

APPENDIX J
SAMPLE.SYNOPSIS FILES

SAMPLE.SYNOPSIS Files
Non-Radon Run

PLEASE GIVE TO ==> BARRY PARKS
PHONE NUMBER: (702) 798-2443

SAMPLE.SYNOPSIS Files
 Non-Radon Run
 (continued)

SYNOPSIS REPORT - CAP-88 (1.00)

ID Code: DOE_ARGONNEP Date/Time: THR 7 September, 1989 12:05:43 PM

Facility: ARGONNE NATIONAL LABORATORY
 Address: ADDRESS
 City: ARGONNE
 State: IL Zipcode:

Source Category: DOE FACILITIES Source Term: 1986

Comments:
 ARGONNE NATIONAL LAB, IL UNIV. OF CHICAGO POP RUN

POPULATION ASSESSMENT
 (RN-222 DOSE/RISK EXCLUDED)

ICRP Collective Effective Dose Equivalent (Person-Rem/Year): 3.07E-01

Collective Population

| | GONADS | BREAST | R MAR | LUNGS | THYROID | ENDOST | RMNDR |
|----------------------------|---------|---------|---------|---------|---------|---------|---------|
| Organ dose (P-REM/YR) : | 3.1E-01 | 3.0E-01 | 2.8E-01 | 3.3E-01 | 3.5E-01 | 2.7E-01 | 3.1E-01 |

FREQUENCY DISTRIBUTION OF LIFETIME FATAL CANCER RISKS

| RISK | NUMBER OF PEOPLE | NUMBER OF PEOPLE AT THIS RISK OR HIGHER | DEATHS/YEAR AT THIS RISK | DEATHS/YEAR AT THIS RISK 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 | 0 | 0 | 0.00E+00 | 0.00E+00 |
| LESS THAN 1.0E-06 | 7893815 | 7893815 | 1.13E-04 | 1.13E-04 |

INDIVIDUAL AT MAXIMUM RISK ASSESSEMENT
 (RN-222 RISKS EXCLUDED)

Location to the individual: 750 METERS SOUTH SOUTHWEST

| | GONADS | BREAST | R MAR | LUNGS | THYROID | ENDOST | RMNDR |
|---------------------------|---------|---------|---------|---------|---------|---------|---------|
| Organ dose (mrem/yr) : | 2.6E-03 | 2.5E-03 | 2.8E-03 | 3.1E-02 | 2.5E-03 | 2.1E-02 | 2.7E-03 |

ICRP Effective Dose Equivalent (mrem/yr): 6.59E-03
 Lifetime Fatal Cancer Risk : 1.39E-07

SOURCE TERM (1986)

SAMPLE.SYNOPSIS Files
Non-Radon Run
(continued)

ID CODE: DOE_ARGONNEP

DATE/TIME:THR 7 September, 1989 12:05:43 PM PAGE 2

| Nuclide | Class | Amad | Stack #1 Ci/yr | TOTAL |
|---------|-------|------|-------------------|----------|
| AR-41 | * | 0.00 | 1.46E+00 | 1.46E+00 |
| C-11 | D | 1.00 | 9.00E+01 | 9.00E+01 |
| CS-134 | D | 1.00 | 2.04E-07 | 2.04E-07 |
| CS-137 | D | 1.00 | 4.95E-07 | 4.95E-07 |
| BA-137M | D | 1.00 | 0.00E+00 | 0.00E+00 |
| H-3 | * | 0.00 | 5.03E+01 | 5.03E+01 |
| I-129 | D | 1.00 | 1.61E-05 | 1.61E-05 |
| I-131 | D | 1.00 | 1.52E-06 | 1.52E-06 |
| KR-85 | * | 0.00 | 1.70E+00 | 1.70E+00 |
| NB-95 | Y | 1.00 | 1.55E-08 | 1.55E-08 |
| PU-239 | Y | 1.00 | 5.61E-09 | 5.61E-09 |
| RN-220 | * | 0.00 | 6.98E+03 | 6.98E+03 |
| SB-125 | W | 1.00 | 3.38E-05 | 3.38E-05 |
| ZR-95 | W | 1.00 | 7.50E-09 | 7.50E-09 |

SITE INFORMATION

Temperature: 10 C
Rainfall: 80 cm/yr
Mixing Height: 700 meters

EMISSION INFORMATION

Stack Number: 1
Stack Height (meters): 61.00
Stack Diameter (meters): 0.00
Plume Rise
Momentum (m/sec): 0.00E+00

FOOD SUPPLY FRACTIONS

| | Local | Regional | Imported |
|------------|-------|----------|----------|
| Vegetable: | 0.076 | 0.924 | 0.000 |
| Meat: | 0.008 | 0.992 | 0.000 |
| Milk: | 0.000 | 1.000 | 0.000 |

FOOD FRACTIONS USED: DB = 3.33E-01 DM = 2.16E-02 FC = 2.80E-02

POPULATION ARRAY (1980 Census)

| | 250 | 750 | 1500 | 2500 | 3500 | 4500 | 7500 |
|-----|-----|-----|------|-------|-------|-------|--------|
| N | 0. | 0. | 0. | 2070. | 514. | 3434. | 25640. |
| NNW | 0. | 0. | 0. | 0. | 3283. | 4172. | 17450. |
| NW | 0. | 0. | 0. | 0. | 0. | 1925. | 16327. |
| WNW | 0. | 0. | 0. | 421. | 0. | 0. | 15766. |
| W | 0. | 0. | 0. | 0. | 0. | 3832. | 10282. |
| WSW | 0. | 0. | 0. | 0. | 757. | 0. | 18479. |

SAMPLE.SYNOPSIS Files
 Non-Radon Run
 (continued)

ID CODE: DOE_ARGONNEP

DATE/TIME:THR 7 September, 1989 12:05:43 PM PAGE 3

| | 250 | 750 | 1500 | 2500 | 3500 | 4500 | 7500 |
|-----|-----|------|------|-------|-------|-------|--------|
| SW | 0. | 0. | 0. | 0. | 0. | 583. | 699. |
| SSW | 0. | 371. | 0. | 0. | 0. | 754. | 3388. |
| S | 0. | 0. | 0. | 0. | 0. | 0. | 11255. |
| SSE | 0. | 0. | 0. | 0. | 0. | 0. | 1524. |
| SE | 0. | 0. | 0. | 0. | 0. | 0. | 1400. |
| ESE | 0. | 0. | 0. | 0. | 0. | 9. | 543. |
| E | 0. | 0. | 0. | 2877. | 0. | 626. | 0. |
| ENE | 0. | 0. | 0. | 0. | 549. | 807. | 7362. |
| NE | 0. | 0. | 0. | 899. | 1493. | 1477. | 6039. |
| NNE | 0. | 0. | 0. | 1245. | 4758. | 3299. | 18169. |

| | 15000 | 25000 | 35000 | 45000 | 55000 | 70000 |
|-----|---------|---------|---------|---------|---------|---------|
| N | 79915. | 108628. | 137641. | 198337. | 58920. | 239266. |
| NNW | 76995. | 81605. | 153849. | 53208. | 59104. | 111910. |
| NW | 31050. | 38804. | 39953. | 63051. | 4973. | 21218. |
| WNW | 40030. | 32245. | 29235. | 4906. | 2527. | 52311. |
| W | 15628. | 64259. | 34322. | 5686. | 9600. | 6945. |
| WSW | 3255. | 3927. | 1759. | 1552. | 2745. | 5894. |
| SW | 14087. | 25526. | 3013. | 2211. | 11628. | 13569. |
| SSW | 25583. | 92779. | 6919. | 6218. | 14385. | 9580. |
| S | 3057. | 17399. | 3386. | 1227. | 3539. | 69888. |
| SSE | 1560. | 20196. | 2956. | 3162. | 6812. | 21119. |
| SE | 38264. | 55616. | 129090. | 26537. | 13264. | 28396. |
| ESE | 42042. | 148331. | 186756. | 195779. | 202379. | 109332. |
| E | 110559. | 390640. | 316868. | 23367. | 0. | 27418. |
| ENE | 85258. | 426648. | 343806. | 0. | 0. | 0. |
| NE | 104299. | 548998. | 884496. | 132440. | 0. | 0. |
| NNE | 72950. | 210212. | 312502. | 221810. | 53208. | 3020. |

REFERENCE FILE NAMES FOR ASSESSMENT

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-----
JCL FILE      ==> CAAR.CAA88.DOE(ARGONNEP)
ALLRAD FILE   ==> CBNRACS.CAA88.DATA(ALLRAD88)
POP FILE      ==> CAAR.CAA88.POPLIB(ARGONNE)
STARFILE      ==> CAAR.CAA88.STARLIB(MDW0675)
PREDA FILE    ==> CAAR.AIRDOS.LIB(JOAPOP)
RADRISK FILE  ==> CBNRACS.CAA88.RADRISK.V8401RBM
  
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SAMPLE.SYNOPSIS Files
 Non-Radon Run
 (continued)

ID CODE: DOE_ARGONNEP

DATE/TIME:THR 7 September, 1989 12:05:43 PM PAGE 4

FREQUENCY DISTRIBUTION OF LIFETIME FATAL CANCER RISKS

| RISK ----- | NUMBER OF PEOPLE ----- | NUMBER OF PEOPLE AT THIS RISK OR HIGHER ----- | DEATHS/YEAR AT THIS RISK ----- | DEATHS/YEAR AT THIS RISK OR HIGHER ----- |
|--------------------|------------------------------|--|---|---|
| 1.0E+00 TO 3.0E-01 | 0 | 0 | 0.00E+00 | 0.00E+00 |
| 3.0E-01 TO 1.0E-01 | 0 | 0 | 0.00E+00 | 0.00E+00 |
| 1.0E-01 TO 3.0E-02 | 0 | 0 | 0.00E+00 | 0.00E+00 |
| 3.0E-02 TO 1.0E-02 | 0 | 0 | 0.00E+00 | 0.00E+00 |
| 1.0E-02 TO 3.0E-03 | 0 | 0 | 0.00E+00 | 0.00E+00 |
| 3.0E-03 TO 1.0E-03 | 0 | 0 | 0.00E+00 | 0.00E+00 |
| 1.0E-03 TO 3.0E-04 | 0 | 0 | 0.00E+00 | 0.00E+00 |
| 3.0E-04 TO 1.0E-04 | 0 | 0 | 0.00E+00 | 0.00E+00 |
| 1.0E-04 TO 3.0E-05 | 0 | 0 | 0.00E+00 | 0.00E+00 |
| 3.0E-05 TO 1.0E-05 | 0 | 0 | 0.00E+00 | 0.00E+00 |
| 1.0E-05 TO 3.0E-06 | 0 | 0 | 0.00E+00 | 0.00E+00 |
| 3.0E-06 TO 1.0E-06 | 0 | 0 | 0.00E+00 | 0.00E+00 |
| 1.0E-06 TO 3.0E-07 | 0 | 0 | 0.00E+00 | 0.00E+00 |
| 3.0E-07 TO 1.0E-07 | 371 | 371 | 7.30E-07 | 7.30E-07 |
| LESS THAN 1.0E-07 | 7893444 | 7893815 | 1.12E-04 | 1.13E-04 |

SAMPLE.SYNOPSIS Files
Radon Run

PLEASE GIVE TO ==> LARRY GRAY
PHONE NUMBER: 475-9610

SAMPLE.SYNOPSIS Files
Radon Run
(continued)

SYNOPSIS REPORT - CAP-88 (1.00)

ID Code: SUMINERN_DARPIT1P Date/Time: THR 11 May, 1989 8:53:28 PM

Facility: DARROW PIT #1
Address: ADDRESS
City: FALL RIVER COUNTY
State: SD Zipcode:

Source Category: SURFACE URANIUM MINES RADON Source Term: 1986

Comments:
DARROW PIT #1, FALL RIVER COUNTY, SOUTH DAKOTA -- POP RUN

RN-222 POPULATION ASSESSMENT

Collective Exposure (Person Working Levels): 2.03E-04

FREQUENCY DISTRIBUTION OF LIFETIME FATAL CANCER RISKS

| RISK | NUMBER OF PEOPLE | NUMBER OF PEOPLE AT THIS RISK OR HIGHER | DEATHS/YEAR AT THIS RISK | DEATHS/YEAR AT THIS RISK 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 | 0 | 0 | 0.00E+00 | 0.00E+00 |
| LESS THAN 1.0E-06 | 24163 | 24163 | 3.87E-06 | 3.87E-06 |

RN-222 EXPOSURE AND RISK FOR THE INDIVIDUAL AT MAXIMUM RISK

Location to the individual: 4000 METERS SOUTH SOUTHEAST

Exposure in Working Levels: 1.65E-07
pCi/liter at that location: 3.98E-05
Lifetime Fatal Cancer Risk: 2.26E-07

SOURCE TERM (1986)

| Nuclide | Class | Amad | Stack #1 Ci/yr | TOTAL |
|---------|-------|------|-------------------|----------|
| RN-222 | * | 0.00 | 5.40E+00 | 5.40E+00 |

SITE INFORMATION

Temperature: 8 C
Rainfall: 48 cm/yr
Mixing Height: 1000 meters

SAMPLE SYNOPSIS Files
 Radon Run
 (continued)

ID CODE: SUMINERN_DARPIT1P

DATE/TIME: THR 11 May, 1989 8:53:28 PM

PAGE 2

EMISSION INFORMATION

Stack Number: 1

 Area Height (meters) : 1.00
 Area (sq. m) : 5.83E+04
 Area Diameter (meters): 2.72E+02

FOOD SUPPLY FRACTIONS

| | Local | Regional | Imported |
|------------|-------|----------|----------|
| | ----- | ----- | ----- |
| Vegetable: | 0.076 | 0.924 | 0.000 |
| Meat: | 0.008 | 0.992 | 0.000 |
| Milk: | 0.000 | 1.000 | 0.000 |

FOOD ARRAYS WERE NOT GENERATED OR SUPPLIED FOR THIS RUN. DEFAULT VALUES USED.

POPULATION ARRAY (1980 Census)

| | 250 | 750 | 1500 | 2500 | 4000 | 7500 | 15000 |
|-----|-------|-------|-------|-------|-------|-------|-------|
| | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| N | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| NNW | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| NW | 0. | 0. | 0. | 0. | 6. | 0. | 0. |
| WNW | 0. | 0. | 0. | 0. | 1. | 0. | 0. |
| W | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| WSW | 0. | 0. | 0. | 0. | 15. | 0. | 0. |
| SW | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| SSW | 0. | 0. | 0. | 0. | 9. | 0. | 0. |
| S | 0. | 0. | 0. | 0. | 3. | 0. | 0. |
| SSE | 0. | 0. | 0. | 0. | 3. | 0. | 0. |
| SE | 0. | 0. | 0. | 0. | 0. | 0. | 154. |
| ESE | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| E | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| ENE | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| NE | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| NNE | 0. | 0. | 0. | 0. | 0. | 0. | 0. |

| | 25000 | 35000 | 45000 | 55000 | 70000 |
|-----|-------|-------|-------|-------|-------|
| | ----- | ----- | ----- | ----- | ----- |
| N | 0. | 0. | 0. | 0. | 20. |
| NNW | 0. | 0. | 3600. | 0. | 1281. |
| NW | 0. | 0. | 0. | 0. | 238. |
| WNW | 0. | 461. | 0. | 0. | 0. |
| W | 0. | 74. | 0. | 0. | 6. |
| WSW | 0. | 0. | 0. | 0. | 92. |
| SW | 68. | 0. | 0. | 112. | 99. |
| SSW | 0. | 0. | 0. | 103. | 0. |
| S | 40. | 139. | 0. | 0. | 192. |
| SSE | 1519. | 81. | 0. | 16. | 127. |
| SE | 49. | 0. | 0. | 94. | 44. |
| ESE | 0. | 804. | 0. | 68. | 301. |

SAMPLE.SYNOPSIS Files
Radon Run
(continued)

ID CODE: SUMINERN_DARPIT1P

DATE/TIME:THR 11 May, 1989 8:53:28 PM

PAGE 3

| | 25000 | 35000 | 45000 | 55000 | 70000 |
|-----|-------|-------|-------|-------|-------|
| E | 0. | 4742. | 46. | 190. | 369. |
| ENE | 0. | 124. | 0. | 0. | 491. |
| NE | 0. | 1747. | 1835. | 233. | 2496. |
| NNE | 145. | 667. | 0. | 528. | 731. |

REFERENCE FILE NAMES FOR ASSESSMENT

JCL FILE ==> CAAR.CAA88.SUMINERN(DARPIT1P)
ALLRAD FILE ==> CBNRACS.CAA88.DATA(ALLRAD88)
STAR FILE ==> CAAR.CAA88.STARLIB(RAP0336)
POP FILE ==> CAAR.CAA88.POPLIB(FRCPIT1)
PREDA FILE ==> CAAR.AIRDOS.LIB(JOAPOP)
RADRISK FILE ==> CBNRACS.CAA88.RADRISK.V8401RBM

SAMPLE.SYNOPSIS Files
 Radon Run
 (continued)

ID CODE: SUMINERN_DARPIT1P

DATE/TIME: THR 11 May, 1989 8:53:28 PM

PAGE 4

FREQUENCY DISTRIBUTION OF LIFETIME FATAL CANCER RISKS

| RISK ----- | NUMBER OF PEOPLE ----- | NUMBER OF PEOPLE AT THIS RISK OR HIGHER ----- | DEATHS/YEAR AT THIS RISK ----- | DEATHS/YEAR AT THIS RISK OR HIGHER ----- |
|--------------------|------------------------------|--|---|---|
| 1.0E+00 TO 3.0E-01 | 0 | 0 | 0.00E+00 | 0.00E+00 |
| 3.0E-01 TO 1.0E-01 | 0 | 0 | 0.00E+00 | 0.00E+00 |
| 1.0E-01 TO 3.0E-02 | 0 | 0 | 0.00E+00 | 0.00E+00 |
| 3.0E-02 TO 1.0E-02 | 0 | 0 | 0.00E+00 | 0.00E+00 |
| 1.0E-02 TO 3.0E-03 | 0 | 0 | 0.00E+00 | 0.00E+00 |
| 3.0E-03 TO 1.0E-03 | 0 | 0 | 0.00E+00 | 0.00E+00 |
| 1.0E-03 TO 3.0E-04 | 0 | 0 | 0.00E+00 | 0.00E+00 |
| 3.0E-04 TO 1.0E-04 | 0 | 0 | 0.00E+00 | 0.00E+00 |
| 1.0E-04 TO 3.0E-05 | 0 | 0 | 0.00E+00 | 0.00E+00 |
| 3.0E-05 TO 1.0E-05 | 0 | 0 | 0.00E+00 | 0.00E+00 |
| 1.0E-05 TO 3.0E-06 | 0 | 0 | 0.00E+00 | 0.00E+00 |
| 3.0E-06 TO 1.0E-06 | 0 | 0 | 0.00E+00 | 0.00E+00 |
| 1.0E-06 TO 3.0E-07 | 0 | 0 | 0.00E+00 | 0.00E+00 |
| 3.0E-07 TO 1.0E-07 | 22 | 22 | 5.25E-08 | 5.25E-08 |
| LESS THAN 1.0E-07 | 24141 | 24163 | 3.81E-06 | 3.87E-06 |

APPENDIX K
SECPOP PROGRAM FILES

SECPOP Program Files
SECPOP3A.FOR Program Listing

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|--|--|---|---|---|---|---|---|-----|
| 12345678901234567890123456789012345678901234567890123456789012345678 | | | | | | | | |
| C | PROGRAM SECPOP, MAGNETIC TAPE VERSION | | | | | | | 1. |
| C | THIS PROGRAM IS AN EXTENSIVELY MODIFIED VERSION OF A PROGRAM | | | | | | | 2. |
| C | DESCRIBED IN THE U. S. DEPT. OF COMMERCE, OFFICE OF TELECOMMUNI- | | | | | | | 3. |
| C | CATIONS, TECHICAL MEMORANDUM 73-146. IT HAS BEEN TESTED OVER | | | | | | | 4. |
| C | SEVERAL MONTHS UNDER NORMAL OPERATING CONDITIONS, BUT THE USER | | | | | | | 5. |
| C | IS RESPONSIBLE FOR THE FINAL EVALUATION AS TO ITS USEFULLNESS | | | | | | | 6. |
| C | AND VALIDITY IN HIS PARTICULAR APPLICATION. PLEASE CREDIT THE | | | | | | | 7. |
| C | OFFICE OF TELECOMMUNICATIONS, DEPT. OF COMMERCE, FOR THE | | | | | | | 8. |
| C | PREPARATION OF THE DATA BASE, AND THE OFFICE OF RADIATION | | | | | | | 9. |
| C | PROGRAMS, ENVIRONMENTAL PROTECTION AGENCY, FOR THE PROGRAMS. | | | | | | | 10. |
| C | | | | | | | | 11. |
| C | MODIFIED TO POSITION FILE AT RECORD NREC-1 BEFORE READING DATA FOR | | | | | | | 12. |
| C | RECORD NREC. REVISED VERSION OF SUBROUTINE RECORD INCORPORATED. | | | | | | | 13. |
| C | C.B.NELSON JULY 25, 1983. | | | | | | | 14. |
| C | | | | | | | | 15. |
| C | DIMENSION LONPOS(2136),A(3600) | | | | | | | 16. |
| C | DIMENSION ANUM(17,21), CIRCLE(21), POPTOT(17,21), HSTOT(17,21) | | | | | | | 17. |
| C | DIMENSION ISEC(16),JSEC(16),XISEC(16),XJSEC(16) | | | | | | | 18. |
| C | DIMENSION LON(720),LAT(720),IS(720),IC(720),IH(720),IP(720) | | | | | | | 19. |
| C | COMMON LONPOS | | | | | | | 20. |
| C | REAL*8 NAME(3) | | | | | | | 21. |
| C | REAL LONPOS, LAT, LON, INCR, LONI | | | | | | | 22. |
| C | REAL POP(20,20) | | | | | | | 23. |
| C | INTEGER ANUM, POPTOT, HSTOT | | | | | | | 24. |
| C | INTEGER*2 IS,IC | | | | | | | 25. |
| C | EQUIVALENCE (A(1),LON(1)),(A(721),LAT(1)),(A(1441),IS(1)), | | | | | | | 26. |
| C | > (A(1801),IC(1)),(A(2161),IH(1)),(A(2881),IP(1)) | | | | | | | 27. |
| C | DIST(DLAT,DLON,COSSQ)= 111.19528*SQRT(DLAT*DLAT + | | | | | | | 28. |
| C | 1 DLON*DLON*COSSQ) | | | | | | | 29. |
| C | IDATAU=9 | | | | | | | 30. |
| C | DATA SET IDATAU HAS FODT FILE | | | | | | | 31. |
| C | PI=3.1415926 | | | | | | | 32. |
| C | CONV=PI/180. | | | | | | | 33. |
| C | ERAD=6371.0200 | | | | | | | 34. |
| C | EARTH'S RADIUS = ERAD (KM) | | | | | | | 35. |
| C | RN= 1.4473133 | | | | | | | 36. |
| C | NREC=1 | | | | | | | 37. |
| C | M=1 | | | | | | | 38. |
| C | READ (IDATAU) LONPOS | | | | | | | 39. |
| C | LONPOS HAS INITIAL LONGITUDES OF EACH OF THE 2136 RECORDS | | | | | | | 40. |
| C | READ IN NEW CENTERPOINT | | | | | | | 41. |
| 10 | READ 103, NAME, A1, A2, A3, A4, A5, A6, RADIUS, | | | | | | | 42. |
| 1 | INCR, XSEC, OFFSET | | | | | | | 43. |
| C | COL. 1-24 ALPHAMERIC ID OF CENTERPOINT | | | | | | | 44. |
| C | 25-28 BLANK | | | | | | | 45. |

SECPop Program Files
 SECPop3A.FOR Program Listing
 (continued)

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|-------|---|---|---|---|---|-----|
| 12345678901234567890123456789012345678901234567890123456789012345678 | | | | | | | |
| C | 29-39 | DEGREES, MINUTES, SECONDS OF LATITUDE | | | | | 46. |
| C | 40-50 | DEGREES, MINUTES, SECONDS OF LONGITUDE | | | | | 47. |
| C | 51-56 | RADIUS OF LARGEST OF CONCENTRIC CIRCLES | | | | | 48. |
| C | 57-62 | RADIUS INCREMENT (KM) | | | | | 49. |
| C | 63-67 | NUMBER OF SECTORS | | | | | 50. |
| C | 68-72 | SECTOR OFFSET IN DEGREES | | | | | 51. |
| | | IF (XSEC.EQ.0.) XSEC=1. | | | | | 52. |
| C | | WHEN SECTOR FIELD IS BLANK, USE FULL CIRCLE | | | | | 53. |
| | | NSEC=XSEC | | | | | 54. |
| | | MSEC=360/NSEC | | | | | 55. |
| | | XMSEC=360./XSEC | | | | | 56. |
| | | YMSEC=MSEC | | | | | 57. |
| | | ISW=0 | | | | | 58. |
| | | IF (XMSEC.NE.YMSEC.OR.OFFSET.NE.0..OR.NSEC.GT.12) ISW=1 | | | | | 59. |
| | | IF (XSEC.GT.16) GO TO 25 | | | | | 60. |
| | | NBINS =0 | | | | | 61. |
| C | | WHEN NBINS=0, CIRCLES ARE COMPUTED FROM RADIUS, INCR | | | | | 62. |
| C | | WHEN NBINS.NE.0 (IE. WHEN RADIUS=99999.9), CIRCLES ARE READ IN: | | | | | 63. |
| | | IF (RADIUS.NE.99999.9) GO TO 2 | | | | | 64. |
| | | NBINS=INCR | | | | | 65. |
| | | NRADS=NBINS | | | | | 66. |
| | | READ 106, (CIRCLE(N),N-1,NBINS) | | | | | 67. |
| 106 | | FORMAT (7F10.2) | | | | | 68. |
| | | RADIUS=CIRCLE(NBINS) | | | | | 69. |
| 2 | | IF (A1.EQ.0.) GO TO 23 | | | | | 70. |
| C | | END OF PROGRAM ON BLANK CARD | | | | | 71. |
| | | AL= A1 + A2/60. + A3/3600. | | | | | 72. |
| | | OL = A4 + A5/60. + A6/3600. | | | | | 73. |
| C | | LATITUDE AND LONGITUDE TO DEGREES AND FRACTIONS | | | | | 74. |
| | | PRINT 101,NAME,AL,OL,NSEC | | | | | 75. |
| | | ALR = AL*CONV | | | | | 76. |
| C | | LATITUDE TO RADIANS | | | | | 77. |
| | | RN = RADIUS/(ERAD*CONV) | | | | | 78. |
| | | COSA = COS(ALR) | | | | | 79. |
| | | RNSECA = RN/COSA + .01 | | | | | 80. |
| C | | RNSECA IS LONGITUDE (DIFFERENCE) CORRESPONDING TO ONE | | | | | 81. |
| C | | RADIUS (EAST-WEST) | | | | | 82. |
| | | ALONMX = OL + RNSECA | | | | | 83. |
| C | | WESTERN BOUNDARY FOR SQUARE AROUND RADIUS CIRCLE | | | | | 84. |
| | | XLON = OL - RNSECA | | | | | 85. |
| C | | EASTERN BOUNDARY ETC. | | | | | 86. |
| | | CALL RECORD(XLON,NREC) | | | | | 87. |
| | | IF (LONPOS(NREC).GT.XLON) NREC = NREC - 1 | | | | | 88. |
| | | IF (NREC.GT.2136) GO TO 23 | | | | | 89. |
| | | NREC = (NREC-1)/6 + 2 | | | | | 90. |

SECPop Program Files
 SECPop3A.FOR Program Listing
 (continued)

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|----|---|---|---|---|---|---|---|--|
| | | | | | | | | 123456789012345678901234567890123456789012345678 |
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| 6 | | | | | | | | 114. |
| C | | | | | | | | 115. |
| 32 | | | | | | | | 116. |
| C | | | | | | | | 117. |
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| | | | | | | | | 127. |
| | | | | | | | | 128. |
| C | | | | | | | | 129. |
| C | | | | | | | | 130. |
| | | | | | | | | 131. |
| 11 | | | | | | | | 132. |
| 12 | | | | | | | | 133. |
| | | | | | | | | 134. |
| 13 | | | | | | | | 135. |

SECPOP Program Files
 SECPOP3A.FOR Program Listing
 (continued)

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|--|---|---|---|---|---|------|
| 12345678901234567890123456789012345678901234567890123456789012345678 | | | | | | | |
| 14 | THETA = 6.283185 | | | | | | 136. |
| | GO TO 16 | | | | | | 137. |
| 15 | THETA = 0. | | | | | | 138. |
| 16 | THETA = (THETA + ATAN(-DLON*SQRT(COSSQ)/DLAT))/CONV + OFFSET | | | | | | 139. |
| | DO 17 J=1, NRADS | | | | | | 140. |
| | IF (D.LE.CIRCLE(J)) GO TO 18 | | | | | | 141. |
| 17 | CONTINUE | | | | | | 142. |
| 18 | JA = THETA*XSEC/360. + 1. | | | | | | 143. |
| | IF (JA.EQ.(NSEC+1)) JA=1 | | | | | | 144. |
| | POPTOT(JA,J) = POPTOT(JA,J) + IP(I) | | | | | | 145. |
| | HSTOT(JA,J) = HSTOT(JA,J) + IH(I) | | | | | | 146. |
| | ANUM(JA,J) = ANUM(JA,J) + 1 | | | | | | 147. |
| 19 | CONTINUE | | | | | | 148. |
| | GO TO 32 | | | | | | 149. |
| 20 | PRINT 107 | | | | | | 150. |
| C | CALCULATE MARGINAL TOTALS | | | | | | 151. |
| | NSEC1=NSEC+1 | | | | | | 152. |
| | NRAD1=NRADS+1 | | | | | | 153. |
| | CIRCLE(NRAD1)=RADIUS | | | | | | 154. |
| | DO 121 I=1, NSEC1 | | | | | | 155. |
| | ANUM(I, NRAD1)=0. | | | | | | 156. |
| | POPTOT(I, NRAD1)=0. | | | | | | 157. |
| 121 | HSTOT(I, NRAD1)=0. | | | | | | 158. |
| | DO 122 J=1, NRADS | | | | | | 159. |
| | ANUM(NSEC1, J)=0. | | | | | | 160. |
| | POPTOT(NSEC1, J)=0. | | | | | | 161. |
| 122 | HSTOT(NSEC1, J)=0. | | | | | | 162. |
| | DO 124 I=1, NSEC | | | | | | 163. |
| | DO 123 J=1, NRADS | | | | | | 164. |
| | ANUM(I, NRAD1)=ANUM(I, NRAD1)+ANUM(I, J) | | | | | | 165. |
| | ANUM(NSEC1, J)=ANUM(NSEC1, J)+ANUM(I, J) | | | | | | 166. |
| | POPTOT(I, NRAD1)=POPTOT(I, NRAD1)+POPTOT(I, J) | | | | | | 167. |
| | POPTOT(NSEC1, J)=POPTOT(NSEC1, J)+POPTOT(I, J) | | | | | | 168. |
| | HSTOT(I, NRAD1)=HSTOT(I, NRAD1)+HSTOT(I, J) | | | | | | 169. |
| 123 | HSTOT(NSEC1, J)=HSTOT(NSEC1, J)+HSTOT(I, J) | | | | | | 170. |
| | ANUM(NSEC1, NRAD1)=ANUM(NSEC1, NRAD1)+ANUM(I, NRAD1) | | | | | | 171. |
| | POPTOT(NSEC1, NRAD1)=POPTOT(NSEC1, NRAD1)+POPTOT(I, NRAD1) | | | | | | 172. |
| 124 | HSTOT(NSEC1, NRAD1)=HSTOT(NSEC1, NRAD1)+HSTOT(I, NRAD1) | | | | | | 173. |
| C | FLOAT AND TRANSPOSE POPULATION MATRIX FOR AIRDOS-EPA FORMAT | | | | | | 174. |
| | DO 132 J=1, 20 | | | | | | 175. |
| | JM=MOD(NSEC+1-J, NSEC)+1 | | | | | | 176. |
| | DO 132 I=1, 20 | | | | | | 177. |
| | IF(J.GT.NSEC.OR.I.GT.NRADS) GO TO 130 | | | | | | 178. |
| | POP(I, J)=POPTOT(JM, I) | | | | | | 179. |
| | GO TO 132 | | | | | | 180. |

SECPOP Program Files
 SECPOP3A.FOR Program Listing
 (continued)

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|--|------|--|---|---|---|---|---|------|
| 12345678901234567890123456789012345678901234567890123456789012345678 | | | | | | | | |
| <hr/> | | | | | | | | |
| | 130 | POP(I,J)=0. | | | | | | 181. |
| | 132 | CONTINUE | | | | | | 182. |
| C | | | | | | | | 183. |
| | | PUNCH 133, NAME,AL,OL,NSEC,NRADS | | | | | | 184. |
| | 133 | FORMAT('\$ ',3A8,1X,'LAT=',F8.4,1X,'LON=',F8.4,1X, | | | | | | 185. |
| | > | 'NSEC=',I2,1X,'NRADS=',I2) | | | | | | 186. |
| | | PUNCH 1331, (CIRCLE(I),I=1,NRADS) | | | | | | 187. |
| | 1331 | FORMAT(8F10.1) | | | | | | 188. |
| | | PUNCH 134, POP | | | | | | 189. |
| | 134 | FORMAT(8F10.0) | | | | | | 190. |
| C | | | | | | | | 191. |
| | | IF (ISW.EQ.1) GO TO 41 | | | | | | 192. |
| | | PRINT 104,(ISEC(K),JSEC(K),K=1,NSEC) | | | | | | 193. |
| | | DO 22 N=1,NRAD1 | | | | | | 194. |
| | | PRINT 102, CIRCLE(N),(ANUM(K,N),K=1,NSEC1) | | | | | | 195. |
| 102 | | FORMAT (/ ,1H ,F8.2,1X,13I9) | | | | | | 196. |
| | | PRINT 112,(HSTOT(K,N),K=1,NSEC1) | | | | | | 197. |
| 22 | | PRINT 112,(POPTOT(K,N),K=1,NSEC1) | | | | | | 198. |
| 112 | | FORMAT (1H ,9X,13I9) | | | | | | 199. |
| | | GO TO 10 | | | | | | 200. |
| 41 | | PRINT 204,(XISEC(K),K=1,NSEC) | | | | | | 201. |
| 204 | | FORMAT (' KM ', 1X, 16(F6.1,'-')) | | | | | | 202. |
| | | PRINT 205,(XJSEC(K),K=1,NSEC) | | | | | | 203. |
| 205 | | FORMAT (10X,16F7.1) | | | | | | 204. |
| | | DO 42 N=1,NRAD1 | | | | | | 205. |
| | | PRINT 202, CIRCLE(N),(ANUM(K,N),K=1,NSEC1) | | | | | | 206. |
| 202 | | FORMAT (/ ,1H ,F8.2,1X,16I7,I9) | | | | | | 207. |
| | | PRINT 212, (HSTOT(K,N),K=1,NSEC1) | | | | | | 208. |
| 42 | | PRINT 212, (POPTOT(K,N),K=1,NSEC1) | | | | | | 209. |
| 212 | | FORMAT (1H ,9X,16I7,I9) | | | | | | 210. |
| | | GO TO 10 | | | | | | 211. |
| 101 | | FORMAT (1H1,3A8,6H LAT,F9.4,7H LON,F10.4,11H SECTORS=,I3) | | | | | | 212. |
| 103 | | FORMAT (3A8,4X,2(F5.0,2F3.0),2F6.1,3F5.1) | | | | | | 213. |
| 107 | | FORMAT (11H RADIUS IN,5X,31HCEDS, HOUSING UNITS, POPULATION, | | | | | | 214. |
| 1 | | 41H WITHIN SECTORS, WHOLE CIRCLE (LAST COL.)/) | | | | | | 215. |
| 104 | | FORMAT (12H KM ,1X,12(I4,1H-,I3,1X)) | | | | | | 216. |
| 111 | | FORMAT (22H TOO MANY INCREMENTS) | | | | | | 217. |
| 25 | | PRINT 111 | | | | | | 218. |
| | | GO TO 10 | | | | | | 219. |
| 26 | | PRINT 105 | | | | | | 220. |
| 105 | | FORMAT (22H0I/O ERROR, NEXT POINT) | | | | | | 221. |
| | | GO TO 10 | | | | | | 222. |
| 23 | | STOP | | | | | | 223. |
| | | END | | | | | | 224. |
| | | SUBROUTINE RECPOS(NA,NB, IDATA) | | | | | | 225. |

SECPOP Program Files
 SECPOP3A.FOR Program Listing
 (continued)

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|--|---|---|---|---|---|------|
| 12345678901234567890123456789012345678901234567890123456789012345678 | | | | | | | |
| C | POSITION TAPE FROM RECORD NA TO RECORD NB IN DATASET IDATA | | | | | | 226. |
| | NUM = NB - NA | | | | | | 227. |
| | IF (NUM) 10, 40, 30 | | | | | | 228. |
| 10 | NUM = -NUM | | | | | | 229. |
| | DO 11 I = 1, NUM | | | | | | 230. |
| 11 | BACKSPACE IDATA | | | | | | 231. |
| | GO TO 40 | | | | | | 232. |
| 30 | DO 32 I = 1, NUM | | | | | | 233. |
| 32 | READ (IDATA) | | | | | | 234. |
| 40 | RETURN | | | | | | 235. |
| | END | | | | | | 236. |
| | SUBROUTINE RECORD(LON,K) | | | | | | 237. |
| C | | | | | | | 238. |
| C... | DETERMINE FIRST RECORD FOR PROCESSING. ENTER WITH LON; | | | | | | 239. |
| C... | ON RETURN, LONPOS(K).LT.LON.LE.LONPOS(K+1). | | | | | | 240. |
| C... | C.B.NELSON 7/6/83 | | | | | | 241. |
| C | | | | | | | 242. |
| | COMMON LONPOS(2136) | | | | | | 243. |
| | REAL*4 LONPOS,LON | | | | | | 244. |
| | INTEGER MM/2136/,II/12/ | | | | | | 245. |
| C | | | | | | | 246. |
| | L=1 | | | | | | 247. |
| | M=MM | | | | | | 248. |
| | IF(LONPOS(L).LT.LON) GO TO 10 | | | | | | 249. |
| | K=L | | | | | | 250. |
| C... | LON IS LESS THAN LONPOS(1) | | | | | | 251. |
| | RETURN | | | | | | 252. |
| 10 | IF(LON.LE.LONPOS(M)) GO TO 20 | | | | | | 253. |
| | K=M | | | | | | 254. |
| C... | LON IS GREATER THAN LONPOS(MM) | | | | | | 255. |
| | RETURN | | | | | | 256. |
| 20 | DO 40 I=1,II | | | | | | 257. |
| | K=(L+M)/2 | | | | | | 258. |
| | IF(LONPOS(K).LT.LON) GO TO 30 | | | | | | 259. |
| | M=K | | | | | | 260. |
| C... | LONPOS(K) IS NOT LESS THAN LON | | | | | | 261. |
| | GO TO 40 | | | | | | 262. |
| 30 | IF(LON.LE.LONPOS(K+1)) RETURN | | | | | | 263. |
| | L=K | | | | | | 264. |
| C... | LON IS GREATER THAN LONPOS(K+1) | | | | | | 265. |
| 40 | CONTINUE | | | | | | 266. |
| C... | LONPOS IS NOT PROPERLY SORTED. | | | | | | 267. |
| | STOP 999 | | | | | | 268. |
| | END | | | | | | 269. |

SECPOP Program Files
JCL and Sample Problem Input Data for SECPOP3A.FOR

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--|---|---|---|---|---|---|---|--|
| 1234567890123456789012345678901234567890123456789012345678901234567890 | | | | | | | | |
| //CBN JOB (RACSRDSSST,D013), 'C.B.NELSON 557-9380', TIME=(,3) | | | | | | | | 00010000 |
| /*ROUTE PRINT HOLD | | | | | | | | 00020000 |
| /*JOBPARM FORMS=8391, BURST=Y | | | | | | | | 00030000 |
| /* USE REVISED VERSION (8/21/85) OF SECPOP3 TO DETERMINE | | | | | | | | 00040000 |
| /* POPULATIONS FOR SITES IN CAA BID. | | | | | | | | 00050000 |
| //PROCLIB DD DSN=CBNRACS.PROC.LIB, DISP=SHR | | | | | | | | 00060000 |
| //POP EXEC FORTVLG, PGMNAME=SECP3A, GREGION=400K | | | | | | | | 00070000 |
| //LKED.LOADLIB DD DSN=CBNRACS.LLIB, DISP=SHR | | | | | | | | 00080000 |
| //LKED.SYSIN DD * | | | | | | | | 00090000 |
| INCLUDE LOADLIB(SECP3A) | | | | | | | | 00100000 |
| ENTRY MAIN | | | | | | | | 00110000 |
| /*GO.FT07F001 DD DSN=CBNRACS.CAA.POP, DISP=(,CATLG), | | | | | | | | 00120000 |
| UNIT=DISK, SPACE=(TRK,(10,10),RLSE), | | | | | | | | 00130000 |
| DCB=(RECFM=FB,LRECL=80,BLKSIZE=3120) | | | | | | | | 00140000 |
| /*GO.FT07F001 DD SYSOUT=* | | | | | | | | 00150001 |
| //GO.FT09F001 DD DSN=CBNRACS.POP.LIB(SQ80A), DISP=SHR | | | | | | | | 00160001 |
| //GO.SYSIN DD * | | | | | | | | 00170000 |
| SITE A: NEW YORK, NY | | | | | | | | 40 43 29 074 04 25999999 16. 16. 11.2500180000 |
| .500 .800 1.00 1.50 2.00 3.00 4.00 00190000 | | | | | | | | |
| 5.00 8.00 10.0 15.0 20.0 30.0 40.0 00200000 | | | | | | | | |
| 50.0 80.0 00210000 | | | | | | | | |
| SITE B: ST. LOUIS, MO | | | | | | | | 38 54 50 090 17 18999999 16. 16. 11.2500220000 |
| .500 .800 1.00 1.50 2.00 3.00 4.00 00230000 | | | | | | | | |
| 5.00 8.00 10.0 15.0 20.0 30.0 40.0 00240000 | | | | | | | | |
| 50.0 80.0 00250000 | | | | | | | | |
| SITE C: BARTOW, FL | | | | | | | | 27 53 06 082 01 30999999 16. 16. 11.2500260000 |
| .500 .800 1.00 1.50 2.00 3.00 4.00 00270000 | | | | | | | | |
| 5.00 8.00 10.0 15.0 20.0 30.0 40.0 00280000 | | | | | | | | |
| 50.0 80.0 00290000 | | | | | | | | |
| SITE D: LITTLE ROCK, AK | | | | | | | | 34 32 24 092 30 00999999 16. 16. 11.2500300000 |
| .500 .800 1.00 1.50 2.00 3.00 4.00 00310000 | | | | | | | | |
| 5.00 8.00 10.0 15.0 20.0 30.0 40.0 00320000 | | | | | | | | |
| 50.0 80.0 00330000 | | | | | | | | |
| SITE E: GRANTS, NM | | | | | | | | 35 21 28 107 50 17999999 16. 16. 11.2500340000 |
| .500 .800 1.00 1.50 2.00 3.00 4.00 00350000 | | | | | | | | |
| 5.00 8.00 10.0 15.0 20.0 30.0 40.0 00360000 | | | | | | | | |
| 50.0 80.0 00370000 | | | | | | | | |
| SITE F: 'REMOTE', MT | | | | | | | | 45 53 14 106 37 56999999 16. 16. 11.2500380000 |
| .500 .800 1.00 1.50 2.00 3.00 4.00 00390000 | | | | | | | | |
| 5.00 8.00 10.0 15.0 20.0 30.0 40.0 00400000 | | | | | | | | |
| 50.0 80.0 00410000 | | | | | | | | |
| SITE G: POCATELLO, ID | | | | | | | | 42 54 16 112 32 12999999 16. 16. 11.2500420000 |
| .500 .800 1.00 1.50 2.00 3.00 4.00 00430000 | | | | | | | | |
| 5.00 8.00 10.0 15.0 20.0 30.0 40.0 00440000 | | | | | | | | |
| 50.0 80.0 00450000 | | | | | | | | |
| | | | | | | | | 00460000 |