

CRWMS/M&O

Calculation Cover Sheet

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1. PURPOSE

This calculation demonstrates how uncertainties in half-life and branching fraction affect postclosure isotopic concentrations and the quantification of those effects in terms of reactivity.

The uncertainty in production (preclosure) is included in the uncertainty in reactivity quantified by benchmarking codes to the critical experiments. This calculation is limited to quantifying the effects of decay uncertainties only in the postclosure period. This calculation is intended as an illustration of the methodology to arrive at the effect on k_{eff} from the uncertainties in the half-life and branching fraction of radioisotopes.

This calculation will address the Nuclear Regulatory Commission (NRC) concern regarding the effects of canceling errors in decay calculations.

2. METHOD

The ORIGEN-S module of the SCALE computer code (Functional Module F7 in Refs. 7.1 and 7.2) is used to calculate the decay of the initial isotopic concentrations. The CSAS1X module of the SCALE code (Ref. 7.2, p. C4.5.1) is used to calculate the effect on reactivity.

2.1 CALCULATION INPUTS

Inputs to the calculation include the following four parameters:

- Number of trials for this run
- Initial concentrations representing a particular fuel form, burnup, and enrichment
- Half-life, branching fraction, and initial concentration uncertainties
- Isotopes to include in the reactivity calculation.

2.2 CALCULATION PROCEDURE

The uncertainty evaluation calculation uses ORIGEN-S to calculate the decay of the initial concentrations. The input uncertainties are applied to the base ORIGEN-S half-life and branching fraction values contained in the end6dec library (Module M6 of Ref. 7.2). The input uncertainty values are 1-sigma values and are applied as a normal distribution from -10 sigma to +10 sigma.

The initial concentrations are adjusted by applying the input concentration uncertainties as a normal distribution from -10 sigma to +10 sigma and then decayed for the input time using the adjusted half-life and branching fractions. The resulting actinides and fission products are tabulated.

CSAS1X (*BONAMI*, *NITAWL*, and *XSDRN*) is used to quantify the effects of the variations in concentration on reactivity. Since the *XSDRN* libraries are more limited by the number of

isotopes available than the ORIGEN-S library, some of the isotopes resulting from the decay are discarded, principally lead, bismuth, and protactinium. In addition to the aforementioned discards, all actinides and fission products, except the Selected Principal Isotope Set (Ref. 7.11, Table 4-1) are discarded.

The above procedure is repeated for each of the trials. After the specified number of trials has been run, the mean and standard deviation of the concentrations and reactivity are calculated. For comparison, a base case using the same calculation procedure, but without uncertainties is also run.

3. ASSUMPTIONS

- A The quantification of reactivity effects on an infinite-media fuel-pin basis bound the effect for an entire waste package filled with spent fuel assemblies. This assumption, based on engineering judgement, is conservative because it increases the effective neutron multiplication factor. This assumption is used in Section 4.1.2 and the associated calculation.
- B All but the principal isotopes are discarded in the calculation of reactivity. This assumption is based on past practice and engineering judgement that the answer is more conservative with the principal set than with any other analysis set of isotopes. The isotopes excluded from the principal set are generally neutron-moderating or -absorbing isotopes that would reduce the effective neutron multiplication factor. This assumption is also used in Section 4.1.2 and the associated calculation.
- C The results from the 1,000 trial runs per decay period to generate a mean and a standard deviation are assumed to be from a normal distribution. The basis for this assumption is that results from a DUNC trial run were tested and found to be normally distributed. This assumption is used in Section 6 in calculating the tolerance limit from Reference 7.10, p. 51 for Tables 6-1 and 6-2. It is used only in Section 6 because the tolerance limits appear only in the tables in Section 6.

4. USE OF COMPUTER SOFTWARE AND MODELS

4.1 SOFTWARE APPROVED FOR QA WORK

The ORIGEN-S and CSAS1X software modules are part of the SCALE 4.3 code. Both modules are appropriate for use in the calculations described below. The software for each has been validated over the range it was used and was obtained previously from the Civilian Radioactive Waste Management System (CRWMS) Management and Operating Contractor (M&O) Software Control Management (SCM) in accordance with appropriate procedures. The following applies to both computer codes in Section 4.1.1 and 4.1.2:

- Computer Type: Hewlett Packard 9000/782 Workstation
- Property Tag or Serial Number: 2002611431.

4.1.1 ORIGEN-S

The ORIGEN-S computer code (one of the SCALE 4.3 software modules) is used to calculate the decay of the initial isotopes over the decay period. Reference 7.1 addresses the qualification of SCALE 4.3. Reference 7.2 addresses the code and its manuals.

- Program Name: ORIGEN-S
- Version/Revision Number: Version 4.3
- Computer Software Configuration Item (CSCI) Number: 30011-2002 Rev. 01

The input and output files and the associated data files are contained in Reference 7.12.

4.1.2 CSAS1X

The CSAS1X computer code (one of the SCALE 4.3 software modules) is used to calculate the reactivity effect of a change in the isotopic concentrations from the nominal, no-uncertainty case. Reference 7.1 addresses the qualification of SCALE 4.3. Reference 7.2 addresses the code and its manuals.

- Program Name: CSAS1X
- Version/Revision Number: Version 4.3
- Computer Software Configuration Item (CSCI) Number: 30011-2002 Rev. 01

The input and output files and the associated data files are contained in Reference 7.12.

4.2 SOFTWARE ROUTINES

4.2.1 Decay UNcertainty Code (DUNC)

- Title: DUNC
- Version/Revision Number: DUNC 1.0
- Computer Type: Hewlett Packard 9000/782 Workstation
- Property Tag or Serial Number: 2002611431

The DUNC routine is described in Attachment III.

4.3 MODELS

None Used.

5. CALCULATION

5.1 CALCULATION INPUTS

The data used in the calculations described below (Sections 5.1.1 and 5.1.2) are classified as accepted data, with the exception of Reference 7.4. Data from this reference should be considered to be verified (TBV) in that it is not considered accepted data per the retroactive procedural requirement of AP-SIII.2Q (Ref. 7.13). The "accepted data" classification of the data from Reference 7.4 is pending receipt of a DOE rationale concurrence letter approving the classification (TBV-1393). The sources of the other references consist of data bases maintained by national laboratories, handbooks, and approved calculation files.

5.1.1 Values for Half-life and Branching Fraction Uncertainties

Reference 7.3, Appendix A from Oak Ridge National Laboratory (ORNL), contains uncertainties for the half-lives of radioisotopes in the ORIGEN-S DECAy LIBRARY. The Oak Ridge Project Manager e-mailed a text file to Framatome Cogema Fuels (FCF) and that file, "ornlunce.txt" (Attachment IV), was used for the half-life uncertainties. Reference 7.3, Appendix A contains absolute half-life uncertainties. The absolute uncertainties were converted to relative uncertainties (uncertainty divided by half-life); then, the results were compared to the relative half-life uncertainties independently retrieved from ENDF/B-VI (Evaluated Nuclear Data File). Additionally, the half-life uncertainties are compared to those from PCENSDF (Evaluated Nuclear Structure Data File, where the PC stands for a version suitable for use with a personal computer) (Ref. 7.7, Electronic Media). Generally, the ORNL half-life uncertainty data are considered conservative (larger) compared to information from PCENSDF (Ref. 7.7, Electronic Media).

Figure 5-1 illustrates the flow path for assembling the input data. Scripts and programs use Reference 7.2 for the format and order of input variables into the SCALE 4.3 code package. A

FORTTRAN program, *GETUNCS*, is used to retrieve the uncertainty information from the ENDF/B-VI tapes (Ref. 7.7). The objective is to obtain the branching fraction uncertainties to match the half-life uncertainties provided by ORNL. The listing of isotopes by nuclear ID was compared to a similar list taken from the ORIGEN-S library, *end6dec*. The list, *needbfs*, documents those isotopes in *end6dec* for which uncertainty data were not available from ENDF/B-VI. An awk (a programming language named for the first letter of the last names of its three authors: Aho, Kernighan, and Weinberger) script, *GETEM5*, is used to retrieve uncertainty information from the PCENSDF. The output of *GETEM5* is "all.base." The awk script, *EXTRACT*, is used to extract the branching fraction uncertainty information contained in "all.base" for the isotopes on the "needbfs" list. Finally, after testing the ORNL-converted uncertainty information with an awk script, *CKTHALF*, another awk script, *COMBINE*, is used to produce the uncertainty data file, *combine.out*, to be used by *DUNC* in calculating the impact of the half-life and branching fraction uncertainty on criticality calculations. The FORTRAN programs and various script files are on the Electronic Media (Ref. 7.12).

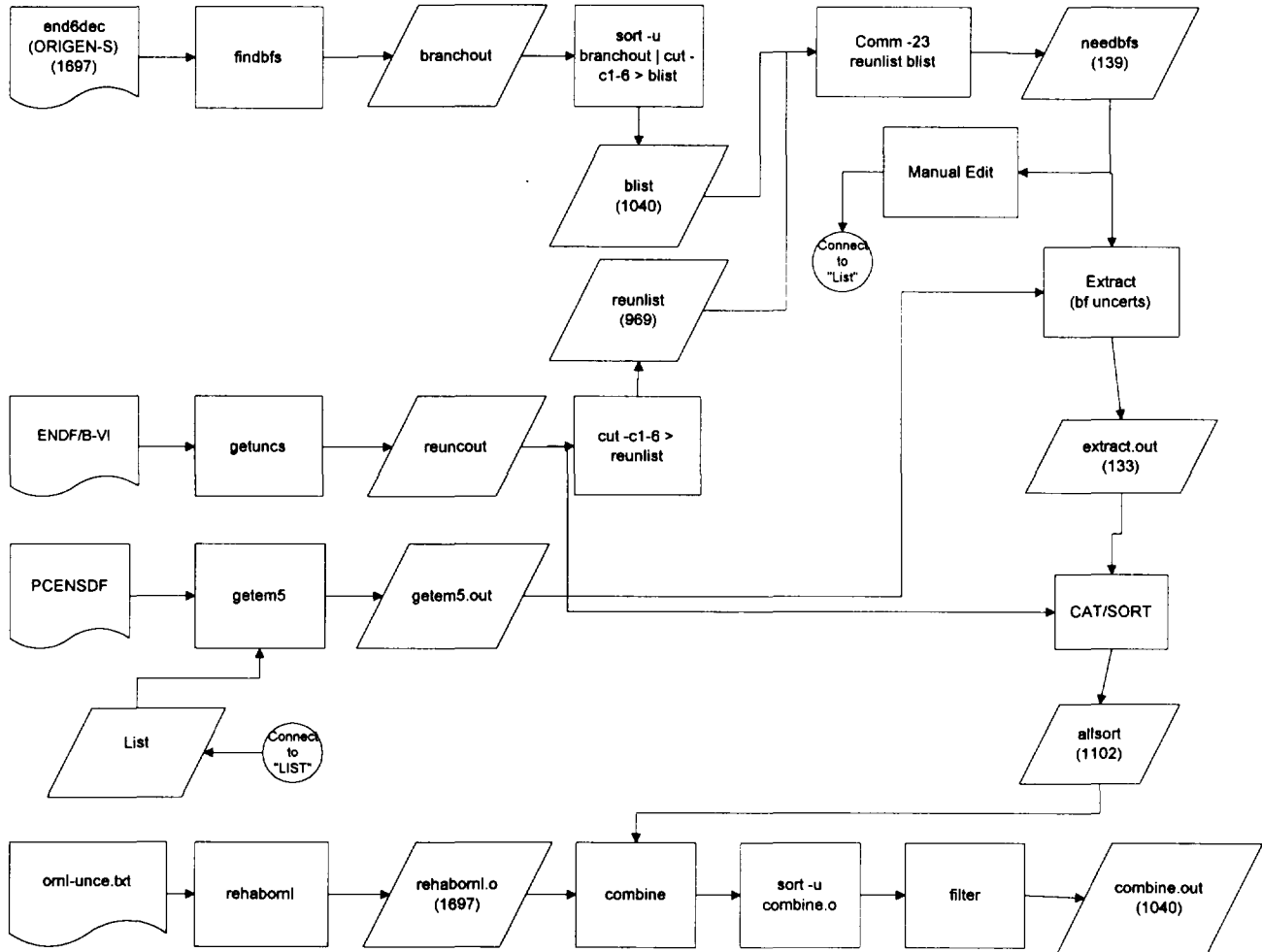


Figure 5-1. Input Data Process

The steps outlined below are used to extract uncertainties for isotope half-life and branching fraction from PCENSDF. Note: The term column or columns refers to a single or multiple entry in a record that contains a standard 80-column format like the computer punch cards.

- The "Parent" Record (Ref. 7.6, p. 9) may contain a nuclear identification number (NUCID) in columns 1-5, e.g., 243PU; will contain a "P" in column 8 with nothing on either side of it; E (Energy of the decaying level in keV [0 for ground state]) in columns 10-19; T (half-life) in columns 40-49; and DT (standard uncertainty in T) in columns 50-55. The T field also contains the units for T: S, M, H, D, Y. A Y (year) is assumed to be 365.25 D (days).
- The "Normalization" Record (Ref. 7.6, p. 10) may contain a NUCID in columns 1-5, will contain an "N" in column 8 with nothing in columns 7 or 9, BR (branching fraction) in columns 32-39; and DBR (standard uncertainty in BR) in columns 40-41.
- The "Level" Record (Ref. 7.6, p. 12) contains T, the half-life of the level in columns 40-49, and DT, the standard uncertainty in T, in columns 50-55. This record will be used in connection with an IT (isomeric transition) decay to find the half-life and standard uncertainty of the metastable state. The appropriate record will contain an "M" in column 2 and the " L, " with surrounding spaces, in columns 7-9.
- The data set records, taken from Reference 7.5, are located in \\gr0\ymp\cwc\DecayCF\UncGen\pcensdf\PXXX_YYY on Electronic Media (Ref. 7.12), where XXX_YYY range from P001_020 to P241_272.
- Each record is scanned for " P ," and then the NUCID is recorded along with the T and DT. Then the scan is continued for " N " and the BR and DBR are recorded.
- DT and DBR are converted to fractions.
- If a value for the standard uncertainty of the branching fraction is not given, then assume the larger of (a) 1 in the last decimal place of the branching fraction, or (b) the standard uncertainty of the other (paired) branching fraction.
- The T and BR for the NUCID are read from the end6dec library and compared to the values from above. If the ensdf-end6dec value of each lies outside the fractional uncertainty, then the uncertainty is set equal to the value of ensdf-end6dec. If the branching fraction is "0.0" in end6dec, it will be given an uncertainty of 0.0 regardless of what it is in PCENSDF. If the branching fraction is missing from PCENSDF and from ENDFB-VI, the uncertainty will be given a value 0.0. This logic is illustrated in Figure 5-2, which is referred to as a truth table. Branching fraction is often referred to as branching ratio in the literature; however, most authoritative references use the symbol

BR to refer to either branching fraction or branching ratio. The symbol BR is used in Figure 5-2.

		BR (PCENSDF)		
		No	Yes	
BR (end6dec)	No	0.0	0.0	
	Yes	0.0	Calc	

Figure 5-2. Truth Table for Branching Fraction Uncertainty

- The final step is to output the information in the input format for DUNC.

5.1.2 Isotopic Concentrations

The isotopic concentration for the cases run with *DUNC* are taken from (CR3SP33AsG27aNode13), i.e., Crystal River 3, State Point 33, Fuel Assembly G27a, at Node 13 (Ref. 7.9). This assembly / node was identified as the one with the highest burnup available for a pressurized water reactor (PWR). All the test cases use this referenced isotopic concentration, but vary important parameters to assist in the evaluation of DUNC.

5.2 DESCRIPTION

DUNC was run for a base case of 15,000 years and 1,000 iterations. In all cases, 1,040 radioactive isotopes were used to analyze the impact of uncertainties on concentration at some future point in time. The Principal Isotope Set (Ref. 7.11, Table 4-1) is used for the criticality calculations. Variations on the base case included the following: (a) runs with the half-life uncertainty set to zero, (b) runs with the branching fraction uncertainty set to zero, and (c) runs with both uncertainties set to zero. The purpose of these runs was to test the functionality of the DUNC front-end drive when used with the SCALE 4.3 code. Test cases were analyzed for 10; 100; 1,000; 10,000; 20,000; 30,000; 40,000; 50,000; 100,000, and 200,000 years. These periods of decay correspond to those for analyses presented in Figures C-21 and C-22 of Appendix C of Reference 7.8.

5.3 PROCEDURE

For each case, *DUNC* is first run in the “G” mode (see Attachment III, Table III-2, “calcflag”) to generate the reactivity response factors. These reactivity response factors are then included in an “R” mode run of *DUNC* to quantify the effect of decay on reactivity.

6. RESULTS

Unaccepted data were used in the development of the results presented in this section. If the results from this section are used as input into documents directly relied upon for construction, fabrication, or procurement, then they are required to be identified and tracked as TBV (to be verified) in accordance with appropriate procedures.

The *DUNC* trial cases are extended in time to 200,000 years. The results are listed below in Tables 6-1 and 6-2, and Figure 6-1. Table 6-1 represents the most conservative case assumed for the impact on reactivity from the uncertainty in the half-life and branching fraction for radioactive nuclides. Table 6-1 represents an envelope of the actual analysis results. Table 6-2 is the result of not normalizing the trial uncertainty of the branching fraction to a value of 1.0, i.e., the trial uncertainty is independently selected for each branch of the decaying isotope. The results, for the fuel examined, indicate: (a) the value of reactivity change is small, and (b) it appears that the uncertainty contribution to criticality for the most part cancels out. The column labeled “Tolerance Limit 95%/99.5%” is the one-sided 95% tolerance limit on 99.5% of the population. The factor (in this case 2.688) for arriving at the tolerance limit is taken from Reference 10, Table 2.4 and Table 5.7, and the equations on p. 11. The bias, added to the tolerance limit, is the type of margin that would be added to a critical limit to account for the uncertainty in the half-life and branching fraction for radioactive nuclides. Figure 6-1 is a plot of the reactivity bias added to the tolerance from Tables 6-1 and 6-2.

Table 6-1. Assumed Most Conservative Uncertainty Effect

Period (y)	Bias Reactivity	Sigma Reactivity	Tolerance Limit (95%/99.5%)
10	-0.0000064	0.0003537	0.0009507
100	0.0000008	0.0000560	0.0001505
500	0.0000023	0.0000548	0.0001473
1,000	0.0000024	0.0000540	0.0001452
5,000	0.0000018	0.0000684	0.0001839
10,000	0.0000018	0.0000913	0.0002454
15,000	0.0000020	0.0001088	0.0002925
20,000	0.0000024	0.0001222	0.0003285
25,000	0.0000027	0.0001334	0.0003586
30,000	0.0000031	0.0001436	0.0003860
40,000	0.0000039	0.0001641	0.0004411
50,000	0.0000046	0.0001827	0.0004911
100,000	0.0000070	0.0002187	0.0005879
200,000	0.0000078	0.0002364	0.0006354

Table 6-2. Results from DUNC by Period (Branching Fraction Not Normalized)

Period (y)	Base Reactivity	Final Reactivity	Bias Reactivity	Sigma Reactivity	Sigma (%)	Tolerance Limit (95%/99.5%)	File Name
10	-0.1064052	-0.1064117	-0.0000066	0.0003537	0.33230	0.0009507	rr.newbf1040R.10.out
100	-0.2176516	-0.2176519	-0.0000003	0.0000508	0.02330	0.0001366	rr.newbf1040R.100.out
500	-0.1925418	-0.1925416	0.0000002	0.0000338	0.01750	0.0000909	rr.newbf1040R.500.out
1,000	-0.1729159	-0.1729156	0.0000003	0.0000296	0.01710	0.0000796	rr.newbf1040R.1000.out
5,000	-0.1373394	-0.1373398	-0.0000003	0.0000442	0.03220	0.0001188	rr.newbf1040R.5000.out
10,000	-0.1214245	-0.1214250	-0.0000004	0.0000693	0.05710	0.0001863	rr.newbf1040R.10000.out
20,000	-0.1101711	-0.1101715	-0.0000004	0.0000953	0.08650	0.0002562	rr.newbf1040R.20000.out
25,000	-0.1112407	-0.1112410	-0.0000003	0.0001020	0.09170	0.0002742	rr.newbf1040R.25000.out
30,000	-0.1153233	-0.1153235	-0.0000002	0.0001072	0.09290	0.0002882	rr.newbf1040R.30000.out
40,000	-0.1289243	-0.1289244	-0.0000001	0.0001160	0.08990	0.0003118	rr.newbf1040R.40000.out
50,000	-0.1449822	-0.1449822	0.0000000	0.0001218	0.08400	0.0003274	rr.newbf1040R.50000.out
100,000	-0.1922092	-0.1922083	0.0000009	0.0000771	0.04010	0.0002072	rr.newbf1040R.100000.out
200,000	-0.2054336	-0.2054326	0.0000009	0.0000519	0.02530	0.0001395	rr.newbf1040R.200000.out

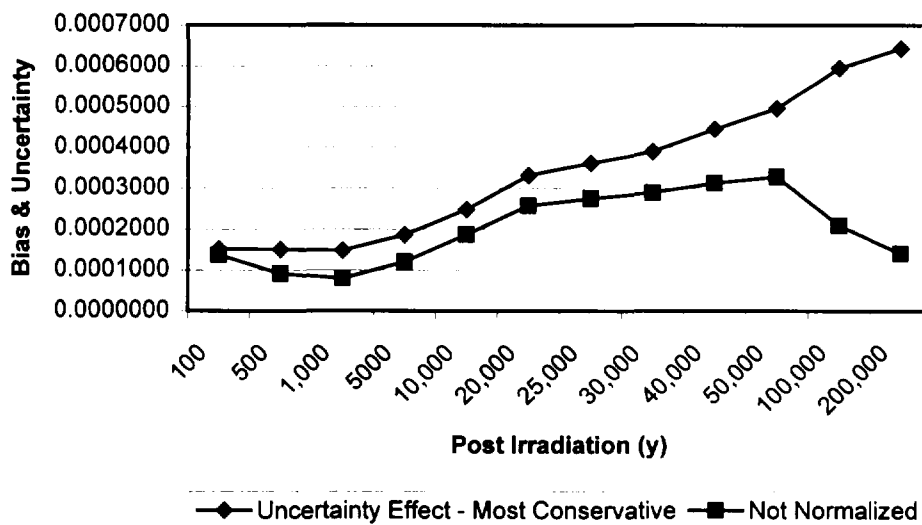


Figure 6-1. Uncertainty Effect on Reactivity

7. REFERENCES

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- 7.12 CRWMS M&O 1999. *One (1) CD for Electronic Media (CD) for The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor, B00000000-01717-0210-00106 REV 00*. Las Vegas, Nevada: CRWMS M&O. ACC: MOL.19990927.0473.
- 7.13 Department of Energy (DOE) 1999. DOE Letter "Accepted Data Call", from R.E. Spence to J.L. Younker, July 27, 1999. ACC: MOL.19990811.0170.

8. ATTACHMENTS

Attachment I: Scale43 Script (4 pages)

Attachment II: List of Files for Electronic Media, Reference 7.12 (53 pages)

Attachment III: Description of the DUNC Software Routine (9 pages)

Attachment IV: E-mail with ORIGEN-S Decay Data From ORNL (72 pages)

Attachment I - Scale43 Script

```
#!/bin/csh
# shell script to execute a scale job

setenv RTNDIR `pwd`
setenv SCALE /$ATTACHHP/scale4.3
setenv TMPDIR ./tmp$$

if ( ! ( $?PGM_DIR ) ) setenv PGM_DIR $SCALE/bin
if ( ! ( $?DATA ) ) setenv DATA $SCALE/data
if ( ! ( $?ORCARD ) ) setenv ORCARD $DATA/ORIGEN
if ( $#argv == 0 ) then
    echo " usage: scale43 input_file [ output_file_name ] [
in_unit# in_filename out_unit# out_filename]"
    echo " "
    exit
endif
if ( ! ( -e $1 ) ) then
    echo =====
    echo "input file you specified does not exist"
    echo =====
    exit
endif
if ( $#argv == 1 ) then
#   echo =====
#   echo "you did not specify an output file"
    echo "output will be saved to a file named $1.output"
#   echo =====
    set output=$1.output
else
    set output=$2
endif
setenv PATH .:${PATH}
if ( ! ( -e $TMPDIR ) ) mkdir $TMPDIR
if ( -e datetime.std ) cp datetime.std $TMPDIR
cd $TMPDIR
cp $RTNDIR/$1 sysin
foreach file ($SCALE/bin/*)
if ( ! ( -e $file:t ) ) ln -s $file $file:t
end
#
# create unit 18 empty scratch file in the tmp directory
- rak
#touch

ft18f001
```

```
# copy origen decay library from directory above, if it
exists, for dunc run - rak
if ( -e ../end6dec ) then
    ln -s ../end6dec
ft27f001
    echo "using your end6dec decay library"
else
    ln -s $ORCARD/end6dec
ft27f001
endif
# use origen code from directory above, if it exists, for
dunc run - rak
if ( -e ../ORIGEN ) then
    rm -f origen
    ln -s ../origen
origen
    echo "using your origen code (origen)"
endif
# use origen code from directory above, if it exists, for
dunc run - rak
if ( -e ../o0o004 ) then
    rm -f o0o004
    ln -s ../o0o004
o0o004
    echo "using your origen code (o0o004)"
endif

if ( ! ( -e ft21f001 ) ) ln -s $DATA/prlimlwr
ft21f001
if ( ! ( -e ft22f001 ) ) ln -s $DATA/pwr33gwd
ft22f001
if ( ! ( -e ft23f001 ) ) ln -s $DATA/maphnobr
ft23f001
if ( ! ( -e ft24f001 ) ) ln -s $DATA/maphh2ob
ft24f001
if ( ! ( -e ft25f001 ) ) ln -s $DATA/baslmfbr
ft25f001
if ( ! ( -e ft26f001 ) ) ln -s $DATA/maphuo2b
ft26f001
if ( ! ( -e ft28f001 ) ) ln -s $ORCARD/xsectpho
ft28f001
if ( ! ( -e ft79f001 ) ) ln -s $DATA/albedos
ft79f001
if ( ! ( -e ft80f001 ) ) ln -s $DATA/weights
ft80f001
if ( ! ( -e ft81f001 ) ) ln -s $DATA/scale.rev03.xn16
ft81f001
if ( ! ( -e ft82f001 ) ) ln -s $DATA/scale.rev04.xn27
ft82f001

if ( ! ( -e ft83f001 ) ) ln -s $DATA/scale.rev04.xn44
ft83f001
```

```
if ( ! ( -e ft84f001 ) ) ln -s $DATA/scale.rev03.xn238
    ft84f001
if ( ! ( -e ft85f001 ) ) ln -s $DATA/scale.rev03.xn22g18
    ft85f001
if ( ! ( -e ft86f001 ) ) ln -s $DATA/scale.rev03.xg18
    ft86f001
if ( ! ( -e ft87f001 ) ) ln -s $DATA/scale.rev04.xn27burn
    ft87f001
if ( ! ( -e ft88f001 ) ) ln -s $DATA/scale.rev04.xn27g18
    ft88f001
if ( ! ( -e ft89f001 ) ) ln -s $DATA/scale.rev10.sclib
    ft89f001
if ( ! ( -e h7matlib ) ) ln -s $DATA/h7matlib
    h7matlib
if ( ! ( -e attenuat ) ) ln -s $DATA/attenuat
    attenuat
if ( ! ( -e buildup ) ) ln -s $DATA/buildup
    buildup
if ( ! ( -e qadxslib ) ) ln -s $DATA/scale.rev01.qadxslib
    qadxslib
if ( ! ( -e qatable ) ) ln -s $DATA/qatable
    qatable
if ( ! ( -e aliases ) ) ln -s $DATA/aliases
    aliases
if ( -e $RTNDIR/$1.restart ) cp $RTNDIR/$1.restart restart
if ( $#argv == 6 ) then
    rm -f ft$3f001 ft$5f001
    ln -s $4 ft$3f001
    echo "Unit $3 has been linked to file $4"
    ln -s $6 ft$5f001
    echo "Unit $5 has been linked to file $6"
endif
# added by rak for uncertainty.
ln -s ../dunc08 ft08f001
rm print _tot* _prt* _out*
scale
cat $DATA/scale.messages > $RTNDIR/$output
cat print >> $RTNDIR/$output
cat _tot* >> $RTNDIR/$output
cat _prt* >> $RTNDIR/$output
cat _out* >> $RTNDIR/$output
if ( -e _h7in000 ) then
    foreach file ( _h7in* )
        cp $file $RTNDIR/$1.$file
    end
    rm _h7in*
endif
if ( -e plot0000 ) then
    foreach file (plot*)
        cp $file $RTNDIR/$1.$file
    end
end
```



```
rm plot*
endif
if ( -e plot0000.gif ) then
  mv plot0000.gif $RTNDIR/$1.gif
endif
if ( -e map0000 ) then
  foreach file (map*)
    cp $file $RTNDIR/$1.$file
  end
  rm map*
endif
if ( -e h7node00 ) then
  foreach file (h7node*)
    cp $file $RTNDIR/$1.$file
  end
  rm h7node*
endif
if ( -e h7cvrg00 ) then
  foreach file (h7cvrg*)
    cp $file $RTNDIR/$1.$file
  end
  rm h7cvrg*
endif
cd $RTNDIR
rm -r $TMPDIR
```

Attachment II - List of Files for Electronic Media, Reference 7.12

File or Directory Name	File Size (bytes)	File Date	File Time
Eval	1024	9-Apr-99	11:06
UncGen	2048	3-Aug-99	10:57
filelist	179960	20-Sep-99	14:32
filelist.txt	163779	26-Aug-99	11:21
fl.txt	93347	27-Aug-99	09:07
makelist	127	27-Aug-99	9:06
src	1024	23-Aug-99	8:06
tape.200	2319192	11-Aug-99	9:13
tape.201	2871693	11-Aug-99	9:13
tape.202	3022272	11-Aug-99	9:13
tape.203	3870180	11-Aug-99	9:13
tape.204	3176253	11-Aug-99	9:13
tape.205	3378834	11-Aug-99	9:13
tape.206	3653991	11-Aug-99	9:13
tape.207	3254418	11-Aug-99	9:14
tape.208	2890566	11-Aug-99	9:14
Test	4096	26-Aug-99	11:20
combine.out	113360	17-Mar-99	11:59
old1040	113363	18-Mar-99	17:22
Newrun	168	24-Aug-99	13:50
duncflt	534603	24-Aug-99	8:43
duncnrm	538703	24-Aug-99	8:42
newruns	734	12-Aug-99	13:45
o0o004	1023008	7-Jul-98	8:17
origen	1023008	7-Jul-98	8:17
pegram	455	17-Aug-99	9:31
pegram.out	25209	17-Aug-99	9:46
pegram2.out.gz	5355	17-Aug-99	14:20
results.gz	3037	12-Apr-99	11:13
rk2	1279	16-Aug-99	7:46
rk3	986	12-Aug-99	13:08
rr.fltR.50000.out.gz	998144	23-Aug-99	13:40

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-2 of II-53**

rr.newbf1040R.10000.gz	10429	10-Aug-99	12:58
rr.newbf1040R.10000.out.gz	1012319	10-Aug-99	17:10
rr.newbf1040R.100000.gz	10419	10-Aug-99	12:59
rr.newbf1040R.100000.out.gz	1032863	10-Aug-99	20:52
rr.newbf1040R.20000.gz	10427	10-Aug-99	12:58
rr.newbf1040R.20000.out.gz	1012985	11-Aug-99	0:24
rr.newbf1040R.200000.gz	10424	10-Aug-99	12:59
rr.newbf1040R.200000.out.gz	1031427	11-Aug-99	4:06
rr.newbf1040R.50000.gz	10430	10-Aug-99	12:58
rr.newbf1040R.50000.out.gz	996694	11-Aug-99	7:49
rr.nrmR.100000.out.gz	1031722	24-Aug-99	16:59
rr.nrmR.200000.out.gz	1031744	24-Aug-99	20:08
rr.nrmR.50000.out.gz	998021	23-Aug-99	17:23
rr.nrmR.50000.outa	5578426	24-Aug-99	12:05
rr.test1040G.10.gz	10230	12-Apr-99	14:05
rr.test1040G.10.out.gz	13462	14-Apr-99	8:29
rr.test1040G.100.gz	10231	12-Apr-99	14:05
rr.test1040G.100.out.gz	13564	14-Apr-99	9:14
rr.test1040G.1000.gz	10232	12-Apr-99	14:05
rr.test1040G.1000.out.gz	13579	14-Apr-99	9:57
rr.test1040G.10000.gz	10235	12-Apr-99	14:06
rr.test1040G.10000.out.gz	13412	14-Apr-99	10:40
rr.test1040G.100000.gz	10236	22-Apr-99	8:18
rr.test1040G.100000.out.gz	13359	22-Apr-99	8:56
rr.test1040G.20000.gz	10235	12-Apr-99	14:06
rr.test1040G.20000.out.gz	13442	14-Apr-99	11:20
rr.test1040G.200000.gz	10236	22-Apr-99	8:18
rr.test1040G.200000.out.gz	13370	22-Apr-99	9:31
rr.test1040G.25000.gz	10236	18-Apr-99	10:16
rr.test1040G.25000.out.gz	13395	18-Apr-99	12:18
rr.test1040G.30000.gz	10234	18-Apr-99	10:17
rr.test1040G.30000.out.gz	13373	18-Apr-99	12:53
rr.test1040G.40000.gz	10235	21-Apr-99	11:31
rr.test1040G.40000.out.gz	13386	21-Apr-99	12:41
rr.test1040G.500.gz	10233	18-Apr-99	10:15
rr.test1040G.500.out.gz	13565	18-Apr-99	11:01
rr.test1040G.5000.gz	10235	18-Apr-99	10:16
rr.test1040G.5000.out.gz	13513	18-Apr-99	11:42
rr.test1040G.50000.gz	10236	21-Apr-99	11:32
rr.test1040G.50000.out.gz	13399	21-Apr-99	15:20
rr.test1040G.gz	10231	19-Mar-99	11:33
rr.test1040K.100.gz	10232	20-Apr-99	11:12
rr.test1040K.100.out.gz	1007829	21-Apr-99	14:44
rr.test1040R.10	114643	14-Apr-99	16:43

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-3 of II-53**

rr.test1040R.10.out.gz	850173	14-Apr-99	19:10
rr.test1040R.100.gz	10437	15-Apr-99	7:47
rr.test1040R.100.out.gz	1003985	15-Apr-99	10:31
rr.test1040R.1000.gz	10437	14-Apr-99	16:45
rr.test1040R.1000.out.gz	1087488	14-Apr-99	21:36
rr.test1040R.10000.gz	10423	15-Apr-99	7:48
rr.test1040R.10000.out.gz	1027883	15-Apr-99	13:09
rr.test1040R.100000.gz	10413	22-Apr-99	14:29
rr.test1040R.100000.out.gz	1057610	22-Apr-99	16:58
rr.test1040R.20000.gz	10421	15-Apr-99	7:48
rr.test1040R.20000.out2	5655383	12-Aug-99	11:56
rr.test1040R.200000.gz	10418	22-Apr-99	14:30
rr.test1040R.200000.out.gz	1061597	22-Apr-99	19:20
rr.test1040R.25000.gz	10425	19-Apr-99	8:19
rr.test1040R.25000.out.gz	1015151	19-Apr-99	15:35
rr.test1040R.30000.gz	10421	19-Apr-99	8:20
rr.test1040R.30000.out.gz	1033202	19-Apr-99	18:03
rr.test1040R.40000.gz	10423	21-Apr-99	15:36
rr.test1040R.40000.out.gz	1033756	21-Apr-99	17:52
rr.test1040R.500.gz	10435	19-Apr-99	8:16
rr.test1040R.500.out.gz	1033797	19-Apr-99	10:46
rr.test1040R.5000.gz	10431	19-Apr-99	8:18
rr.test1040R.5000.out.gz	1051140	19-Apr-99	13:09
rr.test1040R.50000.gz	10424	21-Apr-99	15:36
rr.test1040R.50000.out.gz	1020695	21-Apr-99	20:11
rr.test1040R.Th0.gz	6774	12-Apr-99	11:43
rr.test1040R.Th0.out.gz	671605	12-Apr-99	14:36
rr.test1040R.bf0.gz	7919	12-Apr-99	11:44
rr.test1040R.bf0.out.gz	976970	15-Apr-99	19:20
rr.test1040R.gz	10420	12-Apr-99	13:48
rr.test50.gz	1052	16-Feb-99	13:25
rr.test50G.gz	1053	12-Apr-99	7:26
rr.test50G.out.sav.gz	4224	19-Mar-99	13:39
rr.test50R.gz	1226	12-Apr-99	8:50
rr.unormR.10.out.gz	842624	12-Aug-99	17:11
rr.unormR.100.out.gz	994244	12-Aug-99	20:34
rr.unormR.1000.out.gz	1072260	13-Aug-99	3:25
rr.unormR.10000.out.gz	1012309	13-Aug-99	10:25
rr.unormR.100000.out.gz	1032853	14-Aug-99	9:22
rr.unormR.20000.out.gz	1012975	13-Aug-99	15:19
rr.unormR.200000.out.gz	1031416	14-Aug-99	12:50
rr.unormR.25000.out.gz	993028	13-Aug-99	19:12
rr.unormR.30000.out.gz	1010914	13-Aug-99	22:39
rr.unormR.40000.out.gz	1011408	14-Aug-99	2:06

Waste Package Operations

Calculation

Title: The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor

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rr.unormR.500.out.gz	1023730	13-Aug-99	0:00
rr.unormR.5000.out.gz	1038468	13-Aug-99	6:52
rr.unormR.50000.out.gz	996684	14-Aug-99	5:36
rrtest1040G.out.gz	13420	9-Apr-99	11:54
rrtest1040R.out.gz	1031407	9-Apr-99	16:39
rrtest50G.out.gz	4218	12-Apr-99	8:06
rrtest50R.out.gz	916386	12-Apr-99	11:06
run.multi.dunc.gz	85	22-Apr-99	14:31
rundunc	105	4-Mar-99	10:07
zeroThluncs.gz	531	12-Apr-99	11:30
zerobfuncs.gz	468	12-Apr-99	11:31

ENDFB6	1024	11-Aug-99	13:30
OUTPUT	8071692	11-Mar-99	10:05
README.txt	2370	19-Mar-99	14:28
all	22414	15-Mar-99	14:59
allsort	120118	17-Mar-99	10:19
backup	1024	11-Mar-99	11:53
blist	7280	11-Mar-99	11:13
bout	117489	11-Mar-99	9:43
branchout	193820	11-Mar-99	9:43
chout.out	1202	3-Aug-99	10:56
ck_bf_gt2	1339	3-Aug-99	10:52
combine	926	17-Mar-99	10:58
combine.o	184973	17-Mar-99	11:49
combine.ou	142463	17-Mar-99	11:50
combine.out	113360	17-Mar-99	11:55
dostounix	147	20-Nov-98	10:31
duncl.h	880	15-Oct-98	15:41
end6dec.act	10400	17-Mar-99	11:38
extract	1097	17-Mar-99	9:49
extract.out	14497	17-Mar-99	9:53
filter	666	17-Mar-99	11:47
findbfs	28770	11-Mar-99	9:41
findbfs.f	3759	11-Mar-99	8:35
findbfs.o	8832	11-Mar-99	9:41
getem5	11933	16-Mar-99	10:16
getem5.o	17296	16-Mar-99	10:57
getem5.o.sav	45244	16-Mar-99	10:07
getem5.out	16132	16-Mar-99	11:13
getuncs	28762	11-Mar-99	10:04
getuncs.f	10374	11-Mar-99	10:04

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-6 of II-53**

P011LI.ENX.gz	918	11-Mar-99	13:07
P012B.ENX.gz	606	11-Mar-99	13:07
P012BE.ENX.gz	271	11-Mar-99	13:07
P012N.ENX.gz	492	11-Mar-99	13:07
P013B.ENX.gz	650	11-Mar-99	13:08
P013N.ENX.gz	203	11-Mar-99	13:08
P013O.ENX.gz	501	11-Mar-99	13:08
P014B.ENX.gz	799	11-Mar-99	13:08
P014C.ENX.gz	167	11-Mar-99	13:08
P014O.ENX.gz	591	11-Mar-99	13:08
P015C.ENX.gz	885	11-Mar-99	13:08
P015O.ENX.gz	198	11-Mar-99	13:08
P016C.ENX.gz	707	11-Mar-99	13:08
P016N.ENX.gz	979	11-Mar-99	13:08
P017C.ENX.gz	544	11-Mar-99	13:08
P017F.ENX.gz	257	11-Mar-99	13:08
P017N.ENX.gz	741	11-Mar-99	13:08
P017NE.ENX.gz	1054	11-Mar-99	13:08
P018C.ENX.gz	512	11-Mar-99	13:08
P018F.ENX.gz	219	11-Mar-99	13:08
P018N.ENX.gz	1657	11-Mar-99	13:08
P018NE.ENX.gz	525	11-Mar-99	13:08
P019N.ENX.gz	452	11-Mar-99	13:08
P019NE.ENX.gz	511	11-Mar-99	13:08
P019O.ENX.gz	867	11-Mar-99	13:08
P020F.ENX.gz	566	11-Mar-99	13:08
P020MG.ENX.gz	289	11-Mar-99	13:08
P020NA.ENX.gz	1460	11-Mar-99	13:08
P020O.ENX.gz	469	11-Mar-99	13:08
P021F.ENX.gz	541	11-Mar-99	13:08
P021MG.ENX.gz	1267	11-Mar-99	13:08
P021NA.ENX.gz	336	11-Mar-99	13:08
P021O.ENX.gz	512	11-Mar-99	13:08
P022F.ENX.gz	522	11-Mar-99	13:08
P022MG.ENX.gz	360	11-Mar-99	13:08
P022NA.ENX.gz	274	11-Mar-99	13:08
P022O.ENX.gz	270	11-Mar-99	13:08
P023AL.ENX.gz	480	11-Mar-99	13:08
P023F.ENX.gz	739	11-Mar-99	13:08
P023MG.ENX.gz	420	11-Mar-99	13:08
P023NE.ENX.gz	411	11-Mar-99	13:08
P023O.ENX.gz	246	11-Mar-99	13:08
P024AL.ENX.gz	2680	11-Mar-99	13:08
P024F.ENX.gz	228	11-Mar-99	13:08

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-7 of II-53**

P024NA.ENX.gz	626	11-Mar-99	13:08
P024NE.ENX.gz	354	11-Mar-99	13:08
P024O.ENX.gz	288	11-Mar-99	13:08
P024SI.ENX.gz	412	11-Mar-99	13:08
P025AL.ENX.gz	481	11-Mar-99	13:08
P025NA.ENX.gz	532	11-Mar-99	13:08
P025NE.ENX.gz	507	11-Mar-99	13:08
P025SI.ENX.gz	848	11-Mar-99	13:08
P026AL.ENX.gz	514	11-Mar-99	13:08
P026NA.ENX.gz	753	11-Mar-99	13:08
P026NE.ENX.gz	318	11-Mar-99	13:08
P026P.ENX.gz	523	11-Mar-99	13:08
P026SI.ENX.gz	923	11-Mar-99	13:08
P027MG.ENX.gz	229	11-Mar-99	13:08
P027NA.ENX.gz	607	11-Mar-99	13:08
P027SI.ENX.gz	643	11-Mar-99	13:08
P028AL.ENX.gz	220	11-Mar-99	13:08
P028MG.ENX.gz	637	11-Mar-99	13:08
P028NA.ENX.gz	356	11-Mar-99	13:08
P028P.ENX.gz	1299	11-Mar-99	13:08
P028S.ENX.gz	217	11-Mar-99	13:08
P029AL.ENX.gz	363	11-Mar-99	13:08
P029MG.ENX.gz	616	11-Mar-99	13:08
P029NA.ENX.gz	657	11-Mar-99	13:08
P029P.ENX.gz	458	11-Mar-99	13:08
P029S.ENX.gz	1773	11-Mar-99	13:08
P030AL.ENX.gz	555	11-Mar-99	13:08
P030MG.ENX.gz	229	11-Mar-99	13:08
P030NA.ENX.gz	625	11-Mar-99	13:08
P030P.ENX.gz	412	11-Mar-99	13:08
P030S.ENX.gz	404	11-Mar-99	13:08
P031AL.ENX.gz	315	11-Mar-99	13:08
P031MG.ENX.gz	504	11-Mar-99	13:08
P031NA.ENX.gz	520	11-Mar-99	13:08
P031S.ENX.gz	449	11-Mar-99	13:08
P031SI.ENX.gz	221	11-Mar-99	13:08
P032AL.ENX.gz	283	11-Mar-99	13:08
P032AR.ENX.gz	1050	11-Mar-99	13:08
P032CL.ENX.gz	818	11-Mar-99	13:08
P032MG.ENX.gz	163	11-Mar-99	13:08
P032NA.ENX.gz	305	11-Mar-99	13:08
P032P.ENX.gz	177	11-Mar-99	13:08
P032SI.ENX.gz	179	11-Mar-99	13:08
P033AR.ENX.gz	2150	11-Mar-99	13:08

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-8 of II-53**

P033CL.ENX.gz	728	11-Mar-99	13:08
P033MG.ENX.gz	245	11-Mar-99	13:08
P033NA.ENX.gz	470	11-Mar-99	13:08
P033P.ENX.gz	181	11-Mar-99	13:08
P033SI.ENX.gz	498	11-Mar-99	13:08
P034AL.ENX.gz	406	11-Mar-99	13:08
P034AR.ENX.gz	503	11-Mar-99	13:08
P034CL.ENX.gz	939	11-Mar-99	13:08
P034MG.ENX.gz	227	11-Mar-99	13:08
P034NA.ENX.gz	346	11-Mar-99	13:08
P034P.ENX.gz	428	11-Mar-99	13:08
P034SI.ENX.gz	287	11-Mar-99	13:08
P035AL.ENX.gz	291	11-Mar-99	13:08
P035AR.ENX.gz	739	11-Mar-99	13:08
P035CA.ENX.gz	381	11-Mar-99	13:08
P035K.ENX.gz	1182	11-Mar-99	13:08
P035NA.ENX.gz	222	11-Mar-99	13:08
P035P.ENX.gz	306	11-Mar-99	13:08
P035S.ENX.gz	183	11-Mar-99	13:08
P035SI.ENX.gz	677	11-Mar-99	13:08
P036CA.ENX.gz	371	11-Mar-99	13:08
P036CL.ENX.gz	301	11-Mar-99	13:08
P036K.ENX.gz	2481	11-Mar-99	13:08
P036P.ENX.gz	820	11-Mar-99	13:08
P036SI.ENX.gz	612	11-Mar-99	13:08
P037AR.ENX.gz	201	11-Mar-99	13:08
P037CA.ENX.gz	1246	11-Mar-99	13:08
P037K.ENX.gz	431	11-Mar-99	13:08
P037P.ENX.gz	303	11-Mar-99	13:08
P037S.ENX.gz	532	11-Mar-99	13:08
P038CA.ENX.gz	482	11-Mar-99	13:08
P038CL.ENX.gz	546	11-Mar-99	13:08
P038K.ENX.gz	627	11-Mar-99	13:08
P038P.ENX.gz	360	11-Mar-99	13:08
P038S.ENX.gz	399	11-Mar-99	13:08
P039AR.ENX.gz	190	11-Mar-99	13:08
P039CA.ENX.gz	332	11-Mar-99	13:08
P039CL.ENX.gz	749	11-Mar-99	13:08
P039P.ENX.gz	250	11-Mar-99	13:08
P039S.ENX.gz	401	11-Mar-99	13:08
P040CL.ENX.gz	1372	11-Mar-99	13:08
P040K.ENX.gz	522	11-Mar-99	13:08
P040P.ENX.gz	235	11-Mar-99	13:08
P040S.ENX.gz	309	11-Mar-99	13:08

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-9 of II-53**

P040SC.ENX.gz	4312	11-Mar-99	13:08
P040TI.ENX.gz	160	11-Mar-99	13:08
P041AR.ENX.gz	354	11-Mar-99	13:08
P041CA.ENX.gz	208	11-Mar-99	13:08
P041CL.ENX.gz	332	11-Mar-99	13:08
P041P.ENX.gz	236	11-Mar-99	13:08
P041SC.ENX.gz	403	11-Mar-99	13:08
P041TI.ENX.gz	1668	11-Mar-99	13:08
P042AR.ENX.gz	189	11-Mar-99	13:08
P042CL.ENX.gz	200	11-Mar-99	13:08
P042K.ENX.gz	508	11-Mar-99	13:08
P042P.ENX.gz	234	11-Mar-99	13:08
P042SC.ENX.gz	587	11-Mar-99	13:08
P042TI.ENX.gz	444	11-Mar-99	13:08
P043AR.ENX.gz	1427	11-Mar-99	13:08
P043CL.ENX.gz	202	11-Mar-99	13:08
P043K.ENX.gz	533	11-Mar-99	13:08
P043S.ENX.gz	240	11-Mar-99	13:08
P043SC.ENX.gz	482	11-Mar-99	13:08
P043TI.ENX.gz	969	11-Mar-99	13:08
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P044K.ENX.gz	2342	11-Mar-99	13:08
P044S.ENX.gz	284	11-Mar-99	13:08
P044SC.ENX.gz	870	11-Mar-99	13:08
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P044V.ENX.gz	344	11-Mar-99	13:08
P045AR.ENX.gz	3247	11-Mar-99	13:08
P045CA.ENX.gz	1021	11-Mar-99	13:08
P045CL.ENX.gz	151	11-Mar-99	13:08
P045CR.ENX.gz	661	11-Mar-99	13:08
P045K.ENX.gz	2999	11-Mar-99	13:08
P045SC.ENX.gz	361	11-Mar-99	13:08
P045TI.ENX.gz	1901	11-Mar-99	13:08
P045V.ENX.gz	948	11-Mar-99	13:08
P046AR.ENX.gz	662	11-Mar-99	13:08
P046CR.ENX.gz	266	11-Mar-99	13:08
P046K.ENX.gz	1261	11-Mar-99	13:08
P046SC.ENX.gz	1707	11-Mar-99	13:08
P046V.ENX.gz	923	11-Mar-99	13:08
P047CA.ENX.gz	1766	11-Mar-99	13:08
P047CR.ENX.gz	692	11-Mar-99	13:08
P047K.ENX.gz	1142	11-Mar-99	13:08
P047SC.ENX.gz	992	11-Mar-99	13:08
P047V.ENX.gz	1089	11-Mar-99	13:08

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-10 of II-53**

P048CA.ENX.gz	1159	11-Mar-99	13:08
P048CR.ENX.gz	1011	11-Mar-99	13:08
P048K.ENX.gz	2601	11-Mar-99	13:08
P048MN.ENX.gz	2575	11-Mar-99	13:08
P048SC.ENX.gz	973	11-Mar-99	13:08
P048V.ENX.gz	2095	11-Mar-99	13:08
P049CA.ENX.gz	1014	11-Mar-99	13:08
P049CR.ENX.gz	2389	11-Mar-99	13:08
P049FE.ENX.gz	1276	11-Mar-99	13:08
P049K.ENX.gz	3364	11-Mar-99	13:08
P049MN.ENX.gz	773	11-Mar-99	13:08
P049SC.ENX.gz	630	11-Mar-99	13:08
P049V.ENX.gz	392	11-Mar-99	13:08
P050CA.ENX.gz	1641	11-Mar-99	13:08
P050CR.ENX.gz	375	11-Mar-99	13:08
P050FE.ENX.gz	520	11-Mar-99	13:08
P050K.ENX.gz	2351	11-Mar-99	13:08
P050MN.ENX.gz	2855	11-Mar-99	13:08
P050SC.ENX.gz	1997	11-Mar-99	13:08
P050V.ENX.gz	1049	11-Mar-99	13:08
P051CA.ENX.gz	989	11-Mar-99	13:08
P051CR.ENX.gz	1162	11-Mar-99	13:08
P051FE.ENX.gz	937	11-Mar-99	13:08
P051K.ENX.gz	1625	11-Mar-99	13:08
P051MN.ENX.gz	1286	11-Mar-99	13:08
P051SC.ENX.gz	1169	11-Mar-99	13:08
P051TI.ENX.gz	1078	11-Mar-99	13:08
P052CA.ENX.gz	731	11-Mar-99	13:08
P052FE.ENX.gz	1271	11-Mar-99	13:08
P052K.ENX.gz	830	11-Mar-99	13:08
P052MN.ENX.gz	1942	11-Mar-99	13:08
P052SC.ENX.gz	1060	11-Mar-99	13:08
P052TI.ENX.gz	492	11-Mar-99	13:08
P052V.ENX.gz	1332	11-Mar-99	13:08
P053CO.ENX.gz	977	11-Mar-99	13:08
P053FE.ENX.gz	1177	11-Mar-99	13:08
P053MN.ENX.gz	286	11-Mar-99	13:08
P053NI.ENX.gz	479	11-Mar-99	13:08
P053TI.ENX.gz	816	11-Mar-99	13:08
P053V.ENX.gz	495	11-Mar-99	13:08
P054CO.ENX.gz	1243	11-Mar-99	13:08
P054MN.ENX.gz	889	11-Mar-99	13:09
P054V.ENX.gz	1769	11-Mar-99	13:09
P055CO.ENX.gz	2211	11-Mar-99	13:09

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-11 of II-53**

P055CR.ENX.gz	976	11-Mar-99	13:09
P055FE.ENX.gz	1641	11-Mar-99	13:09
P055NI.ENX.gz	477	11-Mar-99	13:09
P055V.ENX.gz	826	11-Mar-99	13:09
P056CO.ENX.gz	3803	11-Mar-99	13:09
P056CR.ENX.gz	515	11-Mar-99	13:09
P056MN.ENX.gz	1172	11-Mar-99	13:09
P056NI.ENX.gz	1534	11-Mar-99	13:09
P057CO.ENX.gz	3179	11-Mar-99	13:09
P057CR.ENX.gz	2405	11-Mar-99	13:09
P057CU.ENX.gz	643	11-Mar-99	13:09
P057MN.ENX.gz	2335	11-Mar-99	13:09
P057NI.ENX.gz	1992	11-Mar-99	13:09
P057ZN.ENX.gz	875	11-Mar-99	13:09
P058CO.ENX.gz	1680	11-Mar-99	13:09
P058CR.ENX.gz	478	11-Mar-99	13:09
P058CU.ENX.gz	1385	11-Mar-99	13:09
P058MN.ENX.gz	1583	11-Mar-99	13:09
P058ZN.ENX.gz	283	11-Mar-99	13:09
P059CR.ENX.gz	368	11-Mar-99	13:09
P059CU.ENX.gz	2543	11-Mar-99	13:09
P059FE.ENX.gz	3139	11-Mar-99	13:09
P059MN.ENX.gz	1185	11-Mar-99	13:09
P059NI.ENX.gz	444	11-Mar-99	13:09
P059ZN.ENX.gz	2409	11-Mar-99	13:09
P060CO.ENX.gz	2159	11-Mar-99	13:09
P060CU.ENX.gz	2946	11-Mar-99	13:09
P060FE.ENX.gz	517	11-Mar-99	13:09
P060MN.ENX.gz	648	11-Mar-99	13:09
P060ZN.ENX.gz	1099	11-Mar-99	13:09
P061CO.ENX.gz	796	11-Mar-99	13:09
P061CU.ENX.gz	2293	11-Mar-99	13:09
P061FE.ENX.gz	1846	11-Mar-99	13:09
P061GE.ENX.gz	764	11-Mar-99	13:09
P061MN.ENX.gz	836	11-Mar-99	13:09
P061ZN.ENX.gz	2474	11-Mar-99	13:09
P062CO.ENX.gz	2253	11-Mar-99	13:09
P062CU.ENX.gz	1049	11-Mar-99	13:09
P062FE.ENX.gz	555	11-Mar-99	13:09
P062GA.ENX.gz	583	11-Mar-99	13:09
P062MN.ENX.gz	635	11-Mar-99	13:09
P062ZN.ENX.gz	2526	11-Mar-99	13:09
P063CO.ENX.gz	887	11-Mar-99	13:09
P063FE.ENX.gz	822	11-Mar-99	13:09

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-12 of II-53**

P063GA.ENX.gz	982	11-Mar-99	13:09
P063NI.ENX.gz	270	11-Mar-99	13:09
P063ZN.ENX.gz	1853	11-Mar-99	13:09
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P064CU.ENX.gz	1659	11-Mar-99	13:09
P064FE.ENX.gz	459	11-Mar-99	13:09
P064GA.ENX.gz	2712	11-Mar-99	13:09
P064GE.ENX.gz	1414	11-Mar-99	13:09
P065CO.ENX.gz	1057	11-Mar-99	13:09
P065GA.ENX.gz	3887	11-Mar-99	13:09
P065GE.ENX.gz	3044	11-Mar-99	13:09
P065NI.ENX.gz	1816	11-Mar-99	13:09
P065ZN.ENX.gz	1760	11-Mar-99	13:09
P066AS.ENX.gz	319	11-Mar-99	13:09
P066CO.ENX.gz	628	11-Mar-99	13:09
P066CU.ENX.gz	939	11-Mar-99	13:09
P066GA.ENX.gz	3943	11-Mar-99	13:09
P066GE.ENX.gz	3807	11-Mar-99	13:09
P066NI.ENX.gz	468	11-Mar-99	13:09
P067AS.ENX.gz	1667	11-Mar-99	13:09
P067CO.ENX.gz	401	11-Mar-99	13:09
P067CU.ENX.gz	1195	11-Mar-99	13:09
P067GA.ENX.gz	1557	11-Mar-99	13:09
P067GE.ENX.gz	2151	11-Mar-99	13:09
P067NI.ENX.gz	960	11-Mar-99	13:09
P068AS.ENX.gz	2156	11-Mar-99	13:09
P068CU.ENX.gz	3639	11-Mar-99	13:09
P068GA.ENX.gz	1510	11-Mar-99	13:09
P068GE.ENX.gz	757	11-Mar-99	13:09
P068NI.ENX.gz	305	11-Mar-99	13:09
P069AS.ENX.gz	3458	11-Mar-99	13:09
P069CU.ENX.gz	1426	11-Mar-99	13:09
P069GE.ENX.gz	3146	11-Mar-99	13:09
P069NI.ENX.gz	1146	11-Mar-99	13:09
P069SE.ENX.gz	4071	11-Mar-99	13:09
P069ZN.ENX.gz	1222	11-Mar-99	13:09
P070AS.ENX.gz	2674	11-Mar-99	13:09
P070CU.ENX.gz	1592	11-Mar-99	13:09
P070GA.ENX.gz	1242	11-Mar-99	13:09
P070SE.ENX.gz	1641	11-Mar-99	13:09
P071AS.ENX.gz	4069	11-Mar-99	13:09
P071BR.ENX.gz	1050	11-Mar-99	13:09
P071CU.ENX.gz	824	11-Mar-99	13:09
P071GE.ENX.gz	1680	11-Mar-99	13:09

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-13 of II-53**

P071KR.ENX.gz	542	11-Mar-99	13:09
P071SE.ENX.gz	2954	11-Mar-99	13:09
P071ZN.ENX.gz	2957	11-Mar-99	13:09
P072AS.ENX.gz	3156	11-Mar-99	13:09
P072BR.ENX.gz	1948	11-Mar-99	13:09
P072CU.ENX.gz	980	11-Mar-99	13:09
P072GA.ENX.gz	4034	11-Mar-99	13:09
P072KR.ENX.gz	1162	11-Mar-99	13:09
P072SE.ENX.gz	513	11-Mar-99	13:09
P072ZN.ENX.gz	1429	11-Mar-99	13:09
P073AS.ENX.gz	937	11-Mar-99	13:09
P073BR.ENX.gz	1927	11-Mar-99	13:09
P073CU.ENX.gz	347	11-Mar-99	13:09
P073GA.ENX.gz	1387	11-Mar-99	13:09
P073GE.ENX.gz	417	11-Mar-99	13:09
P073KR.ENX.gz	1812	11-Mar-99	13:09
P073SE.ENX.gz	5066	11-Mar-99	13:09
P073ZN.ENX.gz	1575	11-Mar-99	13:09
P074AS.ENX.gz	2926	11-Mar-99	13:09
P074BR.ENX.gz	6440	11-Mar-99	13:09
P074CU.ENX.gz	858	11-Mar-99	13:09
P074GA.ENX.gz	4077	11-Mar-99	13:09
P074KR.ENX.gz	2288	11-Mar-99	13:09
P074RB.ENX.gz	241	11-Mar-99	13:09
P074ZN.ENX.gz	1324	11-Mar-99	13:09
P075AS.ENX.gz	464	11-Mar-99	13:09
P075BR.ENX.gz	2848	11-Mar-99	13:09
P075CU.ENX.gz	455	11-Mar-99	13:09
P075GA.ENX.gz	1075	11-Mar-99	13:09
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P075KR.ENX.gz	2257	11-Mar-99	13:09
P075RB.ENX.gz	1366	11-Mar-99	13:09
P075SE.ENX.gz	2666	11-Mar-99	13:09
P075ZN.ENX.gz	2918	11-Mar-99	13:09
P076AS.ENX.gz	6075	11-Mar-99	13:09
P076BR.ENX.gz	5919	11-Mar-99	13:09
P076CU.ENX.gz	1197	11-Mar-99	13:09
P076GA.ENX.gz	3145	11-Mar-99	13:09
P076KR.ENX.gz	3204	11-Mar-99	13:09
P076RB.ENX.gz	2327	11-Mar-99	13:09
P076SR.ENX.gz	1653	11-Mar-99	13:09
P076ZN.ENX.gz	2109	11-Mar-99	13:09
P077AS.ENX.gz	1256	11-Mar-99	13:09
P077BR.ENX.gz	3070	11-Mar-99	13:09

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-14 of II-53**

P077CU.ENX.gz	278	11-Mar-99	13:09
P077GA.ENX.gz	852	11-Mar-99	13:09
P077GE.ENX.gz	6526	11-Mar-99	13:09
P077KR.ENX.gz	2579	11-Mar-99	13:09
P077RB.ENX.gz	4111	11-Mar-99	13:09
P077SE.ENX.gz	452	11-Mar-99	13:09
P077SR.ENX.gz	1120	11-Mar-99	13:09
P077ZN.ENX.gz	2807	11-Mar-99	13:09
P078AS.ENX.gz	2167	11-Mar-99	13:09
P078BR.ENX.gz	2600	11-Mar-99	13:09
P078GA.ENX.gz	1720	11-Mar-99	13:09
P078GE.ENX.gz	528	11-Mar-99	13:09
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P078ZN.ENX.gz	1597	11-Mar-99	13:09
P079AS.ENX.gz	895	11-Mar-99	13:09
P079BR.ENX.gz	379	11-Mar-99	13:09
P079CU.ENX.gz	361	11-Mar-99	13:09
P079GA.ENX.gz	3236	11-Mar-99	13:09
P079GE.ENX.gz	2480	11-Mar-99	13:09
P079KR.ENX.gz	3406	11-Mar-99	13:09
P079RB.ENX.gz	6171	11-Mar-99	13:09
P079SE.ENX.gz	900	11-Mar-99	13:09
P079SR.ENX.gz	1961	11-Mar-99	13:09
P079Y.ENX.gz	971	11-Mar-99	13:09
P079ZN.ENX.gz	1556	11-Mar-99	13:09
P080AS.ENX.gz	1474	11-Mar-99	13:09
P080BR.ENX.gz	3158	11-Mar-99	13:09
P080GA.ENX.gz	3332	11-Mar-99	13:09
P080GE.ENX.gz	1110	11-Mar-99	13:09
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P080SR.ENX.gz	863	11-Mar-99	13:09
P080Y.ENX.gz	1332	11-Mar-99	13:09
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P081AS.ENX.gz	2385	11-Mar-99	13:09
P081GA.ENX.gz	4510	11-Mar-99	13:09
P081GE.ENX.gz	3388	11-Mar-99	13:09
P081KR.ENX.gz	1722	11-Mar-99	13:09
P081RB.ENX.gz	6616	11-Mar-99	13:09
P081SE.ENX.gz	4900	11-Mar-99	13:09
P081SR.ENX.gz	4648	11-Mar-99	13:09
P081Y.ENX.gz	2739	11-Mar-99	13:09
P081ZN.ENX.gz	298	11-Mar-99	13:09
P081ZR.ENX.gz	455	11-Mar-99	13:09
P082AS.ENX.gz	1877	11-Mar-99	13:09

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-15 of II-53**

P082BR.ENX.gz	4759	11-Mar-99	13:09
P082GA.ENX.gz	917	11-Mar-99	13:09
P082GE.ENX.gz	526	11-Mar-99	13:09
P082RB.ENX.gz	5066	11-Mar-99	13:09
P082SE.ENX.gz	530	11-Mar-99	13:09
P082SR.ENX.gz	300	11-Mar-99	13:09
P082Y.ENX.gz	702	11-Mar-99	13:09
P082ZR.ENX.gz	383	11-Mar-99	13:09
P083AS.ENX.gz	2114	11-Mar-99	13:09
P083BR.ENX.gz	978	11-Mar-99	13:09
P083GA.ENX.gz	340	11-Mar-99	13:09
P083GE.ENX.gz	1328	11-Mar-99	13:09
P083KR.ENX.gz	1134	11-Mar-99	13:09
P083NB.ENX.gz	507	11-Mar-99	13:09
P083RB.ENX.gz	1673	11-Mar-99	13:09
P083SE.ENX.gz	4873	11-Mar-99	13:09
P083SR.ENX.gz	5269	11-Mar-99	13:09
P083Y.ENX.gz	4063	11-Mar-99	13:09
P083ZR.ENX.gz	2822	11-Mar-99	13:09
P084AS.ENX.gz	917	11-Mar-99	13:09
P084BR.ENX.gz	2711	11-Mar-99	13:09
P084NB.ENX.gz	603	11-Mar-99	13:09
P084RB.ENX.gz	2730	11-Mar-99	13:09
P084SE.ENX.gz	1100	11-Mar-99	13:09
P084Y.ENX.gz	2730	11-Mar-99	13:09
P084ZR.ENX.gz	710	11-Mar-99	13:09
P085AS.ENX.gz	1689	11-Mar-99	13:09
P085BR.ENX.gz	1596	11-Mar-99	13:09
P085KR.ENX.gz	1605	11-Mar-99	13:09
P085NB.ENX.gz	416	11-Mar-99	13:09
P085SE.ENX.gz	1968	11-Mar-99	13:09
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P085ZR.ENX.gz	2551	11-Mar-99	13:09
P086AS.ENX.gz	348	11-Mar-99	13:09
P086BR.ENX.gz	1434	11-Mar-99	13:10
P086NB.ENX.gz	1398	11-Mar-99	13:10
P086RB.ENX.gz	1632	11-Mar-99	13:10
P086SE.ENX.gz	2021	11-Mar-99	13:10
P086SR.ENX.gz	977	11-Mar-99	13:10
P086Y.ENX.gz	5892	11-Mar-99	13:10
P086ZR.ENX.gz	1304	11-Mar-99	13:10
P087BR.ENX.gz	8823	11-Mar-99	13:10
P087KR.ENX.gz	1855	11-Mar-99	13:10

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-16 of II-53**

P087MO.ENX.gz	768	11-Mar-99	13:10
P087NB.ENX.gz	2304	11-Mar-99	13:10
P087RB.ENX.gz	457	11-Mar-99	13:10
P087SE.ENX.gz	1170	11-Mar-99	13:10
P087SR.ENX.gz	842	11-Mar-99	13:10
P087Y.ENX.gz	1377	11-Mar-99	13:10
P087ZR.ENX.gz	2337	11-Mar-99	13:10
P088BR.ENX.gz	4509	11-Mar-99	13:10
P088KR.ENX.gz	2872	11-Mar-99	13:10
P088MO.ENX.gz	389	11-Mar-99	13:10
P088NB.ENX.gz	4612	11-Mar-99	13:10
P088RB.ENX.gz	2343	11-Mar-99	13:10
P088SE.ENX.gz	1784	11-Mar-99	13:10
P088Y.ENX.gz	1534	11-Mar-99	13:10
P088ZR.ENX.gz	569	11-Mar-99	13:10
P089BR.ENX.gz	3648	11-Mar-99	13:10
P089KR.ENX.gz	6274	11-Mar-99	13:10
P089MO.ENX.gz	1179	11-Mar-99	13:10
P089NB.ENX.gz	3474	11-Mar-99	13:10
P089RB.ENX.gz	1743	11-Mar-99	13:10
P089SE.ENX.gz	678	11-Mar-99	13:10
P089SR.ENX.gz	483	11-Mar-99	13:10
P089Y.ENX.gz	378	11-Mar-99	13:10
P089ZR.ENX.gz	1262	11-Mar-99	13:10
P090BR.ENX.gz	3048	11-Mar-99	13:10
P090KR.ENX.gz	3099	11-Mar-99	13:10
P090MO.ENX.gz	2032	11-Mar-99	13:10
P090NB.ENX.gz	3272	11-Mar-99	13:10
P090RB.ENX.gz	5500	11-Mar-99	13:10
P090RU.ENX.gz	408	11-Mar-99	13:10
P090SR.ENX.gz	414	11-Mar-99	13:10
P090TC.ENX.gz	1641	11-Mar-99	13:10
P090Y.ENX.gz	1986	11-Mar-99	13:10
P091BR.ENX.gz	590	11-Mar-99	13:10
P091KR.ENX.gz	5362	11-Mar-99	13:10
P091MO.ENX.gz	3011	11-Mar-99	13:10
P091NB.ENX.gz	1744	11-Mar-99	13:10
P091RB.ENX.gz	4205	11-Mar-99	13:10
P091RU.ENX.gz	325	11-Mar-99	13:10
P091SR.ENX.gz	2453	11-Mar-99	13:10
P091TC.ENX.gz	3565	11-Mar-99	13:10
P091Y.ENX.gz	818	11-Mar-99	13:10
P091ZR.ENX.gz	783	11-Mar-99	13:10
P092BR.ENX.gz	1547	11-Mar-99	13:10

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-17 of II-53**

P092KR.ENX.gz	3335	11-Mar-99	13:10
P092NB.ENX.gz	2109	11-Mar-99	13:10
P092RB.ENX.gz	3605	11-Mar-99	13:10
P092RU.ENX.gz	2154	11-Mar-99	13:10
P092SR.ENX.gz	1671	11-Mar-99	13:10
P092TC.ENX.gz	2240	11-Mar-99	13:10
P092Y.ENX.gz	2058	11-Mar-99	13:10
P093KR.ENX.gz	6810	11-Mar-99	13:10
P093MO.ENX.gz	2554	11-Mar-99	13:10
P093NB.ENX.gz	847	11-Mar-99	13:10
P093RB.ENX.gz	8897	11-Mar-99	13:10
P093RU.ENX.gz	4122	11-Mar-99	13:10
P093SR.ENX.gz	5374	11-Mar-99	13:10
P093TC.ENX.gz	3436	11-Mar-99	13:10
P093Y.ENX.gz	2386	11-Mar-99	13:10
P093ZR.ENX.gz	480	11-Mar-99	13:10
P094KR.ENX.gz	1172	11-Mar-99	13:10
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P094PD.ENX.gz	344	11-Mar-99	13:10
P094RB.ENX.gz	5364	11-Mar-99	13:10
P094RH.ENX.gz	2060	11-Mar-99	13:10
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P094SR.ENX.gz	1199	11-Mar-99	13:10
P094TC.ENX.gz	3932	11-Mar-99	13:10
P094Y.ENX.gz	2369	11-Mar-99	13:10
P095KR.ENX.gz	1172	11-Mar-99	13:10
P095NB.ENX.gz	3087	11-Mar-99	13:10
P095PD.ENX.gz	2805	11-Mar-99	13:10
P095RB.ENX.gz	6404	11-Mar-99	13:10
P095RH.ENX.gz	4233	11-Mar-99	13:10
P095RU.ENX.gz	3430	11-Mar-99	13:10
P095SR.ENX.gz	3051	11-Mar-99	13:10
P095TC.ENX.gz	5885	11-Mar-99	13:10
P095Y.ENX.gz	3297	11-Mar-99	13:10
P095ZR.ENX.gz	1799	11-Mar-99	13:10
P096AG.ENX.gz	465	11-Mar-99	13:10
P096NB.ENX.gz	1680	11-Mar-99	13:10
P096PD.ENX.gz	845	11-Mar-99	13:10
P096RB.ENX.gz	5053	11-Mar-99	13:10
P096RH.ENX.gz	3760	11-Mar-99	13:10
P096SR.ENX.gz	1349	11-Mar-99	13:10
P096TC.ENX.gz	3024	11-Mar-99	13:10
P096Y.ENX.gz	3710	11-Mar-99	13:10
P096ZR.ENX.gz	258	11-Mar-99	13:10

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-18 of II-53**

P097AG.ENX.gz	1075	11-Mar-99	13:10
P097NB.ENX.gz	1370	11-Mar-99	13:10
P097PD.ENX.gz	2739	11-Mar-99	13:10
P097RB.ENX.gz	4382	11-Mar-99	13:10
P097RH.ENX.gz	6643	11-Mar-99	13:10
P097RU.ENX.gz	2817	11-Mar-99	13:10
P097SR.ENX.gz	2180	11-Mar-99	13:10
P097TC.ENX.gz	1143	11-Mar-99	13:10
P097Y.ENX.gz	3794	11-Mar-99	13:10
P097ZR.ENX.gz	3011	11-Mar-99	13:10
P098AG.ENX.gz	1764	11-Mar-99	13:10
P098CD.ENX.gz	1642	11-Mar-99	13:10
P098NB.ENX.gz	8104	11-Mar-99	13:10
P098PD.ENX.gz	2347	11-Mar-99	13:10
P098RB.ENX.gz	6042	11-Mar-99	13:10
P098RH.ENX.gz	2444	11-Mar-99	13:10
P098SR.ENX.gz	3128	11-Mar-99	13:10
P098TC.ENX.gz	525	11-Mar-99	13:10
P098Y.ENX.gz	4313	11-Mar-99	13:10
P098ZR.ENX.gz	405	11-Mar-99	13:10
P099AG.ENX.gz	3698	11-Mar-99	13:10
P099CD.ENX.gz	667	11-Mar-99	13:10
P099MO.ENX.gz	4247	11-Mar-99	13:10
P099NB.ENX.gz	3498	11-Mar-99	13:10
P099PD.ENX.gz	3669	11-Mar-99	13:10
P099RB.ENX.gz	1807	11-Mar-99	13:10
P099RH.ENX.gz	4165	11-Mar-99	13:10
P099SR.ENX.gz	2882	11-Mar-99	13:10
P099TC.ENX.gz	2691	11-Mar-99	13:10
P099Y.ENX.gz	3723	11-Mar-99	13:10
P099ZR.ENX.gz	1566	11-Mar-99	13:10
P100AG.ENX.gz	3341	11-Mar-99	13:10
P100CD.ENX.gz	2099	11-Mar-99	13:10
P100NB.ENX.gz	4146	11-Mar-99	13:10
P100PD.ENX.gz	2551	11-Mar-99	13:10
P100RB.ENX.gz	1178	11-Mar-99	13:10
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P100TC.ENX.gz	1369	11-Mar-99	13:10
P100Y.ENX.gz	5082	11-Mar-99	13:10
P100ZR.ENX.gz	1315	11-Mar-99	13:10
P101AG.ENX.gz	2723	11-Mar-99	13:10
P101CD.ENX.gz	3647	11-Mar-99	13:10
P101IN.ENX.gz	483	11-Mar-99	13:10

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-19 of II-53**

P101MO.ENX.gz	4981	11-Mar-99	13:10
P101NB.ENX.gz	1431	11-Mar-99	13:10
P101PD.ENX.gz	3462	11-Mar-99	13:10
P101RB.ENX.gz	738	11-Mar-99	13:10
P101RH.ENX.gz	3268	11-Mar-99	13:10
P101RU.ENX.gz	849	11-Mar-99	13:10
P101SR.ENX.gz	2518	11-Mar-99	13:10
P101TC.ENX.gz	1719	11-Mar-99	13:10
P101Y.ENX.gz	1075	11-Mar-99	13:10
P101ZR.ENX.gz	1932	11-Mar-99	13:10
P102AG.ENX.gz	3748	11-Mar-99	13:10
P102CD.ENX.gz	1651	11-Mar-99	13:10
P102IN.ENX.gz	608	11-Mar-99	13:10
P102MO.ENX.gz	1113	11-Mar-99	13:10
P102NB.ENX.gz	1790	11-Mar-99	13:10
P102RH.ENX.gz	3948	11-Mar-99	13:10
P102SR.ENX.gz	1441	11-Mar-99	13:10
P102TC.ENX.gz	2295	11-Mar-99	13:10
P102Y.ENX.gz	1247	11-Mar-99	13:10
P102ZR.ENX.gz	1539	11-Mar-99	13:10
P103AG.ENX.gz	4650	11-Mar-99	13:10
P103CD.ENX.gz	6998	11-Mar-99	13:10
P103IN.ENX.gz	1332	11-Mar-99	13:10
P103MO.ENX.gz	1681	11-Mar-99	13:10
P103NB.ENX.gz	1734	11-Mar-99	13:10
P103PD.ENX.gz	1342	11-Mar-99	13:10
P103RH.ENX.gz	915	11-Mar-99	13:10
P103RU.ENX.gz	3636	11-Mar-99	13:10
P103TC.ENX.gz	2418	11-Mar-99	13:10
P103ZR.ENX.gz	1466	11-Mar-99	13:10
P104AG.ENX.gz	5637	11-Mar-99	13:10
P104CD.ENX.gz	988	11-Mar-99	13:10
P104IN.ENX.gz	2642	11-Mar-99	13:10
P104MO.ENX.gz	1599	11-Mar-99	13:10
P104NB.ENX.gz	1409	11-Mar-99	13:10
P104RH.ENX.gz	2623	11-Mar-99	13:10
P104SN.ENX.gz	1192	11-Mar-99	13:10
P104TC.ENX.gz	3578	11-Mar-99	13:10
P104ZR.ENX.gz	809	11-Mar-99	13:10
P105AG.ENX.gz	7103	11-Mar-99	13:10
P105CD.ENX.gz	7232	11-Mar-99	13:10
P105IN.ENX.gz	4929	11-Mar-99	13:10
P105MO.ENX.gz	2993	11-Mar-99	13:10
P105NB.ENX.gz	976	11-Mar-99	13:10

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-20 of II-53**

P105RH.ENX.gz	1850	11-Mar-99	13:10
P105RU.ENX.gz	4284	11-Mar-99	13:10
P105TC.ENX.gz	4002	11-Mar-99	13:10
P106AG.ENX.gz	6546	11-Mar-99	13:10
P106IN.ENX.gz	6079	11-Mar-99	13:10
P106MO.ENX.gz	953	11-Mar-99	13:10
P106NB.ENX.gz	620	11-Mar-99	13:10
P106RH.ENX.gz	6158	11-Mar-99	13:10
P106RU.ENX.gz	320	11-Mar-99	13:10
P106SN.ENX.gz	1368	11-Mar-99	13:10
P106TC.ENX.gz	2182	11-Mar-99	13:10
P106TE.ENX.gz	201	11-Mar-99	13:10
P107AG.ENX.gz	877	11-Mar-99	13:10
P107CD.ENX.gz	3482	11-Mar-99	13:10
P107IN.ENX.gz	5394	11-Mar-99	13:10
P107MO.ENX.gz	1066	11-Mar-99	13:10
P107PD.ENX.gz	700	11-Mar-99	13:10
P107RH.ENX.gz	1634	11-Mar-99	13:10
P107RU.ENX.gz	3427	11-Mar-99	13:10
P107SN.ENX.gz	1543	11-Mar-99	13:10
P107TC.ENX.gz	3104	11-Mar-99	13:10
P107TE.ENX.gz	293	11-Mar-99	13:10
P108AG.ENX.gz	3628	11-Mar-99	13:10
P108IN.ENX.gz	4957	11-Mar-99	13:10
P108MO.ENX.gz	357	11-Mar-99	13:10
P108RH.ENX.gz	1537	11-Mar-99	13:10
P108RU.ENX.gz	1314	11-Mar-99	13:10
P108SB.ENX.gz	534	11-Mar-99	13:10
P108SN.ENX.gz	2032	11-Mar-99	13:11
P108TC.ENX.gz	2544	11-Mar-99	13:11
P108TE.ENX.gz	383	11-Mar-99	13:11
P109AG.ENX.gz	223	11-Mar-99	13:11
P109CD.ENX.gz	2285	11-Mar-99	13:11
P109IN.ENX.gz	3218	11-Mar-99	13:11
P109PD.ENX.gz	2736	11-Mar-99	13:11
P109RH.ENX.gz	1903	11-Mar-99	13:11
P109RU.ENX.gz	5235	11-Mar-99	13:11
P109SB.ENX.gz	1144	11-Mar-99	13:11
P109SN.ENX.gz	4736	11-Mar-99	13:11
P109TC.ENX.gz	977	11-Mar-99	13:11
P109TE.ENX.gz	246	11-Mar-99	13:11
P110AG.ENX.gz	5012	11-Mar-99	13:11
P110I.ENX.gz	299	11-Mar-99	13:11
P110IN.ENX.gz	5680	11-Mar-99	13:11

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-21 of II-53**

P110RH.ENX.gz	1397	11-Mar-99	13:11
P110RU.ENX.gz	921	11-Mar-99	13:11
P110SB.ENX.gz	1857	11-Mar-99	13:11
P110SN.ENX.gz	754	11-Mar-99	13:11
P110TC.ENX.gz	844	11-Mar-99	13:11
P110TE.ENX.gz	414	11-Mar-99	13:11
P110XE.ENX.gz	286	11-Mar-99	13:11
P111AG.ENX.gz	3322	11-Mar-99	13:11
P111CD.ENX.gz	830	11-Mar-99	13:11
P111I.ENX.gz	384	11-Mar-99	13:11
P111IN.ENX.gz	1607	11-Mar-99	13:11
P111PD.ENX.gz	6012	11-Mar-99	13:11
P111RH.ENX.gz	1496	11-Mar-99	13:11
P111RU.ENX.gz	1492	11-Mar-99	13:11
P111SB.ENX.gz	1760	11-Mar-99	13:11
P111SN.ENX.gz	2177	11-Mar-99	13:11
P111TC.ENX.gz	479	11-Mar-99	13:11
P111XE.ENX.gz	450	11-Mar-99	13:11
P112AG.ENX.gz	2269	11-Mar-99	13:11
P112I.ENX.gz	585	11-Mar-99	13:11
P112IN.ENX.gz	2893	11-Mar-99	13:11
P112PD.ENX.gz	711	11-Mar-99	13:11
P112RH.ENX.gz	1480	11-Mar-99	13:11
P112RU.ENX.gz	250	11-Mar-99	13:11
P112SB.ENX.gz	2786	11-Mar-99	13:11
P112TE.ENX.gz	793	11-Mar-99	13:11
P112XE.ENX.gz	475	11-Mar-99	13:11
P113AG.ENX.gz	3032	11-Mar-99	13:11
P113CD.ENX.gz	639	11-Mar-99	13:11
P113I.ENX.gz	712	11-Mar-99	13:11
P113IN.ENX.gz	477	11-Mar-99	13:11
P113PD.ENX.gz	1816	11-Mar-99	13:11
P113RH.ENX.gz	1651	11-Mar-99	13:11
P113RU.ENX.gz	1083	11-Mar-99	13:11
P113SB.ENX.gz	2344	11-Mar-99	13:11
P113SN.ENX.gz	1197	11-Mar-99	13:11
P113TE.ENX.gz	1514	11-Mar-99	13:11
P113XE.ENX.gz	328	11-Mar-99	13:11
P114AG.ENX.gz	1999	11-Mar-99	13:11
P114CS.ENX.gz	783	11-Mar-99	13:11
P114I.ENX.gz	2376	11-Mar-99	13:11
P114IN.ENX.gz	2277	11-Mar-99	13:11
P114PD.ENX.gz	840	11-Mar-99	13:11
P114RH.ENX.gz	1528	11-Mar-99	13:11

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-22 of II-53**

P114RU.ENX.gz	903	11-Mar-99	13:11
P114SB.ENX.gz	3243	11-Mar-99	13:11
P114TE.ENX.gz	3634	11-Mar-99	13:11
P114XE.ENX.gz	262	11-Mar-99	13:11
P115AG.ENX.gz	4235	11-Mar-99	13:11
P115CD.ENX.gz	4569	11-Mar-99	13:11
P115I.ENX.gz	1545	11-Mar-99	13:11
P115IN.ENX.gz	1677	11-Mar-99	13:11
P115PD.ENX.gz	1915	11-Mar-99	13:11
P115RH.ENX.gz	945	11-Mar-99	13:11
P115SB.ENX.gz	3526	11-Mar-99	13:11
P115SN.ENX.gz	1111	11-Mar-99	13:11
P115TE.ENX.gz	4467	11-Mar-99	13:11
P115XE.ENX.gz	510	11-Mar-99	13:11
P116AG.ENX.gz	3227	11-Mar-99	13:11
P116CS.ENX.gz	1791	11-Mar-99	13:11
P116I.ENX.gz	1887	11-Mar-99	13:11
P116IN.ENX.gz	2913	11-Mar-99	13:11
P116PD.ENX.gz	1249	11-Mar-99	13:11
P116RH.ENX.gz	1143	11-Mar-99	13:11
P116SB.ENX.gz	3818	11-Mar-99	13:11
P116TE.ENX.gz	1336	11-Mar-99	13:11
P116XE.ENX.gz	425	11-Mar-99	13:11
P117AG.ENX.gz	3922	11-Mar-99	13:11
P117CD.ENX.gz	5122	11-Mar-99	13:11
P117CS.ENX.gz	1725	11-Mar-99	13:11
P117I.ENX.gz	1396	11-Mar-99	13:11
P117IN.ENX.gz	1263	11-Mar-99	13:11
P117PD.ENX.gz	1022	11-Mar-99	13:11
P117RH.ENX.gz	516	11-Mar-99	13:11
P117SB.ENX.gz	2186	11-Mar-99	13:11
P117SN.ENX.gz	743	11-Mar-99	13:11
P117TE.ENX.gz	1571	11-Mar-99	13:11
P117XE.ENX.gz	1650	11-Mar-99	13:11
P118AG.ENX.gz	3608	11-Mar-99	13:11
P118CD.ENX.gz	383	11-Mar-99	13:11
P118CS.ENX.gz	2562	11-Mar-99	13:11
P118I.ENX.gz	5637	11-Mar-99	13:11
P118IN.ENX.gz	3406	11-Mar-99	13:11
P118PD.ENX.gz	2092	11-Mar-99	13:11
P118SB.ENX.gz	2820	11-Mar-99	13:11
P118TE.ENX.gz	350	11-Mar-99	13:11
P118XE.ENX.gz	451	11-Mar-99	13:11
P119AG.ENX.gz	3979	11-Mar-99	13:11

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-23 of II-53**

P119CD.ENX.gz	5313	11-Mar-99	13:11
P119CS.ENX.gz	1780	11-Mar-99	13:11
P119I.ENX.gz	5225	11-Mar-99	13:11
P119IN.ENX.gz	2283	11-Mar-99	13:11
P119PD.ENX.gz	588	11-Mar-99	13:11
P119SB.ENX.gz	495	11-Mar-99	13:11
P119SN.ENX.gz	684	11-Mar-99	13:11
P119TE.ENX.gz	4070	11-Mar-99	13:11
P119XE.ENX.gz	1023	11-Mar-99	13:11
P120AG.ENX.gz	1275	11-Mar-99	13:11
P120BA.ENX.gz	228	11-Mar-99	13:11
P120CD.ENX.gz	237	11-Mar-99	13:11
P120CS.ENX.gz	1980	11-Mar-99	13:11
P120I.ENX.gz	3864	11-Mar-99	13:11
P120IN.ENX.gz	1923	11-Mar-99	13:11
P120SB.ENX.gz	1957	11-Mar-99	13:11
P120XE.ENX.gz	4090	11-Mar-99	13:11
P121AG.ENX.gz	3713	11-Mar-99	13:11
P121BA.ENX.gz	490	11-Mar-99	13:11
P121CD.ENX.gz	3738	11-Mar-99	13:11
P121CS.ENX.gz	5793	11-Mar-99	13:11
P121I.ENX.gz	4430	11-Mar-99	13:11
P121IN.ENX.gz	1740	11-Mar-99	13:11
P121LA.ENX.gz	415	11-Mar-99	13:11
P121SN.ENX.gz	961	11-Mar-99	13:11
P121TE.ENX.gz	2471	11-Mar-99	13:11
P121XE.ENX.gz	6362	11-Mar-99	13:11
P122AG.ENX.gz	669	11-Mar-99	13:11
P122BA.ENX.gz	1270	11-Mar-99	13:11
P122CD.ENX.gz	417	11-Mar-99	13:11
P122CS.ENX.gz	4466	11-Mar-99	13:11
P122I.ENX.gz	2945	11-Mar-99	13:11
P122IN.ENX.gz	4325	11-Mar-99	13:11
P122LA.ENX.gz	476	11-Mar-99	13:11
P122SB.ENX.gz	2434	11-Mar-99	13:11
P122XE.ENX.gz	2577	11-Mar-99	13:11
P123AG.ENX.gz	1666	11-Mar-99	13:11
P123BA.ENX.gz	667	11-Mar-99	13:11
P123CD.ENX.gz	3942	11-Mar-99	13:11
P123CS.ENX.gz	3383	11-Mar-99	13:11
P123I.ENX.gz	2705	11-Mar-99	13:11
P123IN.ENX.gz	1947	11-Mar-99	13:11
P123LA.ENX.gz	1397	11-Mar-99	13:11
P123SN.ENX.gz	1562	11-Mar-99	13:11

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-24 of II-53**

P123TE.ENX.gz	1040	11-Mar-99	13:11
P123XE.ENX.gz	3634	11-Mar-99	13:11
P124BA.ENX.gz	657	11-Mar-99	13:11
P124CD.ENX.gz	814	11-Mar-99	13:11
P124CS.ENX.gz	2338	11-Mar-99	13:11
P124I.ENX.gz	3803	11-Mar-99	13:11
P124IN.ENX.gz	3227	11-Mar-99	13:11
P124SB.ENX.gz	4233	11-Mar-99	13:11
P125BA.ENX.gz	869	11-Mar-99	13:11
P125CD.ENX.gz	4597	11-Mar-99	13:11
P125CE.ENX.gz	267	11-Mar-99	13:11
P125CS.ENX.gz	1552	11-Mar-99	13:11
P125I.ENX.gz	906	11-Mar-99	13:11
P125IN.ENX.gz	1386	11-Mar-99	13:11
P125LA.ENX.gz	1112	11-Mar-99	13:11
P125SB.ENX.gz	2964	11-Mar-99	13:11
P125SN.ENX.gz	3387	11-Mar-99	13:11
P125TE.ENX.gz	1051	11-Mar-99	13:11
P125XE.ENX.gz	3358	11-Mar-99	13:11
P126BA.ENX.gz	3271	11-Mar-99	13:11
P126CD.ENX.gz	1010	11-Mar-99	13:11
P126CE.ENX.gz	465	11-Mar-99	13:11
P126CS.ENX.gz	3551	11-Mar-99	13:11
P126I.ENX.gz	1943	11-Mar-99	13:11
P126IN.ENX.gz	3586	11-Mar-99	13:11
P126LA.ENX.gz	347	11-Mar-99	13:11
P126PR.ENX.gz	324	11-Mar-99	13:11
P126SB.ENX.gz	2615	11-Mar-99	13:11
P126SN.ENX.gz	1223	11-Mar-99	13:11
P127BA.ENX.gz	3096	11-Mar-99	13:11
P127CD.ENX.gz	1045	11-Mar-99	13:11
P127CE.ENX.gz	724	11-Mar-99	13:11
P127CS.ENX.gz	5286	11-Mar-99	13:11
P127IN.ENX.gz	2230	11-Mar-99	13:11
P127LA.ENX.gz	420	11-Mar-99	13:11
P127PR.ENX.gz	329	11-Mar-99	13:11
P127SB.ENX.gz	2677	11-Mar-99	13:11
P127SN.ENX.gz	4034	11-Mar-99	13:11
P127TE.ENX.gz	1612	11-Mar-99	13:11
P127XE.ENX.gz	1957	11-Mar-99	13:11
P128BA.ENX.gz	1292	11-Mar-99	13:11
P128CD.ENX.gz	842	11-Mar-99	13:11
P128CS.ENX.gz	3670	11-Mar-99	13:11
P128I.ENX.gz	1183	11-Mar-99	13:11

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-25 of II-53**

P128IN.ENX.gz	3365	11-Mar-99	13:11
P128LA.ENX.gz	3012	11-Mar-99	13:11
P128PR.ENX.gz	458	11-Mar-99	13:11
P128SB.ENX.gz	3055	11-Mar-99	13:11
P128SN.ENX.gz	1544	11-Mar-99	13:12
P129BA.ENX.gz	4766	11-Mar-99	13:12
P129CD.ENX.gz	423	11-Mar-99	13:12
P129CS.ENX.gz	1667	11-Mar-99	13:12
P129I.ENX.gz	583	11-Mar-99	13:12
P129IN.ENX.gz	2011	11-Mar-99	13:12
P129LA.ENX.gz	4688	11-Mar-99	13:12
P129SB.ENX.gz	3624	11-Mar-99	13:12
P129SN.ENX.gz	2739	11-Mar-99	13:12
P129TE.ENX.gz	3956	11-Mar-99	13:12
P129XE.ENX.gz	611	11-Mar-99	13:12
P130BA.ENX.gz	839	11-Mar-99	13:12
P130CE.ENX.gz	375	11-Mar-99	13:12
P130CS.ENX.gz	2783	11-Mar-99	13:12
P130I.ENX.gz	2949	11-Mar-99	13:12
P130IN.ENX.gz	2200	11-Mar-99	13:12
P130LA.ENX.gz	2137	11-Mar-99	13:12
P130PR.ENX.gz	573	11-Mar-99	13:12
P130SB.ENX.gz	2530	11-Mar-99	13:12
P130SN.ENX.gz	1628	11-Mar-99	13:12
P131BA.ENX.gz	3801	11-Mar-99	13:12
P131CE.ENX.gz	2274	11-Mar-99	13:12
P131CS.ENX.gz	201	11-Mar-99	13:12
P131I.ENX.gz	1973	11-Mar-99	13:12
P131IN.ENX.gz	2912	11-Mar-99	13:12
P131LA.ENX.gz	5059	11-Mar-99	13:12
P131ND.ENX.gz	519	11-Mar-99	13:12
P131PR.ENX.gz	2096	11-Mar-99	13:12
P131SB.ENX.gz	4191	11-Mar-99	13:12
P131SM.ENX.gz	159	11-Mar-99	13:12
P131SN.ENX.gz	5606	11-Mar-99	13:12
P131TE.ENX.gz	7211	11-Mar-99	13:12
P131XE.ENX.gz	481	11-Mar-99	13:12
P132CE.ENX.gz	3020	11-Mar-99	13:12
P132CS.ENX.gz	1362	11-Mar-99	13:12
P132I.ENX.gz	5018	11-Mar-99	13:12
P132IN.ENX.gz	1185	11-Mar-99	13:12
P132LA.ENX.gz	4248	11-Mar-99	13:12
P132PM.ENX.gz	747	11-Mar-99	13:12
P132PR.ENX.gz	657	11-Mar-99	13:12

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-26 of II-53**

P132SB.ENX.gz	2085	11-Mar-99	13:12
P132SN.ENX.gz	2105	11-Mar-99	13:12
P132TE.ENX.gz	1317	11-Mar-99	13:12
P132XE.ENX.gz	556	11-Mar-99	13:12
P133BA.ENX.gz	3024	11-Mar-99	13:12
P133CE.ENX.gz	11303	11-Mar-99	13:12
P133I.ENX.gz	2684	11-Mar-99	13:12
P133LA.ENX.gz	5889	11-Mar-99	13:12
P133ND.ENX.gz	5549	11-Mar-99	13:12
P133PM.ENX.gz	2672	11-Mar-99	13:12
P133PR.ENX.gz	1750	11-Mar-99	13:12
P133SB.ENX.gz	2679	11-Mar-99	13:12
P133SN.ENX.gz	1396	11-Mar-99	13:12
P133TE.ENX.gz	8627	11-Mar-99	13:12
P133XE.ENX.gz	1362	11-Mar-99	13:12
P134BA.ENX.gz	541	11-Mar-99	13:12
P134CE.ENX.gz	2274	11-Mar-99	13:12
P134CS.ENX.gz	2421	11-Mar-99	13:12
P134I.ENX.gz	3226	11-Mar-99	13:12
P134LA.ENX.gz	5251	11-Mar-99	13:12
P134ND.ENX.gz	2061	11-Mar-99	13:12
P134PM.ENX.gz	1618	11-Mar-99	13:12
P134PR.ENX.gz	1949	11-Mar-99	13:12
P134SB.ENX.gz	1546	11-Mar-99	13:12
P134SM.ENX.gz	1095	11-Mar-99	13:12
P134SN.ENX.gz	614	11-Mar-99	13:12
P134TE.ENX.gz	1689	11-Mar-99	13:12
P134XE.ENX.gz	383	11-Mar-99	13:12
P135BA.ENX.gz	457	11-Mar-99	13:12
P135CE.ENX.gz	5636	11-Mar-99	13:12
P135CS.ENX.gz	509	11-Mar-99	13:12
P135I.ENX.gz	2864	11-Mar-99	13:12
P135LA.ENX.gz	2017	11-Mar-99	13:12
P135ND.ENX.gz	2137	11-Mar-99	13:12
P135PM.ENX.gz	696	11-Mar-99	13:12
P135PR.ENX.gz	1998	11-Mar-99	13:12
P135SB.ENX.gz	1155	11-Mar-99	13:12
P135SM.ENX.gz	180	11-Mar-99	13:12
P135TE.ENX.gz	1692	11-Mar-99	13:12
P135XE.ENX.gz	1239	11-Mar-99	13:12
P136BA.ENX.gz	495	11-Mar-99	13:12
P136CE.ENX.gz	573	11-Mar-99	13:12
P136CS.ENX.gz	2929	11-Mar-99	13:12
P136EU.ENX.gz	1197	11-Mar-99	13:12

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-27 of II-53**

P136I.ENX.gz	6957	11-Mar-99	13:12
P136LA.ENX.gz	2097	11-Mar-99	13:12
P136ND.ENX.gz	4526	11-Mar-99	13:12
P136PM.ENX.gz	3589	11-Mar-99	13:12
P136PR.ENX.gz	4400	11-Mar-99	13:12
P136SM.ENX.gz	1544	11-Mar-99	13:12
P136TE.ENX.gz	2367	11-Mar-99	13:12
P137BA.ENX.gz	681	11-Mar-99	13:12
P137CE.ENX.gz	2770	11-Mar-99	13:12
P137CS.ENX.gz	853	11-Mar-99	13:12
P137I.ENX.gz	7753	11-Mar-99	13:12
P137LA.ENX.gz	273	11-Mar-99	13:12
P137ND.ENX.gz	4701	11-Mar-99	13:12
P137PM.ENX.gz	2666	11-Mar-99	13:12
P137PR.ENX.gz	3030	11-Mar-99	13:12
P137SM.ENX.gz	1040	11-Mar-99	13:12
P137TE.ENX.gz	698	11-Mar-99	13:12
P137XE.ENX.gz	2528	11-Mar-99	13:12
P138CE.ENX.gz	504	11-Mar-99	13:12
P138CS.ENX.gz	4132	11-Mar-99	13:12
P138EU.ENX.gz	878	11-Mar-99	13:12
P138I.ENX.gz	2574	11-Mar-99	13:12
P138LA.ENX.gz	793	11-Mar-99	13:12
P138ND.ENX.gz	1834	11-Mar-99	13:12
P138PM.ENX.gz	2374	11-Mar-99	13:12
P138PR.ENX.gz	3638	11-Mar-99	13:12
P138SM.ENX.gz	285	11-Mar-99	13:12
P138XE.ENX.gz	3096	11-Mar-99	13:12
P139BA.ENX.gz	2347	11-Mar-99	13:12
P139CE.ENX.gz	2264	11-Mar-99	13:12
P139CS.ENX.gz	4850	11-Mar-99	13:12
P139EU.ENX.gz	2321	11-Mar-99	13:12
P139I.ENX.gz	3445	11-Mar-99	13:12
P139ND.ENX.gz	5579	11-Mar-99	13:12
P139PM.ENX.gz	2607	11-Mar-99	13:12
P139PR.ENX.gz	2713	11-Mar-99	13:12
P139SM.ENX.gz	4747	11-Mar-99	13:12
P139XE.ENX.gz	9278	11-Mar-99	13:12
P140BA.ENX.gz	2118	11-Mar-99	13:12
P140CS.ENX.gz	4991	11-Mar-99	13:12
P140EU.ENX.gz	1321	11-Mar-99	13:12
P140GD.ENX.gz	1706	11-Mar-99	13:12
P140I.ENX.gz	668	11-Mar-99	13:12
P140LA.ENX.gz	4277	11-Mar-99	13:12

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-28 of II-53**

P140ND.ENX.gz	601	11-Mar-99	13:12
P140PM.ENX.gz	2454	11-Mar-99	13:12
P140PR.ENX.gz	1896	11-Mar-99	13:12
P140SM.ENX.gz	3436	11-Mar-99	13:12
P140TB.ENX.gz	378	11-Mar-99	13:12
P140XE.ENX.gz	3811	11-Mar-99	13:12
P141BA.ENX.gz	3038	11-Mar-99	13:12
P141CE.ENX.gz	1192	11-Mar-99	13:12
P141CS.ENX.gz	4704	11-Mar-99	13:12
P141DY.ENX.gz	320	11-Mar-99	13:12
P141EU.ENX.gz	3038	11-Mar-99	13:12
P141GD.ENX.gz	2578	11-Mar-99	13:12
P141I.ENX.gz	453	11-Mar-99	13:12
P141LA.ENX.gz	1068	11-Mar-99	13:12
P141ND.ENX.gz	1819	11-Mar-99	13:12
P141PM.ENX.gz	2572	11-Mar-99	13:12
P141SM.ENX.gz	3568	11-Mar-99	13:12
P141TB.ENX.gz	1980	11-Mar-99	13:12
P141XE.ENX.gz	4613	11-Mar-99	13:12
P142BA.ENX.gz	3172	11-Mar-99	13:12
P142CS.ENX.gz	2890	11-Mar-99	13:12
P142DY.ENX.gz	472	11-Mar-99	13:12
P142EU.ENX.gz	2305	11-Mar-99	13:12
P142GD.ENX.gz	2627	11-Mar-99	13:12
P142LA.ENX.gz	4293	11-Mar-99	13:12
P142PM.ENX.gz	1952	11-Mar-99	13:12
P142PR.ENX.gz	1380	11-Mar-99	13:12
P142SM.ENX.gz	642	11-Mar-99	13:12
P142TB.ENX.gz	1317	11-Mar-99	13:12
P142XE.ENX.gz	2498	11-Mar-99	13:12
P143BA.ENX.gz	4625	11-Mar-99	13:12
P143CE.ENX.gz	2582	11-Mar-99	13:12
P143CS.ENX.gz	2782	11-Mar-99	13:12
P143EU.ENX.gz	2068	11-Mar-99	13:12
P143GD.ENX.gz	3190	11-Mar-99	13:12
P143LA.ENX.gz	1925	11-Mar-99	13:12
P143PM.ENX.gz	610	11-Mar-99	13:12
P143PR.ENX.gz	589	11-Mar-99	13:12
P143SM.ENX.gz	2887	11-Mar-99	13:12
P143TB.ENX.gz	857	11-Mar-99	13:12
P143XE.ENX.gz	248	11-Mar-99	13:12
P144BA.ENX.gz	3101	11-Mar-99	13:12
P144CE.ENX.gz	2161	11-Mar-99	13:12
P144CS.ENX.gz	2066	11-Mar-99	13:12

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-29 of II-53**

P144DY.ENX.gz	539	11-Mar-99	13:12
P144EU.ENX.gz	836	11-Mar-99	13:12
P144GD.ENX.gz	1073	11-Mar-99	13:12
P144LA.ENX.gz	5337	11-Mar-99	13:12
P144ND.ENX.gz	212	11-Mar-99	13:12
P144PM.ENX.gz	1492	11-Mar-99	13:12
P144PR.ENX.gz	2407	11-Mar-99	13:12
P144TB.ENX.gz	1233	11-Mar-99	13:12
P145BA.ENX.gz	2043	11-Mar-99	13:12
P145CE.ENX.gz	2397	11-Mar-99	13:12
P145CS.ENX.gz	3503	11-Mar-99	13:12
P145DY.ENX.gz	654	11-Mar-99	13:12
P145EU.ENX.gz	4635	11-Mar-99	13:12
P145GD.ENX.gz	9376	11-Mar-99	13:12
P145HO.ENX.gz	797	11-Mar-99	13:12
P145LA.ENX.gz	2141	11-Mar-99	13:12
P145PM.ENX.gz	861	11-Mar-99	13:12
P145PR.ENX.gz	1689	11-Mar-99	13:12
P145SM.ENX.gz	1069	11-Mar-99	13:12
P145TB.ENX.gz	1385	11-Mar-99	13:12
P146BA.ENX.gz	3627	11-Mar-99	13:12
P146CE.ENX.gz	1929	11-Mar-99	13:12
P146CS.ENX.gz	1583	11-Mar-99	13:13
P146DY.ENX.gz	2013	11-Mar-99	13:13
P146EU.ENX.gz	9382	11-Mar-99	13:13
P146GD.ENX.gz	1475	11-Mar-99	13:13
P146HO.ENX.gz	900	11-Mar-99	13:13
P146LA.ENX.gz	7155	11-Mar-99	13:13
P146PM.ENX.gz	1259	11-Mar-99	13:13
P146PR.ENX.gz	2815	11-Mar-99	13:13
P146SM.ENX.gz	235	11-Mar-99	13:13
P146TB.ENX.gz	1902	11-Mar-99	13:13
P147BA.ENX.gz	3457	11-Mar-99	13:13
P147CE.ENX.gz	2386	11-Mar-99	13:13
P147CS.ENX.gz	1901	11-Mar-99	13:13
P147DY.ENX.gz	1683	11-Mar-99	13:13
P147EU.ENX.gz	4684	11-Mar-99	13:13
P147GD.ENX.gz	6844	11-Mar-99	13:13
P147HO.ENX.gz	515	11-Mar-99	13:13
P147LA.ENX.gz	2325	11-Mar-99	13:13
P147ND.ENX.gz	3300	11-Mar-99	13:13
P147PM.ENX.gz	1271	11-Mar-99	13:13
P147PR.ENX.gz	3179	11-Mar-99	13:13
P147SM.ENX.gz	263	11-Mar-99	13:13

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P147TB.ENX.gz	2359	11-Mar-99	13:13
P147TM.ENX.gz	405	11-Mar-99	13:13
P148BA.ENX.gz	2033	11-Mar-99	13:13
P148CE.ENX.gz	2364	11-Mar-99	13:13
P148CS.ENX.gz	332	11-Mar-99	13:13
P148DY.ENX.gz	1543	11-Mar-99	13:13
P148ER.ENX.gz	781	11-Mar-99	13:13
P148EU.ENX.gz	9137	11-Mar-99	13:13
P148GD.ENX.gz	283	11-Mar-99	13:13
P148HO.ENX.gz	2445	11-Mar-99	13:13
P148LA.ENX.gz	2200	11-Mar-99	13:13
P148PM.ENX.gz	2894	11-Mar-99	13:13
P148PR.ENX.gz	3055	11-Mar-99	13:13
P148SM.ENX.gz	212	11-Mar-99	13:13
P148TB.ENX.gz	3115	11-Mar-99	13:13
P148TM.ENX.gz	828	11-Mar-99	13:13
P149CE.ENX.gz	1018	11-Mar-99	13:13
P149DY.ENX.gz	6891	11-Mar-99	13:13
P149ER.ENX.gz	7163	11-Mar-99	13:13
P149EU.ENX.gz	3960	11-Mar-99	13:13
P149GD.ENX.gz	8770	11-Mar-99	13:13
P149HO.ENX.gz	3686	11-Mar-99	13:13
P149ND.ENX.gz	11103	11-Mar-99	13:13
P149PM.ENX.gz	3510	11-Mar-99	13:13
P149PR.ENX.gz	3601	11-Mar-99	13:13
P149TB.ENX.gz	10586	11-Mar-99	13:13
P149TM.ENX.gz	928	11-Mar-99	13:13
P150CE.ENX.gz	490	11-Mar-99	13:13
P150DY.ENX.gz	627	11-Mar-99	13:13
P150ER.ENX.gz	735	11-Mar-99	13:13
P150EU.ENX.gz	8968	11-Mar-99	13:13
P150GD.ENX.gz	342	11-Mar-99	13:13
P150HO.ENX.gz	2665	11-Mar-99	13:13
P150LA.ENX.gz	263	11-Mar-99	13:13
P150LU.ENX.gz	577	11-Mar-99	13:13
P150PM.ENX.gz	3166	11-Mar-99	13:13
P150PR.ENX.gz	2541	11-Mar-99	13:13
P150TB.ENX.gz	12608	11-Mar-99	13:13
P150TM.ENX.gz	2189	11-Mar-99	13:13
P151CE.ENX.gz	477	11-Mar-99	13:13
P151DY.ENX.gz	4890	11-Mar-99	13:13
P151ER.ENX.gz	3160	11-Mar-99	13:13
P151GD.ENX.gz	3921	11-Mar-99	13:13
P151HO.ENX.gz	2317	11-Mar-99	13:13

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P151LU.ENX.gz	1075	11-Mar-99	13:13
P151ND.ENX.gz	12641	11-Mar-99	13:13
P151PM.ENX.gz	10647	11-Mar-99	13:13
P151PR.ENX.gz	4293	11-Mar-99	13:13
P151SM.ENX.gz	1194	11-Mar-99	13:13
P151TB.ENX.gz	14519	11-Mar-99	13:13
P151TM.ENX.gz	3106	11-Mar-99	13:13
P151YB.ENX.gz	1497	11-Mar-99	13:13
P152CE.ENX.gz	519	11-Mar-99	13:13
P152DY.ENX.gz	808	11-Mar-99	13:13
P152ER.ENX.gz	761	11-Mar-99	13:13
P152EU.ENX.gz	18592	11-Mar-99	13:13
P152GD.ENX.gz	233	11-Mar-99	13:13
P152HO.ENX.gz	5123	11-Mar-99	13:13
P152LU.ENX.gz	978	11-Mar-99	13:13
P152ND.ENX.gz	2294	11-Mar-99	13:13
P152PM.ENX.gz	5365	11-Mar-99	13:13
P152PR.ENX.gz	3017	11-Mar-99	13:13
P152TB.ENX.gz	17627	11-Mar-99	13:13
P152TM.ENX.gz	2800	11-Mar-99	13:13
P152YB.ENX.gz	1437	11-Mar-99	13:13
P153DY.ENX.gz	12491	11-Mar-99	13:13
P153ER.ENX.gz	924	11-Mar-99	13:13
P153GD.ENX.gz	3033	11-Mar-99	13:13
P153HO.ENX.gz	3337	11-Mar-99	13:13
P153ND.ENX.gz	454	11-Mar-99	13:13
P153PM.ENX.gz	1772	11-Mar-99	13:13
P153SM.ENX.gz	3996	11-Mar-99	13:13
P153TB.ENX.gz	11706	11-Mar-99	13:13
P153TM.ENX.gz	1487	11-Mar-99	13:13
P153YB.ENX.gz	1238	11-Mar-99	13:13
P154DY.ENX.gz	902	11-Mar-99	13:13
P154ER.ENX.gz	1179	11-Mar-99	13:13
P154EU.ENX.gz	12577	11-Mar-99	13:13
P154HF.ENX.gz	478	11-Mar-99	13:13
P154HO.ENX.gz	7072	11-Mar-99	13:13
P154LU.ENX.gz	2006	11-Mar-99	13:13
P154ND.ENX.gz	3359	11-Mar-99	13:13
P154PM.ENX.gz	6378	11-Mar-99	13:13
P154PR.ENX.gz	951	11-Mar-99	13:13
P154TB.ENX.gz	12655	11-Mar-99	13:13
P154TM.ENX.gz	1776	11-Mar-99	13:13
P154YB.ENX.gz	1251	11-Mar-99	13:13
P155DY.ENX.gz	13468	11-Mar-99	13:13

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P155ER.ENX.gz	2639	11-Mar-99	13:13
P155EU.ENX.gz	3757	11-Mar-99	13:13
P155GD.ENX.gz	1002	11-Mar-99	13:13
P155HO.ENX.gz	9540	11-Mar-99	13:13
P155LU.ENX.gz	1716	11-Mar-99	13:13
P155ND.ENX.gz	2096	11-Mar-99	13:13
P155PM.ENX.gz	845	11-Mar-99	13:13
P155SM.ENX.gz	3794	11-Mar-99	13:13
P155TB.ENX.gz	8706	11-Mar-99	13:13
P155TM.ENX.gz	3952	11-Mar-99	13:13
P155YB.ENX.gz	1148	11-Mar-99	13:13
P156ER.ENX.gz	1956	11-Mar-99	13:13
P156EU.ENX.gz	7029	11-Mar-99	13:13
P156HF.ENX.gz	652	11-Mar-99	13:13
P156HO.ENX.gz	6477	11-Mar-99	13:13
P156LU.ENX.gz	966	11-Mar-99	13:13
P156ND.ENX.gz	726	11-Mar-99	13:13
P156PM.ENX.gz	3068	11-Mar-99	13:13
P156SM.ENX.gz	2519	11-Mar-99	13:13
P156TA.ENX.gz	379	11-Mar-99	13:13
P156TB.ENX.gz	8442	11-Mar-99	13:13
P156TM.ENX.gz	5589	11-Mar-99	13:13
P156YB.ENX.gz	1618	11-Mar-99	13:13
P157DY.ENX.gz	5646	11-Mar-99	13:13
P157ER.ENX.gz	4991	11-Mar-99	13:13
P157EU.ENX.gz	5499	11-Mar-99	13:13
P157GD.ENX.gz	2073	11-Mar-99	13:13
P157HF.ENX.gz	788	11-Mar-99	13:13
P157HO.ENX.gz	7863	11-Mar-99	13:13
P157LU.ENX.gz	1458	11-Mar-99	13:13
P157PM.ENX.gz	2575	11-Mar-99	13:13
P157SM.ENX.gz	2831	11-Mar-99	13:13
P157TA.ENX.gz	576	11-Mar-99	13:13
P157TB.ENX.gz	1792	11-Mar-99	13:13
P157TM.ENX.gz	5553	11-Mar-99	13:13
P157YB.ENX.gz	1297	11-Mar-99	13:13
P158ER.ENX.gz	3885	11-Mar-99	13:13
P158EU.ENX.gz	3952	11-Mar-99	13:13
P158GD.ENX.gz	540	11-Mar-99	13:13
P158HF.ENX.gz	361	11-Mar-99	13:13
P158HO.ENX.gz	7599	11-Mar-99	13:13
P158LU.ENX.gz	692	11-Mar-99	13:13
P158PM.ENX.gz	387	11-Mar-99	13:13
P158SM.ENX.gz	816	11-Mar-99	13:13

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-33 of II-53**

P158TA.ENX.gz	236	11-Mar-99	13:13
P158TB.ENX.gz	3627	11-Mar-99	13:13
P158TM.ENX.gz	5670	11-Mar-99	13:13
P158W.ENX.gz	278	11-Mar-99	13:13
P158YB.ENX.gz	1052	11-Mar-99	13:13
P159DY.ENX.gz	4330	11-Mar-99	13:13
P159ER.ENX.gz	6648	11-Mar-99	13:13
P159EU.ENX.gz	2186	11-Mar-99	13:13
P159GD.ENX.gz	3602	11-Mar-99	13:13
P159HF.ENX.gz	483	11-Mar-99	13:13
P159HO.ENX.gz	6533	11-Mar-99	13:13
P159LU.ENX.gz	870	11-Mar-99	13:13
P159SM.ENX.gz	1818	11-Mar-99	13:13
P159TA.ENX.gz	474	11-Mar-99	13:13
P159TM.ENX.gz	5513	11-Mar-99	13:13
P159W.ENX.gz	473	11-Mar-99	13:13
P159YB.ENX.gz	2999	11-Mar-99	13:13
P160ER.ENX.gz	1318	11-Mar-99	13:13
P160EU.ENX.gz	1772	11-Mar-99	13:13
P160HF.ENX.gz	547	11-Mar-99	13:13
P160HO.ENX.gz	13971	11-Mar-99	13:13
P160LU.ENX.gz	1966	11-Mar-99	13:13
P160SM.ENX.gz	412	11-Mar-99	13:13
P160TA.ENX.gz	662	11-Mar-99	13:13
P160TB.ENX.gz	6239	11-Mar-99	13:13
P160TM.ENX.gz	3342	11-Mar-99	13:13
P160W.ENX.gz	518	11-Mar-99	13:13
P160YB.ENX.gz	1956	11-Mar-99	13:13
P161ER.ENX.gz	10461	11-Mar-99	13:13
P161EU.ENX.gz	562	11-Mar-99	13:13
P161GD.ENX.gz	6013	11-Mar-99	13:13
P161HF.ENX.gz	923	11-Mar-99	13:13
P161HO.ENX.gz	5551	11-Mar-99	13:13
P161LU.ENX.gz	2099	11-Mar-99	13:13
P161RE.ENX.gz	711	11-Mar-99	13:13
P161TA.ENX.gz	1177	11-Mar-99	13:13
P161TB.ENX.gz	5387	11-Mar-99	13:13
P161TM.ENX.gz	6878	11-Mar-99	13:13
P161W.ENX.gz	871	11-Mar-99	13:13
P161YB.ENX.gz	3358	11-Mar-99	13:13
P162GD.ENX.gz	1831	11-Mar-99	13:13
P162HF.ENX.gz	1898	11-Mar-99	13:13
P162HO.ENX.gz	7663	11-Mar-99	13:13
P162LU.ENX.gz	2193	11-Mar-99	13:13

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-34 of II-53**

P162OS.ENX.gz	527	11-Mar-99	13:13
P162RE.ENX.gz	663	11-Mar-99	13:13
P162TA.ENX.gz	1189	11-Mar-99	13:13
P162TB.ENX.gz	4192	11-Mar-99	13:13
P162TM.ENX.gz	10061	11-Mar-99	13:13
P162W.ENX.gz	926	11-Mar-99	13:13
P162YB.ENX.gz	3238	11-Mar-99	13:13
P163ER.ENX.gz	2268	11-Mar-99	13:13
P163GD.ENX.gz	1099	11-Mar-99	13:13
P163HF.ENX.gz	1411	11-Mar-99	13:14
P163HO.ENX.gz	776	11-Mar-99	13:14
P163LU.ENX.gz	2730	11-Mar-99	13:14
P163OS.ENX.gz	257	11-Mar-99	13:14
P163RE.ENX.gz	320	11-Mar-99	13:14
P163TA.ENX.gz	1181	11-Mar-99	13:14
P163TB.ENX.gz	4885	11-Mar-99	13:14
P163TM.ENX.gz	15834	11-Mar-99	13:14
P163W.ENX.gz	788	11-Mar-99	13:14
P163YB.ENX.gz	8062	11-Mar-99	13:14
P164HF.ENX.gz	716	11-Mar-99	13:14
P164HO.ENX.gz	1621	11-Mar-99	13:14
P164LU.ENX.gz	1819	11-Mar-99	13:14
P164OS.ENX.gz	464	11-Mar-99	13:14
P164RE.ENX.gz	475	11-Mar-99	13:14
P164TA.ENX.gz	1436	11-Mar-99	13:14
P164TB.ENX.gz	4393	11-Mar-99	13:14
P164TM.ENX.gz	9173	11-Mar-99	13:14
P164W.ENX.gz	252	11-Mar-99	13:14
P164YB.ENX.gz	2614	11-Mar-99	13:14
P165DY.ENX.gz	4576	11-Mar-99	13:14
P165ER.ENX.gz	643	11-Mar-99	13:14
P165HF.ENX.gz	453	11-Mar-99	13:14
P165LU.ENX.gz	3003	11-Mar-99	13:14
P165OS.ENX.gz	885	11-Mar-99	13:14
P165RE.ENX.gz	1015	11-Mar-99	13:14
P165TA.ENX.gz	279	11-Mar-99	13:14
P165TB.ENX.gz	839	11-Mar-99	13:14
P165TM.ENX.gz	8323	11-Mar-99	13:14
P165W.ENX.gz	812	11-Mar-99	13:14
P165YB.ENX.gz	4188	11-Mar-99	13:14
P166DY.ENX.gz	1593	11-Mar-99	13:14
P166HF.ENX.gz	1089	11-Mar-99	13:14
P166HO.ENX.gz	12678	11-Mar-99	13:14
P166IR.ENX.gz	447	11-Mar-99	13:14

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-35 of II-53**

P166LU.ENX.gz	4635	11-Mar-99	13:14
P166OS.ENX.gz	613	11-Mar-99	13:14
P166RE.ENX.gz	840	11-Mar-99	13:14
P166TA.ENX.gz	979	11-Mar-99	13:14
P166TM.ENX.gz	10103	11-Mar-99	13:14
P166W.ENX.gz	1298	11-Mar-99	13:14
P166YB.ENX.gz	683	11-Mar-99	13:14
P167DY.ENX.gz	1902	11-Mar-99	13:14
P167ER.ENX.gz	582	11-Mar-99	13:14
P167HF.ENX.gz	1250	11-Mar-99	13:14
P167HO.ENX.gz	2964	11-Mar-99	13:14
P167IR.ENX.gz	470	11-Mar-99	13:14
P167LU.ENX.gz	13417	11-Mar-99	13:14
P167OS.ENX.gz	1012	11-Mar-99	13:14
P167RE.ENX.gz	939	11-Mar-99	13:14
P167TA.ENX.gz	421	11-Mar-99	13:14
P167TM.ENX.gz	1744	11-Mar-99	13:14
P167W.ENX.gz	299	11-Mar-99	13:14
P167YB.ENX.gz	5595	11-Mar-99	13:14
P168DY.ENX.gz	1062	11-Mar-99	13:14
P168HF.ENX.gz	707	11-Mar-99	13:14
P168HO.ENX.gz	4043	11-Mar-99	13:14
P168IR.ENX.gz	326	11-Mar-99	13:14
P168LU.ENX.gz	5528	11-Mar-99	13:14
P168OS.ENX.gz	533	11-Mar-99	13:14
P168PT.ENX.gz	358	11-Mar-99	13:14
P168RE.ENX.gz	1452	11-Mar-99	13:14
P168TA.ENX.gz	1768	11-Mar-99	13:14
P168TM.ENX.gz	5341	11-Mar-99	13:14
P168W.ENX.gz	698	11-Mar-99	13:14
P169DY.ENX.gz	710	11-Mar-99	13:14
P169ER.ENX.gz	1306	11-Mar-99	13:14
P169HF.ENX.gz	1505	11-Mar-99	13:14
P169HO.ENX.gz	2093	11-Mar-99	13:14
P169IR.ENX.gz	547	11-Mar-99	13:14
P169LU.ENX.gz	16421	11-Mar-99	13:14
P169OS.ENX.gz	281	11-Mar-99	13:14
P169PT.ENX.gz	161	11-Mar-99	13:14
P169RE.ENX.gz	220	11-Mar-99	13:14
P169TA.ENX.gz	1401	11-Mar-99	13:14
P169YB.ENX.gz	7611	11-Mar-99	13:14
P170HF.ENX.gz	6287	11-Mar-99	13:14
P170HO.ENX.gz	5905	11-Mar-99	13:14
P170IR.ENX.gz	228	11-Mar-99	13:14

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-36 of II-53**

P170LU.ENX.gz	13181	11-Mar-99	13:14
P170OS.ENX.gz	244	11-Mar-99	13:14
P170PT.ENX.gz	189	11-Mar-99	13:14
P170RE.ENX.gz	1339	11-Mar-99	13:14
P170TA.ENX.gz	1365	11-Mar-99	13:14
P170TM.ENX.gz	2881	11-Mar-99	13:14
P170W.ENX.gz	462	11-Mar-99	13:14
P171ER.ENX.gz	5150	11-Mar-99	13:14
P171HF.ENX.gz	6109	11-Mar-99	13:14
P171HO.ENX.gz	1125	11-Mar-99	13:14
P171IR.ENX.gz	345	11-Mar-99	13:14
P171LU.ENX.gz	7940	11-Mar-99	13:14
P171OS.ENX.gz	392	11-Mar-99	13:14
P171PT.ENX.gz	448	11-Mar-99	13:14
P171RE.ENX.gz	1608	11-Mar-99	13:14
P171TA.ENX.gz	2784	11-Mar-99	13:14
P171TM.ENX.gz	908	11-Mar-99	13:14
P171W.ENX.gz	1487	11-Mar-99	13:14
P172ER.ENX.gz	3703	11-Mar-99	13:14
P172HF.ENX.gz	3712	11-Mar-99	13:14
P172HO.ENX.gz	998	11-Mar-99	13:14
P172IR.ENX.gz	3458	11-Mar-99	13:14
P172LU.ENX.gz	19123	11-Mar-99	13:14
P172OS.ENX.gz	1158	11-Mar-99	13:14
P172PT.ENX.gz	441	11-Mar-99	13:14
P172RE.ENX.gz	1351	11-Mar-99	13:14
P172TA.ENX.gz	6411	11-Mar-99	13:14
P172TM.ENX.gz	3783	11-Mar-99	13:14
P172W.ENX.gz	2384	11-Mar-99	13:14
P173AU.ENX.gz	426	11-Mar-99	13:14
P173ER.ENX.gz	1723	11-Mar-99	13:14
P173HF.ENX.gz	4494	11-Mar-99	13:14
P173IR.ENX.gz	1703	11-Mar-99	13:14
P173LU.ENX.gz	3200	11-Mar-99	13:14
P173OS.ENX.gz	646	11-Mar-99	13:14
P173PT.ENX.gz	645	11-Mar-99	13:14
P173RE.ENX.gz	419	11-Mar-99	13:14
P173TA.ENX.gz	5214	11-Mar-99	13:14
P173TM.ENX.gz	1227	11-Mar-99	13:14
P173W.ENX.gz	1532	11-Mar-99	13:14
P174AU.ENX.gz	341	11-Mar-99	13:14
P174ER.ENX.gz	787	11-Mar-99	13:14
P174HF.ENX.gz	276	11-Mar-99	13:14
P174IR.ENX.gz	1444	11-Mar-99	13:14

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P174LU.ENX.gz	6088	11-Mar-99	13:14
P174OS.ENX.gz	604	11-Mar-99	13:14
P174PT.ENX.gz	603	11-Mar-99	13:14
P174RE.ENX.gz	1241	11-Mar-99	13:14
P174TA.ENX.gz	6264	11-Mar-99	13:14
P174TM.ENX.gz	3308	11-Mar-99	13:14
P174W.ENX.gz	1175	11-Mar-99	13:14
P175AU.ENX.gz	486	11-Mar-99	13:14
P175HF.ENX.gz	1860	11-Mar-99	13:14
P175HG.ENX.gz	386	11-Mar-99	13:14
P175IR.ENX.gz	918	11-Mar-99	13:14
P175OS.ENX.gz	287	11-Mar-99	13:14
P175PT.ENX.gz	818	11-Mar-99	13:14
P175RE.ENX.gz	579	11-Mar-99	13:14
P175TA.ENX.gz	6485	11-Mar-99	13:14
P175TM.ENX.gz	2417	11-Mar-99	13:14
P175W.ENX.gz	945	11-Mar-99	13:14
P175YB.ENX.gz	1689	11-Mar-99	13:14
P176AU.ENX.gz	592	11-Mar-99	13:14
P176HG.ENX.gz	320	11-Mar-99	13:14
P176IR.ENX.gz	343	11-Mar-99	13:14
P176LU.ENX.gz	2251	11-Mar-99	13:14
P176OS.ENX.gz	786	11-Mar-99	13:14
P176PT.ENX.gz	603	11-Mar-99	13:14
P176RE.ENX.gz	1526	11-Mar-99	13:14
P176TA.ENX.gz	8545	11-Mar-99	13:14
P176TM.ENX.gz	2232	11-Mar-99	13:14
P176W.ENX.gz	1162	11-Mar-99	13:14
P176YB.ENX.gz	864	11-Mar-99	13:14
P177AU.ENX.gz	287	11-Mar-99	13:14
P177HF.ENX.gz	3778	11-Mar-99	13:14
P177HG.ENX.gz	468	11-Mar-99	13:14
P177IR.ENX.gz	1993	11-Mar-99	13:14
P177LU.ENX.gz	5039	11-Mar-99	13:14
P177OS.ENX.gz	1516	11-Mar-99	13:14
P177PT.ENX.gz	1313	11-Mar-99	13:14
P177RE.ENX.gz	1740	11-Mar-99	13:14
P177TA.ENX.gz	3186	11-Mar-99	13:14
P177TM.ENX.gz	854	11-Mar-99	13:14
P177W.ENX.gz	4956	11-Mar-99	13:14
P177YB.ENX.gz	1963	11-Mar-99	13:14
P178AU.ENX.gz	406	11-Mar-99	13:14
P178HF.ENX.gz	3486	11-Mar-99	13:14
P178HG.ENX.gz	347	11-Mar-99	13:14

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P178IR.ENX.gz	1977	11-Mar-99	13:14
P178LU.ENX.gz	2956	11-Mar-99	13:14
P178OS.ENX.gz	509	11-Mar-99	13:14
P178PT.ENX.gz	922	11-Mar-99	13:14
P178RE.ENX.gz	3126	11-Mar-99	13:14
P178TA.ENX.gz	3834	11-Mar-99	13:14
P178W.ENX.gz	518	11-Mar-99	13:14
P178YB.ENX.gz	302	11-Mar-99	13:14
P179AU.ENX.gz	379	11-Mar-99	13:14
P179HF.ENX.gz	2561	11-Mar-99	13:14
P179HG.ENX.gz	534	11-Mar-99	13:14
P179IR.ENX.gz	1726	11-Mar-99	13:14
P179LU.ENX.gz	1576	11-Mar-99	13:14
P179OS.ENX.gz	1614	11-Mar-99	13:14
P179PT.ENX.gz	1890	11-Mar-99	13:14
P179RE.ENX.gz	5907	11-Mar-99	13:14
P179TA.ENX.gz	330	11-Mar-99	13:14
P179TL.ENX.gz	339	11-Mar-99	13:14
P179W.ENX.gz	2989	11-Mar-99	13:14
P179YB.ENX.gz	1245	11-Mar-99	13:14
P180AU.ENX.gz	1260	11-Mar-99	13:14
P180HF.ENX.gz	2569	11-Mar-99	13:14
P180HG.ENX.gz	752	11-Mar-99	13:14
P180IR.ENX.gz	2470	11-Mar-99	13:14
P180LU.ENX.gz	2311	11-Mar-99	13:14
P180OS.ENX.gz	1211	11-Mar-99	13:14
P180PT.ENX.gz	317	11-Mar-99	13:14
P180RE.ENX.gz	3309	11-Mar-99	13:14
P180TA.ENX.gz	1341	11-Mar-99	13:14
P180YB.ENX.gz	861	11-Mar-99	13:14
P181AU.ENX.gz	8172	11-Mar-99	13:14
P181HF.ENX.gz	3100	11-Mar-99	13:14
P181HG.ENX.gz	1097	11-Mar-99	13:14
P181IR.ENX.gz	1719	11-Mar-99	13:14
P181LU.ENX.gz	1309	11-Mar-99	13:14
P181OS.ENX.gz	5360	11-Mar-99	13:14
P181PB.ENX.gz	365	11-Mar-99	13:14
P181PT.ENX.gz	2388	11-Mar-99	13:14
P181RE.ENX.gz	5563	11-Mar-99	13:15
P181TA.ENX.gz	435	11-Mar-99	13:15
P181W.ENX.gz	1124	11-Mar-99	13:15
P182AU.ENX.gz	1443	11-Mar-99	13:15
P182HF.ENX.gz	3450	11-Mar-99	13:15
P182HG.ENX.gz	1321	11-Mar-99	13:15

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P182IR.ENX.gz	1629	11-Mar-99	13:15
P182LU.ENX.gz	494	11-Mar-99	13:15
P182OS.ENX.gz	2299	11-Mar-99	13:15
P182PB.ENX.gz	420	11-Mar-99	13:15
P182PT.ENX.gz	456	11-Mar-99	13:15
P182RE.ENX.gz	7610	11-Mar-99	13:15
P182TA.ENX.gz	4412	11-Mar-99	13:15
P182TL.ENX.gz	288	11-Mar-99	13:15
P183AU.ENX.gz	7711	11-Mar-99	13:15
P183HF.ENX.gz	1632	11-Mar-99	13:15
P183HG.ENX.gz	3982	11-Mar-99	13:15
P183IR.ENX.gz	9571	11-Mar-99	13:15
P183LU.ENX.gz	1367	11-Mar-99	13:15
P183OS.ENX.gz	7337	11-Mar-99	13:15
P183PB.ENX.gz	799	11-Mar-99	13:15
P183PT.ENX.gz	892	11-Mar-99	13:15
P183RE.ENX.gz	3196	11-Mar-99	13:15
P183TA.ENX.gz	2855	11-Mar-99	13:15
P183TL.ENX.gz	354	11-Mar-99	13:15
P183W.ENX.gz	814	11-Mar-99	13:15
P184AU.ENX.gz	2991	11-Mar-99	13:15
P184HF.ENX.gz	1554	11-Mar-99	13:15
P184HG.ENX.gz	1708	11-Mar-99	13:15
P184IR.ENX.gz	4002	11-Mar-99	13:15
P184LU.ENX.gz	1178	11-Mar-99	13:15
P184PT.ENX.gz	8293	11-Mar-99	13:15
P184RE.ENX.gz	6194	11-Mar-99	13:15
P184TA.ENX.gz	3664	11-Mar-99	13:15
P184TL.ENX.gz	1056	11-Mar-99	13:15
P185AU.ENX.gz	14945	11-Mar-99	13:15
P185HF.ENX.gz	283	11-Mar-99	13:15
P185HG.ENX.gz	7687	11-Mar-99	13:15
P185IR.ENX.gz	5142	11-Mar-99	13:15
P185OS.ENX.gz	3342	11-Mar-99	13:15
P185PB.ENX.gz	611	11-Mar-99	13:15
P185PT.ENX.gz	5557	11-Mar-99	13:15
P185TA.ENX.gz	2797	11-Mar-99	13:15
P185TL.ENX.gz	640	11-Mar-99	13:15
P185W.ENX.gz	2834	11-Mar-99	13:15
P186AU.ENX.gz	3109	11-Mar-99	13:15
P186HG.ENX.gz	4674	11-Mar-99	13:15
P186IR.ENX.gz	8013	11-Mar-99	13:15
P186OS.ENX.gz	231	11-Mar-99	13:15
P186PB.ENX.gz	304	11-Mar-99	13:15

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-40 of II-53**

P186PT.ENX.gz	2460	11-Mar-99	13:15
P186RE.ENX.gz	3423	11-Mar-99	13:15
P186TA.ENX.gz	2840	11-Mar-99	13:15
P186TL.ENX.gz	2172	11-Mar-99	13:15
P187AU.ENX.gz	9811	11-Mar-99	13:15
P187BI.ENX.gz	285	11-Mar-99	13:15
P187HG.ENX.gz	4314	11-Mar-99	13:15
P187IR.ENX.gz	5724	11-Mar-99	13:15
P187PB.ENX.gz	1384	11-Mar-99	13:15
P187PT.ENX.gz	6168	11-Mar-99	13:15
P187RE.ENX.gz	278	11-Mar-99	13:15
P187TL.ENX.gz	653	11-Mar-99	13:15
P187W.ENX.gz	8644	11-Mar-99	13:15
P188AU.ENX.gz	4794	11-Mar-99	13:15
P188BI.ENX.gz	638	11-Mar-99	13:15
P188HG.ENX.gz	4613	11-Mar-99	13:15
P188IR.ENX.gz	8693	11-Mar-99	13:15
P188PB.ENX.gz	1010	11-Mar-99	13:15
P188PT.ENX.gz	2356	11-Mar-99	13:15
P188RE.ENX.gz	6493	11-Mar-99	13:15
P188TL.ENX.gz	5032	11-Mar-99	13:15
P188W.ENX.gz	1113	11-Mar-99	13:15
P189AU.ENX.gz	3395	11-Mar-99	13:15
P189BI.ENX.gz	458	11-Mar-99	13:15
P189HG.ENX.gz	6113	11-Mar-99	13:15
P189IR.ENX.gz	5357	11-Mar-99	13:15
P189OS.ENX.gz	324	11-Mar-99	13:15
P189PB.ENX.gz	150	11-Mar-99	13:15
P189PT.ENX.gz	7799	11-Mar-99	13:15
P189RE.ENX.gz	4219	11-Mar-99	13:15
P189TL.ENX.gz	572	11-Mar-99	13:15
P189W.ENX.gz	581	11-Mar-99	13:15
P190AU.ENX.gz	8350	11-Mar-99	13:15
P190BI.ENX.gz	1482	11-Mar-99	13:15
P190HG.ENX.gz	2609	11-Mar-99	13:15
P190IR.ENX.gz	6767	11-Mar-99	13:15
P190OS.ENX.gz	715	11-Mar-99	13:15
P190PB.ENX.gz	2928	11-Mar-99	13:15
P190PT.ENX.gz	362	11-Mar-99	13:15
P190RE.ENX.gz	5314	11-Mar-99	13:15
P190TL.ENX.gz	5445	11-Mar-99	13:15
P190W.ENX.gz	916	11-Mar-99	13:15
P191AU.ENX.gz	7624	11-Mar-99	13:15
P191BI.ENX.gz	860	11-Mar-99	13:15

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-41 of II-53**

P191HG.ENX.gz	4200	11-Mar-99	13:15
P191IR.ENX.gz	841	11-Mar-99	13:15
P191OS.ENX.gz	3625	11-Mar-99	13:15
P191PB.ENX.gz	1251	11-Mar-99	13:15
P191PT.ENX.gz	5729	11-Mar-99	13:15
P191TL.ENX.gz	4284	11-Mar-99	13:15
P192AU.ENX.gz	10600	11-Mar-99	13:15
P192BI.ENX.gz	3033	11-Mar-99	13:15
P192HG.ENX.gz	3050	11-Mar-99	13:15
P192IR.ENX.gz	7327	11-Mar-99	13:15
P192OS.ENX.gz	2563	11-Mar-99	13:15
P192PB.ENX.gz	1695	11-Mar-99	13:15
P192PO.ENX.gz	293	11-Mar-99	13:15
P192RE.ENX.gz	714	11-Mar-99	13:15
P192TL.ENX.gz	3730	11-Mar-99	13:15
P193AU.ENX.gz	5744	11-Mar-99	13:15
P193BI.ENX.gz	897	11-Mar-99	13:15
P193HG.ENX.gz	8504	11-Mar-99	13:15
P193IR.ENX.gz	1179	11-Mar-99	13:15
P193OS.ENX.gz	4810	11-Mar-99	13:15
P193PB.ENX.gz	1307	11-Mar-99	13:15
P193PO.ENX.gz	418	11-Mar-99	13:15
P193PT.ENX.gz	1519	11-Mar-99	13:15
P193TL.ENX.gz	3199	11-Mar-99	13:15
P194AT.ENX.gz	174	11-Mar-99	13:15
P194AU.ENX.gz	12155	11-Mar-99	13:15
P194BI.ENX.gz	4665	11-Mar-99	13:15
P194HG.ENX.gz	414	11-Mar-99	13:15
P194IR.ENX.gz	6730	11-Mar-99	13:15
P194OS.ENX.gz	1128	11-Mar-99	13:15
P194PB.ENX.gz	4748	11-Mar-99	13:15
P194PO.ENX.gz	436	11-Mar-99	13:15
P194TL.ENX.gz	3899	11-Mar-99	13:15
P195AU.ENX.gz	3238	11-Mar-99	13:15
P195BI.ENX.gz	3545	11-Mar-99	13:15
P195HG.ENX.gz	8650	11-Mar-99	13:15
P195IR.ENX.gz	5803	11-Mar-99	13:15
P195PB.ENX.gz	5355	11-Mar-99	13:15
P195PO.ENX.gz	580	11-Mar-99	13:15
P195PT.ENX.gz	1755	11-Mar-99	13:15
P195TL.ENX.gz	8913	11-Mar-99	13:15
P196AT.ENX.gz	432	11-Mar-99	13:15
P196AU.ENX.gz	6023	11-Mar-99	13:15
P196BI.ENX.gz	6209	11-Mar-99	13:15

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-42 of II-53**

P196IR.ENX.gz	3346	11-Mar-99	13:15
P196OS.ENX.gz	1083	11-Mar-99	13:15
P196PB.ENX.gz	2499	11-Mar-99	13:15
P196PO.ENX.gz	726	11-Mar-99	13:15
P196TL.ENX.gz	4516	11-Mar-99	13:15
P197AT.ENX.gz	512	11-Mar-99	13:15
P197AU.ENX.gz	1363	11-Mar-99	13:15
P197BI.ENX.gz	457	11-Mar-99	13:15
P197HG.ENX.gz	3601	11-Mar-99	13:15
P197IR.ENX.gz	2058	11-Mar-99	13:15
P197PB.ENX.gz	8619	11-Mar-99	13:15
P197PO.ENX.gz	795	11-Mar-99	13:15
P197PT.ENX.gz	3157	11-Mar-99	13:15
P197TL.ENX.gz	5975	11-Mar-99	13:15
P198AT.ENX.gz	294	11-Mar-99	13:15
P198AU.ENX.gz	5824	11-Mar-99	13:15
P198BI.ENX.gz	2095	11-Mar-99	13:15
P198IR.ENX.gz	572	11-Mar-99	13:15
P198PB.ENX.gz	2605	11-Mar-99	13:15
P198PO.ENX.gz	442	11-Mar-99	13:15
P198RN.ENX.gz	278	11-Mar-99	13:15
P198TL.ENX.gz	9725	11-Mar-99	13:15
P199AT.ENX.gz	729	11-Mar-99	13:15
P199AU.ENX.gz	3078	11-Mar-99	13:15
P199BI.ENX.gz	6045	11-Mar-99	13:15
P199HG.ENX.gz	1007	11-Mar-99	13:15
P199PB.ENX.gz	5041	11-Mar-99	13:15
P199PO.ENX.gz	4838	11-Mar-99	13:15
P199PT.ENX.gz	4971	11-Mar-99	13:15
P199RN.ENX.gz	711	11-Mar-99	13:15
P199TL.ENX.gz	3920	11-Mar-99	13:15
P200AT.ENX.gz	2276	11-Mar-99	13:15
P200AU.ENX.gz	3002	11-Mar-99	13:15
P200BI.ENX.gz	3031	11-Mar-99	13:15
P200PB.ENX.gz	1702	11-Mar-99	13:15
P200PO.ENX.gz	2250	11-Mar-99	13:15
P200PT.ENX.gz	2238	11-Mar-99	13:15
P200RN.ENX.gz	612	11-Mar-99	13:15
P200TL.ENX.gz	5160	11-Mar-99	13:15
P201AT.ENX.gz	618	11-Mar-99	13:15
P201AU.ENX.gz	2443	11-Mar-99	13:15
P201BI.ENX.gz	4988	11-Mar-99	13:15
P201FR.ENX.gz	289	11-Mar-99	13:15
P201HG.ENX.gz	644	11-Mar-99	13:15

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-43 of II-53**

P201PB.ENX.gz	4377	11-Mar-99	13:15
P201PO.ENX.gz	3819	11-Mar-99	13:15
P201PT.ENX.gz	663	11-Mar-99	13:15
P201RN.ENX.gz	476	11-Mar-99	13:15
P201TL.ENX.gz	2318	11-Mar-99	13:15
P202AT.ENX.gz	1599	11-Mar-99	13:15
P202AU.ENX.gz	998	11-Mar-99	13:15
P202BI.ENX.gz	5246	11-Mar-99	13:15
P202FR.ENX.gz	317	11-Mar-99	13:15
P202PB.ENX.gz	2715	11-Mar-99	13:15
P202PO.ENX.gz	1626	11-Mar-99	13:15
P202RN.ENX.gz	838	11-Mar-99	13:15
P202TL.ENX.gz	1204	11-Mar-99	13:15
P203AT.ENX.gz	1958	11-Mar-99	13:15
P203AU.ENX.gz	457	11-Mar-99	13:15
P203BI.ENX.gz	6230	11-Mar-99	13:15
P203FR.ENX.gz	345	11-Mar-99	13:15
P203HG.ENX.gz	1491	11-Mar-99	13:15
P203PB.ENX.gz	2166	11-Mar-99	13:15
P203PO.ENX.gz	3890	11-Mar-99	13:15
P203RN.ENX.gz	778	11-Mar-99	13:15
P204AT.ENX.gz	3627	11-Mar-99	13:15
P204AU.ENX.gz	1795	11-Mar-99	13:15
P204BI.ENX.gz	10401	11-Mar-99	13:16
P204FR.ENX.gz	783	11-Mar-99	13:16
P204PB.ENX.gz	957	11-Mar-99	13:16
P204PO.ENX.gz	3079	11-Mar-99	13:16
P204RN.ENX.gz	227	11-Mar-99	13:16
P204TL.ENX.gz	1292	11-Mar-99	13:16
P205AT.ENX.gz	7220	11-Mar-99	13:16
P205BI.ENX.gz	6000	11-Mar-99	13:16
P205FR.ENX.gz	275	11-Mar-99	13:16
P205HG.ENX.gz	1099	11-Mar-99	13:16
P205PB.ENX.gz	1096	11-Mar-99	13:16
P205PO.ENX.gz	4996	11-Mar-99	13:16
P205RA.ENX.gz	216	11-Mar-99	13:16
P205RN.ENX.gz	694	11-Mar-99	13:16
P206AT.ENX.gz	3728	11-Mar-99	13:16
P206BI.ENX.gz	4477	11-Mar-99	13:16
P206FR.ENX.gz	2213	11-Mar-99	13:16
P206HG.ENX.gz	1763	11-Mar-99	13:16
P206PB.ENX.gz	2753	11-Mar-99	13:16
P206PO.ENX.gz	3460	11-Mar-99	13:16
P206RA.ENX.gz	731	11-Mar-99	13:16

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-44 of II-53**

P206RN.ENX.gz	1281	11-Mar-99	13:16
P206TL.ENX.gz	4025	11-Mar-99	13:16
P207AT.ENX.gz	8934	11-Mar-99	13:16
P207BI.ENX.gz	3501	11-Mar-99	13:16
P207FR.ENX.gz	649	11-Mar-99	13:16
P207HG.ENX.gz	1980	11-Mar-99	13:16
P207PB.ENX.gz	472	11-Mar-99	13:16
P207PO.ENX.gz	7111	11-Mar-99	13:16
P207RA.ENX.gz	822	11-Mar-99	13:16
P207RN.ENX.gz	3861	11-Mar-99	13:16
P207TL.ENX.gz	1447	11-Mar-99	13:16
P208AC.ENX.gz	755	11-Mar-99	13:16
P208AT.ENX.gz	5147	11-Mar-99	13:16
P208BI.ENX.gz	1743	11-Mar-99	13:16
P208FR.ENX.gz	2003	11-Mar-99	13:16
P208PO.ENX.gz	1022	11-Mar-99	13:16
P208RA.ENX.gz	503	11-Mar-99	13:16
P208RN.ENX.gz	3906	11-Mar-99	13:16
P208TL.ENX.gz	3169	11-Mar-99	13:16
P209AC.ENX.gz	195	11-Mar-99	13:16
P209AT.ENX.gz	4455	11-Mar-99	13:16
P209FR.ENX.gz	330	11-Mar-99	13:16
P209PB.ENX.gz	320	11-Mar-99	13:16
P209PO.ENX.gz	1395	11-Mar-99	13:16
P209RA.ENX.gz	309	11-Mar-99	13:16
P209RN.ENX.gz	6337	11-Mar-99	13:16
P209TL.ENX.gz	1490	11-Mar-99	13:16
P210AC.ENX.gz	407	11-Mar-99	13:16
P210AT.ENX.gz	5354	11-Mar-99	13:16
P210BI.ENX.gz	3951	11-Mar-99	13:16
P210FR.ENX.gz	1266	11-Mar-99	13:16
P210PB.ENX.gz	1676	11-Mar-99	13:16
P210PO.ENX.gz	2542	11-Mar-99	13:16
P210RA.ENX.gz	629	11-Mar-99	13:16
P210RN.ENX.gz	3012	11-Mar-99	13:16
P210TL.ENX.gz	1673	11-Mar-99	13:16
P211AC.ENX.gz	346	11-Mar-99	13:16
P211AT.ENX.gz	1553	11-Mar-99	13:16
P211BI.ENX.gz	1429	11-Mar-99	13:16
P211FR.ENX.gz	1040	11-Mar-99	13:16
P211PB.ENX.gz	3166	11-Mar-99	13:16
P211PO.ENX.gz	1534	11-Mar-99	13:16
P211RA.ENX.gz	458	11-Mar-99	13:16
P211RN.ENX.gz	4115	11-Mar-99	13:16

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P212AC.ENX.gz	372	11-Mar-99	13:16
P212AT.ENX.gz	1289	11-Mar-99	13:16
P212BI.ENX.gz	6993	11-Mar-99	13:16
P212FR.ENX.gz	2516	11-Mar-99	13:16
P212PB.ENX.gz	2036	11-Mar-99	13:16
P212PO.ENX.gz	851	11-Mar-99	13:16
P212RA.ENX.gz	307	11-Mar-99	13:16
P212RN.ENX.gz	307	11-Mar-99	13:16
P213AC.ENX.gz	484	11-Mar-99	13:16
P213AT.ENX.gz	320	11-Mar-99	13:16
P213BI.ENX.gz	3455	11-Mar-99	13:16
P213FR.ENX.gz	578	11-Mar-99	13:16
P213PO.ENX.gz	987	11-Mar-99	13:16
P213RA.ENX.gz	2523	11-Mar-99	13:16
P213RN.ENX.gz	639	11-Mar-99	13:16
P213TH.ENX.gz	488	11-Mar-99	13:16
P214AC.ENX.gz	640	11-Mar-99	13:16
P214AT.ENX.gz	840	11-Mar-99	13:16
P214BI.ENX.gz	14101	11-Mar-99	13:16
P214FR.ENX.gz	996	11-Mar-99	13:16
P214PB.ENX.gz	5292	11-Mar-99	13:16
P214PO.ENX.gz	1082	11-Mar-99	13:16
P214RA.ENX.gz	504	11-Mar-99	13:16
P214RN.ENX.gz	779	11-Mar-99	13:16
P214TH.ENX.gz	263	11-Mar-99	13:16
P215AC.ENX.gz	291	11-Mar-99	13:16
P215AT.ENX.gz	387	11-Mar-99	13:16
P215BI.ENX.gz	710	11-Mar-99	13:16
P215FR.ENX.gz	288	11-Mar-99	13:16
P215PO.ENX.gz	478	11-Mar-99	13:16
P215RA.ENX.gz	384	11-Mar-99	13:16
P215RN.ENX.gz	329	11-Mar-99	13:16
P215TH.ENX.gz	381	11-Mar-99	13:16
P216AC.ENX.gz	663	11-Mar-99	13:16
P216AT.ENX.gz	975	11-Mar-99	13:16
P216FR.ENX.gz	221	11-Mar-99	13:16
P216PA.ENX.gz	365	11-Mar-99	13:16
P216PO.ENX.gz	574	11-Mar-99	13:16
P216RA.ENX.gz	249	11-Mar-99	13:16
P216RN.ENX.gz	284	11-Mar-99	13:16
P216TH.ENX.gz	591	11-Mar-99	13:16
P217AC.ENX.gz	1191	11-Mar-99	13:16
P217AT.ENX.gz	1084	11-Mar-99	13:16
P217FR.ENX.gz	341	11-Mar-99	13:16

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-46 of II-53**

P217PA.ENX.gz	323	11-Mar-99	13:16
P217PO.ENX.gz	408	11-Mar-99	13:16
P217RA.ENX.gz	301	11-Mar-99	13:16
P217RN.ENX.gz	640	11-Mar-99	13:16
P217TH.ENX.gz	244	11-Mar-99	13:16
P218AC.ENX.gz	443	11-Mar-99	13:16
P218AT.ENX.gz	642	11-Mar-99	13:16
P218FR.ENX.gz	1563	11-Mar-99	13:16
P218PA.ENX.gz	474	11-Mar-99	13:16
P218PO.ENX.gz	871	11-Mar-99	13:16
P218RA.ENX.gz	388	11-Mar-99	13:16
P218RN.ENX.gz	726	11-Mar-99	13:16
P218TH.ENX.gz	387	11-Mar-99	13:16
P218U.ENX.gz	331	11-Mar-99	13:16
P219AC.ENX.gz	602	11-Mar-99	13:16
P219AT.ENX.gz	338	11-Mar-99	13:16
P219FR.ENX.gz	1126	11-Mar-99	13:16
P219PA.ENX.gz	444	11-Mar-99	13:16
P219RA.ENX.gz	1762	11-Mar-99	13:16
P219RN.ENX.gz	2870	11-Mar-99	13:16
P219TH.ENX.gz	403	11-Mar-99	13:16
P220AC.ENX.gz	665	11-Mar-99	13:16
P220FR.ENX.gz	1243	11-Mar-99	13:16
P220RA.ENX.gz	460	11-Mar-99	13:16
P220RN.ENX.gz	641	11-Mar-99	13:16
P220TH.ENX.gz	185	11-Mar-99	13:16
P221AC.ENX.gz	353	11-Mar-99	13:16
P221FR.ENX.gz	1930	11-Mar-99	13:16
P221PA.ENX.gz	438	11-Mar-99	13:16
P221RA.ENX.gz	1203	11-Mar-99	13:16
P221RN.ENX.gz	4323	11-Mar-99	13:16
P221TH.ENX.gz	405	11-Mar-99	13:16
P222AC.ENX.gz	573	11-Mar-99	13:16
P222FR.ENX.gz	2939	11-Mar-99	13:16
P222PA.ENX.gz	341	11-Mar-99	13:16
P222RA.ENX.gz	1096	11-Mar-99	13:16
P222RN.ENX.gz	518	11-Mar-99	13:16
P222TH.ENX.gz	221	11-Mar-99	13:16
P222U.ENX.gz	440	11-Mar-99	13:16
P223AC.ENX.gz	3748	11-Mar-99	13:16
P223FR.ENX.gz	3812	11-Mar-99	13:16
P223PA.ENX.gz	480	11-Mar-99	13:16
P223RA.ENX.gz	5977	11-Mar-99	13:16
P223RN.ENX.gz	1509	11-Mar-99	13:16

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment II**Page II-47 of II-53**

P223TH.ENX.gz	1944	11-Mar-99	13:16
P224AC.ENX.gz	4155	11-Mar-99	13:16
P224FR.ENX.gz	3244	11-Mar-99	13:16
P224PA.ENX.gz	331	11-Mar-99	13:16
P224RA.ENX.gz	1676	11-Mar-99	13:16
P224RN.ENX.gz	644	11-Mar-99	13:16
P224TH.ENX.gz	561	11-Mar-99	13:16
P225AC.ENX.gz	6277	11-Mar-99	13:16
P225FR.ENX.gz	3683	11-Mar-99	13:16
P225PA.ENX.gz	338	11-Mar-99	13:16
P225RA.ENX.gz	776	11-Mar-99	13:16
P225RN.ENX.gz	592	11-Mar-99	13:16
P225TH.ENX.gz	1829	11-Mar-99	13:16
P225U.ENX.gz	548	11-Mar-99	13:16
P226AC.ENX.gz	2768	11-Mar-99	13:16
P226FR.ENX.gz	3236	11-Mar-99	13:16
P226NP.ENX.gz	463	11-Mar-99	13:16
P226PA.ENX.gz	567	11-Mar-99	13:16
P226RA.ENX.gz	2297	11-Mar-99	13:16
P226RN.ENX.gz	206	11-Mar-99	13:16
P226TH.ENX.gz	2421	11-Mar-99	13:16
P226U.ENX.gz	360	11-Mar-99	13:16
P227AC.ENX.gz	2394	11-Mar-99	13:16
P227FR.ENX.gz	6242	11-Mar-99	13:16
P227NP.ENX.gz	766	11-Mar-99	13:16
P227PA.ENX.gz	3370	11-Mar-99	13:16
P227RA.ENX.gz	2790	11-Mar-99	13:16
P227RN.ENX.gz	511	11-Mar-99	13:16
P227TH.ENX.gz	10034	11-Mar-99	13:16
P227U.ENX.gz	1454	11-Mar-99	13:16
P228AC.ENX.gz	8595	11-Mar-99	13:16
P228FR.ENX.gz	3806	11-Mar-99	13:16
P228PA.ENX.gz	8134	11-Mar-99	13:16
P228RA.ENX.gz	1033	11-Mar-99	13:16
P228TH.ENX.gz	1950	11-Mar-99	13:16
P228U.ENX.gz	569	11-Mar-99	13:16
P229AC.ENX.gz	2703	11-Mar-99	13:16
P229NP.ENX.gz	409	11-Mar-99	13:16
P229PA.ENX.gz	4208	11-Mar-99	13:16
P229RA.ENX.gz	470	11-Mar-99	13:16
P229TH.ENX.gz	6056	11-Mar-99	13:16
P229U.ENX.gz	1813	11-Mar-99	13:16
P230AC.ENX.gz	5439	11-Mar-99	13:16
P230FR.ENX.gz	4543	11-Mar-99	13:16

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P230NP.ENX.gz	523	11-Mar-99	13:16
P230PA.ENX.gz	6868	11-Mar-99	13:16
P230PU.ENX.gz	800	11-Mar-99	13:16
P230RA.ENX.gz	1404	11-Mar-99	13:16
P230TH.ENX.gz	3458	11-Mar-99	13:17
P230U.ENX.gz	2540	11-Mar-99	13:17
P231AC.ENX.gz	1888	11-Mar-99	13:17
P231FR.ENX.gz	411	11-Mar-99	13:17
P231NP.ENX.gz	762	11-Mar-99	13:17
P231PA.ENX.gz	4728	11-Mar-99	13:17
P231RA.ENX.gz	414	11-Mar-99	13:17
P231TH.ENX.gz	2676	11-Mar-99	13:17
P231U.ENX.gz	1210	11-Mar-99	13:17
P232AC.ENX.gz	2087	11-Mar-99	13:17
P232NP.ENX.gz	1523	11-Mar-99	13:17
P232PA.ENX.gz	2580	11-Mar-99	13:17
P232PU.ENX.gz	784	11-Mar-99	13:17
P232RA.ENX.gz	468	11-Mar-99	13:17
P232TH.ENX.gz	1011	11-Mar-99	13:17
P232U.ENX.gz	1648	11-Mar-99	13:17
P233AC.ENX.gz	748	11-Mar-99	13:17
P233NP.ENX.gz	2266	11-Mar-99	13:17
P233PA.ENX.gz	3276	11-Mar-99	13:17
P233PU.ENX.gz	932	11-Mar-99	13:17
P233TH.ENX.gz	4845	11-Mar-99	13:17
P233U.ENX.gz	8345	11-Mar-99	13:17
P234AC.ENX.gz	1096	11-Mar-99	13:17
P234AM.ENX.gz	1622	11-Mar-99	13:17
P234NP.ENX.gz	4983	11-Mar-99	13:17
P234PA.ENX.gz	25882	11-Mar-99	13:17
P234PU.ENX.gz	1047	11-Mar-99	13:17
P234TH.ENX.gz	3420	11-Mar-99	13:17
P234U.ENX.gz	2514	11-Mar-99	13:17
P235NP.ENX.gz	2021	11-Mar-99	13:17
P235PA.ENX.gz	988	11-Mar-99	13:17
P235PU.ENX.gz	1495	11-Mar-99	13:17
P235TH.ENX.gz	1313	11-Mar-99	13:17
P235U.ENX.gz	3479	11-Mar-99	13:17
P236NP.ENX.gz	3536	11-Mar-99	13:17
P236PA.ENX.gz	2229	11-Mar-99	13:17
P236PU.ENX.gz	746	11-Mar-99	13:17
P236TH.ENX.gz	1051	11-Mar-99	13:17
P236U.ENX.gz	1740	11-Mar-99	13:17
P237AM.ENX.gz	4870	11-Mar-99	13:17

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P237NP.ENX.gz	5564	11-Mar-99	13:17
P237PA.ENX.gz	1749	11-Mar-99	13:17
P237PU.ENX.gz	4041	11-Mar-99	13:17
P237U.ENX.gz	4359	11-Mar-99	13:17
P238AM.ENX.gz	4270	11-Mar-99	13:17
P238CM.ENX.gz	360	11-Mar-99	13:17
P238NP.ENX.gz	3066	11-Mar-99	13:17
P238PA.ENX.gz	2831	11-Mar-99	13:17
P238PU.ENX.gz	5266	11-Mar-99	13:17
P238U.ENX.gz	2224	11-Mar-99	13:17
P239AM.ENX.gz	2582	11-Mar-99	13:17
P239CF.ENX.gz	291	11-Mar-99	13:17
P239CM.ENX.gz	499	11-Mar-99	13:17
P239NP.ENX.gz	2703	11-Mar-99	13:17
P239PU.ENX.gz	9096	11-Mar-99	13:17
P239U.ENX.gz	2679	11-Mar-99	13:17
P240AM.ENX.gz	2356	11-Mar-99	13:17
P240BK.ENX.gz	218	11-Mar-99	13:17
P240CF.ENX.gz	274	11-Mar-99	13:17
P240CM.ENX.gz	224	11-Mar-99	13:17
P240NP.ENX.gz	3973	11-Mar-99	13:17
P240PU.ENX.gz	1740	11-Mar-99	13:17
P240U.ENX.gz	1143	11-Mar-99	13:17
P241AM.ENX.gz	9892	11-Mar-99	13:17
P241CF.ENX.gz	791	11-Mar-99	13:17
P241CM.ENX.gz	5057	11-Mar-99	13:17
P241NP.ENX.gz	2408	11-Mar-99	13:17
P241PU.ENX.gz	3810	11-Mar-99	13:17
P242AM.ENX.gz	2872	11-Mar-99	13:17
P242BK.ENX.gz	343	11-Mar-99	13:17
P242CF.ENX.gz	333	11-Mar-99	13:17
P242CM.ENX.gz	2057	11-Mar-99	13:17
P242NP.ENX.gz	2203	11-Mar-99	13:17
P242PU.ENX.gz	868	11-Mar-99	13:17
P242U.ENX.gz	969	11-Mar-99	13:17
P243AM.ENX.gz	2905	11-Mar-99	13:17
P243BK.ENX.gz	1546	11-Mar-99	13:17
P243CF.ENX.gz	915	11-Mar-99	13:17
P243CM.ENX.gz	3536	11-Mar-99	13:17
P243ES.ENX.gz	667	11-Mar-99	13:17
P243FM.ENX.gz	449	11-Mar-99	13:17
P243NP.ENX.gz	306	11-Mar-99	13:17
P243PU.ENX.gz	2751	11-Mar-99	13:17
P244AM.ENX.gz	1813	11-Mar-99	13:17

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P244BK.ENX.gz	619	11-Mar-99	13:17
P244CF.ENX.gz	215	11-Mar-99	13:17
P244CM.ENX.gz	1437	11-Mar-99	13:17
P244ES.ENX.gz	288	11-Mar-99	13:17
P244NP.ENX.gz	480	11-Mar-99	13:17
P244PU.ENX.gz	340	11-Mar-99	13:17
P245AM.ENX.gz	1668	11-Mar-99	13:17
P245BK.ENX.gz	4495	11-Mar-99	13:17
P245CF.ENX.gz	812	11-Mar-99	13:17
P245CM.ENX.gz	3368	11-Mar-99	13:17
P245ES.ENX.gz	441	11-Mar-99	13:17
P245FM.ENX.gz	381	11-Mar-99	13:17
P245PU.ENX.gz	3597	11-Mar-99	13:17
P246AM.ENX.gz	7179	11-Mar-99	13:17
P246BK.ENX.gz	1829	11-Mar-99	13:17
P246CF.ENX.gz	565	11-Mar-99	13:17
P246CM.ENX.gz	419	11-Mar-99	13:17
P246ES.ENX.gz	389	11-Mar-99	13:17
P246FM.ENX.gz	269	11-Mar-99	13:17
P246PU.ENX.gz	1025	11-Mar-99	13:17
P247AM.ENX.gz	912	11-Mar-99	13:17
P247BK.ENX.gz	684	11-Mar-99	13:17
P247CF.ENX.gz	3023	11-Mar-99	13:17
P247CM.ENX.gz	1398	11-Mar-99	13:17
P247ES.ENX.gz	544	11-Mar-99	13:17
P247FM.ENX.gz	636	11-Mar-99	13:17
P247MD.ENX.gz	338	11-Mar-99	13:17
P248BK.ENX.gz	903	11-Mar-99	13:17
P248CF.ENX.gz	362	11-Mar-99	13:17
P248CM.ENX.gz	4788	11-Mar-99	13:17
P248ES.ENX.gz	357	11-Mar-99	13:17
P248FM.ENX.gz	189	11-Mar-99	13:17
P248MD.ENX.gz	316	11-Mar-99	13:17
P249BK.ENX.gz	1555	11-Mar-99	13:17
P249CF.ENX.gz	5679	11-Mar-99	13:17
P249CM.ENX.gz	1534	11-Mar-99	13:17
P249ES.ENX.gz	2995	11-Mar-99	13:17
P249FM.ENX.gz	362	11-Mar-99	13:17
P249MD.ENX.gz	505	11-Mar-99	13:17
P24NA.ENX.gz	30	10-Mar-99	23:37
P250BK.ENX.gz	2790	11-Mar-99	13:17
P250CF.ENX.gz	390	11-Mar-99	13:17
P250ES.ENX.gz	3391	11-Mar-99	13:17
P250FM.ENX.gz	327	11-Mar-99	13:17

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P250MD.ENX.gz	344	11-Mar-99	13:17
P251BK.ENX.gz	1459	11-Mar-99	13:17
P251CF.ENX.gz	1813	11-Mar-99	13:17
P251CM.ENX.gz	1353	11-Mar-99	13:17
P251ES.ENX.gz	1027	11-Mar-99	13:17
P251FM.ENX.gz	4606	11-Mar-99	13:17
P251MD.ENX.gz	451	11-Mar-99	13:17
P251NO.ENX.gz	353	11-Mar-99	13:17
P252CF.ENX.gz	20619	11-Mar-99	13:17
P252ES.ENX.gz	2302	11-Mar-99	13:17
P252FM.ENX.gz	422	11-Mar-99	13:17
P252NO.ENX.gz	215	11-Mar-99	13:17
P253CF.ENX.gz	1104	11-Mar-99	13:17
P253ES.ENX.gz	3611	11-Mar-99	13:17
P253FM.ENX.gz	1675	11-Mar-99	13:17
P253LR.ENX.gz	679	11-Mar-99	13:17
P253NO.ENX.gz	325	11-Mar-99	13:17
P254CF.ENX.gz	864	11-Mar-99	13:17
P254ES.ENX.gz	4263	11-Mar-99	13:17
P254FM.ENX.gz	552	11-Mar-99	13:17
P254LR.ENX.gz	334	11-Mar-99	13:17
P254NO.ENX.gz	430	11-Mar-99	13:17
P255CF.ENX.gz	342	11-Mar-99	13:17
P255ES.ENX.gz	1056	11-Mar-99	13:17
P255FM.ENX.gz	2893	11-Mar-99	13:17
P255LR.ENX.gz	584	11-Mar-99	13:17
P255MD.ENX.gz	1155	11-Mar-99	13:17
P255NO.ENX.gz	1088	11-Mar-99	13:17
P255RF.ENX.gz	291	11-Mar-99	13:17
P256ES.ENX.gz	1013	11-Mar-99	13:17
P256FM.ENX.gz	298	11-Mar-99	13:17
P256LR.ENX.gz	397	11-Mar-99	13:17
P256MD.ENX.gz	924	11-Mar-99	13:17
P256NO.ENX.gz	269	11-Mar-99	13:17
P256RF.ENX.gz	401	11-Mar-99	13:17
P257FM.ENX.gz	1223	11-Mar-99	13:17
P257HA.ENX.gz	438	11-Mar-99	13:17
P257LR.ENX.gz	402	11-Mar-99	13:17
P257MD.ENX.gz	986	11-Mar-99	13:17
P257NO.ENX.gz	629	11-Mar-99	13:17
P257RF.ENX.gz	1158	11-Mar-99	13:17
P258HA.ENX.gz	911	11-Mar-99	13:17
P258LR.ENX.gz	547	11-Mar-99	13:17
P258MD.ENX.gz	587	11-Mar-99	13:17

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P258RF.ENX.gz	280	11-Mar-99	13:17
P259LR.ENX.gz	456	11-Mar-99	13:17
P259NO.ENX.gz	894	11-Mar-99	13:17
P259RF.ENX.gz	618	11-Mar-99	13:17
P259SG.ENX.gz	443	11-Mar-99	13:17
P260HA.ENX.gz	606	11-Mar-99	13:17
P260LR.ENX.gz	300	11-Mar-99	13:17
P260SG.ENX.gz	325	11-Mar-99	13:17
P261HA.ENX.gz	175	11-Mar-99	13:17
P261NS.ENX.gz	389	11-Mar-99	13:17
P261RF.ENX.gz	339	11-Mar-99	13:17
P261SG.ENX.gz	296	11-Mar-99	13:17
P262HA.ENX.gz	245	11-Mar-99	13:17
P262NS.ENX.gz	412	11-Mar-99	13:17
P263HA.ENX.gz	401	11-Mar-99	12:56
P263SG.ENX.gz	204	11-Mar-99	12:56
P264HS.ENX.gz	279	11-Mar-99	12:56
P265HS.ENX.gz	421	11-Mar-99	12:56
P266MT.ENX.gz	395	11-Mar-99	12:56

brnorm.f	1435	11-Aug-99	14:37
bu.f	2447	8-Sep-98	10:49
dunc	538703	12-Aug-99	13:16
dunc.f	2033	27-Aug-98	12:31
duncg.h	746	2-Sep-98	10:36
dunci.h	319	11-Aug-98	5:38
dunck.h	235	24-Aug-98	11:56
duncl.h	880	11-Aug-98	5:40
duncp.h	117	11-Aug-98	21:14
dunct.h	174	11-Aug-98	5:46
duncu.h	557	2-Aug-99	11:16
fuzzl.f	3432	24-Aug-99	8:42
fuzzn.f	1832	1-Sep-98	7:05
ggub.f	503	2-Jul-98	7:35
initlib.f	438	2-Mar-99	12:07
inprocess.f	4863	25-Aug-98	12:51
input.h	2930	1-Sep-98	6:48
o0o004	1023008	7-Jul-98	8:17
orget.f	1909	19-Aug-98	14:39
origen	1023008	7-Jul-98	8:17
orset.f	3327	21-Aug-98	15:05
pu239.f	2447	29-Jun-98	8:56

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pu241.f	4363	24-Jul-98	7:50
ran1.f	1526	4-Sep-98	8:02
ranck.f	12186	4-Sep-98	14:01
ranmr.f	3363	4-Sep-98	14:02
rrapply.f	1198	25-Aug-98	13:37
rrgen.f	2148	1-Sep-98	8:08
rtest.f	48206	8-Sep-98	14:07
selnorm.f	722	4-Sep-98	14:05
selunif.f	363	4-Sep-98	14:06
stats.f	4073	1-Mar-99	8:57
strnum.f	279	1-Jul-98	13:57
trial.f	4197	2-Mar-99	12:06
writelib.f	647	11-Aug-98	21:31
xsget.f	1129	25-Aug-98	6:46
xsset.f	3077	18-Aug-98	10:53

Attachment III - Description of the DUNC Software Routine**A. Code Summary**

The DUNC code is a driver that has four main functions in this application. First, DUNC applies input decay constant (half-life and branching fraction) uncertainties to the base ORIGEN-S decay constants; second, it runs ORIGEN-S to perform the decay calculation; third, it runs CSAS1X to perform the reactivity calculation; and fourth, it calculates the bias and standard deviation in the resulting isotopic concentrations and reactivity of a fuel pin for an input decay period.

B. Limitations

The DUNC code addresses uncertainties only during decay, not during depletion. Since DUNC uses the ORIGEN-S code for decay calculations, limitations in the ORIGEN-S method and decay constant library will affect the DUNC results.

The code uses the CSAS1X module in SCALE to calculate the reactivity. Limitations in that module and cross-section data will also affect the DUNC results. In particular, the cross-section library does not contain every isotope found in the ORIGEN-S decay-constant library, and these "extra" isotopes are ignored in the reactivity calculation.

The DUNC code uses an infinite-media fuel pin to quantify the effects on reactivity. Therefore, it represents local effects of decay uncertainty on reactivity and not the effects seen for an entire core.

C. Common Blocks

Data is stored between trials in common blocks. The block names and their general contents are shown in Table III-1.

Table III-1. DUNC Common Blocks

Common Block Name	Contents
duncg.h	general data, including the case title, calculation type, time step and base reactivity
duncp.h	print option array
dunci.h	initial (undecayed) concentrations and the values after any concentration uncertainty has been applied
duncl.h	decay-constant library, both base and with uncertainty added
dunct.h	decay with no uncertainty results
duncu.h	input decay constant and concentration uncertainty values
dunck.h	trial reactivity results, identities of isotopes used in the reactivity calculation

D. Flow of Execution

Figure III-1. depicts the major modules of DUNC. The program flow is outlined below .

- **Input:** The input is read by *inprocess*. This includes the specification for the type of calculation, print options, time step for decay, initial concentrations, uncertainty values, and isotopes to be used in the reactivity calculation. See the **input** Section for a more detailed description. The initial library, without uncertainties, is written by *writelib*.

- **Base case:** The base ORIGEN-S input file, *dunc07* is created by *orset*. The normal *scale43* script file is run and the output is in *dunc07.output*. Note that two changes have been made to the *scale43* package to support DUNC. These changes are described in the "Changes to *scale43*" Section.
 - The resulting (decayed) concentrations are read from file *dunc08* by the subroutine *orget*.
 - If the problem type is anything but a "concentration only" type, the reactivity calculation at the end-of-decay is performed with *csas1x*. The routine *xsset* creates the *csas1x*-input deck using the isotopes specified in the input from the concentrations from the above step. *Xsset* writes the input deck to file *dunc09* and runs the *scale43* script directing the output to *dunc09.output*.
 - The resulting reactivity is obtained from routine *xsget* that runs a shell script, *sasxs2dunc*, to put the k_{eff} in the file *dunc10*. This file is read and the reactivity is calculated: $\text{reactivity} = (k_{\text{eff}} - 1) / k_{\text{eff}}$

sasxs2dunc contains the executable awk script:

```
#!/bin/awk -f
# gets reactivity from csas1x output files      r.kochendarfer
06/30/98      sasxs2dunc
# produces file to be read by DUNC

BEGIN{
x = 0.0 }

/lambda/{ x = $2 }
END{
printf("%.7f\n", x)
}
```

- At this point, if the calculation of reactivity factors (delta-reactivity/delta-concentration) is requested via calculation type "G," the *rrgen* routine is called. For each isotope specified to be used in the reactivity calculation, a base *csas1x* run is

duplicated with a change, in only that isotopic concentration, by the factor specified in the input. The routines *xsset* and *xsget* are used for this calculation. The resulting reactivity response factors are calculated:

- $\text{reactresp}(\text{isotope}) = (\text{base_reactivity} - \text{perturbed_reactivity}) / (\text{base_concentration} - \text{perturbed_concentration})$
 - The concentration and reactivity results for the base case are then written to the output file.
- **Trials:** For calculation types where trials are run, the routine *trial* is called. A calculating loop is performed once for each trial as described below.
- The arrays containing the decay constants are initialized with the base values by *initlib*.
 - Uncertainty is added to the library decay constants by the *fuzzl* routine. A random gaussian error in the amount specified by the input is added to each isotope specified in the input by the *addit* routine. This routine calls either the *selnorm* or *selunif* routine to obtain a decay-constant value having either a normal, or a uniform, error added to it.
 - The *selnorm* routine uses the rejection technique to sample from a normal distribution with a specified mean and standard deviation and produces a value, which is within 10 sigma in either direction from the mean. In turn, *trial* uses the portable *ranmr* routine, based on *ranmar*, to generate a uniformly distributed pseudo-random number using an algorithm that is a combination of a Fibonacci sequence and an arithmetic sequence. This algorithm and routine were originally published in Reference 7.4. For large uncertainties, negative values of the decay constant may be generated. In these cases, the value is regenerated until a positive value is generated. If desired, the branching fractions are then normalized with the routine *brnorm*. The effect from normalization of the branching fraction should be further investigated. Finally, the library file, a modified *end6dec*, is written with *writelib*.
 - Uncertainty is added to the end-of-decay isotopic concentrations by the routine *fuzzn*.
 - The ORIGEN-S input file for this trial, *dunc07*, is created by *orset*. The normal *scale43* script file is run and the output is in *dunc07.output*. The resulting (decayed) concentrations are read from file *dunc08* by the subroutine *orget*.
 - This set of isotopes from the decay calculation is reduced to the same set as in the base set. Intermediate statistical results are tabulated for the concentrations at this point (see the Statistical Tabulation, Section G, for more details). If reactivity calculations are specified, the reactivity calculation at the end-of-decay is performed

with *csas1x*. The routine *xsset* creates the *csas1x*-input deck using the isotopes obtained from the decay with the "uncertain" decay constants. It writes the input deck to file *dunc09* and runs the *scale43* script directing the output to *dunc09.output*.

- The resulting reactivity is obtained from routine *xsget* that runs a shell script, *sasxs2dunc*, to put the k_{eff} in the file *dunc10*. If the reactivity calculation is specified to use the reactivity factors (input $\Delta_{\text{reactivity}}/\Delta_{\text{concentration}}$) instead of a reactivity calculation, the routine *rrapply* is called. This routine calculates reactivity for this case using the end-of-decay isotopics for this trial and the reactivity response factors:
- $\text{reactivity} = \text{base_reactivity} + \text{Factor} * (\text{base_concentration} - \text{trial_concentration})$
- The statistics for this trial are then tabulated by the routine *stats*. See the Statistical Tabulation, Section G, for more details.

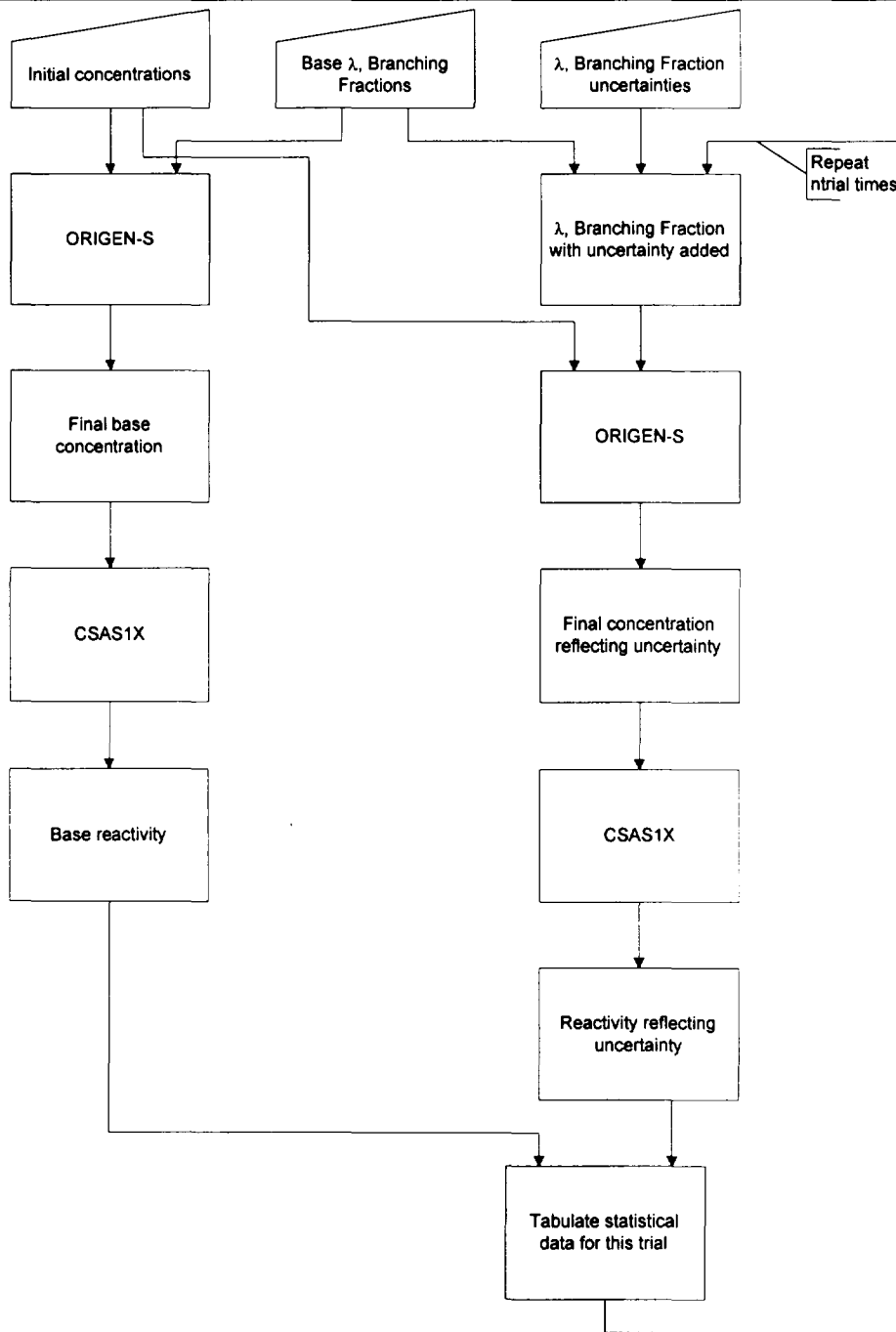


Figure III-1. DUNC Flow of Execution

E. Changes to *scale43*

Two changes have been made to *scale43* to support DUNC. These changes are described below.

1. The *scale43* shell script checks for a local copy of the ORIGEN-S decay-constant library, *end6dec*. If a copy exists in the directory, it is linked in the temporary directory to the ORIGEN-S input file, *ft27f001*. If a copy does not exist, the shell script uses the base file in *nux/attachp/scale4.3/data/origen/end6dec*. Updating the *end6dec*, ORIGEN-S library file is how the uncertainties get into the ORIGEN-S calculation.
2. In the ORIGEN-S routine, *xorigen.f*, the lines:

```
write(npun,format) (nucl(i),xzero(i),i=1,ilite)
write(npun,format) (nucl(i),xzero(i),i=i0,i1)
write(npun,format) (nucl(i),xzero(i),i=i0,itot)
```

were changed to:

```
write(npun,format) (nucl(i),xzero(i),xnew(ixnew,i),i=1,ilite)
write(npun,format) (nucl(i),xzero(i),xnew(ixnew,i),i=i0,i1)
write(npun,format) (nucl(i),xzero(i),xnew(ixnew,i),i=i0,itot)
```

This change provided for writing the resulting, end-of-decay concentrations to *dunc07.output* with the E15.8 format instead of the default output format of E7.2, which does not provides sufficient accuracy.

F. Input

Table III-2 itemizes the input for the DUNC routine. Only one case can be run at a time, as the intermediate files identified above, and it will be over-written during the process. The "calcflag" variable may be "N," "K," "G," or "R." The "calcflag" is the letter entered into the input file to execute the appropriate calculation by DUNC.

Table III-2. Input for DUNC (input.h)

Variable	Format	Description
title	a80	
calcflag	a1,1x,30i1	N, K, G, or R
N		concentration evaluation only
K		reactivity calculation via XSDRN also
G		reactivity calculation via factors
R		generation of reactivity response factors
print_array	i1	1 = print 0 = no print
1		normalized input concentrations
2		base concentrations from ORIGEN-S
3		trial concentrations from ORIGEN-S
4		trial intermediate statistics results
5		trial reactivity
6		trial concentration statistics semi-final
7		unmodified lambda (half-life) and bf (branching fraction) values (for uncertainty)
8		modified lambda and bf values (for uncertainty)
9		unmodified concentration values (for uncertainty)
10		modified concentration values (for uncertainty)
11		orget eliminated isotopes
12		reactivity response-factor generation detail
13		reactivity calculation details from factors
Nstep	i6	number of time steps (limit=1)
timestep	F12.2	timestep (years)
Niso	i6	number of initial concentration isotopes
Isotopic Concentration Array		
zaidi(i), concii(i)	i6, F12.2	nuclear ID and associated concentration (can be in moles for N, must be in atom/b*cm for "K" (k _{eff})-calculation)
Nunc	i6	number of isotopes with uncertainty values
Array of Uncertainty Input Data	i6,10F10.2,i2	
zaidu(i)	i6	nuclear ID
concu(i)	F10.2	concentration uncertainty
lambdau(i)	F10.2	half-life uncertainty
fbu(i)	F10.2	beta decay to ground-state uncertainty
fbu1(i)	F10.2	beta decay to excited-state uncertainty
fpu(i)	F10.2	beta+ decay to ground-state uncertainty
fpu1(i)	F10.2	beta+ decay to excited-state uncertainty
fau(i)	F10.2	alpha decay uncertainty
ftu(i)	F10.2	isomeric transition decay uncertainty
fsfu(i)	F10.2	spontaneous fission uncertainty
fnu(i)	F10.2	neutron and beta-decay uncertainty
Disttype	I1	distribution type, 0=normal, 1=uniform over 3-sigma
n4k	I6	number of isotopes used in k-effective calculation
zaidk(i),reactresp(i)	i6,F15.8	Nuclear ID, reactivity response factor (delta-rho/delta-conc)("R"-calc only)

Table Notes:

1. For "K" (k_{eff}) calculations ("K"-calculation, quantification of effects in terms of reactivity), the reactivity calculation is done with *XSDRN* using the isotopes specified and disregarding all others.
2. For "G"-calculations ("G"-calculation, reactivity response factor generation), the *reactresp(n)* value is used as a multiplier on the base end-of-decay concentration to generate a delta-concentration, which is used to calculate the reactivity effect of increasing that isotope with *XSDRN*. This reactivity effect is used to calculate the reactivity response factor (delta-rho/delta-conc) for each isotope used in the "K"-calculation.
3. For "R"-calculations ("R"-calc, calculation of "K" using reactivity response factors), the *reactresp(n)* value is input from a previous "G"-calc run or calculated by some other method.

G. Statistical Tabulation

The basic statistical equations used by DUNC are provided below:

The mean concentration is calculated by the following formula (where *i* is the variable for the trial number in the summation):

$$\bar{N} = \frac{\sum_{i=1}^{ntrial} N_i}{ntrial}$$

and the standard deviation by:

$$\sigma = \sqrt{\frac{\sum_{i=1}^{ntrial} N_i^2 - \frac{\left(\sum_{i=1}^{ntrial} N_i\right)^2}{ntrial}}{(ntrial - 1)}}$$

In *trial*, portions of these quantities are tabulated as the trial calculation progresses and the final quantities are calculated and printed in the call to *stats*.

In *trial*:

$$xsum = \sum N_i$$

$$reactsum = \sum \rho_i$$

In *stats*:

$$\mu = \frac{\sum N_i}{n}$$

$$\bar{\rho} = \frac{\sum \rho_i}{n}$$

$$xsqsum = \sum (N_i - \bar{N})^2$$

$$reactsum = \sum (\rho_i - \bar{\rho})^2$$

$$\sigma = \sqrt{\frac{\sum (N_i - \bar{N})^2}{(n-1)}}$$

$$\sigma = \sqrt{\frac{\sum (\rho_i - \bar{\rho})^2}{(n-1)}}$$

$$percent = \frac{\sigma * 100}{\mu}$$

ATTACHMENT IV – E-mail with ORIGEN-S Decay Data From ORNL

Tuck,

Attached below is the ORIGEN decay data extracted by Bill Hermann. There are three tables - one for each of ORIGEN-S's data libraries: light elements, actinides, and fission products. Note that in some cases nuclides can occur in more than one library.

Mark

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Table 1. ORIGEN-S library halflives, uncertainties, and other nuclear decay data

light elements, materials of construction, and activation products

Name	Unit	T-1/2	Delta-T-1/2	Fb	Fb1	Fp	Fp1
Ft	Fa	Fn	Q	FQ			
h 1	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
h 2	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
h 3	1	3.891E+08	1.893E+06	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.006	.000			
h 4	1	1.000E-03	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
he 3	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			

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he 4	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
he 6	1	8.067E-01	1.500E-03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.570	.000			
li 6	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
li 7	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
li 8	1	8.380E-01	6.000E-03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	10.270	.000			
be 8	1	2.000E-06	0.000E+00	.0000	.0000	.0000	.0000
.0000	1.0000	.0000	.095	.000			
be 9	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
be 10	1	5.049E+13	6.311E+12	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.203	.000			
be 11	1	1.381E+01	8.000E-02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	6.095	.236			
b 10	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
b 11	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
b 12	1	2.020E-02	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	6.413	.009			
c 12	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
c 13	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
c 14	1	1.808E+11	1.262E+09	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.049	.000			
c 15	1	2.449E+00	4.000E-03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	6.483	.557			
n 13	1	5.979E+02	2.400E-01	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	1.511	.675			
n 14	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
n 15	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
n 16	1	7.130E+00	2.000E-02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	7.254	.619			
o 16	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
o 17	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
o 18	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
o 19	1	2.691E+01	8.000E-02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.681	.351			

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f 19	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
f 20	1	1.100E+01	2.000E-02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	4.115	.397			
ne 20	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ne 21	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ne 22	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ne 23	1	3.724E+01	1.200E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.067	.080			
na 22	1	8.211E+07	6.311E+04	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	2.387	.919			
na 23	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
na 24	1	5.277E+04	1.440E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	4.677	.882			
na 24m	1	2.018E-02	0.000E+00	.0003	.0000	.0000	.0000
.9997	.0000	.0000	.473	.998			
na 25	1	5.960E+01	7.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.946	.224			
mg 24	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
mg 25	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
mg 26	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
mg 27	1	5.677E+02	6.600E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.593	.559			
mg 28	1	7.528E+04	1.080E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.525	.899			
al 27	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
al 28	1	1.344E+02	4.800E-02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.020	.589			
al 29	1	3.940E+02	4.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	4.377	.777			
al 30	1	3.600E+00	6.000E-02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	5.680	.593			
si 28	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
si 29	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
si 30	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
si 31	1	9.439E+03	1.800E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.596	.001			

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si 32	1	5.430E+09	1.300E+08	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.069	.000			
p 31	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
p 32	1	1.232E+06	3.456E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.695	.000			
p 33	1	2.189E+06	1.100E+04	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.076	.000			
p 34	1	1.243E+01	8.000E-02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.640	.125			
s 32	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
s 33	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
s 34	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
s 35	1	7.561E+06	1.100E+04	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.049	.000			
s 36	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
s 37	1	3.030E+02	1.200E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.731	.785			
cl 35	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
cl 36	1	9.499E+12	6.311E+10	.9810	.0000	.0190	.0000
.0000	.0000	.0000	.247	.000			
cl 37	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
cl 38	1	2.234E+03	3.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.970	.478			
cl 38m	1	7.150E-01	3.000E-03	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.671	1.000			
ar 36	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ar 37	1	3.028E+06	3.456E+03	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.002	.153			
ar 38	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ar 39	1	8.489E+09	9.467E+07	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.219	.000			
ar 40	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ar 41	1	6.577E+03	2.520E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.747	.735			
ar 42	1	1.038E+09	3.471E+07	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.233	.000			
k 39	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			

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k 40	1	4.030E+16	2.525E+14	.8933	.0000	.1067	.0000
.0000	.0000	.0000	.634	.246			
k 41	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
k 42	1	4.450E+04	1.080E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.715	.169			
k 43	1	8.030E+04	4.000E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.269	.753			
k 44	1	1.328E+03	1.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.840	.620			
ca 40	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ca 41	1	3.250E+12	1.262E+11	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.003	.143			
ca 42	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ca 43	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ca 44	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ca 45	1	1.415E+07	1.555E+05	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.077	.000			
ca 46	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ca 47	1	3.919E+05	1.728E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.401	.749			
ca 48	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ca 49	1	5.229E+02	1.400E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	4.040	.785			
sc 45	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sc 46	1	7.241E+06	8.640E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.122	.947			
sc 46m	1	1.875E+01	4.000E-02	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.143	.624			
sc 47	1	2.890E+05	2.592E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.271	.399			
sc 48	1	1.573E+05	3.600E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.576	.937			
sc 49	1	3.432E+03	1.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.819	.001			
sc 50	1	1.025E+02	5.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	4.838	.661			
ti 46	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ti 47	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			

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ti 48	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ti 49	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ti 50	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ti 51	1	3.456E+02	6.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.238	.298			
v 49	1	2.920E+07	4.320E+05	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.004	.213			
v 50	1	4.400E+24	1.300E+24	.3000	.0000	.7000	.0000
.0000	.0000	.0000	1.293	.998			
v 51	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
v 52	1	2.250E+02	6.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.514	.575			
v 53	1	9.660E+01	2.400E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.047	.507			
v 54	1	4.980E+01	5.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	6.380	.759			
cr 50	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
cr 51	1	2.394E+06	3.456E+02	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.037	.899			
cr 52	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
cr 53	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
cr 54	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
cr 55	1	2.098E+02	1.800E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.102	.001			
mn 54	1	2.697E+07	8.640E+03	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.840	.995			
mn 55	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
mn 56	1	9.283E+03	2.160E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.523	.671			
mn 57	1	8.720E+01	8.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.203	.086			
mn 58	1	6.530E+01	7.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	4.100	.578			
fe 54	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
fe 55	1	8.615E+07	6.311E+05	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.006	.291			
fe 56	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			

Waste Package Operations**Calculation****Title:** The Effect of Half-life and Branching Fraction Uncertainties on the Effective Neutron Multiplication Factor**Document Identifier:** B00000000-01717-0210-00106 REV 00 Attachment IV**Page IV-7 of IV-72**

fe 57	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
fe 58	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
fe 59	1	3.845E+06	6.048E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.306	.910			
co 58m	1	3.290E+04	4.000E+02	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.023	.082			
co 58	1	6.127E+06	1.296E+03	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	1.010	.966			
co 59	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
co 60	1	1.663E+08	1.578E+04	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.601	.963			
co 60m	1	6.282E+02	2.400E+00	.0024	.0000	.0000	.0000
.9976	.0000	.0000	.065	.102			
co 61	1	5.940E+03	1.800E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.564	.172			
co 62	1	9.000E+01	2.400E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.240	.494			
ni 58	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ni 59	1	2.367E+12	4.102E+11	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.007	.401			
ni 60	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ni 61	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ni 62	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ni 63	1	3.159E+09	6.311E+07	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.017	.000			
ni 64	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ni 65	1	9.072E+03	4.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.184	.464			
ni 66	1	1.966E+05	1.100E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.065	.000			
cu 62	1	5.844E+02	1.200E+00	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	2.283	.439			
cu 63	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
cu 64	1	4.572E+04	7.200E+00	.3710	.0000	.6290	.0000
.0000	.0000	.0000	.313	.609			
cu 65	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
cu 66	1	3.060E+02	1.200E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.154	.068			

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cu 67	1	2.226E+05	5.000E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.271	.426			
zn 63	1	2.286E+03	1.800E+01	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	2.021	.545			
zn 64	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
zn 65	1	2.107E+07	8.640E+03	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.590	.989			
zn 66	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
zn 67	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
zn 68	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
zn 69	1	3.380E+03	6.000E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.321	.000			
zn 69m	1	4.954E+04	8.000E+01	.0003	.0000	.0000	.0000
.9997	.0000	.0000	.438	.950			
zn 70	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
zn 71	1	1.470E+02	6.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.363	.231			
zn 71m	1	1.426E+04	1.800E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.097	.744			
ga 69	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ga 70	1	1.268E+03	1.800E+00	.9959	.0000	.0041	.0000
.0000	.0000	.0000	.651	.011			
ga 71	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ga 72	1	5.076E+04	3.600E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.206	.844			
ga 72m	1	3.700E-02	0.000E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.119	1.000			
ge 70	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ge 71	1	9.880E+05	3.000E+03	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.009	.467			
ge 71m	1	2.040E-02	0.000E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.181	.828			
ge 72	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ge 73	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ge 74	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ge 75	1	4.967E+03	2.400E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.456	.077			

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ge 75m	1	4.770E+01	7.000E-01	.0003	.0000	.0000	.0000
.9997	.0000	.0000	.136	.419			
ge 76	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ge 77	1	4.068E+04	3.600E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.684	.607			
ge 77m	1	5.290E+01	6.000E-01	.7900	.0000	.0000	.0000
.2100	.0000	.0000	1.013	.064			
as 75	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
as 76	1	9.475E+04	2.520E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.483	.281			
as 77	1	1.398E+05	1.800E+02	.9968	.0032	.0000	.0000
.0000	.0000	.0000	.234	.032			
se 74	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
se 75	1	1.035E+07	8.640E+02	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.407	.964			
se 76	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
se 77	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
se 77m	1	1.745E+01	1.000E-01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.159	.549			
se 78	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
se 79	1	1.041E+13	1.010E+12	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.053	.000			
se 79m	1	2.346E+02	3.000E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.094	.146			
se 80	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
se 81	1	1.107E+03	7.200E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.618	.010			
se 81m	1	3.435E+03	5.400E+00	.0005	.0000	.0000	.0000
.9995	.0000	.0000	.100	.149			
se 82	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
se 83	1	1.338E+03	6.600E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.050	.850			
se 83m	1	7.010E+01	4.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.227	.428			
br 79	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
br 80	1	1.061E+03	1.200E+00	.9170	.0000	.0830	.0000
.0000	.0000	.0000	.801	.095			
br 80m	1	1.591E+04	3.600E+01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.085	.285			

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br 81	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
br 82	1	1.271E+05	7.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.783	.948			
br 82m	1	3.678E+02	3.000E+00	.0240	.0000	.0000	.0000
.9760	.0000	.0000	.078	.104			
br 83	1	8.640E+03	7.200E+01	.0002	.9998	.0000	.0000
.0000	.0000	.0000	.333	.021			
kr 78	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
kr 79	1	1.261E+05	3.600E+02	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.281	.914			
kr 79m	1	5.000E+01	3.000E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.126	.317			
kr 80	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
kr 81	1	6.722E+12	6.627E+11	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.022	.775			
kr 81m	1	1.300E+01	1.000E+00	.0000	.0000	.0001	.0000
.9999	.0000	.0000	.187	.696			
kr 82	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
kr 83	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
kr 83m	1	6.588E+03	7.200E+01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.038	.063			
kr 84	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
kr 85	1	3.383E+08	6.311E+05	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.253	.009			
kr 85m	1	1.613E+04	2.880E+01	.7900	.0000	.0000	.0000
.2100	.0000	.0000	.412	.381			
kr 86	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
kr 87	1	4.579E+03	3.720E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.123	.373			
kr 88	1	1.022E+04	1.080E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.322	.841			
rb 85	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
rb 86	1	1.610E+06	1.555E+03	.9999	.0000	.0001	.0000
.0000	.0000	.0000	.761	.122			
rb 86m	1	6.102E+01	1.800E-01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.556	.982			
rb 87	1	1.515E+18	4.102E+16	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.082	.000			
rb 88	1	1.067E+03	6.600E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.709	.235			

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rb 89	1	9.120E+02	6.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.088	.670			
sr 84	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sr 85	1	5.602E+06	1.728E+03	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.527	.984			
sr 85m	1	4.060E+03	4.200E+00	.0000	.0000	.1270	.0000
.8730	.0000	.0000	.229	.944			
sr 86	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sr 87	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sr 87m	1	1.012E+04	3.600E+01	.0000	.0000	.0030	.0000
.9970	.0000	.0000	.386	.832			
sr 88	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sr 89	1	4.368E+06	7.776E+03	.9999	.0001	.0000	.0000
.0000	.0000	.0000	.583	.000			
sr 90	1	8.883E+08	3.156E+06	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.196	.000			
sr 91	1	3.427E+04	2.160E+02	.4200	.5800	.0000	.0000
.0000	.0000	.0000	1.347	.523			
sr 93	1	4.454E+02	1.440E+00	.6540	.3460	.0000	.0000
.0000	.0000	.0000	3.090	.736			
y 89	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
y 89m	1	1.606E+01	4.000E-02	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.909	.992			
y 90	1	2.308E+05	3.600E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.934	.000			
y 90m	1	1.148E+04	3.600E+01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.680	.933			
y 91	1	5.055E+06	5.184E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.607	.006			
y 92	1	1.274E+04	3.600E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.689	.150			
y 93	1	3.636E+04	5.760E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.260	.070			
y 94	1	1.122E+03	6.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.587	.298			
y 96	1	5.900E+00	2.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	4.435	.272			
zr 89	1	2.824E+05	2.592E+02	.0000	.0000	.0013	.9987
.0000	.0000	.0000	.350	.733			
zr 90	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
zr 91	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			

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zr 92	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
zr 93	1	4.828E+13	3.156E+12	.0000	1.0000	.0000	.0000
.0000	.0000	.0000	.019	.000			
zr 94	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
zr 95	1	5.531E+06	3.456E+03	.9889	.0111	.0000	.0000
.0000	.0000	.0000	.850	.861			
zr 96	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
zr 97	1	6.084E+04	1.800E+02	.0520	.9480	.0000	.0000
.0000	.0000	.0000	.886	.217			
nb 91	1	2.146E+10	4.102E+09	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.017	.697			
nb 92	1	1.104E+15	9.467E+13	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	1.513	.995			
nb 93	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
nb 93m	1	5.090E+08	4.734E+06	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.029	.065			
nb 94	1	6.406E+11	5.049E+10	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.717	.915			
nb 95	1	3.021E+06	2.592E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.809	.945			
nb 95m	1	3.119E+05	2.592E+03	.0560	.0000	.0000	.0000
.9440	.0000	.0000	.239	.287			
nb 96	1	8.406E+04	1.800E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.716	.906			
nb 97	1	4.326E+03	4.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.134	.587			
nb 97m	1	6.000E+01	8.000E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.743	.980			
nb 98	1	2.860E+00	6.000E-02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.656	.448			
nb100	1	1.500E+00	2.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.197	.221			
mo 92	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
mo 93m	1	2.500E+04	0.000E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	2.426	.952			
mo 93	1	1.104E+11	2.209E+10	.0000	.0000	.1800	.8200
.0000	.0000	.0000	.016	.688			
mo 94	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
mo 95	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
mo 96	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			

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mo 97	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
mo 98	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
mo 99	1	2.374E+05	3.600E+01	.1200	.8800	.0000	.0000
.0000	.0000	.0000	.676	.402			
mo100	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
mo101	1	8.760E+02	6.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.032	.745			
tc 97	1	8.205E+13	1.262E+13	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.017	.703			
tc 97m	1	7.819E+06	8.640E+04	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.092	.101			
tc 98	1	1.325E+14	9.467E+12	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.517	.919			
tc 99	1	6.662E+12	3.787E+10	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.085	.000			
tc100	1	1.580E+01	1.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.398	.059			
tc101	1	8.520E+02	6.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.813	.413			
ru 96	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ru 97	1	2.506E+05	8.640E+03	.0000	.0000	.9996	.0004
.0000	.0000	.0000	.253	.951			
ru 98	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ru 99	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ru100	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ru101	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ru102	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ru103	1	3.392E+06	1.728E+03	.0027	.9973	.0000	.0000
.0000	.0000	.0000	.562	.881			
ru104	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ru105	1	1.598E+04	7.200E+01	.7160	.2840	.0000	.0000
.0000	.0000	.0000	1.150	.642			
ru106	1	3.211E+07	1.296E+04	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.010	.000			
ru107	1	2.250E+02	3.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.652	.361			
rh102	1	9.152E+07	0.000E+00	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	2.165	.998			

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rh103	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
rh104	1	4.230E+01	4.000E-01	.9955	.0000	.0045	.0000
.0000	.0000	.0000	.999	.012			
rh104m	1	2.604E+02	3.000E+00	.0013	.0000	.0000	.0000
.9987	.0000	.0000	.127	.359			
rh105	1	1.273E+05	2.160E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.230	.335			
rh105m	1	4.500E+01	0.000E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.125	.274			
rh106	1	2.980E+01	8.000E-02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.617	.127			
rh106m	1	7.800E+03	1.200E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.173	.899			
rh107	1	1.302E+03	2.400E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.750	.417			
pd102	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
pd103	1	1.468E+06	1.642E+03	.0000	.0000	.0003	.9998
.0000	.0000	.0000	.020	.744			
pd104	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
pd105	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
pd106	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
pd107	1	2.051E+14	9.467E+12	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.009	.000			
pd107m	1	2.130E+01	5.000E-01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.213	.713			
pd108	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
pd109	1	4.932E+04	3.600E+02	.0005	.9995	.0000	.0000
.0000	.0000	.0000	.361	.002			
pd109m	1	2.814E+02	6.000E-01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.184	.598			
pd110	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
pd111	1	1.404E+03	1.200E+01	.0074	.9926	.0000	.0000
.0000	.0000	.0000	.878	.051			
pd111m	1	1.980E+04	3.600E+02	.0740	.1960	.0000	.0000
.7300	.0000	.0000	.545	.659			
ag106	1	1.440E+03	6.000E+00	.0100	.0000	.9900	.0000
.0000	.0000	.0000	.595	.168			
ag107	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ag108	1	1.422E+02	6.000E-01	.9715	.0000	.0285	.0000
.0000	.0000	.0000	.628	.029			

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ag108m	1	4.008E+09	6.627E+08	.0000	.0000	.9130	.0000
.0870	.0000	.0000	1.636	.991			
ag109	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ag109m	1	3.960E+01	2.000E-01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.085	.129			
ag110	1	2.460E+01	2.000E-01	.9970	.0000	.0030	.0000
.0000	.0000	.0000	1.212	.025			
ag110m	1	2.158E+07	3.456E+03	.9864	.0000	.0000	.0000
.0136	.0000	.0000	2.813	.974			
ag111	1	6.437E+05	8.640E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.381	.069			
ag111m	1	6.480E+01	8.000E-01	.0070	.0000	.0000	.0000
.9930	.0000	.0000	.062	.125			
ag112	1	1.130E+04	7.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.086	.331			
cd106	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
cd107	1	2.340E+04	7.200E+01	.0000	.0000	.0006	.9994
.0000	.0000	.0000	.026	.798			
cd108	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
cd109	1	3.997E+07	3.456E+04	.0000	.0000	.0000	1.0000
.0000	.0000	.0000	.020	.758			
cd110	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
cd111	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
cd111m	1	2.916E+03	1.800E+01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.387	.734			
cd112	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
cd113	1	2.935E+23	5.996E+22	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.091	.000			
cd113m	1	4.450E+08	1.578E+07	.9986	.0000	.0000	.0000
.0014	.0000	.0000	.184	.000			
cd114	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
cd115	1	1.925E+05	3.600E+02	.0000	1.0000	.0000	.0000
.0000	.0000	.0000	.510	.378			
cd115m	1	3.853E+06	2.592E+04	.9999	.0001	.0000	.0000
.0000	.0000	.0000	.636	.052			
cd116	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
cd117	1	8.964E+03	1.440E+02	.0900	.9100	.0000	.0000
.0000	.0000	.0000	1.510	.715			
cd117m	1	1.210E+04	1.800E+02	.9850	.0150	.0000	.0000
.0000	.0000	.0000	2.235	.910			

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cd119	1	1.614E+02	1.200E+00	.1000	.9000	.0000	.0000
.0000	.0000	.0000	2.472	.683			
cd121	1	1.350E+01	3.000E-01	.0000	1.0000	.0000	.0000
.0000	.0000	.0000	3.179	.592			
in113	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
in113m	1	5.969E+03	3.600E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.387	.664			
in114	1	7.190E+01	1.000E-01	.9950	.0000	.0050	.0000
.0000	.0000	.0000	.775	.003			
in114m	1	4.278E+06	8.640E+02	.0000	.0000	.0430	.0000
.9570	.0000	.0000	.236	.398			
in115	1	1.392E+22	7.889E+20	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.153	.000			
in116	1	1.410E+01	3.000E-02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.384	.014			
in116m	1	3.249E+03	3.600E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.784	.888			
in117	1	2.628E+03	4.200E+01	.9968	.0032	.0000	.0000
.0000	.0000	.0000	.954	.721			
in117m	1	6.990E+03	4.200E+01	.5290	.0000	.0000	.0000
.4710	.0000	.0000	.522	.174			
in118	1	5.000E+00	3.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.848	.042			
in119	1	1.440E+02	6.000E+00	.9907	.0093	.0000	.0000
.0000	.0000	.0000	1.370	.561			
in119m	1	1.080E+03	1.800E+01	.9750	.0000	.0000	.0000
.0250	.0000	.0000	1.107	.117			
in120	1	3.080E+00	8.000E-02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.759	.234			
in120m	1	4.620E+01	8.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.922	.724			
in121	1	2.310E+01	6.000E-01	.8870	.1130	.0000	.0000
.0000	.0000	.0000	1.912	.485			
sn112	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sn113	1	9.944E+06	3.456E+03	.0000	.0000	.0000	1.0000
.0000	.0000	.0000	.028	.814			
sn113m	1	1.284E+03	2.400E+01	.0000	.0000	.0890	.0000
.9110	.0000	.0000	.065	.210			
sn114	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sn115	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sn116	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sn117	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			

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sn117m	1	1.175E+06	3.456E+03	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.313	.502			
sn118	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sn119	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sn119m	1	2.532E+07	1.123E+05	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.087	.131			
sn120	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sn121	1	9.742E+04	1.440E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.115	.000			
sn121m	1	1.736E+09	1.578E+08	.2240	.0000	.0000	.0000
.7760	.0000	.0000	.039	.128			
sn122	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sn123	1	1.116E+07	3.456E+04	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.527	.013			
sn123m	1	2.405E+03	4.200E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.619	.228			
sn124	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sn125	1	8.329E+05	2.592E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.123	.278			
sn125m	1	5.712E+02	3.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.162	.306			
sb121	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sb122	1	2.333E+05	8.640E+02	.9760	.0000	.0240	.0000
.0000	.0000	.0000	1.002	.436			
sb122m	1	2.526E+02	1.200E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.160	.438			
sb123	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sb124	1	5.201E+06	2.592E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.236	.826			
sb124m	1	9.300E+01	3.000E+00	.2500	.0000	.0000	.0000
.7500	.0000	.0000	.557	.795			
sb125	1	8.615E+07	9.467E+05	.7700	.2300	.0000	.0000
.0000	.0000	.0000	.533	.814			
sb126	1	1.071E+06	8.640E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.119	.883			
sb126m	1	1.140E+03	1.800E+01	.8600	.0000	.0000	.0000
.1400	.0000	.0000	2.186	.711			
te120	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
te121	1	1.450E+06	3.024E+04	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.586	.985			

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te121m	1	1.331E+07	6.048E+05	.0000	.0000	.1140	.0000
.8860	.0000	.0000	.291	.745			
te122	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
te123	1	3.913E+20	3.156E+19	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.017	.765			
te123m	1	1.034E+07	8.640E+03	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.246	.602			
te124	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
te125	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
te125m	1	5.011E+06	8.640E+04	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.142	.251			
te126	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
te127	1	3.366E+04	2.520E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.229	.021			
te127m	1	9.418E+06	1.728E+05	.0240	.0000	.0000	.0000
.9760	.0000	.0000	.090	.123			
te128	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
te129	1	4.176E+03	1.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.600	.103			
te129m	1	2.903E+06	8.640E+03	.3600	.0000	.0000	.0000
.6400	.0000	.0000	.307	.120			
te130	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
te131	1	1.500E+03	6.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.142	.369			
te131m	1	1.080E+05	7.200E+03	.7780	.0000	.0000	.0000
.2220	.0000	.0000	1.612	.882			
i125	1	5.196E+06	9.504E+03	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.059	.716			
i126	1	1.125E+06	6.048E+03	.4370	.0000	.5630	.0000
.0000	.0000	.0000	.610	.744			
i127	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
i128	1	1.499E+03	1.200E+00	.9310	.0000	.0690	.0000
.0000	.0000	.0000	.829	.109			
i129	1	4.954E+14	1.262E+13	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.079	.312			
i130	1	4.450E+04	3.600E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.428	.881			
i130m	1	5.400E+02	6.000E+00	.1600	.0000	.0000	.0000
.8400	.0000	.0000	.288	.382			
i131	1	6.947E+05	8.640E+02	.9891	.0109	.0000	.0000
.0000	.0000	.0000	.573	.666			

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i132	1	8.222E+03	3.600E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.778	.820			
xe124	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
xe125	1	6.084E+04	7.200E+02	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.300	.892			
xe125m	1	5.700E+01	1.000E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.247	.469			
xe126	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
xe127	1	3.145E+06	8.640E+03	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.311	.901			
xe127m	1	6.920E+01	9.000E-01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.293	.573			
xe128	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
xe129	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
xe129m	1	7.681E+05	1.728E+04	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.227	.224			
xe130	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
xe131	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
xe131m	1	1.028E+06	8.640E+03	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.162	.124			
xe132	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
xe133	1	4.530E+05	8.640E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.184	.257			
xe133m	1	1.892E+05	8.640E+02	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.225	.179			
xe134	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
xe135	1	3.290E+04	7.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.567	.439			
xe135m	1	9.174E+02	3.000E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.523	.818			
xe136	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
xe137	1	2.291E+02	7.800E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.888	.101			
cs131	1	8.372E+05	9.000E+02	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.028	.821			
cs132	1	5.598E+05	6.000E+02	.0187	.0000	.9813	.0000
.0000	.0000	.0000	.728	.982			
cs133	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			

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cs134	1	6.507E+07	1.578E+05	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.720	.904			
cs134m	1	1.048E+04	3.600E+01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.131	.203			
cs135	1	7.258E+13	9.467E+12	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.056	.000			
cs136	1	1.137E+06	2.592E+03	.8880	.1120	.0000	.0000
.0000	.0000	.0000	2.051	.935			
cs137	1	9.467E+08	6.311E+06	.0557	.9443	.0000	.0000
.0000	.0000	.0000	.188	.000			
cs138	1	1.932E+03	6.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.604	.655			
ba130	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ba131	1	1.020E+06	1.800E+04	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.502	.914			
ba131m	1	8.760E+02	1.200E+01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.187	.412			
ba132	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ba133	1	3.320E+08	4.102E+06	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.455	.885			
ba133m	1	1.400E+05	4.000E+02	.0000	.0000	.0001	.0000
.9999	.0000	.0000	.285	.235			
ba134	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ba135	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ba135m	1	1.033E+05	7.200E+02	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.259	.229			
ba136	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ba136m	1	3.084E-01	1.900E-03	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	2.030	.949			
ba137	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ba137m	1	1.531E+02	6.000E-02	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.663	.904			
ba138	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ba139	1	5.078E+03	2.040E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.942	.046			
ba140	1	1.102E+06	2.592E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.493	.369			
ba141	1	1.096E+03	4.200E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.730	.472			
la137	1	1.893E+12	6.311E+11	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.030	.835			

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1a138	1	3.314E+18	6.311E+16	.3360	.0000	.6640	.0000
.0000	.0000	.0000	1.262	.977			
1a139	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
1a140	1	1.450E+05	6.048E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.832	.812			
1a141	1	1.411E+04	1.080E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.994	.043			
ce136	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ce137	1	3.240E+04	1.100E+03	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.050	.756			
ce137m	1	1.238E+05	1.100E+03	.0000	.0000	.0100	.0000
.9900	.0000	.0000	.258	.214			
ce138	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ce139	1	1.189E+07	2.000E+03	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.248	.702			
ce139m	1	5.480E+01	1.000E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.751	.931			
ce140	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ce141	1	2.808E+06	4.320E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.247	.310			
ce142	1	3.311E+18	0.000E+00	.0000	.0000	.0000	.0000
.0000	1.0000	.0000	.000	.000			
ce143	1	1.188E+05	7.200E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.709	.394			
ce144	1	2.462E+07	1.728E+04	.9860	.0140	.0000	.0000
.0000	.0000	.0000	.110	.172			
ce145	1	1.806E+02	3.600E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.536	.560			
pr141	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
pr142	1	6.883E+04	1.440E+02	.9998	.0000	.0002	.0000
.0000	.0000	.0000	.868	.067			
pr142m	1	8.760E+02	3.000E+01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.002	.000			
pr143	1	1.172E+06	1.728E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.315	.000			
pr144	1	1.037E+03	3.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.238	.023			
pr145	1	2.154E+04	3.600E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.696	.027			
nd142	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
nd143	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			

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nd144	1	6.600E+22	0.000E+00	.0000	.0000	.0000	.0000
.0000	1.0000	.0000	1.910	.000			
nd145	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
nd146	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
nd147	1	9.487E+05	8.640E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.408	.343			
nd148	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
nd149	1	6.210E+03	2.520E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.871	.426			
nd150	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
nd151	1	7.464E+02	4.200E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.481	.639			
pm145	1	5.586E+08	1.262E+07	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.044	.734			
pm147	1	8.279E+07	6.311E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.062	.000			
pm148	1	4.640E+05	7.776E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.303	.440			
pm148m	1	3.568E+06	9.504E+03	.9540	.0000	.0000	.0000
.0460	.0000	.0000	2.156	.920			
pm149	1	1.911E+05	1.800E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.377	.032			
pm150	1	9.648E+03	7.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.249	.654			
pm151	1	1.022E+05	1.440E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.616	.534			
pm152	1	2.460E+02	6.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.545	.097			
sm144	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sm145	1	2.938E+07	2.592E+05	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.093	.702			
sm146	1	3.250E+15	1.578E+14	.0000	.0000	.0000	.0000
.0000	1.0000	.0000	2.543	.000			
sm147	1	3.345E+18	6.311E+16	.0000	.0000	.0000	.0000
.0000	1.0000	.0000	2.311	.000			
sm148	1	2.500E+23	0.000E+00	.0000	.0000	.0000	.0000
.0000	1.0000	.0000	1.986	.000			
sm149	1	3.154E+23	0.000E+00	.0000	.0000	.0000	.0000
.0000	1.0000	.0000	.000	.000			
sm150	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sm151	1	2.840E+09	1.893E+08	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.020	.001			

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sm152	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sm153	1	1.666E+05	3.600E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.335	.194			
sm154	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sm155	1	1.338E+03	1.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.667	.154			
eu151	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
eu152	1	4.206E+08	1.262E+06	.2792	.0000	.7208	.0000
.0000	.0000	.0000	1.288	.902			
eu152m	1	3.355E+04	3.600E+01	.7200	.0000	.2800	.0000
.0000	.0000	.0000	.805	.376			
eu153	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
eu154	1	2.711E+08	1.578E+05	.9998	.0000	.0002	.0000
.0000	.0000	.0000	1.532	.818			
eu155	1	1.477E+08	1.578E+06	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.131	.493			
eu156	1	1.312E+06	6.912E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.695	.726			
gd152	1	3.408E+21	0.000E+00	.0000	.0000	.0000	.0000
.0000	1.0000	.0000	2.206	.000			
gd153	1	2.087E+07	1.728E+04	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.148	.726			
gd154	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
gd155m	1	3.100E-02	0.000E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.122	.000			
gd155	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
gd156	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
gd157	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
gd158	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
gd159	1	6.682E+04	2.880E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.362	.144			
gd160	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
gd161	1	2.196E+02	3.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.971	.400			
gd162	1	5.040E+02	1.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.823	.652			
tb157	1	4.734E+09	9.467E+08	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.013	.737			

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tb159	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
tb160	1	6.247E+06	1.728E+04	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.480	.826			
tb161	1	5.962E+05	1.728E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.233	.154			
tb162	1	4.656E+02	6.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.646	.673			
dy156	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
dy157	1	2.930E+04	1.500E+02	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.317	.982			
dy158	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
dy159	1	1.248E+07	1.800E+04	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.055	.821			
dy160	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
dy161	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
dy162	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
dy163	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
dy164	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
dy165	1	8.402E+03	2.160E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.474	.055			
dy165m	1	7.548E+01	3.600E-01	.0224	.0000	.0000	.0000
.9776	.0000	.0000	.118	.169			
dy166	1	2.938E+05	3.600E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.206	.209			
ho163	1	1.442E+11	8.000E+08	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.000	.000			
ho165	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ho166	1	9.648E+04	7.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.725	.041			
ho166m	1	3.787E+10	5.680E+09	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.774	.918			
er162	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
er163	1	4.500E+03	2.400E+01	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.045	.884			
er164	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
er165	1	3.730E+04	1.500E+02	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.043	.880			

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er166	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
er167	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
er167m	1	2.280E+00	3.000E-02	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.203	.478			
er168	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
er169	1	8.122E+05	1.800E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.103	.000			
er170	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
er171	1	2.706E+04	8.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.790	.472			
er172	1	1.775E+05	1.800E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.633	.796			
tm169	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
tm170	1	1.111E+07	3.000E+04	.9985	.0000	.0015	.0000
.0000	.0000	.0000	.335	.016			
tm170m	1	4.100E-06	0.000E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.000	.000			
tm171	1	6.060E+07	4.000E+05	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.026	.023			
tm172	1	2.290E+05	1.100E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.005	.483			
tm173	1	2.970E+04	3.000E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.696	.558			
yb168	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
yb169	1	2.767E+06	5.000E+02	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.429	.734			
yb170	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
yb171	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
yb172	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
yb173	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
yb174	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
yb175	1	3.620E+05	9.000E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.170	.235			
yb175m	1	6.700E-02	0.000E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.513	.000			
yb176	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			

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yb177	1	6.800E+03	4.000E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.606	.307			
lu175	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
lu176	1	1.136E+18	5.049E+16	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.784	.626			
lu176m	1	1.309E+04	1.100E+01	1.0000	.0000	.0010	.0000
.0000	.0000	.0000	.448	.018			
lu177	1	5.797E+05	9.000E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.182	.193			
lu177m	1	1.390E+07	3.000E+04	.7900	.0000	.0000	.0000
.2100	.0000	.0000	1.249	.801			
hf174	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
hf175	1	6.050E+06	1.800E+05	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.411	.899			
hf176	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
hf177	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
hf178	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
hf178m	1	4.000E+00	2.000E-01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	1.134	.882			
hf179	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
hf179m	1	1.867E+01	3.000E-02	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.358	.662			
hf180	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
hf180m	1	1.980E+04	4.000E+02	.0002	.0000	.0000	.0000
1.0000	.0000	.0000	1.121	.890			
hf181	1	3.662E+06	6.000E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.732	.727			
hf182	1	2.840E+14	6.311E+13	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.303	.792			
ta180	1	2.935E+04	2.200E+01	.1400	.0000	.8600	.0000
.0000	.0000	.0000	.100	.478			
ta181	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ta182	1	9.936E+06	1.728E+04	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.508	.863			
ta182m	1	9.500E+02	6.000E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.523	.514			
ta183	1	4.410E+05	9.000E+03	.0000	1.0000	.0000	.0000
.0000	.0000	.0000	.638	.462			
w180	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			

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w181	1	1.047E+07	1.728E+04	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.048	.859			
w182	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
w183m	1	5.200E+00	6.000E-02	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.297	.437			
w183	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
w184	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
w185	1	6.489E+06	2.592E+04	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.127	.000			
w185m	1	1.002E+02	1.800E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.183	.123			
w186	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
w187	1	8.604E+04	3.600E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.722	.590			
w188	1	6.000E+06	5.000E+04	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.101	.019			
w189	1	6.900E+02	1.800E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.230	1.000			
re185	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
re186	1	3.263E+05	3.240E+02	.9400	.0000	.0600	.0000
.0000	.0000	.0000	.361	.052			
re187	1	1.578E+18	6.311E+17	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.001	.000			
re188	1	6.113E+04	8.000E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.836	.068			
re188m	1	1.116E+03	6.000E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.161	.466			
re189	1	8.750E+04	1.500E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.386	.145			
os184	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
os185	1	8.090E+06	5.000E+04	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.727	.980			
os186	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
os187	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
os188	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
os189	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
os190	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			

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os190m	1	5.940E+02	6.000E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	1.696	.937			
os191	1	1.331E+06	9.000E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.125	.320			
os191m	1	4.716E+04	1.800E+02	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.070	.107			
os192	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
os193	1	1.098E+05	1.500E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.445	.151			
os194	1	1.893E+08	6.311E+06	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.034	.056			
ir191	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ir192	1	6.379E+06	7.000E+02	.9524	.0000	.0476	.0000
.0000	.0000	.0000	1.035	.790			
ir192m	1	7.600E+09	3.000E+08	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.151	.019			
ir193	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ir194	1	6.894E+04	1.080E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.901	.100			
ir194m	1	1.480E+07	1.000E+06	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.413	.966			
pt190	1	1.893E+19	3.156E+18	.0000	.0000	.0000	.0000
.0000	1.0000	.0000	3.243	.000			
pt191	1	2.510E+05	9.000E+03	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.335	.811			
pt192	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
pt193	1	1.578E+09	2.840E+08	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.005	.433			
pt193m	1	3.740E+05	3.000E+03	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.141	.092			
pt194	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
pt195	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
pt195m	1	3.473E+05	9.000E+02	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.245	.310			
pt196	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
pt197	1	6.590E+04	1.100E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.276	.091			
pt197m	1	5.725E+03	1.100E+01	.0330	.0000	.0000	.0000
.9670	.0000	.0000	.399	.209			
pt198	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			

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pt199	1	1.848E+03	2.400E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.741	.271			
pt199m	1	1.360E+01	4.000E-01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.417	.817			
au197	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
au198	1	2.329E+05	1.728E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.730	.552			
au199	1	2.712E+05	6.000E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.233	.385			
au200	1	2.904E+03	1.800E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.013	.269			
hg196	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
hg197	1	2.309E+05	1.800E+02	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.132	.552			
hg197m	1	8.570E+04	4.000E+02	.0000	.0000	.0700	.0000
.9300	.0000	.0000	.302	.311			
hg198	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
hg199	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
hg199m	1	2.556E+03	3.000E+01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.534	.350			
hg200	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
hg201	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
hg202	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
hg203	1	4.027E+06	1.555E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.336	.707			
hg204	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
hg205	1	3.120E+02	6.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.546	.010			
t1203	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
t1204	1	1.193E+08	6.311E+05	.9743	.0000	.0257	.0000
.0000	.0000	.0000	.239	.006			
t1205	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
t1206	1	2.520E+02	1.200E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.537	.000			
pb204	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
pb205	1	4.797E+14	2.209E+13	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.006	.506			

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pb206	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
pb207	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
pb208	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
pb209	1	1.171E+04	5.040E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.198	.000			
bi208	1	1.161E+13	1.262E+11	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	2.652	.998			
bi209	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
bi210	1	4.331E+05	4.320E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.389	.000			
bi210m	1	9.467E+13	3.156E+12	.0000	.0000	.0000	.0000
.0000	1.0000	.0000	5.309	.049			
bi211	1	1.284E+02	1.200E+00	.0027	.0000	.0000	.0000
.0000	.9973	.0000	6.733	.007			
po210	1	1.196E+07	1.728E+02	.0000	.0000	.0000	.0000
.0000	1.0000	.0000	5.407	.000			
po211	1	5.160E-01	3.000E-03	.0000	.0000	.0000	.0000
.0000	1.0000	.0000	7.595	.001			
po211m	1	2.520E+01	6.000E-01	.0000	.0000	.0000	.0000
.0000	.9998	.0000	7.515	.002			

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Table 2. ORIGEN-S library halflives, uncertainties, and other nuclear decay data

actinides and their daughters								
Name	Unit	T-1/2	Delta-T-1/2	Fb	Fb1	Fp	Fp1	Ft
Fa	Fspon-fis	Q	FQ					
he	4	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
0.00E+00	0.00E+00		.000	.000				
t1206	1	2.520E+02	1.200E+00	1.0000	.0000	.0000	.0000	.0000
0.00E+00	0.00E+00		.537	.000				
t1207	1	2.862E+02	1.200E+00	1.0000	.0000	.0000	.0000	.0000
0.00E+00	0.00E+00		.497	.004				
t1208	1	1.832E+02	2.400E-01	1.0000	.0000	.0000	.0000	.0000
0.00E+00	0.00E+00		3.946	.852				
t1209	1	1.320E+02	4.200E+00	1.0000	.0000	.0000	.0000	.0000
0.00E+00	0.00E+00		2.811	.754				
pb206	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000	.0000
0.00E+00	0.00E+00		.000	.000				
pb207	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000	.0000
0.00E+00	0.00E+00		.000	.000				

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pb208	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000	.0000	.0000
0.00E+00	0.00E+00	.000	.000						
pb209	1	1.171E+04	5.040E+01	1.0000	.0000	.0000	.0000	.0000	.0000
0.00E+00	0.00E+00	.198	.000						
pb210	1	7.037E+08	6.311E+06	1.0000	.0000	.0000	.0000	.0000	.0000
1.90E-08	0.00E+00	.040	.127						
pb211	1	2.166E+03	1.200E+01	1.0000	.0000	.0000	.0000	.0000	.0000
0.00E+00	0.00E+00	.521	.130						
pb212	1	3.830E+04	3.600E+01	1.0000	.0000	.0000	.0000	.0000	.0000
0.00E+00	0.00E+00	.319	.455						
pb214	1	1.608E+03	0.000E+00	1.0000	.0000	.0000	.0000	.0000	.0000
0.00E+00	0.00E+00	.544	.460						
bi208	1	1.161E+13	1.262E+11	.0000	.0000	1.0000	.0000	.0000	.0000
0.00E+00	0.00E+00	2.652	.998						
bi209	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000	.0000	.0000
0.00E+00	0.00E+00	.000	.000						
bi210m	1	9.467E+13	3.156E+12	.0000	.0000	.0000	.0000	.0000	.0000
1.00E+00	0.00E+00	5.309	.049						
bi210	1	4.331E+05	4.320E+02	1.0000	.0000	.0000	.0000	.0000	.0000
1.32E-06	0.00E+00	.389	.000						
bi211	1	1.284E+02	1.200E+00	.0027	.0000	.0000	.0000	.0000	.0000
9.97E-01	0.00E+00	6.733	.007						
bi212	1	3.633E+03	3.600E+00	.6406	.0000	.0000	.0000	.0000	.0000
3.59E-01	0.00E+00	2.825	.037						
bi213	1	2.735E+03	3.600E+00	.9790	.0000	.0000	.0000	.0000	.0000
2.10E-02	0.00E+00	.714	.177						
bi214	1	1.194E+03	2.400E+01	.9998	.0000	.0000	.0000	.0000	.0000
2.40E-04	0.00E+00	2.163	.697						
po210	1	1.196E+07	1.728E+02	.0000	.0000	.0000	.0000	.0000	.0000
1.00E+00	0.00E+00	5.407	.000						
po211m	1	2.520E+01	6.000E-01	.0000	.0000	.0000	.0000	.0000	.0000
1.00E+00	0.00E+00	7.515	.002						
po211	1	5.160E-01	3.000E-03	.0000	.0000	.0000	.0000	.0000	.0000
1.00E+00	0.00E+00	7.595	.001						
po212	1	2.980E-07	3.000E-09	.0000	.0000	.0000	.0000	.0000	.0000
1.00E+00	0.00E+00	8.953	.000						
po213	1	4.200E-06	8.000E-07	.0000	.0000	.0000	.0000	.0000	.0000
1.00E+00	0.00E+00	8.536	.000						
po214	1	1.643E-04	1.800E-06	.0000	.0000	.0000	.0000	.0000	.0000
1.00E+00	0.00E+00	7.833	.000						
po215	1	1.780E-03	4.000E-06	.0000	.0000	.0000	.0000	.0000	.0000
1.00E+00	0.00E+00	7.526	.000						
po216	1	1.450E-01	2.000E-03	.0000	.0000	.0000	.0000	.0000	.0000
1.00E+00	0.00E+00	6.906	.000						
po218	1	1.860E+02	6.000E-01	.0002	.0000	.0000	.0000	.0000	.0000
1.00E+00	0.00E+00	6.113	.000						
at217	1	3.230E-02	4.000E-04	.0001	.0000	.0000	.0000	.0000	.0000
1.00E+00	0.00E+00	7.199	.000						

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rn218	1	3.500E-02	5.000E-03	.0000	.0000	.0000	.0000	.0000
1.00E+00	0.00E+00	7.266	.000					
rn219	1	3.960E+00	1.000E-02	.0000	.0000	.0000	.0000	.0000
1.00E+00	0.00E+00	7.000	.008					
rn220	1	5.560E+01	1.000E-01	.0000	.0000	.0000	.0000	.0000
1.00E+00	0.00E+00	6.405	.000					
rn222	1	3.304E+05	2.592E+01	.0000	.0000	.0000	.0000	.0000
1.00E+00	0.00E+00	5.590	.000					
fr221	1	2.940E+02	1.200E+01	.0000	.0000	.0000	.0000	.0000
1.00E+00	0.00E+00	6.512	.005					
fr223	1	1.308E+03	2.400E+01	.9999	.0000	.0000	.0000	.0000
6.00E-05	0.00E+00	.413	.139					
ra222	1	3.800E+01	5.000E-01	.0000	.0000	.0000	.0000	.0000
1.00E+00	0.00E+00	6.670	.001					
ra223	1	9.879E+05	1.728E+02	.0000	.0000	.0000	.0000	.0000
1.00E+00	0.00E+00	5.999	.022					
ra224	1	3.162E+05	3.456E+03	.0000	.0000	.0000	.0000	.0000
1.00E+00	0.00E+00	5.790	.002					
ra225	1	1.279E+06	1.728E+04	1.0000	.0000	.0000	.0000	.0000
0.00E+00	0.00E+00	.122	.118					
ra226	1	5.049E+10	2.209E+08	.0000	.0000	.0000	.0000	.0000
1.00E+00	0.00E+00	4.872	.001					
ra228	1	1.814E+08	9.467E+05	1.0000	.0000	.0000	.0000	.0000
0.00E+00	0.00E+00	.009	.047					
ac225	1	8.640E+05	8.640E+03	.0000	.0000	.0000	.0000	.0000
1.00E+00	0.00E+00	5.891	.003					
ac227	1	6.870E+08	9.467E+05	.9862	.0000	.0000	.0000	.0000
1.38E-02	0.00E+00	.082	.002					
ac228	1	2.214E+04	7.200E+01	1.0000	.0000	.0000	.0000	.0000
5.50E-08	0.00E+00	1.316	.669					
th226	1	1.854E+03	0.000E+00	.0000	.0000	.0000	.0000	.0000
1.00E+00	0.00E+00	6.448	.001					
th227	1	1.617E+06	4.320E+02	.0000	.0000	.0000	.0000	.0000
1.00E+00	0.00E+00	6.164	.018					
th228	1	6.037E+07	6.311E+04	.0000	.0000	.0000	.0000	.0000
1.00E+00	0.00E+00	5.525	.001					
th229	1	2.487E+11	1.262E+09	.0000	.0000	.0000	.0000	.0000
1.00E+00	0.00E+00	5.186	.018					
th230	1	2.379E+12	9.467E+09	.0000	.0000	.0000	.0000	.0000
1.00E+00	2.50E-13	4.763	.000					
th231	1	9.187E+04	3.600E+01	1.0000	.0000	.0000	.0000	.0000
0.00E+00	0.00E+00	.184	.169					
th232	1	4.434E+17	1.893E+15	.0000	.0000	.0000	.0000	.0000
1.00E+00	0.00E+00	4.086	.000					
th233	1	1.338E+03	6.000E+00	1.0000	.0000	.0000	.0000	.0000
0.00E+00	0.00E+00	.456	.080					
th234	1	2.082E+06	2.592E+03	.0000	1.0000	.0000	.0000	.0000
0.00E+00	0.00E+00	.070	.139					

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pa231	1	1.034E+12	3.471E+09	.0000	.0000	.0000	.0000	.0000
		1.00E+00	1.50E-12	5.133	.008			
pa232	1	1.132E+05	1.728E+03	.9998	.0000	.0020	.0000	.0000
		0.00E+00	0.00E+00	1.105	.850			
pa233	1	2.333E+06	8.640E+03	1.0000	.0000	.0000	.0000	.0000
		0.00E+00	0.00E+00	.428	.522			
pa234m	1	7.020E+01	1.800E+00	.9987	.0000	.0000	.0000	.0013
		0.00E+00	0.00E+00	.827	.013			
pa234	1	2.412E+04	1.800E+02	1.0000	.0000	.0000	.0000	.0000
		0.00E+00	0.00E+00	2.468	.794			
pa235	1	1.446E+03	1.200E+01	1.0000	.0000	.0000	.0000	.0000
		0.00E+00	0.00E+00	.470	.000			
u230	1	1.797E+06	0.000E+00	.0000	.0000	.0000	.0000	.0000
		1.00E+00	0.00E+00	5.992	.000			
u231	1	3.630E+05	9.000E+03	.0000	.0000	1.0000	.0000	.0000
		5.50E-05	0.00E+00	.089	.862			
u232	1	2.203E+09	1.578E+07	.0000	.0000	.0000	.0000	.0000
		1.00E+00	9.00E-13	5.412	.000			
u233	1	5.024E+12	6.311E+09	.0000	.0000	.0000	.0000	.0000
		1.00E+00	0.00E+00	4.915	.000			
u234	1	7.754E+12	9.467E+09	.0000	.0000	.0000	.0000	.0000
		1.00E+00	1.73E-11	4.856	.000			
u235	1	2.221E+16	2.209E+13	.0000	.0000	.0000	.0000	.0000
		1.00E+00	7.20E-11	4.674	.036			
u236	1	7.391E+14	9.467E+11	.0000	.0000	.0000	.0000	.0000
		1.00E+00	9.64E-10	4.568	.000			
u237	1	5.832E+05	8.640E+02	1.0000	.0000	.0000	.0000	.0000
		0.00E+00	0.00E+00	.327	.437			
u238	1	1.410E+17	1.578E+14	.0000	.0000	.0000	.0000	.0000
		1.00E+00	5.45E-07	4.270	.000			
u239	1	1.408E+03	3.000E+00	1.0000	.0000	.0000	.0000	.0000
		0.00E+00	0.00E+00	.458	.112			
u240	1	5.076E+04	3.600E+02	.0000	1.0000	.0000	.0000	.0000
		0.00E+00	0.00E+00	.151	.065			
u241	1	1.000E+00	0.000E+00	1.0000	.0000	.0000	.0000	.0000
		0.00E+00	0.00E+00	.404	.000			
np235	1	3.423E+07	1.100E+05	.0000	.0000	1.0000	.0000	.0000
		1.40E-05	0.00E+00	.010	.702			
np236m	1	8.100E+04	1.440E+03	.4800	.0000	.5200	.0000	.0000
		0.00E+00	0.00E+00	.134	.380			
np236	1	3.629E+12	3.787E+11	.0890	.0000	.9100	.0000	.0000
		0.00E+00	0.00E+00	.345	.426			
np237	1	6.753E+13	3.156E+11	.0000	.0000	.0000	.0000	.0000
		1.00E+00	0.00E+00	4.813	.007			
np238	1	1.829E+05	1.728E+02	1.0000	.0000	.0000	.0000	.0000
		0.00E+00	0.00E+00	.841	.769			
np239	1	2.035E+05	3.456E+02	1.0000	.0000	.0000	.0000	.0000
		0.00E+00	0.00E+00	.427	.430			

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np240m	1	4.332E+02	1.200E+00	.9988	.0000	.0000	.0000	.0012
0.00E+00	0.00E+00	.945	.341					
np240	1	3.714E+03	1.200E+01	1.0000	.0000	.0000	.0000	.0000
0.00E+00	0.00E+00	1.621	.718					
np241	1	8.340E+02	1.200E+01	1.0000	.0000	.0000	.0000	.0000
0.00E+00	0.00E+00	.475	.073					
pu236	1	9.152E+07	3.156E+06	.0000	.0000	.0000	.0000	.0000
1.00E+00	8.50E-10	5.865	.000					
pu237	1	3.903E+06	5.184E+03	.0000	.0000	1.0000	.0000	.0000
4.20E-05	0.00E+00	.065	.865					
pu238	1	2.768E+09	9.467E+06	.0000	.0000	.0000	.0000	.0000
1.00E+00	1.90E-09	5.591	.000					
pu239	1	7.608E+11	9.467E+08	.0000	.0000	.0000	.0000	.0000
1.00E+00	4.40E-12	5.243	.000					
pu240	1	2.071E+11	2.209E+08	.0000	.0000	.0000	.0000	.0000
1.00E+00	5.70E-08	5.253	.000					
pu241	1	4.528E+08	3.156E+06	1.0000	.0000	.0000	.0000	.0000
2.39E-05	0.00E+00	.005	.000					
pu242	1	1.179E+13	3.471E+10	.0000	.0000	.0000	.0000	.0000
1.00E+00	5.49E-06	4.982	.000					
pu243	1	1.784E+04	1.080E+01	1.0000	.0000	.0000	.0000	.0000
0.00E+00	0.00E+00	.194	.129					
pu244	1	2.525E+15	2.840E+13	.0000	.0000	.0000	.0000	.0000
9.99E-01	1.20E-03	4.891	.003					
pu245	1	3.780E+04	3.600E+02	1.0000	.0000	.0000	.0000	.0000
0.00E+00	0.00E+00	.734	.541					
pu246	1	9.366E+05	1.800E+03	1.0000	.0000	.0000	.0000	.0000
0.00E+00	0.00E+00	.256	.559					
am239	1	4.280E+04	4.000E+02	.0000	.0000	.9999	.0000	.0000
1.00E-04	0.00E+00	.374	.629					
am240	1	1.832E+05	7.200E+02	.0000	.0000	1.0000	.0000	.0000
1.90E-06	0.00E+00	1.098	.943					
am241	1	1.365E+10	1.578E+07	.0000	.0000	.0000	.0000	.0000
1.00E+00	3.77E-12	5.629	.005					
am242m	1	4.450E+09	6.311E+07	.0000	.0000	.0000	.0000	.9955
4.50E-03	1.60E-10	.068	.089					
am242	1	5.767E+04	7.200E+01	.8270	.0000	.1730	.0000	.0000
0.00E+00	0.00E+00	.194	.100					
am243	1	2.326E+11	4.734E+08	.0000	.0000	.0000	.0000	.0000
1.00E+00	3.70E-11	5.431	.011					
am244m	1	1.560E+03	0.000E+00	.9996	.0000	.0004	.0000	.0000
0.00E+00	0.00E+00	.520	.033					
am244	1	3.636E+04	3.600E+02	1.0000	.0000	.0000	.0000	.0000
0.00E+00	0.00E+00	1.128	.718					
am245	1	7.380E+03	3.600E+01	1.0000	.0000	.0000	.0000	.0000
0.00E+00	0.00E+00	.320	.102					
am246	1	2.340E+03	1.800E+01	1.0000	.0000	.0000	.0000	.0000
0.00E+00	0.00E+00	1.376	.505					

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cm241	1	2.834E+06	1.728E+04	.0000	.0000	.9900	.0000	.0000
1.00E-02		0.00E+00	.683	.738				
cm242	1	1.408E+07	5.184E+03	.0000	.0000	.0000	.0000	.0000
1.00E+00		6.33E-08	6.155	.000				
cm243	1	8.994E+08	6.311E+06	.0000	.0000	.0024	.0000	.0000
9.98E-01		0.00E+00	6.175	.022				
cm244	1	5.712E+08	6.311E+05	.0000	.0000	.0000	.0000	.0000
1.00E+00		1.35E-06	5.900	.000				
cm245	1	2.682E+11	6.311E+09	.0000	.0000	.0000	.0000	.0000
1.00E+00		0.00E+00	5.615	.017				
cm246	1	1.493E+11	3.156E+09	.0000	.0000	.0000	.0000	.0000
1.00E+00		2.61E-04	5.525	.001				
cm247	1	5.049E+14	1.578E+13	.0000	.0000	.0000	.0000	.0000
1.00E+00		0.00E+00	5.354	.059				
cm248	1	1.073E+13	9.467E+10	.0000	.0000	.0000	.0000	.0000
9.17E-01		8.26E-02	21.260	.049				
cm249	1	3.849E+03	1.800E+00	1.0000	.0000	.0000	.0000	.0000
0.00E+00		0.00E+00	.296	.064				
cm250	7	1.740E+01	0.000E+00	.1400	.0000	.0000	.0000	.0000
2.50E-01		6.10E-01	123.300	.062				
cm251	1	1.008E+03	1.200E+01	1.0000	.0000	.0000	.0000	.0000
0.00E+00		0.00E+00	.560	.196				
bk249	1	2.765E+07	5.184E+05	1.0000	.0000	.0000	.0000	.0000
1.45E-05		4.70E-10	.033	.000				
bk250	1	1.158E+04	1.800E+01	1.0000	.0000	.0000	.0000	.0000
0.00E+00		0.00E+00	1.188	.757				
bk251	2	5.700E+01	0.000E+00	1.0000	.0000	.0000	.0000	.0000
0.00E+00		0.00E+00	1.100	.000				
cf249	1	1.106E+10	6.627E+07	.0000	.0000	.0000	.0000	.0000
1.00E+00		5.20E-09	6.291	.052				
cf250	1	4.128E+08	2.840E+06	.0000	.0000	.0000	.0000	.0000
9.99E-01		7.70E-04	6.277	.002				
cf251	1	2.834E+10	1.389E+09	.0000	.0000	.0000	.0000	.0000
1.00E+00		0.00E+00	6.041	.021				
cf252	1	8.347E+07	2.525E+05	.0000	.0000	.0000	.0000	.0000
9.69E-01		3.09E-02	12.220	.032				
cf253	1	1.539E+06	6.912E+03	.9969	.0000	.0000	.0000	.0000
3.10E-03		0.00E+00	.096	.000				
cf254	4	6.050E+01	0.000E+00	.0000	.0000	.0000	.0000	.0000
3.10E-03		9.97E-01	199.400	.063				
cf255	3	1.500E+00	0.000E+00	1.0000	.0000	.0000	.0000	.0000
0.00E+00		0.00E+00	.100	.000				
es253	1	1.769E+06	2.592E+03	.0000	.0000	.0000	.0000	.0000
1.00E+00		8.70E-08	6.737	.000				
es254m	3	3.930E+01	0.000E+00	.0000	.0000	.0008	.0000	.0155
9.83E-01		1.03E-03	8.173	.060				
es254	1	2.382E+07	5.000E+04	.0000	.0000	.0000	.0000	.0000
1.00E+00		0.00E+00	6.499	.012				

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es255  4 3.900E+01 0.000E+00 .0000 .0000 .0000 .0000 .0000
1.00E+00 4.17E-05 7.370 .000
s250   6 0.000E+00 0.000E+00 .0000 .0000 .0000 .0000 .0000
0.00E+00 0.00E+00 .000 .000
1
    
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Table 3. ORIGEN-S library halflives, uncertainties, and other nuclear decay data

		fission products						
Name	Unit	T-1/2	Delta-T-1/2	Fb	Fb1	Fp	Fp1	
Ft	Fa	Fn	Q	FQ				
h	3	1	3.891E+08	1.893E+06	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.006	.000				
li	6	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000				
li	7	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000				
be	9	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000				
be	10	1	5.049E+13	6.311E+12	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.203	.000				
c	14	1	1.808E+11	1.262E+09	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.049	.000				
ni	66	1	1.966E+05	1.100E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.065	.000				
cu	66	1	3.060E+02	1.200E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.154	.068				
zn	66	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000				
cu	67	1	2.226E+05	5.000E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.271	.426				
zn	67	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000				
zn	68	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000				
zn	69	1	3.380E+03	6.000E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.321	.000				
zn	69m	1	4.954E+04	8.000E+01	.0003	.0000	.0000	.0000
.9997	.0000	.0000	.438	.950				
ga	69	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000				
zn	70	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000				
ga	70	1	1.268E+03	1.800E+00	.9959	.0000	.0041	.0000
.0000	.0000	.0000	.651	.011				

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ge 70	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
zn 71	1	1.470E+02	6.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.363	.231			
zn 71m	1	1.426E+04	1.800E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.097	.744			
ga 71	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ge 71	1	9.880E+05	3.000E+03	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.009	.467			
ge 71m	1	2.040E-02	0.000E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.181	.828			
co 72	1	1.235E-01	0.000E+00	.8847	.0000	.0000	.0000
.0000	.0000	.1153	9.394	.500			
ni 72	1	3.831E+00	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.795	.327			
cu 72	1	6.489E+00	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	5.029	.595			
zn 72	1	1.674E+05	3.600E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.255	.598			
ga 72	1	5.076E+04	3.600E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.206	.844			
ge 72	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
co 73	1	1.290E-01	0.000E+00	.7488	.0000	.0000	.0000
.0000	.0000	.2512	7.914	.377			
ni 73	1	4.906E-01	0.000E+00	.9999	.0000	.0000	.0000
.0000	.0000	.0000	4.900	.330			
cu 73	1	5.114E+00	0.000E+00	.9944	.0000	.0000	.0000
.0000	.0000	.0056	2.759	.280			
zn 73	1	2.350E+01	1.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.715	.431			
ga 73	1	1.750E+04	1.080E+02	.0130	.9870	.0000	.0000
.0000	.0000	.0000	.787	.433			
ge 73	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ge 73m	1	4.990E-01	1.100E-02	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.066	.170			
co 74	1	9.196E-02	0.000E+00	.8257	.0000	.0000	.0000
.0000	.0000	.1743	10.740	.505			
ni 74	1	9.002E-01	0.000E+00	.9964	.0000	.0000	.0000
.0000	.0000	.0036	3.883	.309			
cu 74	1	6.482E-01	0.000E+00	.9970	.0000	.0000	.0000
.0000	.0000	.0029	5.718	.561			
zn 74	1	9.600E+01	1.000E+00	.2500	.7500	.0000	.0000
.0000	.0000	.0000	1.437	.598			
ga 74	1	4.872E+02	7.200E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	4.028	.749			

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ge 74	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
co 75	1	8.166E-02	0.000E+00	.6869	.0000	.0000	.0000
.0000	.0000	.3131	9.302	.403			
ni 75	1	2.312E-01	0.000E+00	.9900	.0000	.0000	.0000
.0000	.0000	.0100	6.047	.366			
cu 75	1	9.274E-01	0.000E+00	.9653	.0000	.0000	.0000
.0000	.0000	.0347	3.795	.287			
zn 75	1	1.020E+01	2.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.748	.507			
ga 75	1	1.260E+02	1.800E+00	.9520	.0480	.0000	.0000
.0000	.0000	.0000	1.656	.214			
ge 75	1	4.967E+03	2.400E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.456	.077			
ge 75m	1	4.770E+01	7.000E-01	.0003	.0000	.0000	.0000
.9997	.0000	.0000	.136	.419			
as 75	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ni 76	1	3.046E-01	0.000E+00	.9649	.0000	.0000	.0000
.0000	.0000	.0351	4.924	.310			
cu 76	1	2.602E-01	0.000E+00	.9716	.0000	.0000	.0000
.0000	.0000	.0284	6.633	.528			
zn 76	1	5.600E+00	1.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.152	.350			
ga 76	1	3.260E+01	6.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	4.704	.595			
ge 76	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
as 76	1	9.475E+04	2.520E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.483	.281			
se 76	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ni 77	1	1.033E-01	0.000E+00	.9529	.0000	.0000	.0000
.0000	.0000	.0471	7.597	.406			
cu 77	1	3.052E-01	0.000E+00	.8769	.0000	.0000	.0000
.0000	.0000	.1231	4.855	.310			
zn 77	1	2.080E+00	5.000E-02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	4.220	.426			
ga 77	1	1.320E+01	2.000E-01	.0000	1.0000	.0000	.0000
.0000	.0000	.0000	2.832	.279			
ge 77	1	4.068E+04	3.600E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.684	.607			
ge 77m	1	5.290E+01	6.000E-01	.7900	.0000	.0000	.0000
.2100	.0000	.0000	1.013	.064			
as 77	1	1.398E+05	1.800E+02	.9968	.0032	.0000	.0000
.0000	.0000	.0000	.234	.032			
se 77	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			

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se 77m	1	1.745E+01	1.000E-01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.159	.549			
ni 78	1	1.318E-01	0.000E+00	.9070	.0000	.0000	.0000
.0000	.0000	.0930	5.866	.320			
cu 78	1	1.179E-01	0.000E+00	.9009	.0000	.0000	.0000
.0000	.0000	.0991	7.953	.510			
zn 78	1	1.470E+00	1.500E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.754	.407			
ga 78	1	5.090E+00	5.000E-02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	5.081	.500			
ge 78	1	5.280E+03	6.000E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.505	.550			
as 78	1	5.442E+03	1.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.579	.520			
se 78	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
cu 79	1	1.351E-01	0.000E+00	.7579	.0000	.0000	.0000
.0000	.0000	.2421	5.860	.336			
zn 79	1	1.000E+00	1.000E-01	.9885	.0000	.0000	.0000
.0000	.0000	.0115	5.938	.491			
ga 79	1	3.000E+00	9.000E-02	.9470	.0520	.0000	.0000
.0000	.0000	.0005	4.216	.494			
ge 79	1	1.910E+01	3.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.052	.199			
as 79	1	5.406E+02	9.000E+00	.0106	.9894	.0000	.0000
.0000	.0000	.0000	.876	.032			
se 79	1	1.041E+13	1.010E+12	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.053	.000			
se 79m	1	2.346E+02	3.000E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.094	.146			
br 79	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
br 79m	1	4.860E+00	4.000E-02	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.206	.770			
kr 79	1	1.261E+05	3.600E+02	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.281	.914			
cu 80	1	8.988E-02	0.000E+00	.8496	.0000	.0000	.0000
.0000	.0000	.1504	9.041	.507			
zn 80	1	5.400E-01	2.000E-02	.9890	.0000	.0000	.0000
.0000	.0000	.0110	4.005	.310			
ga 80	1	1.660E+00	9.000E-02	.9918	.0000	.0000	.0000
.0000	.0000	.0082	6.673	.532			
ge 80	1	2.950E+01	4.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.510	.397			
as 80	1	1.520E+01	2.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.026	.273			
se 80	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			

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br 80	1	1.061E+03	1.200E+00	.9170	.0000	.0830	.0000
.0000	.0000	.0000	.801	.095			
br 80m	1	1.591E+04	3.600E+01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.085	.285			
kr 80	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
cu 81	1	7.421E-02	0.000E+00	.4705	.0000	.0000	.0000
.0000	.0000	.5295	8.810	.392			
zn 81	1	1.227E-01	0.000E+00	.9426	.0000	.0000	.0000
.0000	.0000	.0574	6.782	.400			
ga 81	1	1.230E+00	1.000E-02	.4700	.4100	.0000	.0000
.0000	.0000	.1190	4.810	.468			
ge 81	1	7.600E+00	6.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.283	.256			
as 81	1	3.330E+01	8.000E-01	.9700	.0300	.0000	.0000
.0000	.0000	.0000	1.808	.127			
se 81	1	1.107E+03	7.200E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.618	.010			
se 81m	1	3.435E+03	5.400E+00	.0005	.0000	.0000	.0000
.9995	.0000	.0000	.100	.149			
br 81	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
kr 81	1	6.722E+12	6.627E+11	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.022	.775			
kr 81m	1	1.300E+01	1.000E+00	.0000	.0000	.0001	.0000
.9999	.0000	.0000	.187	.696			
zn 82	1	1.268E-01	0.000E+00	.7877	.0000	.0000	.0000
.0000	.0000	.2123	6.577	.332			
ga 82	1	6.000E-01	0.000E+00	.7900	.0000	.0000	.0000
.0000	.0000	.2100	8.064	.512			
ge 82	1	4.600E+00	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.214	.346			
as 82	1	1.910E+01	5.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	4.002	.271			
as 82m	1	1.360E+01	4.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	4.617	.607			
se 82	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
br 82	1	1.271E+05	7.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.783	.948			
br 82m	1	3.678E+02	3.000E+00	.0240	.0000	.0000	.0000
.9760	.0000	.0000	.078	.104			
kr 82	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
zn 83	1	8.364E-02	0.000E+00	.7713	.0000	.0000	.0000
.0000	.0000	.2287	8.245	.479			
ga 83	1	3.100E-01	0.000E+00	.4400	.0000	.0000	.0000
.0000	.0000	.5600	8.072	.464			

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ge 83	1	1.900E+00	0.000E+00	.9983	.0000	.0000	.0000
.0000	.0000	.0017	5.133	.476			
as 83	1	1.340E+01	3.000E-01	.3000	.7000	.0000	.0000
.0000	.0000	.0000	4.007	.687			
se 83	1	1.338E+03	6.600E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.050	.850			
se 83m	1	7.010E+01	4.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.227	.428			
br 83	1	8.640E+03	7.200E+01	.0002	.9998	.0000	.0000
.0000	.0000	.0000	.333	.021			
kr 83	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
kr 83m	1	6.588E+03	7.200E+01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.038	.063			
ga 84	1	9.838E-02	0.000E+00	.7198	.0000	.0000	.0000
.0000	.0000	.2802	9.100	.509			
ge 84	1	1.200E+00	0.000E+00	.9000	.0000	.0000	.0000
.0000	.0000	.1000	5.063	.486			
as 84	1	5.500E+00	3.000E-01	.9991	.0000	.0000	.0000
.0000	.0000	.0009	5.440	.294			
se 84	1	1.920E+02	1.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.960	.438			
br 84	1	1.908E+03	4.800E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.986	.582			
br 84m	1	3.600E+02	1.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.669	.755			
kr 84	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ga 85	1	8.697E-02	0.000E+00	.5504	.0000	.0000	.0000
.0000	.0000	.4496	9.217	.467			
ge 85	1	2.500E-01	0.000E+00	.8000	.0000	.0000	.0000
.0000	.0000	.2000	6.351	.501			
as 85	1	2.028E+00	1.200E-02	.2900	.0000	.0000	.0000
.0000	.0000	.7100	6.344	.474			
se 85	1	3.170E+01	9.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.970	.558			
se 85m	1	1.900E+01	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.494	.386			
br 85	1	1.722E+02	1.800E+00	.0018	.9982	.0000	.0000
.0000	.0000	.0000	1.107	.060			
kr 85	1	3.383E+08	6.311E+05	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.253	.009			
kr 85m	1	1.613E+04	2.880E+01	.7900	.0000	.0000	.0000
.2100	.0000	.0000	.412	.381			
rb 85	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ge 86	1	2.468E-01	0.000E+00	.7800	.0000	.0000	.0000
.0000	.0000	.2200	6.147	.429			

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as 86	1	9.000E-01	2.000E-01	.8800	.0000	.0000	.0000
.0000	.0000	.1200	7.180	.526			
se 86	1	1.530E+01	9.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.550	.648			
br 86	1	5.510E+01	4.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	5.340	.641			
br 86m	1	4.500E+00	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	4.752	.351			
kr 86	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
rb 86	1	1.610E+06	1.555E+03	.9999	.0000	.0001	.0000
.0000	.0000	.0000	.761	.122			
rb 86m	1	6.102E+01	1.800E-01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.556	.982			
sr 86	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ge 87	1	1.339E-01	0.000E+00	.8487	.0000	.0000	.0000
.0000	.0000	.1513	7.229	.496			
as 87	1	3.000E-01	0.000E+00	.5600	.0000	.0000	.0000
.0000	.0000	.4400	7.250	.479			
se 87	1	5.600E+00	0.000E+00	.9981	.0000	.0000	.0000
.0000	.0000	.0019	4.723	.560			
br 87	1	5.569E+01	1.300E-01	.9749	.0000	.0000	.0000
.0000	.0000	.0251	4.951	.674			
kr 87	1	4.579E+03	3.720E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.123	.373			
rb 87	1	1.515E+18	4.102E+16	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.082	.000			
sr 87	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sr 87m	1	1.012E+04	3.600E+01	.0000	.0000	.0030	.0000
.9970	.0000	.0000	.386	.832			
ge 88	1	1.290E-01	0.000E+00	.7835	.0000	.0000	.0000
.0000	.0000	.2165	7.172	.419			
as 88	1	1.348E-01	0.000E+00	.8009	.0000	.0000	.0000
.0000	.0000	.1991	8.122	.520			
se 88	1	1.500E+00	0.000E+00	.9950	.0000	.0000	.0000
.0000	.0000	.0050	4.250	.478			
br 88	1	1.650E+01	1.000E-01	.9363	.0000	.0000	.0000
.0000	.0000	.0637	5.881	.561			
kr 88	1	1.022E+04	1.080E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.322	.841			
rb 88	1	1.067E+03	6.600E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.709	.235			
sr 88	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
as 89	1	1.212E-01	0.000E+00	.6673	.0000	.0000	.0000
.0000	.0000	.3327	8.181	.482			

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se 89	1	4.100E-01	0.000E+00	.9500	.0000	.0000	.0000
.0000	.0000	.0500	5.051	.375			
br 89	1	4.370E+00	3.000E-02	.8620	.0000	.0000	.0000
.0000	.0000	.1380	5.481	.587			
kr 89	1	1.902E+02	1.200E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.186	.571			
rb 89	1	9.120E+02	6.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.088	.670			
sr 89	1	4.368E+06	7.776E+03	.9999	.0001	.0000	.0000
.0000	.0000	.0000	.583	.000			
y 89	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
y 89m	1	1.606E+01	4.000E-02	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.909	.992			
as 90	1	9.112E-02	0.000E+00	.7565	.0000	.0000	.0000
.0000	.0000	.2435	9.174	.477			
se 90	1	4.272E-01	0.000E+00	.8900	.0000	.0000	.0000
.0000	.0000	.1100	5.607	.470			
br 90	1	1.920E+00	6.000E-02	.7680	.0000	.0000	.0000
.0000	.0000	.2320	5.871	.548			
kr 90	1	3.232E+01	9.000E-02	.8800	.1200	.0000	.0000
.0000	.0000	.0000	2.578	.480			
rb 90	1	1.530E+02	3.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	4.156	.521			
rb 90m	1	2.580E+02	5.000E+00	.9770	.0000	.0000	.0000
.0230	.0000	.0000	4.751	.700			
sr 90	1	8.883E+08	3.156E+06	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.196	.000			
y 90	1	2.308E+05	3.600E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.934	.000			
y 90m	1	1.148E+04	3.600E+01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.680	.933			
zr 90	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
zr 90m	1	8.092E-01	2.000E-03	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	2.319	.993			
se 91	1	2.700E-01	0.000E+00	.7900	.0000	.0000	.0000
.0000	.0000	.2100	7.062	.443			
br 91	1	6.000E-01	0.000E+00	.8910	.0000	.0000	.0000
.0000	.0000	.1090	5.628	.380			
kr 91	1	8.570E+00	4.000E-02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.812	.458			
rb 91	1	5.840E+01	4.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.901	.600			
sr 91	1	3.427E+04	2.160E+02	.4200	.5800	.0000	.0000
.0000	.0000	.0000	1.347	.523			
y 91	1	5.055E+06	5.184E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.607	.006			

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y 91m	1	2.983E+03	4.200E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.555 .951				
zr 91	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000 .000				
nb 91	1	2.146E+10	4.102E+09	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.017 .697				
se 92	1	1.682E-01	0.000E+00	.8677	.0000	.0000	.0000
.0000	.0000	.1323	6.435 .348				
br 92	1	3.650E-01	7.000E-03	.7000	.0000	.0000	.0000
.0000	.0000	.3000	7.681 .417				
kr 92	1	1.850E+00	1.000E-02	.9997	.0000	.0000	.0000
.0000	.0000	.0003	3.559 .408				
rb 92	1	4.500E+00	2.000E-02	.9999	.0000	.0000	.0000
.0000	.0000	.0001	4.044 .129				
sr 92	1	9.756E+03	3.600E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.516 .884				
y 92	1	1.274E+04	3.600E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.689 .150				
zr 92	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000 .000				
nb 92	1	1.104E+15	9.467E+13	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	1.513 .995				
se 93	1	9.677E-02	0.000E+00	.8797	.0000	.0000	.0000
.0000	.0000	.1203	8.341 .497				
br 93	1	1.763E-01	0.000E+00	.5900	.0000	.0000	.0000
.0000	.0000	.4100	7.533 .488				
kr 93	1	1.290E+00	1.000E-02	.9805	.0000	.0000	.0000
.0000	.0000	.0195	5.200 .440				
rb 93	1	5.700E+00	1.000E-01	.9866	.0000	.0000	.0000
.0000	.0000	.0134	4.071 .334				
sr 93	1	4.454E+02	1.440E+00	.6540	.3460	.0000	.0000
.0000	.0000	.0000	3.090 .736				
y 93	1	3.636E+04	5.760E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.260 .070				
zr 93	1	4.828E+13	3.156E+12	.0000	1.0000	.0000	.0000
.0000	.0000	.0000	.019 .000				
nb 93	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000 .000				
nb 93m	1	5.090E+08	4.734E+06	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.029 .065				
br 94	1	1.108E-01	0.000E+00	.7020	.0000	.0000	.0000
.0000	.0000	.2980	8.908 .523				
kr 94	1	2.100E-01	0.000E+00	.9430	.0000	.0000	.0000
.0000	.0000	.0570	4.456 .332				
rb 94	1	2.702E+00	5.000E-03	.8995	.0000	.0000	.0000
.0000	.0000	.1015	6.925 .595				
sr 94	1	7.520E+01	8.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.267 .629				

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y 94	1	1.122E+03	6.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.587	.298			
zr 94	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
nb 94	1	6.406E+11	5.049E+10	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.717	.915			
nb 94m	1	3.756E+02	6.000E-01	.0050	.0000	.0000	.0000
.9950	.0000	.0000	.047	.250			
br 95	1	1.069E-01	0.000E+00	.7292	.0000	.0000	.0000
.0000	.0000	.2708	7.507	.495			
kr 95	1	7.800E-01	0.000E+00	.9050	.0000	.0000	.0000
.0000	.0000	.0950	6.463	.519			
rb 95	1	3.840E-01	6.000E-03	.9148	.0000	.0000	.0000
.0000	.0000	.0852	6.273	.537			
sr 95	1	2.510E+01	2.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.825	.523			
y 95	1	6.300E+02	1.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.637	.489			
zr 95	1	5.531E+06	3.456E+03	.9889	.0111	.0000	.0000
.0000	.0000	.0000	.850	.861			
nb 95	1	3.021E+06	2.592E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.809	.945			
nb 95m	1	3.119E+05	2.592E+03	.0560	.0000	.0000	.0000
.9440	.0000	.0000	.239	.287			
mo 95	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
br 96	1	8.881E-02	0.000E+00	.7808	.0000	.0000	.0000
.0000	.0000	.2192	9.460	.510			
kr 96	1	2.931E-01	0.000E+00	.9225	.0000	.0000	.0000
.0000	.0000	.0775	4.681	.335			
rb 96	1	1.990E-01	3.000E-03	.8660	.0000	.0000	.0000
.0000	.0000	.1340	7.849	.622			
sr 96	1	1.060E+00	3.000E-02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.148	.430			
y 96	1	5.900E+00	2.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	4.435	.272			
zr 96	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
nb 96	1	8.406E+04	1.800E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.716	.906			
mo 96	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
kr 97	1	1.000E-01	0.000E+00	.9161	.0000	.0000	.0000
.0000	.0000	.0839	6.875	.435			
rb 97	1	1.718E-01	1.600E-03	.7360	.0000	.0000	.0000
.0000	.0000	.2640	8.446	.568			
sr 97	1	4.200E-01	3.000E-02	.8500	.1500	.0000	.0000
.0000	.0000	.0001	4.660	.474			

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y 97	1	3.500E+00	2.000E-01	.9994	.0000	.0000	.0000
.0000	.0000	.0006	3.952	.455			
zr 97	1	6.084E+04	1.800E+02	.0520	.9480	.0000	.0000
.0000	.0000	.0000	.886	.217			
nb 97	1	4.326E+03	4.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.134	.587			
nb 97m	1	6.000E+01	8.000E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.743	.980			
mo 97	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
kr 98	1	1.602E-01	0.000E+00	.9170	.0000	.0000	.0000
.0000	.0000	.0830	5.391	.343			
rb 98	1	1.140E-01	5.000E-03	.8400	.0000	.0000	.0000
.0000	.0000	.1600	6.733	.434			
sr 98	1	6.500E-01	3.000E-02	.9970	.0000	.0000	.0000
.0000	.0000	.0030	3.191	.329			
y 98	1	6.400E-01	3.000E-02	.9976	.0000	.0000	.0000
.0000	.0000	.0024	5.151	.507			
zr 98	1	3.070E+01	4.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.001	.164			
nb 98	1	2.860E+00	6.000E-02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.656	.448			
nb 98m	1	3.078E+03	2.400E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.462	.783			
mo 98	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
tc 98	1	1.325E+14	9.467E+12	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.517	.919			
rb 99	1	5.900E-02	1.000E-03	.8500	.0000	.0000	.0000
.0000	.0000	.1500	6.422	.414			
sr 99	1	2.710E-01	4.000E-03	.9990	.0000	.0000	.0000
.0000	.0000	.0010	5.413	.499			
y 99	1	1.470E+00	2.000E-02	.9847	.0000	.0000	.0000
.0000	.0000	.0153	3.845	.349			
zr 99	1	2.100E+00	1.000E-01	.6400	.3600	.0000	.0000
.0000	.0000	.0000	2.593	.457			
nb 99	1	1.500E+01	2.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.020	.356			
nb 99m	1	1.560E+02	1.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.630	.605			
mo 99	1	2.374E+05	3.600E+01	.1200	.8800	.0000	.0000
.0000	.0000	.0000	.676	.402			
tc 99	1	6.662E+12	3.787E+10	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.085	.000			
tc 99m	1	2.164E+04	3.600E+01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.158	.802			
ru 99	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			

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rb100	1	9.844E-02	0.000E+00	.9505	.0000	.0000	.0000
.0000	.0000	.0495	8.984	.520			
sr100	1	2.020E-01	3.000E-03	.9925	.0000	.0000	.0000
.0000	.0000	.0075	3.809	.335			
y100	1	7.350E-01	7.000E-03	.9915	.0000	.0000	.0000
.0000	.0000	.0085	5.804	.431			
zr100	1	7.100E+00	4.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.812	.385			
nb100	1	1.500E+00	2.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.197	.221			
nb100m	1	2.980E+00	1.100E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.896	.501			
mo100	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
tc100	1	1.580E+01	1.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.398	.059			
ru100	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
rb101	1	9.385E-02	0.000E+00	.7168	.0000	.0000	.0000
.0000	.0000	.2832	7.370	.424			
sr101	1	1.941E-01	0.000E+00	.9753	.0000	.0000	.0000
.0000	.0000	.0247	6.139	.434			
y101	1	5.000E-01	5.000E-02	.9793	.0000	.0000	.0000
.0000	.0000	.0207	4.224	.361			
zr101	1	2.000E+00	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.251	.336			
nb101	1	7.100E+00	3.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.406	.299			
mo101	1	8.760E+02	6.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.032	.745			
tc101	1	8.520E+02	6.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.813	.413			
ru101	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sr102	1	2.871E-01	0.000E+00	.9524	.0000	.0000	.0000
.0000	.0000	.0476	4.618	.342			
y102	1	9.000E-01	0.000E+00	.9406	.0000	.0000	.0000
.0000	.0000	.0594	6.947	.550			
zr102	1	2.900E+00	2.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.987	.371			
nb102	1	1.300E+00	2.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	4.293	.340			
mo102	1	6.780E+02	1.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.398	.119			
tc102	1	5.280E+00	1.500E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.613	.457			
tc102m	1	2.610E+02	4.200E+00	.9800	.0000	.0000	.0000
.0200	.0000	.0000	3.317	.761			

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ru102	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
rh102	1	9.152E+07	0.000E+00	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	2.165	.998			
pd102	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sr103	1	1.196E-01	0.000E+00	.9112	.0000	.0000	.0000
.0000	.0000	.0888	6.696	.440			
y103	1	2.604E-01	0.000E+00	.8763	.0000	.0000	.0000
.0000	.0000	.1237	5.081	.390			
zr103	1	1.300E+00	1.000E-01	.9998	.0000	.0000	.0000
.0000	.0000	.0002	3.924	.374			
nb103	1	1.500E+00	2.000E-01	.9999	.0000	.0000	.0000
.0000	.0000	.0001	3.093	.317			
mo103	1	6.750E+01	1.500E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.278	.498			
tc103	1	5.420E+01	8.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.257	.440			
ru103	1	3.392E+06	1.728E+03	.0027	.9973	.0000	.0000
.0000	.0000	.0000	.562	.881			
rh103	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
rh103m	1	3.367E+03	6.000E-01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.038	.044			
sr104	1	1.629E-01	0.000E+00	.8653	.0000	.0000	.0000
.0000	.0000	.1347	5.366	.345			
y104	1	1.283E-01	0.000E+00	.9122	.0000	.0000	.0000
.0000	.0000	.0878	7.293	.514			
zr104	1	2.573E+00	0.000E+00	.9989	.0000	.0000	.0000
.0000	.0000	.0011	2.637	.339			
nb104	1	4.800E+00	0.000E+00	.9929	.0000	.0000	.0000
.0000	.0000	.0071	5.887	.573			
mo104	1	6.000E+01	2.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.208	.484			
tc104	1	1.098E+03	1.800E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.695	.608			
ru104	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
rh104	1	4.230E+01	4.000E-01	.9955	.0000	.0045	.0000
.0000	.0000	.0000	.999	.012			
rh104m	1	2.604E+02	3.000E+00	.0013	.0000	.0000	.0000
.9987	.0000	.0000	.127	.359			
pd104	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
y105	1	1.469E-01	0.000E+00	.8025	.0000	.0000	.0000
.0000	.0000	.1975	5.821	.407			
zr105	1	4.926E-01	0.000E+00	.9860	.0000	.0000	.0000
.0000	.0000	.0140	4.431	.398			

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nb105	1	2.950E+00	6.000E-02	.9777	.0000	.0000	.0000
.0000	.0000	.0223	3.911	.359			
mo105	1	3.560E+01	1.600E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.177	.452			
tc105	1	4.560E+02	6.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.993	.392			
ru105	1	1.598E+04	7.200E+01	.7160	.2840	.0000	.0000
.0000	.0000	.0000	1.150	.642			
rh105	1	1.273E+05	2.160E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.230	.335			
rh105m	1	4.500E+01	0.000E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.125	.274			
pd105	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
y106	1	8.943E-02	0.000E+00	.8434	.0000	.0000	.0000
.0000	.0000	.1566	8.101	.517			
zr106	1	9.071E-01	0.000E+00	.9848	.0000	.0000	.0000
.0000	.0000	.0152	3.235	.337			
nb106	1	1.000E+00	0.000E+00	.9450	.0000	.0000	.0000
.0000	.0000	.0550	5.882	.433			
mo106	1	8.400E+00	5.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.978	.377			
tc106	1	3.600E+01	1.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	4.630	.633			
ru106	1	3.211E+07	1.296E+04	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.010	.000			
rh106	1	2.980E+01	8.000E-02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.617	.127			
rh106m	1	7.800E+03	1.200E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.173	.899			
pd106	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ag106	1	1.440E+03	6.000E+00	.0100	.0000	.9900	.0000
.0000	.0000	.0000	.595	.168			
y107	1	9.226E-02	0.000E+00	.7406	.0000	.0000	.0000
.0000	.0000	.2594	6.646	.421			
zr107	1	2.430E-01	0.000E+00	.9629	.0000	.0000	.0000
.0000	.0000	.0371	5.200	.423			
nb107	1	7.660E-01	0.000E+00	.9122	.0000	.0000	.0000
.0000	.0000	.0878	4.673	.389			
mo107	1	3.500E+00	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.710	.375			
tc107	1	2.120E+01	2.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.583	.548			
ru107	1	2.250E+02	3.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.652	.361			
rh107	1	1.302E+03	2.400E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.750	.417			

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pd107	1	2.051E+14	9.467E+12	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.009	.000			
pd107m	1	2.130E+01	5.000E-01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.213	.713			
ag107	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
zr108	1	3.781E-01	0.000E+00	.9297	.0000	.0000	.0000
.0000	.0000	.0703	3.942	.340			
nb108	1	2.423E-01	0.000E+00	.9353	.0000	.0000	.0000
.0000	.0000	.0647	6.727	.462			
mo108	1	1.500E+00	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.746	.420			
tc108	1	5.170E+00	7.000E-02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	5.242	.571			
ru108	1	2.730E+02	3.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.561	.109			
rh108	1	1.680E+01	5.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.640	.473			
rh108m	1	3.600E+02	1.800E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.489	.818			
pd108	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ag108	1	1.422E+02	6.000E-01	.9715	.0000	.0285	.0000
.0000	.0000	.0000	.628	.029			
ag108m	1	4.008E+09	6.627E+08	.0000	.0000	.9130	.0000
.0870	.0000	.0000	1.636	.991			
cd108	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
zr109	1	1.300E-01	0.000E+00	.9261	.0000	.0000	.0000
.0000	.0000	.0739	6.130	.441			
nb109	1	3.154E-01	0.000E+00	.8735	.0000	.0000	.0000
.0000	.0000	.1265	5.489	.412			
mo109	1	1.408E+00	0.000E+00	.9947	.0000	.0000	.0000
.0000	.0000	.0053	4.552	.412			
tc109	1	1.400E+00	0.000E+00	.9830	.0000	.0000	.0000
.0000	.0000	.0170	3.246	.338			
ru109	1	3.500E+01	0.000E+00	.5000	.5000	.0000	.0000
.0000	.0000	.0000	2.300	.422			
rh109	1	8.000E+01	2.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.237	.251			
rh109m	1	5.000E+01	0.000E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.050	1.000			
pd109	1	4.932E+04	3.600E+02	.0005	.9995	.0000	.0000
.0000	.0000	.0000	.361	.002			
pd109m	1	2.814E+02	6.000E-01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.184	.598			

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ag109	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ag109m	1	3.960E+01	2.000E-01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.085	.129			
cd109	1	3.997E+07	3.456E+04	.0000	.0000	.0000	1.0000
.0000	.0000	.0000	.020	.758			
nb110	1	1.298E-01	0.000E+00	.8995	.0000	.0000	.0000
.0000	.0000	.1005	7.728	.485			
mo110	1	2.772E+00	0.000E+00	.9870	.0000	.0000	.0000
.0000	.0000	.0130	3.355	.343			
tc110	1	8.300E-01	0.000E+00	.9690	.0000	.0000	.0000
.0000	.0000	.0310	5.212	.416			
ru110	1	1.500E+01	0.000E+00	.0000	1.0000	.0000	.0000
.0000	.0000	.0000	1.255	.475			
rh110	1	3.160E+00	1.700E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.991	.361			
rh110m	1	2.850E+01	1.500E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.737	.692			
pd110	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ag110	1	2.460E+01	2.000E-01	.9970	.0000	.0030	.0000
.0000	.0000	.0000	1.212	.025			
ag110m	1	2.158E+07	3.456E+03	.9864	.0000	.0000	.0000
.0136	.0000	.0000	2.813	.974			
cd110	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
nb111	1	1.718E-01	0.000E+00	.8160	.0000	.0000	.0000
.0000	.0000	.1840	6.080	.422			
mo111	1	4.664E-01	0.000E+00	.9897	.0000	.0000	.0000
.0000	.0000	.0103	5.515	.438			
tc111	1	1.982E+00	0.000E+00	.9431	.0000	.0000	.0000
.0000	.0000	.0569	4.012	.374			
ru111	1	1.600E+00	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.829	.340			
rh111	1	1.100E+01	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.976	.455			
pd111	1	1.404E+03	1.200E+01	.0074	.9926	.0000	.0000
.0000	.0000	.0000	.878	.051			
pd111m	1	1.980E+04	3.600E+02	.0740	.1960	.0000	.0000
.7300	.0000	.0000	.545	.659			
ag111	1	6.437E+05	8.640E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.381	.069			
ag111m	1	6.480E+01	8.000E-01	.0070	.0000	.0000	.0000
.9930	.0000	.0000	.062	.125			
cd111	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
cd111m	1	2.916E+03	1.800E+01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.387	.734			

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nb112	1	8.672E-02	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	8.364	.501			
mo112	1	9.754E-01	0.000E+00	.9792	.0000	.0000	.0000
.0000	.0000	.0208	3.914	.346			
tc112	1	4.314E-01	0.000E+00	.9480	.0000	.0000	.0000
.0000	.0000	.0520	6.154	.453			
ru112	1	3.600E+00	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.839	.394			
rh112	1	1.500E+00	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.633	.318			
pd112	1	7.576E+04	1.800E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.096	.051			
ag112	1	1.130E+04	7.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.086	.331			
cd112	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
mo113	1	2.287E-01	0.000E+00	.9620	.0000	.0000	.0000
.0000	.0000	.0380	6.250	.448			
tc113	1	6.524E-01	0.000E+00	.9281	.0000	.0000	.0000
.0000	.0000	.0719	4.587	.397			
ru113	1	3.000E+00	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.665	.386			
rh113	1	9.000E-01	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.549	.320			
pd113	1	9.300E+01	5.000E+00	.8150	.1850	.0000	.0000
.0000	.0000	.0000	1.700	.359			
ag113	1	1.933E+04	1.800E+02	.9830	.0170	.0000	.0000
.0000	.0000	.0000	.834	.086			
ag113m	1	6.870E+01	1.600E+00	.2000	.0000	.0000	.0000
.8000	.0000	.0000	.254	.457			
cd113	1	2.935E+23	5.996E+22	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.091	.000			
cd113m	1	4.450E+08	1.578E+07	.9986	.0000	.0000	.0000
.0014	.0000	.0000	.184	.000			
in113	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
in113m	1	5.969E+03	3.600E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.387	.664			
mo114	1	3.766E-01	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	4.503	.350			
tc114	1	2.023E-01	0.000E+00	.9346	.0000	.0000	.0000
.0000	.0000	.0654	6.868	.474			
ru114	1	8.137E+00	0.000E+00	.9990	.0000	.0000	.0000
.0000	.0000	.0010	2.317	.364			
rh114	1	1.700E+00	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	4.495	.390			
pd114	1	1.470E+02	6.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.567	.150			

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ag114	1	4.600E+00	2.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.254	.093			
cd114	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
in114	1	7.190E+01	1.000E-01	.9950	.0000	.0050	.0000
.0000	.0000	.0000	.775	.003			
in114m	1	4.278E+06	8.640E+02	.0000	.0000	.0430	.0000
.9570	.0000	.0000	.236	.398			
sn114	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
mo115	1	1.259E-01	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	6.596	.454			
tc115	1	2.704E-01	0.000E+00	.8566	.0000	.0000	.0000
.0000	.0000	.1434	5.237	.413			
ru115	1	8.784E-01	0.000E+00	.9977	.0000	.0000	.0000
.0000	.0000	.0023	4.345	.416			
rh115	1	8.315E+00	0.000E+00	.9923	.0000	.0000	.0000
.0000	.0000	.0077	3.077	.343			
pd115	1	3.800E+01	0.000E+00	.7300	.2700	.0000	.0000
.0000	.0000	.0000	2.597	.482			
ag115	1	1.200E+03	3.000E+01	.9430	.0570	.0000	.0000
.0000	.0000	.0000	1.583	.305			
ag115m	1	1.800E+01	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.814	.486			
cd115	1	1.925E+05	3.600E+02	.0000	1.0000	.0000	.0000
.0000	.0000	.0000	.510	.378			
cd115m	1	3.853E+06	2.592E+04	.9999	.0001	.0000	.0000
.0000	.0000	.0000	.636	.052			
in115	1	1.392E+22	7.889E+20	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.153	.000			
in115m	1	1.615E+04	1.440E+01	.0500	.0000	.0000	.0000
.9500	.0000	.0000	.331	.490			
sn115	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
tc116	1	1.155E-01	0.000E+00	.8778	.0000	.0000	.0000
.0000	.0000	.1222	7.260	.481			
ru116	1	1.700E+00	0.000E+00	.9892	.0000	.0000	.0000
.0000	.0000	.0108	2.833	.348			
rh116	1	9.492E-01	0.000E+00	.9946	.0000	.0000	.0000
.0000	.0000	.0054	5.189	.428			
pd116	1	1.272E+01	4.400E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.266	.477			
ag116	1	1.608E+02	6.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.789	.557			
ag116m	1	1.040E+01	8.000E-01	.9800	.0000	.0000	.0000
.0200	.0000	.0000	4.061	.669			
cd116	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			

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in116	1	1.410E+01	3.000E-02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.384	.014			
in116m	1	3.249E+03	3.600E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.784	.888			
sn116	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
tc117	1	1.518E-01	0.000E+00	.7875	.0000	.0000	.0000
.0000	.0000	.2125	5.695	.420			
ru117	1	3.428E-01	0.000E+00	.9795	.0000	.0000	.0000
.0000	.0000	.0205	4.731	.428			
rh117	1	1.217E+00	0.000E+00	.9518	.0000	.0000	.0000
.0000	.0000	.0482	3.667	.371			
pd117	1	5.000E+00	0.000E+00	.5000	.5000	.0000	.0000
.0000	.0000	.0000	3.002	.362			
ag117	1	7.280E+01	2.000E+00	.8600	.1400	.0000	.0000
.0000	.0000	.0000	2.521	.516			
ag117m	1	5.340E+00	5.000E-02	.8550	.1450	.0000	.0000
.0000	.0000	.0000	2.298	.362			
cd117	1	8.964E+03	1.440E+02	.0900	.9100	.0000	.0000
.0000	.0000	.0000	1.510	.715			
cd117m	1	1.210E+04	1.800E+02	.9850	.0150	.0000	.0000
.0000	.0000	.0000	2.235	.910			
in117	1	2.628E+03	4.200E+01	.9968	.0032	.0000	.0000
.0000	.0000	.0000	.954	.721			
in117m	1	6.990E+03	4.200E+01	.5290	.0000	.0000	.0000
.4710	.0000	.0000	.522	.174			
sn117	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sn117m	1	1.175E+06	3.456E+03	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.313	.502			
tc118	1	8.155E-02	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	7.712	.497			
ru118	1	6.623E-01	0.000E+00	.9589	.0000	.0000	.0000
.0000	.0000	.0411	3.230	.346			
rh118	1	3.156E-01	0.000E+00	.9708	.0000	.0000	.0000
.0000	.0000	.0292	5.600	.445			
pd118	1	3.100E+00	0.000E+00	.5000	.5000	.0000	.0000
.0000	.0000	.0000	1.759	.407			
ag118	1	3.760E+00	1.500E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	4.088	.391			
ag118m	1	2.000E+00	2.000E-01	.5900	.0000	.0000	.0000
.4100	.0000	.0000	2.751	.545			
cd118	1	3.018E+03	1.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.264	.113			
in118	1	5.000E+00	3.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.848	.042			
in118m	1	2.670E+02	3.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.282	.829			

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sn118	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ru119	1	1.949E-01	0.000E+00	.9564	.0000	.0000	.0000
.0000	.0000	.0436	5.252	.440			
rh119	1	4.654E-01	0.000E+00	.9170	.0000	.0000	.0000
.0000	.0000	.0830	4.113	.389			
pd119	1	1.759E+00	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.448	.388			
ag119	1	2.100E+00	1.000E-01	.7800	.2200	.0000	.0000
.0000	.0000	.0000	3.296	.526			
cd119	1	1.614E+02	1.200E+00	.1000	.9000	.0000	.0000
.0000	.0000	.0000	2.472	.683			
cd119m	1	1.320E+02	1.200E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.054	.784			
in119	1	1.440E+02	6.000E+00	.9907	.0093	.0000	.0000
.0000	.0000	.0000	1.370	.561			
in119m	1	1.080E+03	1.800E+01	.9750	.0000	.0000	.0000
.0250	.0000	.0000	1.107	.117			
sn119	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sn119m	1	2.532E+07	1.123E+05	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.087	.131			
ru120	1	3.503E-01	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	4.346	.422			
rh120	1	1.725E-01	0.000E+00	.9407	.0000	.0000	.0000
.0000	.0000	.0593	6.127	.463			
pd120	1	3.906E+00	0.000E+00	.9999	.0000	.0000	.0000
.0000	.0000	.0001	2.157	.377			
ag120	1	1.170E+00	5.000E-02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	5.168	.558			
cd120	1	5.080E+01	2.100E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.735	.174			
in120	1	3.080E+00	8.000E-02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.759	.234			
in120m	1	4.620E+01	8.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.922	.724			
sn120	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
rh121	1	2.496E-01	0.000E+00	.8643	.0000	.0000	.0000
.0000	.0000	.1357	4.597	.403			
pd121	1	6.437E-01	0.000E+00	.9973	.0000	.0000	.0000
.0000	.0000	.0027	3.974	.412			
ag121	1	8.000E-01	1.000E-01	.9992	.0000	.0000	.0000
.0000	.0000	.0008	3.739	.554			
cd121	1	1.350E+01	3.000E-01	.0000	1.0000	.0000	.0000
.0000	.0000	.0000	3.179	.592			
in121	1	2.310E+01	6.000E-01	.8870	.1130	.0000	.0000
.0000	.0000	.0000	1.912	.485			

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in121m	1	2.328E+02	6.000E+00	.9880	.0000	.0000	.0000
.0120	.0000	.0000	1.598	.040			
sn121	1	9.742E+04	1.440E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.115	.000			
sn121m	1	1.736E+09	1.578E+08	.2240	.0000	.0000	.0000
.7760	.0000	.0000	.039	.128			
sb121	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
rh122	1	1.072E-01	0.000E+00	.9170	.0000	.0000	.0000
.0000	.0000	.0830	6.486	.473			
pd122	1	1.411E+00	0.000E+00	.9956	.0000	.0000	.0000
.0000	.0000	.0044	2.572	.358			
ag122	1	4.800E-01	8.000E-02	.9981	.0000	.0000	.0000
.0000	.0000	.0019	5.559	.452			
cd122	1	5.240E+00	3.000E-02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.252	.364			
in122	1	1.500E+00	3.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.605	.345			
in122m	1	1.030E+01	6.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	4.065	.620			
sn122	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sb122	1	2.333E+05	8.640E+02	.9760	.0000	.0240	.0000
.0000	.0000	.0000	1.002	.436			
sb122m	1	2.526E+02	1.200E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.160	.438			
te122	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
rh123	1	1.343E-01	0.000E+00	.8289	.0000	.0000	.0000
.0000	.0000	.1711	5.150	.417			
pd123	1	3.004E-01	0.000E+00	.9931	.0000	.0000	.0000
.0000	.0000	.0069	4.356	.427			
ag123	1	3.900E-01	0.000E+00	.9540	.0000	.0000	.0000
.0000	.0000	.0460	4.514	.412			
cd123	1	8.905E+00	0.000E+00	.7700	.2300	.0000	.0000
.0000	.0000	.0000	2.965	.371			
in123	1	5.980E+00	6.000E-02	.0320	.9680	.0000	.0000
.0000	.0000	.0000	2.465	.447			
in123m	1	4.780E+01	5.000E-01	.0000	1.0000	.0000	.0000
.0000	.0000	.0000	2.076	.032			
sn123	1	1.116E+07	3.456E+04	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.527	.013			
sn123m	1	2.405E+03	4.200E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.619	.228			
sb123	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
te123	1	3.913E+20	3.156E+19	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.017	.765			

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te123m	1	1.034E+07	8.640E+03	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.246	.602			
pd124	1	5.140E-01	0.000E+00	.9730	.0000	.0000	.0000
.0000	.0000	.0270	3.064	.350			
ag124	1	2.495E-01	0.000E+00	.9771	.0000	.0000	.0000
.0000	.0000	.0229	5.721	.458			
cd124	1	9.000E-01	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.709	.332			
in124	1	3.170E+00	5.000E-02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	4.664	.578			
sn124	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sb124	1	5.201E+06	2.592E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.236	.826			
sb124m	1	9.300E+01	3.000E+00	.2500	.0000	.0000	.0000
.7500	.0000	.0000	.557	.795			
te124	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
pd125	1	1.660E-01	0.000E+00	.9773	.0000	.0000	.0000
.0000	.0000	.0227	4.773	.438			
ag125	1	3.335E-01	0.000E+00	.9368	.0000	.0000	.0000
.0000	.0000	.0632	4.434	.409			
cd125	1	1.548E+00	0.000E+00	.7000	.3000	.0000	.0000
.0000	.0000	.0000	3.409	.395			
in125	1	2.330E+00	4.000E-02	.1120	.8880	.0000	.0000
.0000	.0000	.0000	3.090	.418			
in125m	1	1.220E+01	1.000E-01	.0000	1.0000	.0000	.0000
.0000	.0000	.0000	2.769	.243			
sn125	1	8.329E+05	2.592E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.123	.278			
sn125m	1	5.712E+02	3.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.162	.306			
sb125	1	8.615E+07	9.467E+05	.7700	.2300	.0000	.0000
.0000	.0000	.0000	.533	.814			
te125	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
te125m	1	5.011E+06	8.640E+04	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.142	.251			
pd126	1	2.520E-01	0.000E+00	.9497	.0000	.0000	.0000
.0000	.0000	.0503	3.658	.349			
ag126	1	1.398E-01	0.000E+00	.9536	.0000	.0000	.0000
.0000	.0000	.0464	6.455	.533			
cd126	1	5.060E-01	1.500E-02	.0000	1.0000	.0000	.0000
.0000	.0000	.0000	2.211	.326			
in126	1	1.450E+00	2.200E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	6.203	.695			
sn126	1	3.156E+12	0.000E+00	.0000	1.0000	.0000	.0000
.0000	.0000	.0000	.263	.496			

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sb126	1	1.071E+06	8.640E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.119	.883			
sb126m	1	1.140E+03	1.800E+01	.8600	.0000	.0000	.0000
.1400	.0000	.0000	2.186	.711			
te126	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
xe126	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ag127	1	1.753E-01	0.000E+00	.9014	.0000	.0000	.0000
.0000	.0000	.0986	5.117	.426			
cd127	1	5.719E-01	0.000E+00	.4999	.4999	.0000	.0000
.0000	.0000	.0001	4.074	.491			
in127	1	1.150E+00	5.000E-02	.1530	.8404	.0000	.0000
.0000	.0000	.0066	3.919	.451			
in127m	1	3.760E+00	2.000E-02	.0000	.9935	.0000	.0000
.0000	.0000	.0065	3.919	.441			
sn127	1	7.560E+03	1.440E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.413	.787			
sn127m	1	2.478E+02	1.800E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.777	.499			
sb127	1	3.326E+05	4.320E+03	.8250	.1750	.0000	.0000
.0000	.0000	.0000	.978	.679			
te127	1	3.366E+04	2.520E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.229	.021			
te127m	1	9.418E+06	1.728E+05	.0240	.0000	.0000	.0000
.9760	.0000	.0000	.090	.123			
i127	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
xe127	1	3.145E+06	8.640E+03	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.311	.901			
ag128	1	9.428E-02	0.000E+00	.9311	.0000	.0000	.0000
.0000	.0000	.0689	6.932	.534			
cd128	1	1.053E+00	0.000E+00	.9989	.0000	.0000	.0000
.0000	.0000	.0011	2.834	.354			
in128	1	9.000E-01	1.000E-01	.9996	.0000	.0000	.0000
.0000	.0000	.0004	5.730	.541			
sn128	1	3.546E+03	3.000E+01	.0000	1.0000	.0000	.0000
.0000	.0000	.0000	.853	.707			
sb128	1	3.244E+04	1.080E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.578	.864			
sb128m	1	6.240E+02	1.200E+01	.9640	.0000	.0000	.0000
.0360	.0000	.0000	2.854	.665			
te128	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
i128	1	1.499E+03	1.200E+00	.9310	.0000	.0690	.0000
.0000	.0000	.0000	.829	.109			
xe128	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			

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cd129	1	2.987E-01	0.000E+00	.9985	.0000	.0000	.0000
.0000	.0000	.0015	4.532	.492			
in129	1	5.900E-01	2.000E-02	.8940	.1060	.0000	.0000
.0000	.0000	.0016	4.672	.465			
sn129	1	1.296E+02	2.400E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.713	.533			
sn129m	1	4.020E+02	2.400E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.899	.721			
sb129	1	1.584E+04	3.600E+01	.8200	.1800	.0000	.0000
.0000	.0000	.0000	1.747	.776			
te129	1	4.176E+03	1.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.600	.103			
te129m	1	2.903E+06	8.640E+03	.3600	.0000	.0000	.0000
.6400	.0000	.0000	.307	.120			
i129	1	4.954E+14	1.262E+13	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.079	.312			
xe129	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
xe129m	1	7.681E+05	1.728E+04	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.227	.224			
cd130	1	4.768E-01	0.000E+00	.9903	.0000	.0000	.0000
.0000	.0000	.0097	3.486	.351			
in130	1	3.200E-01	2.000E-02	.7000	.2900	.0000	.0000
.0000	.0000	.0091	6.095	.525			
sn130	1	2.232E+02	2.400E+00	.0000	1.0000	.0000	.0000
.0000	.0000	.0000	1.424	.671			
sb130	1	2.370E+03	4.800E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.969	.824			
sb130m	1	3.780E+02	1.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.688	.734			
te130	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
i130	1	4.450E+04	3.600E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.428	.881			
i130m	1	5.400E+02	6.000E+00	.1600	.0000	.0000	.0000
.8400	.0000	.0000	.288	.382			
xe130	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
cd131	1	1.062E-01	0.000E+00	.9513	.0000	.0000	.0000
.0000	.0000	.0487	6.809	.480			
in131	1	2.700E-01	2.000E-02	.9325	.0491	.0000	.0000
.0000	.0000	.0184	4.731	.426			
sn131	1	3.900E+01	2.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.240	.728			
sb131	1	1.380E+03	1.200E+02	.9320	.0680	.0000	.0000
.0000	.0000	.0000	2.332	.750			
te131	1	1.500E+03	6.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.142	.369			

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te131m	1	1.080E+05	7.200E+03	.7780	.0000	.0000	.0000
.2220	.0000	.0000	1.612	.882			
i131	1	6.947E+05	8.640E+02	.9891	.0109	.0000	.0000
.0000	.0000	.0000	.573	.666			
xe131	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
xe131m	1	1.028E+06	8.640E+03	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.162	.124			
cd132	1	1.357E-01	0.000E+00	.7944	.0000	.0000	.0000
.0000	.0000	.2056	5.433	.349			
in132	1	1.860E-01	2.200E-02	.9500	.0000	.0000	.0000
.0000	.0000	.0500	9.146	.634			
sn132	1	4.000E+01	1.000E+00	.0000	1.0000	.0000	.0000
.0000	.0000	.0000	2.022	.640			
sb132	1	2.520E+02	6.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.873	.666			
sb132m	1	1.680E+02	6.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.860	.674			
te132	1	2.815E+05	2.880E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.334	.699			
i132	1	8.222E+03	3.600E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.778	.820			
xe132	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
cs132	1	5.598E+05	6.000E+02	.0187	.0000	.9813	.0000
.0000	.0000	.0000	.728	.982			
ba132	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
in133	1	1.116E-01	0.000E+00	.6834	.0000	.0000	.0000
.0000	.0000	.3166	7.391	.462			
sn133	1	1.440E+00	4.000E-02	.9974	.0000	.0000	.0000
.0000	.0000	.0025	4.654	.443			
sb133	1	1.500E+02	6.000E+00	.8300	.1700	.0000	.0000
.0000	.0000	.0000	2.696	.757			
te133	1	7.500E+02	1.800E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.875	.640			
te133m	1	3.324E+03	2.400E+01	.7230	.1020	.0000	.0000
.1750	.0000	.0000	2.050	.821			
i133	1	7.488E+04	3.600E+02	.9712	.0288	.0000	.0000
.0000	.0000	.0000	1.021	.599			
i133m	1	9.000E+00	2.000E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	1.633	.967			
xe133	1	4.530E+05	8.640E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.184	.257			
xe133m	1	1.892E+05	8.640E+02	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.225	.179			
cs133	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			

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ba133	1	3.320E+08	4.102E+06	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.455	.885			
in134	1	8.056E-02	0.000E+00	.6624	.0000	.0000	.0000
.0000	.0000	.3376	8.927	.526			
sn134	1	1.040E+00	0.000E+00	.8300	.0000	.0000	.0000
.0000	.0000	.1700	3.634	.343			
sb134	1	8.500E-01	1.000E-01	.9990	.0000	.0000	.0000
.0000	.0000	.0010	5.037	.448			
sb134m	1	1.043E+01	1.400E-01	.9988	.0000	.0000	.0000
.0000	.0000	.0012	5.142	.463			
te134	1	2.508E+03	4.800E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.095	.784			
i134	1	3.156E+03	2.400E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.227	.809			
i134m	1	2.214E+02	4.200E+00	.0000	.0230	.0000	.0000
.9770	.0000	.0000	.325	.742			
xe134	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
xe134m	1	2.900E-01	1.700E-02	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	1.965	.966			
cs134	1	6.507E+07	1.578E+05	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.720	.904			
cs134m	1	1.048E+04	3.600E+01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.131	.203			
ba134	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sn135	1	4.178E-01	0.000E+00	.9140	.0000	.0000	.0000
.0000	.0000	.0860	5.078	.489			
sb135	1	1.710E+00	2.000E-02	.7980	.0000	.0000	.0000
.0000	.0000	.2020	4.055	.395			
te135	1	1.900E+01	2.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.562	.415			
i135	1	2.365E+04	7.200E+01	.8430	.1570	.0000	.0000
.0000	.0000	.0000	1.951	.816			
xe135	1	3.290E+04	7.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.567	.439			
xe135m	1	9.174E+02	3.000E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.523	.818			
cs135	1	7.258E+13	9.467E+12	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.056	.000			
cs135m	1	3.180E+03	1.200E+02	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	1.630	.979			
ba135	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ba135m	1	1.033E+05	7.200E+02	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.259	.229			
sn136	1	7.172E-01	0.000E+00	.8361	.0000	.0000	.0000
.0000	.0000	.1639	4.124	.346			

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sb136	1	8.200E-01	0.000E+00	.7700	.0000	.0000	.0000
.0000	.0000	.2300	5.666	.460			
te136	1	1.750E+01	2.000E-01	.9910	.0000	.0000	.0000
.0000	.0000	.0090	3.294	.607			
i136	1	8.340E+01	1.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	4.344	.543			
i136m	1	4.690E+01	1.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	4.823	.537			
xe136	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
cs136	1	1.137E+06	2.592E+03	.8880	.1120	.0000	.0000
.0000	.0000	.0000	2.051	.935			
ba136	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ba136m	1	3.084E-01	1.900E-03	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	2.030	.949			
sb137	1	4.779E-01	0.000E+00	.8000	.0000	.0000	.0000
.0000	.0000	.2000	5.062	.472			
te137	1	3.500E+00	0.000E+00	.9780	.0000	.0000	.0000
.0000	.0000	.0220	3.788	.425			
i137	1	2.450E+01	2.000E-01	.9330	.0000	.0000	.0000
.0000	.0000	.0670	3.302	.373			
xe137	1	2.291E+02	7.800E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.888	.101			
cs137	1	9.467E+08	6.311E+06	.0557	.9443	.0000	.0000
.0000	.0000	.0000	.188	.000			
ba137	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ba137m	1	1.531E+02	6.000E-02	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.663	.904			
sb138	1	1.734E-01	0.000E+00	.7799	.0000	.0000	.0000
.0000	.0000	.2201	6.731	.531			
te138	1	1.400E+00	4.000E-01	.9370	.0000	.0000	.0000
.0000	.0000	.0630	3.035	.352			
i138	1	6.490E+00	7.000E-02	.9464	.0000	.0000	.0000
.0000	.0000	.0536	4.727	.546			
xe138	1	8.448E+02	4.800E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.773	.635			
cs138	1	1.932E+03	6.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.604	.655			
cs138m	1	1.746E+02	4.800E+00	.1900	.0000	.0000	.0000
.8100	.0000	.0000	.990	.714			
ba138	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
la138	1	3.314E+18	6.311E+16	.3360	.0000	.6640	.0000
.0000	.0000	.0000	1.262	.977			
sb139	1	2.178E-01	0.000E+00	.5831	.0000	.0000	.0000
.0000	.0000	.4169	5.836	.460			

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te139	1	5.800E-01	0.000E+00	.9370	.0000	.0000	.0000
.0000	.0000	.0630	4.755	.494			
i139	1	2.300E+00	5.000E-02	.9040	.0000	.0000	.0000
.0000	.0000	.0960	3.870	.362			
xe139	1	3.968E+01	1.400E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.662	.334			
cs139	1	5.562E+02	3.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.980	.167			
ba139	1	5.078E+03	2.040E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.942	.046			
la139	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ce139	1	1.189E+07	2.000E+03	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.248	.702			
pr139	1	1.588E+04	1.500E+02	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.217	.596			
te140	1	8.938E-01	0.000E+00	.8450	.0000	.0000	.0000
.0000	.0000	.1550	3.684	.346			
i140	1	8.600E-01	4.000E-02	.9070	.0000	.0000	.0000
.0000	.0000	.0930	5.130	.454			
xe140	1	1.360E+01	1.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.526	.581			
cs140	1	6.370E+01	3.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.968	.558			
ba140	1	1.102E+06	2.592E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.493	.369			
la140	1	1.450E+05	6.048E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.832	.812			
ce140	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
pr140	1	2.034E+02	6.000E-01	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	1.087	.499			
te141	1	2.726E-01	0.000E+00	.8953	.0000	.0000	.0000
.0000	.0000	.1047	5.307	.489			
i141	1	4.600E-01	0.000E+00	.6100	.0000	.0000	.0000
.0000	.0000	.3900	4.339	.410			
xe141	1	1.730E+00	1.000E-02	.9996	.0000	.0000	.0000
.0000	.0000	.0004	3.601	.436			
cs141	1	2.494E+01	6.000E-02	.9996	.0000	.0000	.0000
.0000	.0000	.0004	2.744	.415			
ba141	1	1.096E+03	4.200E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.730	.472			
la141	1	1.411E+04	1.080E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.994	.043			
ce141	1	2.808E+06	4.320E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.247	.310			
pr141	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			

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nd141	1	8.960E+03	1.100E+02	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.089	.841			
te142	1	5.901E-01	0.000E+00	.8492	.0000	.0000	.0000
.0000	.0000	.1508	3.962	.347			
i142	1	2.000E-01	0.000E+00	.8400	.0000	.0000	.0000
.0000	.0000	.1600	5.978	.536			
xe142	1	1.220E+00	2.000E-02	.9959	.0000	.0000	.0000
.0000	.0000	.0041	2.981	.529			
cs142	1	1.700E+00	2.000E-02	.9990	.0000	.0000	.0000
.0000	.0000	.0010	4.236	.422			
ba142	1	6.360E+02	1.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.449	.743			
la142	1	5.466E+03	3.000E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.230	.732			
ce142	1	3.311E+18	0.000E+00	.0000	.0000	.0000	.0000
.0000	1.0000	.0000	.000	.000			
pr142	1	6.883E+04	1.440E+02	.9998	.0000	.0002	.0000
.0000	.0000	.0000	.868	.067			
pr142m	1	8.760E+02	3.000E+01	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.002	.000			
nd142	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
i143	1	4.011E-01	0.000E+00	.8200	.0000	.0000	.0000
.0000	.0000	.1800	4.725	.477			
xe143	1	9.600E-01	0.000E+00	.9880	.0000	.0000	.0000
.0000	.0000	.0120	4.142	.504			
cs143	1	1.780E+00	1.000E-02	.9839	.0000	.0000	.0000
.0000	.0000	.0161	3.194	.388			
ba143	1	1.450E+01	5.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.376	.412			
la143	1	8.484E+02	9.600E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.380	.094			
ce143	1	1.188E+05	7.200E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.709	.394			
pr143	1	1.172E+06	1.728E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.315	.000			
nd143	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
i144	1	1.460E-01	0.000E+00	.8476	.0000	.0000	.0000
.0000	.0000	.1524	6.045	.537			
xe144	1	1.100E+00	0.000E+00	.9927	.0000	.0000	.0000
.0000	.0000	.0073	2.532	.365			
cs144	1	1.020E+00	3.000E-02	.9687	.0000	.0000	.0000
.0000	.0000	.0313	5.060	.526			
ba144	1	1.140E+01	5.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.651	.427			
la144	1	4.090E+01	4.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.668	.611			

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ce144	1	2.462E+07	1.728E+04	.9860	.0140	.0000	.0000
.0000	.0000	.0000	.110	.172			
pr144	1	1.037E+03	3.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.238	.023			
pr144m	1	4.320E+02	1.800E+01	.0004	.0000	.0000	.0000
.9996	.0000	.0000	.058	.216			
nd144	1	6.600E+22	0.000E+00	.0000	.0000	.0000	.0000
.0000	1.0000	.0000	1.910	.000			
i145	1	1.934E-01	0.000E+00	.7591	.0000	.0000	.0000
.0000	.0000	.2409	4.940	.474			
xe145	1	9.000E-01	0.000E+00	.9389	.0000	.0000	.0000
.0000	.0000	.0611	4.144	.441			
cs145	1	5.940E-01	1.300E-02	.8540	.0000	.0000	.0000
.0000	.0000	.1460	3.808	.622			
ba145	1	4.310E+00	1.600E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.134	.298			
la145	1	2.480E+01	2.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.374	.631			
ce145	1	1.806E+02	3.600E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.536	.560			
pr145	1	2.154E+04	3.600E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.696	.027			
nd145	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
pm145	1	5.586E+08	1.262E+07	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.044	.734			
sm145	1	2.938E+07	2.592E+05	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.093	.702			
xe146	1	5.627E-01	0.000E+00	.9349	.0000	.0000	.0000
.0000	.0000	.0650	3.085	.352			
cs146	1	3.430E-01	7.000E-03	.8680	.0000	.0000	.0000
.0000	.0000	.1320	5.184	.417			
ba146	1	2.200E+00	3.000E-02	.9999	.0000	.0000	.0000
.0000	.0000	.0001	2.250	.391			
la146	1	6.270E+00	1.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	4.212	.541			
ce146	1	8.112E+02	7.800E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.573	.557			
pr146	1	1.449E+03	1.080E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.328	.438			
nd146	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
pm146	1	1.745E+08	1.578E+06	.3390	.0000	.6610	.0000
.0000	.0000	.0000	.842	.892			
sm146	1	3.250E+15	1.578E+14	.0000	.0000	.0000	.0000
.0000	1.0000	.0000	2.543	.000			

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xe147	1	1.991E-01	0.000E+00	.9129	.0000	.0000	.0000
.0000	.0000	.0871	4.633	.499			
cs147	1	5.455E-01	0.000E+00	.7500	.0000	.0000	.0000
.0000	.0000	.2500	3.946	.401			
ba147	1	7.000E-01	3.000E-02	.9997	.0000	.0000	.0000
.0000	.0000	.0003	3.159	.412			
la147	1	4.400E+00	5.000E-01	.9995	.0000	.0000	.0000
.0000	.0000	.0005	2.568	.364			
ce147	1	5.640E+01	1.200E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.940	.557			
pr147	1	8.160E+02	3.000E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.621	.514			
nd147	1	9.487E+05	8.640E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.408	.343			
pm147	1	8.279E+07	6.311E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.062	.000			
sm147	1	3.345E+18	6.311E+16	.0000	.0000	.0000	.0000
.0000	1.0000	.0000	2.311	.000			
cs148	1	2.056E-01	0.000E+00	.7490	.0000	.0000	.0000
.0000	.0000	.2510	5.547	.535			
ba148	1	6.070E-01	2.500E-02	.9994	.0000	.0000	.0000
.0000	.0000	.0006	2.178	.383			
la148	1	1.050E+00	1.000E-02	.9987	.0000	.0000	.0000
.0000	.0000	.0013	3.325	.376			
ce148	1	5.600E+01	1.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.988	.320			
pr148	1	1.362E+02	2.400E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.793	.442			
nd148	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
pm148	1	4.640E+05	7.776E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.303	.440			
pm148m	1	3.568E+06	9.504E+03	.9540	.0000	.0000	.0000
.0460	.0000	.0000	2.156	.920			
sm148	1	2.500E+23	0.000E+00	.0000	.0000	.0000	.0000
.0000	1.0000	.0000	1.986	.000			
cs149	1	2.442E-01	0.000E+00	.6724	.0000	.0000	.0000
.0000	.0000	.3276	5.088	.472			
ba149	1	6.952E-01	0.000E+00	.9997	.0000	.0000	.0000
.0000	.0000	.0003	3.536	.430			
la149	1	2.408E+00	0.000E+00	.9919	.0000	.0000	.0000
.0000	.0000	.0081	2.872	.379			
ce149	1	5.200E+00	3.000E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.220	.471			
pr149	1	1.356E+02	4.200E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.569	.393			
nd149	1	6.210E+03	2.520E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.871	.426			

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pm149	1	1.911E+05	1.800E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.377	.032			
sm149	1	3.154E+23	0.000E+00	.0000	.0000	.0000	.0000
.0000	1.0000	.0000	.000	.000			
eu149	1	8.040E+06	4.000E+04	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.086	.768			
cs150	1	1.238E-01	0.000E+00	.8491	.0000	.0000	.0000
.0000	.0000	.1509	6.159	.541			
ba150	1	9.622E-01	0.000E+00	.9976	.0000	.0000	.0000
.0000	.0000	.0024	3.082	.356			
la150	1	6.081E-01	0.000E+00	.9906	.0000	.0000	.0000
.0000	.0000	.0094	4.586	.555			
ce150	1	4.000E+00	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.129	.389			
pr150	1	6.190E+00	1.600E-01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.093	.348			
nd150	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
pm150	1	9.648E+03	7.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.249	.654			
sm150	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
eu150	1	1.130E+09	3.156E+07	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	1.560	.984			
ba151	1	3.327E-01	0.000E+00	.9624	.0000	.0000	.0000
.0000	.0000	.0376	4.448	.506			
la151	1	7.194E-01	0.000E+00	.9345	.0000	.0000	.0000
.0000	.0000	.0655	3.828	.418			
ce151	1	1.020E+00	6.000E-02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.317	.379			
pr151	1	1.890E+01	7.000E-02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.935	.362			
nd151	1	7.464E+02	4.200E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.481	.639			
pm151	1	1.022E+05	1.440E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.616	.534			
sm151	1	2.840E+09	1.893E+08	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.020	.001			
eu151	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ba152	1	4.205E-01	0.000E+00	.9428	.0000	.0000	.0000
.0000	.0000	.0572	3.937	.353			
la152	1	2.850E-01	0.000E+00	.9396	.0000	.0000	.0000
.0000	.0000	.0604	5.264	.548			
ce152	1	7.663E+00	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.944	.400			
pr152	1	6.776E+00	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.668	.578			

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nd152	1	6.840E+02	1.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.494	.326			
pm152	1	2.460E+02	6.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.545	.097			
pm152m	1	4.512E+02	4.800E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.381	.630			
sm152	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
eu152	1	4.206E+08	1.262E+06	.2792	.0000	.7208	.0000
.0000	.0000	.0000	1.288	.902			
eu152m	1	3.355E+04	3.600E+01	.7200	.0000	.2800	.0000
.0000	.0000	.0000	.805	.376			
gd152	1	3.408E+21	0.000E+00	.0000	.0000	.0000	.0000
.0000	1.0000	.0000	2.206	.000			
la153	1	3.258E-01	0.000E+00	.8931	.0000	.0000	.0000
.0000	.0000	.1069	4.729	.442			
ce153	1	1.469E+00	0.000E+00	.9938	.0000	.0000	.0000
.0000	.0000	.0062	2.807	.401			
pr153	1	4.491E+00	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.727	.377			
nd153	1	6.750E+01	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.783	.377			
pm153	1	3.240E+02	1.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.779	.221			
sm153	1	1.666E+05	3.600E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.335	.194			
eu153	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
gd153	1	2.087E+07	1.728E+04	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.148	.726			
la154	1	1.493E-01	0.000E+00	.8973	.0000	.0000	.0000
.0000	.0000	.1027	5.861	.546			
ce154	1	2.016E+00	0.000E+00	.9936	.0000	.0000	.0000
.0000	.0000	.0064	2.654	.361			
pr154	1	1.061E+00	0.000E+00	.9989	.0000	.0000	.0000
.0000	.0000	.0011	4.287	.563			
nd154	1	4.000E+01	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.215	.500			
pm154	1	1.032E+02	6.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.791	.681			
pm154m	1	1.608E+02	4.200E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.898	.690			
sm154	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
eu154	1	2.711E+08	1.578E+05	.9998	.0000	.0002	.0000
.0000	.0000	.0000	1.532	.818			
gd154	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			

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la155	1	1.540E-01	0.000E+00	.8324	.0000	.0000	.0000
.0000	.0000	.1676	5.596	.482			
ce155	1	5.278E-01	0.000E+00	.9840	.0000	.0000	.0000
.0000	.0000	.0160	3.591	.438			
pr155	1	1.122E+00	0.000E+00	.9846	.0000	.0000	.0000
.0000	.0000	.0154	3.555	.416			
nd155	1	1.822E+01	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.200	.379			
pm155	1	4.800E+01	4.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.653	.383			
sm155	1	1.338E+03	1.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.667	.154			
eu155	1	1.477E+08	1.578E+06	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.131	.493			
gd155m	1	3.100E-02	0.000E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.122	.000			
gd155	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ce156	1	5.963E-01	0.000E+00	.9701	.0000	.0000	.0000
.0000	.0000	.0299	3.299	.355			
pr156	1	3.793E-01	0.000E+00	.9728	.0000	.0000	.0000
.0000	.0000	.0272	4.846	.555			
nd156	1	1.962E+01	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.888	.406			
pm156	1	1.310E+01	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.208	.590			
sm156	1	3.384E+04	7.200E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.329	.343			
eu156	1	1.312E+06	6.912E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.695	.726			
gd156	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ce157	1	2.144E-01	0.000E+00	.9555	.0000	.0000	.0000
.0000	.0000	.0445	4.537	.460			
pr157	1	3.800E-01	0.000E+00	.9361	.0000	.0000	.0000
.0000	.0000	.0639	4.292	.438			
nd157	1	2.483E+00	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.808	.406			
pm157	1	6.118E+01	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.292	.367			
sm157	1	4.842E+02	7.200E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.264	.318			
eu157	1	5.465E+04	1.080E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.660	.403			
gd157	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
pr158	1	1.686E-01	0.000E+00	.9358	.0000	.0000	.0000
.0000	.0000	.0642	5.733	.550			

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nd158	1	2.695E+00	0.000E+00	.9999	.0000	.0000	.0000
.0000	.0000	.0001	2.513	.368			
pm158	1	3.800E+00	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.733	.580			
sm158	1	3.306E+02	5.400E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.963	.576			
eu158	1	2.754E+03	1.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.046	.528			
gd158	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
pr159	1	1.805E-01	0.000E+00	.8764	.0000	.0000	.0000
.0000	.0000	.1236	5.165	.453			
nd159	1	6.416E-01	0.000E+00	.9976	.0000	.0000	.0000
.0000	.0000	.0024	3.729	.447			
pm159	1	3.000E+00	0.000E+00	.9998	.0000	.0000	.0000
.0000	.0000	.0002	2.942	.394			
sm159	1	1.620E+02	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.965	.491			
eu159	1	1.086E+03	6.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.278	.317			
gd159	1	6.682E+04	2.880E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.362	.144			
tb159	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
nd160	1	7.886E-01	0.000E+00	.9905	.0000	.0000	.0000
.0000	.0000	.0095	3.309	.364			
pm160	1	7.289E-01	0.000E+00	.9973	.0000	.0000	.0000
.0000	.0000	.0027	4.470	.559			
sm160	1	7.258E+01	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.536	.449			
eu160	1	4.400E+01	3.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.064	.522			
gd160	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
tb160	1	6.247E+06	1.728E+04	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.480	.826			
dy160	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
nd161	1	3.113E-01	0.000E+00	.9830	.0000	.0000	.0000
.0000	.0000	.0170	4.044	.465			
pm161	1	7.899E-01	0.000E+00	.9825	.0000	.0000	.0000
.0000	.0000	.0175	3.809	.445			
sm161	1	4.780E+00	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.645	.430			
eu161	1	4.205E+01	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.012	.500			
gd161	1	2.196E+02	3.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.971	.400			

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tb161	1	5.962E+05	1.728E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.233	.154			
dy161	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
pm162	1	3.243E-01	0.000E+00	.9786	.0000	.0000	.0000
.0000	.0000	.0214	4.705	.557			
sm162	1	5.260E+00	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.261	.388			
eu162	1	1.624E+02	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.421	.590			
gd162	1	5.040E+02	1.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.823	.652			
tb162	1	4.656E+02	6.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.646	.673			
tb162m	1	8.028E+03	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.832	.626			
dy162	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sm163	1	1.268E+00	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.003	.444			
eu163	1	7.604E+00	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.613	.410			
gd163	1	9.277E+01	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.820	.528			
tb163	1	1.170E+03	1.800E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.110	.711			
tb163m	2	7.000E+00	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.749	.240			
dy163	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sm164	1	1.385E+00	0.000E+00	.9999	.0000	.0000	.0000
.0000	.0000	.0001	2.852	.368			
eu164	1	1.533E+00	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.710	.579			
gd164	1	1.301E+03	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.365	.474			
tb164	1	1.800E+02	6.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	3.050	.765			
dy164	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
sm165	1	4.536E-01	0.000E+00	.9975	.0000	.0000	.0000
.0000	.0000	.0025	3.655	.463			
eu165	1	1.355E+00	0.000E+00	.9981	.0000	.0000	.0000
.0000	.0000	.0019	3.237	.435			
gd165	1	4.229E+01	0.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	2.111	.417			
tb165	1	1.266E+02	6.000E+00	.1400	.8600	.0000	.0000
.0000	.0000	.0000	1.710	.489			

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dy165	1	8.402E+03	2.160E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.474	.055			
dy165m	1	7.548E+01	3.600E-01	.0224	.0000	.0000	.0000
.9776	.0000	.0000	.118	.169			
ho165	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
dy166	1	2.938E+05	3.600E+02	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.206	.209			
ho166	1	9.648E+04	7.200E+01	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.725	.041			
ho166m	1	3.787E+10	5.680E+09	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.774	.918			
er166	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
er167	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
er167m	1	2.280E+00	3.000E-02	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.203	.478			
er168	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ybl68	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
er169	1	8.122E+05	1.800E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.103	.000			
tm169	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
ybl69	1	2.767E+06	5.000E+02	.0000	.0000	1.0000	.0000
.0000	.0000	.0000	.429	.734			
er170	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
tm170	1	1.111E+07	3.000E+04	.9985	.0000	.0015	.0000
.0000	.0000	.0000	.335	.016			
tm170m	1	4.100E-06	0.000E+00	.0000	.0000	.0000	.0000
1.0000	.0000	.0000	.000	.000			
ybl70	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
er171	1	2.706E+04	8.000E+00	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.790	.472			
tm171	1	6.060E+07	4.000E+05	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.026	.023			
ybl71	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			
er172	1	1.775E+05	1.800E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	.633	.796			
tm172	1	2.290E+05	1.100E+03	1.0000	.0000	.0000	.0000
.0000	.0000	.0000	1.005	.483			
ybl72	6	0.000E+00	0.000E+00	.0000	.0000	.0000	.0000
.0000	.0000	.0000	.000	.000			