

Appendix H35 –
RESRAD 7.0 Output for Area L23

Appendix H35: RESRAD 7.0 Output for Area L23

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Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\AREA L23.RAD.

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Dose Conversion Factor (and Related) Parameter Summary
 Dose Library: FGR 11

| Menu | Parameter | Current Value# | Base Case* | Parameter Name |
|------|--|----------------|------------|----------------|
| A-1 | DCF's for external ground radiation, (mrem/yr)/(pCi/g) | | | |
| A-1 | Ba-137m (Source: FGR 12) | 3.606E+00 | 3.606E+00 | DCF1(1) |
| A-1 | Cs-137 (Source: FGR 12) | 7.510E-04 | 7.510E-04 | DCF1(2) |
| A-1 | Sr-90 (Source: FGR 12) | 7.043E-04 | 7.043E-04 | DCF1(3) |
| A-1 | Y-90 (Source: FGR 12) | 2.391E-02 | 2.391E-02 | DCF1(4) |
| B-1 | Dose conversion factors for inhalation, mrem/pCi: | | | |
| B-1 | Cs-137+D | 3.190E-05 | 3.190E-05 | DCF2(1) |
| B-1 | Sr-90+D | 1.308E-03 | 1.300E-03 | DCF2(2) |
| D-1 | Dose conversion factors for ingestion, mrem/pCi: | | | |
| D-1 | Cs-137+D | 5.000E-05 | 5.000E-05 | DCF3(1) |
| D-1 | Sr-90+D | 1.528E-04 | 1.420E-04 | DCF3(2) |
| D-34 | Food transfer factors: | | | |
| D-34 | Cs-137+D , plant/soil concentration ratio, dimensionless | 4.000E-02 | 4.000E-02 | RTF(1,1) |
| D-34 | Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) | 3.000E-02 | 3.000E-02 | RTF(1,2) |
| D-34 | Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d) | 8.000E-03 | 8.000E-03 | RTF(1,3) |
| D-34 | Sr-90+D , plant/soil concentration ratio, dimensionless | 3.000E-01 | 3.000E-01 | RTF(2,1) |
| D-34 | Sr-90+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) | 8.000E-03 | 8.000E-03 | RTF(2,2) |
| D-34 | Sr-90+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d) | 2.000E-03 | 2.000E-03 | RTF(2,3) |
| D-5 | Bioaccumulation factors, fresh water, L/kg: | | | |
| D-5 | Cs-137+D , fish | 2.000E+03 | 2.000E+03 | BIOFAC(1,1) |
| D-5 | Cs-137+D , crustacea and mollusks | 1.000E+02 | 1.000E+02 | BIOFAC(1,2) |
| D-5 | Sr-90+D , fish | 6.000E+01 | 6.000E+01 | BIOFAC(2,1) |
| D-5 | Sr-90+D , crustacea and mollusks | 1.000E+02 | 1.000E+02 | BIOFAC(2,2) |

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.
 *Base Case means Default.Lib w/o Associate Nuclide contributions.

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| Site-Specific Parameter Summary | | | | | |
|---------------------------------|---|------------|-----------|--|----------------|
| Menu | Parameter | User Input | Default | Used by RESRAD (If different from user input) | Parameter Name |
| R011 | Area of contaminated zone (m**2) | 1.308E+05 | 1.000E+04 | --- | AREA |
| R011 | Thickness of contaminated zone (m) | 1.000E+00 | 2.000E+00 | --- | THICKO |
| R011 | Fraction of contamination that is submerged | 0.000E+00 | 0.000E+00 | --- | SUBMFRACT |
| R011 | Length parallel to aquifer flow (m) | 1.650E+02 | 1.000E+02 | --- | LCZPAQ |
| R011 | Basic radiation dose limit (mrem/yr) | 2.500E+01 | 3.000E+01 | --- | BRDL |
| R011 | Time since placement of material (yr) | 0.000E+00 | 0.000E+00 | --- | TI |
| R011 | Times for calculations (yr) | 1.000E+00 | 1.000E+00 | --- | T(2) |
| R011 | Times for calculations (yr) | 3.000E+00 | 3.000E+00 | --- | T(3) |
| R011 | Times for calculations (yr) | 1.000E+01 | 1.000E+01 | --- | T(4) |
| R011 | Times for calculations (yr) | 3.000E+01 | 3.000E+01 | --- | T(5) |
| R011 | Times for calculations (yr) | 1.000E+02 | 1.000E+02 | --- | T(6) |
| R011 | Times for calculations (yr) | 3.000E+02 | 3.000E+02 | --- | T(7) |
| R011 | Times for calculations (yr) | 1.000E+03 | 1.000E+03 | --- | T(8) |
| R011 | Times for calculations (yr) | not used | 0.000E+00 | --- | T(9) |
| R011 | Times for calculations (yr) | not used | 0.000E+00 | --- | T(10) |
| R012 | Initial principal radionuclide (pCi/g): Cs-137 | 1.690E-01 | 0.000E+00 | --- | S1(1) |
| R012 | Initial principal radionuclide (pCi/g): Sr-90 | 7.000E-03 | 0.000E+00 | --- | S1(2) |
| R012 | Concentration in groundwater (pCi/L): Cs-137 | not used | 0.000E+00 | --- | W1(1) |
| R012 | Concentration in groundwater (pCi/L): Sr-90 | not used | 0.000E+00 | --- | W1(2) |
| R013 | Cover depth (m) | 0.000E+00 | 0.000E+00 | --- | COVERO |
| R013 | Density of cover material (g/cm**3) | not used | 1.500E+00 | --- | DENSCV |
| R013 | Cover depth erosion rate (m/yr) | not used | 1.000E-03 | --- | VCV |
| R013 | Density of contaminated zone (g/cm**3) | 1.700E+00 | 1.500E+00 | --- | DENSCZ |
| R013 | Contaminated zone erosion rate (m/yr) | 0.000E+00 | 1.000E-03 | --- | VCZ |
| R013 | Contaminated zone total porosity | 3.600E-01 | 4.000E-01 | --- | TPCZ |
| R013 | Contaminated zone field capacity | 2.000E-01 | 2.000E-01 | --- | FCCZ |
| R013 | Contaminated zone hydraulic conductivity (m/yr) | 1.400E+02 | 1.000E+01 | --- | HCCZ |
| R013 | Contaminated zone b parameter | 1.400E+00 | 5.300E+00 | --- | BCZ |
| R013 | Average annual wind speed (m/sec) | 2.600E+00 | 2.000E+00 | --- | WIND |
| R013 | Humidity in air (g/m**3) | not used | 8.000E+00 | --- | HUMID |
| R013 | Evapotranspiration coefficient | 7.800E-01 | 5.000E-01 | --- | EVAPTR |
| R013 | Precipitation (m/yr) | 1.160E+00 | 1.000E+00 | --- | PRECIP |
| R013 | Irrigation (m/yr) | 4.700E-01 | 2.000E-01 | --- | RI |
| R013 | Irrigation mode | overhead | overhead | --- | IDITCH |
| R013 | Runoff coefficient | 4.100E-01 | 2.000E-01 | --- | RUNOFF |
| R013 | Watershed area for nearby stream or pond (m**2) | 1.370E+07 | 1.000E+06 | --- | WAREA |
| R013 | Accuracy for water/soil computations | 1.000E-03 | 1.000E-03 | --- | EPS |
| R014 | Density of saturated zone (g/cm**3) | 1.700E+00 | 1.500E+00 | --- | DENSAQ |
| R014 | Saturated zone total porosity | 3.600E-01 | 4.000E-01 | --- | TPSZ |
| R014 | Saturated zone effective porosity | 2.500E-01 | 2.000E-01 | --- | EPSZ |
| R014 | Saturated zone field capacity | 2.000E-01 | 2.000E-01 | --- | FCSZ |
| R014 | Saturated zone hydraulic conductivity (m/yr) | 1.400E+03 | 1.000E+02 | --- | HCSZ |
| R014 | Saturated zone hydraulic gradient | 3.000E-02 | 2.000E-02 | --- | HGWT |
| R014 | Saturated zone b parameter | not used | 5.300E+00 | --- | BSZ |
| R014 | Water table drop rate (m/yr) | 0.000E+00 | 1.000E-03 | --- | VWT |
| R014 | Well pump intake depth (m below water table) | 5.000E+00 | 1.000E+01 | --- | DWIBWT |
| R014 | Model: Nondispersion (ND) or Mass-Balance (MB) | ND | ND | --- | MODEL |

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Site-Specific Parameter Summary (continued)

| Menu | Parameter | User Input | Default | Used by RESRAD (If different from user input) | Parameter Name |
|------|--|------------|-----------|--|----------------|
| R014 | Well pumping rate (m**3/yr) | 5.720E+03 | 2.500E+02 | --- | UW |
| R015 | Number of unsaturated zone strata | 1 | 1 | --- | NS |
| R015 | Unsat. zone 1, thickness (m) | 2.000E+00 | 4.000E+00 | --- | H(1) |
| R015 | Unsat. zone 1, soil density (g/cm**3) | 1.700E+00 | 1.500E+00 | --- | DENSUZ(1) |
| R015 | Unsat. zone 1, total porosity | 3.600E-01 | 4.000E-01 | --- | TPUZ(1) |
| R015 | Unsat. zone 1, effective porosity | 2.500E-01 | 2.000E-01 | --- | EPUZ(1) |
| R015 | Unsat. zone 1, field capacity | 2.000E-01 | 2.000E-01 | --- | FCUZ(1) |
| R015 | Unsat. zone 1, soil-specific b parameter | 1.400E+00 | 5.300E+00 | --- | BUZ(1) |
| R015 | Unsat. zone 1, hydraulic conductivity (m/yr) | 1.400E+02 | 1.000E+01 | --- | HCUZ(1) |
| R016 | Distribution coefficients for Cs-137 | | | | |
| R016 | Contaminated zone (cm**3/g) | 2.800E+02 | 4.600E+03 | --- | DCNUCC(1) |
| R016 | Unsat. zone 1 (cm**3/g) | 2.800E+02 | 4.600E+03 | --- | DCNUCU(1,1) |
| R016 | Saturated zone (cm**3/g) | 2.800E+02 | 4.600E+03 | --- | DCNUCS(1) |
| R016 | Leach rate (/yr) | 0.000E+00 | 0.000E+00 | 5.333E-04 | ALEACH(1) |
| R016 | Solubility constant | 0.000E+00 | 0.000E+00 | not used | SOLUBK(1) |
| R016 | Distribution coefficients for Sr-90 | | | | |
| R016 | Contaminated zone (cm**3/g) | 5.000E+00 | 3.000E+01 | --- | DCNUCC(2) |
| R016 | Unsat. zone 1 (cm**3/g) | 5.000E+00 | 3.000E+01 | --- | DCNUCU(2,1) |
| R016 | Saturated zone (cm**3/g) | 5.000E+00 | 3.000E+01 | --- | DCNUCS(2) |
| R016 | Leach rate (/yr) | 0.000E+00 | 0.000E+00 | 2.919E-02 | ALEACH(2) |
| R016 | Solubility constant | 0.000E+00 | 0.000E+00 | not used | SOLUBK(2) |
| R017 | Inhalation rate (m**3/yr) | 8.400E+03 | 8.400E+03 | --- | INHALR |
| R017 | Mass loading for inhalation (g/m**3) | 1.480E-05 | 1.000E-04 | --- | MLINH |
| R017 | Exposure duration | 1.000E+00 | 3.000E+01 | --- | ED |
| R017 | Shielding factor, inhalation | 1.000E+00 | 4.000E-01 | --- | SHF3 |
| R017 | Shielding factor, external gamma | 2.730E-01 | 7.000E-01 | --- | SHF1 |
| R017 | Fraction of time spent indoors | 6.600E-01 | 5.000E-01 | --- | FIND |
| R017 | Fraction of time spent outdoors (on site) | 2.500E-01 | 2.500E-01 | --- | FOTD |
| R017 | Shape factor flag, external gamma | 1.000E+00 | 1.000E+00 | --- | FS |
| R017 | Radii of shape factor array (used if FS = -1): | | | >0 shows circular AREA: | |
| R017 | Outer annular radius (m), ring 1: | not used | 5.000E+01 | --- | RAD_SHAPE(1) |
| R017 | Outer annular radius (m), ring 2: | not used | 7.071E+01 | --- | RAD_SHAPE(2) |
| R017 | Outer annular radius (m), ring 3: | not used | 0.000E+00 | --- | RAD_SHAPE(3) |
| R017 | Outer annular radius (m), ring 4: | not used | 0.000E+00 | --- | RAD_SHAPE(4) |
| R017 | Outer annular radius (m), ring 5: | not used | 0.000E+00 | --- | RAD_SHAPE(5) |
| R017 | Outer annular radius (m), ring 6: | not used | 0.000E+00 | --- | RAD_SHAPE(6) |
| R017 | Outer annular radius (m), ring 7: | not used | 0.000E+00 | --- | RAD_SHAPE(7) |
| R017 | Outer annular radius (m), ring 8: | not used | 0.000E+00 | --- | RAD_SHAPE(8) |
| R017 | Outer annular radius (m), ring 9: | not used | 0.000E+00 | --- | RAD_SHAPE(9) |
| R017 | Outer annular radius (m), ring 10: | not used | 0.000E+00 | --- | RAD_SHAPE(10) |
| R017 | Outer annular radius (m), ring 11: | not used | 0.000E+00 | --- | RAD_SHAPE(11) |
| R017 | Outer annular radius (m), ring 12: | not used | 0.000E+00 | --- | RAD_SHAPE(12) |

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Site-Specific Parameter Summary (continued)

| Menu | Parameter | User Input | Default | Used by RESRAD (If different from user input) | Parameter Name |
|------|--|------------|-----------|--|----------------|
| R017 | Fractions of annular areas within AREA: | | | | |
| R017 | Ring 1 | not used | 1.000E+00 | --- | FRACA(1) |
| R017 | Ring 2 | not used | 2.732E-01 | --- | FRACA(2) |
| R017 | Ring 3 | not used | 0.000E+00 | --- | FRACA(3) |
| R017 | Ring 4 | not used | 0.000E+00 | --- | FRACA(4) |
| R017 | Ring 5 | not used | 0.000E+00 | --- | FRACA(5) |
| R017 | Ring 6 | not used | 0.000E+00 | --- | FRACA(6) |
| R017 | Ring 7 | not used | 0.000E+00 | --- | FRACA(7) |
| R017 | Ring 8 | not used | 0.000E+00 | --- | FRACA(8) |
| R017 | Ring 9 | not used | 0.000E+00 | --- | FRACA(9) |
| R017 | Ring 10 | not used | 0.000E+00 | --- | FRACA(10) |
| R017 | Ring 11 | not used | 0.000E+00 | --- | FRACA(11) |
| R017 | Ring 12 | not used | 0.000E+00 | --- | FRACA(12) |
| R018 | Fruits, vegetables and grain consumption (kg/yr) | 1.120E+02 | 1.600E+02 | --- | DIET(1) |
| R018 | Leafy vegetable consumption (kg/yr) | 2.100E+01 | 1.400E+01 | --- | DIET(2) |
| R018 | Milk consumption (L/yr) | 2.330E+02 | 9.200E+01 | --- | DIET(3) |
| R018 | Meat and poultry consumption (kg/yr) | 6.500E+01 | 6.300E+01 | --- | DIET(4) |
| R018 | Fish consumption (kg/yr) | 9.000E+00 | 5.400E+00 | --- | DIET(5) |
| R018 | Other seafood consumption (kg/yr) | 0.000E+00 | 9.000E-01 | --- | DIET(6) |
| R018 | Soil ingestion rate (g/yr) | 1.830E+01 | 3.650E+01 | --- | SOIL |
| R018 | Drinking water intake (L/yr) | 7.300E+02 | 5.100E+02 | --- | DWI |
| R018 | Contamination fraction of drinking water | 1.000E+00 | 1.000E+00 | --- | FDW |
| R018 | Contamination fraction of household water | not used | 1.000E+00 | --- | FHHW |
| R018 | Contamination fraction of livestock water | 1.000E+00 | 1.000E+00 | --- | FLW |
| R018 | Contamination fraction of irrigation water | 1.000E+00 | 1.000E+00 | --- | FIRW |
| R018 | Contamination fraction of aquatic food | 1.000E+00 | 5.000E-01 | --- | FR9 |
| R018 | Contamination fraction of plant food | 1.000E+00 | -1 | --- | FPLANT |
| R018 | Contamination fraction of meat | 1.000E+00 | -1 | --- | FMEAT |
| R018 | Contamination fraction of milk | 1.000E+00 | -1 | --- | FMILK |
| R019 | Livestock fodder intake for meat (kg/day) | 2.730E+01 | 6.800E+01 | --- | LFI5 |
| R019 | Livestock fodder intake for milk (kg/day) | 6.420E+01 | 5.500E+01 | --- | LFI6 |
| R019 | Livestock water intake for meat (L/day) | 5.000E+01 | 5.000E+01 | --- | LWI5 |
| R019 | Livestock water intake for milk (L/day) | 1.600E+02 | 1.600E+02 | --- | LWI6 |
| R019 | Livestock soil intake (kg/day) | 5.000E-01 | 5.000E-01 | --- | LSI |
| R019 | Mass loading for foliar deposition (g/m**3) | 4.000E-04 | 1.000E-04 | --- | MLFD |
| R019 | Depth of soil mixing layer (m) | 1.500E-01 | 1.500E-01 | --- | DM |
| R019 | Depth of roots (m) | 9.000E-01 | 9.000E-01 | --- | DROOT |
| R019 | Drinking water fraction from ground water | 1.000E+00 | 1.000E+00 | --- | FGWDW |
| R019 | Household water fraction from ground water | not used | 1.000E+00 | --- | FGWHH |
| R019 | Livestock water fraction from ground water | 1.000E+00 | 1.000E+00 | --- | FGWLW |
| R019 | Irrigation fraction from ground water | 1.000E+00 | 1.000E+00 | --- | FGWIR |
| R19B | Wet weight crop yield for Non-Leafy (kg/m**2) | 1.750E+00 | 7.000E-01 | --- | YV(1) |
| R19B | Wet weight crop yield for Leafy (kg/m**2) | 1.500E+00 | 1.500E+00 | --- | YV(2) |
| R19B | Wet weight crop yield for Fodder (kg/m**2) | 1.100E+00 | 1.100E+00 | --- | YV(3) |
| R19B | Growing Season for Non-Leafy (years) | 1.700E-01 | 1.700E-01 | --- | TE(1) |
| R19B | Growing Season for Leafy (years) | 2.500E-01 | 2.500E-01 | --- | TE(2) |
| R19B | Growing Season for Fodder (years) | 8.000E-02 | 8.000E-02 | --- | TE(3) |

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Site-Specific Parameter Summary (continued)

| Menu | Parameter | User Input | Default | Used by RESRAD (If different from user input) | Parameter Name |
|------|--|------------|------------|--|----------------|
| R19B | Translocation Factor for Non-Leafy | 1.000E-01 | 1.000E-01 | --- | TIV(1) |
| R19B | Translocation Factor for Leafy | 1.000E+00 | 1.000E+00 | --- | TIV(2) |
| R19B | Translocation Factor for Fodder | 1.000E+00 | 1.000E+00 | --- | TIV(3) |
| R19B | Dry Foliar Interception Fraction for Non-Leafy | 2.500E-01 | 2.500E-01 | --- | RDRY(1) |
| R19B | Dry Foliar Interception Fraction for Leafy | 2.500E-01 | 2.500E-01 | --- | RDRY(2) |
| R19B | Dry Foliar Interception Fraction for Fodder | 2.500E-01 | 2.500E-01 | --- | RDRY(3) |
| R19B | Wet Foliar Interception Fraction for Non-Leafy | 2.500E-01 | 2.500E-01 | --- | RWET(1) |
| R19B | Wet Foliar Interception Fraction for Leafy | 6.700E-01 | 2.500E-01 | --- | RWET(2) |
| R19B | Wet Foliar Interception Fraction for Fodder | 2.500E-01 | 2.500E-01 | --- | RWET(3) |
| R19B | Weathering Removal Constant for Vegetation | 1.800E+01 | 2.000E+01 | --- | WLAM |
| C14 | C-12 concentration in water (g/cm**3) | not used | 2.000E-05 | --- | C12WTR |
| C14 | C-12 concentration in contaminated soil (g/g) | not used | 3.000E-02 | --- | C12CZ |
| C14 | Fraction of vegetation carbon from soil | not used | 2.000E-02 | --- | CSOIL |
| C14 | Fraction of vegetation carbon from air | not used | 9.800E-01 | --- | CAIR |
| C14 | C-14 evasion layer thickness in soil (m) | not used | 3.000E-01 | --- | DMC |
| C14 | C-14 evasion flux rate from soil (1/sec) | not used | 7.000E-07 | --- | EVSN |
| C14 | C-12 evasion flux rate from soil (1/sec) | not used | 1.000E-10 | --- | REVSN |
| C14 | Fraction of grain in beef cattle feed | not used | 8.000E-01 | --- | AVFG4 |
| C14 | Fraction of grain in milk cow feed | not used | 2.000E-01 | --- | AVFG5 |
| STOR | Storage times of contaminated foodstuffs (days): | | | | |
| STOR | Fruits, non-leafy vegetables, and grain | 1.400E+01 | 1.400E+01 | --- | STOR_T(1) |
| STOR | Leafy vegetables | 1.000E+00 | 1.000E+00 | --- | STOR_T(2) |
| STOR | Milk | 1.000E+00 | 1.000E+00 | --- | STOR_T(3) |
| STOR | Meat and poultry | 2.000E+01 | 2.000E+01 | --- | STOR_T(4) |
| STOR | Fish | 7.000E+00 | 7.000E+00 | --- | STOR_T(5) |
| STOR | Crustacea and mollusks | 7.000E+00 | 7.000E+00 | --- | STOR_T(6) |
| STOR | Well water | 1.000E+00 | 1.000E+00 | --- | STOR_T(7) |
| STOR | Surface water | 1.000E+00 | 1.000E+00 | --- | STOR_T(8) |
| STOR | Livestock fodder | 4.500E+01 | 4.500E+01 | --- | STOR_T(9) |
| R021 | Thickness of building foundation (m) | not used | 1.500E-01 | --- | FLOOR1 |
| R021 | Bulk density of building foundation (g/cm**3) | not used | 2.400E+00 | --- | DENSFL |
| R021 | Total porosity of the cover material | not used | 4.000E-01 | --- | TPCV |
| R021 | Total porosity of the building foundation | not used | 1.000E-01 | --- | TPFL |
| R021 | Volumetric water content of the cover material | not used | 5.000E-02 | --- | PH20CV |
| R021 | Volumetric water content of the foundation | not used | 3.000E-02 | --- | PH20FL |
| R021 | Diffusion coefficient for radon gas (m/sec): | | | | |
| R021 | in cover material | not used | 2.000E-06 | --- | DIFCV |
| R021 | in foundation material | not used | 3.000E-07 | --- | DIFFL |
| R021 | in contaminated zone soil | not used | 2.000E-06 | --- | DIFCZ |
| R021 | Radon vertical dimension of mixing (m) | not used | 2.000E+00 | --- | HMIX |
| R021 | Average building air exchange rate (1/hr) | not used | 5.000E-01 | --- | REXG |
| R021 | Height of the building (room) (m) | not used | 2.500E+00 | --- | HRM |
| R021 | Building interior area factor | not used | 0.000E+00 | --- | FAI |
| R021 | Building depth below ground surface (m) | not used | -1.000E+00 | --- | DMFL |
| R021 | Emanating power of Rn-222 gas | not used | 2.500E-01 | --- | EMANA(1) |
| R021 | Emanating power of Rn-220 gas | not used | 1.500E-01 | --- | EMANA(2) |
| TITL | Number of graphical time points | 32 | --- | --- | NPTS |

Appendix H35: RESRAD 7.0 Output for Area L23

RESRAD, Version 7.0 T½ Limit = 180 days 07/22/2016 11:06 Page 7
 Summary : RESRAD Default Parameters
 File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\AREA L23.RAD

Site-Specific Parameter Summary (continued)

| Menu | Parameter | User Input | Default | Used by RESRAD (If different from user input) | Parameter Name |
|------|---|---------------|---------|--|-------------------|
| TITL | Maximum number of integration points for dose | 17 | --- | --- | LYMAX |
| TITL | Maximum number of integration points for risk | 257 | --- | --- | KYMAX |

Summary of Pathway Selections

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

Appendix H35: RESRAD 7.0 Output for Area L23

RESRAD, Version 7.0 T½ Limit = 180 days 07/22/2016 11:06 Page 8
 Summary : RESRAD Default Parameters
 File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\AREA L23.RAD

| Contaminated Zone Dimensions | Initial Soil Concentrations, pCi/g |
|-------------------------------|------------------------------------|
| Area: 130760.00 square meters | Cs-137 1.690E-01 |
| Thickness: 1.00 meters | Sr-90 7.000E-03 |
| Cover Depth: 0.00 meters | |

Total Dose TDOSE(t), mrem/yr
 Basic Radiation Dose Limit = 2.500E+01 mrem/yr

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

| | | | | | | | | |
|-------------------|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| t (years): | 0.000E+00 | 1.000E+00 | 3.000E+00 | 1.000E+01 | 3.000E+01 | 1.000E+02 | 3.000E+02 | 1.000E+03 |
| TDOSE(t): | 4.142E-01 | 4.030E-01 | 3.815E-01 | 3.160E-01 | 1.882E-01 | 3.595E-02 | 3.098E-04 | 2.206E-11 |
| M(t): | 1.657E-02 | 1.612E-02 | 1.526E-02 | 1.264E-02 | 7.530E-03 | 1.438E-03 | 1.239E-05 | 8.826E-13 |
| Maximum TDOSE(t): | 4.142E-01 mrem/yr at t = 0.000E+00 years | | | | | | | |

Appendix H35: RESRAD 7.0 Output for Area L23

RESRAD, Version 7.0 T½ Limit = 180 days 07/22/2016 11:06 Page 9
 Summary : RESRAD Default Parameters
 File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\AREA L23.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
 Water Independent Pathways (Inhalation excludes radon)

| Radio- Nuclide | Ground | | Inhalation | | Radon | | Plant | | Meat | | Milk | | Soil | |
|-------------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|
| | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. |
| Cs-137 | 2.398E-01 | 0.5791 | 1.264E-07 | 0.0000 | 0.000E+00 | 0.0000 | 4.444E-02 | 0.1073 | 2.594E-02 | 0.0626 | 4.779E-02 | 0.1154 | 1.391E-04 | 0.0003 |
| Sr-90 | 7.085E-05 | 0.0002 | 2.115E-07 | 0.0000 | 0.000E+00 | 0.0000 | 4.160E-02 | 0.1004 | 4.729E-03 | 0.0114 | 9.624E-03 | 0.0232 | 1.735E-05 | 0.0000 |
| Total | 2.399E-01 | 0.5793 | 3.379E-07 | 0.0000 | 0.000E+00 | 0.0000 | 8.603E-02 | 0.2077 | 3.067E-02 | 0.0740 | 5.741E-02 | 0.1386 | 1.564E-04 | 0.0004 |

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
 Water Dependent Pathways

| Radio- Nuclide | Water | | Fish | | Radon | | Plant | | Meat | | Milk | | All Pathways* | |
|-------------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|
| | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. |
| Cs-137 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 3.582E-01 | 0.8647 |
| Sr-90 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 5.604E-02 | 0.1353 |
| Total | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 4.142E-01 | 1.0000 |

*Sum of all water independent and dependent pathways.

Appendix H35: RESRAD 7.0 Output for Area L23

RESRAD, Version 7.0 T½ Limit = 180 days 07/22/2016 11:06 Page 10
 Summary : RESRAD Default Parameters
 File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\AREA L23.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
 Water Independent Pathways (Inhalation excludes radon)

| Radio- Nuclide | Ground | | Inhalation | | Radon | | Plant | | Meat | | Milk | | Soil | |
|-------------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|
| | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. |
| Cs-137 | 2.343E-01 | 0.5814 | 1.234E-07 | 0.0000 | 0.000E+00 | 0.0000 | 4.340E-02 | 0.1077 | 2.534E-02 | 0.0629 | 4.668E-02 | 0.1158 | 1.358E-04 | 0.0003 |
| Sr-90 | 6.718E-05 | 0.0002 | 2.006E-07 | 0.0000 | 0.000E+00 | 0.0000 | 3.944E-02 | 0.0979 | 4.485E-03 | 0.0111 | 9.127E-03 | 0.0226 | 1.645E-05 | 0.0000 |
| Total | 2.343E-01 | 0.5815 | 3.240E-07 | 0.0000 | 0.000E+00 | 0.0000 | 8.285E-02 | 0.2056 | 2.982E-02 | 0.0740 | 5.580E-02 | 0.1385 | 1.523E-04 | 0.0004 |

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
 Water Dependent Pathways

| Radio- Nuclide | Water | | Fish | | Radon | | Plant | | Meat | | Milk | | All Pathways* | |
|-------------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|
| | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. |
| Cs-137 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 3.498E-01 | 0.8681 |
| Sr-90 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 5.314E-02 | 0.1319 |
| Total | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 4.030E-01 | 1.0000 |

*Sum of all water independent and dependent pathways.

Appendix H35: RESRAD 7.0 Output for Area L23

RESRAD, Version 7.0 T½ Limit = 180 days 07/22/2016 11:06 Page 11
 Summary : RESRAD Default Parameters
 File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\AREA.L23.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years
 Water Independent Pathways (Inhalation excludes radon)

| Radio- Nuclide | Ground | | Inhalation | | Radon | | Plant | | Meat | | Milk | | Soil | |
|-------------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|
| | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. |
| Cs-137 | 2.235E-01 | 0.5858 | 1.178E-07 | 0.0000 | 0.000E+00 | 0.0000 | 4.141E-02 | 0.1085 | 2.417E-02 | 0.0634 | 4.453E-02 | 0.1167 | 1.296E-04 | 0.0003 |
| Sr-90 | 6.039E-05 | 0.0002 | 1.803E-07 | 0.0000 | 0.000E+00 | 0.0000 | 3.546E-02 | 0.0929 | 4.032E-03 | 0.0106 | 8.205E-03 | 0.0215 | 1.478E-05 | 0.0000 |
| Total | 2.236E-01 | 0.5860 | 2.981E-07 | 0.0000 | 0.000E+00 | 0.0000 | 7.687E-02 | 0.2015 | 2.821E-02 | 0.0739 | 5.274E-02 | 0.1382 | 1.444E-04 | 0.0004 |

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years
 Water Dependent Pathways

| Radio- Nuclide | Water | | Fish | | Radon | | Plant | | Meat | | Milk | | All Pathways* | |
|-------------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|
| | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. |
| Cs-137 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 3.338E-01 | 0.8748 |
| Sr-90 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 4.777E-02 | 0.1252 |
| Total | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 3.815E-01 | 1.0000 |

*Sum of all water independent and dependent pathways.

Appendix H35: RESRAD 7.0 Output for Area L23

RESRAD, Version 7.0 T½ Limit = 180 days 07/22/2016 11:06 Page 12
 Summary : RESRAD Default Parameters
 File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\AREA L23.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years
 Water Independent Pathways (Inhalation excludes radon)

| Radio- Nuclide | Ground | | Inhalation | | Radon | | Plant | | Meat | | Milk | | Soil | |
|-------------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|
| | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. |
| Cs-137 | 1.896E-01 | 0.6000 | 9.990E-08 | 0.0000 | 0.000E+00 | 0.0000 | 3.513E-02 | 0.1112 | 2.050E-02 | 0.0649 | 3.778E-02 | 0.1195 | 1.099E-04 | 0.0003 |
| Sr-90 | 4.159E-05 | 0.0001 | 1.242E-07 | 0.0000 | 0.000E+00 | 0.0000 | 2.442E-02 | 0.0773 | 2.777E-03 | 0.0088 | 5.651E-03 | 0.0179 | 1.018E-05 | 0.0000 |
| Total | 1.896E-01 | 0.6001 | 2.241E-07 | 0.0000 | 0.000E+00 | 0.0000 | 5.955E-02 | 0.1884 | 2.328E-02 | 0.0737 | 4.343E-02 | 0.1374 | 1.201E-04 | 0.0004 |

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years
 Water Dependent Pathways

| Radio- Nuclide | Water | | Fish | | Radon | | Plant | | Meat | | Milk | | All Pathways* | |
|-------------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|
| | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. |
| Cs-137 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 2.831E-01 | 0.8959 |
| Sr-90 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 3.290E-02 | 0.1041 |
| Total | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 3.160E-01 | 1.0000 |

*Sum of all water independent and dependent pathways.

Appendix H35: RESRAD 7.0 Output for Area L23

RESRAD, Version 7.0 T½ Limit = 180 days 07/22/2016 11:06 Page 13
 Summary : RESRAD Default Parameters
 File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\AREA L23.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years
 Water Independent Pathways (Inhalation excludes radon)

| Radio- Nuclide | Ground | | Inhalation | | Radon | | Plant | | Meat | | Milk | | Soil | |
|-------------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|
| | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. |
| Cs-137 | 1.185E-01 | 0.6294 | 6.242E-08 | 0.0000 | 0.000E+00 | 0.0000 | 2.195E-02 | 0.1166 | 1.281E-02 | 0.0681 | 2.361E-02 | 0.1254 | 6.870E-05 | 0.0004 |
| Sr-90 | 1.433E-05 | 0.0001 | 4.280E-08 | 0.0000 | 0.000E+00 | 0.0000 | 8.416E-03 | 0.0447 | 9.570E-04 | 0.0051 | 1.947E-03 | 0.0103 | 3.509E-06 | 0.0000 |
| Total | 1.185E-01 | 0.6294 | 1.052E-07 | 0.0000 | 0.000E+00 | 0.0000 | 3.037E-02 | 0.1613 | 1.377E-02 | 0.0731 | 2.555E-02 | 0.1357 | 7.221E-05 | 0.0004 |

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years
 Water Dependent Pathways

| Radio- Nuclide | Water | | Fish | | Radon | | Plant | | Meat | | Milk | | All Pathways* | |
|-------------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|
| | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. |
| Cs-137 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 1.769E-01 | 0.9398 |
| Sr-90 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 1.134E-02 | 0.0602 |
| Total | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 1.882E-01 | 1.0000 |

*Sum of all water independent and dependent pathways.

Appendix H35: RESRAD 7.0 Output for Area L23

RESRAD, Version 7.0 T½ Limit = 180 days 07/22/2016 11:06 Page 14
 Summary : RESRAD Default Parameters
 File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\AREA L23.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years
 Water Independent Pathways (Inhalation excludes radon)

| Radio- Nuclide | Ground | | Inhalation | | Radon | | Plant | | Meat | | Milk | | Soil | |
|-------------------|-----------|--------|------------|--------|-----------|--------|-----------|--------|-----------|--------|-----------|--------|-----------|--------|
| | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. |
| Cs-137 | 2.285E-02 | 0.6357 | 1.204E-08 | 0.0000 | 0.000E+00 | 0.0000 | 4.234E-03 | 0.1178 | 2.471E-03 | 0.0687 | 4.553E-03 | 0.1267 | 1.325E-05 | 0.0004 |
| Sr-90 | 3.443E-07 | 0.0000 | 1.028E-09 | 0.0000 | 0.000E+00 | 0.0000 | 2.022E-04 | 0.0056 | 2.299E-05 | 0.0006 | 4.678E-05 | 0.0013 | 8.430E-08 | 0.0000 |
| Total | 2.285E-02 | 0.6357 | 1.307E-08 | 0.0000 | 0.000E+00 | 0.0000 | 4.436E-03 | 0.1234 | 2.494E-03 | 0.0694 | 4.600E-03 | 0.1280 | 1.333E-05 | 0.0004 |

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years
 Water Dependent Pathways

| Radio- Nuclide | Water | | Fish | | Radon | | Plant | | Meat | | Milk | | All Pathways* | |
|-------------------|-----------|--------|-----------|--------|-----------|--------|-----------|--------|-----------|--------|-----------|--------|---------------|--------|
| | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. |
| Cs-137 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 3.412E-02 | 0.9492 |
| Sr-90 | 8.395E-04 | 0.0234 | 2.972E-05 | 0.0008 | 0.000E+00 | 0.0000 | 3.359E-04 | 0.0093 | 1.049E-04 | 0.0029 | 2.434E-04 | 0.0068 | 1.826E-03 | 0.0508 |
| Total | 8.395E-04 | 0.0234 | 2.972E-05 | 0.0008 | 0.000E+00 | 0.0000 | 3.359E-04 | 0.0093 | 1.049E-04 | 0.0029 | 2.434E-04 | 0.0068 | 3.595E-02 | 1.0000 |

*Sum of all water independent and dependent pathways.

Appendix H35: RESRAD 7.0 Output for Area L23

RESRAD, Version 7.0 T½ Limit = 180 days 07/22/2016 11:06 Page 15
 Summary : RESRAD Default Parameters
 File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\AREA L23.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years
 Water Independent Pathways (Inhalation excludes radon)

| Radio- Nuclide | Ground | | Inhalation | | Radon | | Plant | | Meat | | Milk | | Soil | |
|-------------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|
| | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. |
| Cs-137 | 2.074E-04 | 0.6696 | 1.093E-10 | 0.0000 | 0.000E+00 | 0.0000 | 3.843E-05 | 0.1241 | 2.243E-05 | 0.0724 | 4.132E-05 | 0.1334 | 1.203E-07 | 0.0004 |
| Sr-90 | 8.132E-12 | 0.0000 | 2.428E-14 | 0.0000 | 0.000E+00 | 0.0000 | 4.775E-09 | 0.0000 | 5.430E-10 | 0.0000 | 1.105E-09 | 0.0000 | 1.991E-12 | 0.0000 |
| Total | 2.074E-04 | 0.6696 | 1.093E-10 | 0.0000 | 0.000E+00 | 0.0000 | 3.843E-05 | 0.1241 | 2.243E-05 | 0.0724 | 4.133E-05 | 0.1334 | 1.203E-07 | 0.0004 |

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years
 Water Dependent Pathways

| Radio- Nuclide | Water | | Fish | | Radon | | Plant | | Meat | | Milk | | All Pathways* | |
|-------------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|
| | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. |
| Cs-137 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 3.097E-04 | 0.9999 |
| Sr-90 | 1.983E-08 | 0.0001 | 7.019E-10 | 0.0000 | 0.000E+00 | 0.0000 | 7.934E-09 | 0.0000 | 2.477E-09 | 0.0000 | 5.749E-09 | 0.0000 | 4.312E-08 | 0.0001 |
| Total | 1.983E-08 | 0.0001 | 7.019E-10 | 0.0000 | 0.000E+00 | 0.0000 | 7.934E-09 | 0.0000 | 2.477E-09 | 0.0000 | 5.749E-09 | 0.0000 | 3.098E-04 | 1.0000 |

*Sum of all water independent and dependent pathways.

Appendix H35: RESRAD 7.0 Output for Area L23

RESRAD, Version 7.0 T½ Limit = 180 days 07/22/2016 11:06 Page 16
 Summary : RESRAD Default Parameters
 File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\AREA L23.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years
 Water Independent Pathways (Inhalation excludes radon)

| Radio- Nuclide | Ground | | Inhalation | | Radon | | Plant | | Meat | | Milk | | Soil | |
|-------------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|
| | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. |
| Cs-137 | 1.478E-11 | 0.6697 | 7.785E-18 | 0.0000 | 0.000E+00 | 0.0000 | 2.738E-12 | 0.1241 | 1.598E-12 | 0.0724 | 2.944E-12 | 0.1334 | 8.568E-15 | 0.0004 |
| Sr-90 | 5.206E-28 | 0.0000 | 1.554E-30 | 0.0000 | 0.000E+00 | 0.0000 | 3.057E-25 | 0.0000 | 3.476E-26 | 0.0000 | 7.073E-26 | 0.0000 | 1.274E-28 | 0.0000 |
| Total | 1.478E-11 | 0.6697 | 7.785E-18 | 0.0000 | 0.000E+00 | 0.0000 | 2.738E-12 | 0.1241 | 1.598E-12 | 0.0724 | 2.944E-12 | 0.1334 | 8.568E-15 | 0.0004 |

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
 As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years
 Water Dependent Pathways

| Radio- Nuclide | Water | | Fish | | Radon | | Plant | | Meat | | Milk | | All Pathways* | |
|-------------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|------------------|---------------|
| | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. | mrem/yr | fract. |
| Cs-137 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 0.000E+00 | 0.0000 | 2.206E-11 | 1.0000 |
| Sr-90 | 1.269E-24 | 0.0000 | 4.493E-26 | 0.0000 | 0.000E+00 | 0.0000 | 5.079E-25 | 0.0000 | 1.586E-25 | 0.0000 | 3.680E-25 | 0.0000 | 2.760E-24 | 0.0000 |
| Total | 1.269E-24 | 0.0000 | 4.493E-26 | 0.0000 | 0.000E+00 | 0.0000 | 5.079E-25 | 0.0000 | 1.586E-25 | 0.0000 | 3.680E-25 | 0.0000 | 2.206E-11 | 1.0000 |

*Sum of all water independent and dependent pathways.

Appendix H35: RESRAD 7.0 Output for Area L23

RESRAD, Version 7.0 T_{1/2} Limit = 180 days 07/22/2016 11:06 Page 17
 Summary : RESRAD Default Parameters
 File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\AREA L23.RAD

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

| 0 | Parent (i) | Product (j) | Parent and Progeny Thread Fraction | DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) | | | | | | | |
|---|---------------|----------------|------------------------------------|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | | | 0.000E+00 | 1.000E+00 | 3.000E+00 | 1.000E+01 | 3.000E+01 | 1.000E+02 | 3.000E+02 | 1.000E+03 |
| | Cs-137+D | Cs-137+D | 1.000E+00 | 2.119E+00 | 2.070E+00 | 1.975E+00 | 1.675E+00 | 1.047E+00 | 2.019E-01 | 1.833E-03 | 1.306E-10 |
| | OSr-90+D | Sr-90+D | 1.000E+00 | 8.005E+00 | 7.591E+00 | 6.824E+00 | 4.700E+00 | 1.620E+00 | 2.608E-01 | 6.160E-06 | 3.944E-22 |

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

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

| ONuclide (i) | t = 0.000E+00 | 1.000E+00 | 3.000E+00 | 1.000E+01 | 3.000E+01 | 1.000E+02 | 3.000E+02 | 1.000E+03 |
|-----------------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| Cs-137 | 1.180E+01 | 1.208E+01 | 1.266E+01 | 1.492E+01 | 2.388E+01 | 1.238E+02 | 1.364E+04 | 1.915E+11 |
| Sr-90 | 3.123E+00 | 3.293E+00 | 3.663E+00 | 5.319E+00 | 1.543E+01 | 9.585E+01 | 4.058E+06 | *1.366E+14 |

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
 and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
 at tmin = time of minimum single radionuclide soil guideline
 and at tmax = time of maximum total dose = 0.000E+00 years

| ONuclide (i) | Initial (pCi/g) | tmin (years) | DSR(i,tmin) (pCi/g) | G(i,tmin) (pCi/g) | DSR(i,tmax) (pCi/g) | G(i,tmax) (pCi/g) |
|-----------------|--------------------|-----------------|------------------------|----------------------|------------------------|----------------------|
| Cs-137 | 1.690E-01 | 0.000E+00 | 2.119E+00 | 1.180E+01 | 2.119E+00 | 1.180E+01 |
| Sr-90 | 7.000E-03 | 0.000E+00 | 8.005E+00 | 3.123E+00 | 8.005E+00 | 3.123E+00 |

Appendix H35: RESRAD 7.0 Output for Area L23

RESRAD, Version 7.0 T½ Limit = 180 days 07/22/2016 11:06 Page 18
 Summary : RESRAD Default Parameters
 File : C:\RESRAD_FAMILY\RESRAD\7.0\USERFILES\AREA L23.RAD

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

| ONuclide (j) | Parent (i) | THF(i) | DOSE(j,t), mrem/yr | | | | | | | | |
|-----------------|---------------|-----------|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | | t= | 0.000E+00 | 1.000E+00 | 3.000E+00 | 1.000E+01 | 3.000E+01 | 1.000E+02 | 3.000E+02 | 1.000E+03 |
| Cs-137 | Cs-137 | 1.000E+00 | 3.582E-01 | 3.498E-01 | 3.338E-01 | 2.831E-01 | 1.769E-01 | 3.412E-02 | 3.097E-04 | 2.206E-11 | |
| OSr-90 | Sr-90 | 1.000E+00 | 5.604E-02 | 5.314E-02 | 4.777E-02 | 3.290E-02 | 1.134E-02 | 1.826E-03 | 4.312E-08 | 2.760E-24 | |

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

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

| ONuclide (j) | Parent (i) | THF(i) | S(j,t), pCi/g | | | | | | | | |
|-----------------|---------------|-----------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | | t= | 0.000E+00 | 1.000E+00 | 3.000E+00 | 1.000E+01 | 3.000E+01 | 1.000E+02 | 3.000E+02 | 1.000E+03 |
| Cs-137 | Cs-137 | 1.000E+00 | 1.690E-01 | 1.651E-01 | 1.575E-01 | 1.336E-01 | 8.348E-02 | 1.610E-02 | 1.461E-04 | 1.041E-11 | |
| OSr-90 | Sr-90 | 1.000E+00 | 7.000E-03 | 6.637E-03 | 5.966E-03 | 4.109E-03 | 1.416E-03 | 3.402E-05 | 8.034E-10 | 5.143E-26 | |

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

ORESCALC.EXE execution time = 0.41 seconds