4.656E-06	1.076E-05	6.460E-02	2.346E-05
BOWEL	7.207E-06	6.158E-06	2.964E-02	9.812E-06
LIVER	3.860E-06	9.951E-06	7.238E-02	1.985E-05
PANCREAS	3.197E-06	8.190E-06	3.638E-02	1.846E-05
URINARY	2.760E-04	7.065E-04	2.748E-02	7.335E-06
OTHER	3.909E-06	1.002E-05	4.450E-02	2.258E-05

GENETIC EFFECT RISK CONVERSION FACTORS

AVERAGE	3.504E-11	8.986E-11	2.792E+00	2.462E-03
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Version 2.00

Clean Air Act Assessment Package - 1988

G E N E R A L D A T A

Non-Radon Individual Assessment

Nov 11, 2003 10:04 am

Facility: Portsmouth American Centrifuge

Address:

City: Piketon

State: OH

Zip:

Source Category: Facility and Process Ventilation System

Source Type: Stack

Emission Year: 2003

Comments:

Dataset Name: N4PBIOFF

Dataset Date: Nov 11, 2003 10:04 am

Wind File: C:\CAP88PC2\CAP88PC2\PORTS30.WND

VALUES FOR RADIONUCLIDE-DEPENDENT PARAMETERS

Nuclide	Clearance Class	Particle Size (microns)	Scavenging Coefficient (per second)	Dry Deposition Velocity (m/s)
U-234	D	1.0	1.02E-05	1.80E-03
U-235	D	1.0	1.02E-05	1.80E-03
U-238	D	1.0	1.02E-05	1.80E-03

VALUES FOR RADIONUCLIDE-DEPENDENT PARAMETERS

Nuclide	DECAY CONSTANT (PER DAY)			TRANSFER COEFFICIENT	
	Radio- active (1)	Surface	Water	Milk (2)	Meat (3)
U-234	0.00E+00	5.48E-05	0.00E+00	6.00E-04	2.00E-04
U-235	0.00E+00	5.48E-05	0.00E+00	6.00E-04	2.00E-04
U-238	0.00E+00	5.48E-05	0.00E+00	6.00E-04	2.00E-04

FOOTNOTES: (1) Effective radioactive decay constant in plume;
set to zero if less than 1.0E-2

(2) Fraction of animal's daily intake of nuclide
which appears in each L of milk (days/L)

(3) Fraction of animal's daily intake of nuclide
which appears in each kg of meat (days/kg)

VALUES FOR RADIONUCLIDE-DEPENDENT PARAMETERS

Nuclide	CONCENTRATION UPTAKE FACTOR		GI UPTAKE FRACTION	
	Forage (1)	Edible (2)	Inhalation	Ingestion
U-234	8.50E-03	1.71E-03	2.00E-03	2.00E-01
U-235	8.50E-03	1.71E-03	2.00E-03	2.00E-01
U-238	8.50E-03	1.71E-03	2.00E-03	2.00E-01

FOOTNOTES: (1) Concentration factor for uptake of nuclide
from soil for pasture and forage
(in pCi/kg dry weight per pCi/kg dry soil)

(2) Concentration factor for uptake of nuclide
from soil by edible parts of crops
(in pCi/kg wet weight per pCi/kg dry soil)

VALUES FOR RADIONUCLIDE-INDEPENDENT PARAMETERS

HUMAN INHALATION RATE
Cubic centimeters/hr 9.17E+05

SOIL PARAMETERS
Effective surface density (kg/sq m, dry weight)
(Assumes 15 cm plow layer) 2.15E+02

BUILDUP TIMES
For activity in soil (years) 1.00E+02
For radionuclides deposited on ground/water (days) 3.65E+04

DELAY TIMES
Ingestion of pasture grass by animals (hr) 0.00E+00
Ingestion of stored feed by animals (hr) 2.16E+03
Ingestion of leafy vegetables by man (hr) 3.36E+02
Ingestion of produce by man (hr) 3.36E+02
Transport time from animal feed-milk-man (day) 2.00E+00
Time from slaughter to consumption (day) 2.00E+01

WEATHERING
Removal rate constant for physical loss (per hr) 2.90E-03

CROP EXPOSURE DURATION
Pasture grass (hr) 7.20E+02
Crops/leafy vegetables (hr) 1.44E+03

AGRICULTURAL PRODUCTIVITY
Grass-cow-milk-man pathway (kg/sq m) 2.80E-01
Produce/leafy veg for human consumption (kg/sq m) 7.16E-01

FALLOUT INTERCEPTION FRACTIONS
Vegetables 2.00E-01
Pasture 5.70E-01

GRAZING PARAMETERS
Fraction of year animals graze on pasture 4.00E-01
Fraction of daily feed that is pasture grass
when animal grazes on pasture 4.30E-01

VALUES FOR RADIONUCLIDE-INDEPENDENT PARAMETERS

ANIMAL FEED CONSUMPTION FACTORS

Contaminated feed/forage (kg/day, dry weight)	1.56E+01
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DAIRY PRODUCTIVITY

Milk production of cow (L/day)	1.10E+01
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MEAT ANIMAL SLAUGHTER PARAMETERS

Muscle mass of animal at slaughter (kg)	2.00E+02
Fraction of herd slaughtered (per day)	3.81E-03

DECONTAMINATION

Fraction of radioactivity retained after washing for leafy vegetables and produce	5.00E-01
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FRACTIONS GROWN IN GARDEN OF INTEREST

Produce ingested	1.00E+00
Leafy vegetables ingested	1.00E+00

INGESTION RATIOS:

IMMEDIATE SURROUNDING AREA/TOTAL WITHIN AREA	
Vegetables	7.00E-01
Meat	4.42E-01
Milk	3.99E-01

MINIMUM INGESTION FRACTIONS FROM OUTSIDE AREA

(Minimum fractions of food types from outside area listed below are actual fixed values.)	
Vegetables	0.00E+00
Meat	0.00E+00
Milk	0.00E+00

HUMAN FOOD UTILIZATION FACTORS

Produce ingestion (kg/y)	1.76E+02
Milk ingestion (L/y)	1.12E+02
Meat ingestion (kg/y)	8.50E+01
Leafy vegetable ingestion (kg/y)	1.80E+01

SWIMMING PARAMETERS

Fraction of time spent swimming	0.00E+00
Dilution factor for water (cm)	1.00E+00

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Clean Air Act Assessment Package - 1988

C O N C E N T R A T I O N . T A B L E S

Non-Radon Individual Assessment

Nov 11, 2003 10:04 am

Facility: Portsmouth American Centrifuge

Address:

City: Piketon

State: OH

Zip:

Source Category: Facility and Process Ventilation System

Source Type: Stack

Emission Year: 2003

Comments:

Dataset Name: N4PBIOFF

Dataset Date: Nov 11, 2003 10:04 am

Wind File: C:\CAP88PC2\CAP88PC2\PORTS30.WND

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
N	555	U-234	1.1E-02	2.0E-09	7.7E-10	2.8E-09
N	555	U-235	5.0E-04	9.0E-11	3.5E-11	1.3E-10
N	555	U-238	3.9E-03	7.0E-10	2.7E-10	9.7E-10
N	950	U-234	7.4E-03	1.3E-09	4.4E-10	1.8E-09
N	950	U-235	3.4E-04	6.1E-11	2.0E-11	8.1E-11
N	950	U-238	2.6E-03	4.7E-10	1.6E-10	6.3E-10
N	1050	U-234	6.8E-03	1.2E-09	4.0E-10	1.6E-09
N	1050	U-235	3.1E-04	5.6E-11	1.8E-11	7.4E-11
N	1050	U-238	2.4E-03	4.3E-10	1.4E-10	5.7E-10
N	1062	U-234	6.7E-03	1.2E-09	4.0E-10	1.6E-09
N	1062	U-235	3.1E-04	5.5E-11	1.8E-11	7.3E-11
N	1062	U-238	2.4E-03	4.3E-10	1.4E-10	5.6E-10
N	1118	U-234	6.4E-03	1.1E-09	3.8E-10	1.5E-09
N	1118	U-235	2.9E-04	5.2E-11	1.7E-11	7.0E-11
N	1118	U-238	2.2E-03	4.0E-10	1.3E-10	5.4E-10
N	1230	U-234	5.8E-03	1.0E-09	3.4E-10	1.4E-09
N	1230	U-235	2.6E-04	4.8E-11	1.6E-11	6.3E-11
N	1230	U-238	2.0E-03	3.7E-10	1.2E-10	4.8E-10
N	1308	U-234	5.4E-03	9.7E-10	3.2E-10	1.3E-09
N	1308	U-235	2.5E-04	4.5E-11	1.5E-11	5.9E-11
N	1308	U-238	1.9E-03	3.4E-10	1.1E-10	4.5E-10
N	1342	U-234	5.3E-03	9.5E-10	3.1E-10	1.3E-09
N	1342	U-235	2.4E-04	4.3E-11	1.4E-11	5.8E-11
N	1342	U-238	1.9E-03	3.3E-10	1.1E-10	4.4E-10
N	1344	U-234	5.3E-03	9.5E-10	3.1E-10	1.3E-09
N	1344	U-235	2.4E-04	4.3E-11	1.4E-11	5.7E-11
N	1344	U-238	1.8E-03	3.3E-10	1.1E-10	4.4E-10
N	1526	U-234	4.6E-03	8.2E-10	2.7E-10	1.1E-09
N	1526	U-235	2.1E-04	3.7E-11	1.2E-11	5.0E-11
N	1526	U-238	1.6E-03	2.9E-10	9.5E-11	3.8E-10
N	1875	U-234	3.5E-03	6.4E-10	2.2E-10	8.6E-10
N	1875	U-235	1.6E-04	2.9E-11	1.0E-11	3.9E-11
N	1875	U-238	1.2E-03	2.2E-10	7.6E-11	3.0E-10
N	2012	U-234	3.2E-03	5.8E-10	2.0E-10	7.8E-10
N	2012	U-235	1.5E-04	2.7E-11	9.3E-12	3.6E-11
N	2012	U-238	1.1E-03	2.0E-10	7.1E-11	2.8E-10
N	2404	U-234	2.6E-03	4.6E-10	1.7E-10	6.3E-10
N	2404	U-235	1.2E-04	2.1E-11	7.7E-12	2.9E-11
N	2404	U-238	9.0E-04	1.6E-10	5.9E-11	2.2E-10
N	3350	U-234	1.6E-03	2.9E-10	1.2E-10	4.0E-10
N	3350	U-235	7.3E-05	1.3E-11	5.4E-12	1.9E-11
N	3350	U-238	5.6E-04	1.0E-10	4.1E-11	1.4E-10
N	4137	U-234	1.2E-03	2.1E-10	9.2E-11	3.1E-10
N	4137	U-235	5.4E-05	9.8E-12	4.2E-12	1.4E-11

N	4137	U-238	4.1E-04	7.5E-11	3.2E-11	1.1E-10
N	4892	U-234	9.3E-04	1.7E-10	7.7E-11	2.4E-10
N	4892	U-235	4.3E-05	7.7E-12	3.5E-12	1.1E-11

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
N	4892	U-238	3.3E-04	5.9E-11	2.7E-11	8.6E-11
N	10000	U-234	3.1E-04	5.5E-11	3.3E-11	8.8E-11
N	10000	U-235	1.4E-05	2.5E-12	1.5E-12	4.0E-12
N	10000	U-238	1.1E-04	1.9E-11	1.2E-11	3.1E-11
N	40000	U-234	3.2E-05	5.8E-12	5.3E-12	1.1E-11
N	40000	U-235	1.5E-06	2.7E-13	2.4E-13	5.1E-13
N	40000	U-238	1.1E-05	2.0E-12	1.8E-12	3.9E-12
N	60000	U-234	1.1E-05	1.9E-12	2.5E-12	4.4E-12
N	60000	U-235	4.9E-07	8.8E-14	1.1E-13	2.0E-13
N	60000	U-238	3.7E-06	6.7E-13	8.7E-13	1.5E-12
N	80000	U-234	5.9E-06	1.1E-12	1.6E-12	2.6E-12
N	80000	U-235	2.7E-07	4.9E-14	7.1E-14	1.2E-13
N	80000	U-238	2.1E-06	3.7E-13	5.4E-13	9.1E-13
NNW	555	U-234	6.0E-03	1.1E-09	4.8E-10	1.6E-09
NNW	555	U-235	2.7E-04	4.9E-11	2.2E-11	7.1E-11
NNW	555	U-238	2.1E-03	3.8E-10	1.7E-10	5.5E-10
NNW	950	U-234	4.5E-03	8.0E-10	2.8E-10	1.1E-09
NNW	950	U-235	2.0E-04	3.7E-11	1.3E-11	4.9E-11
NNW	950	U-238	1.6E-03	2.8E-10	9.6E-11	3.8E-10
NNW	1050	U-234	4.2E-03	7.5E-10	2.5E-10	1.0E-09
NNW	1050	U-235	1.9E-04	3.4E-11	1.1E-11	4.5E-11
NNW	1050	U-238	1.5E-03	2.6E-10	8.7E-11	3.5E-10
NNW	1062	U-234	4.1E-03	7.4E-10	2.5E-10	9.9E-10
NNW	1062	U-235	1.9E-04	3.4E-11	1.1E-11	4.5E-11
NNW	1062	U-238	1.4E-03	2.6E-10	8.6E-11	3.5E-10
NNW	1118	U-234	3.9E-03	7.1E-10	2.3E-10	9.4E-10
NNW	1118	U-235	1.8E-04	3.2E-11	1.1E-11	4.3E-11
NNW	1118	U-238	1.4E-03	2.5E-10	8.1E-11	3.3E-10
NNW	1230	U-234	3.6E-03	6.5E-10	2.1E-10	8.6E-10
NNW	1230	U-235	1.6E-04	3.0E-11	9.6E-12	3.9E-11
NNW	1230	U-238	1.3E-03	2.3E-10	7.4E-11	3.0E-10
NNW	1308	U-234	3.4E-03	6.1E-10	2.0E-10	8.1E-10
NNW	1308	U-235	1.6E-04	2.8E-11	9.0E-12	3.7E-11
NNW	1308	U-238	1.2E-03	2.2E-10	6.9E-11	2.8E-10
NNW	1342	U-234	3.3E-03	6.0E-10	1.9E-10	7.9E-10
NNW	1342	U-235	1.5E-04	2.7E-11	8.8E-12	3.6E-11
NNW	1342	U-238	1.2E-03	2.1E-10	6.7E-11	2.8E-10
NNW	1344	U-234	3.3E-03	6.0E-10	1.9E-10	7.9E-10
NNW	1344	U-235	1.5E-04	2.7E-11	8.8E-12	3.6E-11
NNW	1344	U-238	1.2E-03	2.1E-10	6.7E-11	2.8E-10
NNW	1526	U-234	2.9E-03	5.2E-10	1.7E-10	6.9E-10
NNW	1526	U-235	1.3E-04	2.4E-11	7.7E-12	3.2E-11
NNW	1526	U-238	1.0E-03	1.8E-10	5.9E-11	2.4E-10
NNW	1875	U-234	2.3E-03	4.1E-10	1.3E-10	5.5E-10

NNW	1875	U-235	1.1E-04	1.9E-11	6.2E-12	2.5E-11
NNW	1875	U-238	8.1E-04	1.5E-10	4.7E-11	1.9E-10
NNW	2012	U-234	2.1E-03	3.8E-10	1.2E-10	5.0E-10

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
NNW	2012	U-235	9.6E-05	1.7E-11	5.7E-12	2.3E-11
NNW	2012	U-238	7.4E-04	1.3E-10	4.4E-11	1.8E-10
NNW	2404	U-234	1.7E-03	3.0E-10	1.0E-10	4.0E-10
NNW	2404	U-235	7.7E-05	1.4E-11	4.7E-12	1.9E-11
NNW	2404	U-238	5.9E-04	1.1E-10	3.6E-11	1.4E-10
NNW	3350	U-234	1.1E-03	1.9E-10	7.1E-11	2.6E-10
NNW	3350	U-235	4.9E-05	8.7E-12	3.3E-12	1.2E-11
NNW	3350	U-238	3.7E-04	6.7E-11	2.5E-11	9.2E-11
NNW	4137	U-234	7.8E-04	1.4E-10	5.6E-11	2.0E-10
NNW	4137	U-235	3.6E-05	6.5E-12	2.6E-12	9.0E-12
NNW	4137	U-238	2.8E-04	5.0E-11	2.0E-11	6.9E-11
NNW	4892	U-234	6.2E-04	1.1E-10	4.6E-11	1.6E-10
NNW	4892	U-235	2.8E-05	5.1E-12	2.1E-12	7.2E-12
NNW	4892	U-238	2.2E-04	3.9E-11	1.6E-11	5.5E-11
NNW	10000	U-234	2.0E-04	3.6E-11	1.9E-11	5.5E-11
NNW	10000	U-235	9.1E-06	1.6E-12	8.8E-13	2.5E-12
NNW	10000	U-238	7.0E-05	1.3E-11	6.7E-12	1.9E-11
NNW	40000	U-234	1.9E-05	3.4E-12	2.8E-12	6.2E-12
NNW	40000	U-235	8.7E-07	1.6E-13	1.3E-13	2.8E-13
NNW	40000	U-238	6.6E-06	1.2E-12	9.7E-13	2.2E-12
NNW	60000	U-234	5.3E-06	9.5E-13	1.2E-12	2.1E-12
NNW	60000	U-235	2.4E-07	4.3E-14	5.4E-14	9.8E-14
NNW	60000	U-238	1.8E-06	3.3E-13	4.1E-13	7.5E-13
NNW	80000	U-234	2.8E-06	5.0E-13	7.2E-13	1.2E-12
NNW	80000	U-235	1.3E-07	2.3E-14	3.3E-14	5.6E-14
NNW	80000	U-238	9.6E-07	1.7E-13	2.5E-13	4.3E-13
NW	555	U-234	4.8E-03	8.7E-10	4.0E-10	1.3E-09
NW	555	U-235	2.2E-04	4.0E-11	1.8E-11	5.8E-11
NW	555	U-238	1.7E-03	3.1E-10	1.4E-10	4.5E-10
NW	950	U-234	3.7E-03	6.7E-10	2.3E-10	9.0E-10
NW	950	U-235	1.7E-04	3.0E-11	1.1E-11	4.1E-11
NW	950	U-238	1.3E-03	2.3E-10	8.1E-11	3.2E-10
NW	1050	U-234	3.5E-03	6.2E-10	2.1E-10	8.3E-10
NW	1050	U-235	1.6E-04	2.8E-11	9.5E-12	3.8E-11
NW	1050	U-238	1.2E-03	2.2E-10	7.3E-11	2.9E-10
NW	1062	U-234	3.4E-03	6.2E-10	2.1E-10	8.2E-10
NW	1062	U-235	1.6E-04	2.8E-11	9.4E-12	3.8E-11
NW	1062	U-238	1.2E-03	2.2E-10	7.2E-11	2.9E-10
NW	1118	U-234	3.3E-03	5.9E-10	1.9E-10	7.9E-10
NW	1118	U-235	1.5E-04	2.7E-11	8.9E-12	3.6E-11
NW	1118	U-238	1.2E-03	2.1E-10	6.8E-11	2.8E-10
NW	1230	U-234	3.0E-03	5.4E-10	1.8E-10	7.2E-10
NW	1230	U-235	1.4E-04	2.5E-11	8.1E-12	3.3E-11
NW	1230	U-238	1.1E-03	1.9E-10	6.2E-11	2.5E-10

NW	1308	U-234	2.9E-03	5.1E-10	1.6E-10	6.8E-10
NW	1308	U-235	1.3E-04	2.3E-11	7.6E-12	3.1E-11
NW	1308	U-238	1.0E-03	1.8E-10	5.8E-11	2.4E-10

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration Rate (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
NW	1342	U-234	2.8E-03	5.0E-10	1.6E-10	6.6E-10
NW	1342	U-235	1.3E-04	2.3E-11	7.4E-12	3.0E-11
NW	1342	U-238	9.8E-04	1.8E-10	5.6E-11	2.3E-10
NW	1344	U-234	2.8E-03	5.0E-10	1.6E-10	6.6E-10
NW	1344	U-235	1.3E-04	2.3E-11	7.3E-12	3.0E-11
NW	1344	U-238	9.8E-04	1.8E-10	5.6E-11	2.3E-10
NW	1526	U-234	2.4E-03	4.4E-10	1.4E-10	5.8E-10
NW	1526	U-235	1.1E-04	2.0E-11	6.4E-12	2.7E-11
NW	1526	U-238	8.6E-04	1.5E-10	4.9E-11	2.0E-10
NW	1875	U-234	1.9E-03	3.5E-10	1.1E-10	4.6E-10
NW	1875	U-235	8.9E-05	1.6E-11	5.1E-12	2.1E-11
NW	1875	U-238	6.8E-04	1.2E-10	3.9E-11	1.6E-10
NW	2012	U-234	1.8E-03	3.2E-10	1.0E-10	4.3E-10
NW	2012	U-235	8.2E-05	1.5E-11	4.8E-12	1.9E-11
NW	2012	U-238	6.3E-04	1.1E-10	3.6E-11	1.5E-10
NW	2404	U-234	1.4E-03	2.6E-10	8.6E-11	3.4E-10
NW	2404	U-235	6.5E-05	1.2E-11	3.9E-12	1.6E-11
NW	2404	U-238	5.0E-04	9.0E-11	3.0E-11	1.2E-10
NW	3350	U-234	9.0E-04	1.6E-10	5.9E-11	2.2E-10
NW	3350	U-235	4.1E-05	7.4E-12	2.7E-12	1.0E-11
NW	3350	U-238	3.2E-04	5.7E-11	2.1E-11	7.8E-11
NW	4137	U-234	6.7E-04	1.2E-10	4.6E-11	1.7E-10
NW	4137	U-235	3.1E-05	5.5E-12	2.1E-12	7.6E-12
NW	4137	U-238	2.3E-04	4.2E-11	1.6E-11	5.8E-11
NW	4892	U-234	5.3E-04	9.5E-11	3.8E-11	1.3E-10
NW	4892	U-235	2.4E-05	4.3E-12	1.8E-12	6.1E-12
NW	4892	U-238	1.8E-04	3.3E-11	1.3E-11	4.7E-11
NW	10000	U-234	1.7E-04	3.0E-11	1.6E-11	4.6E-11
NW	10000	U-235	7.7E-06	1.4E-12	7.2E-13	2.1E-12
NW	10000	U-238	5.9E-05	1.1E-11	5.5E-12	1.6E-11
NW	40000	U-234	1.5E-05	2.7E-12	2.2E-12	4.9E-12
NW	40000	U-235	7.0E-07	1.3E-13	9.9E-14	2.2E-13
NW	40000	U-238	5.3E-06	9.6E-13	7.6E-13	1.7E-12
NW	60000	U-234	4.0E-06	7.1E-13	9.0E-13	1.6E-12
NW	60000	U-235	1.8E-07	3.3E-14	4.1E-14	7.4E-14
NW	60000	U-238	1.4E-06	2.5E-13	3.2E-13	5.7E-13
NW	80000	U-234	2.0E-06	3.7E-13	5.5E-13	9.1E-13
NW	80000	U-235	9.3E-08	1.7E-14	2.5E-14	4.2E-14
NW	80000	U-238	7.1E-07	1.3E-13	1.9E-13	3.2E-13
WNW	555	U-234	4.6E-03	8.2E-10	3.6E-10	1.2E-09
WNW	555	U-235	2.1E-04	3.7E-11	1.7E-11	5.4E-11
WNW	555	U-238	1.6E-03	2.9E-10	1.3E-10	4.2E-10
WNW	950	U-234	3.4E-03	6.1E-10	2.1E-10	8.2E-10
WNW	950	U-235	1.6E-04	2.8E-11	9.5E-12	3.8E-11

WNW	950	U-238	1.2E-03	2.2E-10	7.3E-11	2.9E-10
WNW	1050	U-234	3.2E-03	5.7E-10	1.9E-10	7.6E-10
WNW	1050	U-235	1.4E-04	2.6E-11	8.6E-12	3.5E-11

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m ³)	Dry Deposition Rate (pCi/cm ² /s)	Wet Deposition Rate (pCi/cm ² /s)	Ground Deposition Rate (pCi/cm ² /s)
WNW	1050	U-238	1.1E-03	2.0E-10	6.6E-11	2.7E-10
WNW	1062	U-234	3.1E-03	5.7E-10	1.9E-10	7.5E-10
WNW	1062	U-235	1.4E-04	2.6E-11	8.5E-12	3.4E-11
WNW	1062	U-238	1.1E-03	2.0E-10	6.5E-11	2.6E-10
WNW	1118	U-234	3.0E-03	5.4E-10	1.8E-10	7.2E-10
WNW	1118	U-235	1.4E-04	2.5E-11	8.1E-12	3.3E-11
WNW	1118	U-238	1.1E-03	1.9E-10	6.2E-11	2.5E-10
WNW	1230	U-234	2.8E-03	5.0E-10	1.6E-10	6.6E-10
WNW	1230	U-235	1.3E-04	2.3E-11	7.3E-12	3.0E-11
WNW	1230	U-238	9.7E-04	1.7E-10	5.6E-11	2.3E-10
WNW	1308	U-234	2.6E-03	4.7E-10	1.5E-10	6.2E-10
WNW	1308	U-235	1.2E-04	2.1E-11	6.8E-12	2.8E-11
WNW	1308	U-238	9.1E-04	1.6E-10	5.2E-11	2.2E-10
WNW	1342	U-234	2.5E-03	4.6E-10	1.5E-10	6.0E-10
WNW	1342	U-235	1.2E-04	2.1E-11	6.6E-12	2.8E-11
WNW	1342	U-238	8.9E-04	1.6E-10	5.1E-11	2.1E-10
WNW	1344	U-234	2.5E-03	4.6E-10	1.4E-10	6.0E-10
WNW	1344	U-235	1.2E-04	2.1E-11	6.6E-12	2.7E-11
WNW	1344	U-238	8.9E-04	1.6E-10	5.1E-11	2.1E-10
WNW	1526	U-234	2.2E-03	4.0E-10	1.3E-10	5.3E-10
WNW	1526	U-235	1.0E-04	1.8E-11	5.8E-12	2.4E-11
WNW	1526	U-238	7.8E-04	1.4E-10	4.4E-11	1.8E-10
WNW	1875	U-234	1.8E-03	3.2E-10	1.0E-10	4.2E-10
WNW	1875	U-235	8.0E-05	1.4E-11	4.7E-12	1.9E-11
WNW	1875	U-238	6.2E-04	1.1E-10	3.6E-11	1.5E-10
WNW	2012	U-234	1.6E-03	2.9E-10	9.4E-11	3.8E-10
WNW	2012	U-235	7.4E-05	1.3E-11	4.3E-12	1.8E-11
WNW	2012	U-238	5.7E-04	1.0E-10	3.3E-11	1.3E-10
WNW	2404	U-234	1.3E-03	2.3E-10	7.8E-11	3.1E-10
WNW	2404	U-235	5.9E-05	1.1E-11	3.6E-12	1.4E-11
WNW	2404	U-238	4.5E-04	8.1E-11	2.7E-11	1.1E-10
WNW	3350	U-234	8.1E-04	1.5E-10	5.4E-11	2.0E-10
WNW	3350	U-235	3.7E-05	6.7E-12	2.5E-12	9.1E-12
WNW	3350	U-238	2.8E-04	5.1E-11	1.9E-11	7.0E-11
WNW	4137	U-234	6.0E-04	1.1E-10	4.2E-11	1.5E-10
WNW	4137	U-235	2.7E-05	4.9E-12	1.9E-12	6.9E-12
WNW	4137	U-238	2.1E-04	3.8E-11	1.5E-11	5.3E-11
WNW	4892	U-234	4.7E-04	8.5E-11	3.5E-11	1.2E-10
WNW	4892	U-235	2.2E-05	3.9E-12	1.6E-12	5.5E-12
WNW	4892	U-238	1.7E-04	3.0E-11	1.2E-11	4.2E-11
WNW	10000	U-234	1.5E-04	2.7E-11	1.4E-11	4.2E-11
WNW	10000	U-235	6.9E-06	1.2E-12	6.6E-13	1.9E-12
WNW	10000	U-238	5.3E-05	9.6E-12	5.0E-12	1.5E-11
WNW	40000	U-234	1.4E-05	2.5E-12	2.0E-12	4.5E-12

WNW	40000	U-235	6.4E-07	1.1E-13	9.2E-14	2.1E-13
WNW	40000	U-238	4.9E-06	8.8E-13	7.0E-13	1.6E-12
WNW	60000	U-234	3.7E-06	6.7E-13	8.5E-13	1.5E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
WNW	60000	U-235	1.7E-07	3.1E-14	3.9E-14	7.0E-14
WNW	60000	U-238	1.3E-06	2.4E-13	3.0E-13	5.3E-13
WNW	80000	U-234	1.9E-06	3.4E-13	5.2E-13	8.6E-13
WNW	80000	U-235	8.8E-08	1.6E-14	2.4E-14	4.0E-14
WNW	80000	U-238	6.7E-07	1.2E-13	1.8E-13	3.0E-13
W	555	U-234	3.9E-03	7.0E-10	3.0E-10	1.0E-09
W	555	U-235	1.8E-04	3.2E-11	1.4E-11	4.6E-11
W	555	U-238	1.4E-03	2.5E-10	1.1E-10	3.5E-10
W	950	U-234	2.8E-03	5.1E-10	1.8E-10	6.8E-10
W	950	U-235	1.3E-04	2.3E-11	8.1E-12	3.1E-11
W	950	U-238	9.9E-04	1.8E-10	6.2E-11	2.4E-10
W	1050	U-234	2.6E-03	4.7E-10	1.6E-10	6.3E-10
W	1050	U-235	1.2E-04	2.2E-11	7.3E-12	2.9E-11
W	1050	U-238	9.2E-04	1.7E-10	5.5E-11	2.2E-10
W	1062	U-234	2.6E-03	4.7E-10	1.6E-10	6.2E-10
W	1062	U-235	1.2E-04	2.1E-11	7.2E-12	2.8E-11
W	1062	U-238	9.1E-04	1.6E-10	5.5E-11	2.2E-10
W	1118	U-234	2.5E-03	4.5E-10	1.5E-10	5.9E-10
W	1118	U-235	1.1E-04	2.0E-11	6.8E-12	2.7E-11
W	1118	U-238	8.7E-04	1.6E-10	5.2E-11	2.1E-10
W	1230	U-234	2.3E-03	4.1E-10	1.3E-10	5.4E-10
W	1230	U-235	1.0E-04	1.9E-11	6.2E-12	2.5E-11
W	1230	U-238	8.0E-04	1.4E-10	4.7E-11	1.9E-10
W	1308	U-234	2.1E-03	3.8E-10	1.3E-10	5.1E-10
W	1308	U-235	9.8E-05	1.8E-11	5.8E-12	2.3E-11
W	1308	U-238	7.5E-04	1.4E-10	4.4E-11	1.8E-10
W	1342	U-234	2.1E-03	3.7E-10	1.2E-10	5.0E-10
W	1342	U-235	9.5E-05	1.7E-11	5.6E-12	2.3E-11
W	1342	U-238	7.3E-04	1.3E-10	4.3E-11	1.7E-10
W	1344	U-234	2.1E-03	3.7E-10	1.2E-10	5.0E-10
W	1344	U-235	9.5E-05	1.7E-11	5.6E-12	2.3E-11
W	1344	U-238	7.3E-04	1.3E-10	4.3E-11	1.7E-10
W	1526	U-234	1.8E-03	3.3E-10	1.1E-10	4.3E-10
W	1526	U-235	8.3E-05	1.5E-11	4.9E-12	2.0E-11
W	1526	U-238	6.4E-04	1.2E-10	3.7E-11	1.5E-10
W	1875	U-234	1.4E-03	2.6E-10	8.6E-11	3.4E-10
W	1875	U-235	6.6E-05	1.2E-11	3.9E-12	1.6E-11
W	1875	U-238	5.0E-04	9.1E-11	3.0E-11	1.2E-10
W	2012	U-234	1.3E-03	2.4E-10	7.9E-11	3.2E-10
W	2012	U-235	6.0E-05	1.1E-11	3.6E-12	1.4E-11
W	2012	U-238	4.6E-04	8.3E-11	2.8E-11	1.1E-10
W	2404	U-234	1.0E-03	1.9E-10	6.6E-11	2.5E-10
W	2404	U-235	4.8E-05	8.6E-12	3.0E-12	1.2E-11
W	2404	U-238	3.7E-04	6.6E-11	2.3E-11	8.9E-11

W	3350	U-234	6.6E-04	1.2E-10	4.5E-11	1.6E-10
W	3350	U-235	3.0E-05	5.4E-12	2.1E-12	7.5E-12
W	3350	U-238	2.3E-04	4.2E-11	1.6E-11	5.8E-11

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
W	4137	U-234	4.9E-04	8.8E-11	3.6E-11	1.2E-10
W	4137	U-235	2.2E-05	4.0E-12	1.6E-12	5.7E-12
W	4137	U-238	1.7E-04	3.1E-11	1.3E-11	4.3E-11
W	4892	U-234	3.8E-04	6.9E-11	3.0E-11	9.9E-11
W	4892	U-235	1.8E-05	3.2E-12	1.4E-12	4.5E-12
W	4892	U-238	1.3E-04	2.4E-11	1.0E-11	3.5E-11
W	10000	U-234	1.2E-04	2.2E-11	1.2E-11	3.4E-11
W	10000	U-235	5.6E-06	1.0E-12	5.6E-13	1.6E-12
W	10000	U-238	4.3E-05	7.7E-12	4.3E-12	1.2E-11
W	40000	U-234	1.1E-05	2.0E-12	1.8E-12	3.8E-12
W	40000	U-235	5.2E-07	9.4E-14	8.1E-14	1.7E-13
W	40000	U-238	4.0E-06	7.1E-13	6.2E-13	1.3E-12
W	60000	U-234	3.1E-06	5.6E-13	7.8E-13	1.3E-12
W	60000	U-235	1.4E-07	2.5E-14	3.6E-14	6.1E-14
W	60000	U-238	1.1E-06	1.9E-13	2.7E-13	4.7E-13
W	80000	U-234	1.6E-06	2.9E-13	4.8E-13	7.7E-13
W	80000	U-235	7.3E-08	1.3E-14	2.2E-14	3.5E-14
W	80000	U-238	5.6E-07	1.0E-13	1.7E-13	2.7E-13
WSW	555	U-234	3.7E-03	6.7E-10	2.9E-10	9.6E-10
WSW	555	U-235	1.7E-04	3.0E-11	1.3E-11	4.4E-11
WSW	555	U-238	1.3E-03	2.4E-10	1.0E-10	3.4E-10
WSW	950	U-234	2.6E-03	4.7E-10	1.7E-10	6.4E-10
WSW	950	U-235	1.2E-04	2.1E-11	7.7E-12	2.9E-11
WSW	950	U-238	9.2E-04	1.7E-10	5.9E-11	2.2E-10
WSW	1050	U-234	2.4E-03	4.3E-10	1.5E-10	5.8E-10
WSW	1050	U-235	1.1E-04	2.0E-11	6.9E-12	2.7E-11
WSW	1050	U-238	8.5E-04	1.5E-10	5.3E-11	2.1E-10
WSW	1062	U-234	2.4E-03	4.3E-10	1.5E-10	5.8E-10
WSW	1062	U-235	1.1E-04	2.0E-11	6.8E-12	2.6E-11
WSW	1062	U-238	8.4E-04	1.5E-10	5.2E-11	2.0E-10
WSW	1118	U-234	2.3E-03	4.1E-10	1.4E-10	5.5E-10
WSW	1118	U-235	1.0E-04	1.9E-11	6.5E-12	2.5E-11
WSW	1118	U-238	8.0E-04	1.4E-10	4.9E-11	1.9E-10
WSW	1230	U-234	2.1E-03	3.7E-10	1.3E-10	5.0E-10
WSW	1230	U-235	9.5E-05	1.7E-11	5.9E-12	2.3E-11
WSW	1230	U-238	7.3E-04	1.3E-10	4.5E-11	1.8E-10
WSW	1308	U-234	2.0E-03	3.5E-10	1.2E-10	4.7E-10
WSW	1308	U-235	8.9E-05	1.6E-11	5.5E-12	2.2E-11
WSW	1308	U-238	6.9E-04	1.2E-10	4.2E-11	1.7E-10
WSW	1342	U-234	1.9E-03	3.4E-10	1.2E-10	4.6E-10
WSW	1342	U-235	8.7E-05	1.6E-11	5.3E-12	2.1E-11
WSW	1342	U-238	6.7E-04	1.2E-10	4.1E-11	1.6E-10
WSW	1344	U-234	1.9E-03	3.4E-10	1.2E-10	4.6E-10
WSW	1344	U-235	8.7E-05	1.6E-11	5.3E-12	2.1E-11

WSW	1344	U-238	6.7E-04	1.2E-10	4.1E-11	1.6E-10
WSW	1526	U-234	1.7E-03	3.0E-10	1.0E-10	4.0E-10
WSW	1526	U-235	7.6E-05	1.4E-11	4.7E-12	1.8E-11

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
WSW	1526	U-238	5.8E-04	1.1E-10	3.6E-11	1.4E-10
WSW	1875	U-234	1.3E-03	2.4E-10	8.2E-11	3.2E-10
WSW	1875	U-235	6.0E-05	1.1E-11	3.8E-12	1.5E-11
WSW	1875	U-238	4.6E-04	8.3E-11	2.9E-11	1.1E-10
WSW	2012	U-234	1.2E-03	2.2E-10	7.6E-11	2.9E-10
WSW	2012	U-235	5.5E-05	9.9E-12	3.5E-12	1.3E-11
WSW	2012	U-238	4.2E-04	7.6E-11	2.7E-11	1.0E-10
WSW	2404	U-234	9.5E-04	1.7E-10	6.3E-11	2.3E-10
WSW	2404	U-235	4.4E-05	7.8E-12	2.9E-12	1.1E-11
WSW	2404	U-238	3.3E-04	6.0E-11	2.2E-11	8.2E-11
WSW	3350	U-234	6.0E-04	1.1E-10	4.4E-11	1.5E-10
WSW	3350	U-235	2.7E-05	4.9E-12	2.0E-12	6.9E-12
WSW	3350	U-238	2.1E-04	3.8E-11	1.5E-11	5.3E-11
WSW	4137	U-234	4.4E-04	8.0E-11	3.4E-11	1.1E-10
WSW	4137	U-235	2.0E-05	3.6E-12	1.6E-12	5.2E-12
WSW	4137	U-238	1.6E-04	2.8E-11	1.2E-11	4.0E-11
WSW	4892	U-234	3.5E-04	6.3E-11	2.9E-11	9.1E-11
WSW	4892	U-235	1.6E-05	2.9E-12	1.3E-12	4.2E-12
WSW	4892	U-238	1.2E-04	2.2E-11	1.0E-11	3.2E-11
WSW	10000	U-234	1.1E-04	2.0E-11	1.2E-11	3.2E-11
WSW	10000	U-235	5.1E-06	9.3E-13	5.5E-13	1.5E-12
WSW	10000	U-238	3.9E-05	7.1E-12	4.2E-12	1.1E-11
WSW	40000	U-234	1.1E-05	1.9E-12	1.9E-12	3.8E-12
WSW	40000	U-235	4.9E-07	8.8E-14	8.6E-14	1.7E-13
WSW	40000	U-238	3.7E-06	6.7E-13	6.6E-13	1.3E-12
WSW	60000	U-234	3.1E-06	5.7E-13	8.9E-13	1.5E-12
WSW	60000	U-235	1.4E-07	2.6E-14	4.1E-14	6.7E-14
WSW	60000	U-238	1.1E-06	2.0E-13	3.1E-13	5.1E-13
WSW	80000	U-234	1.7E-06	3.0E-13	5.6E-13	8.7E-13
WSW	80000	U-235	7.7E-08	1.4E-14	2.6E-14	4.0E-14
WSW	80000	U-238	5.9E-07	1.1E-13	2.0E-13	3.0E-13
SW	555	U-234	4.8E-03	8.7E-10	3.5E-10	1.2E-09
SW	555	U-235	2.2E-04	3.9E-11	1.6E-11	5.6E-11
SW	555	U-238	1.7E-03	3.1E-10	1.2E-10	4.3E-10
SW	950	U-234	3.2E-03	5.8E-10	2.0E-10	7.9E-10
SW	950	U-235	1.5E-04	2.7E-11	9.3E-12	3.6E-11
SW	950	U-238	1.1E-03	2.0E-10	7.1E-11	2.8E-10
SW	1050	U-234	3.0E-03	5.3E-10	1.8E-10	7.2E-10
SW	1050	U-235	1.4E-04	2.4E-11	8.4E-12	3.3E-11
SW	1050	U-238	1.0E-03	1.9E-10	6.4E-11	2.5E-10
SW	1062	U-234	2.9E-03	5.3E-10	1.8E-10	7.1E-10
SW	1062	U-235	1.3E-04	2.4E-11	8.3E-12	3.2E-11
SW	1062	U-238	1.0E-03	1.9E-10	6.4E-11	2.5E-10
SW	1118	U-234	2.8E-03	5.0E-10	1.7E-10	6.8E-10

SW	1118	U-235	1.3E-04	2.3E-11	7.9E-12	3.1E-11
SW	1118	U-238	9.8E-04	1.8E-10	6.0E-11	2.4E-10
SW	1230	U-234	2.5E-03	4.6E-10	1.6E-10	6.1E-10

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
SW	1230	U-235	1.2E-04	2.1E-11	7.2E-12	2.8E-11
SW	1230	U-238	8.9E-04	1.6E-10	5.5E-11	2.2E-10
SW	1308	U-234	2.4E-03	4.3E-10	1.5E-10	5.7E-10
SW	1308	U-235	1.1E-04	2.0E-11	6.7E-12	2.6E-11
SW	1308	U-238	8.4E-04	1.5E-10	5.1E-11	2.0E-10
SW	1342	U-234	2.3E-03	4.2E-10	1.4E-10	5.6E-10
SW	1342	U-235	1.1E-04	1.9E-11	6.5E-12	2.6E-11
SW	1342	U-238	8.1E-04	1.5E-10	5.0E-11	2.0E-10
SW	1344	U-234	2.3E-03	4.2E-10	1.4E-10	5.6E-10
SW	1344	U-235	1.1E-04	1.9E-11	6.5E-12	2.6E-11
SW	1344	U-238	8.1E-04	1.5E-10	5.0E-11	2.0E-10
SW	1526	U-234	2.0E-03	3.6E-10	1.2E-10	4.9E-10
SW	1526	U-235	9.2E-05	1.7E-11	5.7E-12	2.2E-11
SW	1526	U-238	7.1E-04	1.3E-10	4.4E-11	1.7E-10
SW	1875	U-234	1.6E-03	2.8E-10	1.0E-10	3.8E-10
SW	1875	U-235	7.2E-05	1.3E-11	4.6E-12	1.8E-11
SW	1875	U-238	5.5E-04	9.9E-11	3.5E-11	1.3E-10
SW	2012	U-234	1.4E-03	2.6E-10	9.3E-11	3.5E-10
SW	2012	U-235	6.6E-05	1.2E-11	4.3E-12	1.6E-11
SW	2012	U-238	5.0E-04	9.1E-11	3.3E-11	1.2E-10
SW	2404	U-234	1.1E-03	2.0E-10	7.7E-11	2.8E-10
SW	2404	U-235	5.2E-05	9.3E-12	3.5E-12	1.3E-11
SW	2404	U-238	4.0E-04	7.2E-11	2.7E-11	9.9E-11
SW	3350	U-234	7.1E-04	1.3E-10	5.4E-11	1.8E-10
SW	3350	U-235	3.3E-05	5.9E-12	2.5E-12	8.3E-12
SW	3350	U-238	2.5E-04	4.5E-11	1.9E-11	6.4E-11
SW	4137	U-234	5.3E-04	9.5E-11	4.3E-11	1.4E-10
SW	4137	U-235	2.4E-05	4.3E-12	1.9E-12	6.3E-12
SW	4137	U-238	1.8E-04	3.3E-11	1.5E-11	4.8E-11
SW	4892	U-234	4.2E-04	7.5E-11	3.5E-11	1.1E-10
SW	4892	U-235	1.9E-05	3.4E-12	1.6E-12	5.0E-12
SW	4892	U-238	1.5E-04	2.6E-11	1.2E-11	3.9E-11
SW	10000	U-234	1.4E-04	2.4E-11	1.5E-11	4.0E-11
SW	10000	U-235	6.2E-06	1.1E-12	7.0E-13	1.8E-12
SW	10000	U-238	4.8E-05	8.6E-12	5.3E-12	1.4E-11
SW	40000	U-234	1.4E-05	2.5E-12	2.5E-12	4.9E-12
SW	40000	U-235	6.3E-07	1.1E-13	1.1E-13	2.3E-13
SW	40000	U-238	4.8E-06	8.7E-13	8.6E-13	1.7E-12
SW	60000	U-234	4.4E-06	7.8E-13	1.2E-12	2.0E-12
SW	60000	U-235	2.0E-07	3.6E-14	5.5E-14	9.0E-14
SW	60000	U-238	1.5E-06	2.8E-13	4.2E-13	6.9E-13
SW	80000	U-234	2.4E-06	4.3E-13	7.6E-13	1.2E-12
SW	80000	U-235	1.1E-07	2.0E-14	3.5E-14	5.5E-14
SW	80000	U-238	8.3E-07	1.5E-13	2.7E-13	4.2E-13

SSW	555	U-234	6.5E-03	1.2E-09	4.6E-10	1.6E-09
SSW	555	U-235	3.0E-04	5.4E-11	2.1E-11	7.5E-11
SSW	555	U-238	2.3E-03	4.1E-10	1.6E-10	5.8E-10

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
SSW	950	U-234	4.4E-03	7.9E-10	2.7E-10	1.1E-09
SSW	950	U-235	2.0E-04	3.6E-11	1.2E-11	4.8E-11
SSW	950	U-238	1.5E-03	2.8E-10	9.4E-11	3.7E-10
SSW	1050	U-234	4.0E-03	7.2E-10	2.4E-10	9.6E-10
SSW	1050	U-235	1.8E-04	3.3E-11	1.1E-11	4.4E-11
SSW	1050	U-238	1.4E-03	2.5E-10	8.5E-11	3.4E-10
SSW	1062	U-234	4.0E-03	7.1E-10	2.4E-10	9.5E-10
SSW	1062	U-235	1.8E-04	3.3E-11	1.1E-11	4.3E-11
SSW	1062	U-238	1.4E-03	2.5E-10	8.4E-11	3.3E-10
SSW	1118	U-234	3.8E-03	6.8E-10	2.3E-10	9.0E-10
SSW	1118	U-235	1.7E-04	3.1E-11	1.0E-11	4.1E-11
SSW	1118	U-238	1.3E-03	2.4E-10	7.9E-11	3.2E-10
SSW	1230	U-234	3.4E-03	6.1E-10	2.0E-10	8.2E-10
SSW	1230	U-235	1.6E-04	2.8E-11	9.4E-12	3.7E-11
SSW	1230	U-238	1.2E-03	2.2E-10	7.2E-11	2.9E-10
SSW	1308	U-234	3.2E-03	5.7E-10	1.9E-10	7.7E-10
SSW	1308	U-235	1.5E-04	2.6E-11	8.8E-12	3.5E-11
SSW	1308	U-238	1.1E-03	2.0E-10	6.7E-11	2.7E-10
SSW	1342	U-234	3.1E-03	5.6E-10	1.9E-10	7.5E-10
SSW	1342	U-235	1.4E-04	2.6E-11	8.6E-12	3.4E-11
SSW	1342	U-238	1.1E-03	2.0E-10	6.6E-11	2.6E-10
SSW	1344	U-234	3.1E-03	5.6E-10	1.9E-10	7.4E-10
SSW	1344	U-235	1.4E-04	2.5E-11	8.6E-12	3.4E-11
SSW	1344	U-238	1.1E-03	2.0E-10	6.5E-11	2.6E-10
SSW	1526	U-234	2.7E-03	4.8E-10	1.6E-10	6.5E-10
SSW	1526	U-235	1.2E-04	2.2E-11	7.5E-12	3.0E-11
SSW	1526	U-238	9.4E-04	1.7E-10	5.7E-11	2.3E-10
SSW	1875	U-234	2.1E-03	3.8E-10	1.3E-10	5.1E-10
SSW	1875	U-235	9.6E-05	1.7E-11	6.0E-12	2.3E-11
SSW	1875	U-238	7.3E-04	1.3E-10	4.6E-11	1.8E-10
SSW	2012	U-234	1.9E-03	3.4E-10	1.2E-10	4.7E-10
SSW	2012	U-235	8.7E-05	1.6E-11	5.6E-12	2.1E-11
SSW	2012	U-238	6.7E-04	1.2E-10	4.3E-11	1.6E-10
SSW	2404	U-234	1.5E-03	2.7E-10	1.0E-10	3.7E-10
SSW	2404	U-235	6.9E-05	1.2E-11	4.6E-12	1.7E-11
SSW	2404	U-238	5.3E-04	9.5E-11	3.6E-11	1.3E-10
SSW	3350	U-234	9.5E-04	1.7E-10	7.1E-11	2.4E-10
SSW	3350	U-235	4.3E-05	7.8E-12	3.2E-12	1.1E-11
SSW	3350	U-238	3.3E-04	6.0E-11	2.5E-11	8.5E-11
SSW	4137	U-234	7.0E-04	1.3E-10	5.6E-11	1.8E-10
SSW	4137	U-235	3.2E-05	5.8E-12	2.6E-12	8.4E-12
SSW	4137	U-238	2.5E-04	4.4E-11	2.0E-11	6.4E-11
SSW	4892	U-234	5.5E-04	1.0E-10	4.7E-11	1.5E-10
SSW	4892	U-235	2.5E-05	4.6E-12	2.1E-12	6.7E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
SSW	10000	U-238	6.4E-05	1.2E-11	7.1E-12	1.9E-11
SSW	40000	U-234	2.0E-05	3.6E-12	3.3E-12	6.9E-12
SSW	40000	U-235	9.1E-07	1.6E-13	1.5E-13	3.2E-13
SSW	40000	U-238	6.9E-06	1.2E-12	1.2E-12	2.4E-12
SSW	60000	U-234	6.7E-06	1.2E-12	1.6E-12	2.8E-12
SSW	60000	U-235	3.1E-07	5.5E-14	7.3E-14	1.3E-13
SSW	60000	U-238	2.3E-06	4.2E-13	5.6E-13	9.8E-13
SSW	80000	U-234	3.7E-06	6.7E-13	1.0E-12	1.7E-12
SSW	80000	U-235	1.7E-07	3.1E-14	4.6E-14	7.7E-14
SSW	80000	U-238	1.3E-06	2.4E-13	3.5E-13	5.9E-13
S	555	U-234	5.5E-03	9.9E-10	3.9E-10	1.4E-09
S	555	U-235	2.5E-04	4.5E-11	1.8E-11	6.3E-11
S	555	U-238	1.9E-03	3.5E-10	1.4E-10	4.9E-10
S	950	U-234	3.5E-03	6.4E-10	2.3E-10	8.7E-10
S	950	U-235	1.6E-04	2.9E-11	1.0E-11	4.0E-11
S	950	U-238	1.2E-03	2.2E-10	7.9E-11	3.0E-10
S	1050	U-234	3.2E-03	5.8E-10	2.0E-10	7.9E-10
S	1050	U-235	1.5E-04	2.7E-11	9.4E-12	3.6E-11
S	1050	U-238	1.1E-03	2.1E-10	7.2E-11	2.8E-10
S	1062	U-234	3.2E-03	5.8E-10	2.0E-10	7.8E-10
S	1062	U-235	1.5E-04	2.6E-11	9.3E-12	3.6E-11
S	1062	U-238	1.1E-03	2.0E-10	7.1E-11	2.7E-10
S	1118	U-234	3.0E-03	5.5E-10	1.9E-10	7.4E-10
S	1118	U-235	1.4E-04	2.5E-11	8.8E-12	3.4E-11
S	1118	U-238	1.1E-03	1.9E-10	6.7E-11	2.6E-10
S	1230	U-234	2.8E-03	5.0E-10	1.7E-10	6.7E-10
S	1230	U-235	1.3E-04	2.3E-11	8.0E-12	3.1E-11
S	1230	U-238	9.7E-04	1.7E-10	6.1E-11	2.3E-10
S	1308	U-234	2.6E-03	4.6E-10	1.6E-10	6.3E-10
S	1308	U-235	1.2E-04	2.1E-11	7.5E-12	2.9E-11
S	1308	U-238	9.0E-04	1.6E-10	5.7E-11	2.2E-10
S	1342	U-234	2.5E-03	4.5E-10	1.6E-10	6.1E-10
S	1342	U-235	1.1E-04	2.1E-11	7.3E-12	2.8E-11
S	1342	U-238	8.8E-04	1.6E-10	5.6E-11	2.1E-10
S	1344	U-234	2.5E-03	4.5E-10	1.6E-10	6.1E-10
S	1344	U-235	1.1E-04	2.1E-11	7.3E-12	2.8E-11
S	1344	U-238	8.8E-04	1.6E-10	5.6E-11	2.1E-10
S	1526	U-234	2.2E-03	3.9E-10	1.4E-10	5.3E-10
S	1526	U-235	9.9E-05	1.8E-11	6.4E-12	2.4E-11
S	1526	U-238	7.6E-04	1.4E-10	4.9E-11	1.9E-10
S	1875	U-234	1.7E-03	3.0E-10	1.1E-10	4.1E-10
S	1875	U-235	7.7E-05	1.4E-11	5.1E-12	1.9E-11
S	1875	U-238	5.9E-04	1.1E-10	3.9E-11	1.5E-10
S	2012	U-234	1.5E-03	2.8E-10	1.0E-10	3.8E-10

S	2012	U-235	7.0E-05	1.3E-11	4.8E-12	1.7E-11
S	2012	U-238	5.4E-04	9.7E-11	3.6E-11	1.3E-10
S	2404	U-234	1.2E-03	2.2E-10	8.6E-11	3.0E-10

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
S	2404	U-235	5.5E-05	1.0E-11	3.9E-12	1.4E-11
S	2404	U-238	4.3E-04	7.7E-11	3.0E-11	1.1E-10
S	3350	U-234	7.6E-04	1.4E-10	6.0E-11	2.0E-10
S	3350	U-235	3.5E-05	6.3E-12	2.8E-12	9.0E-12
S	3350	U-238	2.7E-04	4.8E-11	2.1E-11	6.9E-11
S	4137	U-234	5.6E-04	1.0E-10	4.8E-11	1.5E-10
S	4137	U-235	2.6E-05	4.6E-12	2.2E-12	6.8E-12
S	4137	U-238	2.0E-04	3.5E-11	1.7E-11	5.2E-11
S	4892	U-234	4.4E-04	8.0E-11	4.0E-11	1.2E-10
S	4892	U-235	2.0E-05	3.6E-12	1.8E-12	5.5E-12
S	4892	U-238	1.6E-04	2.8E-11	1.4E-11	4.2E-11
S	10000	U-234	1.5E-04	2.6E-11	1.7E-11	4.4E-11
S	10000	U-235	6.7E-06	1.2E-12	8.0E-13	2.0E-12
S	10000	U-238	5.1E-05	9.2E-12	6.1E-12	1.5E-11
S	40000	U-234	1.5E-05	2.7E-12	2.9E-12	5.7E-12
S	40000	U-235	7.0E-07	1.3E-13	1.3E-13	2.6E-13
S	40000	U-238	5.3E-06	9.6E-13	1.0E-12	2.0E-12
S	60000	U-234	5.1E-06	9.1E-13	1.5E-12	2.4E-12
S	60000	U-235	2.3E-07	4.2E-14	6.8E-14	1.1E-13
S	60000	U-238	1.8E-06	3.2E-13	5.2E-13	8.4E-13
S	80000	U-234	2.8E-06	5.1E-13	9.6E-13	1.5E-12
S	80000	U-235	1.3E-07	2.3E-14	4.4E-14	6.7E-14
S	80000	U-238	9.8E-07	1.8E-13	3.4E-13	5.1E-13
SSE	555	U-234	4.1E-03	7.5E-10	3.0E-10	1.0E-09
SSE	555	U-235	1.9E-04	3.4E-11	1.4E-11	4.8E-11
SSE	555	U-238	1.5E-03	2.6E-10	1.1E-10	3.7E-10
SSE	950	U-234	2.7E-03	4.9E-10	1.7E-10	6.6E-10
SSE	950	U-235	1.2E-04	2.2E-11	8.0E-12	3.0E-11
SSE	950	U-238	9.5E-04	1.7E-10	6.1E-11	2.3E-10
SSE	1050	U-234	2.5E-03	4.5E-10	1.6E-10	6.0E-10
SSE	1050	U-235	1.1E-04	2.0E-11	7.2E-12	2.8E-11
SSE	1050	U-238	8.7E-04	1.6E-10	5.5E-11	2.1E-10
SSE	1062	U-234	2.4E-03	4.4E-10	1.6E-10	6.0E-10
SSE	1062	U-235	1.1E-04	2.0E-11	7.1E-12	2.7E-11
SSE	1062	U-238	8.6E-04	1.6E-10	5.4E-11	2.1E-10
SSE	1118	U-234	2.3E-03	4.2E-10	1.5E-10	5.7E-10
SSE	1118	U-235	1.1E-04	1.9E-11	6.7E-12	2.6E-11
SSE	1118	U-238	8.2E-04	1.5E-10	5.2E-11	2.0E-10
SSE	1230	U-234	2.1E-03	3.8E-10	1.3E-10	5.1E-10
SSE	1230	U-235	9.6E-05	1.7E-11	6.1E-12	2.3E-11
SSE	1230	U-238	7.4E-04	1.3E-10	4.7E-11	1.8E-10
SSE	1308	U-234	2.0E-03	3.5E-10	1.2E-10	4.8E-10
SSE	1308	U-235	9.0E-05	1.6E-11	5.7E-12	2.2E-11
SSE	1308	U-238	6.9E-04	1.2E-10	4.4E-11	1.7E-10

SSE	1342	U-234	1.9E-03	3.4E-10	1.2E-10	4.7E-10
SSE	1342	U-235	8.8E-05	1.6E-11	5.6E-12	2.1E-11
SSE	1342	U-238	6.7E-04	1.2E-10	4.3E-11	1.6E-10

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind	Distance		Air	Dry	Wet	Ground
Toward	(meters)	Nuclide	Concentration	Deposition	Deposition	Deposition
			(pCi/m3)	Rate (pCi/cm2/s)	Rate (pCi/cm2/s)	Rate (pCi/cm2/s)
SSE	1344	U-234	1.9E-03	3.4E-10	1.2E-10	4.7E-10
SSE	1344	U-235	8.7E-05	1.6E-11	5.6E-12	2.1E-11
SSE	1344	U-238	6.7E-04	1.2E-10	4.3E-11	1.6E-10
SSE	1526	U-234	1.7E-03	3.0E-10	1.1E-10	4.0E-10
SSE	1526	U-235	7.6E-05	1.4E-11	4.9E-12	1.9E-11
SSE	1526	U-238	5.8E-04	1.0E-10	3.7E-11	1.4E-10
SSE	1875	U-234	1.3E-03	2.3E-10	8.6E-11	3.2E-10
SSE	1875	U-235	5.9E-05	1.1E-11	3.9E-12	1.5E-11
SSE	1875	U-238	4.5E-04	8.1E-11	3.0E-11	1.1E-10
SSE	2012	U-234	1.2E-03	2.1E-10	8.0E-11	2.9E-10
SSE	2012	U-235	5.4E-05	9.7E-12	3.6E-12	1.3E-11
SSE	2012	U-238	4.1E-04	7.4E-11	2.8E-11	1.0E-10
SSE	2404	U-234	9.3E-04	1.7E-10	6.6E-11	2.3E-10
SSE	2404	U-235	4.3E-05	7.7E-12	3.0E-12	1.1E-11
SSE	2404	U-238	3.3E-04	5.9E-11	2.3E-11	8.2E-11
SSE	3350	U-234	5.8E-04	1.0E-10	4.6E-11	1.5E-10
SSE	3350	U-235	2.7E-05	4.8E-12	2.1E-12	6.9E-12
SSE	3350	U-238	2.0E-04	3.7E-11	1.6E-11	5.3E-11
SSE	4137	U-234	4.3E-04	7.7E-11	3.7E-11	1.1E-10
SSE	4137	U-235	2.0E-05	3.5E-12	1.7E-12	5.2E-12
SSE	4137	U-238	1.5E-04	2.7E-11	1.3E-11	4.0E-11
SSE	4892	U-234	3.4E-04	6.1E-11	3.0E-11	9.1E-11
SSE	4892	U-235	1.6E-05	2.8E-12	1.4E-12	4.2E-12
SSE	4892	U-238	1.2E-04	2.1E-11	1.1E-11	3.2E-11
SSE	10000	U-234	1.1E-04	2.0E-11	1.3E-11	3.3E-11
SSE	10000	U-235	5.1E-06	9.2E-13	6.1E-13	1.5E-12
SSE	10000	U-238	3.9E-05	7.1E-12	4.6E-12	1.2E-11
SSE	40000	U-234	1.2E-05	2.1E-12	2.2E-12	4.3E-12
SSE	40000	U-235	5.4E-07	9.7E-14	1.0E-13	2.0E-13
SSE	40000	U-238	4.1E-06	7.4E-13	7.8E-13	1.5E-12
SSE	60000	U-234	4.0E-06	7.2E-13	1.1E-12	1.8E-12
SSE	60000	U-235	1.8E-07	3.3E-14	5.1E-14	8.4E-14
SSE	60000	U-238	1.4E-06	2.5E-13	3.9E-13	6.4E-13
SSE	80000	U-234	2.2E-06	4.0E-13	7.1E-13	1.1E-12
SSE	80000	U-235	1.0E-07	1.8E-14	3.3E-14	5.1E-14
SSE	80000	U-238	7.8E-07	1.4E-13	2.5E-13	3.9E-13
SE	555	U-234	4.5E-03	8.1E-10	3.2E-10	1.1E-09
SE	555	U-235	2.1E-04	3.7E-11	1.5E-11	5.2E-11
SE	555	U-238	1.6E-03	2.9E-10	1.1E-10	4.0E-10
SE	950	U-234	2.9E-03	5.2E-10	1.8E-10	7.1E-10
SE	950	U-235	1.3E-04	2.4E-11	8.4E-12	3.2E-11
SE	950	U-238	1.0E-03	1.8E-10	6.4E-11	2.5E-10
SE	1050	U-234	2.6E-03	4.8E-10	1.7E-10	6.4E-10
SE	1050	U-235	1.2E-04	2.2E-11	7.6E-12	2.9E-11

SE	1050	U-238	9.3E-04	1.7E-10	5.8E-11	2.3E-10
SE	1062	U-234	2.6E-03	4.7E-10	1.6E-10	6.3E-10
SE	1062	U-235	1.2E-04	2.1E-11	7.5E-12	2.9E-11

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
SE	1062	U-238	9.2E-04	1.7E-10	5.7E-11	2.2E-10
SE	1118	U-234	2.5E-03	4.5E-10	1.6E-10	6.0E-10
SE	1118	U-235	1.1E-04	2.0E-11	7.1E-12	2.7E-11
SE	1118	U-238	8.7E-04	1.6E-10	5.4E-11	2.1E-10
SE	1230	U-234	2.2E-03	4.0E-10	1.4E-10	5.4E-10
SE	1230	U-235	1.0E-04	1.8E-11	6.4E-12	2.5E-11
SE	1230	U-238	7.9E-04	1.4E-10	4.9E-11	1.9E-10
SE	1308	U-234	2.1E-03	3.8E-10	1.3E-10	5.1E-10
SE	1308	U-235	9.5E-05	1.7E-11	6.0E-12	2.3E-11
SE	1308	U-238	7.3E-04	1.3E-10	4.6E-11	1.8E-10
SE	1342	U-234	2.0E-03	3.7E-10	1.3E-10	4.9E-10
SE	1342	U-235	9.3E-05	1.7E-11	5.9E-12	2.3E-11
SE	1342	U-238	7.1E-04	1.3E-10	4.5E-11	1.7E-10
SE	1344	U-234	2.0E-03	3.6E-10	1.3E-10	4.9E-10
SE	1344	U-235	9.3E-05	1.7E-11	5.9E-12	2.3E-11
SE	1344	U-238	7.1E-04	1.3E-10	4.5E-11	1.7E-10
SE	1526	U-234	1.7E-03	3.1E-10	1.1E-10	4.3E-10
SE	1526	U-235	8.0E-05	1.4E-11	5.1E-12	2.0E-11
SE	1526	U-238	6.1E-04	1.1E-10	3.9E-11	1.5E-10
SE	1875	U-234	1.4E-03	2.4E-10	9.0E-11	3.3E-10
SE	1875	U-235	6.2E-05	1.1E-11	4.1E-12	1.5E-11
SE	1875	U-238	4.8E-04	8.6E-11	3.2E-11	1.2E-10
SE	2012	U-234	1.2E-03	2.2E-10	8.4E-11	3.1E-10
SE	2012	U-235	5.7E-05	1.0E-11	3.8E-12	1.4E-11
SE	2012	U-238	4.3E-04	7.8E-11	2.9E-11	1.1E-10
SE	2404	U-234	9.7E-04	1.8E-10	7.0E-11	2.4E-10
SE	2404	U-235	4.5E-05	8.0E-12	3.2E-12	1.1E-11
SE	2404	U-238	3.4E-04	6.1E-11	2.4E-11	8.6E-11
SE	3350	U-234	6.1E-04	1.1E-10	4.9E-11	1.6E-10
SE	3350	U-235	2.8E-05	5.0E-12	2.2E-12	7.2E-12
SE	3350	U-238	2.1E-04	3.8E-11	1.7E-11	5.5E-11
SE	4137	U-234	4.5E-04	8.1E-11	3.9E-11	1.2E-10
SE	4137	U-235	2.1E-05	3.7E-12	1.8E-12	5.5E-12
SE	4137	U-238	1.6E-04	2.8E-11	1.4E-11	4.2E-11
SE	4892	U-234	3.5E-04	6.4E-11	3.2E-11	9.6E-11
SE	4892	U-235	1.6E-05	2.9E-12	1.5E-12	4.4E-12
SE	4892	U-238	1.2E-04	2.2E-11	1.1E-11	3.4E-11
SE	10000	U-234	1.2E-04	2.1E-11	1.4E-11	3.5E-11
SE	10000	U-235	5.3E-06	9.6E-13	6.4E-13	1.6E-12
SE	10000	U-238	4.1E-05	7.4E-12	4.9E-12	1.2E-11
SE	40000	U-234	1.2E-05	2.2E-12	2.4E-12	4.6E-12
SE	40000	U-235	5.6E-07	1.0E-13	1.1E-13	2.1E-13
SE	40000	U-238	4.3E-06	7.7E-13	8.4E-13	1.6E-12
SE	60000	U-234	4.2E-06	7.5E-13	1.2E-12	2.0E-12

SE	60000	U-235	1.9E-07	3.4E-14	5.5E-14	8.9E-14
SE	60000	U-238	1.5E-06	2.6E-13	4.2E-13	6.8E-13
SE	80000	U-234	2.3E-06	4.2E-13	7.8E-13	1.2E-12

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration Rate (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
SE	80000	U-235	1.1E-07	1.9E-14	3.6E-14	5.5E-14
SE	80000	U-238	8.1E-07	1.5E-13	2.7E-13	4.2E-13
ESE	555	U-234	4.4E-03	8.0E-10	3.4E-10	1.1E-09
ESE	555	U-235	2.0E-04	3.6E-11	1.5E-11	5.2E-11
ESE	555	U-238	1.6E-03	2.8E-10	1.2E-10	4.0E-10
ESE	950	U-234	3.0E-03	5.3E-10	1.9E-10	7.3E-10
ESE	950	U-235	1.4E-04	2.4E-11	8.9E-12	3.3E-11
ESE	950	U-238	1.0E-03	1.9E-10	6.8E-11	2.6E-10
ESE	1050	U-234	2.7E-03	4.9E-10	1.8E-10	6.7E-10
ESE	1050	U-235	1.2E-04	2.2E-11	8.0E-12	3.0E-11
ESE	1050	U-238	9.6E-04	1.7E-10	6.1E-11	2.3E-10
ESE	1062	U-234	2.7E-03	4.8E-10	1.7E-10	6.6E-10
ESE	1062	U-235	1.2E-04	2.2E-11	7.9E-12	3.0E-11
ESE	1062	U-238	9.5E-04	1.7E-10	6.1E-11	2.3E-10
ESE	1118	U-234	2.6E-03	4.6E-10	1.6E-10	6.3E-10
ESE	1118	U-235	1.2E-04	2.1E-11	7.5E-12	2.9E-11
ESE	1118	U-238	9.0E-04	1.6E-10	5.8E-11	2.2E-10
ESE	1230	U-234	2.3E-03	4.2E-10	1.5E-10	5.7E-10
ESE	1230	U-235	1.1E-04	1.9E-11	6.8E-12	2.6E-11
ESE	1230	U-238	8.2E-04	1.5E-10	5.2E-11	2.0E-10
ESE	1308	U-234	2.2E-03	3.9E-10	1.4E-10	5.3E-10
ESE	1308	U-235	1.0E-04	1.8E-11	6.4E-12	2.4E-11
ESE	1308	U-238	7.7E-04	1.4E-10	4.9E-11	1.9E-10
ESE	1342	U-234	2.1E-03	3.8E-10	1.4E-10	5.2E-10
ESE	1342	U-235	9.7E-05	1.7E-11	6.2E-12	2.4E-11
ESE	1342	U-238	7.5E-04	1.3E-10	4.8E-11	1.8E-10
ESE	1344	U-234	2.1E-03	3.8E-10	1.4E-10	5.2E-10
ESE	1344	U-235	9.7E-05	1.7E-11	6.2E-12	2.4E-11
ESE	1344	U-238	7.5E-04	1.3E-10	4.8E-11	1.8E-10
ESE	1526	U-234	1.8E-03	3.3E-10	1.2E-10	4.5E-10
ESE	1526	U-235	8.4E-05	1.5E-11	5.4E-12	2.1E-11
ESE	1526	U-238	6.5E-04	1.2E-10	4.2E-11	1.6E-10
ESE	1875	U-234	1.4E-03	2.6E-10	9.5E-11	3.6E-10
ESE	1875	U-235	6.6E-05	1.2E-11	4.4E-12	1.6E-11
ESE	1875	U-238	5.1E-04	9.1E-11	3.3E-11	1.2E-10
ESE	2012	U-234	1.3E-03	2.4E-10	8.9E-11	3.3E-10
ESE	2012	U-235	6.0E-05	1.1E-11	4.1E-12	1.5E-11
ESE	2012	U-238	4.6E-04	8.3E-11	3.1E-11	1.1E-10
ESE	2404	U-234	1.0E-03	1.9E-10	7.3E-11	2.6E-10
ESE	2404	U-235	4.8E-05	8.6E-12	3.4E-12	1.2E-11
ESE	2404	U-238	3.7E-04	6.6E-11	2.6E-11	9.2E-11
ESE	3350	U-234	6.6E-04	1.2E-10	5.1E-11	1.7E-10
ESE	3350	U-235	3.0E-05	5.4E-12	2.3E-12	7.7E-12
ESE	3350	U-238	2.3E-04	4.1E-11	1.8E-11	5.9E-11

ESE	4137	U-234	4.8E-04	8.7E-11	4.0E-11	1.3E-10
ESE	4137	U-235	2.2E-05	4.0E-12	1.9E-12	5.9E-12
ESE	4137	U-238	1.7E-04	3.1E-11	1.4E-11	4.5E-11

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
ESE	4892	U-234	3.8E-04	6.9E-11	3.4E-11	1.0E-10
ESE	4892	U-235	1.7E-05	3.1E-12	1.5E-12	4.7E-12
ESE	4892	U-238	1.3E-04	2.4E-11	1.2E-11	3.6E-11
ESE	10000	U-234	1.2E-04	2.2E-11	1.4E-11	3.7E-11
ESE	10000	U-235	5.7E-06	1.0E-12	6.6E-13	1.7E-12
ESE	10000	U-238	4.4E-05	7.8E-12	5.1E-12	1.3E-11
ESE	40000	U-234	1.2E-05	2.2E-12	2.3E-12	4.6E-12
ESE	40000	U-235	5.7E-07	1.0E-13	1.1E-13	2.1E-13
ESE	40000	U-238	4.3E-06	7.8E-13	8.2E-13	1.6E-12
ESE	60000	U-234	3.9E-06	7.0E-13	1.1E-12	1.9E-12
ESE	60000	U-235	1.8E-07	3.2E-14	5.3E-14	8.5E-14
ESE	60000	U-238	1.4E-06	2.5E-13	4.0E-13	6.5E-13
ESE	80000	U-234	2.1E-06	3.9E-13	7.3E-13	1.1E-12
ESE	80000	U-235	9.8E-08	1.8E-14	3.4E-14	5.1E-14
ESE	80000	U-238	7.5E-07	1.4E-13	2.6E-13	3.9E-13
E	555	U-234	5.5E-03	9.9E-10	4.2E-10	1.4E-09
E	555	U-235	2.5E-04	4.5E-11	1.9E-11	6.5E-11
E	555	U-238	1.9E-03	3.5E-10	1.5E-10	5.0E-10
E	950	U-234	3.8E-03	6.9E-10	2.4E-10	9.3E-10
E	950	U-235	1.7E-04	3.1E-11	1.1E-11	4.3E-11
E	950	U-238	1.3E-03	2.4E-10	8.6E-11	3.3E-10
E	1050	U-234	3.5E-03	6.3E-10	2.2E-10	8.5E-10
E	1050	U-235	1.6E-04	2.9E-11	1.0E-11	3.9E-11
E	1050	U-238	1.2E-03	2.2E-10	7.7E-11	3.0E-10
E	1062	U-234	3.5E-03	6.3E-10	2.2E-10	8.5E-10
E	1062	U-235	1.6E-04	2.9E-11	1.0E-11	3.9E-11
E	1062	U-238	1.2E-03	2.2E-10	7.7E-11	3.0E-10
E	1118	U-234	3.3E-03	6.0E-10	2.1E-10	8.0E-10
E	1118	U-235	1.5E-04	2.7E-11	9.5E-12	3.7E-11
E	1118	U-238	1.2E-03	2.1E-10	7.3E-11	2.8E-10
E	1230	U-234	3.0E-03	5.4E-10	1.9E-10	7.3E-10
E	1230	U-235	1.4E-04	2.5E-11	8.6E-12	3.3E-11
E	1230	U-238	1.1E-03	1.9E-10	6.6E-11	2.6E-10
E	1308	U-234	2.8E-03	5.1E-10	1.8E-10	6.9E-10
E	1308	U-235	1.3E-04	2.3E-11	8.1E-12	3.1E-11
E	1308	U-238	1.0E-03	1.8E-10	6.2E-11	2.4E-10
E	1342	U-234	2.8E-03	5.0E-10	1.7E-10	6.7E-10
E	1342	U-235	1.3E-04	2.3E-11	7.8E-12	3.1E-11
E	1342	U-238	9.7E-04	1.8E-10	6.0E-11	2.4E-10
E	1344	U-234	2.8E-03	5.0E-10	1.7E-10	6.7E-10
E	1344	U-235	1.3E-04	2.3E-11	7.8E-12	3.1E-11
E	1344	U-238	9.7E-04	1.7E-10	6.0E-11	2.3E-10
E	1526	U-234	2.4E-03	4.3E-10	1.5E-10	5.8E-10
E	1526	U-235	1.1E-04	2.0E-11	6.9E-12	2.7E-11

E	1526	U-238	8.5E-04	1.5E-10	5.2E-11	2.0E-10
E	1875	U-234	1.9E-03	3.4E-10	1.2E-10	4.6E-10
E	1875	U-235	8.7E-05	1.6E-11	5.5E-12	2.1E-11

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration Rate (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
E	1875	U-238	6.6E-04	1.2E-10	4.2E-11	1.6E-10
E	2012	U-234	1.7E-03	3.1E-10	1.1E-10	4.2E-10
E	2012	U-235	7.9E-05	1.4E-11	5.1E-12	1.9E-11
E	2012	U-238	6.1E-04	1.1E-10	3.9E-11	1.5E-10
E	2404	U-234	1.4E-03	2.5E-10	9.2E-11	3.4E-10
E	2404	U-235	6.3E-05	1.1E-11	4.2E-12	1.6E-11
E	2404	U-238	4.8E-04	8.7E-11	3.2E-11	1.2E-10
E	3350	U-234	8.6E-04	1.6E-10	6.4E-11	2.2E-10
E	3350	U-235	3.9E-05	7.1E-12	2.9E-12	1.0E-11
E	3350	U-238	3.0E-04	5.4E-11	2.2E-11	7.7E-11
E	4137	U-234	6.4E-04	1.1E-10	5.1E-11	1.7E-10
E	4137	U-235	2.9E-05	5.3E-12	2.3E-12	7.6E-12
E	4137	U-238	2.2E-04	4.0E-11	1.8E-11	5.8E-11
E	4892	U-234	5.0E-04	9.0E-11	4.2E-11	1.3E-10
E	4892	U-235	2.3E-05	4.1E-12	1.9E-12	6.1E-12
E	4892	U-238	1.8E-04	3.2E-11	1.5E-11	4.6E-11
E	10000	U-234	1.6E-04	2.9E-11	1.8E-11	4.7E-11
E	10000	U-235	7.4E-06	1.3E-12	8.2E-13	2.2E-12
E	10000	U-238	5.7E-05	1.0E-11	6.2E-12	1.6E-11
E	40000	U-234	1.6E-05	2.8E-12	2.8E-12	5.6E-12
E	40000	U-235	7.2E-07	1.3E-13	1.3E-13	2.6E-13
E	40000	U-238	5.5E-06	9.8E-13	9.7E-13	2.0E-12
E	60000	U-234	4.7E-06	8.5E-13	1.3E-12	2.2E-12
E	60000	U-235	2.2E-07	3.9E-14	6.0E-14	9.9E-14
E	60000	U-238	1.7E-06	3.0E-13	4.6E-13	7.6E-13
E	80000	U-234	2.6E-06	4.6E-13	8.3E-13	1.3E-12
E	80000	U-235	1.2E-07	2.1E-14	3.8E-14	5.9E-14
E	80000	U-238	8.9E-07	1.6E-13	2.9E-13	4.5E-13
ENE	555	U-234	7.9E-03	1.4E-09	5.9E-10	2.0E-09
ENE	555	U-235	3.6E-04	6.4E-11	2.7E-11	9.1E-11
ENE	555	U-238	2.8E-03	5.0E-10	2.1E-10	7.1E-10
ENE	950	U-234	5.5E-03	9.8E-10	3.4E-10	1.3E-09
ENE	950	U-235	2.5E-04	4.5E-11	1.6E-11	6.1E-11
ENE	950	U-238	1.9E-03	3.5E-10	1.2E-10	4.7E-10
ENE	1050	U-234	5.0E-03	9.1E-10	3.1E-10	1.2E-09
ENE	1050	U-235	2.3E-04	4.1E-11	1.4E-11	5.6E-11
ENE	1050	U-238	1.8E-03	3.2E-10	1.1E-10	4.3E-10
ENE	1062	U-234	5.0E-03	9.0E-10	3.0E-10	1.2E-09
ENE	1062	U-235	2.3E-04	4.1E-11	1.4E-11	5.5E-11
ENE	1062	U-238	1.8E-03	3.2E-10	1.1E-10	4.2E-10
ENE	1118	U-234	4.8E-03	8.6E-10	2.9E-10	1.1E-09
ENE	1118	U-235	2.2E-04	3.9E-11	1.3E-11	5.2E-11
ENE	1118	U-238	1.7E-03	3.0E-10	1.0E-10	4.0E-10
ENE	1230	U-234	4.3E-03	7.8E-10	2.6E-10	1.0E-09

ENE	1230	U-235	2.0E-04	3.6E-11	1.2E-11	4.8E-11
ENE	1230	U-238	1.5E-03	2.7E-10	9.1E-11	3.7E-10
ENE	1308	U-234	4.1E-03	7.3E-10	2.4E-10	9.8E-10

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
ENE	1308	U-235	1.9E-04	3.3E-11	1.1E-11	4.5E-11
ENE	1308	U-238	1.4E-03	2.6E-10	8.6E-11	3.4E-10
ENE	1342	U-234	4.0E-03	7.1E-10	2.4E-10	9.5E-10
ENE	1342	U-235	1.8E-04	3.3E-11	1.1E-11	4.3E-11
ENE	1342	U-238	1.4E-03	2.5E-10	8.3E-11	3.3E-10
ENE	1344	U-234	4.0E-03	7.1E-10	2.4E-10	9.5E-10
ENE	1344	U-235	1.8E-04	3.3E-11	1.1E-11	4.3E-11
ENE	1344	U-238	1.4E-03	2.5E-10	8.3E-11	3.3E-10
ENE	1526	U-234	3.4E-03	6.2E-10	2.1E-10	8.3E-10
ENE	1526	U-235	1.6E-04	2.8E-11	9.5E-12	3.8E-11
ENE	1526	U-238	1.2E-03	2.2E-10	7.3E-11	2.9E-10
ENE	1875	U-234	2.7E-03	4.9E-10	1.7E-10	6.5E-10
ENE	1875	U-235	1.2E-04	2.2E-11	7.7E-12	3.0E-11
ENE	1875	U-238	9.5E-04	1.7E-10	5.9E-11	2.3E-10
ENE	2012	U-234	2.5E-03	4.4E-10	1.6E-10	6.0E-10
ENE	2012	U-235	1.1E-04	2.0E-11	7.1E-12	2.7E-11
ENE	2012	U-238	8.7E-04	1.6E-10	5.4E-11	2.1E-10
ENE	2404	U-234	2.0E-03	3.5E-10	1.3E-10	4.8E-10
ENE	2404	U-235	9.0E-05	1.6E-11	5.9E-12	2.2E-11
ENE	2404	U-238	6.9E-04	1.2E-10	4.5E-11	1.7E-10
ENE	3350	U-234	1.2E-03	2.2E-10	8.9E-11	3.1E-10
ENE	3350	U-235	5.6E-05	1.0E-11	4.1E-12	1.4E-11
ENE	3350	U-238	4.3E-04	7.8E-11	3.1E-11	1.1E-10
ENE	4137	U-234	9.1E-04	1.6E-10	7.0E-11	2.3E-10
ENE	4137	U-235	4.2E-05	7.5E-12	3.2E-12	1.1E-11
ENE	4137	U-238	3.2E-04	5.7E-11	2.5E-11	8.2E-11
ENE	4892	U-234	7.2E-04	1.3E-10	5.8E-11	1.9E-10
ENE	4892	U-235	3.3E-05	5.9E-12	2.7E-12	8.6E-12
ENE	4892	U-238	2.5E-04	4.5E-11	2.0E-11	6.6E-11
ENE	10000	U-234	2.3E-04	4.2E-11	2.5E-11	6.6E-11
ENE	10000	U-235	1.1E-05	1.9E-12	1.1E-12	3.0E-12
ENE	10000	U-238	8.1E-05	1.5E-11	8.7E-12	2.3E-11
ENE	40000	U-234	2.2E-05	4.0E-12	3.8E-12	7.9E-12
ENE	40000	U-235	1.0E-06	1.9E-13	1.8E-13	3.6E-13
ENE	40000	U-238	7.9E-06	1.4E-12	1.3E-12	2.8E-12
ENE	60000	U-234	6.9E-06	1.2E-12	1.8E-12	3.0E-12
ENE	60000	U-235	3.1E-07	5.7E-14	8.3E-14	1.4E-13
ENE	60000	U-238	2.4E-06	4.3E-13	6.3E-13	1.1E-12
ENE	80000	U-234	3.7E-06	6.7E-13	1.1E-12	1.8E-12
ENE	80000	U-235	1.7E-07	3.1E-14	5.3E-14	8.3E-14
ENE	80000	U-238	1.3E-06	2.3E-13	4.0E-13	6.4E-13
NE	555	U-234	1.0E-02	1.8E-09	7.4E-10	2.5E-09
NE	555	U-235	4.6E-04	8.2E-11	3.4E-11	1.2E-10
NE	555	U-238	3.5E-03	6.4E-10	2.6E-10	9.0E-10

NE	950	U-234	6.9E-03	1.2E-09	4.3E-10	1.7E-09
NE	950	U-235	3.2E-04	5.7E-11	2.0E-11	7.6E-11
NE	950	U-238	2.4E-03	4.4E-10	1.5E-10	5.9E-10

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration Rate (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
NE	1050	U-234	6.4E-03	1.1E-09	3.8E-10	1.5E-09
NE	1050	U-235	2.9E-04	5.2E-11	1.8E-11	7.0E-11
NE	1050	U-238	2.2E-03	4.0E-10	1.3E-10	5.4E-10
NE	1062	U-234	6.3E-03	1.1E-09	3.8E-10	1.5E-09
NE	1062	U-235	2.9E-04	5.2E-11	1.7E-11	6.9E-11
NE	1062	U-238	2.2E-03	4.0E-10	1.3E-10	5.3E-10
NE	1118	U-234	6.0E-03	1.1E-09	3.6E-10	1.4E-09
NE	1118	U-235	2.7E-04	4.9E-11	1.7E-11	6.6E-11
NE	1118	U-238	2.1E-03	3.8E-10	1.3E-10	5.1E-10
NE	1230	U-234	5.5E-03	9.8E-10	3.3E-10	1.3E-09
NE	1230	U-235	2.5E-04	4.5E-11	1.5E-11	6.0E-11
NE	1230	U-238	1.9E-03	3.5E-10	1.1E-10	4.6E-10
NE	1308	U-234	5.1E-03	9.2E-10	3.1E-10	1.2E-09
NE	1308	U-235	2.3E-04	4.2E-11	1.4E-11	5.6E-11
NE	1308	U-238	1.8E-03	3.2E-10	1.1E-10	4.3E-10
NE	1342	U-234	5.0E-03	9.0E-10	3.0E-10	1.2E-09
NE	1342	U-235	2.3E-04	4.1E-11	1.4E-11	5.5E-11
NE	1342	U-238	1.8E-03	3.2E-10	1.0E-10	4.2E-10
NE	1344	U-234	5.0E-03	9.0E-10	3.0E-10	1.2E-09
NE	1344	U-235	2.3E-04	4.1E-11	1.4E-11	5.5E-11
NE	1344	U-238	1.7E-03	3.1E-10	1.0E-10	4.2E-10
NE	1526	U-234	4.3E-03	7.8E-10	2.6E-10	1.0E-09
NE	1526	U-235	2.0E-04	3.6E-11	1.2E-11	4.8E-11
NE	1526	U-238	1.5E-03	2.7E-10	9.1E-11	3.7E-10
NE	1875	U-234	3.4E-03	6.1E-10	2.1E-10	8.2E-10
NE	1875	U-235	1.6E-04	2.8E-11	9.6E-12	3.8E-11
NE	1875	U-238	1.2E-03	2.1E-10	7.3E-11	2.9E-10
NE	2012	U-234	3.1E-03	5.6E-10	1.9E-10	7.5E-10
NE	2012	U-235	1.4E-04	2.6E-11	8.9E-12	3.4E-11
NE	2012	U-238	1.1E-03	2.0E-10	6.8E-11	2.6E-10
NE	2404	U-234	2.5E-03	4.4E-10	1.6E-10	6.0E-10
NE	2404	U-235	1.1E-04	2.0E-11	7.4E-12	2.8E-11
NE	2404	U-238	8.6E-04	1.5E-10	5.6E-11	2.1E-10
NE	3350	U-234	1.5E-03	2.8E-10	1.1E-10	3.9E-10
NE	3350	U-235	7.0E-05	1.3E-11	5.1E-12	1.8E-11
NE	3350	U-238	5.4E-04	9.7E-11	3.9E-11	1.4E-10
NE	4137	U-234	1.1E-03	2.0E-10	8.8E-11	2.9E-10
NE	4137	U-235	5.2E-05	9.4E-12	4.0E-12	1.3E-11
NE	4137	U-238	4.0E-04	7.2E-11	3.1E-11	1.0E-10
NE	4892	U-234	8.9E-04	1.6E-10	7.3E-11	2.3E-10
NE	4892	U-235	4.1E-05	7.4E-12	3.3E-12	1.1E-11
NE	4892	U-238	3.1E-04	5.6E-11	2.6E-11	8.2E-11
NE	10000	U-234	2.9E-04	5.2E-11	3.1E-11	8.3E-11
NE	10000	U-235	1.3E-05	2.4E-12	1.4E-12	3.8E-12

NE	10000	U-238	1.0E-04	1.8E-11	1.1E-11	2.9E-11
NE	40000	U-234	2.8E-05	5.1E-12	4.8E-12	9.9E-12
NE	40000	U-235	1.3E-06	2.3E-13	2.2E-13	4.5E-13

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
NE	40000	U-238	9.9E-06	1.8E-12	1.7E-12	3.5E-12
NE	60000	U-234	8.8E-06	1.6E-12	2.3E-12	3.8E-12
NE	60000	U-235	4.0E-07	7.2E-14	1.0E-13	1.8E-13
NE	60000	U-238	3.1E-06	5.5E-13	7.9E-13	1.3E-12
NE	80000	U-234	4.7E-06	8.5E-13	1.4E-12	2.3E-12
NE	80000	U-235	2.2E-07	3.9E-14	6.6E-14	1.0E-13
NE	80000	U-238	1.7E-06	3.0E-13	5.0E-13	8.0E-13
NNE	555	U-234	1.1E-02	1.9E-09	7.8E-10	2.7E-09
NNE	555	U-235	4.9E-04	8.9E-11	3.6E-11	1.2E-10
NNE	555	U-238	3.8E-03	6.9E-10	2.7E-10	9.6E-10
NNE	950	U-234	7.4E-03	1.3E-09	4.5E-10	1.8E-09
NNE	950	U-235	3.4E-04	6.1E-11	2.1E-11	8.1E-11
NNE	950	U-238	2.6E-03	4.7E-10	1.6E-10	6.2E-10
NNE	1050	U-234	6.8E-03	1.2E-09	4.0E-10	1.6E-09
NNE	1050	U-235	3.1E-04	5.6E-11	1.9E-11	7.4E-11
NNE	1050	U-238	2.4E-03	4.3E-10	1.4E-10	5.7E-10
NNE	1062	U-234	6.7E-03	1.2E-09	4.0E-10	1.6E-09
NNE	1062	U-235	3.1E-04	5.5E-11	1.8E-11	7.3E-11
NNE	1062	U-238	2.4E-03	4.2E-10	1.4E-10	5.6E-10
NNE	1118	U-234	6.4E-03	1.1E-09	3.8E-10	1.5E-09
NNE	1118	U-235	2.9E-04	5.2E-11	1.7E-11	7.0E-11
NNE	1118	U-238	2.2E-03	4.0E-10	1.3E-10	5.4E-10
NNE	1230	U-234	5.8E-03	1.0E-09	3.4E-10	1.4E-09
NNE	1230	U-235	2.6E-04	4.8E-11	1.6E-11	6.3E-11
NNE	1230	U-238	2.0E-03	3.7E-10	1.2E-10	4.9E-10
NNE	1308	U-234	5.4E-03	9.7E-10	3.2E-10	1.3E-09
NNE	1308	U-235	2.5E-04	4.5E-11	1.5E-11	5.9E-11
NNE	1308	U-238	1.9E-03	3.4E-10	1.1E-10	4.6E-10
NNE	1342	U-234	5.3E-03	9.5E-10	3.1E-10	1.3E-09
NNE	1342	U-235	2.4E-04	4.3E-11	1.4E-11	5.8E-11
NNE	1342	U-238	1.9E-03	3.3E-10	1.1E-10	4.4E-10
NNE	1344	U-234	5.3E-03	9.5E-10	3.1E-10	1.3E-09
NNE	1344	U-235	2.4E-04	4.3E-11	1.4E-11	5.8E-11
NNE	1344	U-238	1.8E-03	3.3E-10	1.1E-10	4.4E-10
NNE	1526	U-234	4.6E-03	8.2E-10	2.7E-10	1.1E-09
NNE	1526	U-235	2.1E-04	3.8E-11	1.3E-11	5.0E-11
NNE	1526	U-238	1.6E-03	2.9E-10	9.6E-11	3.8E-10
NNE	1875	U-234	3.6E-03	6.4E-10	2.2E-10	8.6E-10
NNE	1875	U-235	1.6E-04	2.9E-11	1.0E-11	3.9E-11
NNE	1875	U-238	1.2E-03	2.2E-10	7.7E-11	3.0E-10
NNE	2012	U-234	3.2E-03	5.8E-10	2.0E-10	7.9E-10
NNE	2012	U-235	1.5E-04	2.7E-11	9.4E-12	3.6E-11
NNE	2012	U-238	1.1E-03	2.1E-10	7.2E-11	2.8E-10
NNE	2404	U-234	2.6E-03	4.6E-10	1.7E-10	6.3E-10

ESTIMATED RADIONUCLIDE CONCENTRATIONS
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

Wind Toward	Distance (meters)	Nuclide	Air Concentration Rate (pCi/m3)	Dry Deposition Rate (pCi/cm2/s)	Wet Deposition Rate (pCi/cm2/s)	Ground Deposition Rate (pCi/cm2/s)
NNE	3350	U-235	7.3E-05	1.3E-11	5.4E-12	1.9E-11
NNE	3350	U-238	5.6E-04	1.0E-10	4.1E-11	1.4E-10
NNE	4137	U-234	1.2E-03	2.1E-10	9.3E-11	3.1E-10
NNE	4137	U-235	5.4E-05	9.8E-12	4.2E-12	1.4E-11
NNE	4137	U-238	4.2E-04	7.5E-11	3.2E-11	1.1E-10
NNE	4892	U-234	9.3E-04	1.7E-10	7.7E-11	2.4E-10
NNE	4892	U-235	4.3E-05	7.7E-12	3.5E-12	1.1E-11
NNE	4892	U-238	3.3E-04	5.9E-11	2.7E-11	8.6E-11
NNE	10000	U-234	3.0E-04	5.4E-11	3.3E-11	8.7E-11
NNE	10000	U-235	1.4E-05	2.5E-12	1.5E-12	4.0E-12
NNE	10000	U-238	1.1E-04	1.9E-11	1.1E-11	3.0E-11
NNE	40000	U-234	3.0E-05	5.4E-12	5.0E-12	1.0E-11
NNE	40000	U-235	1.4E-06	2.5E-13	2.3E-13	4.7E-13
NNE	40000	U-238	1.0E-05	1.9E-12	1.7E-12	3.6E-12
NNE	60000	U-234	9.2E-06	1.7E-12	2.3E-12	3.9E-12
NNE	60000	U-235	4.2E-07	7.6E-14	1.0E-13	1.8E-13
NNE	60000	U-238	3.2E-06	5.8E-13	8.0E-13	1.4E-12
NNE	80000	U-234	4.9E-06	8.9E-13	1.4E-12	2.3E-12
NNE	80000	U-235	2.3E-07	4.1E-14	6.4E-14	1.1E-13
NNE	80000	U-238	1.7E-06	3.1E-13	4.9E-13	8.0E-13

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

C H I / Q T A B L E S

Non-Radon Individual Assessment

Nov 11, 2003 10:04 am

Facility: Portsmouth American Centrifuge

Address:

City: Piketon

State: OH

Zip:

Source Category: Facility and Process Ventilation System

Source Type: Stack

Emission Year: 2003

Comments:

Dataset Name: N4PBIOFF

Dataset Date: Nov 11, 2003 10:04 am

Wind File: C:\CAP88PC2\CAP88PC2\PORTS30.WND

Nov 11, 2003 10:04 am

CHIQ
Page 1

GROUND-LEVEL CHI/Q VALUES FOR U-234
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)							
Dir	555	950	1050	1062	1118	1230	1308
N	5.014E-06	3.380E-06	3.092E-06	3.057E-06	2.905E-06	2.633E-06	2.465E-06
NNW	2.747E-06	2.032E-06	1.891E-06	1.873E-06	1.791E-06	1.642E-06	1.548E-06
NW	2.201E-06	1.682E-06	1.574E-06	1.560E-06	1.495E-06	1.375E-06	1.299E-06
WNW	2.079E-06	1.552E-06	1.445E-06	1.431E-06	1.369E-06	1.256E-06	1.184E-06
W	1.765E-06	1.284E-06	1.192E-06	1.180E-06	1.127E-06	1.032E-06	9.719E-07
WSW	1.693E-06	1.187E-06	1.098E-06	1.086E-06	1.037E-06	9.465E-07	8.902E-07
SW	2.188E-06	1.473E-06	1.351E-06	1.337E-06	1.272E-06	1.155E-06	1.083E-06
SSW	2.975E-06	1.989E-06	1.819E-06	1.799E-06	1.710E-06	1.550E-06	1.452E-06
S	2.494E-06	1.615E-06	1.475E-06	1.458E-06	1.384E-06	1.253E-06	1.172E-06
SSE	1.888E-06	1.235E-06	1.128E-06	1.115E-06	1.059E-06	9.589E-07	8.975E-07
SE	2.058E-06	1.320E-06	1.202E-06	1.188E-06	1.126E-06	1.017E-06	9.506E-07
ESE	2.016E-06	1.349E-06	1.239E-06	1.226E-06	1.166E-06	1.060E-06	9.943E-07
E	2.505E-06	1.737E-06	1.603E-06	1.586E-06	1.512E-06	1.378E-06	1.295E-06
ENE	3.575E-06	2.489E-06	2.294E-06	2.270E-06	2.163E-06	1.971E-06	1.851E-06
NE	4.565E-06	3.151E-06	2.899E-06	2.869E-06	2.731E-06	2.485E-06	2.332E-06
NNE	4.926E-06	3.358E-06	3.079E-06	3.046E-06	2.896E-06	2.629E-06	2.464E-06

Distance (meters)							
Dir	1342	1344	1526	1875	2012	2404	3350
N	2.397E-06	2.393E-06	2.072E-06	1.613E-06	1.473E-06	1.162E-06	7.274E-07
NNW	1.509E-06	1.507E-06	1.322E-06	1.045E-06	9.588E-07	7.634E-07	4.823E-07
NW	1.268E-06	1.266E-06	1.114E-06	8.851E-07	8.127E-07	6.487E-07	4.105E-07
WNW	1.155E-06	1.153E-06	1.011E-06	8.000E-07	7.337E-07	5.842E-07	3.689E-07
W	9.472E-07	9.458E-07	8.278E-07	6.532E-07	5.987E-07	4.759E-07	2.999E-07
WSW	8.672E-07	8.659E-07	7.562E-07	5.951E-07	5.450E-07	4.327E-07	2.724E-07
SW	1.054E-06	1.052E-06	9.137E-07	7.140E-07	6.528E-07	5.161E-07	3.239E-07
SSW	1.412E-06	1.409E-06	1.222E-06	9.521E-07	8.698E-07	6.868E-07	4.310E-07
S	1.139E-06	1.138E-06	9.844E-07	7.658E-07	6.993E-07	5.515E-07	3.454E-07
SSE	8.725E-07	8.711E-07	7.541E-07	5.868E-07	5.359E-07	4.227E-07	2.647E-07
SE	9.237E-07	9.221E-07	7.960E-07	6.171E-07	5.629E-07	4.430E-07	2.766E-07
ESE	9.676E-07	9.661E-07	8.397E-07	6.569E-07	6.007E-07	4.752E-07	2.983E-07
E	1.261E-06	1.259E-06	1.097E-06	8.610E-07	7.879E-07	6.244E-07	3.923E-07
ENE	1.802E-06	1.799E-06	1.567E-06	1.229E-06	1.124E-06	8.906E-07	5.593E-07
NE	2.270E-06	2.266E-06	1.971E-06	1.543E-06	1.411E-06	1.116E-06	7.000E-07
NNE	2.397E-06	2.393E-06	2.075E-06	1.618E-06	1.478E-06	1.167E-06	7.302E-07

GROUND-LEVEL CHI/Q VALUES FOR U-234
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)						
Dir	4137	4892	10000	40000	60000	80000
N	5.387E-07	4.245E-07	1.393E-07	1.466E-08	4.865E-09	2.682E-09
NNW	3.573E-07	2.818E-07	9.067E-08	8.625E-09	2.396E-09	1.254E-09
NW	3.039E-07	2.395E-07	7.630E-08	6.907E-09	1.807E-09	9.249E-10
WNW	2.732E-07	2.152E-07	6.893E-08	6.324E-09	1.704E-09	8.716E-10
W	2.217E-07	1.746E-07	5.584E-08	5.159E-09	1.405E-09	7.280E-10
WSW	2.015E-07	1.587E-07	5.116E-08	4.857E-09	1.432E-09	7.659E-10
SW	2.398E-07	1.890E-07	6.177E-08	6.253E-09	1.985E-09	1.083E-09
SSW	3.197E-07	2.523E-07	8.358E-08	9.010E-09	3.045E-09	1.697E-09
S	2.557E-07	2.015E-07	6.641E-08	6.908E-09	2.301E-09	1.278E-09
SSE	1.959E-07	1.545E-07	5.091E-08	5.354E-09	1.811E-09	1.013E-09
SE	2.046E-07	1.612E-07	5.305E-08	5.543E-09	1.891E-09	1.056E-09
ESE	2.206E-07	1.739E-07	5.664E-08	5.623E-09	1.783E-09	9.772E-10
E	2.901E-07	2.285E-07	7.372E-08	7.105E-09	2.153E-09	1.161E-09
ENE	4.137E-07	3.258E-07	1.053E-07	1.023E-08	3.125E-09	1.686E-09
NE	5.175E-07	4.074E-07	1.316E-07	1.287E-08	3.984E-09	2.155E-09
NNE	5.397E-07	4.248E-07	1.375E-07	1.359E-08	4.200E-09	2.244E-09

GROUND-LEVEL CHI/Q VALUES FOR U-235
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)							
Dir	555	950	1050	1062	1118	1230	1308
N	4.987E-06	3.368E-06	3.082E-06	3.048E-06	2.897E-06	2.626E-06	2.459E-06
NNW	2.729E-06	2.024E-06	1.884E-06	1.866E-06	1.785E-06	1.637E-06	1.544E-06
NW	2.185E-06	1.675E-06	1.568E-06	1.554E-06	1.489E-06	1.371E-06	1.295E-06
WNW	2.065E-06	1.545E-06	1.440E-06	1.426E-06	1.365E-06	1.252E-06	1.181E-06
W	1.754E-06	1.278E-06	1.187E-06	1.176E-06	1.124E-06	1.029E-06	9.693E-07
WSW	1.683E-06	1.182E-06	1.094E-06	1.083E-06	1.033E-06	9.438E-07	8.879E-07
SW	2.176E-06	1.467E-06	1.347E-06	1.333E-06	1.268E-06	1.152E-06	1.080E-06
SSW	2.959E-06	1.982E-06	1.814E-06	1.794E-06	1.705E-06	1.546E-06	1.448E-06
S	2.482E-06	1.610E-06	1.470E-06	1.454E-06	1.380E-06	1.250E-06	1.169E-06
SSE	1.879E-06	1.231E-06	1.125E-06	1.112E-06	1.056E-06	9.565E-07	8.954E-07
SE	2.048E-06	1.316E-06	1.198E-06	1.184E-06	1.123E-06	1.015E-06	9.485E-07
ESE	2.005E-06	1.344E-06	1.235E-06	1.222E-06	1.163E-06	1.057E-06	9.919E-07
E	2.490E-06	1.731E-06	1.597E-06	1.581E-06	1.507E-06	1.374E-06	1.291E-06
ENE	3.554E-06	2.479E-06	2.286E-06	2.263E-06	2.157E-06	1.965E-06	1.846E-06
NE	4.538E-06	3.140E-06	2.890E-06	2.859E-06	2.723E-06	2.479E-06	2.327E-06
NNE	4.898E-06	3.346E-06	3.070E-06	3.036E-06	2.888E-06	2.622E-06	2.458E-06

Distance (meters)							
Dir	1342	1344	1526	1875	2012	2404	3350
N	2.392E-06	2.388E-06	2.069E-06	1.611E-06	1.471E-06	1.161E-06	7.270E-07
NNW	1.505E-06	1.503E-06	1.319E-06	1.044E-06	9.574E-07	7.626E-07	4.821E-07
NW	1.264E-06	1.262E-06	1.111E-06	8.837E-07	8.115E-07	6.480E-07	4.103E-07
WNW	1.152E-06	1.150E-06	1.009E-06	7.987E-07	7.327E-07	5.836E-07	3.687E-07
W	9.448E-07	9.434E-07	8.261E-07	6.522E-07	5.978E-07	4.754E-07	2.997E-07
WSW	8.650E-07	8.637E-07	7.546E-07	5.942E-07	5.443E-07	4.322E-07	2.722E-07
SW	1.051E-06	1.050E-06	9.119E-07	7.130E-07	6.519E-07	5.156E-07	3.237E-07
SSW	1.409E-06	1.406E-06	1.219E-06	9.507E-07	8.687E-07	6.861E-07	4.308E-07
S	1.137E-06	1.135E-06	9.826E-07	7.648E-07	6.984E-07	5.510E-07	3.452E-07
SSE	8.706E-07	8.692E-07	7.527E-07	5.860E-07	5.352E-07	4.223E-07	2.645E-07
SE	9.217E-07	9.202E-07	7.946E-07	6.163E-07	5.623E-07	4.426E-07	2.765E-07
ESE	9.653E-07	9.638E-07	8.380E-07	6.559E-07	5.999E-07	4.747E-07	2.981E-07
E	1.257E-06	1.256E-06	1.095E-06	8.597E-07	7.869E-07	6.238E-07	3.921E-07
ENE	1.798E-06	1.795E-06	1.564E-06	1.227E-06	1.123E-06	8.897E-07	5.590E-07
NE	2.265E-06	2.261E-06	1.967E-06	1.541E-06	1.409E-06	1.115E-06	6.996E-07
NNE	2.391E-06	2.387E-06	2.071E-06	1.616E-06	1.477E-06	1.166E-06	7.298E-07

GROUND-LEVEL CHI/Q VALUES FOR U-235
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)						
Dir	4137	4892	10000	40000	60000	80000
N	5.385E-07	4.244E-07	1.393E-07	1.466E-08	4.867E-09	2.683E-09
NNW	3.572E-07	2.817E-07	9.068E-08	8.628E-09	2.397E-09	1.254E-09
NW	3.038E-07	2.394E-07	7.631E-08	6.910E-09	1.808E-09	9.254E-10
WNW	2.731E-07	2.152E-07	6.893E-08	6.326E-09	1.705E-09	8.720E-10
W	2.217E-07	1.746E-07	5.585E-08	5.161E-09	1.406E-09	7.284E-10
WSW	2.014E-07	1.587E-07	5.116E-08	4.859E-09	1.433E-09	7.662E-10
SW	2.397E-07	1.889E-07	6.177E-08	6.255E-09	1.986E-09	1.084E-09
SSW	3.196E-07	2.522E-07	8.358E-08	9.013E-09	3.046E-09	1.697E-09
S	2.556E-07	2.015E-07	6.641E-08	6.910E-09	2.302E-09	1.279E-09
SSE	1.959E-07	1.544E-07	5.091E-08	5.355E-09	1.812E-09	1.013E-09
SE	2.045E-07	1.611E-07	5.305E-08	5.544E-09	1.891E-09	1.057E-09
ESE	2.205E-07	1.738E-07	5.664E-08	5.625E-09	1.784E-09	9.776E-10
E	2.899E-07	2.284E-07	7.373E-08	7.107E-09	2.154E-09	1.162E-09
ENE	4.135E-07	3.257E-07	1.053E-07	1.023E-08	3.126E-09	1.686E-09
NE	5.173E-07	4.073E-07	1.316E-07	1.288E-08	3.985E-09	2.155E-09
NNE	5.395E-07	4.246E-07	1.375E-07	1.360E-08	4.202E-09	2.245E-09

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GROUND-LEVEL CHI/Q VALUES FOR U-238
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)							
Dir	555	950	1050	1062	1118	1230	1308
N	5.046E-06	3.393E-06	3.102E-06	3.068E-06	2.914E-06	2.640E-06	2.471E-06
NNW	2.769E-06	2.042E-06	1.899E-06	1.881E-06	1.798E-06	1.648E-06	1.553E-06
NW	2.220E-06	1.691E-06	1.581E-06	1.567E-06	1.501E-06	1.380E-06	1.304E-06
WNW	2.096E-06	1.560E-06	1.451E-06	1.437E-06	1.375E-06	1.260E-06	1.188E-06
W	1.779E-06	1.290E-06	1.196E-06	1.185E-06	1.132E-06	1.035E-06	9.749E-07
WSW	1.705E-06	1.192E-06	1.102E-06	1.091E-06	1.040E-06	9.496E-07	8.929E-07
SW	2.202E-06	1.479E-06	1.356E-06	1.342E-06	1.276E-06	1.159E-06	1.086E-06
SSW	2.994E-06	1.997E-06	1.826E-06	1.805E-06	1.715E-06	1.554E-06	1.456E-06
S	2.509E-06	1.622E-06	1.480E-06	1.463E-06	1.388E-06	1.256E-06	1.175E-06
SSE	1.900E-06	1.240E-06	1.132E-06	1.119E-06	1.062E-06	9.616E-07	8.998E-07
SE	2.070E-06	1.325E-06	1.206E-06	1.192E-06	1.130E-06	1.020E-06	9.530E-07
ESE	2.029E-06	1.355E-06	1.244E-06	1.230E-06	1.170E-06	1.063E-06	9.972E-07
E	2.522E-06	1.745E-06	1.609E-06	1.592E-06	1.517E-06	1.382E-06	1.298E-06
ENE	3.600E-06	2.500E-06	2.303E-06	2.279E-06	2.171E-06	1.977E-06	1.856E-06
NE	4.596E-06	3.165E-06	2.910E-06	2.879E-06	2.741E-06	2.493E-06	2.339E-06
NNE	4.959E-06	3.372E-06	3.090E-06	3.056E-06	2.906E-06	2.637E-06	2.470E-06

Distance (meters)							
Dir	1342	1344	1526	1875	2012	2404	3350
N	2.403E-06	2.399E-06	2.077E-06	1.616E-06	1.475E-06	1.163E-06	7.279E-07
NNW	1.514E-06	1.512E-06	1.325E-06	1.047E-06	9.603E-07	7.643E-07	4.827E-07
NW	1.272E-06	1.270E-06	1.117E-06	8.868E-07	8.141E-07	6.495E-07	4.108E-07
WNW	1.158E-06	1.156E-06	1.014E-06	8.015E-07	7.349E-07	5.849E-07	3.692E-07
W	9.501E-07	9.486E-07	8.299E-07	6.544E-07	5.996E-07	4.765E-07	3.001E-07
WSW	8.697E-07	8.684E-07	7.580E-07	5.961E-07	5.459E-07	4.332E-07	2.726E-07
SW	1.057E-06	1.055E-06	9.158E-07	7.152E-07	6.537E-07	5.167E-07	3.241E-07
SSW	1.415E-06	1.413E-06	1.224E-06	9.536E-07	8.710E-07	6.875E-07	4.313E-07
S	1.142E-06	1.141E-06	9.866E-07	7.671E-07	7.003E-07	5.521E-07	3.456E-07
SSE	8.748E-07	8.733E-07	7.557E-07	5.878E-07	5.366E-07	4.231E-07	2.648E-07
SE	9.259E-07	9.244E-07	7.977E-07	6.181E-07	5.637E-07	4.434E-07	2.768E-07
ESE	9.703E-07	9.687E-07	8.416E-07	6.580E-07	6.016E-07	4.758E-07	2.985E-07
E	1.264E-06	1.262E-06	1.100E-06	8.625E-07	7.892E-07	6.252E-07	3.926E-07
ENE	1.807E-06	1.804E-06	1.571E-06	1.231E-06	1.126E-06	8.916E-07	5.597E-07
NE	2.276E-06	2.273E-06	1.976E-06	1.545E-06	1.413E-06	1.117E-06	7.004E-07
NNE	2.403E-06	2.399E-06	2.080E-06	1.621E-06	1.481E-06	1.168E-06	7.306E-07

GROUND-LEVEL CHI/Q VALUES FOR U-238
CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)

Distance (meters)						
Dir	4137	4892	10000	40000	60000	80000
N	5.389E-07	4.246E-07	1.393E-07	1.465E-08	4.863E-09	2.681E-09
NNW	3.575E-07	2.818E-07	9.066E-08	8.621E-09	2.395E-09	1.253E-09
NW	3.041E-07	2.396E-07	7.629E-08	6.904E-09	1.806E-09	9.244E-10
WNW	2.733E-07	2.153E-07	6.892E-08	6.321E-09	1.703E-09	8.711E-10
W	2.218E-07	1.747E-07	5.583E-08	5.157E-09	1.404E-09	7.276E-10
WSW	2.016E-07	1.588E-07	5.115E-08	4.855E-09	1.431E-09	7.656E-10
SW	2.399E-07	1.890E-07	6.176E-08	6.251E-09	1.984E-09	1.083E-09
SSW	3.199E-07	2.524E-07	8.358E-08	9.008E-09	3.044E-09	1.696E-09
S	2.558E-07	2.016E-07	6.640E-08	6.906E-09	2.300E-09	1.278E-09
SSE	1.960E-07	1.545E-07	5.090E-08	5.352E-09	1.811E-09	1.012E-09
SE	2.046E-07	1.612E-07	5.305E-08	5.541E-09	1.890E-09	1.056E-09
ESE	2.207E-07	1.739E-07	5.663E-08	5.621E-09	1.782E-09	9.769E-10
E	2.902E-07	2.285E-07	7.371E-08	7.102E-09	2.152E-09	1.161E-09
ENE	4.139E-07	3.259E-07	1.052E-07	1.023E-08	3.124E-09	1.685E-09
NE	5.178E-07	4.076E-07	1.316E-07	1.287E-08	3.982E-09	2.154E-09
NNE	5.399E-07	4.249E-07	1.375E-07	1.359E-08	4.198E-09	2.243E-09

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

W E A T H E R D A T A

Non-Radon Individual Assessment

Nov 11, 2003 10:04 am

Facility: Portsmouth American Centrifuge

Address:

City: Piketon

State: OH

Zip:

Source Category: Facility and Process Ventilation System

Source Type: Stack

Emission Year: 2003

Comments:

Dataset Name: N4PBIOFF

Dataset Date: Nov 11, 2003 10:04 am

Wind File: C:\CAP88PC2\CAP88PC2\PORTS30.WND

HARMONIC AVERAGE WIND SPEEDS (WIND TOWARDS)

Pasquill Stability Class								Wind Freq
Dir	A	B	C	D	E	F	G	
N	1.210	1.408	2.498	1.880	1.489	0.923	0.000	0.107
NNW	1.132	1.283	2.413	1.795	1.170	0.835	0.000	0.055
NW	1.091	1.242	2.422	1.841	1.068	0.811	0.000	0.044
WNW	1.163	1.495	2.697	1.843	1.021	0.855	0.000	0.042
W	1.274	1.410	2.625	1.893	1.008	0.824	0.000	0.036
WSW	1.405	1.756	3.046	2.124	1.185	0.859	0.000	0.040
SW	1.453	1.668	2.996	2.127	1.316	0.919	0.000	0.052
SSW	1.334	1.421	2.897	1.958	1.615	0.979	0.000	0.068
S	1.351	1.561	3.230	2.519	1.381	0.956	0.000	0.065
SSE	1.327	1.477	3.353	2.366	1.579	0.930	0.000	0.047
SE	1.290	1.736	3.476	2.342	1.481	0.933	0.000	0.052
ESE	1.141	1.571	3.357	2.259	1.392	0.886	0.000	0.049
E	1.076	1.600	3.586	2.301	1.248	0.845	0.000	0.059
ENE	1.177	1.493	3.370	2.291	1.249	0.855	0.000	0.082
NE	1.146	1.531	3.312	2.102	1.288	0.854	0.000	0.102
NNE	1.145	1.498	2.897	1.697	1.246	0.876	0.000	0.099

ARITHMETIC AVERAGE WIND SPEEDS (WIND TOWARDS)

Pasquill Stability Class							
Dir	A	B	C	D	E	F	G
N	1.752	2.144	3.161	2.832	2.293	1.228	0.000
NNW	1.613	1.901	2.925	2.982	1.759	0.980	0.000
NW	1.535	1.878	3.021	3.314	1.561	0.900	0.000
WNW	1.637	2.183	3.021	3.260	1.449	1.023	0.000
W	1.785	2.179	3.240	3.636	1.404	0.938	0.000
WSW	1.931	2.697	3.608	3.856	1.716	1.032	0.000
SW	1.978	2.487	3.553	3.556	1.879	1.186	0.000
SSW	1.874	2.187	3.253	3.019	2.394	1.338	0.000
S	1.875	2.465	3.631	3.703	2.075	1.308	0.000
SSE	1.863	2.305	3.891	3.398	2.284	1.244	0.000
SE	1.812	2.532	4.150	3.506	2.349	1.264	0.000
ESE	1.634	2.498	4.048	3.688	2.253	1.127	0.000
E	1.506	2.462	4.411	3.924	2.095	1.003	0.000
ENE	1.672	2.316	4.305	4.056	2.092	1.045	0.000
NE	1.634	2.389	4.404	3.716	2.196	1.040	0.000

NNE 1.644 2.408 3.706 2.663 1.957 1.092 0.000

FREQUENCIES OF STABILITY CLASSES (WIND TOWARDS)

Pasquill Stability Class							
Dir	A	B	C	D	E	F	G
N	0.0452	0.0537	0.0640	0.3403	0.2540	0.2429	0.0000
NNW	0.0607	0.0461	0.0506	0.3023	0.1895	0.3509	0.0000
NW	0.0627	0.0536	0.0382	0.2881	0.1706	0.3869	0.0000
WNW	0.0564	0.0533	0.0441	0.3030	0.1766	0.3666	0.0000
W	0.0707	0.0662	0.0554	0.3208	0.1578	0.3292	0.0000
WSW	0.0850	0.0835	0.0744	0.3515	0.1288	0.2769	0.0000
SW	0.0777	0.0731	0.0852	0.3675	0.1527	0.2437	0.0000
SSW	0.0605	0.0586	0.0605	0.3575	0.2187	0.2441	0.0000
S	0.0696	0.0698	0.0849	0.4515	0.1182	0.2060	0.0000
SSE	0.0803	0.0779	0.0577	0.4131	0.1620	0.2090	0.0000
SE	0.0793	0.0613	0.0772	0.4470	0.1432	0.1920	0.0000
ESE	0.0878	0.0746	0.0727	0.3996	0.1286	0.2367	0.0000
E	0.0765	0.0693	0.0815	0.3672	0.1504	0.2551	0.0000
ENE	0.0646	0.0604	0.0771	0.3706	0.1703	0.2571	0.0000
NE	0.0580	0.0568	0.0885	0.3566	0.1869	0.2531	0.0000
NNE	0.0621	0.0599	0.0749	0.3169	0.2221	0.2640	0.0000
TOTAL	0.0661	0.0622	0.0701	0.3592	0.1793	0.2630	0.0000

ADDITIONAL WEATHER INFORMATION

Average Air Temperature: 10.3 degrees C
283.49 K
Precipitation: 101.6 cm/y
Lid Height: 1000 meters
Surface Roughness Length: 0.010 meters
Height Of Wind Measurements: 10.0 meters
Average Wind Speed: 2.413 m/s

Vertical Temperature Gradients:

STABILITY E 0.073 k/m
STABILITY F 0.109 k/m
STABILITY G 0.146 k/m