SOFTWARE RELEASE NOTICE

1. SRN Number: PA-SRN- 243

2. Project Title: TSPA & Technical Integration Code	Project No. 20-01402-762
3. SRN Title: TPA Version 4.1j	
4. Originator/Requestor: Gordon Wittmeyer	Date: 05/02/01

5. Summary of Actions

- ☐ Release of new software
- ■ Release of modified software:
  - ■ Enhancements made
  - ■ Corrections made
- ☐ Change of access software
- ☐ Software Retirement

6. Persons Authorized Access

Name	Read Only/Read-Write	Addition/Change/Delete
Sitakanta Mohanty	RW	
Ron Janetzke	RW	
David Esh (NRC)	RW	
Tim McCartin (NRC)	RW	
James Firth (NRC)	RW	
Others (NRC/CNWRA)	RO	

7. Element Manager Approval: Gordon Wittmeyer Date: 5/2/2001

8. Remarks:

An 8mm tape containing FORTRAN source code for the TPA Version 4.1j code, and 3 data CDs containing binary executable files for the PC/Windows NT platform were sent to NRC.

SOFTWARE SUMMARY FORM

01. Summary Date: 05/02/01	02. Summary prepared by (Name and phone): Sitakanta Mohanty (210) 522-5185		03. Summary Action: Modified
04. Software Date: 05/02/01	05. Short Title: TPA Version 4.1j		
06. Software Title: TPA - System Performance Assessment Computer Code, Version 4.1j			07. Internal Software ID: None
08. Software Type: ☐ Automated Data System ■ Computer Program ☐ Subroutine/Module	09. Processing Mode: ☐ Interactive ■ Batch ☐ Combination	10. Application Area: a. General: ☐ Scientific/Engineering ☐ Auxiliary Analyses ■ Total System PA ☐ Subsystem PA ☐ Other b. Specific:	
11. Submitting Organization and Address: CNWRA/SwRI 6220 Culebra Road San Antonio, TX 78228		12. Technical Contact(s) and Phone: Sitakanta Mohanty (210) 522-5185	
13. Software Application: The TPA Code consists of the following modules: UZFLOW, NFENV, EBSREL, UZFT, SZFT, DCAGW, FAULTO, SEISMO, VOLCANO, ASHPLUMO, ASHRMVO, DCAGS, LHS, EXEC.			
14. Computer Platform: SUN Workstation PC	15. Computer Operating System: UNIX Windows NT	16. Programming Language(s): SUN FORTRAN 5.0 Lahey LF90 V4.5	17. Number of Source Program Statements: Approx. 41000 lines w/o stand alone codes
18. Computer Memory Requirements: 105 Mb	19. Tape Drives: None	20. Disk Units: N/A	21. Graphics: N/A
22. Other Operational Requirements: Uses system environment variables: TPA_TEST and TPA_DATA.			
23. Software Availability: ■ Available ☐ Limited ☐ In-House ONLY		24. Documentation Availability: ☐ Available ☐ Preliminary ■ In-House ONLY	
25. Software Developer: _____ Date: 5-2-01			

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CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES
DESIGN VERIFICATION REPORT FOR CNWRA SOFTWARE

DEVELOPED SOFTWARE[1]

Software Title/Name: Total System Performance Assessment Code

Version: 4.1 J

Demonstration workstation: Scratchy 1 and Alby Bldg 189 Room A 207

Operating System: Windows NT & Unix

Developer: S. Mohanty/R. Janetzke

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1. Software Requirements Description: TOP-018, Section 5.3

Software Requirements Description (SRD) and any changes thereto reviewed in accordance with QAP-002 requirements?

Yes: ☐ No: ☐ N/A: ☒

SRD Version: TPA 4.0

SRD Approval Date: 11/3/99

Notes: Changes in accordance with Software Change Requests.

2. Software Development Plan (SDP): TOP-018, Section 5.4

a) The Element Manager has approved the SDP and any changes?

Yes: ☐ No: ☐ N/A: ☒

b) The SDP addresses applicable section of TOP-018, Appendix B, Software Development Plan Template?

Yes: ☐ No: ☐ N/A: ☒

SDP Version: TPA 4.0

SDP Approval Date: 2/15/2000

Notes: Software Change Requests utilized.

[1] See TOP-018, Table 1 for criteria.

DESIGN VERIFICATION REPORT FOR CNWRA SOFTWARE DEVELOPED SOFTWARE

3. Design and Development: TOP-018, Section 5.5.1, 5.5.2

a) Is development and module/subroutine-level testing documented either in scientific notebooks and/or in Software Change Reports (SCR)?

Yes: ☒ No: ☐ N/A: ☐

Scientific Notebook(s): —

SCR Number(s): PA-SCR-334-338 (4 Total)

Notes: Software Change Reports utilized

b) Is development and module/subroutine-level testing sufficiently documented so that an informed reviewer can follow the testing procedures and logic?

Yes: ☒ No: ☐ N/A: ☐

Notes: See SCRs PA-SCR-334 Thru 338

c) Is development in accordance with the conventions described in the SDP/SCR, i.e. coding convention?

Yes: ☒ No: ☐ N/A: ☐

Notes: See SCRs PA-SCR-334 Thru 338

4. Internal Documentation: TOP-018, Section 5.5.3

Software internally documented to allow a user to understand the function(s) being performed and to follow the flow of execution of individual routines?

Yes: ☒ No: ☐ N/A: ☐

Module(s) Reviewed: EXEG.f

dclgw.f

uzflow.f

Notes: Reviewed with software developer, changes checked copies made and attached.

5. Output: TOP-018, Section 5.5.4

Software designed so that individual runs are uniquely identified by Date, Time, Name of software and version?

Yes: ☒ No: ☐ N/A: ☐

Date and time of run: monday Apr 30 16:55:20 2001

Name and version: TPA Version 4.1j

Notes: N/A See attached.

DESIGN VERIFICATION REPORT FOR CNWRA SOFTWARE DEVELOPED SOFTWARE

6. Code Reviews: TOP-018, Section 5.5.5

Are code reviews (if implemented) documented in a scientific notebook or in another format that allows others to understand the code review process and results?

Yes: ☐ No: ☐ N/A: ☒

Scientific Notebook: NO Code Reviews - minor changes from 5/2/2001

Notes: Acquired code that is not to be modified is accepted as is. No code reviews required.

7. Medium and Header Documentation: TOP-018, Section 5.5.6

a) Program title block of main program contains required information?

Yes: ☒ No: ☐ N/A: ☐

Program Title: TOTAL-System Performance Assessment Code V. 4.1j

Customer Name: U.S. NRC

Customer Office/Division: NMSS

Customer Contact(s): Tim McCartin US NRC

Customer Phone Number: 301- 415-6681

Associated Documentation: yes

Disclaimer Notice: yes

Notes: See attached printout from Software.

b) Source code module header contains required information provides Program Name, Client Name, Contract Reference, Revision Number, and Revision History?

Yes: ☒ No: ☐ N/A: ☐

Module Reviewed: exec.f

Module Reviewed: dcagw.f

Module Reviewed: uzflow.f

Notes: N/A

DESIGN VERIFICATION REPORT FOR CNWRA SOFTWARE DEVELOPED SOFTWARE

7. Medium and Header Documentation, continued: TOP-018, Section 5.5.6

c) The physical labeling of software medium (tapes, disks, etc.) contain required information?

Yes: ☒ No: ☐ N/A: ☐

Program Name: TPA

Module/Name/Title: TPA

Module Revision: 4.1j

File Type (ASCII, OBJ, EXE): SUN - ASCII files (TAR File)

Recording Date: May 2, 2001

Operating System of Supporting Hardware: Solaris

Notes: For TPA 4.1j Source code.

8. User's Manual: TOP-018, Section 5.5.5

a) Is there a Users' Manual for the software?

Yes: ☒ No: ☐ N/A: ☐

User's Manual Version and Date: TPA 4.0 Users manual April 2000

Notes: N/A - in QA Records Room Applies

b) Are there basic instructions for the use of the software?

Yes: ☒ No: ☐ N/A: ☐

Location of Instruction: in above users manual

Notes: N/A

9. Acceptance Testing: TOP-018, Section 5.6

a) Does the acceptance testing demonstrate whether or not requirements in the SRD and/or SCR have been fulfilled?

Yes: ☒ No: ☐ N/A: ☐

Location of Test Results: in QA Records Room

Notes: N/A

DESIGN VERIFICATION REPORT FOR CNWRA SOFTWARE
DEVELOPED SOFTWARE

9. Acceptance Testing, continued: TOP-018, Section 5.6

b) Has acceptance testing been conducted for each intended computer platform and operating system?

Yes: ☒ No: ☐ N/A: ☐

Platform(s): Sun (NRC & CNWRA); PCs - Windows NT

Operating System(s): SOLARIS; Windows NT

Location of Test Results: Acceptance Tests in This Folder in QA Records Room.

Notes: N/A

c) Has installation testing been conducted for each intended computer platform and operating system?

Yes: ☐ No: ☐ N/A: ☒

Platform(s): —

Operating System(s): —

Location of Test Results: —

Notes: No changes that would affect installation Testing.

10. Configuration Control: TOP-018, Section 5.7

a) Is the Software Summary Form completed and signed?

Yes: ☒ No: ☐ N/A: ☐

Software Summary Form Approval Date: 5/2/2001

Notes: N/A

b) Is a software technical description prepared, documenting the essential mathematical and numerical basis?

Yes: ☒ No: ☐ N/A: ☐

Location Technical Description: in User's Guide

Notes: See User's guide in QA Records Room

c) Is the source code available (or, is the executable code available in the case of (acquired/commercial codes)?

Yes: ☒ No: ☐ N/A: ☐

Location of Source Code: QA Records Room —

Notes: — both source code and executable code are in QA Records Room.

DESIGN VERIFICATION REPORT FOR CNWRA SOFTWARE DEVELOPED SOFTWARE

11. Configuration Control, continued: TOP-018, Section 5.7

d) Have all the script/make files and executable files been submitted to the Software Custodian?

Yes: ☒ No: ☐ N/A: ☐

Location of Script/Make Files: QA Records Room

Notes: N/A

12. Software Release: TOP-018, Section 5.9

Upon acceptance of the software as verified above, has a Software release Notice, Form TOP-6 been issued?

Yes: ☒ No: ☐ N/A: ☐

Version number on software (1.0 for 1st issue): TPA Version 4.1j

Version number on SRN: 4.1j

Notes: N/A

13. Software Validation: TOP-018, Section 5.10

a) Has a Software Validation Test Plan (SVTP) been prepared for the range of application of the software?

Yes: ☐ No: ☒ N/A: ☐

Version/Date of SVTP: N/A - To be addressed in future in conjunction w/ NRC.

Date reviewed and approved via QAP-002: N/A

Notes: See above.

b) Has a Software Validation Test Report (SVTR) been prepared that documents the results of the validation cases, interpretation of the results, and determination if the software has been validated?

Yes: ☐ No: ☒ N/A: ☐

Version/Date of SVTR: —

Date reviewed and approved via QAP-002: —

Notes: See above

Additional Remarks:

Ron Janetzke 5-2-01
CNWRA Software Developer/Date

Steven Mahmood 5/2/2001
CNWRA Software Custodian/Date

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```
c Program Name:         TPA - Total-System Performance Assessment Code
c File Name:            exec.f
c File Date:            04/28/01
c Release Version:      4.1
c
c Client Name:          USNRC
c                       U. S. Nuclear Regulatory Commission
c                       NRC Office of Nuclear Material Safety and Safeguards
c                       Division of Waste Management
c Contract Number:      NRC 02-97-009
c
c NRC Contact           Tim McCartin (301) 415-6681
c
c CNWRA Contact:        Sitakanta Mohanty (210) 522-5185
c                       Center for Nuclear Waste Regulatory Analyses
c                       San Antonio, Texas 78238-5166
c                       smohanty@swri.edu
c
c Revisions:
c                       3.1.1     includes SPCRs 101 through 205
c                       3.1.2     includes SPCRs 206 through 224
c                       3.1.3     includes SPCRs 225 through 227
c                       3.1.4     includes SPCRs 228 through 231
c                       3.2       includes SPCRs 232 through 252
c                       3.2.1     3.2PCbeta port of 3.2 to PC running NT4
c                       3.2.2     3.2PVMbeta mod of 3.2.1 to enable PVM
c                       3.2.3     includes SCRs  260 through 271
c                       3.3       includes SCRs  272 through 278
c                          and    includes SCRs  280 through 287
c                       4.0       includes SCRs  288 through 313
c                       4.1       includes SCR   321 through 326
c                       4.1c      includes SCR   331 peak mean dose
c                       4.1d      includes SCR   332 tpameans.out & tpa.inp
c                       4.1e      changes to ChlorideMultFactor in tpa.inp only.
c                       4.1f      includes SCR   334 EPA groundwater bug fix.
c                       4.1g      includes SCR   336 Add MAI loss mode in uzflow.
c                       4.1h      includes SCR   335 Add checkpoint/restart.
c                       4.1i      includes SCR   337 Bug fix for icheckpointinp.
c                       4.1j      includes SCR   338 Increase max correlated var.
c
c Documentation:        Predecisional "Total-System Performance Assessment
c                       (TPA) Version 4.0 Code: Module Description and
c                       User's Guide", Center for Nuclear Waste Regulatory
c                       Analyses
c NUREG-Series Designator: N/A
ccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccc
c
c
c = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = =
c
c                         D I S C L A I M E R
c
c = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = =
c
c     "This computer code/material was prepared as an account of work
c performed by the Center for Nuclear Waste Regulatory Analyses (CNWRA)
c for the Division of Waste Management of the Nuclear Regulatory
c Commission (NRC), an independent agency of the United States
c Government.  Neither the developer(s) of the code nor any of their
c sponsors make any warranty, expressed or implied, or assume any legal
c liability or responsibility for the accuracy, completeness, or
c usefulness of any information, apparatus, product or process
c disclosed, or represent that its use would not infringe on privately-
c owned rights."
c
```

```
c     "In no event unless required by applicable law will the sponsors
c or those who have written or modified this code, be liable for
c damages, including any lost profits, lost monies, or other special,
c incidental or consequential damages arising out of the use or
c inability to use the program (including but not limited to loss of
c data or data being rendered inaccurate or losses sustained by third
c parties or a failure of the program to operate with other programs),
c even if you have been advised of the possibility of such damages or
c for any claim by any other party."
c
c = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = =
c
c by S. Mohanty, R. Janetzke, R. Rice, A. Lozano
c    R. Manteufel (initial version)
c
c rwe - SCR 335 - 02/23/01  added logic for checkpoint/restart
c                           operation, including calls to flush.
c=======================================================================
       program exec
c=======================================================================
c Executive for TPA Version 4.1
c Contact Person: : S. Mohanty
c
cc       1         2         3         4         5         6         7
cc3456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
c
      implicit double precision (a-h,o-z)
      implicit integer (i-n)

      include 'ia.i'
      include 'ia1.i'

      include 'maxntime.i'
      include 'maxnsuba.i'
      include 'maxnnucl.i'
      include 'execa.i'
      include 'execb.i'

cc rwr 9/6/00 modified for groundwater protection calculations
      include 'execc.i'

      include 'inventb.i'
      include 'path.i'
```

```
     &        dosefactor(iorgandf,3), dosefactor(iorgandf,4),
     &        dosefactor(iorgandf,5), dosefactor(iorgandf,6),
     &        dosefactor(iorgandf,7), dosefactor(iorgandf,8)
          enddo
          do iorgandf = 1,5
            read(ireadorgandf,'(d8.2)' ) epasf(iorgandf)
          enddo
          do iini1 = 1, ntim
            uconcsum(iini1)=0.0d0
            aconcsum(iini1)=0.0d0
            rconcsum(iini1)=0.0d0
            epadosetotalsum(iini1) = 0.0d0
            do iini2 = 1,8
              epadoseave(iini1,iini2) = 0.0d0
            enddo
          enddo
cc
cc SCR-334
cc rwj 1-29-01  Close file before leaving IF block.
cc
  184     format(3x,a6,2x,d8.2,7(8x,d8.2))
          close(ireadorgandf)

        endif
cc
cc SCR-334
cc rwj 1-29-01   Moved to above.
cc184   format(3x,a6,2x,d8.2,7(8x,d8.2))
cc      close(ireadorgandf)

        ikey =39231
      end if

cc
cc mam 01/24/00 Add call to run genii standalones.
cc
cc      Run GENII programs (envin and env) to make DCF files.
```

dcagw.f
Example

UZflow.f
Example

```
      zNoiseFile      = 'climato1.dat'
      call get_data_file('UZFLOW', 'climato1.dat')

c     get unit number to be used for all datafile input in this module

      call set_iouzflow()

c     set default climate parameters (P in mm/yr, T in degrees C)

      AAP0 = 162.8d0
      AAT0 = 17.38d0

c     get TPS parameters that are constant for all realizations

      SimMaxTime = dget_from_name('MaximumTime[yr]')
      CliTS = dget_from_name('TimeStepForClimate[yr]')
cc
cc rwj 2-27-01
cc     Add infiltration loss mode.
cc
      lossmode = iget_from_name(
     &          'AnnualInfiltrationLossMode(0=NoLoss,1=LossCalculated)')

c     get pointers to TPS parameters that can change each realization

      mAAPmaxmul = mget_from_name(
     &          'MeanAveragePrecipitationMultiplierAtGlacialMaximum')
      mAATmaxadd                                = mget_from_name(
     &          'MeanAverageTemperatureIncreaseAtGlacialMaximum[degC]')
      msdevAAP                                  = mget_from_name(
     &          'StandardDeviationOfMAPAboutMeanInOneTimePeriod[mm/yr]')
      msdevAAT                                  = mget_from_name(
     &          'StandardDeviationOfMATAboutMeanInOneTimePeriod[degC]')
      mrhoPT  = mget_from_name('CorrelationBetweenMAPAndMAT')
      miNoise = mget_from_name('ClimatePerturbationSet')

c     calculate additional parameters
```

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Output printout

To verify Time/date

```
================================================================================
        exec: Welcome to TPA Version 4.1j
      Job started: Mon Apr 30 16:55:20 2001
================================================================================
REPOSITORY DESIGN INFORMATION
Subarea    Area       Waste    Number of WP
   #      [m^2]      [MTU]
   1    723591.3    11479.9        1455
   2    784763.0    12371.5        1568
   3    390372.0     6114.8         775
   4    207581.3     3361.1         426
   5    378972.8     5996.4         760
   6    424872.5     6714.4         851
   7    163938.3     2548.5         323
   8    393468.9     6674.9         846
   9    660785.5     7708.5         977
  10    589497.1     7069.4         896

Total Area [acre]          =     1165.76297799608
Total Buried Waste [MTU]   =     70039.5300000000
Repository AML [MTU/acre]  =     60.0804205674777

Specified Global Parameters:

             Compliance Period =  10000.0 (yr)
       Maximum Simulation Time = 100000.0 (yr)
        Number Of Realizations =      1
            Number Of Subareas =     10
            Volcanism scenario =      1 (yes=1, no=0)
             Faulting scenario =      1 (yes=1, no=0)
              Seismic scenario =      1 (yes=1, no=0)
    Distance to Receptor Group =     20.0 (km)


**>>> CAUTION: CHECKING OF NUCLIDES AND CHAINS IS DISABLED <<<**
**>>> You may not be using the standard chains specified   <<<**
**>>> in the invent module.                                <<<**
**>>> (see "CheckNuclidesAndChains(yes=1,no=0)" in tpa.inp)<<<**


***>>> NOTE: When running with volcanism, verify that   <<<***
***>>> the maximum value of the PDF for parameter       <<<***
***>>> TimeOfNextVolcanicEventinRegionOfInterest[yr] is <<<***
***>>> equal to the parameter MaximumTime[yr].          <<<***
***>>>                                                  <<<***
***>>> Also, verify that the maximum total of both      <<<***
***>>> ejected and failed in drift volcanic failures    <<<***
***>>> not exceed the number of WPs in the subarea.     <<<***


The specified path for data  = $TPA_DATA/
The specified path for codes = $TPA_TEST/
```

Software Change Reports

SOFTWARE CHANGE REPORT (SCR)

SCR No. (*Software Developer Assigns*): PA-SCR-334	**Software Title and Version:** TPA 4.1e	**/Project No:** 20-1402-762

Affected Software Module(s), Description of Problem(s):

dcagw.f

The TPA code aborts when the EPA groundwater protection flag is set to 0.

Change Requested by: J. Weldy Date:1-8-01	**Change Authorized by** (*Software Developer*): R. Janetzke Date: 2-2-01

Description of Change(s) or Problem Resolution (*If changes not implemented, please justify*):

The file close statement should appear in the same if block as the file open statement.

Implemented by: R. Janetzke	**Date:** 2-2-01

Description of Acceptance Tests:

See attachment.

Tested by: M. Hidalgo	**Date:** 3-30-01

SCR334 Test Description and Results

To verify SCR334 changes, the following tests were done:

1. Run TPA 4.1f (folder mytpabasescr334_flag_0) with the GroundwaterProtectionCalc set to 0. Stored results of the run for comparison with item number 2 run.

2. Run TPA 4.1f (folder mytpabasescr334_flag_1) with the GroundwaterProtectionCalc set to 1. Stored results of the run for comparison with item number 1 run.

3. Using the "Windiff" utility by Microsoft, a comparison of all output files from run 1 and 2 was done. Results were identical other that different dates, except the file names "epa_eva.out", "epapktim.out and "organdf.dat" were only present in the run that "groundwaterprotectioncalc" flag was set to 1. The test passed.

All Tests performed for SCR334 Passed.

SOFTWARE CHANGE REPORT (SCR)

SCR No. (*Software Developer Assigns*): PA-SCR-335	**Software Title and Version:** TPA 4.1e	**/Project No:** 20-1402-762

Affected Software Module(s), Description of Problem(s):

exec.f, reader.f, sampler.f, mv.f

When the TPA code terminates prematurely the output files are incomplete. If the job is then restarted it begins again at the first vector. It is desireable to be able to concatenate the files from a second ron to those of a previous run if the first run did not complete.

Change Requested by:	**Change Authorized by** (*Software Developer*):
S. Mohanty Date:1-8-01	R. Janetzke Date: 2-2-01

Description of Change(s) or Problem Resolution (*If changes not implemented, please justify*):

Write file check.pnt to store variables calculated during realizations (see description in attachment) and mylastcheck flag that tracks which realization completed. Pass flag to routines that call writehead and writehead2. If file was initialized in the last run, don't write header again (see comments in modified files). Prevent files from being deleted on a restart.

Implemented by:	**Date:**
Reuben Edgar and Carol Scherer	2-16-01

Description of Acceptance Tests:

See attachment.

Tested by:	**Date:**
M. Hidalgo	3-20-01

SCR335 Test Description and Results

To verify SCR335 changes, the following tests were done:

1. Run TPA 4.1e and created base line (3 realizations) folder in CD "tpa41e3r_no_intfirstbaseline".

2. Run TPA 4.1f and created base line (3 realizations) folder in CD "tpa41f3rcompletenotint". Using the "Windiff" utility by Microsoft, a comparison of all output files from run 1 and 2 was done. The results were correct. The test passed.

3. Run TPA 4.1f (3 realizations - folder "tpa41f_int_1") and interrupted the run during the first realization, then restarted and allowed the run to complete. Using the "Windiff" utility by Microsoft, a comparison of all output files from run 2 and 3 was done. The results were correct. The test passed.

4. Run TPA 4.1f (3 realizations - folder "tpa41f_int_2") and interrupted the run during the second realization, then restarted and allowed the run to complete. Using the "Windiff" utility by Microsoft, a comparison of all output files from run 2 and 4 was done. The results were correct. The test passed.

5. Run TPA 4.1f (3 realizations - folder "tpa41f_int_3") and interrupted the run during the third realization, then restarted and allowed the run to complete. Using the "Windiff" utility by Microsoft, a comparison of all output files from run 2 and 5 was done. The results were correct. The test passed.

6. Run TPA 4.1f (3 realizations) and interrupted during the third realization. Changed TPA.INP from 3 to 1 realization and restarted run and allowed to complete. The system completed run and cleaned the "check.pnt" file. The test passed

7. Run TPA 4.1f and created base line (10 realizations - folder "tpa41f_10r_no_int_complete")

8. Run TPA 4.1f (10 realizations - folder "tpa41f_10r_int_2_8") and interrupted the run during the second realization, then restarted run and interrupted again during the eighth realization and allowed the run to complete. Using the "Windiff" utility by Microsoft, a comparison of all output files from run 7and 8 was done. The results were correct. The test passed.

All Tests performed for SCR335 PASSED

TPA 4.1 e/f Testing Plan

1. Compiled TPA 4.1e.
2. Run TPA 4.1e and create base line (3 realizations).
3. Compiled TPA 4.1f.
4. Run TPA 4.1f and create base line (3 realizations).
5. Compare both TPA4.1 e and f base lines
    - Record results of the base lines comparisons
6. Run TPA 4.1f and create base line (10 realizations)
7. Run TPA 4.1f (3 realizations)
    - Interrupt during the first realization, then restart and allow run to complete
        - Compare results with TPA 4.1f original base line
        - Record results of the comparisons
    - Interrupt during the second realization, then restart and allow run to complete
        - Compare results with TPA 4.1f original base line
        - Record results of the comparisons
    - Interrupt during the third realization, then restart and allow run to complete
        - Compare results with TPA 4.1f original base line
        - Record results of the comparisons
8. Run TPA 4.1f (10 realizations)
    - Interrupt during the second realization, then restart
    - Interrupt during the eight realization, then restart and allow run to complete
        - Compare results with TPA 4.1f original base line (10 realizations)
        - Record results of the comparisons
9. Run TPA 4.1f (3 realizations)
        - Interrupt during the third realization
        - Change TPA.INP from 3 to 1 realization
        - Restart run
        - Record behavior
10. Make a CD with all data and scientific notebook.

- Do daily scientific notebook entries
- Comparisons must compare the list of output files created and differences in the output files

TPA 4.1 e/f Testing Plan Status

1. Compiled TPA 4.1e. **(DONE)**
2. Run TPA 4.1e and create base line (3 realizations). **(DONE)**
3. Compiled TPA 4.1f. **(DONE)**
4. Run TPA 4.1f and create base line (3 realizations). **(DONE)**
5. Compare both TPA4.1 e and f base lines **(DONE)**
   - Record results of the base lines comparisons **(DONE)**
6. Run TPA 4.1f and create base line (10 realizations) **(DONE)**
7. Run TPA 4.1f (3 realizations)
   Interrupt during the first realization, then restart and allow run to complete **(DONE)**
   - Compare results with TPA 4.1f original base line
   - Record results of the comparisons
   - Interrupt during the second realization, then restart and allow run to complete **(DONE)**
     - Compare results with TPA 4.1f original base line
     - Record results of the comparisons
   - Interrupt during the third realization, then restart and allow run to complete **(DONE)**
     - Compare results with TPA 4.1f original base line
     - Record results of the comparisons
8. Run TPA 4.1f (10 realizations) **(WORKING)**
   - Interrupt during the second realization, then restart
   - Interrupt during the eight realization, then restart and allow run to complete
     - Compare results with TPA 4.1f original base line (10 realizations)
     - Record results of the comparisons
9. Run TPA 4.1f (3 realizations) **(DONE)**
   - Interrupt during the third realization
   - Change TPA.INP from 3 to 1 realization
   - Restart run
   - Record behavior
10. Make a CD with all data and scientific notebook.

- Do daily scientific notebook entries
- Comparisons must compare the list of output files created and differences in the output files

TPA 4.1 e/f Testing Plan

1. Compiled TPA 4.1e.
2. Run TPA 4.1e and create base line (3 realizations).
3. Compiled TPA 4.1f.
4. Run TPA 4.1f and create base line (3 realizations).
5. Compare both TPA4.1 e and f base lines
    - Record results of the base lines comparisons
6. Run TPA 4.1f and create base line (10 realizations)
7. Run TPA 4.1f (3 realizations)
    - Interrupt during the first realization, then restart and allow run to complete
        - Compare results with TPA 4.1f original base line
        - Record results of the comparisons
    - Interrupt during the second realization, then restart and allow run to complete
        - Compare results with TPA 4.1f original base line
        - Record results of the comparisons
    - Interrupt during the third realization, then restart and allow run to complete
        - Compare results with TPA 4.1f original base line
        - Record results of the comparisons
8. Run TPA 4.1f (10 realizations)
    - Interrupt during the second realization, then restart
    - Interrupt during the eight realization, then restart and allow run to complete
        - Compare results with TPA 4.1f original base line (10 realizations)
        - Record results of the comparisons
9. Run TPA 4.1f (3 realizations)
        - Interrupt during the third realization
        - Change TPA.INP from 3 to 1 realization
        - Restart run
        - Record behavior
10. Make a CD with all data and scientific notebook.

- Do daily scientific notebook entries
- Comparisons must compare the list of output files created and differences in the output files

SOFTWARE CHANGE REPORT (SCR)

SCR No. (*Software Developer Assigns*): PA-SCR-336	**Software Title and Version:** TPA 4.1f	**/Project No:** 20-1402-762

Affected Software Module(s), Description of Problem(s):

uzflow.f, uzflowi.i

The TPA code does not provide a convenient method of performing importance analysis for infiltration. A parameter is desired that could be accessed via the ia.dat file to neutralize the precipitation and infiltration phenomena.

Change Requested by:	**Change Authorized by** (*Software Developer*):
R. Janetzke Date:2-28-01	R. Janetzke Date: 2-28-01 R Janetzke

Description of Change(s) or Problem Resolution (*If changes not implemented, please justify*):

The loss mode parameter added to the tpa.inp file is AnnualInfiltrationLossMode(0=NoLoss,1=LossCalculated). If mode 0 is selected the calculation of the infiltration loss is skipped and the infiltration is set equal to precipitation.

Implemented by:	**Date:**
R. Janetzke R Janetzke	3-2-01

Description of Acceptance Tests:

See attachment.

Tested by:	**Date:**
M. Hidalgo	4-4-01

SCR336 Test Description and Results

To verify SCR336 changes, the following tests were done:

1. Run TPA 4.1h (folder tpa41h_flag_set_to_0) with the AnnualInfiltrationLossMode set to 0. Stored results of the run for comparison with item number 2 run.

2. Run TPA 4.1h (folder tpa41h_flag_set_to_1) with the AnnualInfiltrationLossMode set to 1. Stored results of the run for comparison with item number 1 run.

3. Using the "Windiff" utility by Microsoft, a comparison of all output files from run 1 and 2 was done. Results were different as expected. The following files were different: "cumrel.res", "cumrel_c.res", "cumrelse.out", "diagnose.out", "ebsfilt.inp", "ebsfilt.out", "ebsflo.dat", "ebsnef.dat", "ebsnef2.dat", "echofilt.dat", "epa_ave.out", "epapktim.out", "frac_rel.out", "gwccdf.res", "gwccdf_c.res", "gwpkdos.res", "gwpkds_c.res", "gwttuzsz.res", "infilper.res", "maxrel.dat", "mv.tpa", "nefii.dis", "nefii.out", "nefii.rel", "nefii.vel", "nefiisz.dis", "nefiisz.out", "nefiisz.src", "nefiiuz.dis", ", "nefiiuz.inp", "nefiiuz.out", "nefiiuz.src", "nefiiuz.vel", "npkdoset.res", "npkdst_c.res", "pkmndose.out", "pkreltim.res", "pkrltm_c.res", "relccdf.res", "relcum.out", "releaset.out", "relfrac.out", "relgwgs.res", "rgwna.tpa", "rgwnr.tpa", ""rgwsa.tpa", "rgwsr.tpa", "rlccdf_c.res", "rlgwgs_c.res", "sotnef.dat", "totdos_c.res", "totdose.res", "trelease.out". The test passed.

All Tests performed for SCR336 Passed.

SOFTWARE CHANGE REPORT (SCR)

SCR No. (*Software Developer Assigns*): PA-SCR-337	**Software Title and Version:** TPA 4.1h	**/Project No:** 20-1402-762

Affected Software Module(s), Description of Problem(s):

exec.f

When requesting more than 55 realizations the maximum number of I/O logical units (150) is exceeded, and the TPA code execution is halted.

Change Requested by: R. Janetzke Date:4-6-01	**Change Authorized by** (*Software Developer*): R. Janetzke Date: 4-6-01 R Janetzke

Description of Change(s) or Problem Resolution (*If changes not implemented, please justify*):

The extra calls to 'igetunitnumber()' were removed, leaving a single initial call per run at the beginning of the code.

Implemented by: R. Janetzke R Janetzke	**Date:** 4-6-01

Description of Acceptance Tests:

Add print to fileunit.f to count number of LUNs opened.
Run TPA for 65 realizations and see if number of LUNs opened exceeds 150.
Modified tpa.inp for 1 subarea (instead of 10). Run for 30K total simulation years.
Run 1: 1 realization. Result: 105 open LUNs (< 150 max)
Run 2: 65 realizations. Result: 105 open LUNs (< 150 max)

Final test result: Test passed.

Tested by: M. Muller	**Date:** 4-6-01 apr 6, 2001

SOFTWARE CHANGE REPORT (SCR)

SCR No. (*Software Developer Assigns*): PA-SCR-338	**Software Title and Version:** TPA 4.1i	**/Project No:** 20-1402-762

Affected Software Module(s), Description of Problem(s):

samplery.i, snllhs.f and tpa.inp

Several new parameter values were supplied by the TPA team including 0.0m backfill thickness, 81.m drift spacing, 7.89 MTU WP payload, 0.7 ventilation factor, 50yr backfill emplacement, lognormal 3.15e-2, 1.05e3 WP flow multiplication factor, and Kds for Am, Np, U, Pu, and Th. The UZ KD parameters involved many new correlations to be specified in the tpa.inp file. The TPA code is limited to 50 total correlated parameter pairs where 75 are required with the new data set.

Change Requested by:	**Change Authorized by** (*Software Developer*):
R. Janetzke Date:4-27-01 R Janetzke	R. Janetzke Date: 4-27-01 R Janetzke

Description of Change(s) or Problem Resolution (*If changes not implemented, please justify*):

The correlation arrays for the TPA executive and the snllhs.f modules were resized to accommodate 100 correlated pairs.

Implemented by:	**Date:**
R. Janetzke R Janetzke	4-28-01

Description of Acceptance Tests:

SEE Attached.

Tested by:	**Date:**
J. Menchaca J Menchaca	5-01-01

TPA Version 4.1j Test Plan: PA-SCR-338

Task Description: Modify the code to enable the LHS RANDOM SAMPLER to accommodate 100 correlated pairs instead of the current 50.

Reason for Change: Several new parameter values were supplied by the TPA team including 0.0m backfill thickness, 81.m drift spacing, 7.80 MTU UP payload, 0.7 ventilation factor, 50yr backfill emplacement, lognormal 3.153-2, 1.05e3 WP flow multiplication factor, and Kds for AM, Np, U, Pu, and Th. The UZ KD parameters involved many new correlations to be specified in the tpa.inp file. The TPA code is limited to 50 total correlated parameter pairs where 75 are required with the new data set.

Analyst: R. Janetzke **Date:** 05/01/01

Controlled Version: Version 4.1i
Modified Version: Version 4.1j

Output files to be checked: lhs.inp, lhse.out

Input files to be checked for correct data transfer: tpa.inp

Mode of documentation 3.5" floppy, PA-SCR-338 files

Functional Testing

Process-level testing:

Generate a basecase run. Check that the correlated pairs that appear in tpa.inp are the pairs that are listed at the bottom of lhs.inp. Check that the pairs and their correlation coefficient listed in lhs.inp are the same that appear in the correlation matrices of lhse.out.

PASSED.

Final checklist:

- **Did the modification substantially change the results?**

  No.

- **Were TPA 4.1i and 4.1j compared using corresponding mean values in tpa.inp? (If NO, please state reason).**

  No. Mean value runs have no correlated inputs.

SOFTWARE CHANGE REPORT (SCR)

SCR No. (*Software Developer Assigns*): PA-SCR-344	**Software Title and Version:** TPA 4.1j	**/Project No:** 20-1402-762

Affected Software Module(s), Description of Problem(s):

exec.f

Part A:

The TPA code is exhibiting slow performance in some circumstances.
The TPA code appears to hang before processing the first requested realization when the requested start realization is large, and also after completing the last requested realization when the requested stop realization is much less than the number of realizations requested to be sampled by LHS. The code completes successfully if given enough time in both cases.

Part B:

The user has no control whether the checkpoint/restart file is created.

Change Requested by:	**Change Authorized by** (*Software Developer*):
J. Menchacha Date:5-8-01	R. Janetzke Date: 5-8-01 Ron Janetzke

Description of Change(s) or Problem Resolution (*If changes not implemented, please justify*):

Part A: The checkpoint/restart file is not written for realizations that are not performed.
Part B: A switch was added to the *tpa.inp* file to permit user selection of the checkpoint/restart file creation.

Implemented by:	**Date:**
R. Janetzke	5-9-01 Ron Janetzke

Description of Acceptance Tests:

See attached Test Plan for TPA SCR#344.
Data on attached CD.

Tested by:	**Date:** 4-2-2002
C. Scherer Carol S. Scherer	

Test Plan for TPA SCR #344

Test Plan Name: Checkpoint/restart file creation and content analysis

Tested By: Carol Scherer **Date:** March 28, 2002

Host Machine: Spock **Host OS:** Sun Solaris

Baseline Version: TPA 4.1 j **Test Version:** TPA 4.2

Functional tests:

None.

System Level Tests:

1. Name: Test contents of check.pnt file using start realization of 1 and a stop realization of 10, then aborting run after 9 realizations have been completed. StopAtRealization = Numberof Realizations and StartAtRealization = 1.

   Path for run directory: /net/spock/home/cscherer/tpatest/scr344

   Path for archive of results: /net/spock/home/cscherer/tpatest/scr344

   Environment variables: modify path and dpath variables in include file path.i to

   /net/spock/home/cscherer/tpatest/

   Special input files or modifications to input files required: none.

   Special diagnostic code modifications required: none.

   Program modes to be used:

   Beginning with the base tpa.inp, make the following changes:

   GenerateRestartFlag will be set to 1.
   NumberOfRealizations will be set to 10.
   StartAtSubarea will be set to 7.
   StopAtSubarea will be set to 10.
   StartAtRealization will be set to 1.
   StopAtRealization will be set to 10.

   This input file will be saved as tpa011009.inp. The '01' in the filename is the start realization and the '10' is the stop realization. '09' is the last full realization completed before the tester should abort the TPA run.

Utility scripts needed to perform the test: none.

Utility codes needed in the analysis of the test data:

A FORTRAN program is needed to open and read the check.pnt file generated by TPA. Check.pnt is a binary file and is not in human readable form. The utility program Testcheck will open check.pnt and read the data into variables and arrays exactly as the code in exec.f does. One of the arrays, which is one-dimensional and stores values according to realization number, will be selected and printed out. The array TotalMaxDoseTime was selected for its simplicity. Testcheck will print out the values stored for realizations 1 through StopAtRealization+5, up to NumberOfRealizations.

Test description:

- objective: to show that only values for selected realizations are being stored

- assumptions: it is not necessary to show the contents of all stored arrays since they are written out to check.pnt at the same time and in the same manner in exec.f

- constraints: there can be no check.pnt file in the directory before the run begins.

- output files to compare or examine: the output file check.out from the Testcheck run.

- disposition of documentation of results: All modified or new source code files, all executables used in the test, and all input and output files will be kept in the archive directory. The archive directory will be written out to a CD.

- step by step test procedure to be used: Compile TPA in */net/spock/home/cscherer/tpatest.* Copy tpa.e to run directory. Copy tpa011009.inp to tpa.inp. Start tpa.e. The tester must watch the screen output from each run and enter Ctrl-C after the specified realization, in this case 9, has been completed. Run Testcheck on check.pnt. After the Testcheck run, the check.pnt file will be renamed cp011009.pnt and check.out will be renamed after the run to cp011009.out. The cp011009.out file will be visually inspected to verify that it contains stored values only for the selected realizations.

- pass/fail criteria:
  The file cp011009.pnt should have values listed only for realizations 1, 2, 3, 4, 5, 6, 7, 8, and 9. Zeroes should be stored for any other realizations.

Results of running test:

PASSED.

2. Name: Test contents of check.pnt file using start realization of 6 and a stop realization of 10, then aborting run after 9 realizations have been completed. StopAtRealization = Number of Realizations and StartAtRealization > 1.

Path for run directory: /net/spock/home/cscherer/tpatest/scr344

Path for archive of results: /net/spock/home/cscherer/tpatest/scr344

Environment variables: modify path and dpath variables in include file path.i to

/net/spock/home/cscherer/tpatest/

Special input files or modifications to input files required: none.

Special diagnostic code modifications required: none.

Program modes to be used:

Beginning with the base tpa.inp, make the following changes:

GenerateRestartFlag will be set to 1.
NumberOfRealizations will be set to 10.
StartAtSubarea will be set to 7.
StopAtSubarea will be set to 10.
StartAtRealization will be set to 6.
StopAtRealization will be set to 10.

Utility scripts needed to perform the test: none.

Utility codes needed in the analysis of the test data: Use Testcheck as described in System Level Test 1.

Test description:

- objective: to show that only values for selected realizations are being stored, specifically, that no values are written to check.pnt for realizations before StartAtRealization.

- assumptions: it is not necessary to show the contents of all stored arrays since they are written out to check.pnt at the same time and in the same manner in exec.f

- constraints: there can be no check.pnt file in the directory before the run begins.

- output files to compare or examine: the output file check.out from the Testcheck run.

- disposition of documentation of results: All modified or new source code files, all executables used in the test, and all input and output files will be kept in the archive directory. The contents of the archive directory will be written out to a CD.

- step by step test procedure to be used: In the run directory, use tpa.e from System Level Test 1. Copy tpa011009.inp to tpa.inp. Start tpa.e. The tester must watch the screen output from each run and enter Ctrl-C after the specified realization, in this case 9, has been completed. Run Testcheck on check.pnt. After the Testcheck run, the check.pnt file will be renamed cp061009.pnt and check.out will be renamed after the run to cp061009.out. The .out file will be visually inspected to verify that it contains stored values only for the selected realizations.

- pass/fail criteria:
  The file cp061009.out should have values listed only for realizations 6, 7, 8, and 9. Zeroes should be stored for any other realizations.

Results of running test:

PASSED.

3. Name: Test contents of check.pnt file using start realization of 1 and a stop realization of 4, then aborting run after 3 realizations have been completed. StartAtRealization = 1 and StopAtRealization < NumberOfRealizations.

Path for run directory: /net/spock/home/cscherer/tpatest/scr344

Path for archive of results: /net/spock/home/cscherer/tpatest/scr344

Environment variables: modify path and dpath variables in include file path.i to

/net/spock/home/cscherer/tpatest/

Special input files or modifications to input files required: none.

Special diagnostic code modifications required: none.

Program modes to be used:

Beginning with the base tpa.inp, make the following changes:

GenerateRestartFlag will be set to 1.
NumberOfRealizations will be set to 10.
StartAtSubarea will be set to 7.
StopAtSubarea will be set to 10.
StartAtRealization will be set to 1.

StopAtRealization will be set to 4.

Utility scripts needed to perform the test: none.

Utility codes needed in the analysis of the test data: Use Testcheck as described in System Level Test 1.

Test description:

- objective: to show that only values for selected realizations are being stored, specifically, that no values are written to check.pnt for realizations after StopAtRealization or any realizations after program is aborted.

- assumptions: it is not necessary to show the contents of all stored arrays since they are written out to check.pnt at the same time and in the same manner in exec.f

- constraints: there can be no check.pnt file in the directory before the run begins.

- output files to compare or examine: the output file check.out from each run.

- disposition of documentation of results: All modified or new source code files, all executables used in the test, and all input and output files will be kept in the archive directory. The contents of the archive directory will be written out to a CD.

- step by step test procedure to be used: In the run directory, use tpa.e from System Level Test 1. Copy tpa010403.inp to tpa.inp. Start tpa.e. The tester must watch the screen output from each run and enter Ctrl-C after the specified realization, in this case 3, has been completed. Run Testcheck on check.pnt. After the Testcheck run, the check.pnt file will be renamed cp010403.pnt and check.out will be renamed after the run to cp010403.out. The .out file will be visually inspected to verify that it contains stored values only for the selected realizations.

- pass/fail criteria:
  The file cp010403.out should list values only for realizations 1, 2, and 3. Zeroes should be stored for any other realizations.

Results of running test:

PASSED.

4. Name: Test use of GenerateRestartFlag in tpa.inp.

Path for run directory: /net/spock/home/cscherer/tpatest/scr344

Path for archive of results: /net/spock/home/cscherer/tpatest/scr344

Environment variables: modify path and dpath variables in include file path.i to

/net/spock/home/cscherer/tpatest/

Special input files or modifications to input files required: none.

Special diagnostic code modifications required: none.

Program modes to be used:

System Level Test 1 has already shown that setting GenerateRestartFlag = 1 will result in the generation of the output file check.pnt. For this test, it is necessary to set GenerateRestartFlag = 0. The settings for other parameters are irrelevant. This input file has been saved in the archive directory as tpa_nocheck.inp.

Utility scripts needed to perform the test: none.

Utility codes needed in the analysis of the test data: none.

Test description:

- objective: to show that no check.pnt output file will be generated with GenerateRestartFlag set to 0.
- assumptions: none.
- constraints: there can be no check.pnt in the directory before the run begins.
- output files to compare or examine: check for presence of check.pnt after tpa.e is started and the run is aborted after at least one realization is completed
- disposition of documentation of results: there should be no output from this run.
- step by step test procedure to be used: In the run directory, use tpa.e from System Level Test 1. Copy tpa_nocheck.inp to tpa.inp. Start tpa.e. Watch the screen output. Abort the run (enter Ctrl-C) anytime after the 1st realization has been completed and before the last realization has completed.
- pass/fail criteria: After aborting the TPA run, the tester should check the directory for the presence of the file check.pnt. If it is not there, the test has passed; if it is present, the test has failed.

Results of running test:

PASSED.

5. Name: Test for creation of check.pnt if program is stopped before the 1st write to the file.

Path for run directory: /net/spock/home/cscherer/tpatest/scr344

Path for archive of results: /net/spock/home/cscherer/tpatest/scr344

Environment variables: modify path and dpath variables in include file path.i to

/net/spock/home/cscherer/tpatest/

Special input files or modifications to input files required: none.

Special diagnostic code modifications required:
Exec.f needs to be modified by inserting a STOP statement before the 1st write to check.pnt. (It should also be placed before the statement that opens check.pnt. If the STOP is placed after the open and before the write, then the file check.pnt will be created, but it will have a size of 0.) This file has been saved in the archive directory as exec_prestop.f. It is necessary to recompile TPA with this version of exec.f before running TPA.

Program modes to be used: Any of the special input files from System Level Tests 1 - 3 may be
used.

Utility scripts needed to perform the test: none.

Utility codes needed in the analysis of the test data: none.

Test description:

- objective: to show that check.pnt is not created until the first time a value is written to the file.
- Assumptions: none.
- constraints: There can be no check.pnt file in the directory before the run begins.
- output files to compare or examine: check for the presence of check.pnt after the run is aborted
- disposition of documentation of results: there should be no output from this run.
- step by step test procedure to be used: Using the modified exec.f, compile TPA in */net/spock/home/cscherer/tpatest.* Copy tpa.e to run directory. Copy tpa061009.inp to tpa.inp. Start tpa.e. Watch the output on the screen. After at least 1 realization has been completed, abort the program by entering Ctrl-C. Check for presence of check.pnt.

- pass/fail criteria: after the TPA run is aborted, check the directory for the presence of check.pnt. If it is there, the test has failed. If it is not there, the test has passed.

Results of running test:

PASSED.

6. Name: Test actual number of times that values are being written to check.pnt.

Path for run directory: /net/spock/home/cscherer/tpatest/scr344

Path for archive of results: /net/spock/home/cscherer/tpatest/scr344

Environment variables: modify path and dpath variables in include file path.i to

/net/spock/home/cscherer/tpatest/

Special input files or modifications to input files required: none.

Special diagnostic code modifications required:
Exec.f needs to be modified by inserting 3 lines of code:

in the declaration section
```
integer writecount
```

after line 4542 "close(icheckpointinp)
```
writecount = writecount + 1
print *, 'writecount = ', writecount
```

This file has been saved in the archive directory as exec_count.f. It is necessary to recompile TPA with this version of exec.f before running TPA.

Program modes to be used: Use tpa061009.inp which was used in System Level Test 2.

Utility scripts needed to perform the test: none.

Utility codes needed in the analysis of the test data: none.

Test description:
- objective: to show that no writes are made to check.pnt when realizations are not selected.

- assumptions: none.

- constraints: There can be no check.pnt file in the directory before the run begins.

- output files to compare or examine: tpa_count.out.

- disposition of documentation of results: All modified or new source code files, all executables used in the test, and all input and output files will be kept in the archive directory. The contents of the archive directory will be written out to a CD.

- step by step test procedure to be used: Using the modified exec.f, compile TPA in */net/spock/home/cscherer/tpatest.* Copy tpa.e to run directory. Copy tpa061009.inp to tpa.inp. Start tpa.e and direct the screen output to a file (tpa.e > tpa_count.out). Wait for completion.

- pass/fail criteria: after the TPA run is complete, visually inspect the file tpa_count.out. For this run, there should be a writecount printed out 5 times with a total writecount = 5.

Results of running test:

PASSED. However, this test pointed out that exec.f writes to check.pnt when it is not necessary. After the 5^{th} write to check.pnt, all realizations are complete, check.pnt is deleted, and the program runs to completion sucessfully. There is no need to write to check.pnt after the last realization specified when NumberOfRealizations = StopAtRealization. See SCR# 393.

Notes:

SOFTWARE CHANGE REPORT (SCR)

SCR No. (*Software Developer Assigns*): PA-SCR-346	**Software Title and Version:** TPA 4.1j	**/Project No:** 20-06002-01-113

Affected Software Module(s), Description of Problem(s): For PA-SCR-346(continued): UZFLOW.F, TPA.INP, makefile4.2 (in the itym directory)

C3 Add shallow infiltration variance factor in UZFLOW

Currently, mean values of shallow infiltration for each 30-m [98.4 ft] pixel are passed from the ITYM preprocessor to the UZFLOW module. The mean values reflect the Monte Carlo analysis performed in the ITYM preprocessor. It is desired to have all stochastic elements of the TPA code controlled by the LHS sampling module used by the executive module in preparing the internal sampled parameter database. This control permits the efficient correlation of all stochastic parameters in the TPA system.

To create a consistent sampling system throughout the TPA system, a new file containing the variance of each 30-m [98.4 ft] pixel will be passed to UZFLOW and a new sampled parameter will be created in the UZFLOW module with a range of -1.0 to 1.0 to determine the shallow infiltration estimate from a distribution defined by files containing the mean and variance. The sampled parameter will be applied consistently across the spatial domain for any particular realization, but will vary between realizations.

The UZFLOW module, besides needing a new sampled parameter, will need to be read in a new external file. Currently, it reads in multiple sets of mean shallow infiltration values contained in a single file covering the range of climatic conditions expected for the repository. A corresponding external file of variance will also need to be read by the UZFLOW module. An algorithm will be added to the UZFLOW module to calculate the stochastic value of shallow infiltration for each pixel prior to aggregating the pixel values to subarea averages.

Change Requested by: R. Janetzke Date:1-14-03	**Change Authorized by** (*Software Developer*): R. Janetzke Date: 1-14-03

Description of Change(s) or Problem Resolution (*If changes not implemented, please justify*):
Please see attachment, "Description of Change(s) or Problem Resolution."

Implemented by: G. Adams	**Date:** 1-13-03

Description of Acceptance Tests:
Please see attachment, "Description of Acceptance Tests."

Tested by: G. Adams C. Scherer	**Date:** 2-7-03 2-21-03

Description of Change(s) or Problem Resolution

Changes for PA-SCR-346(continued)

File UZFLOW.F was modified to only include two UZFLOW sample modes instead of 3. In sample mode 1, the ArealAverageInfiltrationAtStart is sampled and the UZFLOWHydraulicPropertyUncertaintyDeviation is not used. In sample mode 2, the ArealAverageInfiltrationAtStart is not used and the UZFLOWHydraulicPropertyUncertaintyDeviation is sampled.

Since the number of sample modes was changed, the comments in the UZFLOW section of the TPA.INP file were modified to reflect the two sample modes instead of the three sample modes.

In addition, since the compiler has been upgraded on SPOCK, in order to build the ITYM code with the 4.2 compiler, a new make file, makefile4.2, was generated.

Original Changes for PA-SCR-346
Modifications to ITYM:

1. Output Digital Elevation Model (DEM) Tables (DTBL) are created for Mean Annual Infiltration (MAI), log10(MAI), and stdev(log10(MAI)). Formerly, only the MAI DTBL was created. There are flags in the input deck that turn on and off output to the corresponding files. The default is for the two log10 output files to be created (The files maydtbl.dat and smaydtbl.dat will be created.) In addition, a flag can be set to create the maidtbl.dat file.

2. Parameter sampling was corrected to use the following equations:
x = mean + B * Noise where B B^T = Cov = std^T Corr std

3. Bug fixes were made to correct compiler-generated and run-time errors.

Modifications to UZFLOW:

1. The code expects two DTBL files: "maydtbl.dat" and "smaydtbl.dat." These two files contain the Expected(log10(MAI)), abbreviated E(log10(MAI)), and Standard Deviation(log10(MAI)), abbreviated stdev(log10(MAI)), respectively.

2. An additional sampled parameter, "UZFLOWHydraulicPropertyUncertaintyDeviation[N(0,1)]" (uzhpu) was added to TPA.inp. This parameter has zero mean and unit variance.

3. The calc_MAI routine interpolates E(log10(MAI)) + uzhpu * stdev(log10(MAI)) where "uzhpu" is the new sampled parameter and the others are the tabulated values from the input files.

4. An additional sampled parameter, "UZFLOWSampleMode," was added to TPA.inp. This parameter sets up the follow three modes of operation for UZFLOW:

Mode 1: Sample "ArealAverageMeanAnnualInfiltrationAtStart[mm/yr]" (MAI0) and ignore (use a value of 0 for uzhpu) the standard deviation(MAI) from ITYM.

Mode 2: Sample MAI0 (constant value) and use the standard deviation(MAI) from ITYM.

Mode 3: Ignore MAI0 and use the standard deviation(MAI) from ITYM.

New parameters in TPA.INP:

1. UZFLOWSampleMode {constant, 1, 2 or 3}

2. UZFLOWHydraulicPropertyUncertaintyDeviation[N(0,1)] {normal, -3.0857, 3.0857}

Changes to parameters in TPA.INP:

1. MeanAveragePrecipitationMultiplierAtGlacialMaximum was renamed to MeanAnnualPrecipitationMultiplierAtGlacialMaximum.

2. MeanAverageTemperatureIncreaseAtGlacialMaximum[degC] was renamed to MeanAnnualTemperatureIncreaseAtGlacialMaximum[degC].

3. ArealAverageMeanAnnualInfiltrationAtStart[mm/yr] must be a constant for UZFLOWSampleMode 2.

New Files:

maydtbl.dat
smaydtbl.dat

Description of Acceptance Tests

The Test Plan and Test Results for TPA SCR# 346(continued) consists of three process level tests and three system level tests. Since the process level tests involved the ITYM Preprocessor, they were not repeated with the exception that the TPA 5.0Beta1 version of the code was executed for process level test PL-1 to show that a previous SCR corrected the problem noted when this test was originally run as part of PA-SCR-346. The system level tests were upgraded to reflect changes in the TPA distribution between the initial implementation of this SCR as PA-SCR-346 and the continued version identified as PA-SCR-346(continued). Since the UZFLOW module was changed, as part of continuing PA-SCR-346, the system level tests were repeated.

The software successfully passed all process level and system level tests. The test plan and test results are included on a CD labeled, "Test Plan and Test Results for PA-SCR-346(continued)."

Note: The Test Plan/Report for TPA SCR # 346 describes additional testing of the code modifications for SCR # 346 by C. Scherer. Process-level testing on the itym pre-processor was completed early on. However, system-level testing revealed the need for additional code modifications. When they were complete, testing on the system level resumed. This is reflected in the Test Plan/Report by the division of the document into Part A and Part B. Each part was run using different baselines and test code. The test directories from these runs are stored on a CD titled "TPA SCR #346 - Test Directories".

Test Plan/Report for TPA SCR# 346

(in conjunction w/ Test Plan and Test Results for TPA SCR# 346 (continued) by George Adams)

Test Plan Name: C3 Add Shallow Infiltration Variance Factor in UZFLOW

PART A

Tested By: Carol S. Scherer

Date: Oct. 25, 2002

Host Machine: SUN Ultra-4 Server: spock

Host OS: Solaris 5.8

Baseline Version: 4.1j

Test Version: 5.0beta

Process Level Tests

The process level tests identified in this section are designed to test the stand-alone module, AITYM.@ This module was modified as follows:

1. Output Digital Elevation Model (DEM) Tables (DTBL) can be created for Mean Annual Infiltration (MAI), log10(MAI), and stdev(log10(MAI)). There are flags in the input deck that turn on and off output to the corresponding files. The default is for the two log10 output files to be created. By default, maydtbl.dat and smaydtbl.dat will be created. A flag can be set to create the maidtbl.dat file as well.

2. Parameter sampling was corrected to use the following equations:
   x = mean + B * Noise where B B^T = Cov = std^T Corr std

3. Bug fixes were made to correct compiler-generated and run-time errors.

PL-1 Verification of Output Files

1.0 Path for Run Directory
/net/spock/home/cscherer/tpatest/scr346/pltest

2.0 Path for Archived Results
/net/spock/home/cscherer/tpatest/scr346/pltest/pl-1

3.0 Environment Variables

TPA_TEST = /net/spock/home/cscherer/tpatest/scr346
TPA_DATA = /net/spock/home/cscherer/tpatest/scr346

4.0 Special Input Files or Modifications to Input Files Required

4.1 The 5.0beta version of the file, "itym.dat," is required. Make modifications to this file in accordance with the table below:

Parameter		**Value**	
num_realize_per_table		2	
num_MAP_table		3	
num_MAT_table		3	
do_MAI_DTBL		1	
zCareaDEM	careadem.dat	#zCareaDEM	careadem.dat
zCdepDEM	cdepdem.dat	#zCdepDEM	cdepdem.dat

4.2 In order for the ITYM preprocessor to run, the following data files must also be present: bunitdem.dat, elevdem.dat, maswtbl.dat, soildem.dat, sunitdem.dat, and winddem.dat. These files are taken from the 4.1j baseline distribution.

5.0 Special Diagnostic Code Modifications Required: None

6.0 Program Modes to be Used

6.1 The ITYM preprocessor is run using the itym.dat file with the parameters identified in Section 4.1.

7.0 Utility Scripts Needed to Perform the Test

None

8.0 Test Description

8.1 Objective: This test is designed to verify that the ITYM preprocessor module can correctly create and format the following files: "maidtbl.dat," "maydtbl.dat," and "smaydtbl.dat."

8.2 Assumptions: none

8.3 Constraints: none

8.4 Output Files: maidtbl.dat, maydtbl.dat, smaydtbl.dat

8.5 Procedure:

1. At the command prompt from the <<Run Directory>>, type the following:, Aitym.e > PA-SCR-346_PL1.out &.@ The screen output is captured to a file labeled, "PA-SCR-346_PL1.out."

2. Within PA-SCR-346(PL1).out, observe the following messages, Atbl(x, y): MAP = X.XXX MAT = X.XXX MAI = X.XXX s(MAI) = X.XXX MLI = X.XXX MSI = X.XXX Esl = X.XXX." The values, "x and y" will vary between 1 and 3." The values X.XXX are the output values for the associated parameters.

3. Upon completion, open the output files, "maidtbl.dat," Amaydtbl.dat,@ and Asmaydtbl.dat.@ Verify their format in accordance with the following:

a. The first four rows begin with A#.@

b. The key-value pairs appear as follows (ex. from 1st occurrence):

NCOLS 49
NROWS 75
XLLCORNER 545010.000000
YLLCORNER 4074000.000000
CELLSIZE 120.000000
NODATA_VALUE -9999.000000
VAR1 1.0000000E+02
VAR2 0.0000000E+00

c. list of values, one per line

d. b. and c repeat several times with different values for VAR1 and VAR2

e. The last line contains, ANCOLS 0.@

8.6 Pass/Fail Criteria: The three files,"maidtbl.dat', Amaydtbl.dat,@ and Asmaydtbl.dat@ are created in the correct format.

9.0 Test Results (Test Results documented in Scientific Notebook 170-4E.)

9.1 Output and Supporting Files: The files, "PA-SCR-346_PL1.out," "maidtbl.dat," "maydtbl.dat," and "smaydtbl.dat" shall be archived in directory: "<<Run Directory>>\pl-1." The files identified in Section 4.0 shall also be archived in this directory.

9.2 Criterion 1: Verify the output screen values are displayed in accordance with Section 8.5, Step 2.

9.3 Criterion 2: Verify all three files are formatted correctly in accordance with Section 8.5, Step 3.

9.4 Overall Test Status:

This test successfully **PASSED** the criterion above.

PL-2 Verification with Previous Results

1.0 Path for Run Directory
/net/spock/home/cscherer/scr346/pltest

2.0 Path for Archived Results
/net/spock/home/cscherer/scr346/pltest/pl-2

3.0 Environment Variables
TPA_TEST = /net/spock/home/cscherer/tpatest/scr346
TPA_DATA = /net/spock/home/cscherer/tpatest/scr346

4.0 Special Input Files or Modifications to Input Files Required
4.1 The file, "itym.dat," from TPA version 5.0beta shall be used. The file is modified in accordance with the following table:

Test Case A (50 realizations)

Parameter	Value
Modify the following:	
num_pixel_merge	1
num_realize_per_table	50
Comment out the following:	
zCareaDEM careadem.dat	
zCdepDEM cdepdem.dat	
Add the following:	
zDTBLmay	maydtbl.dat
zDTBLsmay	smaydtbl.dat
do_MAI_DTBL	1
do_MAY_DTBL	1
do_sMAY_DTBL	1

Test Case B (100 realizations)

Parameter	Value
Modify the following:	
num_pixel_merge	1
num_realize_per_table	100
Comment out the following:	
zCareaDEM careadem.dat	
zCdepDEM cdepdem.dat	
Add the following:	
zDTBLmay	maydtbl.dat
zDTBLsmay	smaydtbl.dat
do_MAI_DTBL	1
do_MAY_DTBL	1
do_sMAY_DTBL	1

Test Case C (500 realizations)

Parameter	Value
Modify the following:	
num_pixel_merge	1
num_realize_per_table	500
Comment out the following:	
zCareaDEM careadem.dat	
zCdepDEM cdepdem.dat	
Add the following:	
zDTBLmay	maydtbl.dat
zDTBLsmay	smaydtbl.dat
do_MAI_DTBL	1
do_MAY_DTBL	1
do_sMAY_DTBL	1

Test Case D (1000 realizations)

Parameter	Value

Modify the following: num_pixel_merge num_realize_per_table	 1 1000
Comment out the following: zCareaDEM careadem.dat zCdepDEM cdepdem.dat	
Add the following: zDTBLmay zDTBLsmay do_MAI_DTBL do_MAY_DTBL do_sMAY_DTBL	 maydtbl.dat smaydtbl.dat 1 1 1

4.2 In order for the ITYM preprocessor to run, the following data files must also be present: bunitdem.dat, elevdem.dat, maswtbl.dat, soildem.dat, sunitdem.dat, and winddem.dat. These files are taken from the 4.1j baseline distribution.

5.0 Special Diagnostic Code Modifications Required: None

6.0 Program Modes to be Used

6.1 The ITYM preprocessor is run using the itym.dat file with the parameters identified in Section 4.1.

7.0 Utility Scripts Needed to Perform the Test: None

8.0 Test Description

8.1 Objective: This test is designed to verify that the ITYM preprocessor generates data that corresponds to that generated for 500 realizations in the previous ITYM build (4.1j). This test also establishes the number of realizations required for the expected values to stabilize.

8.2 Assumptions: none

8.3 Constraints: none

8.4 Output Files: maidtbl.dat, maydtbl.dat, smaydtbl.dat

8.5 Procedure:

1. Modify the itym.dat file in accordance with Section 4.1, Test Case A.

2. At the command prompt from the <<Run Directory>>, type the following:, "itym.e > PA-SCR-346_PL2-A.out &." The screen output is captured to a file labeled, "PA-SCR-346_PL2-A.out."

3. Within this file, observe the following messages, "tbl(x, y): MAP = X.XXX MAT = X.XXX MAI = X.XXX s(MAI) = X.XXX MLI = X.XXX MSI = X.XXX EsI = X.XXX." The values, "x and y" will vary between 1 and 4." The values X.XXX are the output values for the associated parameters.

4. Modify the itym.dat file in accordance with Section 4.1, Test Case B.

5. At the command prompt from the <<Run Directory>>, type the following, "itym.e > PA-SCR-346_PL2-B.out &." The screen output is captured to a file labeled, "PA-SCR-346_PL2-B.out."

6. Within this file, observe the following messages, "tbl(x, y): MAP = X.XXX MAT = X.XXX MAI = X.XXX s(MAI) = X.XXX MLI = X.XXX MSI = X.XXX EsI = X.XXX." The values, "x and y" will vary between 1 and 4." The values X.XXX are the output values for the associated parameters.

7. Modify the itym.dat file in accordance with Section 4.1, Test Case C.
8. At the command prompt from the <<Run Directory>>, type the following, "itym.e > PA-SCR-346_PL2-C.out &." The screen output is captured to a file labeled, "PA-SCR-346_PL2-C.out."

9. Within this file, observe the following messages, "tbl(x, y): MAP = X.XXX MAT = X.XXX MAI = X.XXX s(MAI) = X.XXX MLI = X.XXX MSI = X.XXX EsI = X.XXX." The values, "x and y" will vary between 1 and 4." The values X.XXX are the output values for the associated parameters.

10. At the climate condition, "P=200, T=14.7," plot the MAI data from "maidtbl.dat" for both this build (4.2b) and the previous ITYM build (4.1j) and compare the resulting plots in terms of MAI magnitude and spatial variability. P = VAR1; T = VAR2.

11. At the climate condition, "P=200, T=14.7," take the log10 inverse of the data from "maydtbl.dat", plot this data, and compare it to the data plotted from the "maidtbl.dat" file.

12. Modify the itym.dat file in accordance with Section 4.1, Test Case D.

13. At the command prompt from the <<Run Directory>>, type the following, "itym.e > PA-SCR-346_PL2-D.out &." The screen output is captured to a file labeled, "PA-SCR-346_PL2-D.out."

14. Within this file, observe the following messages, "tbl(x, y): MAP = X.XXX MAT = X.XXX MAI = X.XXX s(MAI) = X.XXX MLI = X.XXX MSI = X.XXX Esl = X.XXX." The values, "x and y" will vary between 1 and 4." The values X.XXX are the output values for the associated parameters.

15. Verify the values in files, PA-SCR-346(PL2-C) and PA-SCR-346(PL2-D) correspond.

8.6 Pass/Fail Criteria: The output generated by ITYM compares to that previously generated. The expected values stabilize.

9.0 Test Results (Test Results documented in Scientific Notebook 170-4E.)

9.1 Output and Supporting Files: The files, "PA-SCR-346_PL2-A.out", "PA-SCR-346_PL2-B).out," "PA-SCR-346_PL2-C.out," "PA-SCR-346_PL2-D.out," "maidtbl-A.dat," "maidtbl-B.dat," "maidtbl-C.dat," "maidtbl-D.dat," "maydtbl-A.dat," "maydtbl-B.dat," "maydtbl-C.dat," "maydtbl-D.dat," "smaydtbl-A.dat," "smaydtbl-B.dat," "smaydtbl-C.dat," and "smaydtbl-D.dat" shall be archived in directory: "<<Run Directory>>/pl-2." The files identified in Section 4.0 shall also be archived in this directory.

9.2 Criterion 1: The output file values are generated in accordance with Section 8.5, Steps 3, 6, 9, and 14.

9.3 Criterion 2: The output generated in Section 8.5, Steps 3, 6, 9, and 14, correspond to that generated previously and documented in Scientific Notebook 227, page 17. The previously documented results are listed below:

Climate	**Expected Means**			
	50	100	500	1000
P=100, T=0	6.23	8.14	10.44	10.64
P=200, T=7.3	25.19	24.99	22.40	22.35
P=200, T=14.7	16.78	15.51	14.89	15.42
P=400, T=14.7	56.21	48.77	48.18	50.46
P=800, T=14.7	153.02	163.44	149.43	142.59

Current results (5.0 beta) are:

Climate	Means			
# realizations/test case	50 - A	100 - B	500 - C	1000 - D
P=100, T=0	9.558	8.967	9.034	8.948
P=200, T=7.3	23.648	19.870	19.262	20.000
P=200, T=14.7	14.899	13.467	13.862	13.391
P=400, T=14.7	45.100	47.006	45.188	44.668
P=800, T=14.7	129.578	141.406	135.534	135.678

9.4 Criterion 3: The information plotted in Section 8.5, Steps 10 and 11, is comparable between this build (4.2b) of the ITYM preprocessor and the previous build (4.1j).

9.5 Overall Test Status:

This test successfully **PASSED** the criterion above.

PL-3 Verification with Expected Results

1.0 Path for Run Directory
/net/spock/home/cscherer/scr346/pltest

2.0 Path for Archived Results
/net/spock/home/cscherer/scr346/pltest/pl-3

3.0 Environment Variables
TPA_TEST = /net/spock/home/cscherer/scr346
TPA_DATA = /net/spock/home/cscherer/scr346

4.0 Special Input Files or Modifications to Input Files Required
4.1 The file, "itym.dat," (copied from itymreal500.dat) is required. Make modifications to this file in accordance with the table below:

Parameter	Value

num_realize_per_table	500
num_MAP_table	3
num_MAT_table	3
MAP_min	152.8
MAP_max	172.8
MAT_min	15.38
MAT_max	19.38
do_MAI_DTBL	1
num_pixel_merge	1

4.2 In order for the ITYM preprocessor to run, the following data files must also be present: bunitdem.dat, elevdem.dat, maswtbl.dat, soildem.dat, sunitdem.dat, winddem.dat. Take these files from the 4.1j baseline distribution.

5.0 Special Diagnostic Code Modifications Required: None

6.0 Program Modes to be Used

6.1 The ITYM preprocessor is run using the itym.dat file with the parameters identified in Section 4.1.

7.0 Utility Scripts Needed to Perform the Test

None

8.0 Test Description

8.1 Objective: This test is designed to verify that the ITYM preprocessor generates MAI data for the current climate(MAP = 162.8mm, MAT = 17.38) that is reasonable when compared to MAI information from the Department of Energy (DOE).

8.2 Assumptions: none

8.3 Constraints: none

8.4 Output Files: maidtbl.dat, maydtbl.dat, smaydtbl.dat

8.5 Procedure:

1. At the command prompt from the <<Run Directory>>, type the following:, "itym.e >> PA-SCR-346_PL3.out." The screen output is captured to a file labeled, "PA-SCR-346_PL3.out."

2. Within this output file, observe the following messages on the screen, "tbl(x, y): MAP = X.XXX MAT = X.XXX MAI = X.XXX s(MAI) = X.XXX MLI = X.XXX MSI = X.XXX EsI = X.XXX." The values, "x and y" will vary between 1 and 3. The values X.XXX are the output values for the associated parameters.

3. Using the information in "maidtbl.dat," plot the current climate in Techplot 7.0. Verify the MAI magnitude and spatial variability correspond to that from the DOE using mapped and tabulated information. The tabulated information is taken from document, "A
NL-NBS-HS-000032 REV 00, Table 6-9." It is as follows:

Modern Climate Scenario		Lower Bound	Mean	Upper Bound
Average annual net infiltration (mm/year)	Mean	1.3	4.6	11.1

8.6 Pass/Fail Criteria: The output MAI values generated by ITYM compare to the DOE values for the current climate.

9.0 Test Results (Test Results documented in Scientific Notebook 170-4E.)

9.1 Output and Supporting Files: The files, "PA-SCR-346_PL3.out", "maidtbl.dat," "maydtbl.dat," and "smaydtbl.dat" shall be archived in directory: "<<Run Directory>>\pl-3."

9.2 Criterion 1: The output screen values are displayed in accordance with Section 8.5, Step 2, and these values are reasonable for the climate conditions.

9.3 Criterion 2: The MAI values for the current climate correspond to those identified by the DOE.

9.4 Overall Test Status:

This test successfully **PASSED** the criterion above.

PART A NOTES: The test plan is separated into two parts because each part was run at a different time and using a different baseline and test version. After the process-level and system-level tests were run, the results were passed on to a subject-matter expert, Dr. Randy Fedors for his analysis and comments. The process-level tests passed, but a problem was identified from the system-level test results that resulted in code modifications. The process-level tests in Part A did not need to be re-run since no new modifications were made to the itym preprocessor. Part B contains the new system-level tests for the modified **TPA** code.

PART B

Tested By: Carol S. Scherer

Date: Feb 21, 2003

Host Machine: SUN Ultra-4 Server: spock

Host OS: Solaris 5.8

Baseline Version: 5.0betaR
(default compiler)

Test Version: 5.0betaV
(default compiler)

System Level Tests

As part of continuing PA-SCR-346, the UZFLOW module was modified. The module was modified to only include two sample modes instead of three. In UZFLOW Sample Mode 1, the ArealAverageInfiltrationAtStart is sampled and the UZFLOWHydraulicPropertyUncertaintyDeviation is ignored. Conversely, in UZFLOW Sample Mode 2, the ArealAverageInfiltrationAtStart is ignored and the UZFLOWHydraulicPropertyUncertaintyDeviation is sampled.

The system level tests in this section are designed to test the "UZFLOW" module and verify that it generates reasonable information given the input from either the ITYM preprocessor or a special utility program. System level tests are performed by running the TPA code directly. The TPA executive, "exec," calls the UZFLOW module. The following changes were made to the UZFLOW module:

1. The code expects two DTBL files: "maydtbl.dat" and "smaydtbl.dat." These two files contain the Expected(log10(MAI)), abbreviated E(log10(MAI)), and Standard Deviation(log10(MAI)), abbreviated stdev(log10(MAI)), respectively.

2. An additional sampled parameter, "UZFLOWHydraulicPropertyUncertaintyDeviation[N(0,1)]" was added to TPA.INP. This parameter has zero mean and unit variance.

3. The calc_MAI routine interpolates E(log10(MAI)) + uzhpu * stdev(log10(MAI)) where "uzhpu" is the new sampled parameter and the others are the tabulated values from the input files.

SL-1 Verification of Subarea Averaging

1.0 Path for Run Directory

$HOME = /net/spock/home/cscherer

<<Run Directory >> = $HOME/tpatest/scr346B

2.0 Path for Archived Results

<<Archive Directory>> = <<Run Directory>>/slt1

3.0 Environment Variables

TPA_TEST = $HOME/tpatest/scr346B

TPA_DATA = $HOME/tpatest/scr346B

4.0 Special Input Files or Modifications to Input Files Required

4.1 Make the following modifications to the tpa.inp file from the TPA code 5.0betaV Distribution:

Test A

Parameter	Value
UZFLOWSampleMode	iconstant {2}
UZFLOWHydraulicPropertyUncertaintyDeviation[N(0,1)]	constant {0.0}
OutputMode(0=None, 1=All, 2=UserDefined)	Set the parameter value to 1 to generate all output files

Test B

Parameter	Value
UZFLOWSampleMode	iconstant {1}
ArealAverageMeanAnnualInfiltrationAtStart[mm/yr]	constant {1.3336}
OutputMode(0=None, 1=All, 2=UserDefined)	Set the parameter value to 1 to generate all output files

4.2 Specially generated "maydtbl.dat" and "smaydtbl.dat" files must be present. These files are generated by running the special stand-alone module, "maidscr346.e" in place of the ITYM preprocessing module.

5.0 Special Diagnostic Code Modifications Required: None

6.0 Program Modes to be Used

6.1 As specified in Section 4, the OutputMode is set to 1 to generate all output files.

7.0 Utility Program Needed to Perform the Test

7.1 The utility program, "maidscr346.e," built from file, "maidscr346.f" is required. This utility program takes the place of the preprocessing performed by "ITYM."

8.0 Test Description

8.1 Objective: This test verifies that the UZFLOW module correctly performs subarea averaging. The input E(log10(MAI)) and stdev(log10(MAI)) values (from files "maydtbl.dat" and "smaydtbl.dat" are constants for each subarea. The MAI values for subarea 8 are different than those values for other subareas. For areas other than subarea 8, the value for MAI is set to 1 so that E(log10(MAI)) is 0. The value for stdev(log10(MAI)) is set to 0 for all subareas. UZFLOW will take the input values and generate averages that correspond to the input values.

8.2 Assumptions: none

8.3 Constraints: none

8.4 Output Files: infilper.res, uzflow.rlt and uzflow.ech

8.5 Procedure:

1. At the command prompt from the <<Run Directory>>, type the following: "maidscr346.e."

2. Observe that the code executes without aborting and generates the files, "maydtbl.dat," and "smaydtbl.dat."

3. Copy the files, "maydtbl.dat" and "smaydtbl.dat" to the TPA_DATA/DATA directory.

4. For Test Case A, at the command prompt from the <<Run Directory Test>>, type the following, "tpa.e > scr346_slt1a.out." Screen output will be captured to scr346_slt1a.out.

5. Within scr346_slt1a.out, observe the following message for each subarea calculation, "exec: calling uzflow." Verify that the TPA code executes to completion without aborting.

6. Copy the uzflow.rlt, uzflow.ech, and infilper.res files to subdirectory <<Archive Directory>>/testa

7. For Test Case B, at the command prompt from the <<Run Directory>>, type the following, "tpa.e > scr346_slt1b.out." Screen output will be captured to scr346_slt1b.out.

8. Within scr346_slt1b.out, observe the following message for each subarea calculation, "exec: calling uzflow." Verify that the TPA code executes to completion without aborting.

9. Copy the uzflow.rlt, uzflow.ech, and infilper.res files to subdirectory <<Archive Directory>>/testb

10. For subarea 8, verify the Mean Annual Infiltration is 5 mm/yr and that for other subareas is 1 mm/yr.

8.6 Pass/Fail Criteria: The TPA code executes without aborting and Subarea 8 will have a Mean Annual Infiltration(MAI) of 5 mm/yr and the other subareas will have an MAI of 1 mm/yr

9.0 Test Results

9.1 Output and Supporting Files: Files will be archived on a CD labeled, "TPA SCR #346 - Test Directories."

9.2 Criterion 1: The TPA code executes without aborting.

9.3 Criterion 2: The average infiltration value for subarea 8 is 5 mm/yr. The average infiltration for the other subareas is 1 mm/yr.

9.4 Overall Test Status:

This software successfully **PASSED** the criterion above for System Level Test SL-1.

An Excel spreadsheet labeled slt1.xls is included which shows the MAI is 5 mm/yr for subarea 8 and 1 mm/yr for the other subareas. This same result was obtained for Test Case A and Test Case B as expected for Sample Mode 1 and Sample Mode 2, respectively.

SL-2 Reasonable Values

1.0 Path for Run Directory

$HOME = /net/spock/home/cscherer

<<Run Directory>> = $HOME/tpatest/scr346B

2.0 Path for Archived Results

<<Archive Directory>> = <<Run Directory>>/slt2

3.0 Environment Variables

TPA_TEST = $HOME/tpatest/scr346B

TPA_DATA = $HOME/tpatest/scr346B

4.0 Special Input Files or Modifications to Input Files Required

4.1 The files maydtbl.dat and smaydtbl.dat from test PL-2, Test Case C are required for this test.

4.2 The file, "tpa.inp" from the TPA code 5.0betaV distribution, is required. The following changes are required:

Parameter	Value
OutputMode(0=None, 1=All, 2=UserDefined)	Set the parameter value to 1 to generate all output files

5.0 Special Diagnostic Code Modifications Required: None

6.0 Program Modes to be Used

6.1 As specified in Section 4, the TPA code will generate all output files.

7.0 Utility Program Needed to Perform the Test

None

8.0 Test Description

8.1 Objective: This test verifies that UZFLOW generates reasonable values for the average infiltration in each subarea at the current time (time = 0), and that the average infiltration changes as expected for a future time (time = 10000).

8.2 Assumptions: PL-2 has already been run

8.3 Constraints: none

8.4 Output Files: infilper.res, uzflow.rlt, and uzflow.ech

8.5 Procedure:

1. Copy the files, "maydtbl.dat" and "smaydtbl.dat" from process level test PL-2, Test Case C to the TPA_DATA/DATA directory.

2. At the command prompt from <<Run Directory>>, type the following: "tpa.e > scr346_slt2.out." The screen output will be captured to file, scr346_slt2.out.

3. Verify that the TPA code executes to completion without aborting.

4. Upon completion, open the result file, "uzflow.rlt." Verify the average infiltration values for each subarea are reasonable and change as expected from time = 0 to time = 10000.

5. Copy scr346_slt2.out, uzflow.rlt, uzflow.ech, and infilper.res to the <<Archive Directory>>.

8.6 Pass/Fail Criteria: The TPA code executes without aborting. The average infiltration values for each subarea are reasonable and change as expected.

9.0 Test Results

9.1 Output and Supporting Files: Files will be archived on a CD labeled, "TPA SCR #346 - Test Directories."

9.2 Criterion 1: The TPA code executes without aborting.

9.3 Criterion 2: The average infiltration values for each subarea are reasonable and change as expected from Time = 0 to Time = 10000.

9.4 Overall Test Status:

The software successfully **PASSED** the criterion above for System Level Test SL-2.

Test results are included in Microsoft Excel Spreadsheet slt2.xls. The following summarizes these test results:

In the TPA 5.0 testing, the subarea averages are constrained to an average of 9.71 in the realization reported. The effect of future climates is also constrained by TPA.INP entries. The average net infiltration for modern and future climates (10,000 yrs) are reasonable given the current understanding of infiltration and percolation at Yucca Mountain of NRC and CNWRA hydrologists and considering DOE estimates.

TPA 5.0 appears to be working correctly since the rankings of net infiltration are similar to those of previous TPA versions (3.2 and 4.0), particularly when the new subareas are factored out. Subareas 5 and 8 have reversed their rankings between the different TPA versions (4.0 and 5.0). However, their (subareas 5 and 8) net infiltration rates are not significantly different, so the switch in rankings is not considered important. The net infiltration rankings of the 10 subareas is consistent with our understanding of net infiltration processes and projected zones of elevated net infiltration at Yucca Mountain, particularly the high infiltration zones on and near Yucca Mountain crest and the east-trending ridges where the caprock unit occurs at the ground surface.

SL-3 Comparison Between ITYM and TPA

1.0 Path for Run Directory

$HOME = /net/spock/home/cscherer

<<Run Directory>> = $HOME/tpatest/scr346B

2.0 Path for Archived Results

<<Archive Directory>> = <<Run Directory>>/slt3

3.0 Environment Variables

TPA_TEST = $HOME/tpatest/scr346B

TPA_DATA = $HOME/tpatest/scr346B

4.0 Special Input Files or Modifications to Input Files Required

4.1 The maydtbl.dat and smaydtbl.dat files from test PL-3 are required for this test.

4.2 The file, "tpa.inp" from the TPA code 5.0betaV distribution, is required. The following changes are required:

Test A (Sample Mode 1)

Parameter	Value
OutputMode(0=None, 1=All, 2=UserDefined)	Set the parameter value to 2 to define the output.
SelectAppendFiles	Set the parameter value to 1 to allow the uzflow.rlt and uzflow.ech files to be generated.
NumberOfRealizations	50
UserDefinedLowerRealizationAppended	45
UserDefinedUpperRealizationAppended	50
MeanAnnualPrecipitationMultiplierAtGlacialMaximum	constant, 1.0
MeanAnnualTemperatureIncreaseAtGlacialMaximum	constant, 0.0

Test B (Sample Mode 2)

Parameter	Value
OutputMode(0=None, 1=All, 2=UserDefined)	Set the parameter value to 2 to define the output.
SelectAppendFiles	Set the parameter value to 1 to allow the uzflow.rlt and uzflow.ech files to be generated.
NumberOfRealizations	50
UserDefinedLowerRealizationAppended	45
UserDefinedUpperRealizationAppended	50

UZFLOWSampleMode	2
MeanAnnualPrecipitationMultiplierAtGlacialMaximum	constant, 1.0
MeanAnnualTemperatureIncreaseAtGlacialMaximum	constant, 0.0

5.0 Special Diagnostic Code Modifications Required: None

6.0 Program Modes to be Used

6.1 As specified in Section 4, the TPA code will generate uzflow.rlt and uzflow.ech files.

6.2 UZFLOW sample mode 1 and UZFLOW sample mode 2 will be invoked in this test.

7.0 Utility Program Needed to Perform the Test

7.1 The utility code, "extract-subarea," will be required for this test. This code takes the values from maydtbl.dat and generates a subarea average that can be compared to the information contained in uzflow.rlt.

8.0 Test Description

8.1 Objective: This test performs a check for the current climate between the output results from the ITYM preprocessor and the UZFLOW module within TPA.

8.2 Assumptions: none

8.3 Constraints: none

8.4 Output Files: infilper.res, uzflow.rlt and uzflow.ech

8.5 Procedure:

1. Copy the file maydtbl.dat from test PL-3 to the <<Run Directory>> directory. First, extract the current climate from maydtbl.dat and copy the file back as maydtbl.dat. Second, create a file labeled, "subareas.dat" from the tpa.inp file by extracting the subarea size section. At the command prompt from <Run Directory>>, type the following: "extract-mayd.e > sl3.out." The code will execute and generate subarea averaged infiltration to file summary.dat.

2. Copy the maydtbl.dat and smaydtbl.dat files from test PL-3 to the TPA_DATA/DATA directory.

3. For Test Case A, at the command prompt from <<Run Directory>>, type the following: "tpa.e > scr346_slt3a.out." The screen output will be captured to a file labeled, scr346_slt3a.out.

4. Verify that the TPA code executes to completion without aborting.

5. Copy the uzflow.rlt, uzflow.ech, and infilper.res files to the <<Run Directory>>testa directory.

6. For Test Case B, at the command prompt from <<Run Directory>>, type the following: "tpa.e >> scr346_slt3b.out." The screen output will be captured to a file labeled, scr346_slt3b.out.

7. Verify that the TPA code executes to completion without aborting.

8. Copy the uzflow.rlt, uzflow.ech, and infilper.res files to the <<Run Directory>>/testb directory.

9. Upon completion, open the result files for each of the test cases, "uzflow.rlt." Verify the average infiltration values for each subarea compare to those averages contained in "summary.dat.".

8.6 Pass/Fail Criteria: The TPA code executes to completion. The average infiltration values for each subarea are comparable between execution of the ITYM code and TPA code.

9.0 Test Results

9.1 Output and Supporting Files: Files will be archived on a CD labeled, "TPA SCR #346 - Test Directories."

9.2 Criterion 1: The average infiltration values for each subarea are comparable between output files, "summary.dat" and "uzflow.rlt."

9.3 Overall Test Status:

The software successfully **PASSED** the criterion above for System Level Test SL-3.

The results are summarized in Microsoft Excel Spreadsheet slt3.xls.

For Test Case A, results for realizations 45 and 50 were included in the spreadsheet. The Mean Annual Infiltration for the repository at the current climate equals the ArealAverageInfiltrationAtStart as expected. In addition, the infiltration from TPA is comparable to that from the ITYM Preprocessor. The infiltration

rankings for all subareas is the same when infiltration is extracted directly from the itym output (summary.dat file) or when the infiltration is extracted from the TPA output (uzflow.rlt files).

For Test Case B, results for realizations 45, 46, and 50 were included in the spreadsheet. The Mean Annual Infiltration (MAI) for each of these realizations changes as expected for changes in the UZFLOWHydraulicPropertyUncertaintyDeviation sampled parameter. When the parameter is negative, it is expected that the MAI would be less than that from the ITYM Preprocessor. When the parameter is positive, the MAI would be higher than the MAI from ITYM. Realizations 45 and 50 show that a larger negative (-1.192 vs. -0.8990) sampled value for the uncertainty results in a smaller value for the MAI as expected.

```
scr346:
total 7329
drwxr-xr-x   9 cscherer sunuser      8704 Feb 21 12:45 .
drwxr-xr-x  32 cscherer sunuser      4608 Feb 21 14:09 ..
-rwxr-xr-x   1 cscherer sunuser      2001 Sep 18 16:52 CLEANUP
-rw-r--r--   1 cscherer sunuser       869 Sep  6 12:08 Makefile
-rw-r--r--   1 cscherer sunuser     29502 Feb 15  2002 array.f
-rw-r--r--   1 cscherer sunuser     20601 Sep 11 13:41 ashplumo.f
-rw-r--r--   1 cscherer sunuser     37612 Sep 13 12:12 ashrmovo.f
drwxr-xr-x   2 cscherer sunuser       512 Oct  1 08:37 ccdf
-rwxrwxrwx   1 cscherer sunuser       142 Oct  1 12:09 ch_env
drwxr-xr-x   4 cscherer sunuser      1024 Feb 21 12:41 codes
-rw-r--r--   1 cscherer sunuser       608 Sep 20 20:44 coefkdeq.i
-rw-r--r--   1 cscherer sunuser     10207 Feb 15  2002 condxyzt.f
drwxr-xr-x   2 cscherer sunuser      1536 Feb 21 12:33 data
-rw-r--r--   1 cscherer sunuser    115312 Sep 13 10:23 dcags.f
-rw-r--r--   1 cscherer sunuser    155845 Sep 25 13:26 dcagw.f
drwxr-xr-x   2 cscherer sunuser       512 Feb 21 12:33 diff_files
drwxr-xr-x   2 cscherer sunuser       512 Feb 18 11:41 docs
-rw-r--r--   1 cscherer sunuser       190 Sep 20 09:32 driftsa.i
-rw-r--r--   1 cscherer sunuser     23141 Aug 28 10:26 dsfail.f
-rw-r--r--   1 cscherer sunuser     48674 Sep  4 19:25 ebsfail.f
-rw-r--r--   1 cscherer sunuser     77369 Sep 25 15:06 ebsrel.f
-rw-r--r--   1 cscherer sunuser       149 Sep 25 12:15 ebsrel1.i
-rw-r--r--   1 cscherer sunuser    349787 Sep 27 15:21 exec.f
-rw-r--r--   1 cscherer sunuser      2385 Sep 21 10:07 execa.i
-rw-r--r--   1 cscherer sunuser       486 Sep  3  1997 execb.i
-rw-r--r--   1 cscherer sunuser       269 May 29  2002 execc.i
-rw-r--r--   1 cscherer sunuser      8503 Feb 15  2002 faulto.f
-rw-r--r--   1 cscherer sunuser      6599 May 29  2002 fileunit.f
-rw-r--r--   1 cscherer sunuser      5784 Feb 15  2002 findelev.f
-rw-r--r--   1 cscherer sunuser        60 Aug 16  1997 fu1.i
-rw-r--r--   1 cscherer sunuser       609 Sep  4 19:29 fu2.i
-rw-r--r--   1 cscherer sunuser      1229 Jul 22  1999 ia.i
-rw-r--r--   1 cscherer sunuser       956 Sep 26  2000 ia1.i
-rw-r--r--   1 cscherer sunuser     38724 Feb 15  2002 iareader.f
-rw-r--r--   1 cscherer sunuser     68121 Sep 25 12:07 invent.f
-rw-r--r--   1 cscherer sunuser        33 Sep 25 12:15 invent_.i
-rw-r--r--   1 cscherer sunuser        57 Aug 16  1997 inventa.i
-rw-r--r--   1 cscherer sunuser       182 Sep 25 12:14 inventb.i
-rw-r--r--   1 cscherer sunuser       344 Sep 25 12:14 inventc.i
-rw-r--r--   1 cscherer sunuser       124 Sep 25 12:14 inventd.i
-rw-r--r--   1 cscherer sunuser       131 Sep 25 12:14 invente.i
-rw-r--r--   1 cscherer sunuser       130 Sep 25 12:14 inventf.i
-rw-r--r--   1 cscherer sunuser       128 Sep 25 12:14 inventg.i
-rw-r--r--   1 cscherer sunuser       127 Sep 25 12:14 inventh.i
-rw-r--r--   1 cscherer sunuser        75 Aug 16  1997 inventi.i
-rw-r--r--   1 cscherer sunuser       288 Sep 25 12:14 inventj.i
-rw-r--r--   1 cscherer sunuser       332 Sep 25 12:14 inventk.i
-rw-r--r--   1 cscherer sunuser       150 Sep 25 12:14 inventl.i
-rw-r--r--   1 cscherer sunuser       315 Sep 25 12:14 inventm.i
-rw-r--r--   1 cscherer sunuser       175 Sep 25 12:15 inventn.i
-rw-r--r--   1 cscherer sunuser       249 Jan 29  2000 invento.i
-rw-r--r--   1 cscherer sunuser       267 Sep 25 12:15 inventp.i
drwxr-xr-x   2 cscherer sunuser       512 Feb 21 12:36 jpg_files
-rw-r--r--   1 cscherer sunuser        78 Aug 16  1997 max500yr.i
-rw-r--r--   1 cscherer sunuser        99 Sep 25 12:10 maxchain.i
```

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-rw-r--r--   1 cscherer sunuser       149 Sep 25 12:50 maxclchn.i
-rw-r--r--   1 cscherer sunuser       144 Sep 25 12:50 maxclnuc.i
-rw-r--r--   1 cscherer sunuser       508 Sep 25 12:11 maxnnucl.i
-rw-r--r--   1 cscherer sunuser       299 Jul 10  1998 maxnsuba.i
-rw-r--r--   1 cscherer sunuser       206 May 28  1999 maxntime.i
-rw-r--r--   1 cscherer sunuser     11850 Feb 15  2002 mv.f
-rw-r--r--   1 cscherer sunuser       111 Sep  4  1997 mva.i
-rw-r--r--   1 cscherer sunuser        56 Aug 16  1997 mvb.i
-rw-r--r--   1 cscherer sunuser        57 Aug 16  1997 mvc.i
-rw-r--r--   1 cscherer sunuser       101 Aug 16  1997 mvd.i
-rw-r--r--   1 cscherer sunuser        72 Aug 16  1997 mve.i
-rw-r--r--   1 cscherer sunuser        72 Aug 16  1997 mvf.i
-rw-r--r--   1 cscherer sunuser    108095 Sep 20 09:32 nfenv.f
-rw-r--r--   1 cscherer sunuser        94 Aug 16  1997 nintv.i
-rw-r--r--   1 cscherer sunuser      1502 Jun 11  1997 notice.i
-rw-r--r--   1 cscherer sunuser      6579 Feb 15  2002 numrecip.f
-rw-r--r--   1 cscherer sunuser       259 Aug 16  1997 path.i
-rw-r--r--   1 cscherer sunuser      6584 Feb 15  2002 peakfind.f
drwxr-xr-x   7 cscherer sunuser      1024 Feb 21 12:42 pltest
-rw-r--r--   1 cscherer sunuser     46322 Feb 15  2002 ran.f
-rw-r--r--   1 cscherer sunuser    148500 Sep 25 12:25 reader.f
-rw-r--r--   1 cscherer sunuser       185 May 21  1998 reader.i
-rw-r--r--   1 cscherer sunuser       106 Aug 27  1999 reader1.i
-rw-r--r--   1 cscherer sunuser        58 Aug 27  1999 reader2.i
-rw-r--r--   1 cscherer sunuser       102 Aug 27  1999 reader3.i
-rw-r--r--   1 cscherer sunuser        89 Aug 27  1999 reader4.i
-rw-r--r--   1 cscherer sunuser        58 Aug 16  1997 reflux2.i
-rw-r--r--   1 cscherer sunuser     95694 May 29  2002 sampler.f
-rw-r--r--   1 cscherer sunuser        62 Aug 16  1997 sampler0.i
-rw-r--r--   1 cscherer sunuser        79 Aug 16  1997 sampler1.i
-rw-r--r--   1 cscherer sunuser        62 Aug 16  1997 sampler2.i
-rw-r--r--   1 cscherer sunuser       178 Apr  3  1998 sampler3.i
-rw-r--r--   1 cscherer sunuser       145 Sep 19  2000 sampler4.i
-rw-r--r--   1 cscherer sunuser        62 Aug 16  1997 samplera.i
-rw-r--r--   1 cscherer sunuser        62 Aug 16  1997 samplerb.i
-rw-r--r--   1 cscherer sunuser        62 Aug 16  1997 samplerc.i
-rw-r--r--   1 cscherer sunuser        68 Aug 16  1997 samplerd.i
-rw-r--r--   1 cscherer sunuser       133 Aug 16  1997 samplere.i
-rw-r--r--   1 cscherer sunuser       111 Aug 16  1997 samplerf.i
-rw-r--r--   1 cscherer sunuser        84 Aug 16  1997 samplerg.i
-rw-r--r--   1 cscherer sunuser        68 Aug 16  1997 samplerh.i
-rw-r--r--   1 cscherer sunuser        83 Aug 16  1997 sampleri.i
-rw-r--r--   1 cscherer sunuser        61 Aug 16  1997 samplerj.i
-rw-r--r--   1 cscherer sunuser       208 Aug 16  1997 samplerk.i
-rw-r--r--   1 cscherer sunuser       104 Aug 16  1997 samplerl.i
-rw-r--r--   1 cscherer sunuser        63 Aug 16  1997 samplerm.i
-rw-r--r--   1 cscherer sunuser        79 Aug 16  1997 samplern.i
-rw-r--r--   1 cscherer sunuser        63 Aug 16  1997 samplero.i
-rw-r--r--   1 cscherer sunuser       260 Mar 14  2002 samplerp.i
-rw-r--r--   1 cscherer sunuser       103 Aug 16  1997 samplerq.i
-rw-r--r--   1 cscherer sunuser       176 Aug 16  1997 samplerr.i
-rw-r--r--   1 cscherer sunuser       336 Apr  3  1998 samplers.i
-rw-r--r--   1 cscherer sunuser        70 Aug 16  1997 samplert.i
-rw-r--r--   1 cscherer sunuser        69 Aug 16  1997 sampleru.i
-rw-r--r--   1 cscherer sunuser        62 Aug 16  1997 samplerv.i
-rw-r--r--   1 cscherer sunuser        60 Aug 16  1997 samplerw.i
-rw-r--r--   1 cscherer sunuser       227 Mar 14  2002 samplerx.i
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-rw-r--r--   1 cscherer sunuser       299 Apr 30  2001 samplery.i
-rw-r--r--   1 cscherer sunuser        60 Aug 16  1997 samplerz.i
-rw-r--r--   1 cscherer sunuser     51131 Sep 21 10:06 seismo2.f
-rwxrwxrwx   1 cscherer sunuser        30 Sep 12 16:53 show_env
-rw-r--r--   1 cscherer sunuser       144 Sep  3  1997 stop.i
-rw-r--r--   1 cscherer sunuser     38273 Sep  3 10:13 subarea.f
-rw-r--r--   1 cscherer sunuser       255 Feb  4  2000 subareaa.i
-rw-r--r--   1 cscherer sunuser        79 Aug 16  1997 subareab.i
-rw-r--r--   1 cscherer sunuser        82 Aug 16  1997 subareac.i
-rw-r--r--   1 cscherer sunuser        81 Aug 16  1997 subaread.i
-rw-r--r--   1 cscherer sunuser        77 Aug 16  1997 subareae.i
-rw-r--r--   1 cscherer sunuser        60 Feb  3  2000 subareaf.i
-rw-r--r--   1 cscherer sunuser        64 Feb  2  2000 subareag.i
-rw-r--r--   1 cscherer sunuser    108014 Sep 25 12:37 szft.f
-rw-r--r--   1 cscherer sunuser        60 Feb  7  2000 szft.i
-rw-r--r--   1 cscherer sunuser     84174 Oct 25 13:56 tpa.inp
-rw-r--r--   1 cscherer sunuser     32054 Oct 16 16:10 tpaA.out
-rw-r--r--   1 cscherer sunuser     65585 Apr 28  2001 tpa_41j.inp
-rwxr-xr-x   1 cscherer sunuser   2401804 Oct  1 09:14 tpa_base.e
-rw-r--r--   1 cscherer sunuser     83751 Oct 21 14:47 tpa_orig.inp
-rw-r--r--   1 cscherer sunuser   2732248 Oct 23 19:18 tpa_test1024C.out
-rw-r--r--   1 cscherer sunuser       314 Aug 16  1997 uz_climi.i
-rw-r--r--   1 cscherer sunuser      1219 Sep  6 20:05 uz_climr.i
-rw-r--r--   1 cscherer sunuser       341 Aug 16  1997 uz_climz.i
-rw-r--r--   1 cscherer sunuser      1323 Sep 26 14:28 uz_flowi.i
-rw-r--r--   1 cscherer sunuser      1170 Sep 26 14:29 uz_flowr.i
-rw-r--r--   1 cscherer sunuser       176 Aug 16  1997 uz_flowz.i
-rw-r--r--   1 cscherer sunuser      3225 Sep 26 14:30 uz_parms.i
-rw-r--r--   1 cscherer sunuser     66563 Sep 26 14:39 uzflow.f
-rw-r--r--   1 cscherer sunuser    119021 Sep 25 17:31 uzft.f
-rw-r--r--   1 cscherer sunuser       542 Sep 20 20:44 uzszft.i
-rw-r--r--   1 cscherer sunuser     14215 Feb 15  2002 volcano.f
-rw-r--r--   1 cscherer sunuser     11721 Feb 15  2002 zportunx.f

scr346/ccdf:
total 36
drwxr-xr-x   2 cscherer sunuser       512 Oct  1 08:37 .
drwxr-xr-x   9 cscherer sunuser      8704 Feb 21 12:45 ..
-rw-r--r--   1 cscherer sunuser       267 Mar 14  2000 Makefile
-rw-r--r--   1 cscherer sunuser     23390 Jul 22  1999 tccdf.f
-rw-r--r--   1 cscherer sunuser        66 Aug  1  1997 tccdf.i
-rw-r--r--   1 cscherer sunuser       640 Jan 29  2001 tccdf.inp

scr346/codes:
total 1105
drwxr-xr-x   4 cscherer sunuser      1024 Feb 21 12:41 .
drwxr-xr-x   9 cscherer sunuser      8704 Feb 21 12:45 ..
-rw-r--r--   1 cscherer sunuser      1403 Sep  6 13:40 Makefile
-rw-r--r--   1 cscherer sunuser       499 Jun  2  1997 README
-rw-r--r--   1 cscherer sunuser      2320 May 28  1998 SIZES.INC
-rw-r--r--   1 cscherer sunuser       164 Feb 17  1998 SIZES2.INC
-rw-r--r--   1 cscherer sunuser     95611 Sep 26  2000 ashplume.f
-rw-r--r--   1 cscherer sunuser     25361 Jul 17  2002 corrosn.f
-rw-r--r--   1 cscherer sunuser     20721 Jul 23  2002 dsfailt.f
-rw-r--r--   1 cscherer sunuser     12568 Sep 26  2000 ebsfilt.f
-rw-r--r--   1 cscherer sunuser     99585 Jul 17  2002 failt.f
drwxr-xr-x   2 cscherer sunuser      3072 Oct  1 09:17 gentpa
```

```
-rwxr-xr-x   1 cscherer sunuser      4040 May 29  2002 integrt.f
drwxr-xr-x   3 cscherer sunuser       512 Oct  1 10:27 itym
-r--r--r--   1 cscherer sunuser       868 Mar 14  2002 lhs1.i
-r--r--r--   1 cscherer sunuser      1308 Mar 14  2002 lhs2.i
-r--r--r--   1 cscherer sunuser       438 Mar 14  2002 lhs3.i
-r--r--r--   1 cscherer sunuser       437 Mar 14  2002 lhs4.i
-r--r--r--   1 cscherer sunuser       374 Mar 14  2002 lhs5.i
-r--r--r--   1 cscherer sunuser       450 Mar 14  2002 lhs6.i
-r--r--r--   1 cscherer sunuser       464 Mar 14  2002 lhs7.i
-r--r--r--   1 cscherer sunuser       431 Mar 14  2002 lhs8.i
-rwxr-xr-x   1 cscherer sunuser      5229 May 29  2002 linintrp.f
-rw-r--r--   1 cscherer sunuser     82807 Sep 25 15:02 mechfail.f
-rw-r--r--   1 cscherer sunuser    308005 Sep 26  2000 nefmks.f
-rw-r--r--   1 cscherer sunuser    147326 Sep 20 09:33 releaset.f
-rw-r--r--   1 cscherer sunuser    224558 Sep  6 10:21 snllhs.f
-rwxr-xr-x   1 cscherer sunuser      4303 May 29  2002 srchpos.f
-rwxr-xr-x   1 cscherer sunuser     18031 Jul 17  2002 weldfail.f

scr346/codes/gentpa:
total 1077
drwxr-xr-x   2 cscherer sunuser      3072 Oct  1 09:17 .
drwxr-xr-x   4 cscherer sunuser      1024 Feb 21 12:41 ..
-rw-r--r--   1 cscherer sunuser       543 Feb 11  2000 AFPPAR.CMN
-rw-r--r--   1 cscherer sunuser      1044 Feb 11  2000 AIRPAR.CMN
-rw-r--r--   1 cscherer sunuser       872 Feb 11  2000 ANMPAR.CMN
-rw-r--r--   1 cscherer sunuser       615 Feb 11  2000 AQUPAR.CMN
-rw-r--r--   1 cscherer sunuser      1089 Feb 11  2000 CONC.CMN
-rw-r--r--   1 cscherer sunuser       461 Feb 11  2000 DAYPC.CMN
-rw-r--r--   1 cscherer sunuser       400 Feb 11  2000 DECAY.CMN
-rw-r--r--   1 cscherer sunuser       571 Feb 11  2000 DFPAR.CMN
-rw-r--r--   1 cscherer sunuser      1359 Feb 11  2000 DOSALL.CMN
-rw-r--r--   1 cscherer sunuser       574 Feb 11  2000 ENVPAR.CMN
-rw-r--r--   1 cscherer sunuser       310 Feb 11  2000 EXPALL.CMN
-rw-r--r--   1 cscherer sunuser       637 Feb 11  2000 EXTPAR.CMN
-rw-r--r--   1 cscherer sunuser       327 Feb 11  2000 FILES.CMN
-rw-r--r--   1 cscherer sunuser       814 Feb 11  2000 FODPAR.CMN
-rw-r--r--   1 cscherer sunuser       438 Feb 11  2000 INVIN.CMN
-rw-r--r--   1 cscherer sunuser       569 Feb 11  2000 LABELS.CMN
-rw-r--r--   1 cscherer sunuser      1161 Feb 11  2000 MTBPAR.CMN
-rw-r--r--   1 cscherer sunuser      1688 Feb 28  2000 Make.bat
-rw-r--r--   1 cscherer sunuser      1849 Feb 24  2000 Makefile
-rw-r--r--   1 cscherer sunuser      1746 Feb 11  2000 Mkenv.fig
-rw-r--r--   1 cscherer sunuser      1548 Feb 11  2000 Mkenvin.fig
-rw-r--r--   1 cscherer sunuser      2762 Feb 11  2000 OPT.CMN
-rw-r--r--   1 cscherer sunuser       444 Feb 11  2000 ORGMAS.CMN
-rw-r--r--   1 cscherer sunuser       728 Feb 11  2000 ORGPAR.CMN
-rw-r--r--   1 cscherer sunuser       589 Feb 11  2000 RAD.CMN
-rw-r--r--   1 cscherer sunuser       788 Feb 11  2000 RADIN.CMN
-rw-r--r--   1 cscherer sunuser       722 Feb 11  2000 RMD.CMN
-rw-r--r--   1 cscherer sunuser       489 Feb 11  2000 RMD2.CMN
-rw-r--r--   1 cscherer sunuser       891 Feb 11  2000 SOLPAR.CMN
-rw-r--r--   1 cscherer sunuser       489 Feb 11  2000 SWPAR.CMN
-rw-r--r--   1 cscherer sunuser       586 Feb 11  2000 TIMES.CMN
-rw-r--r--   1 cscherer sunuser       316 Feb 11  2000 TITL.CMN
-rw-r--r--   1 cscherer sunuser     12777 Feb 11  2000 accmod.f
-rw-r--r--   1 cscherer sunuser     25904 Oct  1 09:16 accmod.o
-rw-r--r--   1 cscherer sunuser     10094 Feb 11  2000 acute1.f
```

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-rw-r--r--   1 cscherer sunuser     16572 Oct  1 09:17 acute1.o
-rw-r--r--   1 cscherer sunuser      9579 Feb 11  2000 acutea.f
-rw-r--r--   1 cscherer sunuser     12028 Oct  1 09:17 acutea.o
-rw-r--r--   1 cscherer sunuser      7118 Feb 11  2000 acutec.f
-rw-r--r--   1 cscherer sunuser      8324 Oct  1 09:17 acutec.o
-rw-r--r--   1 cscherer sunuser      8669 Feb 11  2000 aircal.f
-rw-r--r--   1 cscherer sunuser     12304 Oct  1 09:17 aircal.o
-rw-r--r--   1 cscherer sunuser      8383 Feb 11  2000 anmcal.f
-rw-r--r--   1 cscherer sunuser     14516 Oct  1 09:17 anmcal.o
-rw-r--r--   1 cscherer sunuser      2043 Feb 11  2000 aqucal.f
-rw-r--r--   1 cscherer sunuser      3288 Oct  1 09:17 aqucal.o
-rw-r--r--   1 cscherer sunuser      1217 Feb 11  2000 biocal.f
-rw-r--r--   1 cscherer sunuser      2016 Oct  1 09:17 biocal.o
-rw-r--r--   1 cscherer sunuser      4174 Feb 11  2000 blockd.f
-rw-r--r--   1 cscherer sunuser      6660 Oct  1 09:16 blockd.o
-rw-r--r--   1 cscherer sunuser      1405 Feb 11  2000 bsort.f
-rw-r--r--   1 cscherer sunuser      1216 Oct  1 09:17 bsort.o
-rw-r--r--   1 cscherer sunuser     13008 Feb 11  2000 candh.f
-rw-r--r--   1 cscherer sunuser     11964 Oct  1 09:17 candh.o
-rw-r--r--   1 cscherer sunuser      6653 Feb 11  2000 chain.f
-rw-r--r--   1 cscherer sunuser      5464 Oct  1 09:17 chain.o
-rw-r--r--   1 cscherer sunuser     23921 Feb 11  2000 check.f
-rw-r--r--   1 cscherer sunuser     49048 Oct  1 09:17 check.o
-rw-r--r--   1 cscherer sunuser     10189 Feb 11  2000 cronmod.f
-rw-r--r--   1 cscherer sunuser     24012 Oct  1 09:16 cronmod.o
-rw-r--r--   1 cscherer sunuser      5153 Feb 11  2000 crpcal.f
-rw-r--r--   1 cscherer sunuser      8744 Oct  1 09:17 crpcal.o
-rw-r--r--   1 cscherer sunuser      3842 Feb 11  2000 dkharv.f
-rw-r--r--   1 cscherer sunuser      5924 Oct  1 09:17 dkharv.o
-rw-r--r--   1 cscherer sunuser      5426 Feb 11  2000 dose.f
-rw-r--r--   1 cscherer sunuser      2398 Feb 11  2000 drfbiv.f
-rw-r--r--   1 cscherer sunuser      2752 Oct  1 09:17 drfbiv.o
-rw-r--r--   1 cscherer sunuser      6728 Feb 11  2000 drfsec.f
-rw-r--r--   1 cscherer sunuser      4940 Oct  1 09:17 drfsec.o
-rw-r--r--   1 cscherer sunuser      1877 Feb 11  2000 drkcal.f
-rw-r--r--   1 cscherer sunuser      2656 Oct  1 09:17 drkcal.o
-rw-r--r--   1 cscherer sunuser      1325 Feb 11  2000 dumred.f
-rw-r--r--   1 cscherer sunuser      3652 Oct  1 09:17 dumred.o
-rw-r--r--   1 cscherer sunuser      3958 Feb 11  2000 edranm.f
-rw-r--r--   1 cscherer sunuser      7408 Oct  1 09:17 edranm.o
-rw-r--r--   1 cscherer sunuser      3567 Feb 11  2000 edrcrp.f
-rw-r--r--   1 cscherer sunuser      7756 Oct  1 09:17 edrcrp.o
-rw-r--r--   1 cscherer sunuser      2525 Feb 11  2000 edrnon.f
-rw-r--r--   1 cscherer sunuser      5244 Oct  1 09:17 edrnon.o
-rw-r--r--   1 cscherer sunuser      2853 Feb 11  2000 edrres.f
-rw-r--r--   1 cscherer sunuser      4504 Oct  1 09:17 edrres.o
-rw-r--r--   1 cscherer sunuser     10581 Feb 11  2000 env.f
-rw-r--r--   1 cscherer sunuser      4885 Feb 11  2000 envin.f
-rw-r--r--   1 cscherer sunuser      4561 Feb 11  2000 envlib.f
-rw-r--r--   1 cscherer sunuser      9112 Oct  1 09:16 envlib.o
-rw-r--r--   1 cscherer sunuser      1912 Feb 11  2000 exposr.f
-rw-r--r--   1 cscherer sunuser      2300 Oct  1 09:17 exposr.o
-rw-r--r--   1 cscherer sunuser      6774 Feb 11  2000 extcal.f
-rw-r--r--   1 cscherer sunuser      7676 Oct  1 09:17 extcal.o
-rw-r--r--   1 cscherer sunuser      1489 Feb 11  2000 filerr.f
-rw-r--r--   1 cscherer sunuser      4084 Oct  1 09:16 filerr.o
-rw-r--r--   1 cscherer sunuser      1986 Feb 11  2000 fntdrf.f
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-rw-r--r--   1 cscherer sunuser      2028 Oct  1 09:17 fntdrf.o
-rw-r--r--   1 cscherer sunuser      3003 Feb 11  2000 headng.f
-rw-r--r--   1 cscherer sunuser      5788 Oct  1 09:17 headng.o
-rw-r--r--   1 cscherer sunuser      2203 Feb 11  2000 idnuc.f
-rw-r--r--   1 cscherer sunuser      3088 Oct  1 09:17 idnuc.o
-rw-r--r--   1 cscherer sunuser      2842 Feb 11  2000 inhcal.f
-rw-r--r--   1 cscherer sunuser      5772 Oct  1 09:17 inhcal.o
-rw-r--r--   1 cscherer sunuser      2392 Feb 11  2000 initnv.f
-rw-r--r--   1 cscherer sunuser      2928 Oct  1 09:17 initnv.o
-rw-r--r--   1 cscherer sunuser      1841 Feb 11  2000 intpol.f
-rw-r--r--   1 cscherer sunuser      3676 Oct  1 09:17 intpol.o
-rw-r--r--   1 cscherer sunuser      1348 Feb 11  2000 invmol.f
-rw-r--r--   1 cscherer sunuser      1156 Oct  1 09:17 invmol.o
-rw-r--r--   1 cscherer sunuser       677 Feb 11  2000 makda2.f
-rw-r--r--   1 cscherer sunuser      1044 Oct  1 09:16 makda2.o
-rw-r--r--   1 cscherer sunuser      5870 Feb 11  2000 opnfil.f
-rw-r--r--   1 cscherer sunuser     12184 Oct  1 09:17 opnfil.o
-rw-r--r--   1 cscherer sunuser      4217 Feb 11  2000 order.f
-rw-r--r--   1 cscherer sunuser      5696 Oct  1 09:17 order.o
-rw-r--r--   1 cscherer sunuser      2325 Feb 11  2000 packag.f
-rw-r--r--   1 cscherer sunuser      4064 Oct  1 09:17 packag.o
-rw-r--r--   1 cscherer sunuser      3366 Feb 11  2000 plmriz.f
-rw-r--r--   1 cscherer sunuser      2212 Oct  1 09:17 plmriz.o
-rw-r--r--   1 cscherer sunuser      1861 Feb 11  2000 prior.f
-rw-r--r--   1 cscherer sunuser      2388 Oct  1 09:17 prior.o
-rw-r--r--   1 cscherer sunuser      4080 Feb 11  2000 prob.f
-rw-r--r--   1 cscherer sunuser      2144 Oct  1 09:17 prob.o
-rw-r--r--   1 cscherer sunuser      2079 Feb 11  2000 profile.f
-rw-r--r--   1 cscherer sunuser      1632 Oct  1 09:17 profile.o
-rw-r--r--   1 cscherer sunuser     11351 Feb 11  2000 readin.f
-rw-r--r--   1 cscherer sunuser     48336 Oct  1 09:16 readin.o
-rw-r--r--   1 cscherer sunuser      6174 Feb 11  2000 redcas.f
-rw-r--r--   1 cscherer sunuser     25392 Oct  1 09:17 redcas.o
-rw-r--r--   1 cscherer sunuser      3867 Feb 11  2000 redcha.f
-rw-r--r--   1 cscherer sunuser      9800 Oct  1 09:17 redcha.o
-rw-r--r--   1 cscherer sunuser      8483 Feb 11  2000 redflt.f
-rw-r--r--   1 cscherer sunuser     36472 Oct  1 09:16 redflt.o
-rw-r--r--   1 cscherer sunuser      1694 Feb 11  2000 redist.f
-rw-r--r--   1 cscherer sunuser      1824 Oct  1 09:17 redist.o
-rw-r--r--   1 cscherer sunuser      8548 Feb 11  2000 ritenv.f
-rw-r--r--   1 cscherer sunuser     35960 Oct  1 09:17 ritenv.o
-rw-r--r--   1 cscherer sunuser      4371 Feb 11  2000 ritexp.f
-rw-r--r--   1 cscherer sunuser     11396 Oct  1 09:17 ritexp.o
-rw-r--r--   1 cscherer sunuser      2584 Feb 11  2000 ritmed.f
-rw-r--r--   1 cscherer sunuser      7228 Oct  1 09:17 ritmed.o
-rw-r--r--   1 cscherer sunuser     27222 Feb 11  2000 ritqa.f
-rw-r--r--   1 cscherer sunuser     92588 Oct  1 09:17 ritqa.o
-rw-r--r--   1 cscherer sunuser      4346 Feb 11  2000 rlibin.f
-rw-r--r--   1 cscherer sunuser     10064 Oct  1 09:16 rlibin.o
-rw-r--r--   1 cscherer sunuser      4399 Feb 11  2000 rwake.f
-rw-r--r--   1 cscherer sunuser      3380 Oct  1 09:17 rwake.o
-rw-r--r--   1 cscherer sunuser      2396 Feb 11  2000 sigma.f
-rw-r--r--   1 cscherer sunuser      1916 Oct  1 09:17 sigma.o
-rw-r--r--   1 cscherer sunuser      8387 Feb 11  2000 swcal.f
-rw-r--r--   1 cscherer sunuser      5888 Oct  1 09:17 swcal.o
-rw-r--r--   1 cscherer sunuser      1894 Feb 11  2000 trnspt.f
-rw-r--r--   1 cscherer sunuser      2124 Oct  1 09:17 trnspt.o
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-rw-r--r--   1 cscherer sunuser      1771 Feb 11  2000 ustar.f
-rw-r--r--   1 cscherer sunuser      1500 Oct  1 09:17 ustar.o
-rw-r--r--   1 cscherer sunuser      9276 Feb 11  2000 xqcal.f
-rw-r--r--   1 cscherer sunuser     17084 Oct  1 09:17 xqcal.o
-rw-r--r--   1 cscherer sunuser      5277 Feb 11  2000 xqin.f
-rw-r--r--   1 cscherer sunuser     13968 Oct  1 09:17 xqin.o

scr346/codes/itym:
total 4
drwxr-xr-x   3 cscherer sunuser       512 Oct  1 10:27 .
drwxr-xr-x   4 cscherer sunuser      1024 Feb 21 12:41 ..
-rwxrwxrwx   1 cscherer sunuser       596 Oct  1 10:27 makefile
drwxr-xr-x   2 cscherer sunuser      1024 Oct  1 10:27 src

scr346/codes/itym/src:
total 1849
drwxr-xr-x   2 cscherer sunuser      1024 Oct  1 10:27 .
drwxr-xr-x   3 cscherer sunuser       512 Oct  1 10:27 ..
-rw-r--r--   1 cscherer sunuser     29776 Mar 22  2000 array.f
-rw-r--r--   1 cscherer sunuser     95892 Oct  1 10:27 array.o
-rw-r--r--   1 cscherer sunuser     15856 Mar 22  2000 check_valid.f
-rw-r--r--   1 cscherer sunuser     24824 Oct  1 10:27 check_valid.o
-rw-r--r--   1 cscherer sunuser     59186 Sep 25 18:51 estimator.f
-rw-r--r--   1 cscherer sunuser    301544 Oct  1 10:27 estimator.o
-rw-r--r--   1 cscherer sunuser      4911 Sep 25 18:53 init_itym.f
-rw-r--r--   1 cscherer sunuser     36080 Oct  1 10:27 init_itym.o
-rw-r--r--   1 cscherer sunuser      9420 Sep 25 18:55 itym.f
-rw-r--r--   1 cscherer sunuser     10129 Sep 25 18:57 itym.i
-rw-r--r--   1 cscherer sunuser     20892 Oct  1 10:27 itym.o
-rw-r--r--   1 cscherer sunuser     26752 Sep 26 14:19 itymutils.f
-rw-r--r--   1 cscherer sunuser    184752 Oct  1 10:27 itymutils.o
-rw-r--r--   1 cscherer sunuser       261 Mar 22  2000 path.i
-rw-r--r--   1 cscherer sunuser        55 Mar 22  2000 preuzf.i
-rw-r--r--   1 cscherer sunuser     42671 Mar 22  2000 ran.f
-rw-r--r--   1 cscherer sunuser    136252 Oct  1 10:27 ran.o
-rw-r--r--   1 cscherer sunuser     38406 Sep 26 14:20 strtokfunc.f
-rw-r--r--   1 cscherer sunuser    311320 Oct  1 10:27 strtokfunc.o
-rw-r--r--   1 cscherer sunuser     60346 Sep 26 14:22 uncertain.f
-rw-r--r--   1 cscherer sunuser     12265 Mar 22  2000 uncertain.i
-rw-r--r--   1 cscherer sunuser    383132 Oct  1 10:27 uncertain.o
-rw-r--r--   1 cscherer sunuser        55 Mar 22  2000 unctab.i
-rw-r--r--   1 cscherer sunuser     10904 Mar 22  2000 zportunx.f
-rw-r--r--   1 cscherer sunuser      5460 Oct  1 10:27 zportunx.o

scr346/data:
total 4697
drwxr-xr-x   2 cscherer sunuser      1536 Feb 21 12:33 .
drwxr-xr-x   9 cscherer sunuser      8704 Feb 21 12:45 ..
-rw-r--r--   1 cscherer sunuser       965 Feb 11  2000 FILENAME.DAT
-rw-r--r--   1 cscherer sunuser    121789 Mar 22  2000 bunitdem.dat
-rw-r--r--   1 cscherer sunuser      1025 Mar 29  2000 burnup.dat
-rw-r--r--   1 cscherer sunuser    850000 Aug 15  1997 climato1.dat
-rw-r--r--   1 cscherer sunuser      2200 Feb  1  1999 climato2.dat
-rw-r--r--   1 cscherer sunuser      4791 Sep 25 17:29 coefkdeq.dat
-rw-r--r--   1 cscherer sunuser      2033 May 31  2002 dilution.dat
-rw-r--r--   1 cscherer sunuser       519 Oct 19  2000 drythick.dat
-rw-r--r--   1 cscherer sunuser       791 Jul 23  2002 dsfailt.def
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-rw-r--r--   1 cscherer sunuser      6265 Jul 17  2002 ebsfail.def
-rw-r--r--   1 cscherer sunuser       790 May 28  1998 ebsfilt.def
-rw-r--r--   1 cscherer sunuser      5553 Sep  3 09:27 ebsrel.def
-rw-r--r--   1 cscherer sunuser    298679 Mar 22  2000 elevdem.dat
-rw-r--r--   1 cscherer sunuser      9381 May 29  2002 fluoride.dat
-rw-r--r--   1 cscherer sunuser      6513 Feb 11  2000 gbioac1.dat
-rw-r--r--   1 cscherer sunuser      3383 Sep  4 19:18 gdefauls.def
-rw-r--r--   1 cscherer sunuser      3383 Feb 11  2000 gdefault.def
-rw-r--r--   1 cscherer sunuser        64 Feb 11  2000 gdosinc2.dat
-rw-r--r--   1 cscherer sunuser      7011 Feb 11  2000 gftrans.def
-rw-r--r--   1 cscherer sunuser      7011 Sep  4 19:18 gftranss.def
-rw-r--r--   1 cscherer sunuser     15214 Feb 11  2000 ggamen.dat
-rw-r--r--   1 cscherer sunuser     13855 Feb 11  2000 ggenii.def
-rw-r--r--   1 cscherer sunuser     13173 Sep  4 19:18 ggeniis.def
-rw-r--r--   1 cscherer sunuser      5351 Feb 11  2000 ggrdf.dat
-rw-r--r--   1 cscherer sunuser      9897 Mar 29  2000 gnewdf.dat
-rw-r--r--   1 cscherer sunuser     13200 Mar 20  2000 grmdlib.dat
-rw-r--r--   1 cscherer sunuser      3048 Sep 15  2000 gs_cb_ad.dat
-rw-r--r--   1 cscherer sunuser      2487 Jun  4  1998 gs_cb_ci.dat
-rw-r--r--   1 cscherer sunuser      3045 Sep 15  2000 gs_pb_ad.dat
-rw-r--r--   1 cscherer sunuser      2487 Jun  4  1998 gs_pb_ci.dat
-rw-r--r--   1 cscherer sunuser      7521 May 31  2002 ia.dat
-rw-r--r--   1 cscherer sunuser     20530 Sep 25 18:59 itym.dat
-rw-r--r--   1 cscherer sunuser    943774 Mar 29  2000 maidtbl.dat
-rw-r--r--   1 cscherer sunuser     10978 Mar 22  2000 maswtbl.dat
-rw-r--r--   1 cscherer sunuser    236048 Oct  7 09:07 maydtbl.dat
-rw-r--r--   1 cscherer sunuser     11267 Sep 21 09:55 mechfail.def
-rw-r--r--   1 cscherer sunuser      1254 Sep 20 20:42 multifaf.dat
-rw-r--r--   1 cscherer sunuser      1255 Sep 20 20:42 multifbe.dat
-rw-r--r--   1 cscherer sunuser    116965 Jul 17  2002 multiflo.dat
-rw-r--r--   1 cscherer sunuser      6890 Sep 25 11:51 nuclides.dat
-rw-r--r--   1 cscherer sunuser      7111 Sep 24  2000 organdf.dat
-rw-r--r--   1 cscherer sunuser       548 Sep 21  2000 repdes.dat
-rwxr-xr-x   1 cscherer sunuser    130088 Sep 21 09:55 seisbs1.dis
-rwxr-xr-x   1 cscherer sunuser    130088 Sep 21 09:56 seisbs2.dis
-rw-r--r--   1 cscherer sunuser    236061 Oct  7 09:07 smaydtbl.dat
-rw-r--r--   1 cscherer sunuser    489858 Mar 22  2000 soildem.dat
-rw-r--r--   1 cscherer sunuser      4506 Feb  7  2000 strmtube.dat
-rw-r--r--   1 cscherer sunuser    119673 Mar 22  2000 sunitdem.dat
-rw-r--r--   1 cscherer sunuser    162404 May  8  2000 tefkti.inp
-rw-r--r--   1 cscherer sunuser     97497 Sep 26 14:24 tpanames.dbs
-rw-r--r--   1 cscherer sunuser    471041 Mar 22  2000 winddem.dat
-rw-r--r--   1 cscherer sunuser     17410 Feb  2  2000 wpflow.def

scr346/diff_files:
total 73
drwxr-xr-x   2 cscherer sunuser       512 Feb 21 12:33 .
drwxr-xr-x   9 cscherer sunuser      8704 Feb 21 12:45 ..
-rw-r--r--   1 cscherer sunuser     59473 Oct  7 11:10 inp.dif
-rw-r--r--   1 cscherer sunuser      2852 Oct 16 16:24 nefii_inp3b_A.diff
-rw-r--r--   1 cscherer sunuser       330 Oct 21 14:34 tpasl3b_orig.diff

scr346/docs:
total 121
drwxr-xr-x   2 cscherer sunuser       512 Feb 18 11:41 .
drwxr-xr-x   9 cscherer sunuser      8704 Feb 21 12:45 ..
-rwxr--r--   1 cscherer sunuser     90468 Oct 25 13:32 Test Plan PA-SCR-346.wpd
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-rwxr--r--   1 cscherer sunuser     22054 Sep 30 15:34 scr_346.wpd

scr346/jpg_files:
total 714
drwxr-xr-x   2 cscherer sunuser       512 Feb 21 12:36 .
drwxr-xr-x   9 cscherer sunuser      8704 Feb 21 12:45 ..
-rwxr--r--   1 cscherer sunuser    271038 Feb 10 10:41 pl2-scr346_41j.jpg
-rwxr--r--   1 cscherer sunuser    256906 Feb 10 10:41 pl2-scr346_mai.jpg
-rwxr--r--   1 cscherer sunuser    147846 Feb 10 10:41 pl2-scr346_may.jpg

scr346/pltest:
total 155
drwxr-xr-x   7 cscherer sunuser      1024 Feb 21 12:42 .
drwxr-xr-x   9 cscherer sunuser      8704 Feb 21 12:45 ..
-rw-r--r--   1 cscherer sunuser      1275 Oct  1 12:34 PA-SCR-346_PL1.out
-rw-r--r--   1 cscherer sunuser      2164 Oct  1 14:31 PA-SCR-346_PL2-A.out
-rw-r--r--   1 cscherer sunuser      2164 Oct  1 16:18 PA-SCR-346_PL2-B.out
-rw-r--r--   1 cscherer sunuser      2164 Oct  3 17:23 PA-SCR-346_PL2-C.out
-rw-r--r--   1 cscherer sunuser      2032 Oct  5 06:36 PA-SCR-346_PL2-D.out
-rw-r--r--   1 cscherer sunuser     20618 Oct  1 13:40 itym-A.dat
-rw-r--r--   1 cscherer sunuser     20619 Oct  1 13:41 itym-B.dat
-rw-r--r--   1 cscherer sunuser     20619 Oct  1 13:41 itym-C.dat
-rw-r--r--   1 cscherer sunuser     20620 Oct  1 13:42 itym-D.dat
-rw-r--r--   1 cscherer sunuser       140 Oct  1 13:18 itym_dat.dif
-rw-r--r--   1 cscherer sunuser     20530 Sep 25 18:59 itym_v5beta.dat
-rw-r--r--   1 cscherer sunuser     20464 Mar 22  2000 itymreal500.dat
drwxr-xr-x   2 cscherer sunuser       512 Oct  3 10:17 pl-1
drwxr-xr-x   2 cscherer sunuser      1024 Oct 23 09:38 pl-2
drwxr-xr-x   2 cscherer sunuser      1024 Feb 21 12:43 pl-3
drwxr-xr-x   3 cscherer sunuser       512 Feb 21 12:47 run41j
drwxr-xr-x   2 cscherer sunuser      1024 Feb 21 12:46 run42b
-rwxrwxrwx   1 cscherer sunuser        30 Sep 12 16:53 show_env

scr346/pltest/pl-1:
total 4001
drwxr-xr-x   2 cscherer sunuser       512 Oct  3 10:17 .
drwxr-xr-x   7 cscherer sunuser      1024 Feb 21 12:42 ..
-rw-r--r--   1 cscherer sunuser      1275 Oct  1 12:34 PA-SCR-346_PL1.out
-rw-r--r--   1 cscherer sunuser    121789 Oct  1 12:33 bunitdem.dat
-rw-r--r--   1 cscherer sunuser    298679 Oct  1 12:33 elevdem.dat
-rw-r--r--   1 cscherer sunuser     20548 Oct  1 12:32 itym.dat
-rwxr-xr-x   1 cscherer sunuser   1040384 Oct  1 10:27 itym.e
-rw-r--r--   1 cscherer sunuser     20546 Oct  1 10:52 itym_pl-1.dat
-rw-r--r--   1 cscherer sunuser    530950 Oct  1 12:34 maidtbl.dat
-rw-r--r--   1 cscherer sunuser     10978 Oct  1 12:33 maswtbl.dat
-rw-r--r--   1 cscherer sunuser    530957 Oct  1 12:34 maydtbl.dat
-rw-r--r--   1 cscherer sunuser    530970 Oct  1 12:34 smaydtbl.dat
-rw-r--r--   1 cscherer sunuser    489858 Oct  1 12:33 soildem.dat
-rw-r--r--   1 cscherer sunuser    119673 Oct  1 12:33 sunitdem.dat
-rw-r--r--   1 cscherer sunuser    471041 Oct  1 12:33 winddem.dat

scr346/pltest/pl-2:
total 200941
drwxr-xr-x   2 cscherer sunuser      1024 Oct 23 09:38 .
drwxr-xr-x   7 cscherer sunuser      1024 Feb 21 12:42 ..
-rw-r--r--   1 cscherer sunuser      2164 Oct  1 14:31 PA-SCR-346_PL2-A.out
-rw-r--r--   1 cscherer sunuser      2164 Oct  1 16:18 PA-SCR-346_PL2-B.out
```

```
-rw-r--r--   1 cscherer sunuser      2164 Oct  3 17:23 PA-SCR-346_PL2-C.out
-rw-r--r--   1 cscherer sunuser      2032 Oct  5 06:36 PA-SCR-346_PL2-D.out
-rw-r--r--   1 cscherer sunuser    121789 Oct  4 09:01 bunitdem.dat
-rw-r--r--   1 cscherer sunuser    298679 Oct  4 09:01 elevdem.dat
-rw-r--r--   1 cscherer sunuser     20618 Oct  1 13:40 itym-A.dat
-rw-r--r--   1 cscherer sunuser     20619 Oct  1 13:41 itym-B.dat
-rw-r--r--   1 cscherer sunuser     20619 Oct  1 13:41 itym-C.dat
-rw-r--r--   1 cscherer sunuser     20620 Oct  1 13:42 itym-D.dat
-rw-r--r--   1 cscherer sunuser     20530 Sep 25 18:59 itym_v5beta.dat
-rw-r--r--   1 cscherer sunuser     20464 Mar 22  2000 itymreal500.dat
-rw-r--r--   1 cscherer sunuser  15286168 Oct  1 14:31 maidtbl-A.dat
-rw-r--r--   1 cscherer sunuser  15286168 Oct  1 16:18 maidtbl-B.dat
-rw-r--r--   1 cscherer sunuser  15286168 Oct  3 17:23 maidtbl-C.dat
-rw-r--r--   1 cscherer sunuser    955374 Oct 22 16:52 maidtbl-Cp200t147.dat
-rw-r--r--   1 cscherer sunuser  15286168 Oct  5 06:36 maidtbl-D.dat
-rwxr--r--   1 cscherer sunuser   3284992 Oct 22 17:21 maidtbl-p200t147.xls
-rw-r--r--   1 cscherer sunuser  15286174 Oct  4 21:25 maidtbl_41j.dat
-rw-r--r--   1 cscherer sunuser    955374 Oct 22 16:53 maidtbl_41jp200t147.dat
-rw-r--r--   1 cscherer sunuser     10978 Oct  4 09:01 maswtbl.dat
-rw-r--r--   1 cscherer sunuser  15286175 Oct  1 14:31 maydtbl-A.dat
-rw-r--r--   1 cscherer sunuser  15286175 Oct  1 16:18 maydtbl-B.dat
-rw-r--r--   1 cscherer sunuser  15286175 Oct  3 17:23 maydtbl-C.dat
-rw-r--r--   1 cscherer sunuser  15286175 Oct  5 06:36 maydtbl-D.dat
-rw-r--r--   1 cscherer sunuser  15286188 Oct  1 14:31 smaydtbl-A.dat
-rw-r--r--   1 cscherer sunuser  15286188 Oct  1 16:18 smaydtbl-B.dat
-rw-r--r--   1 cscherer sunuser  15286188 Oct  3 17:23 smaydtbl-C.dat
-rw-r--r--   1 cscherer sunuser  15286188 Oct  5 06:36 smaydtbl-D.dat
-rw-r--r--   1 cscherer sunuser    489858 Oct  4 09:01 soildem.dat
-rw-r--r--   1 cscherer sunuser    119673 Oct  4 09:01 sunitdem.dat
-rw-r--r--   1 cscherer sunuser    471041 Oct  4 09:01 winddem.dat

scr346/pltest/pl-3:
total 26844
drwxr-xr-x   2 cscherer sunuser      1024 Feb 21 12:43 .
drwxr-xr-x   7 cscherer sunuser      1024 Feb 21 12:42 ..
-rw-r--r--   1 cscherer sunuser      1143 Oct  3 17:59 PA-SCR-346_PL3a.out
-rw-r--r--   1 cscherer sunuser      1143 Oct  4 16:15 PA-SCR-346_PL3b.out
-rw-r--r--   1 cscherer sunuser    121789 Oct  4 09:46 bunitdem.dat
-rw-r--r--   1 cscherer sunuser    298679 Oct  4 09:46 elevdem.dat
-rw-r--r--   1 cscherer sunuser     20543 Oct  4 09:45 itym.dat
-rw-r--r--   1 cscherer sunuser     20530 Sep 25 18:59 itym_v5beta.dat
-rw-r--r--   1 cscherer sunuser     20511 Oct  3 12:49 ityma.dat
-rw-r--r--   1 cscherer sunuser     20464 Mar 22  2000 itymreal500.dat
-rw-r--r--   1 cscherer sunuser   8598550 Oct  3 17:59 maidtbl-a.dat
-rw-r--r--   1 cscherer sunuser     10978 Oct  4 09:46 maswtbl.dat
-rw-r--r--   1 cscherer sunuser   8598557 Oct  3 17:59 maydtbl-a.dat
-rw-r--r--   1 cscherer sunuser   8598570 Oct  3 17:59 smaydtbl-a.dat
-rw-r--r--   1 cscherer sunuser    489858 Oct  4 09:46 soildem.dat
-rw-r--r--   1 cscherer sunuser    119673 Oct  4 09:46 sunitdem.dat
-rw-r--r--   1 cscherer sunuser    471041 Oct  4 09:46 winddem.dat

scr346/pltest/run41j:
total 45
drwxr-xr-x   3 cscherer sunuser       512 Feb 21 12:47 .
drwxr-xr-x   7 cscherer sunuser      1024 Feb 21 12:42 ..
-rw-r--r--   1 cscherer sunuser      2000 Oct  4 21:25 PA-SCR-346_PL2-41j.out
drwxr-xr-x   2 cscherer sunuser      1024 Oct  1 14:13 data
```

```
-rw-r--r--   1 cscherer sunuser     20464 Oct  4 09:16 itym.dat
-rw-r--r--   1 cscherer sunuser     20464 Oct  4 09:16 itym_41j.dat

scr346/pltest/run41j/data:
total 3872
drwxr-xr-x   2 cscherer sunuser      1024 Oct  1 14:13 .
drwxr-xr-x   3 cscherer sunuser       512 Feb 21 12:47 ..
-rw-r--r--   1 cscherer sunuser       965 Feb 11  2000 FILENAME.DAT
-rwxr-xr-x   1 cscherer sunuser     28524 Oct 19  2001 a.out
-rw-r--r--   1 cscherer sunuser    121789 Mar 22  2000 bunitdem.dat
-rw-r--r--   1 cscherer sunuser      1025 Mar 29  2000 burnup.dat
-rw-r--r--   1 cscherer sunuser    850000 Aug 15  1997 climato1.dat
-rw-r--r--   1 cscherer sunuser      2200 Feb  1  1999 climato2.dat
-rw-r--r--   1 cscherer sunuser      2033 Mar 15  2000 dilution.dat
-rw-r--r--   1 cscherer sunuser       519 Oct 19  2000 drythick.dat
-rw-r--r--   1 cscherer sunuser      5146 Jan 20  2000 ebsfail.def
-rw-r--r--   1 cscherer sunuser       790 May 28  1998 ebsfilt.def
-rw-r--r--   1 cscherer sunuser      4541 Mar 21  2000 ebsrel.def
-rw-r--r--   1 cscherer sunuser    298679 Mar 22  2000 elevdem.dat
-rw-r--r--   1 cscherer sunuser      6513 Feb 11  2000 gbioac1.dat
-rw-r--r--   1 cscherer sunuser      3383 Feb 11  2000 gdefault.def
-rw-r--r--   1 cscherer sunuser        64 Feb 11  2000 gdosinc2.dat
-rw-r--r--   1 cscherer sunuser      7011 Feb 11  2000 gftrans.def
-rw-r--r--   1 cscherer sunuser     15214 Feb 11  2000 ggamen.dat
-rw-r--r--   1 cscherer sunuser     13855 Feb 11  2000 ggenii.def
-rw-r--r--   1 cscherer sunuser      5351 Feb 11  2000 ggrdf.dat
-rw-r--r--   1 cscherer sunuser      9897 Mar 29  2000 gnewdf.dat
-rw-r--r--   1 cscherer sunuser     13200 Mar 20  2000 grmdlib.dat
-rw-r--r--   1 cscherer sunuser      3048 Sep 15  2000 gs_cb_ad.dat
-rw-r--r--   1 cscherer sunuser      2487 Jun  4  1998 gs_cb_ci.dat
-rw-r--r--   1 cscherer sunuser      3045 Sep 15  2000 gs_pb_ad.dat
-rw-r--r--   1 cscherer sunuser      2487 Jun  4  1998 gs_pb_ci.dat
-rw-r--r--   1 cscherer sunuser      7461 Mar 23  2001 ia.dat
-rw-r--r--   1 cscherer sunuser     20462 Mar 22  2000 itym.dat
-rw-r--r--   1 cscherer sunuser    943774 Mar 29  2000 maidtbl.dat
-rw-r--r--   1 cscherer sunuser     10978 Mar 22  2000 maswtbl.dat
-rw-r--r--   1 cscherer sunuser    106515 Mar 16  2000 multiflo.dat
-rw-r--r--   1 cscherer sunuser      4591 Oct 19  2000 nuclides.dat
-rw-r--r--   1 cscherer sunuser      7111 Sep 24  2000 organdf.dat
-rw-r--r--   1 cscherer sunuser       563 Oct 19  2001 quad.f
-rw-r--r--   1 cscherer sunuser       548 Sep 21  2000 repdes.dat
-rw-r--r--   1 cscherer sunuser    489858 Mar 22  2000 soildem.dat
-rw-r--r--   1 cscherer sunuser      4506 Feb  7  2000 strmtube.dat
-rw-r--r--   1 cscherer sunuser    119673 Mar 22  2000 sunitdem.dat
-rw-r--r--   1 cscherer sunuser    162404 May  8  2000 tefkti.inp
-rw-r--r--   1 cscherer sunuser     73692 Mar 23  2001 tpanames.dbs
-rw-r--r--   1 cscherer sunuser    471041 Mar 22  2000 winddem.dat
-rw-r--r--   1 cscherer sunuser     17410 Feb  2  2000 wpflow.def

scr346/pltest/run42b:
total 2489
drwxr-xr-x   2 cscherer sunuser      1024 Feb 21 12:46 .
drwxr-xr-x   7 cscherer sunuser      1024 Feb 21 12:42 ..
-rw-r--r--   1 cscherer sunuser    121789 Mar 22  2000 bunitdem.dat
-rw-r--r--   1 cscherer sunuser    298679 Mar 22  2000 elevdem.dat
-rw-r--r--   1 cscherer sunuser     20462 Mar 22  2000 itym.dat
-rw-r--r--   1 cscherer sunuser    943774 Mar 29  2000 maidtbl.dat
```

```
-rw-r--r--   1 cscherer sunuser     10978 Mar 22  2000 maswtbl.dat
-rw-r--r--   1 cscherer sunuser    489858 Mar 22  2000 soildem.dat
-rw-r--r--   1 cscherer sunuser    119673 Mar 22  2000 sunitdem.dat
-rw-r--r--   1 cscherer sunuser    471041 Mar 22  2000 winddem.dat
```

```
scr346B:
total 4701
drwxr-xr-x  13 cscherer sunuser      7680 Feb 21 13:28 .
drwxr-xr-x  32 cscherer sunuser      4608 Feb 21 14:09 ..
-rwxr-xr-x   1 cscherer sunuser      2001 Sep 18 16:52 CLEANUP
-rw-r--r--   1 cscherer sunuser       869 Nov 27 14:22 Makefile
-rw-rw-rw-   1 cscherer sunuser       961 Nov 27 14:24 Makefile4.2
-rw-r--r--   1 cscherer sunuser     29502 Nov 15 17:28 array.f
-rw-r--r--   1 cscherer sunuser     20601 Sep 11 13:41 ashplumo.f
-rw-r--r--   1 cscherer sunuser     37630 Nov 27 13:27 ashrmovo.f
drwxr-xr-x   2 cscherer sunuser       512 Feb 20 11:58 ccdf
-rwxrwxrwx   1 cscherer sunuser       144 Feb 18 14:27 ch_env
drwxr-xr-x   4 cscherer sunuser      1024 Feb 21 12:40 codes
-rw-r--r--   1 cscherer sunuser       735 Feb 18 18:46 coefkdeq.i
-rw-r--r--   1 cscherer sunuser     10207 Feb 15  2002 condxyzt.f
drwxr-xr-x   2 cscherer sunuser      1536 Feb 21 12:24 data
-rw-r--r--   1 cscherer sunuser    122748 Feb 18 18:49 dcags.f
-rw-r--r--   1 cscherer sunuser    157577 Dec 19 14:34 dcagw.f
drwxr-xr-x   2 cscherer sunuser       512 Feb 20 11:53 diff_files
drwxr-xr-x   2 cscherer sunuser       512 Feb 21 14:08 docs
-rw-r--r--   1 cscherer sunuser       190 Sep 20 09:32 driftsa.i
-rw-r--r--   1 cscherer sunuser     25470 Dec 17 17:53 dsfail.f
-rw-r--r--   1 cscherer sunuser     48867 Feb 14 19:59 ebsfail.f
-rw-r--r--   1 cscherer sunuser     86105 Feb 16 19:40 ebsrel.f
-rw-r--r--   1 cscherer sunuser       149 Sep 25 12:15 ebsrel1.i
-rw-r--r--   1 cscherer sunuser    385746 Feb 20 10:02 exec.f
-rw-r--r--   1 cscherer sunuser      2385 Sep 21 10:07 execa.i
-rw-r--r--   1 cscherer sunuser       486 Sep  3  1997 execb.i
-rw-r--r--   1 cscherer sunuser       269 May 29  2002 execc.i
-rw-r--r--   1 cscherer sunuser       104 Feb  6 14:32 execd.i
-rw-r--r--   1 cscherer sunuser      8503 Feb 15  2002 faulto.f
-rw-r--r--   1 cscherer sunuser      6599 May 29  2002 fileunit.f
-rw-r--r--   1 cscherer sunuser      5784 Feb 15  2002 findelev.f
-rw-r--r--   1 cscherer sunuser        60 Aug 16  1997 fu1.i
-rw-r--r--   1 cscherer sunuser       609 Sep  4 19:29 fu2.i
-rw-r--r--   1 cscherer sunuser      3387 Feb 21 11:25 gdefault.inp
-rw-r--r--   1 cscherer sunuser      7142 Feb 21 11:25 gftrans.inp
-rw-r--r--   1 cscherer sunuser     13164 Feb 21 11:25 ggenii.inp
-rw-r--r--   1 cscherer sunuser      1229 Jul 22  1999 ia.i
-rw-r--r--   1 cscherer sunuser       956 Sep 26  2000 ia1.i
-rw-r--r--   1 cscherer sunuser     21238 Dec 19 14:34 iareader.f
-rw-r--r--   1 cscherer sunuser     69374 Feb 20 11:12 invent.f
-rw-r--r--   1 cscherer sunuser        33 Sep 25 12:15 invent_.i
-rw-r--r--   1 cscherer sunuser        57 Aug 16  1997 inventa.i
-rw-r--r--   1 cscherer sunuser       182 Sep 25 12:14 inventb.i
-rw-r--r--   1 cscherer sunuser       344 Sep 25 12:14 inventc.i
-rw-r--r--   1 cscherer sunuser       124 Sep 25 12:14 inventd.i
-rw-r--r--   1 cscherer sunuser       131 Sep 25 12:14 invente.i
-rw-r--r--   1 cscherer sunuser       130 Sep 25 12:14 inventf.i
-rw-r--r--   1 cscherer sunuser       128 Sep 25 12:14 inventg.i
-rw-r--r--   1 cscherer sunuser       127 Sep 25 12:14 inventh.i
-rw-r--r--   1 cscherer sunuser        75 Aug 16  1997 inventi.i
-rw-r--r--   1 cscherer sunuser       288 Sep 25 12:14 inventj.i
-rw-r--r--   1 cscherer sunuser       332 Sep 25 12:14 inventk.i
-rw-r--r--   1 cscherer sunuser       150 Dec  6 14:29 inventl.i
-rw-r--r--   1 cscherer sunuser       315 Dec 11 09:33 inventm.i
-rw-r--r--   1 cscherer sunuser       175 Sep 25 12:15 inventn.i
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-rw-r--r--   1 cscherer sunuser       249 Jan 29  2000 invento.i
-rw-r--r--   1 cscherer sunuser       267 Sep 25 12:15 inventp.i
-rw-r--r--   1 cscherer sunuser        78 Aug 16  1997 max500yr.i
-rw-r--r--   1 cscherer sunuser        99 Sep 25 12:10 maxchain.i
-rw-r--r--   1 cscherer sunuser       149 Sep 25 12:50 maxclchn.i
-rw-r--r--   1 cscherer sunuser       144 Sep 25 12:50 maxclnuc.i
-rw-r--r--   1 cscherer sunuser       508 Sep 25 12:11 maxnnucl.i
-rw-r--r--   1 cscherer sunuser       299 Jul 10  1998 maxnsuba.i
-rw-r--r--   1 cscherer sunuser       206 May 28  1999 maxntime.i
-rw-r--r--   1 cscherer sunuser     11850 Feb 15  2002 mv.f
-rw-r--r--   1 cscherer sunuser       111 Sep  4  1997 mva.i
-rw-r--r--   1 cscherer sunuser        56 Aug 16  1997 mvb.i
-rw-r--r--   1 cscherer sunuser        57 Aug 16  1997 mvc.i
-rw-r--r--   1 cscherer sunuser       101 Aug 16  1997 mvd.i
-rw-r--r--   1 cscherer sunuser        72 Aug 16  1997 mve.i
-rw-r--r--   1 cscherer sunuser        72 Aug 16  1997 mvf.i
-rw-r--r--   1 cscherer sunuser    112638 Feb 19 11:01 nfenv.f
-rw-r--r--   1 cscherer sunuser       326 Nov 17 18:24 nfenvadj.i
-rw-r--r--   1 cscherer sunuser        94 Aug 16  1997 nintv.i
-rw-r--r--   1 cscherer sunuser      1502 Jun 11  1997 notice.i
-rw-r--r--   1 cscherer sunuser      6579 Feb 15  2002 numrecip.f
-rw-r--r--   1 cscherer sunuser       259 Aug 16  1997 path.i
-rw-r--r--   1 cscherer sunuser      6584 Feb 15  2002 peakfind.f
-rw-r--r--   1 cscherer sunuser     46322 Feb 15  2002 ran.f
-rw-r--r--   1 cscherer sunuser    148482 Dec 19 14:32 reader.f
-rw-r--r--   1 cscherer sunuser       185 May 21  1998 reader.i
-rw-r--r--   1 cscherer sunuser       106 Aug 27  1999 reader1.i
-rw-r--r--   1 cscherer sunuser        58 Aug 27  1999 reader2.i
-rw-r--r--   1 cscherer sunuser       102 Aug 27  1999 reader3.i
-rw-r--r--   1 cscherer sunuser        89 Aug 27  1999 reader4.i
-rw-r--r--   1 cscherer sunuser        58 Aug 16  1997 reflux2.i
-rw-r--r--   1 cscherer sunuser     95694 May 29  2002 sampler.f
-rw-r--r--   1 cscherer sunuser        62 Aug 16  1997 sampler0.i
-rw-r--r--   1 cscherer sunuser        79 Aug 16  1997 sampler1.i
-rw-r--r--   1 cscherer sunuser        62 Aug 16  1997 sampler2.i
-rw-r--r--   1 cscherer sunuser       178 Apr  3  1998 sampler3.i
-rw-r--r--   1 cscherer sunuser       145 Sep 19  2000 sampler4.i
-rw-r--r--   1 cscherer sunuser        62 Aug 16  1997 samplera.i
-rw-r--r--   1 cscherer sunuser        62 Aug 16  1997 samplerb.i
-rw-r--r--   1 cscherer sunuser        62 Aug 16  1997 samplerc.i
-rw-r--r--   1 cscherer sunuser        68 Aug 16  1997 samplerd.i
-rw-r--r--   1 cscherer sunuser       133 Aug 16  1997 samplere.i
-rw-r--r--   1 cscherer sunuser       111 Aug 16  1997 samplerf.i
-rw-r--r--   1 cscherer sunuser        84 Aug 16  1997 samplerg.i
-rw-r--r--   1 cscherer sunuser        68 Aug 16  1997 samplerh.i
-rw-r--r--   1 cscherer sunuser        83 Aug 16  1997 sampleri.i
-rw-r--r--   1 cscherer sunuser        61 Aug 16  1997 samplerj.i
-rw-r--r--   1 cscherer sunuser       208 Aug 16  1997 samplerk.i
-rw-r--r--   1 cscherer sunuser       104 Aug 16  1997 samplerl.i
-rw-r--r--   1 cscherer sunuser        63 Aug 16  1997 samplerm.i
-rw-r--r--   1 cscherer sunuser        79 Aug 16  1997 samplern.i
-rw-r--r--   1 cscherer sunuser        63 Aug 16  1997 samplero.i
-rw-r--r--   1 cscherer sunuser       260 Mar 14  2002 samplerp.i
-rw-r--r--   1 cscherer sunuser       103 Aug 16  1997 samplerq.i
-rw-r--r--   1 cscherer sunuser       176 Aug 16  1997 samplerr.i
-rw-r--r--   1 cscherer sunuser       336 Apr  3  1998 samplers.i
-rw-r--r--   1 cscherer sunuser        70 Aug 16  1997 samplert.i
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-rw-r--r--   1 cscherer sunuser        69 Aug 16  1997 sampleru.i
-rw-r--r--   1 cscherer sunuser        62 Aug 16  1997 samplerv.i
-rw-r--r--   1 cscherer sunuser        60 Aug 16  1997 samplerw.i
-rw-r--r--   1 cscherer sunuser       316 Jan 14 17:30 samplerx.i
-rw-r--r--   1 cscherer sunuser       299 Apr 30  2001 samplery.i
-rw-r--r--   1 cscherer sunuser        60 Aug 16  1997 samplerz.i
-rw-r--r--   1 cscherer sunuser       322 Nov 17 18:24 seisadj.i
-rw-r--r--   1 cscherer sunuser     74226 Dec 17 17:52 seismo2.f
-rwxrwxrwx   1 cscherer sunuser        30 Sep 12 16:53 show_env
drwxr-xr-x   4 cscherer sunuser       512 Feb 21 12:11 slt1
drwxr-xr-x   2 cscherer sunuser       512 Feb 21 11:05 slt1_files
drwxr-xr-x   2 cscherer sunuser       512 Feb 21 12:15 slt2
drwxr-xr-x   2 cscherer sunuser       512 Feb 21 11:29 slt2_files
drwxr-xr-x   4 cscherer sunuser       512 Feb 21 13:28 slt3
drwxr-xr-x   2 cscherer sunuser       512 Feb 21 11:05 slt3_files
-rw-r--r--   1 cscherer sunuser       144 Sep  3  1997 stop.i
-rw-r--r--   1 cscherer sunuser     38273 Sep  3 10:13 subarea.f
-rw-r--r--   1 cscherer sunuser       255 Feb  4  2000 subareaa.i
-rw-r--r--   1 cscherer sunuser        79 Aug 16  1997 subareab.i
-rw-r--r--   1 cscherer sunuser        82 Aug 16  1997 subareac.i
-rw-r--r--   1 cscherer sunuser        81 Aug 16  1997 subaread.i
-rw-r--r--   1 cscherer sunuser        77 Aug 16  1997 subareae.i
-rw-r--r--   1 cscherer sunuser        60 Feb  3  2000 subareaf.i
-rw-r--r--   1 cscherer sunuser        64 Feb  2  2000 subareag.i
-rw-r--r--   1 cscherer sunuser    115415 Feb 10 11:35 szft.f
-rw-r--r--   1 cscherer sunuser       264 Nov 17 18:23 szft.i
-rwxr-xr-x   1 cscherer sunuser   2424992 Feb 20 13:21 tpa.e
-rw-r--r--   1 cscherer sunuser     91441 Feb 20 13:58 tpa.inp
-rw-r--r--   1 cscherer sunuser     91445 Feb 19 19:59 tpa_orig.inp
-rw-r--r--   1 cscherer sunuser       314 Aug 16  1997 uz_climi.i
-rw-r--r--   1 cscherer sunuser      1219 Sep  6 20:05 uz_climr.i
-rw-r--r--   1 cscherer sunuser       341 Aug 16  1997 uz_climz.i
-rw-r--r--   1 cscherer sunuser      1323 Sep 26 14:28 uz_flowi.i
-rw-r--r--   1 cscherer sunuser      1170 Sep 26 14:29 uz_flowr.i
-rw-r--r--   1 cscherer sunuser       176 Aug 16  1997 uz_flowz.i
-rw-r--r--   1 cscherer sunuser      3225 Sep 26 14:30 uz_parms.i
-rw-r--r--   1 cscherer sunuser     72309 Feb 19 20:01 uzflow.f
-rw-r--r--   1 cscherer sunuser    127287 Feb 16 19:42 uzft.f
-rw-r--r--   1 cscherer sunuser       755 Nov 17 18:23 uzszft.i
-rw-r--r--   1 cscherer sunuser     14215 Feb 15  2002 volcano.f
-rw-r--r--   1 cscherer sunuser     11721 Feb 15  2002 zportunx.f

scr346B/ccdf:
total 35
drwxr-xr-x   2 cscherer sunuser       512 Feb 20 11:58 .
drwxr-xr-x  13 cscherer sunuser      7680 Feb 21 13:28 ..
-rw-r--r--   1 cscherer sunuser       267 Mar 14  2000 Makefile
-rw-r--r--   1 cscherer sunuser     23390 Jul 22  1999 tccdf.f
-rw-r--r--   1 cscherer sunuser        66 Aug  1  1997 tccdf.i
-rw-r--r--   1 cscherer sunuser       640 Jan 29  2001 tccdf.inp

scr346B/codes:
total 1197
drwxr-xr-x   4 cscherer sunuser      1024 Feb 21 12:40 .
drwxr-xr-x  13 cscherer sunuser      7680 Feb 21 13:28 ..
-rw-r--r--   1 cscherer sunuser      1403 Feb 19 19:54 Makefile
-rw-r--r--   1 cscherer sunuser      1838 Feb 19 19:56 Makefile4.2
```

```
-rw-r--r--   1 cscherer sunuser       499 Jun  2  1997 README
-rw-r--r--   1 cscherer sunuser      2320 May 28  1998 SIZES.INC
-rw-r--r--   1 cscherer sunuser       164 Feb 17  1998 SIZES2.INC
-rw-r--r--   1 cscherer sunuser     95611 Sep 26  2000 ashplume.f
-rw-r--r--   1 cscherer sunuser     25361 Jul 17  2002 corrosn.f
-rw-r--r--   1 cscherer sunuser     23303 Dec 17 17:21 dsfailt.f
-rw-r--r--   1 cscherer sunuser     17737 Feb 16 19:36 ebsfilt.f
-rw-r--r--   1 cscherer sunuser    103168 Feb 18 18:44 failt.f
-r--r--r--   1 cscherer sunuser       450 Nov 17 18:03 failtadj.i
drwxr-xr-x   2 cscherer sunuser      3072 Feb 20 13:03 gentpa
-rwxr-xr-x   1 cscherer sunuser      4633 Nov 17 18:01 integrt.f
drwxr-xr-x   3 cscherer sunuser       512 Feb 20 11:58 itym
-r--r--r--   1 cscherer sunuser       868 Dec 17 16:59 lhs1.i
-r--r--r--   1 cscherer sunuser      1308 Mar 14  2002 lhs2.i
-r--r--r--   1 cscherer sunuser       438 Mar 14  2002 lhs3.i
-r--r--r--   1 cscherer sunuser       437 Mar 14  2002 lhs4.i
-r--r--r--   1 cscherer sunuser       374 Mar 14  2002 lhs5.i
-r--r--r--   1 cscherer sunuser       450 Mar 14  2002 lhs6.i
-r--r--r--   1 cscherer sunuser       464 Mar 14  2002 lhs7.i
-r--r--r--   1 cscherer sunuser       431 Mar 14  2002 lhs8.i
-rwxr-xr-x   1 cscherer sunuser      5229 May 29  2002 linintrp.f
-r--r--r--   1 cscherer sunuser       331 Nov 17 18:03 mechadj.i
-rw-r--r--   1 cscherer sunuser    126625 Dec 17 17:57 mechfail.f
-rw-r--r--   1 cscherer sunuser    308005 Sep 26  2000 nefmks.f
-rw-r--r--   1 cscherer sunuser    168121 Jan  7 11:17 releaset.f
-rw-r--r--   1 cscherer sunuser    224558 Sep  6 10:21 snllhs.f
-rwxr-xr-x   1 cscherer sunuser      4303 May 29  2002 srchpos.f
-rwxr-xr-x   1 cscherer sunuser     19890 Nov 17 18:01 weldfail.f

scr346B/codes/gentpa:
total 1079
drwxr-xr-x   2 cscherer sunuser      3072 Feb 20 13:03 .
drwxr-xr-x   4 cscherer sunuser      1024 Feb 21 12:40 ..
-rw-r--r--   1 cscherer sunuser       543 Feb 11  2000 AFPPAR.CMN
-rw-r--r--   1 cscherer sunuser      1044 Feb 11  2000 AIRPAR.CMN
-rw-r--r--   1 cscherer sunuser       872 Feb 11  2000 ANMPAR.CMN
-rw-r--r--   1 cscherer sunuser       615 Feb 11  2000 AQUPAR.CMN
-rw-r--r--   1 cscherer sunuser      1089 Feb 11  2000 CONC.CMN
-rw-r--r--   1 cscherer sunuser       461 Feb 11  2000 DAYPC.CMN
-rw-r--r--   1 cscherer sunuser       400 Feb 11  2000 DECAY.CMN
-rw-r--r--   1 cscherer sunuser       571 Feb 11  2000 DFPAR.CMN
-rw-r--r--   1 cscherer sunuser      1359 Feb 11  2000 DOSALL.CMN
-rw-r--r--   1 cscherer sunuser       574 Feb 11  2000 ENVPAR.CMN
-rw-r--r--   1 cscherer sunuser       310 Feb 11  2000 EXPALL.CMN
-rw-r--r--   1 cscherer sunuser       637 Feb 11  2000 EXTPAR.CMN
-rw-r--r--   1 cscherer sunuser       327 Feb 11  2000 FILES.CMN
-rw-r--r--   1 cscherer sunuser       814 Feb 11  2000 FODPAR.CMN
-rw-r--r--   1 cscherer sunuser       438 Feb 11  2000 INVIN.CMN
-rw-r--r--   1 cscherer sunuser       569 Feb 11  2000 LABELS.CMN
-rw-r--r--   1 cscherer sunuser      1161 Feb 11  2000 MTBPAR.CMN
-rw-r--r--   1 cscherer sunuser      1688 Feb 28  2000 Make.bat
-rw-r--r--   1 cscherer sunuser      1849 Feb 24  2000 Makefile
-rw-rw-rw-   1 cscherer sunuser      1938 Nov 27 14:12 Makefile4.2
-rw-r--r--   1 cscherer sunuser      1746 Feb 11  2000 Mkenv.fig
-rw-r--r--   1 cscherer sunuser      1548 Feb 11  2000 Mkenvin.fig
-rw-r--r--   1 cscherer sunuser      2762 Feb 11  2000 OPT.CMN
-rw-r--r--   1 cscherer sunuser       444 Feb 11  2000 ORGMAS.CMN
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-rw-r--r--   1 cscherer sunuser       728 Feb 11  2000 ORGPAR.CMN
-rw-r--r--   1 cscherer sunuser       589 Feb 11  2000 RAD.CMN
-rw-r--r--   1 cscherer sunuser       788 Feb 11  2000 RADIN.CMN
-rw-r--r--   1 cscherer sunuser       722 Feb 11  2000 RMD.CMN
-rw-r--r--   1 cscherer sunuser       489 Feb 11  2000 RMD2.CMN
-rw-r--r--   1 cscherer sunuser       891 Feb 11  2000 SOLPAR.CMN
-rw-r--r--   1 cscherer sunuser       489 Feb 11  2000 SWPAR.CMN
-rw-r--r--   1 cscherer sunuser       586 Feb 11  2000 TIMES.CMN
-rw-r--r--   1 cscherer sunuser       316 Feb 11  2000 TITL.CMN
-rw-r--r--   1 cscherer sunuser     12777 Feb 11  2000 accmod.f
-rw-r--r--   1 cscherer sunuser     25904 Feb 20 13:02 accmod.o
-rw-r--r--   1 cscherer sunuser     10094 Feb 11  2000 acute1.f
-rw-r--r--   1 cscherer sunuser     16572 Feb 20 13:03 acute1.o
-rw-r--r--   1 cscherer sunuser      9579 Feb 11  2000 acutea.f
-rw-r--r--   1 cscherer sunuser     12028 Feb 20 13:03 acutea.o
-rw-r--r--   1 cscherer sunuser      7118 Feb 11  2000 acutec.f
-rw-r--r--   1 cscherer sunuser      8324 Feb 20 13:03 acutec.o
-rw-r--r--   1 cscherer sunuser      8669 Feb 11  2000 aircal.f
-rw-r--r--   1 cscherer sunuser     12304 Feb 20 13:03 aircal.o
-rw-r--r--   1 cscherer sunuser      8383 Feb 11  2000 anmcal.f
-rw-r--r--   1 cscherer sunuser     14516 Feb 20 13:03 anmcal.o
-rw-r--r--   1 cscherer sunuser      2043 Feb 11  2000 aqucal.f
-rw-r--r--   1 cscherer sunuser      3288 Feb 20 13:03 aqucal.o
-rw-r--r--   1 cscherer sunuser      1217 Feb 11  2000 biocal.f
-rw-r--r--   1 cscherer sunuser      2016 Feb 20 13:03 biocal.o
-rw-r--r--   1 cscherer sunuser      4174 Feb 11  2000 blockd.f
-rw-r--r--   1 cscherer sunuser      6660 Feb 20 13:02 blockd.o
-rw-r--r--   1 cscherer sunuser      1405 Feb 11  2000 bsort.f
-rw-r--r--   1 cscherer sunuser      1220 Feb 20 13:03 bsort.o
-rw-r--r--   1 cscherer sunuser     13008 Feb 11  2000 candh.f
-rw-r--r--   1 cscherer sunuser     11968 Feb 20 13:03 candh.o
-rw-r--r--   1 cscherer sunuser      6653 Feb 11  2000 chain.f
-rw-r--r--   1 cscherer sunuser      5468 Feb 20 13:03 chain.o
-rw-r--r--   1 cscherer sunuser     23921 Feb 11  2000 check.f
-rw-r--r--   1 cscherer sunuser     49052 Feb 20 13:03 check.o
-rw-r--r--   1 cscherer sunuser     10189 Feb 11  2000 cronmod.f
-rw-r--r--   1 cscherer sunuser     24016 Feb 20 13:02 cronmod.o
-rw-r--r--   1 cscherer sunuser      5153 Feb 11  2000 crpcal.f
-rw-r--r--   1 cscherer sunuser      8744 Feb 20 13:03 crpcal.o
-rw-r--r--   1 cscherer sunuser      3842 Feb 11  2000 dkharv.f
-rw-r--r--   1 cscherer sunuser      5924 Feb 20 13:03 dkharv.o
-rw-r--r--   1 cscherer sunuser      5426 Feb 11  2000 dose.f
-rw-r--r--   1 cscherer sunuser      2398 Feb 11  2000 drfbiv.f
-rw-r--r--   1 cscherer sunuser      2752 Feb 20 13:03 drfbiv.o
-rw-r--r--   1 cscherer sunuser      6728 Feb 11  2000 drfsec.f
-rw-r--r--   1 cscherer sunuser      4940 Feb 20 13:03 drfsec.o
-rw-r--r--   1 cscherer sunuser      1877 Feb 11  2000 drkcal.f
-rw-r--r--   1 cscherer sunuser      2656 Feb 20 13:03 drkcal.o
-rw-r--r--   1 cscherer sunuser      1325 Feb 11  2000 dumred.f
-rw-r--r--   1 cscherer sunuser      3652 Feb 20 13:03 dumred.o
-rw-r--r--   1 cscherer sunuser      3958 Feb 11  2000 edranm.f
-rw-r--r--   1 cscherer sunuser      7408 Feb 20 13:03 edranm.o
-rw-r--r--   1 cscherer sunuser      3567 Feb 11  2000 edrcrp.f
-rw-r--r--   1 cscherer sunuser      7756 Feb 20 13:03 edrcrp.o
-rw-r--r--   1 cscherer sunuser      2525 Feb 11  2000 edrnon.f
-rw-r--r--   1 cscherer sunuser      5244 Feb 20 13:03 edrnon.o
-rw-r--r--   1 cscherer sunuser      2853 Feb 11  2000 edrres.f
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-rw-r--r--   1 cscherer sunuser      4504 Feb 20 13:03 edrres.o
-rw-r--r--   1 cscherer sunuser     10581 Feb 11  2000 env.f
-rw-r--r--   1 cscherer sunuser      4885 Feb 11  2000 envin.f
-rw-r--r--   1 cscherer sunuser      4561 Feb 11  2000 envlib.f
-rw-r--r--   1 cscherer sunuser      9112 Feb 20 13:02 envlib.o
-rw-r--r--   1 cscherer sunuser      1912 Feb 11  2000 exposr.f
-rw-r--r--   1 cscherer sunuser      2300 Feb 20 13:03 exposr.o
-rw-r--r--   1 cscherer sunuser      6774 Feb 11  2000 extcal.f
-rw-r--r--   1 cscherer sunuser      7676 Feb 20 13:03 extcal.o
-rw-r--r--   1 cscherer sunuser      1489 Feb 11  2000 filerr.f
-rw-r--r--   1 cscherer sunuser      4084 Feb 20 13:02 filerr.o
-rw-r--r--   1 cscherer sunuser      1986 Feb 11  2000 fntdrf.f
-rw-r--r--   1 cscherer sunuser      2028 Feb 20 13:03 fntdrf.o
-rw-r--r--   1 cscherer sunuser      3003 Feb 11  2000 headng.f
-rw-r--r--   1 cscherer sunuser      5788 Feb 20 13:03 headng.o
-rw-r--r--   1 cscherer sunuser      2203 Feb 11  2000 idnuc.f
-rw-r--r--   1 cscherer sunuser      3092 Feb 20 13:03 idnuc.o
-rw-r--r--   1 cscherer sunuser      2842 Feb 11  2000 inhcal.f
-rw-r--r--   1 cscherer sunuser      5772 Feb 20 13:03 inhcal.o
-rw-r--r--   1 cscherer sunuser      2392 Feb 11  2000 initnv.f
-rw-r--r--   1 cscherer sunuser      2928 Feb 20 13:03 initnv.o
-rw-r--r--   1 cscherer sunuser      1841 Feb 11  2000 intpol.f
-rw-r--r--   1 cscherer sunuser      3676 Feb 20 13:03 intpol.o
-rw-r--r--   1 cscherer sunuser      1348 Feb 11  2000 invmol.f
-rw-r--r--   1 cscherer sunuser      1156 Feb 20 13:03 invmol.o
-rw-r--r--   1 cscherer sunuser       677 Feb 11  2000 makda2.f
-rw-r--r--   1 cscherer sunuser      1044 Feb 20 13:02 makda2.o
-rw-r--r--   1 cscherer sunuser      5870 Feb 11  2000 opnfil.f
-rw-r--r--   1 cscherer sunuser     12184 Feb 20 13:02 opnfil.o
-rw-r--r--   1 cscherer sunuser      4217 Feb 11  2000 order.f
-rw-r--r--   1 cscherer sunuser      5700 Feb 20 13:03 order.o
-rw-r--r--   1 cscherer sunuser      2325 Feb 11  2000 packag.f
-rw-r--r--   1 cscherer sunuser      4064 Feb 20 13:03 packag.o
-rw-r--r--   1 cscherer sunuser      3366 Feb 11  2000 plmriz.f
-rw-r--r--   1 cscherer sunuser      2212 Feb 20 13:03 plmriz.o
-rw-r--r--   1 cscherer sunuser      1861 Feb 11  2000 prior.f
-rw-r--r--   1 cscherer sunuser      2392 Feb 20 13:03 prior.o
-rw-r--r--   1 cscherer sunuser      4080 Feb 11  2000 prob.f
-rw-r--r--   1 cscherer sunuser      2144 Feb 20 13:03 prob.o
-rw-r--r--   1 cscherer sunuser      2079 Feb 11  2000 profile.f
-rw-r--r--   1 cscherer sunuser      1636 Feb 20 13:03 profile.o
-rw-r--r--   1 cscherer sunuser     11351 Feb 11  2000 readin.f
-rw-r--r--   1 cscherer sunuser     48336 Feb 20 13:02 readin.o
-rw-r--r--   1 cscherer sunuser      6174 Feb 11  2000 redcas.f
-rw-r--r--   1 cscherer sunuser     25392 Feb 20 13:03 redcas.o
-rw-r--r--   1 cscherer sunuser      3867 Feb 11  2000 redcha.f
-rw-r--r--   1 cscherer sunuser      9800 Feb 20 13:03 redcha.o
-rw-r--r--   1 cscherer sunuser      8483 Feb 11  2000 redflt.f
-rw-r--r--   1 cscherer sunuser     36472 Feb 20 13:02 redflt.o
-rw-r--r--   1 cscherer sunuser      1694 Feb 11  2000 redist.f
-rw-r--r--   1 cscherer sunuser      1824 Feb 20 13:03 redist.o
-rw-r--r--   1 cscherer sunuser      8548 Feb 11  2000 ritenv.f
-rw-r--r--   1 cscherer sunuser     35960 Feb 20 13:03 ritenv.o
-rw-r--r--   1 cscherer sunuser      4371 Feb 11  2000 ritexp.f
-rw-r--r--   1 cscherer sunuser     11396 Feb 20 13:03 ritexp.o
-rw-r--r--   1 cscherer sunuser      2584 Feb 11  2000 ritmed.f
-rw-r--r--   1 cscherer sunuser      7228 Feb 20 13:03 ritmed.o
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-rw-r--r--   1 cscherer sunuser     27222 Feb 11  2000 ritqa.f
-rw-r--r--   1 cscherer sunuser     92592 Feb 20 13:02 ritqa.o
-rw-r--r--   1 cscherer sunuser      4346 Feb 11  2000 rlibin.f
-rw-r--r--   1 cscherer sunuser     10064 Feb 20 13:02 rlibin.o
-rw-r--r--   1 cscherer sunuser      4399 Feb 11  2000 rwake.f
-rw-r--r--   1 cscherer sunuser      3384 Feb 20 13:03 rwake.o
-rw-r--r--   1 cscherer sunuser      2396 Feb 11  2000 sigma.f
-rw-r--r--   1 cscherer sunuser      1920 Feb 20 13:03 sigma.o
-rw-r--r--   1 cscherer sunuser      8387 Feb 11  2000 swcal.f
-rw-r--r--   1 cscherer sunuser      5892 Feb 20 13:03 swcal.o
-rw-r--r--   1 cscherer sunuser      1894 Feb 11  2000 trnspt.f
-rw-r--r--   1 cscherer sunuser      2124 Feb 20 13:03 trnspt.o
-rw-r--r--   1 cscherer sunuser      1771 Feb 11  2000 ustar.f
-rw-r--r--   1 cscherer sunuser      1504 Feb 20 13:03 ustar.o
-rw-r--r--   1 cscherer sunuser      9276 Feb 11  2000 xqcal.f
-rw-r--r--   1 cscherer sunuser     17088 Feb 20 13:03 xqcal.o
-rw-r--r--   1 cscherer sunuser      5277 Feb 11  2000 xqin.f
-rw-r--r--   1 cscherer sunuser     13968 Feb 20 13:03 xqin.o

scr346B/codes/itym:
total 4
drwxr-xr-x   3 cscherer sunuser       512 Feb 20 11:58 .
drwxr-xr-x   4 cscherer sunuser      1024 Feb 21 12:40 ..
-rw-r--r--   1 cscherer sunuser       596 Oct  1 10:06 makefile
drwxr-xr-x   2 cscherer sunuser       512 Feb 20 11:58 src

scr346B/codes/itym/src:
total 328
drwxr-xr-x   2 cscherer sunuser       512 Feb 20 11:58 .
drwxr-xr-x   3 cscherer sunuser       512 Feb 20 11:58 ..
-rw-r--r--   1 cscherer sunuser     29776 Mar 22  2000 array.f
-rw-r--r--   1 cscherer sunuser     15856 Mar 22  2000 check_valid.f
-rw-r--r--   1 cscherer sunuser     60931 Dec 30 19:29 estimator.f
-rw-r--r--   1 cscherer sunuser      5384 Dec 30 19:31 init_itym.f
-rw-r--r--   1 cscherer sunuser      9420 Sep 25 18:55 itym.f
-rw-r--r--   1 cscherer sunuser     11640 Dec 30 19:31 itym.i
-rw-r--r--   1 cscherer sunuser     26752 Sep 26 14:19 itymutils.f
-rw-r--r--   1 cscherer sunuser       261 Mar 22  2000 path.i
-rw-r--r--   1 cscherer sunuser        55 Mar 22  2000 preuzf.i
-rw-r--r--   1 cscherer sunuser     42671 Mar 22  2000 ran.f
-rw-r--r--   1 cscherer sunuser     38406 Sep 26 14:20 strtokfunc.f
-rw-r--r--   1 cscherer sunuser     60346 Sep 26 14:22 uncertain.f
-rw-r--r--   1 cscherer sunuser     12265 Mar 22  2000 uncertain.i
-rw-r--r--   1 cscherer sunuser        55 Mar 22  2000 unctab.i
-rw-r--r--   1 cscherer sunuser     10904 Mar 22  2000 zportunx.f

scr346B/data:
total 7088
drwxr-xr-x   2 cscherer sunuser      1536 Feb 21 12:24 .
drwxr-xr-x  13 cscherer sunuser      7680 Feb 21 13:28 ..
-rwxrwxrwx   1 cscherer sunuser       965 Feb 11  2000 FILENAME.DAT
-rwxrwxrwx   1 cscherer sunuser    121789 Mar 22  2000 bunitdem.dat
-rwxrwxrwx   1 cscherer sunuser      1025 Mar 29  2000 burnup.dat
-rwxrwxrwx   1 cscherer sunuser    468925 Sep 25 19:00 careadem.dat
-rwxrwxrwx   1 cscherer sunuser    515693 Sep 25 19:01 cdepdem.dat
-rwxrwxrwx   1 cscherer sunuser    850000 Aug 15  1997 climato1.dat
-rwxrwxrwx   1 cscherer sunuser      2200 Feb  1  1999 climato2.dat
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-rwxrwxrwx   1 cscherer sunuser      6219 Feb 19 10:46 coefkdeq.dat
-rwxrwxrwx   1 cscherer sunuser      2200 Dec 19 13:50 dilution.dat
-rwxrwxrwx   1 cscherer sunuser       519 Oct 19  2000 drythick.dat
-rwxrwxrwx   1 cscherer sunuser       791 Jul 23  2002 dsfailt.def
-rwxrwxrwx   1 cscherer sunuser      5973 Feb 14 19:57 ebsfail.def
-rwxrwxrwx   1 cscherer sunuser       790 May 28  1998 ebsfilt.def
-rwxrwxrwx   1 cscherer sunuser      5459 Jan  7 11:17 ebsrel.def
-rwxrwxrwx   1 cscherer sunuser    298679 Mar 22  2000 elevdem.dat
-rwxrwxrwx   1 cscherer sunuser      9381 May 29  2002 fluoride.dat
-rwxrwxrwx   1 cscherer sunuser      6513 Feb 11  2000 gbioac1.dat
-rwxrwxrwx   1 cscherer sunuser      3383 Sep  4 19:18 gdefauls.def
-rwxrwxrwx   1 cscherer sunuser      3383 Feb 11  2000 gdefault.def
-rwxrwxrwx   1 cscherer sunuser        64 Feb 11  2000 gdosinc2.dat
-rwxrwxrwx   1 cscherer sunuser      7011 Feb 11  2000 gftrans.def
-rwxrwxrwx   1 cscherer sunuser      7011 Sep  4 19:18 gftranss.def
-rwxrwxrwx   1 cscherer sunuser     15214 Feb 11  2000 ggamen.dat
-rwxrwxrwx   1 cscherer sunuser     13855 Feb 11  2000 ggenii.def
-rwxrwxrwx   1 cscherer sunuser     13173 Sep  4 19:18 ggeniis.def
-rwxrwxrwx   1 cscherer sunuser      5351 Feb 11  2000 ggrdf.dat
-rwxrwxrwx   1 cscherer sunuser      9897 Mar 29  2000 gnewdf.dat
-rwxrwxrwx   1 cscherer sunuser     13200 Mar 20  2000 grmdlib.dat
-rwxrwxrwx   1 cscherer sunuser      3048 Sep 15  2000 gs_cb_ad.dat
-rwxrwxrwx   1 cscherer sunuser      2487 Jun  4  1998 gs_cb_ci.dat
-rwxrwxrwx   1 cscherer sunuser      3045 Sep 15  2000 gs_pb_ad.dat
-rwxrwxrwx   1 cscherer sunuser      2487 Jun  4  1998 gs_pb_ci.dat
-rwxrwxrwx   1 cscherer sunuser      8153 Dec 20 09:54 ia.dat
-rwxrwxrwx   1 cscherer sunuser     20698 Dec 30 19:26 itym.dat
-rwxrwxrwx   1 cscherer sunuser    943774 Mar 29  2000 maidtbl.dat
-rwxrwxrwx   1 cscherer sunuser     10978 Mar 22  2000 maswtbl.dat
-rwxrwxrwx   1 cscherer sunuser    943775 Dec 30 19:18 maydtbl.dat
-rwxrwxrwx   1 cscherer sunuser      9729 Dec 17 17:31 mechfail.def
-rwxrwxrwx   1 cscherer sunuser      1251 Feb  6 14:39 multifaf.dat
-rwxrwxrwx   1 cscherer sunuser      1252 Feb  6 14:39 multifbe.dat
-rwxrwxrwx   1 cscherer sunuser    116965 Jul 17  2002 multiflo.dat
-rwxrwxrwx   1 cscherer sunuser      6890 Jan 15 11:09 nuclides.dat
-rwxrwxrwx   1 cscherer sunuser      7111 Sep 24  2000 organdf.dat
-rwxrwxrwx   1 cscherer sunuser       548 Sep 21  2000 repdes.dat
-rwxrwxrwx   1 cscherer sunuser         0 Feb 20 16:59 scr346B_slt3a.out
-rwxrwxrwx   1 cscherer sunuser    130758 Dec 17 17:31 seisbs1.dis
-rwxrwxrwx   1 cscherer sunuser    130758 Dec 17 17:31 seisbs2.dis
-rwxrwxrwx   1 cscherer sunuser    943788 Dec 30 19:18 smaydtbl.dat
-rwxrwxrwx   1 cscherer sunuser    489858 Mar 22  2000 soildem.dat
-rwxrwxrwx   1 cscherer sunuser      4506 Feb  7  2000 strmtube.dat
-rwxrwxrwx   1 cscherer sunuser    119673 Mar 22  2000 sunitdem.dat
-rwxrwxrwx   1 cscherer sunuser    162404 May  8  2000 tefkti.inp
-rwxrwxrwx   1 cscherer sunuser    101499 Feb 19 10:43 tpanames.dbs
-rwxrwxrwx   1 cscherer sunuser    471041 Mar 22  2000 winddem.dat
-rwxrwxrwx   1 cscherer sunuser     17410 Feb  2  2000 wpflow.def

scr346B/diff_files:
total 15
drwxr-xr-x   2 cscherer sunuser       512 Feb 20 11:53 .
drwxr-xr-x  13 cscherer sunuser      7680 Feb 21 13:28 ..
-rw-r--r--   1 cscherer sunuser       176 Feb 19 10:40 slt1a_slt1b_out.dif
-rw-r--r--   1 cscherer sunuser      5095 Feb 19 09:55 tpa_inp.dif

scr346B/docs:
```

```
total 146
drwxr-xr-x   2 cscherer sunuser       512 Feb 21 14:08 .
drwxr-xr-x  13 cscherer sunuser      7680 Feb 21 13:28 ..
-rwxr--r--   1 cscherer sunuser     24951 Feb 21 13:11 scr_346.wpd
-rwxr--r--   1 cscherer sunuser    101243 Feb 21 14:11 tp_scr346B.wpd

scr346B/slt1:
total 29
drwxr-xr-x   4 cscherer sunuser       512 Feb 21 12:11 .
drwxr-xr-x  13 cscherer sunuser      7680 Feb 21 13:28 ..
-rwxr--r--   1 cscherer sunuser     17920 Feb 19 10:58 slt1.xls
drwxr-xr-x   2 cscherer sunuser       512 Feb 21 12:09 testa
drwxr-xr-x   2 cscherer sunuser       512 Feb 21 12:09 testb

scr346B/slt1/testa:
total 181
drwxr-xr-x   2 cscherer sunuser       512 Feb 21 12:09 .
drwxr-xr-x   4 cscherer sunuser       512 Feb 21 12:11 ..
-rw-r--r--   1 cscherer sunuser      2330 Feb 21 10:54 infilper.res
-rw-r--r--   1 cscherer sunuser     22779 Feb 21 10:54 sccr346_slt1a.out
-rw-r--r--   1 cscherer sunuser     91435 Feb 21 10:43 tpa_slt1a.inp
-rw-r--r--   1 cscherer sunuser      4266 Feb 21 10:54 uzflow.ech
-rw-r--r--   1 cscherer sunuser     59286 Feb 21 10:54 uzflow.rlt

scr346B/slt1/testb:
total 181
drwxr-xr-x   2 cscherer sunuser       512 Feb 21 12:09 .
drwxr-xr-x   4 cscherer sunuser       512 Feb 21 12:11 ..
-rw-r--r--   1 cscherer sunuser      2330 Feb 21 11:06 infilper.res
-rw-r--r--   1 cscherer sunuser     22843 Feb 21 11:06 scr346_slt1b.out
-rw-r--r--   1 cscherer sunuser     91443 Feb 21 10:44 tpa_slt1b.inp
-rw-r--r--   1 cscherer sunuser      4266 Feb 21 11:06 uzflow.ech
-rw-r--r--   1 cscherer sunuser     59286 Feb 21 11:06 uzflow.rlt

scr346B/slt1_files:
total 556
drwxr-xr-x   2 cscherer sunuser       512 Feb 21 11:05 .
drwxr-xr-x  13 cscherer sunuser      7680 Feb 21 13:28 ..
-r-xr--r--   1 cscherer sunuser     57668 Jan 10 14:46 maidscr346.e
-r-xr--r--   1 cscherer sunuser      9990 Apr 10  2002 maidscr346.f
-r-xr--r--   1 cscherer sunuser    236048 Jan 10 14:46 maydtbl.dat
-r-xr--r--   1 cscherer sunuser    236061 Jan 10 14:46 smaydtbl.dat

scr346B/slt2:
total 210
drwxr-xr-x   2 cscherer sunuser       512 Feb 21 12:15 .
drwxr-xr-x  13 cscherer sunuser      7680 Feb 21 13:28 ..
-rw-r--r--   1 cscherer sunuser      2330 Feb 21 11:24 infilper.res
-rw-r--r--   1 cscherer sunuser     23169 Feb 21 11:24 scr346_slt2.out
-rwxr--r--   1 cscherer sunuser     22528 Feb 21 12:15 slt2.xls
-rw-r--r--   1 cscherer sunuser     91445 Feb 21 11:10 tpa_slt2.inp
-rw-r--r--   1 cscherer sunuser      4266 Feb 21 11:24 uzflow.ech
-rw-r--r--   1 cscherer sunuser     59286 Feb 21 11:24 uzflow.rlt

scr346B/slt2_files:
total 44817
drwxr-xr-x   2 cscherer sunuser       512 Feb 21 11:29 .
```

```
drwxr-xr-x  13 cscherer sunuser      7680 Feb 21 13:28 ..
-r-xr--r--   1 cscherer sunuser  15286168 Oct  3 17:23 maidtbl-C.dat
-r-xr--r--   1 cscherer sunuser  15286175 Oct  3 17:23 maydtbl-C.dat
-r-xr--r--   1 cscherer sunuser  15286188 Oct  3 17:23 smaydtbl-C.dat

scr346B/slt3:
total 2118
drwxr-xr-x   4 cscherer sunuser       512 Feb 21 13:28 .
drwxr-xr-x  13 cscherer sunuser      7680 Feb 21 13:28 ..
-rw-r--r--   1 cscherer sunuser   1009808 Feb 21 11:25 scr346_slt3a.out
-rw-r--r--   1 cscherer sunuser    989095 Feb 20 16:35 scr346_slt3b.out
-rwxr--r--   1 cscherer sunuser     41472 Feb 21 12:07 slt3.xls
drwxr-xr-x   2 cscherer sunuser       512 Feb 21 13:28 testa
drwxr-xr-x   2 cscherer sunuser       512 Feb 21 13:28 testb
-rw-r--r--   1 cscherer sunuser     91441 Feb 20 13:45 tpa_slt3b.inp

scr346B/slt3/testa:
total 2
drwxr-xr-x   2 cscherer sunuser       512 Feb 21 13:28 .
drwxr-xr-x   4 cscherer sunuser       512 Feb 21 13:28 ..

scr346B/slt3/testb:
total 448
drwxr-xr-x   2 cscherer sunuser       512 Feb 21 13:28 .
drwxr-xr-x   4 cscherer sunuser       512 Feb 21 13:28 ..
-rw-r--r--   1 cscherer sunuser     82592 Feb 20 16:35 infilper.res
-rw-r--r--   1 cscherer sunuser      5111 Feb 20 16:35 uzflow.ech
-rw-r--r--   1 cscherer sunuser    353031 Feb 20 16:35 uzflow.rlt

scr346B/slt3_files:
total 17916
drwxr-xr-x   2 cscherer sunuser       512 Feb 21 11:05 .
drwxr-xr-x  13 cscherer sunuser      7680 Feb 21 13:28 ..
-rwxrw-rw-   1 cscherer sunuser     42780 Jun 12  2002 extract-mayd.e
-rwxrw-rw-   1 cscherer sunuser     10814 Jun 12  2002 extract-mayd.f
-rwxrw-rw-   1 cscherer sunuser    955565 Jan 13 11:55
maydtbl_currentclimate.dat
-rwxrw-rw-   1 cscherer sunuser   8598557 Oct  4 16:15 maydtbl_from_pl3.dat
-rwxrw-rw-   1 cscherer sunuser      2551 Jan 13 12:18 sl3.out
-rwxrw-rw-   1 cscherer sunuser   8598570 Oct  4 16:15 smaydtbl_from_pl3.dat
-rwxrw-rw-   1 cscherer sunuser      1211 Jan 13 12:18 subareas.dat
-rwxrw-rw-   1 cscherer sunuser      1380 Jan 13 12:18 summary.dat
-rwxrw-rw-   1 cscherer sunuser     88542 Jan 10 13:27 tpa.inp
```

Test Plan and Test Results for TPA SCR# 346(continued)

Test Plan Name: C3 Add Shallow Infiltration Variance Factor in UZFLOW

Tested By: George Adams
(Process Level Tests for PA-SCR-346 conducted by Carol Scherer, System Level Tests for PA-SCR-346(continued) conducted by George Adams, Test Result Comments by George Adams and Randy Fedors)

Host Machine: SUN Ultra-4 Server: spock

Baseline Version: TPA 5.0BetaI

Date: January 13-15, 2003,
February 7, 2003

Host OS: Solaris 5.8

Test Version: 5.0BetaI (With the UZFLOW.F module modified to only use Sample Mode 1 and what was formerly Sample Mode 3.)

Process Level Test Results

As part of continuing PA-SCR-346, no change was made to the ITYM Preprocessor. Therefore, the previous test results were used and commented on.

The process level tests identified in this section are designed to test the stand-alone module, "ITYM." This module was modified as follows:

1. Output Digital Elevation Model (DEM) Tables (DTBL) can be created for Mean Annual Infiltration (MAI), log10(MAI), and stdev(log10(MAI)). There are flags in the input deck that turn on and off output to the corresponding files. The default is for the two log10 output files to be created. By default, maydtbl.dat and smaydtbl.dat will be created. A flag can be set to create the maidtbl.dat file as well.

2. Parameter sampling was corrected to use the following equations:
x = mean + B*Noise where B B^T = Cov = std^T Corrr std

3. Bug fixes were made to correct compiler-generated and run-time errors.

PL-1 Verification of Output Files

This test is designed to verify that the ITYM preprocessor module can correctly create and format the following files: "maidtbl.dat," "maydtbl.dat," and "smaydtbl.dat."

1.0 Test Results

1.1 Output and Supporting Files: Files will be archived on a CD labeled, "Test Plan and Test Results for PA-SCR-346(continued)."

1.2 Criterion 1: Verify the output screen values are displayed in accordance with Section 8.5, Step 2 of the Test Plan for TPA SCR #346. This step is summarized as follows:

Within PA-SCR-346_PL1.out, observe the following messages, "tbl(x,y): MAP = X.XXX MAT = X.XXX MAI = X.XXX s(MAI) = X.XXX MLI = X.XXX MSI = X.XXX EsI = X.XXX." The values, "x and y," will vary between 1 and 3. The values, "X.XXX" are the output values for the associated parameters.

1.3 Criterion 2: Verify all three files are formatted correctly in accordance with Section 8.5, Step 3 of the Test Plan for TPA SCR #346. This step is repeated and appears as follows:

Upon completion, open the output files, "maidtbl.dat," "maydtbl.dat," and "smaydtbl.dat." Verify their format in accordance with the following:

a. The first four rows begin with "#."

b. The key-value pairs appear as follows (ex. from 1st occurrence):

NCOLS 49
NROWS 75
XLLCORNER 545010.000000
YLLCORNER 4074000.000000
CELLSIZE 120.000000
NODATA_VALUE -9999.000000
VAR1 1.0000000E+02
VAR2 0.0000000E+00

c. List of values, one per line

d. Item b and Item c repeat several times with different values for VAR1 and VAR2.

e. The last line contains, "NCOLS 0."

1.4 Overall Test Status:

For TPA code version 5.0BetaI, the software successfully **PASSED** the criterion above for Process Level Test PL-1.

Originally, this test failed criterion 1 when the code was executed as part of the TPA 5.0BetaA distribution. There was a formatting error on the screen display included in file, "PA-SCR-346_PL1.out." Some values for EsI were shown as "******". This problem was corrected as part of SCR PA-SCR-410.

A portion of the TPA 5.0BetaA screen output PA-SCR-346_PL1.out was extracted and is shown below:

```
tbl( 1, 1): MAP = 100.000 MAT =   0.000 MAI =   5.941 s(MAI) =   8.894
            MLI =   0.201 MSI =   1.147 EsI = 235.738
tbl( 2, 1): MAP = 282.843 MAT =   0.000 MAI = 106.385 s(MAI) =  82.685
            MLI =   1.889 MSI =   0.594 EsI = *******
```

In TPA 5.0BetaI, this problem was corrected and a portion of the screen output was extracted and is shown below:

```
tbl( 1, 1): MAP = 100.000 MAT =   0.000 MAI =   5.992 s(MAI) =   8.931
            MLI =   0.206 MSI =   1.148 EsI =   2.327D+02
tbl( 2, 1): MAP = 282.843 MAT =   0.000 MAI = 106.575 s(MAI) =  82.579
            MLI =   1.891 MSI =   0.593 EsI =   9.829D+04
```

The TPA5.0BetaI version incorporated changes which shifted the current climate from 17.28 degrees C to 17.38 degrees C. This resulted in the slightly different values shown above.

This test **PASSED** criterion 2 for both the TPA 5.0BetaA and TPA 5.0BetaI distributions. The three files, "maidtbl.dat," "maydtbl.dat," and "smaydtbl.dat" were formatted correctly.

PL-2 Verification with Previous Results

This test is designed to verify that the ITYM preprocessor generates data that corresponds to that generated for 500 realizations in the previous ITYM build (4.1j). This test also establishes the number of realizations required for the expected values to stabilize.

1.0 Test Results

1.1 Output and Supporting Files: Files will be archived on a CD labeled, "Test Plan and Test Results for PA-SCR-346(continued)."

1.2 Criterion 1: The output file values are generated in accordance with Section 8.5, Steps 3, 6, 9, and 14 of the Test Plan for TPA SCR #346. These steps are summarized as follows:

For test cases A, B, C, and D, within the screen output files (PA-SCR-346_PL2-A.out, PA-SCR-346_PL2-B.out, PA-SCR-346_PL2-C.out, and PA-SCR-346_PL2-D.out) observe the following messages, "tbl(x,y): MAP = X.XXX MAT = X.XXX MAI = X.XXX s(MAI) = X.XXX MLI = X.XXX MSI = X.XXX EsI = X.XXX." The values, "x and y," will vary between 1 and 4. The values, "X.XXX," are the output values for the associated parameters.

1.3 Criterion 2: The output generated in Section 8.5, Steps 3, 6, 9, and 14, corresponds to that generated previously and documented in Scientific Notebook 227, page 17. The previously documented results are shown in the following table:

Climate	Expected Means			
	50 realizations	100 realizations	500 realizations	1000 realizations
P=100, T = 0	6.23	8.14	10.44	10.64
P=200, T=7.3	25.19	24.99	22.40	22.35
P=200, T=14.7	16.78	15.51	14.89	15.42
P=400, T=14.7	56.21	48.77	48.18	50.46
P=800, T=14.7	153.02	163.44	149.43	142.59

1.4 Criterion 3: The information plotted in Section 8.5, Steps 10 and 11 of the Test Plan for TPA SCR #346 is comparable between this build of the ITYM preprocessor and the previous build (4.1j). These steps are summarized below:

At the climate condition, "P=200, T=-14.7," plot the MAI data from "maidtbl.dat" for both this build and the previous ITYM build (4.1j) and compare the resulting plots in terms of MAI magnitude and spatial variability.

At the climate condition, "P=200, T=14.7," take the log10 inverse of the data from "maydtbl.dat," plot this data, and compare it to the data plotted from the "maidtbl.dat" file.

1.5 Overall Test Status:

This software successfully **PASSED** the criterion above for Process Level Test PL-2.

The four output files (PA-SCR-346_PL2-A.out, PA-SCR-346_PL2-B.out, PA-SCR-346_PL2-C.out, and PA-SCR-346_PL2-D.out for Test Cases A, B, C, and D respectively) are displayed correctly.

The output generated for Test Cases A through D is comparable to previous test results with the largest differences at the fewer number of realizations. The results for these four test cases is summarized in the table below:

Climate	5.0 Beta	Previous Results (4.1j)	Percent Difference
	Test Case A (50 Realizations)		
P=100, T=0	9.558	6.23	53.4%
P=200, T=7.3	23.648	25.19	-6.1%
P=200, T=14.7	14.899	16.78	-11.2%
P=400, T=14.7	45.100	56.21	-19.8%
P=800, T=14.7	129.578	153.02	-15.3%
	Test Case B (100 Realizations)		
P=100, T=0	8.967	8.14	10.2%
P=200, T=7.3	19.870	24.99	-20.5%
P=200, T=14.7	13.467	15.51	-13.2%
P=400, T=14.7	47.006	48.77	-3.6%
P=800, T=14.7	141.406	163.44	-13.5%
	Test Case C (500 Realizations)		
P=100, T=0	9.034	10.44	-13.5%
P=200, T=7.3	19.262	22.4	-14.0%
P=200, T=14.7	13.862	14.89	-6.9%
P=400, T=14.7	45.188	48.18	-6.2%
P=800, T=14.7	135.534	149.43	-9.3%
	Test Case D (1000 Realizations)		
P=100, T=0	8.948	10.64	-15.9%
P=200, T=7.3	20.000	22.35	-10.5%
P=200, T=14.7	13.391	15.42	-13.2%
P=400, T=14.7	44.668	50.46	-11.5%
P=800, T=14.7	135.678	142.59	-4.8%

The following three tables compare the change in output versus the number of realizations. These three tables show that as the number of realizations increases, the itym output approaches that generated for the 1000 realization case. The 500-realization case is comparable to the 1000-realization case and 500 realizations is sufficient for the ITYM Preprocessor data to stabilize.

The following table compares the 50-realization output to the 1000-realization output.

	Comparison of 50 Realization Results to 1000 Realization Results		
Climate	**Test Case A**	**Test Case D**	**Percent Difference**
P=100, T=0	9.558	8.948	6.8%
P=200, T=0	26.369	29.460	-10.5%
P=400, T=0	79.896	80.456	-0.7%
P=800, T=0	210.525	208.752	0.8%
P=100, T=7.3	6.444	6.357	1.4%
P=200, T=7.3	23.648	20.009	18.2%
P=400, T=7.3	61.736	62.396	-1.1%
P=800, T=7.3	166.210	175.962	-5.5%
P=100, T=14.7	4.169	3.928	6.1%
P=200, T=14.7	14.899	13.391	11.3%
P=400, T=14.7	45.100	44.668	1.0%
P=800, T=14.7	129.578	135.678	-4.5%
P=100, T=22	2.781	2.613	6.4%
P=200, T=22	7.079	8.720	-18.8%
P=400, T=22	30.637	30.244	1.3%
P=800, T=22	100.024	95.869	4.3%

The following table compares the 100-realization output to the 1000-realization output:

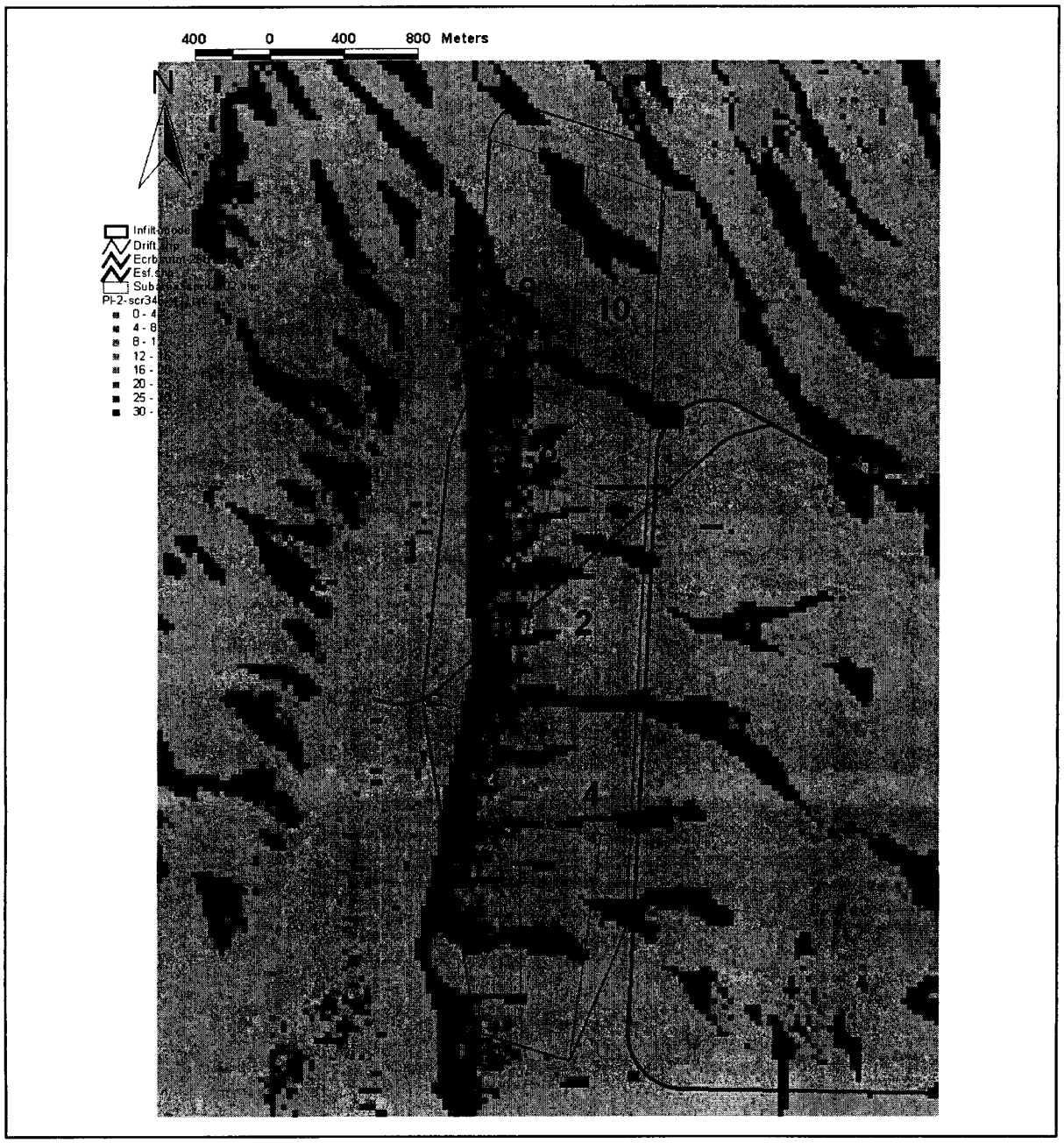
	Comparison of 100 Realization Results to 1000 Realization Results		
Climate	**Test Case B**	**Test Case D**	**Percent Difference**
P=100, T=0	8.967	8.948	0.2%
P=200, T=0	26.850	29.460	-8.9%
P=400, T=0	93.388	80.456	16.1%
P=800, T=0	207.048	208.752	-0.8%
P=100, T=7.3	6.502	6.357	2.3%
P=200, T=7.3	19.870	20.009	-0.7%
P=400, T=7.3	59.282	62.396	-5.0%
P=800, T=7.3	174.612	175.962	-0.8%
P=100, T=14.7	3.929	3.928	0.03%
P=200, T=14.7	13.467	13.391	0.6%
P=400, T=14.7	47.006	44.668	5.2%
P=800, T=14.7	141.406	135.678	4.2%
P=100, T=22	3.140	2.613	20.2%
P=200, T=22	9.833	8.720	12.8%
P=400, T=22	33.380	30.244	10.4%
P=800, T=22	96.214	95.869	0.4%

The following table compares the 500-realization output to the 1000-realization output:

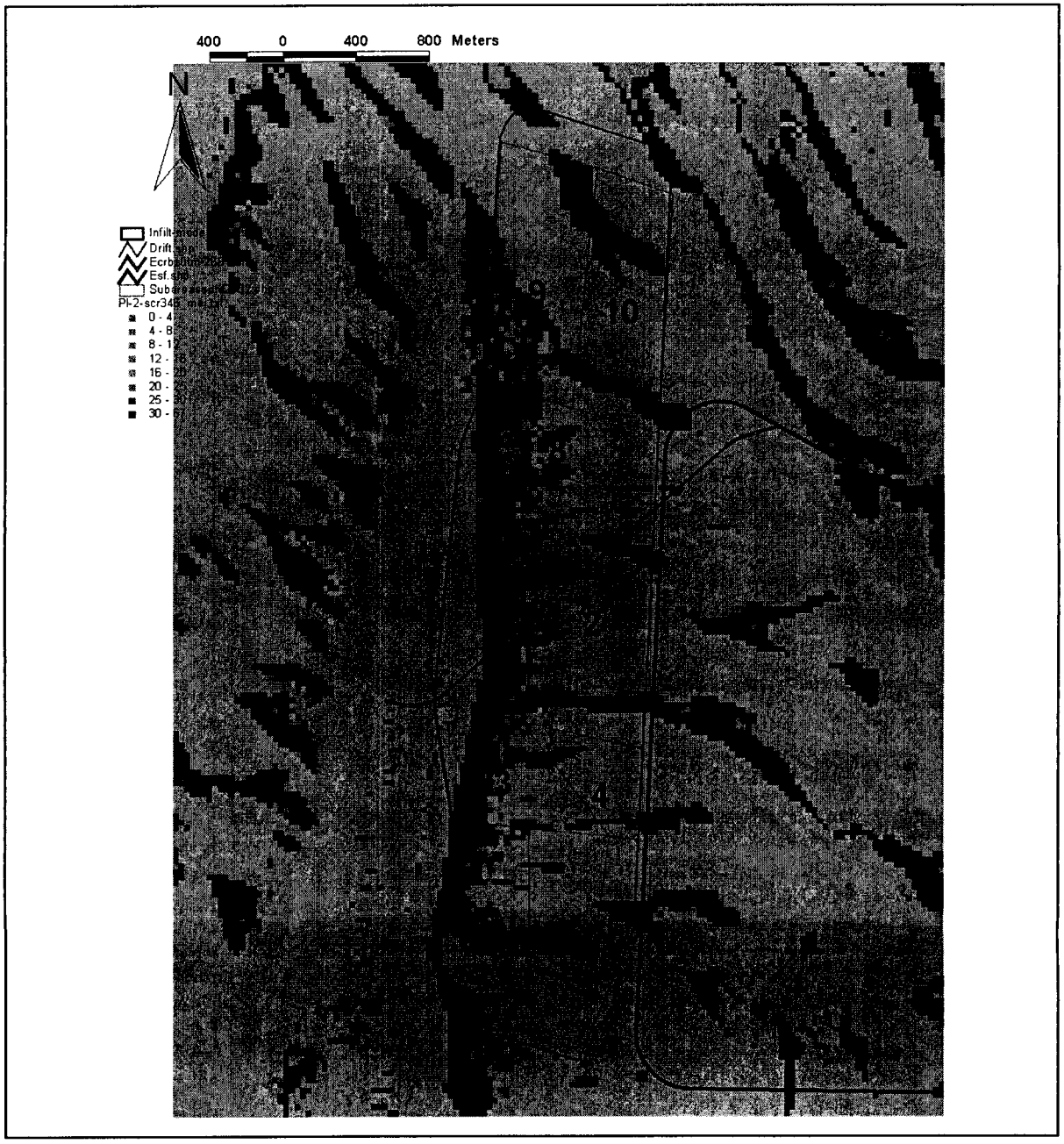
	Comparison of 500 Realization Results to 1000 Realization Results		
Climate	**Test Case C**	**Test Case D**	**Percent Difference**
P=100, T=0	9.034	8.948	1.0%
P=200, T=0	28.246	29.460	-4.1%
P=400, T=0	86.294	80.456	7.3%
P=800, T=0	210.417	208.752	0.8%
P=100, T=7.3	5.783	6.357	-9.0%
P=200, T=7.3	19.262	20.009	-3.7%
P=400, T=7.3	65.594	62.396	5.1%
P=800, T=7.3	169.043	175.962	-3.9%
P=100, T=14.7	4.298	3.928	9.4%
P=200, T=14.7	13.862	13.391	3.5%
P=400, T=14.7	45.188	44.668	1.2%
P=800, T=14.7	135.534	135.678	-0.1%
P=100, T=22	2.796	2.613	7.0%
P=200, T=22	8.632	8.720	-1.0%
P=400, T=22	29.815	30.244	-1.4%
P=800, T=22	101.605	95.869	6.0%

A comparison was also conducted between the maidtbl.dat files for this build and the previous build (4.1j). In addition, a comparison was conducted between the maidtbl.dat and maydtbl.dat files for this build. The results are shown on the following diagrams:

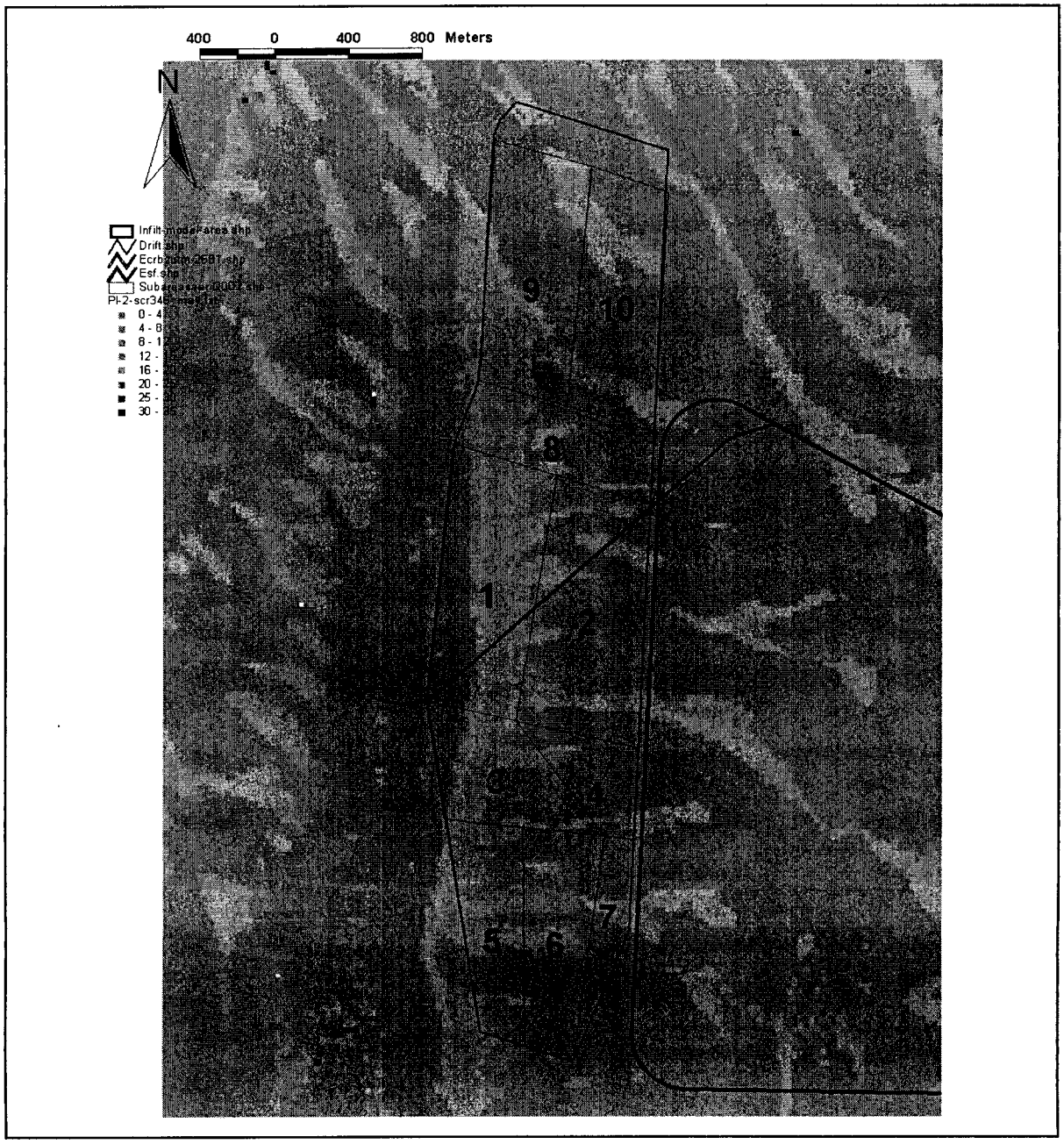
Plot of maidtbl.dat from the previous build (4.1j).



Plot of maidtbl.dat from this build.



Plot of maydtbl.dat from this build.



Summary of results from the previous three plots:

Comparison of maidtbl.dat files from the previous build (4.1j) and this build.

1. Plots of data from the maidtbl_41jp200t147.dat and maidtbl-Cp200t147.dat files (included in the archive) with the repository and ESF overlay were used to visually compare magnitude and distribution of net infiltration. The patterns are virtually identical and the magnitudes appear to be the same. Slight differences of specific pixels are not significant, where significance is judged in the context of overall uncertainty in net infiltration estimates. The overall distribution of net infiltration is consistent with our understanding of the physical processes; i.e., we expect higher values in areas where the caprock is exposed and soils are thin (on ridgetops and Yucca Mountain crest), higher values where the PTn is exposed on the west flank of Yucca Mountain, and lowest values where the soils are thick (alluvial valleys). There are areas outside of the repository footprint (e.g., to the north on the ridgetops) where errors have continued for both TPA 4.1j and TPA 5.0. These errors do not affect the results of TPA since all emplacement/subareas are within the repository. If the repository footprint were to change, then the errors would have to be fixed.

Comparison of maidtbl.dat and maydtbl.dat files from this build.

2. Plots of data from the maidtbl-Cp200t147.dat and maydtbl-Cp200t147.dat files (log10) (included in the archive) showed similar distribution of net infiltration across Yucca Mountain. The magnitudes of the log10 estimates of net infiltration, however, are much lower those for the natural space (maidtbl-Cp200t147.dat) This was previously noted when ITYM was implemented, and should be expected since a number of the important parameters are lognormally distributed. Net infiltration itself is expected to be lognormally distributed (spatially), thus supporting the log10 approach. The natural space mean annual infiltration map is output from ITYM to better link current results with early TPA results (the comparison of maidtbl_41jp200t147.dat and maidtbl-Cp200t147.dat illustrates this connection).

PL-3 Verification with Expected Results

This test is designed to verify that the ITYM preprocessor generates MAI data for the current climate (MAP = 162.8 mm/yr. MAT = 17.38 degrees C) that is reasonable when compared to MAI information from the Department of Energy (DOE).

1.0 Test Results

1.1 Output and Supporting Files: Files will be archived on a CD labeled, "Test Plan and Test Results for PA-SCR-346(continued)."

1.2 Criterion 1: Verify the output screen values are displayed in accordance with Section 8.5, Step 2 of the Test Plan for TPA SCR #346, and the values are reasonable for the climate conditions. Step 2 is summarized as follows:

Within PA-SCR-346_PL3.out, observe the following messages, "tbl(x,y): MAP = X.XXX MAT = X.XXX MAI = X.XXX s(MAI) = X.XXX MLI = X.XXX MSI = X.XXX EsI = X.XXX." The values, "x and y," will vary between 1 and 3. The values, "X.XXX" are the output values for the associated parameters.

1.3 Criterion 2: Verify the MAI values for the current climate correspond to those identified by the DOE. In particular, Section 8.5, Step 3 of the Test Plan for TPA SCR #346 is summarized as follows:

Using the information in "maidtbl.dat," plot the current climate in TecPlot 7.0. Verify the MAI magnitude and spatial variability correspond to that from the DOE using mapped and tabulated information. The tabulated information is taken from document, "ANL-NBS-HS-000032 REV 00, Table 6-9." It is as follows:

Modern Climate Scenario		Lower Bound	Mean	Upper Bound
Average annual net infiltration (mm/yr)	Mean	1.3	4.6	11.1

1.4 Overall Test Status:

The software successfully **PASSED** the criterion above for Process Level Test PL-3.

The output screen values are displayed correctly. A portion of the screen output was extracted and is displayed as follows:

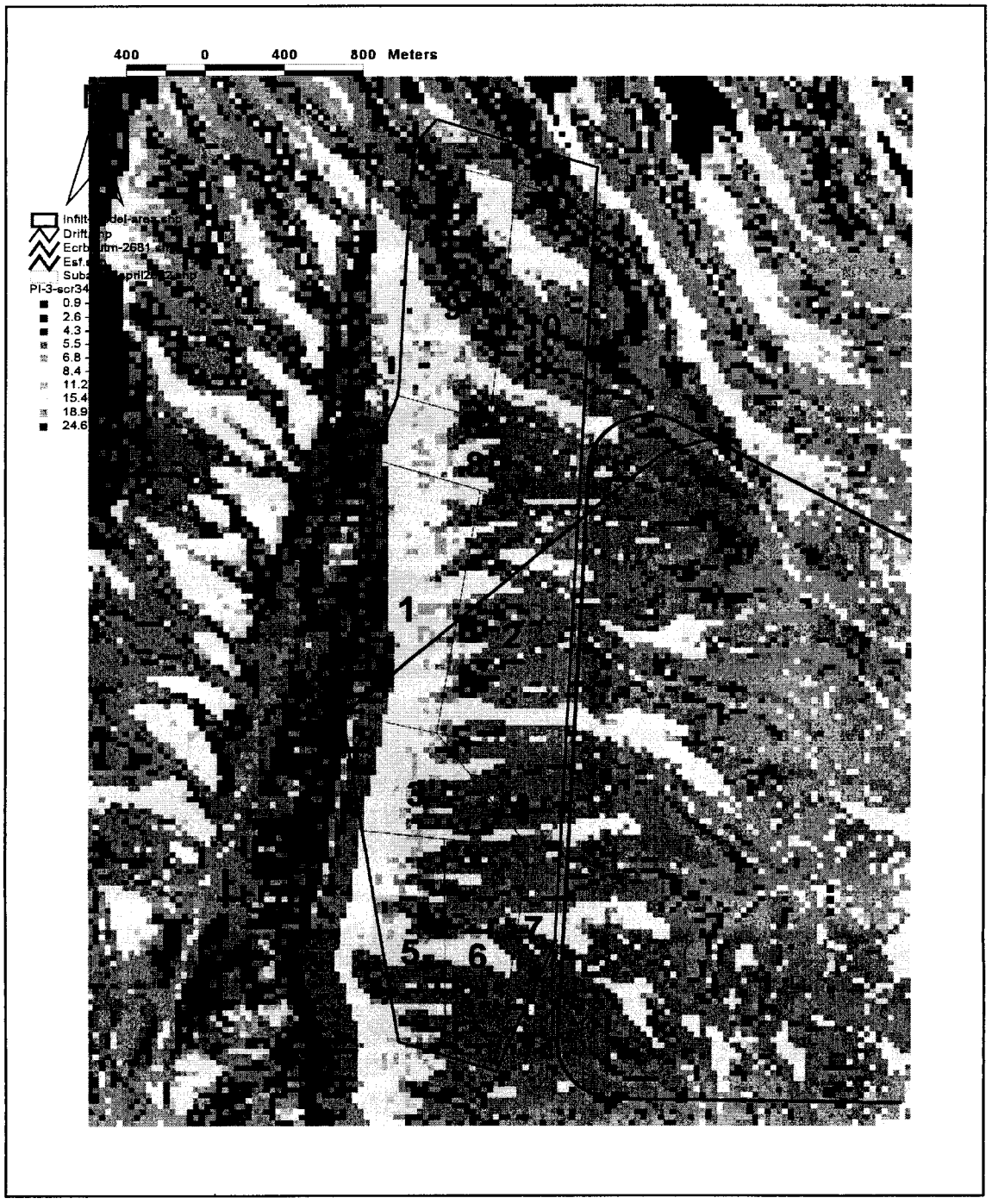
```
tbl( 1, 1): MAP = 152.800 MAT =  15.380 MAI =   8.014 s(MAI) =  12.266
```

```
            MLI =   0.216 MSI =   0.856 EsI =  14.339
tbl( 2, 1): MAP = 162.493 MAT =  15.380 MAI =   8.881 s(MAI) =  13.109
            MLI =   0.274 MSI =   0.862 EsI =  16.070
```

The Mean Annual Infiltration values generated by the ITYM Preprocessor are reasonable values for the climate conditions and are included in the following table:

Climate	**Mean Annual Infiltration (mm/yr)**
MAP = 152.8 mm/yr, MAT = 15.38 deg C	8.014
MAP = 162.493 mm/yr, MAT = 15.38 deg C	8.881
MAP = 172.8 mm/yr, MAT = 15.38 deg C	10.897
MAP = 152.8 mm/yr, MAT = 17.38 deg C	7.186
MAP = 162.493 mm/yr, MAT = 17.38 deg C	7.761
MAP = 172.8 mm/yr, MAT = 17.38 deg C	8.363
MAP = 152.8 mm/yr, MAT = 19.38 deg C	7.131
MAP = 162.493 mm/yr, MAT = 19.38 deg C	6.691
MAP = 172.8 mm/yr, MAT = 19.38 deg C	8.802

In addition, a plot of the information contained in maidtbl.dat file is shown as follows:



The values from the ITYM Preprocessor are reasonable for the following reasons:

1. The spatial distribution is similar to that of the DOE (ANL-NBS-HS-000032 REV 00, table 6-9);

2. The average for ITYM results is within the bounds of the DOE table 6-9 averages (DOE UZ flow and transport model domain) for lower, mean, and upper bound cases;

3. The ITYM model results remain slightly higher than the DOE mean case as expected and as maintained by CNWRA staff based on supporting information (temperature data and chloride data in perched water).

System Level Test Plan and Test Results

As part of continuing PA-SCR-346, the UZFLOW module was modified. The module was modified to only include two sample modes instead of three. In UZFLOW Sample Mode 1, the ArealAverageInfiltrationAtStart is sampled and the UZFLOWHydraulicPropertyUncertaintyDeviation is ignored. Conversely, in UZFLOW Sample Mode 2, the ArealAverageInfiltrationAtStart is ignored and the UZFLOWHydraulicPropertyUncertaintyDeviation is sampled.

The system level tests in this section are designed to test the "UZFLOW" module and verify that it generates reasonable information given the input from either the ITYM preprocessor or a special utility program. System level tests are performed by running the TPA code directly. The TPA executive, "exec," calls the UZFLOW module. The following changes were made to the UZFLOW module:

1. The code expects two DTBL files: "maydtbl.dat" and "smaydtbl.dat." These two files contain the Expected(log10(MAI)), abbreviated E(log10(MAI)), and Standard Deviation(log10(MAI)), abbreviated stdev(log10(MAI)), respectively.

2. An additional sampled parameter, "UZFLOWHydraulicPropertyUncertaintyDeviation[N(0,1)]" was added to TPA.INP. This parameter has zero mean and unit variance.

3. The calc_MAI routine interpolates E(log10(MAI)) + uzhpu * stdev(log10(MAI)) where "uzhpu" is the new sampled parameter and the others are the tabulated values from the input files.

SL-1 Verification of Subarea Averaging

1.0 Path for Run Directory

<<Run Directory Utility>> = $HOME/PA-SCR-346/test/utiltest/sl-1

<<Run Directory Test>> = $HOME/PA-SCR-346/test/sltest/sl-1

2.0 Path for Archived Results

<<Run Directory Test>>

3.0 Environment Variables

TPA_TEST = $HOME/PA-SCR-346/code50betaimod

TPA_DATA = $HOME/PA-SCR-346/code50betaimod

4.0 Special Input Files or Modifications to Input Files Required

4.1 Make the following modifications to the tpa.inp file from the TPA code 5.0BetaI Distribution:

Test A

Parameter	Value
UZFLOWSampleMode	iconstant {2}
UZFLOWHydraulicPropertyUncertaintyDeviation[N(0,1)]	constant {0.0}
OutputMode(0=None, 1=All, 2=UserDefined)	Set the parameter value to 1 to generate all output files

Test B

Parameter	Value
UZFLOWSampleMode	iconstant {1}
ArealAverageMeanAnnualInfiltrationAtStart[mm/yr]	constant {1.3336}
OutputMode(0=None, 1=All, 2=UserDefined)	Set the parameter value to 1 to generate all output files

4.2 Specially generated "maydtbl.dat" and "smaydtbl.dat" files must be present. These files are generated by running the special stand-alone module, "maidscr346.e" in place of the ITYM preprocessing module.

5.0 Special Diagnostic Code Modifications Required: None

6.0 Program Modes to be Used

6.1 As specified in Section 4, the OutputMode is set to 1 to generate all output files.

7.0 Utility Program Needed to Perform the Test

7.1 The utility program, "maidscr346.e," built from file, "maidscr346.f" is required. This utility program takes the place of the preprocessing performed by "ITYM."

8.0 Test Description

8.1 Objective: This test verifies that the UZFLOW module correctly performs subarea averaging. The input E(log10(MAI)) and stdev(log10(MAI)) values (from files "maydtbl.dat" and "smaydtbl.dat" are constants for each subarea. The MAI values for subarea 8 are different than those values for other subareas. For areas other than subarea 8, the value for MAI is set to 1 so that E(log10(MAI)) is 0. The value for stdev(log10(MAI)) is set to 0 for all subareas. UZFLOW will take the input values and generate averages that correspond to the input values.

8.2 Assumptions: none

8.3 Constraints: none

8.4 Output Files: infilper.res, uzflow.rlt and uzflow.ech

8.5 Procedure:

1. At the command prompt from the <<Run Directory Utility>>, type the following: "maidscr346.e."

2. Observe that the code executes without aborting and generates the files, "maydtbl.dat," and "smaydtbl.dat."

3. Copy the files, "maydtbl.dat" and "smaydtbl.dat" to the TPA_DATA/DATA directory.

4. For Test Case A, at the command prompt from the <<Run Directory Test>>, type the following, "tpa.e > PA-SCR-346_SL1-A.out." Screen output will be captured to PA-SCR-346_SL1-A.out.

5. Within PA-SCR-346_SL1-A.out, observe the following message for each subarea calculation, "exec: calling uzflow." Verify that the TPA code executes to completion without aborting.

6. Copy the uzflow.rlt, uzflow.ech, and infilper.res files to subdirectory <<Run Directory Test>>/testA

7. For Test Case B, at the command prompt from the <<Run Directory Test>>, type the following, "tpa.e > PA-SCR-346_SL1-B.out." Screen output will be captured to PA-SCR-346_SL1-B.out.

8. Within PA-SCR-346_SL1-B.out, observe the following message for each subarea calculation, "exec: calling uzflow." Verify that the TPA code executes to completion without aborting.

9. Copy the uzflow.rlt, uzflow.ech, and infilper.res files to subdirectory <<Run Directory Test>>/testB

10. For subarea 8, verify the Mean Annual Infiltration is 5 mm/yr and that for other subareas is 1 mm/yr.

8.6 Pass/Fail Criteria: The TPA code executes without aborting and Subarea 8 will have a Mean Annual Infiltration(MAI) of 5 mm/yr and the other subareas will have an MAI of 1 mm/yr

9.0 Test Results

9.1 Output and Supporting Files: Files will be archived on a CD labeled, "Test Plan and Test Results for PA-SCR-346(continued)."

9.2 Criterion 1: The TPA code executes without aborting.

9.3 Criterion 2: The average infiltration value for subarea 8 is 5 mm/yr. The average infiltration for the other subareas is 1 mm/yr.

9.4 Overall Test Status:

This software successfully **PASSED** the criterion above for System Level Test SL-1.

An Excel spreadsheet labeled sl-1.xls is included which shows the MAI is 5 mm/yr for subarea 8 and 1 mm/yr for the other subareas. This same result was obtained for Test Case A and Test Case B as expected for Sample Mode 1 and Sample Mode 2, respectively.

SL-2 Reasonable Values

1.0 Path for Run Directory

<<Run Directory>> = $HOME/PA-SCR-346/test/sltest/sl-2

2.0 Path for Archived Results

<<Run Directory>>

3.0 Environment Variables

TPA_TEST = $HOME/PA-SCR-346/code50betaimod

TPA_DATA = $HOME/PA-SCR-346/code50betaimod

4.0 Special Input Files or Modifications to Input Files Required

4.1 The files maydtbl.dat and smaydtbl.dat from test PL-2, Test Case C are required for this test.

4.2 The file, "tpa.inp" from the TPA code 5.0BetaI distribution, is required. The following changes are required:

Parameter	Value
OutputMode(0=None, 1=All, 2=UserDefined)	Set the parameter value to 1 to generate all output files

5.0 Special Diagnostic Code Modifications Required: None

6.0 Program Modes to be Used

6.1 As specified in Section 4, the TPA code will generate all output files.

7.0 Utility Program Needed to Perform the Test

None

8.0 Test Description

8.1 Objective: This test verifies that UZFLOW generates reasonable values for the average infiltration in each subarea at the current time (time = 0), and that the average infiltration changes as expected for a future time (time = 10000).

8.2 Assumptions: PL-2 has already been run

8.3 Constraints: none

8.4 Output Files: infilper.res, uzflow.rlt, and uzflow.ech

8.5 Procedure:

1. Copy the files, "maydtbl.dat" and "smaydtbl.dat" from process level test PL-2, Test Case C to the TPA_DATA/DATA directory.

2. At the command prompt from <<Run Directory>>, type the following: "tpa.e > PA-SCR-346_SL2.out." The screen output will be captured to file, PA-SCR-346_SL2.out.

3. Verify that the TPA code executes to completion without aborting.

4. Upon completion, open the result file, "uzflow.rlt." Verify the average infiltration values for each subarea are reasonable and change as expected from time = 0 to time = 10000.

8.6 Pass/Fail Criteria: The TPA code executes without aborting. The average infiltration values for each subarea are reasonable and change as expected.

9.0 Test Results

9.1 Output and Supporting Files: Files will be archived on a CD labeled, "Test Plan and Test Results for PA-SCR-346(continued)."

9.2 Criterion 1: The TPA code executes without aborting.

9.3 Criterion 2: The average infiltration values for each subarea are reasonable and change as expected from Time = 0 to Time = 10000.

9.4 Overall Test Status:

The software successfully **PASSED** the criterion above for System Level Test SL-2.

Test results are included in Microsoft Excel Spreadsheet sl-2.xls. The following summarizes these test results:

In the TPA 5.0 testing, the subarea averages are constrained to an average of 9.71 in the realization reported. The effect of future climates is also constrained by TPA.INP entries. The average net infiltration for modern and future climates (10,000 yrs) are reasonable given the current understanding of infiltration and percolation at Yucca Mountain of NRC and CNWRA hydrologists and considering DOE estimates.

TPA 5.0 appears to be working correctly since the rankings of net infiltration are similar to those of previous TPA versions (3.2 and 4.0), particularly when the new subareas are factored out. Subareas 5 and 8 have reversed their rankings between the different TPA versions (4.0 and 5.0). However, their (subareas 5 and 8) net infiltration rates are not significantly different, so the switch in rankings is not considered important. The net infiltration rankings of the 10 subareas is consistent with our understanding of net infiltration processes and projected zones of elevated net infiltration at Yucca Mountain, particularly the high infiltration zones on and near Yucca Mountain crest and the east-trending ridges where the caprock unit occurs at the ground surface.

SL-3 Comparison Between ITYM and TPA

1.0 Path for Run Directory

<<Run Directory Utility>> = $HOME/PA-SCR-346/test/utiltest/sl-3

<<Run Directory Test>> = $HOME/PA-SCR-346/test/sltest/sl-3

2.0 Path for Archived Results

<<Run Directory Test>>

3.0 Environment Variables

TPA_TEST = $HOME/PA-SCR-346/code50betaimod

TPA_DATA = $HOME/PA-SCR-346/code50betaimod

4.0 Special Input Files or Modifications to Input Files Required

4.1 The maydtbl.dat and smaydtbl.dat files from test PL-3 are required for this test.

4.2 The file, "tpa.inp" from the TPA code 5.0BetaI distribution, is required. The following changes are required:

Test A (Sample Mode 1)

Parameter	Value
OutputMode(0=None, 1=All, 2=UserDefined)	Set the parameter value to 2 to define the output.
SelectAppendFiles	Set the parameter value to 1 to allow the uzflow.rlt and uzflow.ech files to be generated.
NumberOfRealizations	50
UserDefinedLowerRealizationAppended	45
UserDefinedUpperRealizationAppended	50
MeanAnnualPrecipitationMultiplierAtGlacialMaximum	constant, 1.0
MeanAnnualTemperatureIncreaseAtGlacialMaximum	constant, 0.0

Test B (Sample Mode 2)

Parameter	Value
OutputMode(0=None, 1=All, 2=UserDefined)	Set the parameter value to 2 to define the output.
SelectAppendFiles	Set the parameter value to 1 to allow the uzflow.rlt and uzflow.ech files to be generated.
NumberOfRealizations	50
UserDefinedLowerRealizationAppended	45
UserDefinedUpperRealizationAppended	50
UZFLOWSampleMode	2
MeanAnnualPrecipitationMultiplierAtGlacialMaximum	constant, 1.0
MeanAnnualTemperatureIncreaseAtGlacialMaximum	constant, 0.0

5.0 Special Diagnostic Code Modifications Required: None

6.0 Program Modes to be Used

6.1 As specified in Section 4, the TPA code will generate uzflow.rlt and uzflow.ech files.

6.2 UZFLOW sample mode 1 and UZFLOW sample mode 2 will be invoked in this test.

7.0 Utility Program Needed to Perform the Test

7.1 The utility code, "extract-subarea," will be required for this test. This code takes the values from maydtbl.dat and generates a subarea average that can be compared to the information contained in uzflow.rlt.

8.0 Test Description

8.1 Objective: This test performs a check for the current climate between the output results from the ITYM preprocessor and the UZFLOW module within TPA.

8.2 Assumptions: none

8.3 Constraints: none

8.4 Output Files: infilper.res, uzflow.rlt and uzflow.ech

8.5 Procedure:

1. Copy the file maydtbl.dat from test PL-3 to the <<Run Directory Utility>> directory. First, extract the current climate from maydtbl.dat and copy the file back as maydtbl.dat. Second, create a file labeled, "subareas.dat" from the tpa.inp file by extracting the subarea size section. At the command prompt from <Run Directory Utility>>, type the following: "extract-mayd.e > sl3.out." The code will execute and generate subarea averaged infiltration to file summary.dat.

2. Copy the maydtbl.dat and smaydtbl.dat files from test PL-3 to the TPA_DATA/DATA directory.

3. For Test Case A, at the command prompt from <<Run Directory Test>>, type the following: "tpa.e > PA-SCR-346_SL3-A.out." The screen output will be captured to a file labeled, PA-SCR-346_SL3-A.out.

4. Verify that the TPA code executes to completion without aborting.

5. Copy the uzflow.rlt, uzflow.ech, and infilper.res files to the <<Run Directory Test>>/testA directory.

6. For Test Case B, at the command prompt from <<Run Directory Test>>, type the following: "tpa.e >> PA-SCR-346_SL3-B.out." The screen output will be captured to a file labeled, PA-SCR-346_SL3-B.out.

7. Verify that the TPA code executes to completion without aborting.

8. Copy the uzflow.rlt, uzflow.ech, and infilper.res files to the <<Run Directory Test>>/testB directory.

9. Upon completion, open the result files for each of the test cases, "uzflow.rlt." Verify the average infiltration values for each subarea compare to those averages contained in "summary.dat.".

8.6 Pass/Fail Criteria: The TPA code executes to completion. The average infiltration values for each subarea are comparable between execution of the ITYM code and TPA code.

9.0 Test Results

9.1 Output and Supporting Files: Files will be archived on a CD labeled, "Test Plan and Test Results for PA-SCR-346(continued)."

9.2 Criterion 1: The average infiltration values for each subarea are comparable between output files, "summary.dat" and "uzflow.rlt."

9.3 Overall Test Status:

The software successfully **PASSED** the criterion above for System Level Test SL-3.

The results are summarized in Microsoft Excel Spreadsheet sl-3.xls.

For Test Case A, results for realizations 45 and 50 were included in the spreadsheet. The Mean Annual Infiltration for the repository at the current climate equals the ArealAverageInfiltrationAtStart as expected. In addition, the infiltration from TPA is comparable to that from the ITYM Preprocessor. The infiltration rankings for all subareas is the same when infiltration is extracted directly from the itym output (summary.dat file) or when the infiltration is extracted from the TPA output (uzflow.rlt files).

For Test Case B, results for realizations 45, 47, and 50 were included in the spreadsheet. The Mean Annual Infiltration (MAI) for each of these realizations changes as expected for changes in the UZFLOWHydraulicPropertyUncertaintyDeviation sampled parameter. When the parameter is negative, it is expected that the MAI would be less than that from the ITYM Preprocessor. When the parameter is positive, the MAI would be higher than the MAI from ITYM. Realizations 45 and 50 show that a larger positive sampled value for the uncertainty results in a larger value for the MAI as expected.

SOFTWARE CHANGE REPORT (SCR)

SCR No. (*Software Developer Assigns*): PA-SCR-394	**Software Title and Version:** TPA 4.1.j	**/Project No:** 20-1402-762

Affected Software Module(s), Description of Problem(s): releaset.f, ebsfilt.f, exec.f, ebsrel.f, tpa.inp, ebsrel.def

RELEASET

Extract additional information from the RELEASET module and store this information in the ebsrel.rlt file. The following additional information is needed: 1) waste package fill-up time 2) the period over which the solubility limit is activated for each nuclide, and 3) the spent fuel dissolution time (this requirement was removed during the time this SCR remained open).

Remove ileach and code dependent upon it.

Remove declarations of variables that are not used.

Change Requested by:	**Change Authorized by** (*Software Developer*):
S. Mohanty Date:5-15-02	R. Janetzke Date: 5-15-02

Description of Change(s) or Problem Resolution (*If changes not implemented, please justify*):
Original changes made to version 4.1j. Changes then merged into TPA 5.0betaB. Additional changes required to make the modifications compatible with other modifications to the code in intermediate versions.

See attachment for detailed modifications..

Implemented by:	**Date:**
George Adams	5-29-02
Carol Scherer	12-09-02

Description of Acceptance Tests: See attached test plan and CD.

Tested by: Carol Scherer	**Date:** 12-13-02

Description of Chang(s) or Problem Resolution (continued from previous page):

EBSFILT.F

In this file, code for processing the solubility affected flag and waste package fill time was added.

The following is the listing resulting from using diff on the modified file vs. the TPA 5.0betaB file.

101,106d100

```
< c     GADAMS PA-SCR-394 5-29-02: Added affected nuclides flag
< c     This information is moved from ebsnef to ebsnef2 so that
< c     it can eventually be retrieved and stored in ebsrel.rlt.
<       INTEGER i_affected_flag(maxntimes)
< c     GADAMS PA-SCR-394 5-29-02: End of change
```

239,243c233,234

```
<           do 1 = 1,numtimes
<
< c          GADAMS PA-SCR-394 5-29-02: Added i_affected_flag
< cc             read(1,*) time(1),win(1)
<          read(1,*) time(1),win(1), i_affected_flag(1)
---
>        do 1 = 1,numtimes
>          read(1,*) time(1),win(1)
```

246,249c237

```
< cc             write(4,*) '1,time(1),win(1)=',1, time(1),win(1)
<          write(4,*) '1,time(1),win(1)=',1, time(1),win(1),
<     &       i_affected_flag(1)
< c          GADAMS 5-29-02: End of change
---
>          write(4,*) '1,time(1),win(1)=',1, time(1),win(1)
```

257,261c245

```
<
< c        GADAMS PA-SCR-394 5-29-02:  Added i_affected_flag
<          WRITE(2, FMT = '(2(1x, 1pe12.4), I4)') t, r, i_affected_flag(1)
< c      write(2,'(f10.1,e15.6)') t,r
< c        GADAMS PA-SCR-394 5-29-02: End of change
---
>        write(2,'(f10.1,e15.6)') t,r
```

301,305c285

```
< c          GADAMS PA-SCR-394 5-29-02: Added i_affected_flag
<            WRITE(2, FMT = '(2(1x, 1pe12.4), I4)') t, r,
<     &        i_affected_flag(i+1)
< c        write(2,'(f10.1,e15.6)') t,r
< c          GADAMS PA-SCR-394 5-29-02: End of change
```

```
---
>          write(2,'(f10.1,e15.6)') t,r
```

EBSREL.DEF

Remove ileach. Change line 28 from:

```
    1.06000E+04,       1          ! fueden,ileach (1:particle,2:grain)
```

To:

```
    1.06000E+04                   ! fueden (1:particle,2:grain)
```

EBSREL.F

In this file, code was added to read and write out additional information.

The following is the listing resulting from using diff on the modified file vs. the TPA 5.0betaB file.

76,84c77

```
< c GADAMS PA-SCR-394 5-29-02:  Added 3 parameters to the argument list.
< cc     &                    ciperyrinsaintoloweruz, releasewpfailedtime)
<      &                   ciperyrinsaintoloweruz, releasewpfailedtime,
< cc - css - 12/6/02; SCR #394:  dissolutiontime no longer used
< cc     &                    nuclideSolubilityAffected, dissolutiontime,
<      &                   nuclideSolubilityAffected,
< cc - end change:  SCR #394
<      &                   wpFillTime)
< c GADAMS PA-SCR-394 5-22-02:
---
>      &                   ciperyrinsaintoloweruz, releasewpfailedtime)
```

135,143d127

```
< c GADAMS PA-SCR-394 5-29-02: Added the following three parameters
< c to the argument list.
< c nuclideSolubilityAffected(mxntime, maxaqnuc) = output, integer
< c              flag indicating if the release rate is affected
< c              by the solubility limit.
< c dissolutionTime = output, double precision; spent fuel dissolution
< c                   time
< c wpFillTime = output, double precision; time to fill the waste package
< c GADAMS PA-SCR-394 5-29-02: End of change
```

150d133

```
<       include 'maxntime.i'
```

161,166d143

```
< c     GADAMS PA-SCR-394 5-29-02: Added a flag indicating if the release
< c     rate for the nuclide was affected by the solubility limit
<       INTEGER nuclideSolubilityAffected(mxntime, maxaqnuc)
<       DOUBLE PRECISION solubility_affected(maxntime)
< c     GADAMS PA-SCR-394 5-29-02: End of change
```

168,174d144

```
< c     GADAMS PA-SCR-394 5-29-02: Added dissolutionTime and wpFillTime
< cc - css - 12/6/02; SCR #394:  dissolutionTime no longer used
< cc      DOUBLE PRECISION dissolutionTime
< cc - end change:  SCR #394
<       DOUBLE PRECISION wpFillTime
< c     GADAMS PA-SCR-394 5-29-02: End of change
```

213a184

```
>       INCLUDE 'maxntime.i'
```

327,332d298

```
< c       GADAMS PA-SCR-394 5-29-02: Added affected nuclide information.
< c       This information indicates when the release rate is affected
< c       by the solubility limit.
<         dimension affected_value(maxjtim)
```

650,654c616,618

```
< cc - css - 12/9/02; SCR #394:  remove unused variables
< cc        call clearchar( 60, name )
< cc        name = 'SurfaceAreaModel'
< cc        i_ileach =  ispquery( name )
< cc - end change:  SCR #394
---
>         call clearchar( 60, name )
>         name = 'SurfaceAreaModel'
>       i_ileach = ispquery( name )
```

1118,1120c1082

```
< cc - css - 12/9/02; SCR #394:  remove variables no longer used
< cc                             in releaset
< cc      ILEACH = 1
---
>       ILEACH = 1
```

1122,1126c1084,1085

```
< cc      write( aline(1:23), fmt='(1pe14.5,2h, i7)' )
< cc     &   FUEDEN, ILEACH
<       write( aline(1:23), fmt='(1pe14.5)' )
<      &   FUEDEN
< cc - end change:  SCR #394
---
>       write( aline(1:23), fmt='(1pe14.5,2h, i7)' )
>      &   FUEDEN, ILEACH
```

```
1934,1938d1892
< c       GADAMS PA-SCR-394 5-29-02: Added affected_value to identify when
< c       a nuclide is affected by the solubility limit.
<         affected_value(1) = 0.0d0

1942,1951c1896
< c         GADAMS PA-SCR-394 5-29-02: Added affected value to identify
< c         when a nuclide is affected by the solubility limit.
< cc          read(iebsnefdat,*,err=9078) ajtim(it), ajval(it)
<           read(iebsnefdat,*,err=9078) ajtim(it), ajval(it),
<      &      i_affected_flag
<
<           affected_value(it) = DBLE(i_affected_flag)
<
< c         GADAMS PA-SCR-394 5-29-02: End of change
---
>           read(iebsnefdat,*,err=9078) ajtim(it), ajval(it)

1967,1970d1910
< c         GADAMS PA-SCR-394 5-29-02: Added flag indicating if the
< c         release rate was affected by the solubility limit of the
< c         element.

1972,1992c1912,1922
<           CALL maplist(ntempcount, ajtim(1), affected_value(1),
<      &         ntim, tim(1), solubility_affected(1))
<
<           DO index_solubility = 1, mxntime
<             IF(solubility_affected(index_solubility) .GT. 0.0d0) THEN
<               nuclideSolubilityAffected(index_solubility, iset) = 1
<             ELSE
<               nuclideSolubilityAffected(index_solubility, iset) = 0
<             ENDIF
<           ENDDO
< c         GADAMS PA-SCR-394 5-29-02: End of change
<           if (ajval(1) .eq. 0.0d0) then
<              do ifix = 2,ntempcount
<                 if (ajval(ifix) .ne. 0.0d0) then
<                    do ifixtpatime = 2,ntim-1
<                       if(tim(ifixtpatime+1) .lt. ajtim(ifix)) then
<                          ciperyrinsaintoloweruz(ifixtpatime,iset)=0.0d0
<                       endif
<                    enddo
<                    goto 624
---
>                 if (ajval(1) .eq. 0.0d0) then
>                   do ifix = 2,ntempcount
>                     if (ajval(ifix) .ne. 0.0d0) then
>                       do ifixtpatime = 2,ntim-1
>                         if(tim(ifixtpatime+1) .lt. ajtim(ifix)) then
```

```
>                          ciperyrinsaintoloweruz(ifixtpatime,iset)=0.0d0
>                        endif
>                      enddo
>                      goto 624
>                    endif
>                  enddo
```

1994,1996c1924

```
<              enddo
<            endif
< 624        continue
---
> 624             continue
```

2055,2064d1980

```
< c     GADAMS PA-SCR-394 5-29-02: Retrieve dissolution time and
< c     waste package fill time
<       READ(irelfracout, *)
< cc - css - 12/6/02; SCR #394:  dissolutionTime no longer used
< cc      READ(irelfracout, *) dissolutionTime
< cc - end change:  SCR #394
<       READ(irelfracout, *) wpFillTime
< c     GADAMS PA-SCR-394 5-29-02: End of change
```

2113,2116d2028

```
< cc - css - 12-4-02; SCR #394
<       integer i_affected_flag1
<       integer i_affected_flag2
< cc - end change
```

2156,2164c2067,2070

```
< cc          read (iebssfdat,   *,err=901) ajtim1, ajval1
< cc          read (iebsglassdat,*,err=902) ajtim2, ajval2
< cc          write (iebsnefdat,  '(1x, 1pe12.4, 1x, 1pe12.4)')
< cc     &          ajtim2, ajval1 + ajval2
<           read (iebssfdat,   *,err=901) ajtim1, ajval1, i_affected_flag1
<           read (iebsglassdat,*,err=902) ajtim2, ajval2, i_affected_flag2
<           write (iebsnefdat,  '(1x, 1pe12.4, 1x, 1pe12.4, 1x, i4)')
<      &          ajtim2, ajval1 + ajval2, i_affected_flag1
< cc - end change: SCR #394
---
>           read (iebssfdat,   *,err=901) ajtim1, ajval1
>           read (iebsglassdat,*,err=902) ajtim2, ajval2
>           write (iebsnefdat,  '(1x, 1pe12.4, 1x, 1pe12.4)')
>      &          ajtim2, ajval1 + ajval2
```

2236,2238d2141

```
< cc - css - 12-4-02; SCR #394
<       integer i_affected_flag
< cc - end change
```

2327,2330c2230
```
< cc - css - 12-4-02; SCR #394
< cc             read(iebsnefdat,*,err=9078) ajtim, ajval
< cc             write(iebsnefout,'(1p2e13.4)',err=9078) ajtim, ajval
<              read(iebsnefdat,*,err=9078) ajtim, ajval, i_affected_flag
---
>              read(iebsnefdat,*,err=9078) ajtim, ajval
```

2332,2334c2232
```
<              write(iebsnefout,'(1p2e13.4,i4)',err=9078) ajtim, ajval,
<      &             i_affected_flag
< cc - end change:  SCR #394
---
>              write(iebsnefout,'(1p2e13.4)',err=9078) ajtim, ajval
```

2340,2344c2238
```
< cc - css - 12-4-02; SCR #394
< cc             read(iebsnefdat,*,err=9078) ajtim, ajval
< cc             write(iebsnefout,'(1p2e13.4)',err=9078) ajtim, ajval
< cc             write(iebsnefcld,'(1p2e13.4)',err=9078) ajtim, cldval
<              read(iebsnefdat,*,err=9078) ajtim, ajval, i_affected_flag
---
>              read(iebsnefdat,*,err=9078) ajtim, ajval
```

2348,2352c2242,2243
```
<              write(iebsnefout,'(1p2e13.4,i4)',err=9078) ajtim,
<      &                            ajval, i_affected_flag
<              write(iebsnefcld,'(1p2e13.4,i4)',err=9078) ajtim,
<      &                            cldval, i_affected_flag
< cc - end change:  SCR #394
---
>              write(iebsnefout,'(1p2e13.4)',err=9078) ajtim, ajval
>              write(iebsnefcld,'(1p2e13.4)',err=9078) ajtim, cldval
```

2366c2257
```
< cc    and ebscld.out should have only the newly formed colloidal nuclides.
---
> cc    ane ebscld.out should have only the newly formed colloidal nuclides.
```

2391,2397c2282,2283
```
< cc - css - 12-4-02; SCR #394
< cc          read(iebsnefout,*,err=9078) ajtim, ajval
< cc          write(iebsnefdat,'(1p2e13.4)',err=9078) ajtim, ajval
<           read(iebsnefout,*,err=9078) ajtim, ajval, i_affected_flag
<           write(iebsnefdat,'(1p2e13.4,i4)',err=9078) ajtim, ajval,
<      &                            i_affected_flag
< cc - end change:  SCR #394
---
>           read(iebsnefout,*,err=9078) ajtim, ajval
```

```
>           write(iebsnefdat,'(1p2e13.4)',err=9078) ajtim, ajval
```

2408,2414c2294,2295

```
< cc          read(iebsnefcld,*,err=9078) ajtim, ajval
< cc          write(iebsnefdat,'(1p2e13.4)',err=9078) ajtim, ajval
<           read(iebsnefcld,*,err=9078) ajtim, ajval, i_affected_flag
<           write(iebsnefdat,'(1p2e13.4,i4)',err=9078) ajtim, ajval,
<      &                 i_affected_flag
< cc - end change:  SCR #394
---
>           read(iebsnefcld,*,err=9078) ajtim, ajval
>           write(iebsnefdat,'(1p2e13.4)',err=9078) ajtim, ajval
```

EXEC.F

In this file, arrays were re-dimensioned to include colloids, additional information was written to output files, waste package fill time was added, and code to process to process releases affected by solubility was added.

The following is the listing resulting from using diff on the modified file vs. the TPA 5.0betaB file.

278,312d277

```
< C     GADAMS PA-SCR-394 5-29-02: Added the following flag to summarize
< c     ebsrel results after the main loop has completed.
<       LOGICAL summarize_ebsrel
<
< c     GADAMS PA-SCR-394 5-29-02: Added the following local parameters
< c     for the management of release rate affected by the solubility
< c     limit
< cc - css - 12/4/02;  SCR #394
< cc try these arrays using maxaqnuc instead of maxnnucl
< cc1     dimension nuclide_solubility_affected(maxntime, maxnnucl)
< cc2     dimension number_cycles_subarea(maxnnucl)
< cc3     dimension average_cycles_subarea(maxnnucl)
< cc4     dimension average_cycles_realization(maxnnucl)
< cc5     dimension nuclide_affected_subarea(maxnnucl)
< cc6     dimension average_affected_subarea(maxnnucl)
< cc7     dimension average_affected_realization(maxnnucl)
<       dimension nuclide_solubility_affected(maxntime, maxaqnuc)
<       dimension number_cycles_subarea(maxaqnuc)
<       dimension average_cycles_subarea(maxaqnuc)
<       dimension average_cycles_realization(maxaqnuc)
<       dimension nuclide_affected_subarea(maxaqnuc)
<       dimension average_affected_subarea(maxaqnuc)
<       dimension average_affected_realization(maxaqnuc)
< cc - end change:  SCR #394
<       LOGICAL solubility_flag
< c     GADAMS PA-SCR-394 5-29-02: End of change
<
< c     GADAMS PA-SCR-394 5-29-02: Added waste package fill time
```

```
< c     parameters
<       DOUBLE PRECISION wp_fill_time
<       DOUBLE PRECISION wp_fill_time_average
<       DOUBLE PRECISION wp_fill_time_minimum
<       DOUBLE PRECISION wp_fill_time_maximum
< c     GADAMS PA-SCR-394 5-29-02: End of change
```

416,428d380

```
< c     GADAMS PA-SCR-394 5-29-02: Retrieve information from relcum.out
< c     and place it in ebsrel.rlt.
<       character*100 relcum_line
<
< c     GADAMS PA-SCR-394 5-29-02: Store information for spent fuel
< c     dissolution time
< cc - css - 12/6/02; SCR #394:  dissolution_time no longer calculated
< cc                             in releaset
< cc      INTEGER index_sub, index_real
< cc      DOUBLE PRECISION dissolution_time(maxrealizations, maxnsubarea)
< cc - end change:  SCR #394
< c     GADAMS PA-SCR-394 5-29-02: End of change
```

579,582d530

```
< c     GADAMS PA-SCR-394 5-29-02:  Added nuclide data to ebsrel.rlt file
<       iunitrelcumout = igetunitnumber('exec    ')
< c     GADAMS PA-SCR-394:  end change
```

2770,2798d2717

```
< c       GADAMS PA-SCR-394 5-29-02: Added flag to indicate that ebsrel
< c       needs to contain summary information after the main loop is
< c       executed
<         summarize_ebsrel = .FALSE.
<
< c       GADAMS PA-SCR-394 5-29-02: Added number of nuclides affected by
< c       solubility limit
<         solubility_flag = .FALSE.
< cc - css - 12-4-02;   SCR #394
< cc        DO i = 1, maxnnucl
<         DO i = 1, maxaqnuc
< cc - end change
<           solubility_flag = .FALSE.
<           nuclide_affected_subarea(i) = 0
<           average_affected_subarea(i) = 0.0d0
<           average_affected_realization(i) = 0.0d0
<           number_cycles_subarea(i) = 0
<           average_cycles_subarea(i) = 0.0d0
<           average_cycles_realization(i) = 0.0d0
<         ENDDO
< c       GADAMS PA-SCR-394 5-29-02: End of change
<
< c       GADAMS PA-SCR-394 5-29-02: Added waste package fill parameters
<         wp_fill_time = 0.0d0
<         wp_fill_time_average = 0.0d0
```

```
<          wp_fill_time_minimum = 0.0d0
<          wp_fill_time_maximum = 0.0d0
< c        GADAMS PA-SCR-394 5-29-02: End of change
```

3863,3867d3783

```
< c          GADAMS PA-SCR-394 5-29-02: Set a flag to indicate that
< c          summary data needs to be placed in ebsrel.rlt
<            summarize_ebsrel = .TRUE.
```

3990,3999c3906

```
<      &           releasewpfailedtime,
< cc     &             releasewpfailedtime)
< c            GADAMS PA-SCR-394 5-29-02: Added nuclide_solubility_affected
< c            dissolution_time, and wp_fill_time
<      &         nuclide_solubility_affected,
< cc - css - 12/6/02; SCR #394:  dissolution_time no longer calculated in
< cc                             releaset
< cc     &       dissolution_time(ir, isa), wp_fill_time)
<      &         wp_fill_time)
< cc - end change:  SCR #394
---
>      &           releasewpfailedtime)
```

4007,4016c3914

```
<      &           releasewpfailedtime,
< cc     &             releasewpfailedtime)
< c            GADAMS PA-SCR-394 5-29-02: Added nuclide_solubility_affected
< c            dissolution_time, and wp_fill_time
<      &         nuclide_solubility_affected,
< cc - css - 12/6/02; SCR #394:  dissolution_time no longer calculated in
< cc                             releaset
< cc     &       dissolution_time(ir, isa), wp_fill_time)
<      &         wp_fill_time)
< cc - end change:  SCR #394
---
>      &           releasewpfailedtime)
```

4043,4084d3938

```
< c        GADAMS PA-SCR-394 5-29-02: Accumulate the number of time steps
< c        the nuclide is affected by the solubility limit
< cc - css - 12-04-02; SCR #394
< cc         DO i_nuclide = 1, nnucl
<          DO i_nuclide = 1, nnucl + numclnuc
< cc - end change:  SCR #394
<            solubility_flag = .FALSE.
<            DO i_time = 2, ntim
<              nuclide_affected_subarea(i_nuclide) =
<      &         nuclide_affected_subarea(i_nuclide)
<      &         + nuclide_solubility_affected(i_time, i_nuclide)
<
<            IF(nuclide_solubility_affected(i_time, i_nuclide) .LE. 0) THEN
```

```
<              IF(solubility_flag) THEN
<                number_cycles_subarea(i_nuclide) =
<      &           number_cycles_subarea(i_nuclide) + 1
<              ENDIF
<              solubility_flag = .FALSE.
<            ELSE
<              solubility_flag = .TRUE.
<            ENDIF
<            ENDDO
<          ENDDO
< c        GADAMS PA-SCR-394 5-29-02: End of change
<
< c        GADAMS PA-SCR-394 5-29-02: Added wp fill time parameters
<          IF(ir .EQ. istartreal .AND. isa .EQ. istartsuba)THEN
<            wp_fill_time_average = wp_fill_time
<            wp_fill_time_minimum = wp_fill_time
<            wp_fill_time_maximum = wp_fill_time
<          ELSE
<            wp_fill_time_average = wp_fill_time_average +
<      &       wp_fill_time
<            IF(wp_fill_time .GT. wp_fill_time_maximum) THEN
<              wp_fill_time_maximum = wp_fill_time
<            ENDIF
<            IF(wp_fill_time .LT. wp_fill_time_minimum) THEN
<              wp_fill_time_minimum = wp_fill_time
<            ENDIF
<          ENDIF
< c        GADAMS PA-SCR-394 5-29-02: End of change
```

4093,4109d3946

```
< c          GADAMS PA-SCR-394 5-29-02: Added nuclide data to result file.
< c          Transfer additional nuclide data from relcum.out to the
< c          result file.
<
<            WRITE(iunitresultsebsrel, FMT = '(/,1x, A)')
<      &       'Release information taken from RELCUM.OUT'
<            OPEN(UNIT= iunitrelcumout, FILE = 'relcum.out',
<      &       STATUS = 'old')
<
<            DO WHILE(.TRUE.)
<              READ(iunitrelcumout, FMT='(A100)', END = 509) relcum_line
<              WRITE(iunitresultsebsrel, FMT='(A100)') relcum_line
<            ENDDO
<
<  509       CONTINUE
<            CLOSE(iunitrelcumout)
< c          GADAMS PA-SCR-394 5-29-02: End of change
```

4161,4169d3997

```
< c          GADAMS PA-SCR-394 5-29-02: Added a flag to indicate when the
< c          solubility limit affects the release rate.
<            WRITE(iunitresultsebsrel, FMT = '(1x, 2a)')
```

```
<      &      'AF = Affected Flag: ',
<      &      'If this flag is set (1), then the release rate was' //
<      &      ' affected by solubility.'
< c         GADAMS PA-SCR-394 5-29-02: End of change
```

4177,4180d4004

```
< c             GADAMS PA-SCR-394 5-29-02: Added a flag to indicate when
< c             the solubility limit affects the release rate.
< c              write(iunitresultsebsrel,fmt='(/,"        time",
< c     &           3x,5(3x,a6,4x),/)') (names(j),j=i,iend)
```

4182c4006

```
<      &           5x,5(3x,a6,3x, A2, 1x),/)') (names(j), 'AF',j=i,iend)
---
>      &           3x,5(3x,a6,4x),/)') (names(j),j=i,iend)
```

4184,4191c4008,4009

```
< c              write(iunitresultsebsrel,fmt='(i4,6(1pe12.4))')j,tim(j),
< c     &              (ciperyrinsaintoloweruz(j,k),k=i,iend)
<               write(iunitresultsebsrel,
<      &          fmt='(i4, 1pe12.4, 5(1pe12.4, I3))') j,
<      &          tim(j), (ciperyrinsaintoloweruz(j,k),
<      &          nuclide_solubility_affected(j, k), k=i,iend)
< c             GADAMS PA-SCR-394 5-29-02: End of change
---
>              write(iunitresultsebsrel,fmt='(i4,6(1pe12.4))')j,tim(j),
>      &             (ciperyrinsaintoloweruz(j,k),k=i,iend)
```

4880,4929d4697

```
< c     GADAMS PA-SCR-394 5-29-02: Accumulate the number of time steps the
< c     nuclide is affected by the solubility limit
<
< cc - css - 12-4-02; SCR #394
< cc      DO i_nuclide = 1, nnucl
<       DO i_nuclide = 1, nnucl + numclnuc
< cc - end change:  SCR #394
<         average_affected_subarea(i_nuclide) =
<      &    DBLE(nuclide_affected_subarea(i_nuclide)) /
<      &    DBLE(istopsuba - istartsuba + 1)
<
<         average_affected_realization(i_nuclide) =
<      &    average_affected_realization(i_nuclide) +
<      &    average_affected_subarea(i_nuclide)
<
<         average_cycles_subarea(i_nuclide) =
<      &    DBLE(number_cycles_subarea(i_nuclide)) /
<      &    DBLE(istopsuba - istartsuba + 1)
<
<         average_cycles_realization(i_nuclide) =
<      &    average_cycles_realization(i_nuclide) +
<      &    average_cycles_subarea(i_nuclide)
```

```
<       ENDDO
<
< cc    Conditional whether to write results to ebsrel.rlt
<       IF (iappend .eq. 1) THEN
<         IF (iselectappend .eq. 0 .or. iselectappend .eq. 7) THEN
<
<           WRITE(iunitresultsebsrel, FMT = '(/, 1x, A)')
<      &      'Subarea Averages {steps, cycles}'
<           DO i_nuclide = 1, nnucl
<             write( iunitresultsebsrel,
<      &        fmt='(1x, A5, 2(2x, 1pe15.4))') names(i_nuclide),
<      &        average_affected_subarea(i_nuclide),
<      &        average_cycles_subarea(i_nuclide)
<           ENDDO
<         ENDIF
<       ENDIF
<
< c     Reinitialize accumulators for next realization
< cc - css - 12-4-02; SCR #394
< cc      DO i_nuclide = 1, nnucl
<       DO i_nuclide = 1, nnucl + numclnuc
< cc - end change
<         nuclide_affected_subarea(i_nuclide) = 0
<         number_cycles_subarea(i_nuclide) = 0
<       ENDDO
<
< c     GADAMS PA-SCR-394 5-29-02: End of change
```

6098,6116d5865

```
< c     GADAMS PA-SCR-394 5-29-02: Display the summary information in
< c     ebsrel.rlt if results are being placed in this result file.
<       IF(summarize_ebsrel) THEN
<
<         WRITE(iunitresultsebsrel, FMT = '(/, 1x, a)')
<      &    'Averages for all Realizations {Steps, Cycles}'
<
< cc - css - 12-4-02; SCR #394
< cc      DO i_nuclide = 1, nnucl
<       DO i_nuclide = 1, nnucl + numclnuc
< cc - end change
<
<           average_affected_realization(i_nuclide) =
<      &      average_affected_realization(i_nuclide) /
<      &      DBLE(istopreal-istartreal + 1)
<
<           average_cycles_realization(i_nuclide) =
<      &      average_cycles_realization(i_nuclide) /
<      &      DBLE(istopreal - istartreal + 1)
```

6118,6149d5866

```
<           write( iunitresultsebsrel,
<      &      fmt='(1x, A5, 2(2x, 1pe15.4))') names(i_nuclide),
```

```
<       &       average_affected_realization(i_nuclide),
<       &       average_cycles_realization(i_nuclide)
<          ENDDO
<
<          wp_fill_time_average = wp_fill_time_average /
<       &     (DBLE(istopreal - istartreal + 1) *
<       &      DBLE(istopsuba - istartsuba + 1))
<          WRITE(iunitresultsebsrel, FMT = '(/, 1x, a)')
<       &     'Waste Package fill time {MIN, AVG, MAX}[yr]'
<          WRITE(iunitresultsebsrel, FMT = '(1x, 3(1pe12.4, 2x))')
<       &     wp_fill_time_minimum, wp_fill_time_average,
<       &     wp_fill_time_maximum
<
< cc - css - 12/6/02; SCR #394:  dissolution_time no longer calculated in
< cc                             releaset
< cc         WRITE(iunitresultsebsrel, FMT = '(/, 1x, a)')
< cc      &     'Dissolution Time for each subarea and realization[yr]'
< cc
< cc         DO index_real = istartreal, istopreal
< cc           DO index_sub = istartsuba, istopsuba
< cc             WRITE(iunitresultsebsrel, FMT = '(1x, 2I5, 2x, 1pe12.4)')
< cc      &        index_real, index_sub,
< cc      &        dissolution_time(index_real, index_sub)
< cc           ENDDO
< cc         ENDDO
< cc - end change:  SCR #394
<
<        ENDIF
< c      GADAMS PA-SCR-394 5-29-02: End of change
```

RELEASET.F

In this file, ileach and associated code was removed. Variables that were no longer used were commented out. Waste package fill time was added.

The following is the listing resulting from using diff on the modified file vs. the TPA 5.0betaB file.

2,7d1

```
< c css - 12/6/02 - merge in GADAMS changes for SCR #394
< c                 remove tftc, tleach, addtime variables; they are
< c                 no longer used; remove prints for these variables
< c                 to relcum.out
< c                 clean up other local variables which are no
< c                 longer used
```

142c139

```
<          real*8 time1, ttemp, vmax,
---
>          real*8 time1, tleach,      ttemp, vmax,
```

```
178,180c175
< cc - css - 12/9/04; SCR #394: remove variables that are no longer used
< cc        integer ileach
< cc - end change:   SCR #394
---
>     integer ileach

211,214c206
< cc - css - 12/6/02; SCR #394: remove variables no longer used
< cc        real*8 tregular(maxbin),tftc
<         real*8 tregular(maxbin)
< cc - end change:  SCR #394
---
>         real*8 tregular(maxbin),tftc

244,246c236
< cc - css - 12/6/02; SCR #394: remove variables no longer used
< cc     &                  ccfr(maxnuc, maxmem), tleach, nelem,
<      &                  ccfr(maxnuc, maxmem), nelem,
---
>      &                  ccfr(maxnuc, maxmem), tleach, nelem,

248d237
<      &                  amassl(maxnuc)

249a239
>      &                  amassl(maxnuc),      tftc

283,286c273
< cc - css - 12/9/02; SCR #394:  remove variables that are no longer used
< cc        common /cwast1/ fueden, amassc,ileach
<         common /cwast1/ fueden, amassc
< cc - end change:  SCR #394
---
>         common /cwast1/ fueden, amassc,ileach

304,327d290
< c     GADAMS PA-SCR-394 5-29-02: Added affected_nuclide to track
< c     concentration reaching solubility limit.
<      INTEGER affected_nuclide
<      COMMON /nuclide/ affected_nuclide(maxnuc, maxmem, maxste)
< c     GADAMS PA-SCR-394 5-29-02: End of change
< c     GADAMS PA-SCR-394 5-29-02: Added waste package fill time
<       LOGICAL fill_flag
<       DOUBLE PRECISION waste_package_fill_time
< c     GADAMS PA-SCR-394 5-29-02: End of change
<
< c     GADAMS PA-SCR-394 5-29-02: Correcting an error generating waste
< c     package fill time.  The waste package fill time is the difference
< c     between the time the release rate goes positive and the first
```

```
< c     failure time.
<       DOUBLE PRECISION failure_time_initial
< c     GADAMS 5-29-02: End of change
<
< cc - css - 12/6/02; SCR #394:  dissolution time no longer calculated
< c     GADAMS PA-SCR-394 5-29-02: Added dissolution time
< cc      DOUBLE PRECISION dissolution_time
< c     GADAMS PA-SCR-394 5-29-02: End of change
< cc - end change:  SCR #394
```

515,521d480

```
< c       GADAMS PA-SCR-394 5-29-02: Initialize variables
<         failure_time_initial = ttemp(ntemp)
< cc - css - 12/6/02; SCR #394:  remove variables no longer used
< cc        dissolution_time = 0.0d0
< cc - end change:  SCR #394
< c       GADAMS PA-SCR-394 5-29-02: End of change
```

644,664d602

```
< c      GADAMS PA-SCR-394 5-29-02: Moved these lines to earlier in the
< c      module.
< c      Added information to relcum.out.
< c - css - 12/4/02; SCR #394:  changed unit from 25 to 30
<        OPEN(30, FILE = 'relcum.out', STATUS = 'unknown')
<        WRITE(30, *)
<        WRITE(30, FMT = '(1x, 1PE15.5, 5x, A)') simtimex,
<      &   'Simulation Time'
<        WRITE(30, *)
< c      GADAMS PA-SCR-394 5-29-02: End of change
< c
< cc - css - 12/5/02; SCR #394:  remove tleach, tftc, tlt columns
< cc
< cc       WRITE(30, FMT = '(1x, A7,3x, A8, 4A20)') 'Type', '# Failed',
< cc     &   'Fail Time[yr]', 'SF-LCH Span[yr]',
< cc     &   'SF-LCH Onset[yr]', 'SF-LCH End[yr]'
<        WRITE(30, FMT = '(1x, A7,3x, A8, 4A20)') 'Type', '# Failed',
<      &   'Fail Time[yr]'
< cc - end change:  SCR #394
```

741,762c680,682

```
< c           GADAMS PA-SCR-394 5-29-02: Relcum would generate a number for
< c           the amount of corrosion failed waste packages.  This value
< c           would be generated even if corrosion failure did not occur
< c           within the time period.  When failt generates the file,
< c           ebstrh.dat.  If the corrosion failure time equals the end
< c           of simulation time, then no waste package failure occurred
< c           during the simulation period.  Therefore, in this module,
< c           set the number of waste packages failed due to corrosion
< c           to zero if the corrosion failure time equals the end of
< c           simulation time.
<             IF(cftime .GE. simtimex) THEN
<               numwp = 0
```

```
<              ELSE
<                numwp = icfcon
<              ENDIF
< c            GADAMS PA-SCR-394 5-29-02: End of change
<
<            ENDIF
<
<            IF(numwp .GT. 0 ) THEN
<              failure_time_initial = MIN(tfail, failure_time_initial)
<            ENDIF
---
>              numwp = icfcon
>            end if
```

896,921c817

```
< c          GADAMS PA-SCR-394 5-29-02: Added nuclide parameters to
< c          relcum.out
< c
< cc - css - 12/5/02; SCR #394:  remove tleach, tftc, & tlt columns
< cc            WRITE(30, FMT = '(1x, I7, I8, 8x, 4(1pe12.4, 8x))') itype,
< cc     &        numwp, tfail, tleach, tftc, tlt
<              WRITE(30, FMT = '(1x, I7, I8, 8x, 4(1pe12.4, 8x))') itype,
<       &        numwp, tfail
< cc - css: see "if (numwp.gt.0) then" above
<              else
<                WRITE(30, FMT = '(1x, I7, I8, 8x, 4(1pe12.4, 8x))') itype,
<       &          numwp, tfail
< cc      &          numwp, tfail, 0.0, 0.0, 0.0
< cc - end change:  SCR #394
<              ENDIF
<
< c          GADAMS PA-SCR-394 5-29-02: End of change
<
< cc - css - 12/6/02; SCR 394:  tleach no longer calculated, so
< cc                            there is no dissolution_time
< c          GADAMS PA-SCR-394 5-29-02: Added dissolution time
< cc            if(itype .EQ. 1) dissolution_time = tleach
< c          GADAMS PA-SCR-394 5-29-02: End of change
< cc - end change:  SCR #394
---
>            end if
```

1030,1044c926,927

```
< c        GADAMS PA-SCR-394 5-29-02: Moved to earlier in the module.
< c        Added nuclide data for relcum.dat.
< c - css - 12/4/02; SCR #394:  change unit #; 25 is already used
< c        open (25, file='relcum.out', status='unknown')
< c        write (25, 9001) simtimex
< c        GADAMS PA-SCR-394 5-29-02: End of change
<
< c       GADAMS PA-SCR-394 5-29-02: Modified relcum.out to contain
< c       addition nuclide data
```

```
<         WRITE(30, FMT = '(/, 1x, A10, 5A15)') 'Alloy Name',
<       &   'Halflife[yr]',
<       &   'xnoloss[ci]', 'amwp[ci]', 'xmass[ci]', 'Fraction Left'
< c       GADAMS PA-SCR-394 5-29-02: End of change
---
>          open (25, file='relcum.out', status='unknown')
>          write (25, 9001) simtimex
```

1061,1069c943

```
<
< c          GADAMS PA-SCR-394 5-29-02: Modified relcum.dat to display
< c          additional nuclide data.
< c - css - 12/4/02; SCR #394: change unit # to 30; 25 is being used
<            WRITE(30, FMT = '(1x, A10, 3x, 5(1pe12.4, 3x))') namall(k, i),
<       &      halflife(k, i), xnoloss(k, i), amwp(k, i, ntemp),
<       &      xmass(k, i, ntemp), pleft
< c             write (25, 9010) namall(k, i), xmass(k, i, ntemp),pleft
---
>              write (25, 9010) namall(k, i), xmass(k, i, ntemp),pleft
```

1072,1074c946

```
< c         close(25)
---
>          close(25)
```

1078,1082d949

```
< c        GADAMS PA-SCR-394 5-29-02: Added waste package fill time
<          fill_flag = .FALSE.
<          waste_package_fill_time = ttemp(ntemp)
```

1087,1104c954

```
< c              GADAMS PA-SCR-394 5-29-02: Added affected_nuclide to the
< c              output (trelease.out)
<                write (26, *) ttemp(itemp), xmass(k, i, itemp),
<       &          affected_nuclide(k, i, itemp)
< c              GADAMS PA-SCR-394 5-29-02: End of change
< c              GADAMS PA-SCR-394 5-29-02: Added waste package fill time
< c              Waste package fill time is based on nuclide CL36
<                IF(namall(k,i) .EQ. 'CL36') THEN
<                  IF( (.NOT. fill_flag) .AND.
<       &            (xmass(k, i, itemp) .GT. 0.0d0)) THEN
<                    waste_package_fill_time = ttemp(itemp) -
<       &              failure_time_initial
<                    fill_flag = .TRUE.
<                  ENDIF
<                ENDIF
< c              GADAMS PA-SCR-394 5-29-02: End of change
---
>                write (26, *) ttemp(itemp), xmass(k, i, itemp)
```

1109,1118d958

```
< c       GADAMS PA-SCR-394 5-29-02: Added waste package fill time to
< c       relcum.out
<         WRITE(30, *)
<         WRITE(30, FMT = '(1x, 1pe15.5, 5x, A)') waste_package_fill_time,
<      &    'Waste package fill time based on CL36'
<
<         close(30)
< c       GADAMS PA-SCR-394 5-29-02: End of change
```

1227,1231d1066

```
< c           GADAMS PA-SCR-394 5-29-02: Added affected flag to
< c           ebsnef.dat.
< c           This flag gets passed to ebsfilt and eventually is
< c           placed in the ebsrel.rlt file.
```

1233,1235c1068

```
<               write (20, 9003) tregular(itim), fracre(k, i, itim),
<      &          affected_nuclide(k, i, itim)
< c           GADAMS PA-SCR-394 5-29-02: End of change
---
>               write (20, 9003) tregular(itim), fracre(k, i, itim)
```

1285,1297d1117

```
< c       GADAMS PA-SCR-394 5-29-02: Added Dissolution time (tleach) as
< c       a parameter in the file.  This value is read by ebsrel and
< c       returned to the executive.
<         WRITE(24, *)
< cc - css - 12/6/02; SCR #394:  dissolution_time no longer calculated
< cc        WRITE(24, FMT = '(1x, 1pe12.4, 2x, A)') dissolution_time,
< cc     &    'SF-LCS Span[yr]'
< cc - end change:  SCR #394
<         WRITE(24, FMT = '(1x, 1pe12.4, 2x, A)') waste_package_fill_time,
<      &    'Waste package fill time[yr]'
< c       GADAMS PA-SCR-394 5-29-02: End of change
```

1408,1412c1227

```
< c       GADAMS PA-SCR-394 5-29-02: Added affected flag to ebsnef.dat
< c 9003   format (1x, 1pe12.4, 1x, 1pe12.4)
<  9003   FORMAT(2(1x, 1pe12.4), I4)
< c       GADAMS PA-SCR-394 5-29-02: End of change
---
>  9003   format (1x, 1pe12.4, 1x, 1pe12.4)
```

1426c1241,1246

```
<     subroutine liqrel(dtt, tcool, vtmp, itype, tend)
---
>     subroutine liqrel(      dtt, tcool,
>      1                  vtmp,       itype, tend           )
```

1432,1434c1252

```
< cc - css - 12/6/02; SCR #394:  remove variables no longer used
< cc      real*8 utotal
< cc - end change:  SCR #394
---
>       real*8 utotal
```

1442,1445c1260

```
< cc - css - 12/6/02; SCR #394:  remove variables no longer used
< cc        real*8 qout, qtmp, crf, drf, srate, sumre1, sumre2,
<          real*8 qout, qtmp, crf, drf, sumre1, sumre2,
< cc - end change:  SCR #394
---
>          real*8 qout, qtmp, crf, drf, srate, sumre1, sumre2,
```

1449,1451c1264

```
< cc - css - 12/6/02; SCR #394:  remove variables no longer used
< cc     &       tend, tfail, tftc, time, time1
<      &       tend, tfail, time1
---
>      &       tend, tfail, tftc, time, time1
```

1454c1267

```
<          real*8 tiny, tmp, tstart, tstop, ttemp,
---
>          real*8 tiny, tleach,      tmass0, tmp, tstart,tstop,ttemp,
```

1460,1462c1273

```
< cc - css - 12/9/02; SCR #394:  remove variables that are no longer used
< cc        integer ileach
< cc - end change:  SCR #394
---
>     integer ileach
```

1467,1469c1278

```
< cc - css - 12/6/02; SCR #394:  remove variables no longer used
< cc        real*8 sareap, sareat, uo2rate
< cc - end change:  SCR #394
---
>          real*8 sareap, sareat, uo2rate
```

1476,1478c1285

```
< cc - css - 12/6/02; SCR #394 - remove varibles no longer used
< cc        real*8 timintv, addtime
< cc - end change:  SCR #394
---
>          real*8 timintv, addtime
```

1496,1499c1303

```
< cc - css - 12/9/02; SCR #394:  remove variables that are no longer used
< cc        common /cwast1/ fueden, amassc,ileach
```

```
<          common /cwast1/ fueden, amassc
< cc - end change:  SCR #394
---
>          common /cwast1/ fueden, amassc,ileach
```

1516,1518c1320

```
< cc - css - 12/6/02; SCR #394:  remove variables no longer used
< cc     &                  ccfr(maxnuc, maxmem), tleach, nelem,
<       &                  ccfr(maxnuc, maxmem), nelem,
---
>       &                  ccfr(maxnuc, maxmem), tleach, nelem,
```

1521c1323

```
<       &                  amassl(maxnuc)
---
>       &                  amassl(maxnuc),       tftc
```

1910c1720,1721

```
<       1                  dtmax, nok, nbad, tiny, dydx)
---
>       1                  dtmax, nok, nbad, tiny,
>       2                             dydx       )
```

2035,2038c1851

```
< cc - css - 12/6/02; SCR #394:  remove variables no longer used
< cc     &       t, tavg,  tftc, tleach
<       &       t, tavg
< cc - end change:  SCR #394
---
>       &       t, tavg,  tftc, tleach
```

2042,2043d1854

```
< c       GADAMS PA-SCR-394 5-29-02: Added maxste for affected_nuclide
```

2045,2046c1856

```
<       &          maxnuc, maxtim,  nelem, maxste
---
>       &          maxnuc, maxtim,  nelem
```

2057,2059c1867

```
< cc - css - 12/9/02; SCR #394:  remove variables that are no longer used
< cc        integer ileach
< cc - end change:  SCR #394
---
>     integer ileach
```

2074,2076d1880

```
< c       GADAMS PA-SCR-394 5-29-02: Added maxste for affected_nuclide
<         parameter (maxste=402)
```

2083,2096d1886
```
< c       GADAMS PA-SCR-394 5-29-02: Display when a nuclide is affected by
< c       the element solubility
<         character*3 elem
<         character*6 namall
<         common /cnucl1/ elem(maxele), namall(maxnuc, maxmem)
<         LOGICAL affected_flag
< c     GADAMS PA-SCR-394 5-29-02: Added affected_nuclide to track
< c     concentration reaching solubility limit.
<      INTEGER affected_nuclide
<      COMMON /nuclide/ affected_nuclide(maxnuc, maxmem, maxste)
< c     GADAMS PA-SCR-394 5-29-02: End of change
<
< c       GADAMS PA-SCR-394 5-29-02: End of change
```

2098,2101c1888
```
< cc - css - 12/9/02; SCR #394:  remove variables that are no longer used
< cc        common /cwast1/ fueden, amassc,ileach
<         common /cwast1/ fueden, amassc
< cc - end change:  SCR #394
---
>         common /cwast1/ fueden, amassc,ileach
```

2122,2125c1909
```
< cc - css - 12/6/02; SCR #394: remove variables no longer used
< cc     &                  ccfr(maxnuc, maxmem), tleach, nelem,
<      &                  ccfr(maxnuc, maxmem), nelem,
< cc - end change:  SCR #394
---
>      &                  ccfr(maxnuc, maxmem), tleach, nelem,
```

2128c1912
```
<      &                  amassl(maxnuc)
---
>      &                  amassl(maxnuc),      tftc
```

2343,2350c2129,2132
```
< cc - css - 12/9/02; SCR #394:  remove variables that are no longer used
< cc         remove "if then" for ileach wherever it appears per email
< cc         from dick codell to ron janetzke 9/2/2002
< cc        else if (ileach.eq.1) then
< cc          sareap = 4. * pi* r0z**2
< ccc--       waste matrix leach rate from total wet mass UO2/wp
< cc          sareat = sareap*(amass0*xfrac)/(4./3.*pi*r0z**3*fueden)
< cc - end change:  SCR #394
---
>         else if (ileach.eq.1) then
>           sareap = 4. * pi* r0z**2
> c--       waste matrix leach rate from total wet mass UO2/wp
>           sareat = sareap*(amass0*xfrac)/(4./3.*pi*r0z**3*fueden)
```

```
2447,2452d2228
< c         GADAMS PA-SCR-394 5-29-02: Added affected flag to determine
< c         when the concentration is set to the solubility limit
<           affected_flag = .FALSE.
< c         GADAMS PA-SCR-394 5-29-02: End of change

2455,2472c2231
< c           GADAMS PA-SCR-394 5-29-02:  Blocked the IF statement to
< c           capture the solubility affects.
< c            if ( concn.gt.sol(ielem) ) concn = sol(ielem)
<             if ( concn.gt.sol(ielem) ) THEN
<
< c             GADAMS PA-SCR-394 5-29-02: Display when nuclide is
< c             affected by solubility limit.
<               affected_flag = .TRUE.
< c              print *, 'Concentration: ', concn, '  Solubility: ',
< c     &        sol(ielem), 'Name: ', elem(ielem)
< c             GADAMS PA-SCR-394 5-29-02: End of change
<
<               concn = sol(ielem)
<
<             endif
< c           GADAMS PA-SCR-394 5-29-02: End of change
---
>             if ( concn.gt.sol(ielem) ) concn = sol(ielem)

2486,2495d2244
<
< c             GADAMS PA-SCR-394 5-29-02: Identify when nuclide is
< c             affected by solubility limit.
<               IF(affected_flag) THEN
<                 affected_nuclide(mmi, mmj, it) = 1
<               ELSE
<                 affected_nuclide(mmi, mmJ, it) = 0
<               ENDIF
< c             GADAMS PA-SCR-394 5-29-02: End of change

2684c2441,2442
<      1                    nok, nbad, tiny, dydx)
---
>      1                    nok, nbad, tiny,
>      1                         dydx          )

3217,3219c2995
< cc - css - 12/9/02; SCR #394:  remove variables that are no longer used
< cc        integer ileach
< cc - end change:  SCR #394
---
>     integer ileach
```

```
3251,3254c3027
< cc - css - 12/9/02; SCR #394:  remove variables that are no longer used
< cc        common /cwast1/ fueden, amassc,ileach
<         common /cwast1/ fueden, amassc
< cc - end change:  SCR #394
---
>         common /cwast1/ fueden, amassc,ileach

3374,3376c3151
< cc - css - 12/9/02; SCR #394:  remove variables that are no longer used
< cc        integer ileach
< cc - end change:  SCR #394
---
>     integer ileach

3445,3448c3221
< cc - css - 12/9/02; SCR #394:  remove variables that are no longer used
< cc        common /cwast1/ fueden, amassc,ileach
<         common /cwast1/ fueden, amassc
< cc - end change:  SCR #394
---
>         common /cwast1/ fueden, amassc,ileach

3741,3744c3518
< cc - css - 12/9/02; SCR #394:  remove variables that are no longer used
< cc        read (4, *) fueden,ileach
<         read (4, *) fueden
< cc - end change:  SCR #394
---
>         read (4, *) fueden,ileach

3978c3758
<         real*8 amass, amassl, ccfr, ci1000, wleach
---
>         real*8 amass, amassl, ccfr, ci1000, tftc, tleach,      wleach

4010,4012c3790
< cc - css - 12/6/02; SCR #394:  remove variables no longer used
<      &                  ccfr(maxnuc, maxmem), nelem,
< cc - end change:  SCR #394
---
>      &                  ccfr(maxnuc, maxmem), tleach, nelem,

4016c3794
<      &                  amassl(maxnuc)
---
>      &                  amassl(maxnuc),      tftc

4113,4118d3892
```

```
< c       GADAMS PA-SCR-394 5-29-02: Modified this format statement
< c       to read the file in the format it was created by ebsrel.
< c       An error occurred retrieving the information after
< c       editing the file.
```

4122,4127c3896

```
< c 9001   format (a3, 2x, i5, 3F10.0)
<
< c 9001   format (a3, 2x, i5, 2F10.0)
<  9001   FORMAT(a3, 2x, i5, 3(1pe10.3))
< c       GADAMS PA-SCR-394 5-29-02: End of change
---
>  9001   format (a3, 2x, i5, 3F10.0)
```

4309,4313c4081

```
< cc - css - 12/6/02; SCR #394:  variables are declared real*8
< cc                             everywhere else
< cc      DOUBLE PRECISION ds_time_mark, fraction_failed_first,
<       real*8 ds_time_mark, fraction_failed_first,
< cc - end change:  SCR #394
---
>       DOUBLE PRECISION ds_time_mark, fraction_failed_first,
```

4366,4370c4135

```
< cc - css - 12/6/02; SCR #394:  variables are declared as real*8
< cc                             everywhere else
< cc      DOUBLE PRECISION frac_weld_surf, weld_failure_time
<       real *8 frac_weld_surf, weld_failure_time
< cc - end change:  SCR #394
---
>       DOUBLE PRECISION frac_weld_surf, weld_failure_time
```

4375,4379c4140

```
< cc - css - 12/6/02; SCR #394:  cftime & tcaqu are declared
< cc            as real*8 everywhere else
< cc      DOUBLE PRECISION cftime, tcaqu
<       real*8 cftime, tcaqu
< cc - end change:  SCR #394
---
>       DOUBLE PRECISION cftime, tcaqu
```

TPA.INP

Remove SurfaceArealModel. Comment out:

```
** css 12/9/02; SCR #394:this sampled parameter was
** read in for ileach in ebsrel.f, but is  no longer used
**iconstant
**SurfaceAreaModel
**1
```

Test Plan for TPA SCR# 394

Test Plan Name: Test Plan for Module RELEASET

Tested By: Carol S. Scherer

Date: December 16, 2002

Host Machine: SUN Ultra-4 Server: spock

Host OS: Solaris 5.8

Baseline Version: 5.0betaB

Test Version: 5.0betaB w/ mods

Process Level Tests

The process level test in this section is designed to verify the RELEASET module can generate the following additional information:

1) waste package fill time,

2) the period over which the solubility limit is activated for each nuclide.

PL-1 Verification of Output Files

1.0 Path for Run Directory

$HOME = /net/spock/home/cscherer
<<Run Directory>> $HOME/tpatest/scr394/pltest

2.0 Path for Archived Results

<<Run Directory>>/pl-1

3.0 Environment Variables

TPA_TEST = $HOME/tpatest/scr394

TPA_DATA = $HOME/tpatest/scr394

4.0 Special Input Files or Modifications to Input Files Required

4.1 The following input files from the 5.0betaB distribution are required: ebspac.nuc, ebsrel.inp, ebstrh.dat, ebsflo.dat.

5.0 Special Diagnostic Code Modifications Required: None

6.0 Program Modes to be Used

None

7.0 Utility Scripts Needed to Perform the Test

None

8.0 Test Description

8.1 Objective: This test is designed to verify that the RELEASET module can generate: 1) solubility limit affected and 2) waste package fill time time.

8.2 Assumptions: none

8.3 Constraints: none

8.4 Output Files: cumrelse.out, diagnose.out, ebsnef.dat, relfrac.out, trelease.out, relcum.out, maxrel.dat, frac_rel.out, inv1000.out.

8.5 Procedure:

1. At the command prompt from the <<Run Directory>>, type the following:, "releaset.e > scr394_pl1.out." The screen output is captured to a file labeled, "scr394_pl1.out."

2. Upon completion, open the output files, "relfrac.out," "relcum.out," "ebsnef.dat," and "trelease.out."

3. For files, "ebsnef.dat" and "trelease.out," verify a third column, solubility limit affected flag, was added for each nuclide and the information corresponds between the "trelease.out" file and the "ebsnef.dat" file.

4. Verify "relcum.out" contains a waste package fill time that corresponds to the difference between the time the release rate goes positive (for nuclide CL36) in "trelease.out" and the first failure time.

5. Verify "relfrac.out" contains the same waste package fill time as "relcum.out."

8.6 Pass/Fail Criteria: The four files, "relfrac.out," "relcum.out', "ebsnef.dat," and "trelease.out" are created and contain the addition information of waste package fill time, and solubility limit affected in accordance with Section 8.5 Steps 3, 4, 5, and 6.

9.0 Test Results (Test Results documented in Scientific Notebook 170-4E.)

9.1 Output and Supporting Files: The files identified in Section 4 and 8 shall be archived in directory <<Run Directory>>/pl-1.

9.2 Criterion 1: Verify the output files contain the required additional information of solubility limit affected and waste package fill time in accordance with Section 8.5, Steps 3, 4, and 5.

9.3 Overall Test Status:

This test successfully **PASSED** the criterion above.

System Level Tests

The system level test in this section is designed to verify that the EXEC and EBSREL modules can correctly process the addition information generated by RELEASET. The following additional information is processed:

1) waste package fill time

2) the period over which the solubility limit is activated for each nuclide.

SL-1 Verification of Integration

1.0 Path for Run Directory

$HOME = /net/spock/home/cscherer

<<Run Directory>> = $HOME/tpatest/scr394/sltest

2.0 Path for Archived Results

<<Run Directory>>/sl-1

3.0 Environment Variables

TPA_TEST = $HOME/tpatest/scr394

TPA_DATA = $HOME/tpatest/scr394

4.0 Special Input Files or Modifications to Input Files Required

4.1 The file, "tpa.inp" is required. The following modifications are required in this file:

Parameter	Value
Modify the following parameters: SelectAppendFiles	Set the parameter value to 7 to allow the ebsrel.ech and ebsrel.rlt files to be generated.
OutputMode(0=None, 1=All, 2=UserDefined)	Set the parameter value to 2 for user-defined output.
NumberOfRealizations	5
UserDefinedLowerRealizationAppended	1
UserDefinedUpperRealizationAppended	5
DurationOfCompliancePeriod[yr]	1.oe5
MaximumTime[yr]	1.oe5
NumberOfTimeStepsInCompliancePeriod	251
RatioOfLastToFirstTimeStepInCompliancePeriod	1.0

5.0 Special Diagnostic Code Modifications Required: None

6.0 Program Modes to be Used

6.1 As specified in Section 4.1, generate the echo (ebsrel.ech) and result (ebsrel.rlt) files by setting the append option (SelectAppendFiles) to 7 in "tpa.inp."

7.0 Utility Program Needed to Perform the Test

None

8.0 Test Description

8.1 This test is designed to verify that the EXEC and EBSREL modules can correctly process the addition information generated by RELEASET.

8.2 Assumptions: none

8.3 Constraints: none

8.4 Output Files: ebsrel.rlt and ebsrel.ech

8.5 Procedure:

1. At the command prompt from the <<Run Directory>>, type the following:, "tpa.e > scr394_sl1.out." Screen output will be captured to scr394_sl1.out.

2. Within this file, observe the following message for each subarea calculation, "exec: calling ebsrel." Verify that the TPA code executes to completion without generating run-time errors or aborting.

3. Upon completion, open the result file, "ebsrel.rlt." For the last realization and subarea, verify the following:

a. The file contains the same release information as that in relcum.out.

b. The file contains the same solubility affected flag information as that contained in ebsnef2.dat.

c. The solubility limit affected subarea averages and number of cycles correspond to the time-step information.

4. Within "ebsrel.rlt," solubility limit affected and fill time values for all realizations correspond to the subarea information.

8.6 Pass/Fail Criteria: The TPA code executes without error. The additional information generated by RELEASET is correctly processed and stored in file, "ebsrel.rlt" in accordance with Section 8.5, Steps 3 and 4.

9.0 Test Results (Test Results documented in Scientific Notebook 170-4E.)

9.1 Output and Supporting Files: The files identified in Sections 4 and 8 shall be archived in directory <<Run Directory>>/sl-1.

9.2 Criterion 1: The TPA code executes without generating run-time errors or aborting.

9.3 Criterion 2: The solubility limit affected and fill time are correctly processed and stored in file, "ebsrel.rlt" in accordance with Section 8.5, Steps 3 and 4.

9.4 Overall Test Status:

This test successfully **PASSED** the criterion above.

SL-2 Verification of No Side Effects

1.0 Path for Run Directory

$HOME = /net/spock/home/cscherer

<<Run Directory>> = $HOME/tpatest/scr394/sltest

2.0 Path for Archived Results

<<Run Directory>>/sl-2

3.0 Environment Variables

TPA_TEST = $HOME/tpatest/scr394

TPA_DATA = $HOME/tpatest/scr394

4.0 Special Input Files or Modifications to Input Files Required

4.1 The file, "tpa.inp" is required. The following modifications are required in this file:

Parameter	Value
Modify the following parameters:	
SelectAppendFiles	7
OutputMode(0=None, 1=All, 2=UserDefined)	2
MaximumTime[yr]	1.oe5

5.0 Special Diagnostic Code Modifications Required:

5.1 At approximately line 1082 in the TPA 5.0betaB version of ebsrel.f, change the line "ILEACH = 1" to ILEACH = 0".

6.0 Program Modes to be Used

6.1 As specified in Section 4.1, generate the echo (ebsrel.ech) and result (ebsrel.rlt) files by setting the append option (SelectAppendFiles) to 7 in "tpa.inp."

7.0 Utility Program Needed to Perform the Test: None.

8.0 Test Description

8.1 This test is designed to verify that the modifications made to TPA generate no unwanted side effects.

8.2 Assumptions: none

8.3 Constraints: none

8.4 Output Files: all

8.5 Procedure:

1. Compile a version of the TPA 5.0betaB tpa.e using the modification listed in 5.0. Save as tpa_ileach0.e. Compile a version of TPA using the modifications listed in SCR #394. Save as tpa_mod394.e.

2. At the command prompt from the <<Run Directory>>, using tpa_ileach0.e, type the following: tpa.e > scr394_sl2_ileach0.out. Screen output will be captured to scr394_sl2_ileach0.out.

3. Copy the output files from the first run to the subdirectory sltest/basecase_ileach0.

4. At the command prompt from the <<Run Directory>>, using tpa_mod394.e, type the following: tpa.e > scr394_sl2.out. Screen output will be captured to scr394_sl2.out.

5. Copy the output files from the second run to the subdirectory sltest/sl-2.

6. In both runs, verify that the TPA code executes to completion without generating run-time errors or aborting.

7. Compare the output files from both runs. Verify that the only difference in the files are dime/date stamps and the expected format differences. The values in the files should be the same.

8.6 Pass/Fail Criteria: The TPA code executes without error. Differences in output files are in accordance wiith Section 8.5, Step 4.

9.0 Test Results (Test Results documented in Scientific Notebook 170-4E.)

9.1 Output and Supporting Files: The files identified in Sections 4 and 8 shall be archived in directory <<Run Directory>>/sl-2.

9.2 Criterion 1: The TPA code executes without generating run-time errors or aborting.

9.3 Criterion 2: The output values are in accordance with Section 8.5, Step 7.

9.4 Overall Test Status:

This test successfully **PASSED** the criterion above.

Contents of CD

SCR #394 directory listing — TPA SCR #394 — 12/16/02 2:52 PM

unix format except where noted (Windows - Corel WordPerfect, W.wtp)

```
scr394:
total 37960
drwxr-xr-x  20 cscherer sunuser      9216 Dec 13 13:58 .
drwxr-xr-x  30 cscherer sunuser      6144 Dec 16 14:48 ..
drwxr-xr-x   2 cscherer sunuser      7168 Nov 27 11:12 50Bdefaultfiles
drwxr-xr-x   2 cscherer sunuser      7168 Nov 27 11:01 50Bsolappsfiles
-rwxr-xr-x   1 cscherer sunuser      2001 Sep 18 16:52 CLEANUP
-rw-r--r--   1 cscherer sunuser       965 Dec 13 11:49 FILENAME.DAT
-rw-r--r--   1 cscherer sunuser       904 Dec  2 14:42 Makefile
-rw-r--r--   1 cscherer sunuser       869 Sep  6 12:08 Makefile_betaB
-rw-r--r--   1 cscherer sunuser       904 Dec  2 14:42 Makefile_solapps
-rw-r--r--   1 cscherer sunuser       865 Dec  2 14:43 Makefile_solapps_onlytpa
-rw-r--r--   1 cscherer sunuser      1437 Dec 13 11:49 NEFII.VEL
-rw-r--r--   1 cscherer sunuser      2746 Dec 13 11:49 airpkdos.res
-rw-r--r--   1 cscherer sunuser      2746 Dec 13 11:49 arpkds_c.res
-rw-r--r--   1 cscherer sunuser     29502 Nov 15 17:28 array.f
-rw-r--r--   1 cscherer sunuser     51364 Dec 13 11:34 array.o
-rw-r--r--   1 cscherer sunuser       914 Dec 13 11:49 ashout.res
-rw-r--r--   1 cscherer sunuser     20601 Sep 11 13:41 ashplumo.f
-rw-r--r--   1 cscherer sunuser     45552 Dec 13 11:34 ashplumo.o
-rw-r--r--   1 cscherer sunuser     37612 Sep 13 12:12 ashrmovo.f
-rw-r--r--   1 cscherer sunuser     46800 Dec 13 11:34 ashrmovo.o
drwxr-xr-x   2 cscherer sunuser       512 Dec 10 12:26 baseline
-rw-r--r--   1 cscherer sunuser      1025 Dec 13 11:43 burnup.dat
drwxr-xr-x   2 cscherer sunuser       512 Nov 15 13:05 ccdf
-rwxrwxrwx   1 cscherer sunuser       142 Nov 19 10:36 ch_env
-rw-r--r--   1 cscherer sunuser      7547 Dec 13 11:49 chlrdmf.dat
-rw-r--r--   1 cscherer sunuser    850000 Dec 13 11:44 climato1.dat
-rw-r--r--   1 cscherer sunuser      2200 Dec 13 11:44 climato2.dat
drwxr-xr-x   6 cscherer sunuser      2560 Dec 13 11:40 codes
-rw-r--r--   1 cscherer sunuser      4791 Dec 13 11:44 coefkdeq.dat
-rw-r--r--   1 cscherer sunuser       608 Sep 20 20:44 coefkdeq.i
-rw-r--r--   1 cscherer sunuser     10207 Feb 15  2002 condxyzt.f
-rw-r--r--   1 cscherer sunuser      3408 Dec 13 11:38 condxyzt.o
-rw-r--r--   1 cscherer sunuser     18979 Dec 13 11:49 corrode.out
-rw-r--r--   1 cscherer sunuser     78453 Dec 13 11:49 cp.tpa
-rw-r--r--   1 cscherer sunuser      2252 Dec 13 11:49 cumrel.res
-rw-r--r--   1 cscherer sunuser      2252 Dec 13 11:49 cumrel_c.res
-rw-r--r--   1 cscherer sunuser     69680 Dec 13 11:49 cumrelse.out
drwxr-xr-x   2 cscherer sunuser      1536 Dec 13 11:06 data
-rw-r--r--   1 cscherer sunuser    115312 Sep 13 10:23 dcags.f
-rw-r--r--   1 cscherer sunuser    252684 Dec 13 11:35 dcags.o
-rw-r--r--   1 cscherer sunuser    155845 Sep 25 13:26 dcagw.f
-rw-r--r--   1 cscherer sunuser    336292 Dec 13 11:35 dcagw.o
-rw-r--r--   1 cscherer sunuser      9993 Dec 13 11:49 deltaec.inp
-rw-r--r--   1 cscherer sunuser     14700 Dec 13 11:49 diagnose.out
drwxr-xr-x   2 cscherer sunuser       512 Dec 13 11:55 diffs
-rw-r--r--   1 cscherer sunuser      2033 Dec 13 11:49 dilution.dat
drwxr-xr-x   2 cscherer sunuser       512 Dec 16 13:50 docs
-rw-r--r--   1 cscherer sunuser      3870 Dec 13 11:43 drifts.dat
-rw-r--r--   1 cscherer sunuser       190 Sep 20 09:32 driftsa.i
-rw-r--r--   1 cscherer sunuser       519 Dec 13 11:44 drythick.dat
-rw-r--r--   1 cscherer sunuser     23141 Nov 17 18:05 dsfail.f
-rw-r--r--   1 cscherer sunuser     28012 Dec 13 11:35 dsfail.o
-rw-r--r--   1 cscherer sunuser      2951 Dec 13 11:44 dsfailt.dat
-rw-r--r--   1 cscherer sunuser       791 Dec 13 11:44 dsfailt.def
-rwxr-xr-x   1 cscherer sunuser     43236 Dec 13 11:44 dsfailt.e
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-rw-r--r--   1 cscherer sunuser       610 Dec 13 11:44 dsfailt.inp
-rw-r--r--   1 cscherer sunuser        34 Dec 13 11:44 dsfailt.out
-rw-r--r--   1 cscherer sunuser     65260 Dec 13 11:49 ebscld.out
-rw-r--r--   1 cscherer sunuser      6265 Dec 13 11:44 ebsfail.def
-rw-r--r--   1 cscherer sunuser     48674 Sep  4 19:25 ebsfail.f
-rw-r--r--   1 cscherer sunuser      6222 Dec 13 11:49 ebsfail.inp
-rw-r--r--   1 cscherer sunuser    117596 Dec 13 11:35 ebsfail.o
-rw-r--r--   1 cscherer sunuser       790 Dec 13 11:44 ebsfilt.def
-rwxr-xr-x   1 cscherer sunuser     41968 Dec 13 11:44 ebsfilt.e
-rw-r--r--   1 cscherer sunuser     13526 Nov 18 12:47 ebsfilt.f
-rw-r--r--   1 cscherer sunuser      3030 Dec 13 11:49 ebsfilt.inp
-rw-r--r--   1 cscherer sunuser       239 Dec 13 11:49 ebsfilt.out
-rw-r--r--   1 cscherer sunuser      1450 Dec 13 13:58 ebsfilt_diffs.txt
-rw-r--r--   1 cscherer sunuser     13526 Nov 18 12:47 ebsfilt_mod394.f
-rwxr--r--   1 cscherer sunuser     13828 Jun  4  2002 ebsfilt_v4111.f
-rw-r--r--   1 cscherer sunuser     12568 Sep 26  2000 ebsfilt_v41j.f
-rw-r--r--   1 cscherer sunuser     20929 Dec 13 11:49 ebsflo.dat
-rw-r--r--   1 cscherer sunuser    251401 Dec 13 11:49 ebsnef.dat
-rw-r--r--   1 cscherer sunuser    186252 Dec 13 11:49 ebsnef.out
-rw-r--r--   1 cscherer sunuser    658449 Dec 13 11:49 ebsnef2.dat
-rw-r--r--   1 cscherer sunuser      1883 Dec 13 11:49 ebspac.nuc
-rw-r--r--   1 cscherer sunuser      9451 Dec 13 11:49 ebsrel.cum
-rw-r--r--   1 cscherer sunuser      5546 Dec 13 11:44 ebsrel.def
-rw-r--r--   1 cscherer sunuser    426149 Dec 13 11:49 ebsrel.ech
-rw-r--r--   1 cscherer sunuser     82484 Dec 12 13:50 ebsrel.f
-rw-r--r--   1 cscherer sunuser     11211 Dec 13 11:49 ebsrel.inp
-rw-r--r--   1 cscherer sunuser    211800 Dec 13 11:36 ebsrel.o
-rw-r--r--   1 cscherer sunuser   1554514 Dec 13 11:49 ebsrel.rlt
-rw-r--r--   1 cscherer sunuser       149 Sep 25 12:15 ebsrel1.i
-rw-r--r--   1 cscherer sunuser     77434 Dec 13 11:04 ebsrel_base_ileach0.f
-rw-r--r--   1 cscherer sunuser     77391 Nov 17 18:08 ebsrel_betaB.f
-rw-r--r--   1 cscherer sunuser       147 Dec 13 13:55 ebsrel_def_diffs.txt
-rw-r--r--   1 cscherer sunuser      9835 Dec 13 13:53 ebsrel_diffs.txt
-rw-r--r--   1 cscherer sunuser     11211 Dec  6 12:53 ebsrel_ileach.inp
-rw-r--r--   1 cscherer sunuser     80283 Dec  2 14:38 ebsrel_isa.f
-rw-r--r--   1 cscherer sunuser     80215 Nov 26 13:09 ebsrel_mod394a.f
-rw-r--r--   1 cscherer sunuser     82204 Dec  6 11:17 ebsrel_mod394b.f
-rw-r--r--   1 cscherer sunuser     82492 Dec  9 11:28 ebsrel_mod394c.f
-rw-r--r--   1 cscherer sunuser     82484 Dec 12 13:50 ebsrel_mod394d_noileach.f
-rw-r--r--   1 cscherer sunuser     81701 Dec  3 12:13 ebsrel_test_iaf.f
-rw-r--r--   1 cscherer sunuser     85193 Dec  4 13:17 ebsrel_test_iaf2.f
-rw-r--r--   1 cscherer sunuser     82525 Dec 12 13:05 ebsrel_test_ileach.f
-rwxr--r--   1 cscherer sunuser     55268 Jun  4  2002 ebsrel_v4111.f
-rw-r--r--   1 cscherer sunuser     50784 Sep 26  2000 ebsrel_v41j.f
-rw-r--r--   1 cscherer sunuser    186203 Dec 13 11:49 ebssf.dat
-rw-r--r--   1 cscherer sunuser     25515 Dec 13 11:49 ebstrh.dat
-rw-r--r--   1 cscherer sunuser     18435 Dec 13 11:49 ebstrhc.inp
-rw-r--r--   1 cscherer sunuser      2711 Dec 13 11:49 echofail.dat
-rw-r--r--   1 cscherer sunuser    667001 Dec 13 11:49 echofilt.dat
-rwxr-xr-x   1 cscherer sunuser    191664 Dec 13 11:49 env.e
-rwxr-xr-x   1 cscherer sunuser    282984 Dec 13 11:49 envin.e
-rw-r--r--   1 cscherer sunuser     39354 Dec 13 11:49 epa_ave.out
-rw-r--r--   1 cscherer sunuser      1707 Dec 13 11:49 epapktim.out
-rw-r--r--   1 cscherer sunuser    361507 Dec 12 12:48 exec.f
-rw-r--r--   1 cscherer sunuser    956192 Dec 13 11:38 exec.o
-rw-r--r--   1 cscherer sunuser    350165 Nov 18 11:24 exec_betaB.f
-rw-r--r--   1 cscherer sunuser     13148 Dec 13 13:53 exec_diffs.txt
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-rw-r--r--   1 cscherer sunuser    359885 Dec  2 14:50 exec_isa.f
-rw-r--r--   1 cscherer sunuser    359816 Dec  2 13:54 exec_mod394a.f
-rw-r--r--   1 cscherer sunuser    361460 Dec  6 11:23 exec_mod394b.f
-rw-r--r--   1 cscherer sunuser    361462 Dec  9 13:11 exec_mod394c.f
-rw-r--r--   1 cscherer sunuser    361507 Dec 12 12:48 exec_mod394d.f
-rw-r--r--   1 cscherer sunuser    359921 Dec  4 13:17 exec_test_iaf1.f
-rw-r--r--   1 cscherer sunuser    360742 Dec  4 13:40 exec_test_iaf2.f
-rwxr--r--   1 cscherer sunuser    306860 Jun  4  2002 exec_v4111.f
-rw-r--r--   1 cscherer sunuser    280312 May  8  2001 exec_v41j.f
-rw-r--r--   1 cscherer sunuser      2385 Sep 21 10:07 execa.i
-rw-r--r--   1 cscherer sunuser       486 Sep  3  1997 execb.i
-rw-r--r--   1 cscherer sunuser       269 May 29  2002 execc.i
-rwxr-xr-x   1 cscherer sunuser    140336 Dec 13 11:44 failt.e
-rw-r--r--   1 cscherer sunuser     22703 Dec 13 11:49 failt.out
-rw-r--r--   1 cscherer sunuser      8503 Feb 15  2002 faulto.f
-rw-r--r--   1 cscherer sunuser     10828 Dec 13 11:36 faulto.o
-rw-r--r--   1 cscherer sunuser      6599 May 29  2002 fileunit.f
-rw-r--r--   1 cscherer sunuser      8588 Dec 13 11:38 fileunit.o
-rw-r--r--   1 cscherer sunuser      5784 Feb 15  2002 findelev.f
-rw-r--r--   1 cscherer sunuser      9708 Dec 13 11:38 findelev.o
-rw-r--r--   1 cscherer sunuser      9381 Dec 13 11:44 fluoride.dat
-rw-r--r--   1 cscherer sunuser     69680 Dec 13 11:49 frac_rel.out
drwxr-xr-x   2 cscherer sunuser       512 Nov 14 12:44 fromron
drwxr-xr-x   3 cscherer sunuser       512 Dec  4 16:20 fromv411
-rw-r--r--   1 cscherer sunuser        60 Aug 16  1997 fu1.i
-rw-r--r--   1 cscherer sunuser       609 Sep  4 19:29 fu2.i
-rw-r--r--   1 cscherer sunuser      6513 Dec 13 11:49 gbioac1.dat
-rw-r--r--   1 cscherer sunuser      3383 Dec 13 11:49 gdefault.def
-rw-r--r--   1 cscherer sunuser      3387 Dec 13 11:49 gdefault.inp
-rw-r--r--   1 cscherer sunuser        64 Dec 13 11:49 gdosinc2.dat
-rw-r--r--   1 cscherer sunuser         0 Dec 13 11:49 gentoo.out
-rw-r--r--   1 cscherer sunuser     35173 Dec 13 11:49 genv.in
-rw-r--r--   1 cscherer sunuser     18393 Dec 13 11:49 genv.out
drwxr-xr-x   2 cscherer sunuser       512 Nov 15 13:00 georgemods
-rw-r--r--   1 cscherer sunuser      7011 Dec 13 11:49 gftrans.def
-rw-r--r--   1 cscherer sunuser      7142 Dec 13 11:49 gftrans.inp
-rw-r--r--   1 cscherer sunuser     15214 Dec 13 11:49 ggamen.dat
-rw-r--r--   1 cscherer sunuser     13855 Dec 13 11:49 ggenii.def
-rw-r--r--   1 cscherer sunuser     13164 Dec 13 11:49 ggenii.inp
-rw-r--r--   1 cscherer sunuser     10074 Dec 13 11:49 ggenii.out
-rw-r--r--   1 cscherer sunuser      5351 Dec 13 11:49 ggrdf.dat
-rw-r--r--   1 cscherer sunuser      5673 Dec 13 11:49 gmedia.out
-rw-r--r--   1 cscherer sunuser      9897 Dec 13 11:49 gnewdf.dat
-rw-r--r--   1 cscherer sunuser     13200 Dec 13 11:49 grmdlib.dat
-rw-r--r--   1 cscherer sunuser       572 Dec 13 11:49 gsccdf.res
-rw-r--r--   1 cscherer sunuser       572 Dec 13 11:49 gsccdf_c.res
-rw-r--r--   1 cscherer sunuser      3561 Dec 13 11:49 gw_cb_ad.dat
-rw-r--r--   1 cscherer sunuser      1264 Dec 13 11:49 gw_cb_ci.dat
-rw-r--r--   1 cscherer sunuser      3557 Dec 13 11:49 gw_pb_ad.dat
-rw-r--r--   1 cscherer sunuser      1261 Dec 13 11:49 gw_pb_ci.dat
-rw-r--r--   1 cscherer sunuser       572 Dec 13 11:49 gwccdf.res
-rw-r--r--   1 cscherer sunuser       572 Dec 13 11:49 gwccdf_c.res
-rw-r--r--   1 cscherer sunuser         9 Dec 13 11:49 gwork.buf
-rw-r--r--   1 cscherer sunuser      1738 Dec 13 11:49 gwpkdos.res
-rw-r--r--   1 cscherer sunuser      1738 Dec 13 11:49 gwpkds_c.res
-rw-r--r--   1 cscherer sunuser      2170 Dec 13 11:49 gwttuzsz.res
-rw-r--r--   1 cscherer sunuser      1229 Jul 22  1999 ia.i
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-rw-r--r--   1 cscherer sunuser       956 Sep 26  2000 ia1.i
-rw-r--r--   1 cscherer sunuser     38724 Feb 15  2002 iareader.f
-rw-r--r--   1 cscherer sunuser     54028 Dec 13 11:36 iareader.o
-rw-r--r--   1 cscherer sunuser      3110 Dec 13 11:49 infilper.res
-rw-r--r--   1 cscherer sunuser      1102 Dec 13 11:49 inv1000.out
-rw-r--r--   1 cscherer sunuser     68121 Sep 25 12:07 invent.f
-rw-r--r--   1 cscherer sunuser     86480 Dec 13 11:36 invent.o
-rw-r--r--   1 cscherer sunuser        33 Sep 25 12:15 invent_.i
-rw-r--r--   1 cscherer sunuser        57 Aug 16  1997 inventa.i
-rw-r--r--   1 cscherer sunuser       182 Sep 25 12:14 inventb.i
-rw-r--r--   1 cscherer sunuser       344 Sep 25 12:14 inventc.i
-rw-r--r--   1 cscherer sunuser       124 Sep 25 12:14 inventd.i
-rw-r--r--   1 cscherer sunuser       131 Sep 25 12:14 invente.i
-rw-r--r--   1 cscherer sunuser       130 Sep 25 12:14 inventf.i
-rw-r--r--   1 cscherer sunuser       128 Sep 25 12:14 inventg.i
-rw-r--r--   1 cscherer sunuser       127 Sep 25 12:14 inventh.i
-rw-r--r--   1 cscherer sunuser        75 Aug 16  1997 inventi.i
-rw-r--r--   1 cscherer sunuser       288 Sep 25 12:14 inventj.i
-rw-r--r--   1 cscherer sunuser       332 Sep 25 12:14 inventk.i
-rw-r--r--   1 cscherer sunuser       150 Sep 25 12:14 inventl.i
-rw-r--r--   1 cscherer sunuser       315 Sep 25 12:14 inventm.i
-rw-r--r--   1 cscherer sunuser       175 Sep 25 12:15 inventn.i
-rw-r--r--   1 cscherer sunuser       249 Jan 29  2000 invento.i
-rw-r--r--   1 cscherer sunuser       267 Sep 25 12:15 inventp.i
-rw-r--r--   1 cscherer sunuser         0 Nov 26 13:55 lhs.csv
-rw-r--r--   1 cscherer sunuser     40006 Dec 13 11:43 lhs.inp
-rw-r--r--   1 cscherer sunuser      5268 Dec 13 11:44 lhs.out
-rw-r--r--   1 cscherer sunuser     69312 Dec 13 11:44 lhse.out
-rw-r--r--   1 cscherer sunuser      4720 Dec 13 11:38 linintrp.o
-rwxrwxrwx   1 cscherer sunuser        31 Dec  3 09:28 list_exe
-rw-r--r--   1 cscherer sunuser        78 Aug 16  1997 max500yr.i
-rw-r--r--   1 cscherer sunuser        99 Sep 25 12:10 maxchain.i
-rw-r--r--   1 cscherer sunuser       149 Sep 25 12:50 maxclchn.i
-rw-r--r--   1 cscherer sunuser       144 Sep 25 12:50 maxclnuc.i
-rw-r--r--   1 cscherer sunuser       508 Sep 25 12:11 maxnnucl.i
-rw-r--r--   1 cscherer sunuser       299 Jul 10  1998 maxnsuba.i
-rw-r--r--   1 cscherer sunuser       206 May 28  1999 maxntime.i
-rw-r--r--   1 cscherer sunuser      1095 Dec 13 11:49 maxrel.dat
-rwxr-xr-x   1 cscherer sunuser    943775 Dec 13 11:44 maydtbl.dat
-rw-r--r--   1 cscherer sunuser    519279 Dec 13 11:44 mechfail.dat
-rw-r--r--   1 cscherer sunuser     11267 Dec 13 11:44 mechfail.def
-rwxr-xr-x   1 cscherer sunuser    113840 Dec 13 11:44 mechfail.e
-rw-r--r--   1 cscherer sunuser     35413 Dec 13 11:44 mechfail.inp
-rw-r--r--   1 cscherer sunuser         0 Dec 13 11:44 mechfail.out
drwxr-xr-x   2 cscherer sunuser      1024 Dec  4 15:41 merge
drwxr-xr-x   2 cscherer sunuser       512 Dec 13 13:44 mods
-rw-r--r--   1 cscherer sunuser      1254 Dec 13 11:44 multifaf.dat
-rw-r--r--   1 cscherer sunuser      1255 Dec 13 11:44 multifbe.dat
-rw-r--r--   1 cscherer sunuser     11850 Feb 15  2002 mv.f
-rw-r--r--   1 cscherer sunuser     19424 Dec 13 11:36 mv.o
-rw-r--r--   1 cscherer sunuser     61241 Dec 13 11:49 mv.tpa
-rw-r--r--   1 cscherer sunuser       111 Sep  4  1997 mva.i
-rw-r--r--   1 cscherer sunuser        56 Aug 16  1997 mvb.i
-rw-r--r--   1 cscherer sunuser        57 Aug 16  1997 mvc.i
-rw-r--r--   1 cscherer sunuser       101 Aug 16  1997 mvd.i
-rw-r--r--   1 cscherer sunuser        72 Aug 16  1997 mve.i
-rw-r--r--   1 cscherer sunuser        72 Aug 16  1997 mvf.i
```

```
-rw-r--r--   1 cscherer sunuser      3110 Dec 13 11:49 nearfld.res
-rw-r--r--   1 cscherer sunuser   1550562 Dec 13 11:49 nefii.dis
-rw-r--r--   1 cscherer sunuser     11320 Dec 13 11:49 nefii.inp
-rw-r--r--   1 cscherer sunuser   1952215 Dec 13 11:49 nefii.out
-rw-r--r--   1 cscherer sunuser       603 Dec 13 11:49 nefii.rel
-rw-r--r--   1 cscherer sunuser   1550562 Dec 13 11:49 nefiisz.dis
-rw-r--r--   1 cscherer sunuser     11320 Dec 13 11:49 nefiisz.inp
-rw-r--r--   1 cscherer sunuser   1952215 Dec 13 11:49 nefiisz.out
-rw-r--r--   1 cscherer sunuser    301832 Dec 13 11:49 nefiisz.src
-rw-r--r--   1 cscherer sunuser      1437 Dec 13 11:49 nefiisz.vel
-rw-r--r--   1 cscherer sunuser    188096 Dec 13 11:47 nefiiuz.dis
-rw-r--r--   1 cscherer sunuser     10100 Dec 13 11:47 nefiiuz.inp
-rw-r--r--   1 cscherer sunuser    448930 Dec 13 11:47 nefiiuz.out
-rw-r--r--   1 cscherer sunuser    255898 Dec 13 11:47 nefiiuz.src
-rw-r--r--   1 cscherer sunuser       822 Dec 13 11:47 nefiiuz.vel
-rwxr-xr-x   1 cscherer sunuser    391504 Dec 13 11:44 nefmks.e
-rw-r--r--   1 cscherer sunuser      1900 Dec 13 11:49 nefmks.log
-rw-r--r--   1 cscherer sunuser    110051 Nov 17 18:23 nfenv.f
-rw-r--r--   1 cscherer sunuser     98120 Dec 13 11:36 nfenv.o
-rw-r--r--   1 cscherer sunuser       326 Nov 17 18:24 nfenvadj.i
-rw-r--r--   1 cscherer sunuser        94 Aug 16  1997 nintv.i
-rw-r--r--   1 cscherer sunuser      1502 Jun 11  1997 notice.i
-rw-r--r--   1 cscherer sunuser      2506 Dec 13 11:49 npkdoset.res
-rw-r--r--   1 cscherer sunuser      2506 Dec 13 11:49 npkdst_c.res
-rw-r--r--   1 cscherer sunuser      6890 Dec 13 11:43 nuclides.dat
-rw-r--r--   1 cscherer sunuser      6579 Feb 15  2002 numrecip.f
-rw-r--r--   1 cscherer sunuser      4748 Dec 13 11:38 numrecip.o
-rw-r--r--   1 cscherer sunuser      7111 Dec 13 11:49 organdf.dat
-rw-r--r--   1 cscherer sunuser       259 Aug 16  1997 path.i
-rw-r--r--   1 cscherer sunuser      6584 Feb 15  2002 peakfind.f
-rw-r--r--   1 cscherer sunuser      6336 Dec 13 11:38 peakfind.o
-rw-r--r--   1 cscherer sunuser       698 Dec 13 11:49 pkmndose.out
-rw-r--r--   1 cscherer sunuser      8244 Dec 13 11:49 pkreltim.res
-rw-r--r--   1 cscherer sunuser      8244 Dec 13 11:49 pkrltm_c.res
drwxr-xr-x   4 cscherer sunuser      1024 Dec 10 09:20 pltest
drwxr-xr-x   2 cscherer sunuser      8192 Dec  9 12:10 postmodb
drwxr-xr-x   2 cscherer sunuser       512 Dec 13 10:06 pre-final-exes
-rw-r--r--   1 cscherer sunuser     46322 Feb 15  2002 ran.f
-rw-r--r--   1 cscherer sunuser     87592 Dec 13 11:38 ran.o
-rw-r--r--   1 cscherer sunuser    148500 Sep 25 12:25 reader.f
-rw-r--r--   1 cscherer sunuser       185 May 21  1998 reader.i
-rw-r--r--   1 cscherer sunuser    432448 Dec 13 11:37 reader.o
-rw-r--r--   1 cscherer sunuser       106 Aug 27  1999 reader1.i
-rw-r--r--   1 cscherer sunuser        58 Aug 27  1999 reader2.i
-rw-r--r--   1 cscherer sunuser       102 Aug 27  1999 reader3.i
-rw-r--r--   1 cscherer sunuser        89 Aug 27  1999 reader4.i
-rw-r--r--   1 cscherer sunuser        58 Aug 16  1997 reflux2.i
-rw-r--r--   1 cscherer sunuser       899 Dec 13 11:49 rel_flow.out
-rw-r--r--   1 cscherer sunuser       572 Dec 13 11:49 relccdf.res
-rw-r--r--   1 cscherer sunuser      2266 Dec 13 11:49 relcum.out
-rwxr-xr-x   1 cscherer sunuser    120024 Dec 13 11:44 releaset.e
-rw-r--r--   1 cscherer sunuser       413 Dec 13 11:49 releaset.out
-rw-r--r--   1 cscherer sunuser     20708 Dec 13 13:57 releaset_diffs.txt
-rwxr--r--   1 cscherer sunuser    134891 Jun  4  2002 releaset_v4111.f
-rw-r--r--   1 cscherer sunuser    122299 Sep 26  2000 releaset_v41j.f
-rw-r--r--   1 cscherer sunuser       665 Dec 13 11:49 relfrac.out
-rw-r--r--   1 cscherer sunuser       722 Dec 13 11:49 relgwgs.res
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-rwxrwxrwx   1 cscherer sunuser        39 Dec  3 12:02 remove_exe
-rw-r--r--   1 cscherer sunuser       548 Dec 13 11:43 repdes.dat
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 11:49 rgwna.tpa
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 11:49 rgwnapani.tpa
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 11:49 rgwnapdw.tpa
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 11:49 rgwnapext.tpa
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 11:49 rgwnapinh.tpa
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 11:49 rgwnapmlk.tpa
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 11:49 rgwnappla.tpa
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 11:49 rgwnr.tpa
-rw-r--r--   1 cscherer sunuser      7437 Dec 13 11:49 rgwsa.tpa
-rw-r--r--   1 cscherer sunuser     23937 Dec 13 11:49 rgwsap.tpa
-rw-r--r--   1 cscherer sunuser      7483 Dec 13 11:49 rgwsr.tpa
-rw-r--r--   1 cscherer sunuser       572 Dec 13 11:49 rlccdf_c.res
-rw-r--r--   1 cscherer sunuser       722 Dec 13 11:49 rlgwgs_c.res
-rw-r--r--   1 cscherer sunuser     95694 May 29  2002 sampler.f
-rw-r--r--   1 cscherer sunuser    165652 Dec 13 11:37 sampler.o
-rw-r--r--   1 cscherer sunuser        62 Aug 16  1997 sampler0.i
-rw-r--r--   1 cscherer sunuser        79 Aug 16  1997 sampler1.i
-rw-r--r--   1 cscherer sunuser        62 Aug 16  1997 sampler2.i
-rw-r--r--   1 cscherer sunuser       178 Apr  3  1998 sampler3.i
-rw-r--r--   1 cscherer sunuser       145 Sep 19  2000 sampler4.i
-rw-r--r--   1 cscherer sunuser        62 Aug 16  1997 samplera.i
-rw-r--r--   1 cscherer sunuser        62 Aug 16  1997 samplerb.i
-rw-r--r--   1 cscherer sunuser        62 Aug 16  1997 samplerc.i
-rw-r--r--   1 cscherer sunuser        68 Aug 16  1997 samplerd.i
-rw-r--r--   1 cscherer sunuser       133 Aug 16  1997 samplere.i
-rw-r--r--   1 cscherer sunuser       111 Aug 16  1997 samplerf.i
-rw-r--r--   1 cscherer sunuser        84 Aug 16  1997 samplerg.i
-rw-r--r--   1 cscherer sunuser        68 Aug 16  1997 samplerh.i
-rw-r--r--   1 cscherer sunuser        83 Aug 16  1997 sampleri.i
-rw-r--r--   1 cscherer sunuser        61 Aug 16  1997 samplerj.i
-rw-r--r--   1 cscherer sunuser       208 Aug 16  1997 samplerk.i
-rw-r--r--   1 cscherer sunuser       104 Aug 16  1997 samplerl.i
-rw-r--r--   1 cscherer sunuser        63 Aug 16  1997 samplerm.i
-rw-r--r--   1 cscherer sunuser        79 Aug 16  1997 samplern.i
-rw-r--r--   1 cscherer sunuser        63 Aug 16  1997 samplero.i
-rw-r--r--   1 cscherer sunuser       260 Mar 14  2002 samplerp.i
-rw-r--r--   1 cscherer sunuser       103 Aug 16  1997 samplerq.i
-rw-r--r--   1 cscherer sunuser       176 Aug 16  1997 samplerr.i
-rw-r--r--   1 cscherer sunuser       336 Apr  3  1998 samplers.i
-rw-r--r--   1 cscherer sunuser        70 Aug 16  1997 samplert.i
-rw-r--r--   1 cscherer sunuser        69 Aug 16  1997 sampleru.i
-rw-r--r--   1 cscherer sunuser        62 Aug 16  1997 samplerv.i
-rw-r--r--   1 cscherer sunuser        60 Aug 16  1997 samplerw.i
-rw-r--r--   1 cscherer sunuser       227 Mar 14  2002 samplerx.i
-rw-r--r--   1 cscherer sunuser       299 Apr 30  2001 samplery.i
-rw-r--r--   1 cscherer sunuser        60 Aug 16  1997 samplerz.i
-rw-r--r--   1 cscherer sunuser      3597 Dec 13 11:43 samplpar.abb
-rw-r--r--   1 cscherer sunuser     27397 Dec 13 11:43 samplpar.hdr
-rw-r--r--   1 cscherer sunuser      5914 Dec 13 11:49 samplpar.res
-rw-r--r--   1 cscherer sunuser     25920 Dec 13 10:57 scr394_basecase.out
-rw-r--r--   1 cscherer sunuser     25981 Dec 13 11:17
scr394_basecase_ileach0.out
-rw-r--r--   1 cscherer sunuser     25981 Dec 13 11:49 scr394_sl2.out
-rw-r--r--   1 cscherer sunuser       322 Nov 17 18:24 seisadj.i
-rwxr-xr-x   1 cscherer sunuser    130088 Dec 13 11:44 seisbs1.dis
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-rwxr-xr-x   1 cscherer sunuser    130088 Dec 13 11:44 seisbs2.dis
-rw-r--r--   1 cscherer sunuser     51692 Nov 17 18:23 seismo2.f
-rw-r--r--   1 cscherer sunuser     78776 Dec 13 11:37 seismo2.o
-rwxrwxrwx   1 cscherer sunuser        30 Sep 12 16:53 show_env
drwxr-xr-x   7 cscherer sunuser      4608 Dec 13 11:57 sltest
-rwxr-xr-x   1 cscherer sunuser    943788 Dec 13 11:44 smaydtbl.dat
-rwxr-xr-x   1 cscherer sunuser    212836 Dec 13 11:43 snllhs.e
-rw-r--r--   1 cscherer sunuser    301832 Dec 13 11:49 sotnef.dat
-rw-r--r--   1 cscherer sunuser     28459 Dec 13 11:49 sp.tpa
-rw-r--r--   1 cscherer sunuser     82808 Dec 13 11:49 spquery.tpa
-rw-r--r--   1 cscherer sunuser      1776 Dec 13 11:38 srchpos.o
-rw-r--r--   1 cscherer sunuser       144 Sep  3  1997 stop.i
-rw-r--r--   1 cscherer sunuser      4506 Dec 13 11:44 strmtube.dat
-rw-r--r--   1 cscherer sunuser     38273 Dec  2 14:54 subarea.f
-rw-r--r--   1 cscherer sunuser     59656 Dec 13 11:37 subarea.o
-rw-r--r--   1 cscherer sunuser     38273 Dec  2 14:54 subarea_base.f
-rw-r--r--   1 cscherer sunuser     38355 Dec  2 14:49 subarea_isa.f
-rw-r--r--   1 cscherer sunuser       255 Feb  4  2000 subareaa.i
-rw-r--r--   1 cscherer sunuser        79 Aug 16  1997 subareab.i
-rw-r--r--   1 cscherer sunuser        82 Aug 16  1997 subareac.i
-rw-r--r--   1 cscherer sunuser        81 Aug 16  1997 subaread.i
-rw-r--r--   1 cscherer sunuser        77 Aug 16  1997 subareae.i
-rw-r--r--   1 cscherer sunuser        60 Feb  3  2000 subareaf.i
-rw-r--r--   1 cscherer sunuser        64 Feb  2  2000 subareag.i
-rw-r--r--   1 cscherer sunuser    111077 Nov 18 11:20 szft.f
-rw-r--r--   1 cscherer sunuser       264 Nov 17 18:23 szft.i
-rw-r--r--   1 cscherer sunuser    181160 Dec 13 11:36 szft.o
drwxr-xr-x   2 cscherer sunuser       512 Dec 13 11:02 test_screen_outputs
-rw-r--r--   1 cscherer sunuser     13122 Dec 13 11:49 totdos_c.res
-rw-r--r--   1 cscherer sunuser     19322 Dec 13 11:49 totdose.res
-rwxr-xr-x   1 cscherer sunuser   2434028 Dec 13 11:38 tpa.e
-rw-r--r--   1 cscherer sunuser     83951 Dec 10 13:36 tpa.inp
-r--r--r--   1 cscherer sunuser      9325 Mar  4  2002 tpa_.out
-rw-r--r--   1 cscherer sunuser     83835 Nov 18 11:19 tpa_base.inp
-rwxr-xr-x   1 cscherer sunuser   2424744 Dec 13 10:45 tpa_base_solapps.e
-rwxr-xr-x   1 cscherer sunuser   2424736 Dec 13 11:08
tpa_base_solapps_ileach0.e
-rw-r--r--   1 cscherer sunuser     83835 Dec 10 12:14 tpa_basecase.inp
-rw-r--r--   1 cscherer sunuser       214 Dec 13 13:54 tpa_inp_diffs.txt
-rw-r--r--   1 cscherer sunuser     83951 Dec 10 13:36 tpa_mod394.inp
-rw-r--r--   1 cscherer sunuser     86219 Dec 13 11:43 tpameans.out
-rw-r--r--   1 cscherer sunuser     97497 Dec 13 11:43 tpanames.dbs
-rw-r--r--   1 cscherer sunuser    236079 Dec 13 11:49 trelease.out
-rw-r--r--   1 cscherer sunuser       314 Aug 16  1997 uz_climi.i
-rw-r--r--   1 cscherer sunuser      1219 Sep  6 20:05 uz_climr.i
-rw-r--r--   1 cscherer sunuser       341 Aug 16  1997 uz_climz.i
-rw-r--r--   1 cscherer sunuser      1323 Sep 26 14:28 uz_flowi.i
-rw-r--r--   1 cscherer sunuser      1170 Sep 26 14:29 uz_flowr.i
-rw-r--r--   1 cscherer sunuser       176 Aug 16  1997 uz_flowz.i
-rw-r--r--   1 cscherer sunuser      3225 Sep 26 14:30 uz_parms.i
-rw-r--r--   1 cscherer sunuser     66563 Sep 26 14:39 uzflow.f
-rw-r--r--   1 cscherer sunuser     67952 Dec 13 11:37 uzflow.o
-rw-r--r--   1 cscherer sunuser    124052 Nov 18 11:21 uzft.f
-rw-r--r--   1 cscherer sunuser    200392 Dec 13 11:38 uzft.o
-rw-r--r--   1 cscherer sunuser       755 Nov 17 18:23 uzszft.i
-rw-r--r--   1 cscherer sunuser     14215 Feb 15  2002 volcano.f
-rw-r--r--   1 cscherer sunuser     17468 Dec 13 11:38 volcano.o
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-rw-r--r--   1 cscherer sunuser     21032 Dec 13 11:49 weldfail.out
-rw-r--r--   1 cscherer sunuser     13105 Dec 13 11:44 wpflow.dat
-rw-r--r--   1 cscherer sunuser     17410 Dec 13 11:44 wpflow.def
-rw-r--r--   1 cscherer sunuser       912 Dec 13 11:49 wpsfail.res
-rw-r--r--   1 cscherer sunuser     11721 Feb 15  2002 zportunx.f
-rw-r--r--   1 cscherer sunuser      1936 Dec 13 11:38 zportunx.o

scr394/50Bdefaultfiles:
total 9245
drwxr-xr-x   2 cscherer sunuser      7168 Nov 27 11:12 .
drwxr-xr-x  20 cscherer sunuser      9216 Dec 13 13:58 ..
-rw-r--r--   1 cscherer sunuser       965 Nov 27 11:10 FILENAME.DAT
-rw-r--r--   1 cscherer sunuser       381 Nov 27 11:10 NEFII.VEL
-rw-r--r--   1 cscherer sunuser      2746 Nov 27 11:10 airpkdos.res
-rw-r--r--   1 cscherer sunuser      2746 Nov 27 11:10 arpkds_c.res
-rw-r--r--   1 cscherer sunuser       914 Nov 27 11:10 ashout.res
-rw-r--r--   1 cscherer sunuser      1025 Nov 27 11:06 burnup.dat
-rw-r--r--   1 cscherer sunuser      5047 Nov 27 11:10 chlrdmf.dat
-rw-r--r--   1 cscherer sunuser    850000 Nov 27 11:06 climato1.dat
-rw-r--r--   1 cscherer sunuser      2200 Nov 27 11:06 climato2.dat
-rw-r--r--   1 cscherer sunuser      4791 Nov 27 11:07 coefkdeq.dat
-rw-r--r--   1 cscherer sunuser     14506 Nov 27 11:10 corrode.out
-rw-r--r--   1 cscherer sunuser     78539 Nov 27 11:10 cp.tpa
-rw-r--r--   1 cscherer sunuser      2252 Nov 27 11:10 cumrel.res
-rw-r--r--   1 cscherer sunuser      2252 Nov 27 11:10 cumrel_c.res
-rw-r--r--   1 cscherer sunuser     46580 Nov 27 11:10 cumrelse.out
-rw-r--r--   1 cscherer sunuser      6693 Nov 27 11:10 deltaec.inp
-rw-r--r--   1 cscherer sunuser      9800 Nov 27 11:10 diagnose.out
-rw-r--r--   1 cscherer sunuser      2033 Nov 27 11:10 dilution.dat
-rw-r--r--   1 cscherer sunuser      3870 Nov 27 11:06 drifts.dat
-rw-r--r--   1 cscherer sunuser       519 Nov 27 11:06 drythick.dat
-rw-r--r--   1 cscherer sunuser      2951 Nov 27 11:07 dsfailt.dat
-rw-r--r--   1 cscherer sunuser       791 Nov 27 11:07 dsfailt.def
-rw-r--r--   1 cscherer sunuser       610 Nov 27 11:07 dsfailt.inp
-rw-r--r--   1 cscherer sunuser        34 Nov 27 11:07 dsfailt.out
-rw-r--r--   1 cscherer sunuser     37960 Nov 27 11:10 ebscld.out
-rw-r--r--   1 cscherer sunuser      6265 Nov 27 11:07 ebsfail.def
-rw-r--r--   1 cscherer sunuser      6222 Nov 27 11:10 ebsfail.inp
-rw-r--r--   1 cscherer sunuser       790 Nov 27 11:07 ebsfilt.def
-rw-r--r--   1 cscherer sunuser      3030 Nov 27 11:10 ebsfilt.inp
-rw-r--r--   1 cscherer sunuser       551 Nov 27 11:10 ebsfilt.out
-rw-r--r--   1 cscherer sunuser     14029 Nov 27 11:10 ebsflo.dat
-rw-r--r--   1 cscherer sunuser    146101 Nov 27 11:10 ebsnef.dat
-rw-r--r--   1 cscherer sunuser    108252 Nov 27 11:10 ebsnef.out
-rw-r--r--   1 cscherer sunuser    140681 Nov 27 11:10 ebsnef2.dat
-rw-r--r--   1 cscherer sunuser    146101 Nov 27 08:44 ebsnef_betaB.dat
-rw-r--r--   1 cscherer sunuser    146101 Nov 27 10:53 ebsnef_solapps.dat
-rw-r--r--   1 cscherer sunuser      1883 Nov 27 11:10 ebspac.nuc
-rw-r--r--   1 cscherer sunuser      5553 Nov 27 11:07 ebsrel.def
-rw-r--r--   1 cscherer sunuser     11211 Nov 27 11:10 ebsrel.inp
-rw-r--r--   1 cscherer sunuser    108203 Nov 27 11:10 ebssf.dat
-rw-r--r--   1 cscherer sunuser     17315 Nov 27 11:10 ebstrh.dat
-rw-r--r--   1 cscherer sunuser     12335 Nov 27 11:10 ebstrhc.inp
-rw-r--r--   1 cscherer sunuser      2711 Nov 27 11:10 echofail.dat
-rw-r--r--   1 cscherer sunuser    305086 Nov 27 11:10 echofilt.dat
-rw-r--r--   1 cscherer sunuser     39354 Nov 27 11:10 epa_ave.out
-rw-r--r--   1 cscherer sunuser      1707 Nov 27 11:10 epapktim.out
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-rw-r--r--   1 cscherer sunuser     17398 Nov 27 11:10 failt.out
-rw-r--r--   1 cscherer sunuser      6281 Nov 27 11:07 fluoride.dat
-rw-r--r--   1 cscherer sunuser     46580 Nov 27 11:10 frac_rel.out
-rw-r--r--   1 cscherer sunuser      6513 Nov 27 11:10 gbioac1.dat
-rw-r--r--   1 cscherer sunuser      3383 Nov 27 11:10 gdefault.def
-rw-r--r--   1 cscherer sunuser      3387 Nov 27 11:10 gdefault.inp
-rw-r--r--   1 cscherer sunuser        64 Nov 27 11:10 gdosinc2.dat
-rw-r--r--   1 cscherer sunuser         0 Nov 27 11:10 gentoo.out
-rw-r--r--   1 cscherer sunuser     35173 Nov 27 11:10 genv.in
-rw-r--r--   1 cscherer sunuser     18393 Nov 27 11:10 genv.out
-rw-r--r--   1 cscherer sunuser      7011 Nov 27 11:10 gftrans.def
-rw-r--r--   1 cscherer sunuser      7142 Nov 27 11:10 gftrans.inp
-rw-r--r--   1 cscherer sunuser     15214 Nov 27 11:10 ggamen.dat
-rw-r--r--   1 cscherer sunuser     13855 Nov 27 11:10 ggenii.def
-rw-r--r--   1 cscherer sunuser     13164 Nov 27 11:10 ggenii.inp
-rw-r--r--   1 cscherer sunuser     10074 Nov 27 11:10 ggenii.out
-rw-r--r--   1 cscherer sunuser      5351 Nov 27 11:10 ggrdf.dat
-rw-r--r--   1 cscherer sunuser      5673 Nov 27 11:10 gmedia.out
-rw-r--r--   1 cscherer sunuser      9897 Nov 27 11:10 gnewdf.dat
-rw-r--r--   1 cscherer sunuser     13200 Nov 27 11:10 grmdlib.dat
-rw-r--r--   1 cscherer sunuser       572 Nov 27 11:10 gsccdf.res
-rw-r--r--   1 cscherer sunuser       572 Nov 27 11:10 gsccdf_c.res
-rw-r--r--   1 cscherer sunuser      3561 Nov 27 11:10 gw_cb_ad.dat
-rw-r--r--   1 cscherer sunuser      1264 Nov 27 11:10 gw_cb_ci.dat
-rw-r--r--   1 cscherer sunuser      3557 Nov 27 11:10 gw_pb_ad.dat
-rw-r--r--   1 cscherer sunuser      1261 Nov 27 11:10 gw_pb_ci.dat
-rw-r--r--   1 cscherer sunuser       572 Nov 27 11:10 gwccdf.res
-rw-r--r--   1 cscherer sunuser       572 Nov 27 11:10 gwccdf_c.res
-rw-r--r--   1 cscherer sunuser         9 Nov 27 11:10 gwork.buf
-rw-r--r--   1 cscherer sunuser      1738 Nov 27 11:10 gwpkdos.res
-rw-r--r--   1 cscherer sunuser      1738 Nov 27 11:10 gwpkds_c.res
-rw-r--r--   1 cscherer sunuser      2170 Nov 27 11:10 gwttuzsz.res
-rw-r--r--   1 cscherer sunuser      2330 Nov 27 11:10 infilper.res
-rw-r--r--   1 cscherer sunuser      1102 Nov 27 11:10 inv1000.out
-rw-r--r--   1 cscherer sunuser         0 Nov 26 13:55 lhs.csv
-rw-r--r--   1 cscherer sunuser     40006 Nov 27 11:06 lhs.inp
-rw-r--r--   1 cscherer sunuser      5268 Nov 27 11:06 lhs.out
-rw-r--r--   1 cscherer sunuser     69312 Nov 27 11:06 lhse.out
-rw-r--r--   1 cscherer sunuser      1095 Nov 27 11:10 maxrel.dat
-rwxr-xr-x   1 cscherer sunuser    943775 Nov 27 11:06 maydtbl.dat
-rw-r--r--   1 cscherer sunuser    347679 Nov 27 11:07 mechfail.dat
-rw-r--r--   1 cscherer sunuser     11267 Nov 27 11:07 mechfail.def
-rw-r--r--   1 cscherer sunuser     11341 Nov 27 11:07 mechfail.inp
-rw-r--r--   1 cscherer sunuser         0 Nov 27 11:07 mechfail.out
-rw-r--r--   1 cscherer sunuser      1254 Nov 27 11:06 multifaf.dat
-rw-r--r--   1 cscherer sunuser      1255 Nov 27 11:06 multifbe.dat
-rw-r--r--   1 cscherer sunuser     61241 Nov 27 11:10 mv.tpa
-rw-r--r--   1 cscherer sunuser      2330 Nov 27 11:10 nearfld.res
-rw-r--r--   1 cscherer sunuser    135512 Nov 27 11:10 nefii.dis
-rw-r--r--   1 cscherer sunuser     11320 Nov 27 11:10 nefii.inp
-rw-r--r--   1 cscherer sunuser    226823 Nov 27 11:10 nefii.out
-rw-r--r--   1 cscherer sunuser       603 Nov 27 11:10 nefii.rel
-rw-r--r--   1 cscherer sunuser    135512 Nov 27 11:10 nefiisz.dis
-rw-r--r--   1 cscherer sunuser     11320 Nov 27 11:10 nefiisz.inp
-rw-r--r--   1 cscherer sunuser    226823 Nov 27 11:10 nefiisz.out
-rw-r--r--   1 cscherer sunuser    144660 Nov 27 11:10 nefiisz.src
-rw-r--r--   1 cscherer sunuser       381 Nov 27 11:10 nefiisz.vel
```

```
-rw-r--r--   1 cscherer sunuser    763574 Nov 27 11:10 nefiiuz.dis
-rw-r--r--   1 cscherer sunuser     10100 Nov 27 11:10 nefiiuz.inp
-rw-r--r--   1 cscherer sunuser    806774 Nov 27 11:10 nefiiuz.out
-rw-r--r--   1 cscherer sunuser    145705 Nov 27 11:10 nefiiuz.src
-rw-r--r--   1 cscherer sunuser       171 Nov 27 11:10 nefiiuz.vel
-rw-r--r--   1 cscherer sunuser       285 Nov 27 11:10 nefmks.log
-rw-r--r--   1 cscherer sunuser      2506 Nov 27 11:10 npkdoset.res
-rw-r--r--   1 cscherer sunuser      2506 Nov 27 11:10 npkdst_c.res
-rw-r--r--   1 cscherer sunuser      6890 Nov 27 11:06 nuclides.dat
-rw-r--r--   1 cscherer sunuser      7111 Nov 27 11:10 organdf.dat
-rw-r--r--   1 cscherer sunuser       698 Nov 27 11:10 pkmndose.out
-rw-r--r--   1 cscherer sunuser      8244 Nov 27 11:10 pkreltim.res
-rw-r--r--   1 cscherer sunuser      8244 Nov 27 11:10 pkrltm_c.res
-rw-r--r--   1 cscherer sunuser       899 Nov 27 11:10 rel_flow.out
-rw-r--r--   1 cscherer sunuser       572 Nov 27 11:10 relccdf.res
-rw-r--r--   1 cscherer sunuser       721 Nov 27 11:10 relcum.out
-rw-r--r--   1 cscherer sunuser       412 Nov 27 11:10 releaset.out
-rw-r--r--   1 cscherer sunuser       620 Nov 27 11:10 relfrac.out
-rw-r--r--   1 cscherer sunuser       722 Nov 27 11:10 relgwgs.res
-rw-r--r--   1 cscherer sunuser       548 Nov 27 11:06 repdes.dat
-rw-r--r--   1 cscherer sunuser     47561 Nov 27 11:10 rgwna.tpa
-rw-r--r--   1 cscherer sunuser     47561 Nov 27 11:10 rgwnapani.tpa
-rw-r--r--   1 cscherer sunuser     47561 Nov 27 11:10 rgwnapdw.tpa
-rw-r--r--   1 cscherer sunuser     47561 Nov 27 11:10 rgwnapext.tpa
-rw-r--r--   1 cscherer sunuser     47561 Nov 27 11:10 rgwnapinh.tpa
-rw-r--r--   1 cscherer sunuser     47561 Nov 27 11:10 rgwnapmlk.tpa
-rw-r--r--   1 cscherer sunuser     47561 Nov 27 11:10 rgwnappla.tpa
-rw-r--r--   1 cscherer sunuser     47561 Nov 27 11:10 rgwnr.tpa
-rw-r--r--   1 cscherer sunuser      5137 Nov 27 11:10 rgwsa.tpa
-rw-r--r--   1 cscherer sunuser     16137 Nov 27 11:10 rgwsap.tpa
-rw-r--r--   1 cscherer sunuser      5183 Nov 27 11:10 rgwsr.tpa
-rw-r--r--   1 cscherer sunuser       572 Nov 27 11:10 rlccdf_c.res
-rw-r--r--   1 cscherer sunuser       722 Nov 27 11:10 rlgwgs_c.res
-rw-r--r--   1 cscherer sunuser      3597 Nov 27 11:06 samplpar.abb
-rw-r--r--   1 cscherer sunuser     27397 Nov 27 11:06 samplpar.hdr
-rw-r--r--   1 cscherer sunuser      5914 Nov 27 11:10 samplpar.res
-rwxr-xr-x   1 cscherer sunuser    130088 Nov 27 11:07 seisbs1.dis
-rwxr-xr-x   1 cscherer sunuser    130088 Nov 27 11:07 seisbs2.dis
-rwxr-xr-x   1 cscherer sunuser    943788 Nov 27 11:06 smaydtbl.dat
-rw-r--r--   1 cscherer sunuser    144660 Nov 27 11:10 sotnef.dat
-rw-r--r--   1 cscherer sunuser     28459 Nov 27 11:10 sp.tpa
-rw-r--r--   1 cscherer sunuser      4506 Nov 27 11:07 strmtube.dat
-rw-r--r--   1 cscherer sunuser     13122 Nov 27 11:10 totdos_c.res
-rw-r--r--   1 cscherer sunuser     13122 Nov 27 11:10 totdose.res
-rw-r--r--   1 cscherer sunuser     83835 Nov 18 11:19 tpa.inp
-r--r--r--   1 cscherer sunuser      9325 Mar  4  2002 tpa_.out
-rw-r--r--   1 cscherer sunuser     83835 Nov 18 11:19 tpa_base.inp
-rw-r--r--   1 cscherer sunuser     86103 Nov 27 11:06 tpameans.out
-rw-r--r--   1 cscherer sunuser     97497 Nov 27 11:06 tpanames.dbs
-rw-r--r--   1 cscherer sunuser    137487 Nov 27 11:10 trelease.out
-rw-r--r--   1 cscherer sunuser     14132 Nov 27 11:10 weldfail.out
-rw-r--r--   1 cscherer sunuser      8805 Nov 27 11:07 wpflow.dat
-rw-r--r--   1 cscherer sunuser     17410 Nov 27 11:07 wpflow.def
-rw-r--r--   1 cscherer sunuser       818 Nov 27 11:10 wpsfail.res

scr394/50Bsolappsfiles:
total 9245
```

```
drwxr-xr-x   2 cscherer sunuser      7168 Nov 27 11:01 .
drwxr-xr-x  20 cscherer sunuser      9216 Dec 13 13:58 ..
-rw-r--r--   1 cscherer sunuser       965 Nov 27 10:53 FILENAME.DAT
-rw-r--r--   1 cscherer sunuser       381 Nov 27 10:53 NEFII.VEL
-rw-r--r--   1 cscherer sunuser      2746 Nov 27 10:53 airpkdos.res
-rw-r--r--   1 cscherer sunuser      2746 Nov 27 10:53 arpkds_c.res
-rw-r--r--   1 cscherer sunuser       914 Nov 27 10:53 ashout.res
-rw-r--r--   1 cscherer sunuser      1025 Nov 27 10:47 burnup.dat
-rw-r--r--   1 cscherer sunuser      5047 Nov 27 10:53 chlrdmf.dat
-rw-r--r--   1 cscherer sunuser    850000 Nov 27 10:48 climato1.dat
-rw-r--r--   1 cscherer sunuser      2200 Nov 27 10:48 climato2.dat
-rw-r--r--   1 cscherer sunuser      4791 Nov 27 10:48 coefkdeq.dat
-rw-r--r--   1 cscherer sunuser     14506 Nov 27 10:53 corrode.out
-rw-r--r--   1 cscherer sunuser     78539 Nov 27 10:53 cp.tpa
-rw-r--r--   1 cscherer sunuser      2252 Nov 27 10:53 cumrel.res
-rw-r--r--   1 cscherer sunuser      2252 Nov 27 10:53 cumrel_c.res
-rw-r--r--   1 cscherer sunuser     46580 Nov 27 10:53 cumrelse.out
-rw-r--r--   1 cscherer sunuser      6693 Nov 27 10:53 deltaec.inp
-rw-r--r--   1 cscherer sunuser      9800 Nov 27 10:53 diagnose.out
-rw-r--r--   1 cscherer sunuser      2033 Nov 27 10:53 dilution.dat
-rw-r--r--   1 cscherer sunuser      3870 Nov 27 10:47 drifts.dat
-rw-r--r--   1 cscherer sunuser       519 Nov 27 10:48 drythick.dat
-rw-r--r--   1 cscherer sunuser      2951 Nov 27 10:48 dsfailt.dat
-rw-r--r--   1 cscherer sunuser       791 Nov 27 10:48 dsfailt.def
-rw-r--r--   1 cscherer sunuser       610 Nov 27 10:48 dsfailt.inp
-rw-r--r--   1 cscherer sunuser        34 Nov 27 10:48 dsfailt.out
-rw-r--r--   1 cscherer sunuser     37960 Nov 27 10:53 ebscld.out
-rw-r--r--   1 cscherer sunuser      6265 Nov 27 10:48 ebsfail.def
-rw-r--r--   1 cscherer sunuser      6222 Nov 27 10:53 ebsfail.inp
-rw-r--r--   1 cscherer sunuser       790 Nov 27 10:48 ebsfilt.def
-rw-r--r--   1 cscherer sunuser      3030 Nov 27 10:53 ebsfilt.inp
-rw-r--r--   1 cscherer sunuser       551 Nov 27 10:53 ebsfilt.out
-rw-r--r--   1 cscherer sunuser     14029 Nov 27 10:53 ebsflo.dat
-rw-r--r--   1 cscherer sunuser    146101 Nov 27 10:53 ebsnef.dat
-rw-r--r--   1 cscherer sunuser    108252 Nov 27 10:53 ebsnef.out
-rw-r--r--   1 cscherer sunuser    140681 Nov 27 10:53 ebsnef2.dat
-rw-r--r--   1 cscherer sunuser    146101 Nov 27 08:44 ebsnef_betaB.dat
-rw-r--r--   1 cscherer sunuser    146101 Nov 27 10:53 ebsnef_solapps.dat
-rw-r--r--   1 cscherer sunuser      1883 Nov 27 10:53 ebspac.nuc
-rw-r--r--   1 cscherer sunuser      5553 Nov 27 10:48 ebsrel.def
-rw-r--r--   1 cscherer sunuser     11211 Nov 27 10:53 ebsrel.inp
-rw-r--r--   1 cscherer sunuser    108203 Nov 27 10:53 ebssf.dat
-rw-r--r--   1 cscherer sunuser     17315 Nov 27 10:53 ebstrh.dat
-rw-r--r--   1 cscherer sunuser     12335 Nov 27 10:53 ebstrhc.inp
-rw-r--r--   1 cscherer sunuser      2711 Nov 27 10:53 echofail.dat
-rw-r--r--   1 cscherer sunuser    305086 Nov 27 10:53 echofilt.dat
-rw-r--r--   1 cscherer sunuser     39354 Nov 27 10:53 epa_ave.out
-rw-r--r--   1 cscherer sunuser      1707 Nov 27 10:53 epapktim.out
-rw-r--r--   1 cscherer sunuser     17398 Nov 27 10:53 failt.out
-rw-r--r--   1 cscherer sunuser      6281 Nov 27 10:48 fluoride.dat
-rw-r--r--   1 cscherer sunuser     46580 Nov 27 10:53 frac_rel.out
-rw-r--r--   1 cscherer sunuser      6513 Nov 27 10:53 gbioac1.dat
-rw-r--r--   1 cscherer sunuser      3383 Nov 27 10:53 gdefault.def
-rw-r--r--   1 cscherer sunuser      3387 Nov 27 10:53 gdefault.inp
-rw-r--r--   1 cscherer sunuser        64 Nov 27 10:53 gdosinc2.dat
-rw-r--r--   1 cscherer sunuser         0 Nov 27 10:53 gentoo.out
-rw-r--r--   1 cscherer sunuser     35173 Nov 27 10:53 genv.in
```

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-rw-r--r--   1 cscherer sunuser     18393 Nov 27 10:53 genv.out
-rw-r--r--   1 cscherer sunuser      7011 Nov 27 10:53 gftrans.def
-rw-r--r--   1 cscherer sunuser      7142 Nov 27 10:53 gftrans.inp
-rw-r--r--   1 cscherer sunuser     15214 Nov 27 10:53 ggamen.dat
-rw-r--r--   1 cscherer sunuser     13855 Nov 27 10:53 ggenii.def
-rw-r--r--   1 cscherer sunuser     13164 Nov 27 10:53 ggenii.inp
-rw-r--r--   1 cscherer sunuser     10074 Nov 27 10:53 ggenii.out
-rw-r--r--   1 cscherer sunuser      5351 Nov 27 10:53 ggrdf.dat
-rw-r--r--   1 cscherer sunuser      5673 Nov 27 10:53 gmedia.out
-rw-r--r--   1 cscherer sunuser      9897 Nov 27 10:53 gnewdf.dat
-rw-r--r--   1 cscherer sunuser     13200 Nov 27 10:53 grmdlib.dat
-rw-r--r--   1 cscherer sunuser       572 Nov 27 10:53 gsccdf.res
-rw-r--r--   1 cscherer sunuser       572 Nov 27 10:53 gsccdf_c.res
-rw-r--r--   1 cscherer sunuser      3561 Nov 27 10:53 gw_cb_ad.dat
-rw-r--r--   1 cscherer sunuser      1264 Nov 27 10:53 gw_cb_ci.dat
-rw-r--r--   1 cscherer sunuser      3557 Nov 27 10:53 gw_pb_ad.dat
-rw-r--r--   1 cscherer sunuser      1261 Nov 27 10:53 gw_pb_ci.dat
-rw-r--r--   1 cscherer sunuser       572 Nov 27 10:53 gwccdf.res
-rw-r--r--   1 cscherer sunuser       572 Nov 27 10:53 gwccdf_c.res
-rw-r--r--   1 cscherer sunuser         9 Nov 27 10:53 gwork.buf
-rw-r--r--   1 cscherer sunuser      1738 Nov 27 10:53 gwpkdos.res
-rw-r--r--   1 cscherer sunuser      1738 Nov 27 10:53 gwpkds_c.res
-rw-r--r--   1 cscherer sunuser      2170 Nov 27 10:53 gwttuzsz.res
-rw-r--r--   1 cscherer sunuser      2330 Nov 27 10:53 infilper.res
-rw-r--r--   1 cscherer sunuser      1102 Nov 27 10:53 inv1000.out
-rw-r--r--   1 cscherer sunuser         0 Nov 26 13:55 lhs.csv
-rw-r--r--   1 cscherer sunuser     40006 Nov 27 10:48 lhs.inp
-rw-r--r--   1 cscherer sunuser      5268 Nov 27 10:48 lhs.out
-rw-r--r--   1 cscherer sunuser     69312 Nov 27 10:48 lhse.out
-rw-r--r--   1 cscherer sunuser      1095 Nov 27 10:53 maxrel.dat
-rwxr-xr-x   1 cscherer sunuser    943775 Nov 27 10:48 maydtbl.dat
-rw-r--r--   1 cscherer sunuser    347679 Nov 27 10:48 mechfail.dat
-rw-r--r--   1 cscherer sunuser     11267 Nov 27 10:48 mechfail.def
-rw-r--r--   1 cscherer sunuser     11341 Nov 27 10:48 mechfail.inp
-rw-r--r--   1 cscherer sunuser         0 Nov 27 10:48 mechfail.out
-rw-r--r--   1 cscherer sunuser      1254 Nov 27 10:48 multifaf.dat
-rw-r--r--   1 cscherer sunuser      1255 Nov 27 10:48 multifbe.dat
-rw-r--r--   1 cscherer sunuser     61241 Nov 27 10:53 mv.tpa
-rw-r--r--   1 cscherer sunuser      2330 Nov 27 10:53 nearfld.res
-rw-r--r--   1 cscherer sunuser    135512 Nov 27 10:53 nefii.dis
-rw-r--r--   1 cscherer sunuser     11320 Nov 27 10:53 nefii.inp
-rw-r--r--   1 cscherer sunuser    226823 Nov 27 10:53 nefii.out
-rw-r--r--   1 cscherer sunuser       603 Nov 27 10:53 nefii.rel
-rw-r--r--   1 cscherer sunuser    135512 Nov 27 10:53 nefiisz.dis
-rw-r--r--   1 cscherer sunuser     11320 Nov 27 10:53 nefiisz.inp
-rw-r--r--   1 cscherer sunuser    226823 Nov 27 10:53 nefiisz.out
-rw-r--r--   1 cscherer sunuser    144660 Nov 27 10:53 nefiisz.src
-rw-r--r--   1 cscherer sunuser       381 Nov 27 10:53 nefiisz.vel
-rw-r--r--   1 cscherer sunuser    763574 Nov 27 10:53 nefiiuz.dis
-rw-r--r--   1 cscherer sunuser     10100 Nov 27 10:53 nefiiuz.inp
-rw-r--r--   1 cscherer sunuser    806774 Nov 27 10:53 nefiiuz.out
-rw-r--r--   1 cscherer sunuser    145705 Nov 27 10:53 nefiiuz.src
-rw-r--r--   1 cscherer sunuser       171 Nov 27 10:53 nefiiuz.vel
-rw-r--r--   1 cscherer sunuser       190 Nov 27 10:53 nefmks.log
-rw-r--r--   1 cscherer sunuser      2506 Nov 27 10:53 npkdoset.res
-rw-r--r--   1 cscherer sunuser      2506 Nov 27 10:53 npkdst_c.res
-rw-r--r--   1 cscherer sunuser      6890 Nov 27 10:47 nuclides.dat
```

```
-rw-r--r--   1 cscherer sunuser      7111 Nov 27 10:53 organdf.dat
-rw-r--r--   1 cscherer sunuser       698 Nov 27 10:53 pkmndose.out
-rw-r--r--   1 cscherer sunuser      8244 Nov 27 10:53 pkreltim.res
-rw-r--r--   1 cscherer sunuser      8244 Nov 27 10:53 pkrltm_c.res
-rw-r--r--   1 cscherer sunuser       764 Nov 27 10:53 rel_flow.out
-rw-r--r--   1 cscherer sunuser       572 Nov 27 10:53 relccdf.res
-rw-r--r--   1 cscherer sunuser       721 Nov 27 10:53 relcum.out
-rw-r--r--   1 cscherer sunuser       412 Nov 27 10:53 releaset.out
-rw-r--r--   1 cscherer sunuser       620 Nov 27 10:53 relfrac.out
-rw-r--r--   1 cscherer sunuser       722 Nov 27 10:53 relgwgs.res
-rw-r--r--   1 cscherer sunuser       548 Nov 27 10:47 repdes.dat
-rw-r--r--   1 cscherer sunuser     47561 Nov 27 10:53 rgwna.tpa
-rw-r--r--   1 cscherer sunuser     47561 Nov 27 10:53 rgwnapani.tpa
-rw-r--r--   1 cscherer sunuser     47561 Nov 27 10:53 rgwnapdw.tpa
-rw-r--r--   1 cscherer sunuser     47561 Nov 27 10:53 rgwnapext.tpa
-rw-r--r--   1 cscherer sunuser     47561 Nov 27 10:53 rgwnapinh.tpa
-rw-r--r--   1 cscherer sunuser     47561 Nov 27 10:53 rgwnapmlk.tpa
-rw-r--r--   1 cscherer sunuser     47561 Nov 27 10:53 rgwnappla.tpa
-rw-r--r--   1 cscherer sunuser     47561 Nov 27 10:53 rgwnr.tpa
-rw-r--r--   1 cscherer sunuser      5137 Nov 27 10:53 rgwsa.tpa
-rw-r--r--   1 cscherer sunuser     16137 Nov 27 10:53 rgwsap.tpa
-rw-r--r--   1 cscherer sunuser      5183 Nov 27 10:53 rgwsr.tpa
-rw-r--r--   1 cscherer sunuser       572 Nov 27 10:53 rlccdf_c.res
-rw-r--r--   1 cscherer sunuser       722 Nov 27 10:53 rlgwgs_c.res
-rw-r--r--   1 cscherer sunuser      3597 Nov 27 10:47 samplpar.abb
-rw-r--r--   1 cscherer sunuser     27397 Nov 27 10:47 samplpar.hdr
-rw-r--r--   1 cscherer sunuser      5914 Nov 27 10:53 samplpar.res
-rwxr-xr-x   1 cscherer sunuser    130088 Nov 27 10:48 seisbs1.dis
-rwxr-xr-x   1 cscherer sunuser    130088 Nov 27 10:48 seisbs2.dis
-rwxr-xr-x   1 cscherer sunuser    943788 Nov 27 10:48 smaydtbl.dat
-rw-r--r--   1 cscherer sunuser    144660 Nov 27 10:53 sotnef.dat
-rw-r--r--   1 cscherer sunuser     28459 Nov 27 10:53 sp.tpa
-rw-r--r--   1 cscherer sunuser      4506 Nov 27 10:49 strmtube.dat
-rw-r--r--   1 cscherer sunuser     13122 Nov 27 10:53 totdos_c.res
-rw-r--r--   1 cscherer sunuser     13122 Nov 27 10:53 totdose.res
-rw-r--r--   1 cscherer sunuser     83835 Nov 18 11:19 tpa.inp
-r--r--r--   1 cscherer sunuser      9325 Mar  4  2002 tpa_.out
-rw-r--r--   1 cscherer sunuser     83835 Nov 18 11:19 tpa_base.inp
-rw-r--r--   1 cscherer sunuser     86103 Nov 27 10:47 tpameans.out
-rw-r--r--   1 cscherer sunuser     97497 Nov 27 10:47 tpanames.dbs
-rw-r--r--   1 cscherer sunuser    137387 Nov 27 10:53 trelease.out
-rw-r--r--   1 cscherer sunuser     14132 Nov 27 10:53 weldfail.out
-rw-r--r--   1 cscherer sunuser      8805 Nov 27 10:48 wpflow.dat
-rw-r--r--   1 cscherer sunuser     17410 Nov 27 10:48 wpflow.def
-rw-r--r--   1 cscherer sunuser       818 Nov 27 10:53 wpsfail.res

scr394/baseline:
total 10
drwxr-xr-x   2 cscherer sunuser       512 Dec 10 12:26 .
drwxr-xr-x  20 cscherer sunuser      9216 Dec 13 13:58 ..

scr394/ccdf:
total 36
drwxr-xr-x   2 cscherer sunuser       512 Nov 15 13:05 .
drwxr-xr-x  20 cscherer sunuser      9216 Dec 13 13:58 ..
-rw-r--r--   1 cscherer sunuser       267 Mar 14  2000 Makefile
-rw-r--r--   1 cscherer sunuser     23390 Jul 22  1999 tccdf.f
```

```
-rw-r--r--   1 cscherer sunuser        66 Aug  1  1997 tccdf.i
-rw-r--r--   1 cscherer sunuser       640 Jan 29  2001 tccdf.inp

scr394/codes:
total 6542
drwxr-xr-x   6 cscherer sunuser      2560 Dec 13 11:40 .
drwxr-xr-x  20 cscherer sunuser      9216 Dec 13 13:58 ..
-rw-r--r--   1 cscherer sunuser      1437 Dec 12 13:24 Makefile
-rw-r--r--   1 cscherer sunuser      1403 Sep  6 13:40 Makefile_betaB
-rw-r--r--   1 cscherer sunuser      1437 Nov 27 10:25 Makefile_solapps
-rw-r--r--   1 cscherer sunuser       499 Jun  2  1997 README
-rw-r--r--   1 cscherer sunuser      2320 May 28  1998 SIZES.INC
-rw-r--r--   1 cscherer sunuser       164 Feb 17  1998 SIZES2.INC
-rwxr-xr-x   1 cscherer sunuser    161984 Dec 13 11:39 ashplume.e
-rw-r--r--   1 cscherer sunuser     95611 Sep 26  2000 ashplume.f
-rwxr-xr-x   1 cscherer sunuser    161984 Dec 13 11:10 ashplume_base.e
drwxr-xr-x   2 cscherer sunuser      1024 Nov 27 08:57 betaBsrc
-rw-r--r--   1 cscherer sunuser     25361 Jul 17 14:57 corrosn.f
-rw-r--r--   1 cscherer sunuser     23436 Dec 13 10:46 corrosn.o
-rwxr-xr-x   1 cscherer sunuser     43236 Dec 13 11:40 dsfailt.e
-rw-r--r--   1 cscherer sunuser     22597 Nov 17 18:01 dsfailt.f
-rwxr-xr-x   1 cscherer sunuser     43236 Dec 13 11:10 dsfailt_base.e
-rwxr-xr-x   1 cscherer sunuser     41968 Dec 13 11:40 ebsfilt.e
-rw-r--r--   1 cscherer sunuser     13526 Nov 18 12:47 ebsfilt.f
-rw-r--r--   1 cscherer sunuser      1450 Dec 12 10:16 ebsfiltB_mod.diff
-rwxr-xr-x   1 cscherer sunuser     41596 Dec 13 11:10 ebsfilt_base.e
-rw-r--r--   1 cscherer sunuser     12568 Sep 26  2000 ebsfilt_betaB.f
-rw-r--r--   1 cscherer sunuser     13526 Nov 18 12:47 ebsfilt_mod394.f
-rw-r--r--   1 cscherer sunuser      1450 Dec  2 11:11 ebsfilt_mod_beta.diff
-rwxr-xr-x   1 cscherer sunuser    191664 Dec 13 11:40 env.e
-rwxr-xr-x   1 cscherer sunuser    191664 Dec 13 11:10 env_base.e
-rwxr-xr-x   1 cscherer sunuser    282984 Dec 13 11:40 envin.e
-rwxr-xr-x   1 cscherer sunuser    282984 Dec 13 11:10 envin_base.e
-rw-r--r--   1 cscherer sunuser      3928 Dec  6 09:49 errors.lst
-rwxr-xr-x   1 cscherer sunuser    140336 Dec 13 11:39 failt.e
-rw-r--r--   1 cscherer sunuser    103340 Nov 17 18:01 failt.f
-rwxr-xr-x   1 cscherer sunuser    140336 Dec 13 11:09 failt_base.e
-r--r--r--   1 cscherer sunuser       450 Nov 17 18:03 failtadj.i
drwxr-xr-x   2 cscherer sunuser      3584 Dec 13 11:40 gentpa
-rwxr-xr-x   1 cscherer sunuser      4633 Nov 17 18:01 integrt.f
-rw-r--r--   1 cscherer sunuser      1436 Dec 13 10:46 integrt.o
drwxr-xr-x   3 cscherer sunuser       512 Nov 15 13:05 itym
-r--r--r--   1 cscherer sunuser       868 Mar 14  2002 lhs1.i
-r--r--r--   1 cscherer sunuser      1308 Mar 14  2002 lhs2.i
-r--r--r--   1 cscherer sunuser       438 Mar 14  2002 lhs3.i
-r--r--r--   1 cscherer sunuser       437 Mar 14  2002 lhs4.i
-r--r--r--   1 cscherer sunuser       374 Mar 14  2002 lhs5.i
-r--r--r--   1 cscherer sunuser       450 Mar 14  2002 lhs6.i
-r--r--r--   1 cscherer sunuser       464 Mar 14  2002 lhs7.i
-r--r--r--   1 cscherer sunuser       431 Mar 14  2002 lhs8.i
-rwxr-xr-x   1 cscherer sunuser      5229 May 29  2002 linintrp.f
-rw-r--r--   1 cscherer sunuser      3312 Dec 13 10:46 linintrp.o
-r--r--r--   1 cscherer sunuser       331 Nov 17 18:03 mechadj.i
-rwxr-xr-x   1 cscherer sunuser    113840 Dec 13 11:38 mechfail.e
-rw-r--r--   1 cscherer sunuser     89700 Nov 17 18:01 mechfail.f
-rwxr-xr-x   1 cscherer sunuser    113840 Dec 13 11:08 mechfail_base.e
-rwxr-xr-x   1 cscherer sunuser    391504 Dec 13 11:39 nefmks.e
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-rw-r--r--   1 cscherer sunuser    308005 Sep 26  2000 nefmks.f
-rwxr-xr-x   1 cscherer sunuser    391504 Dec 13 11:09 nefmks_base.e
-rwxr-xr-x   1 cscherer sunuser    120024 Dec 13 11:39 releaset.e
-rw-r--r--   1 cscherer sunuser    160258 Dec 12 12:53 releaset.f
-rw-r--r--   1 cscherer sunuser     20484 Dec 12 10:17 releasetB_mod.diff
-rwxr-xr-x   1 cscherer sunuser    114608 Dec 13 11:09 releaset_base.e
-rw-r--r--   1 cscherer sunuser    147326 Sep 20 09:33 releaset_betaB.f
-rw-r--r--   1 cscherer sunuser    158999 Dec  6 11:08 releaset_mod394.f
-rw-r--r--   1 cscherer sunuser    156823 Dec  6 09:44 releaset_mod394_a.f
-rw-r--r--   1 cscherer sunuser    158467 Dec  6 10:46 releaset_mod394_b.f
-rw-r--r--   1 cscherer sunuser    160431 Dec 11 14:39 releaset_mod394_d.f
-rwxr-xr-x   1 cscherer sunuser    130404 Dec 11 15:15 releaset_mod394_e.d
-rw-r--r--   1 cscherer sunuser    160258 Dec 12 12:53 releaset_mod394_final.f
-rw-r--r--   1 cscherer sunuser    160345 Dec 12 14:12 releaset_mod394c_real8.f
-rw-r--r--   1 cscherer sunuser    160432 Dec 12 11:40
releaset_mod394e_noileach.f
-rw-r--r--   1 cscherer sunuser     10327 Dec  2 11:12 releaset_mod_beta.diff
-rw-r--r--   1 cscherer sunuser    160715 Dec 12 13:03 releaset_test_ileach.f
-rw-r--r--   1 cscherer sunuser    160348 Dec 12 12:51 releaset_test_real8.f
-rwxrwxrwx   1 cscherer sunuser       180 Dec  3 09:15 remove_exe
-rwxr-xr-x   1 cscherer sunuser    212836 Dec 13 11:40 snllhs.e
-rw-r--r--   1 cscherer sunuser    224558 Sep  6 10:21 snllhs.f
-rwxr-xr-x   1 cscherer sunuser    212836 Dec 13 11:10 snllhs_base.e
-rwxr-xr-x   1 cscherer sunuser      4303 May 29  2002 srchpos.f
-rw-r--r--   1 cscherer sunuser      1312 Dec 13 10:46 srchpos.o
drwxr-xr-x   2 cscherer sunuser      1024 Dec 13 10:49 test_exes
-rwxr-xr-x   1 cscherer sunuser     19890 Nov 17 18:01 weldfail.f
-rw-r--r--   1 cscherer sunuser      9808 Dec 13 10:46 weldfail.o

scr394/codes/betaBsrc:
total 1091
drwxr-xr-x   2 cscherer sunuser      1024 Nov 27 08:57 .
drwxr-xr-x   6 cscherer sunuser      2560 Dec 13 11:40 ..
-rw-r--r--   1 cscherer sunuser     95611 Sep 26  2000 ashplume.f
-rw-r--r--   1 cscherer sunuser     25361 Jul 17 14:57 corrosn.f
-rw-r--r--   1 cscherer sunuser     22597 Nov 17 18:01 dsfailt.f
-rw-r--r--   1 cscherer sunuser     12568 Sep 26  2000 ebsfilt.f
-rw-r--r--   1 cscherer sunuser    103340 Nov 17 18:01 failt.f
-rwxr-xr-x   1 cscherer sunuser      4633 Nov 17 18:01 integrt.f
-rwxr-xr-x   1 cscherer sunuser      5229 May 29  2002 linintrp.f
-rw-r--r--   1 cscherer sunuser     89700 Nov 17 18:01 mechfail.f
-rw-r--r--   1 cscherer sunuser    308005 Sep 26  2000 nefmks.f
-rw-r--r--   1 cscherer sunuser    147326 Sep 20 09:33 releaset.f
-rw-r--r--   1 cscherer sunuser    224558 Sep  6 10:21 snllhs.f
-rwxr-xr-x   1 cscherer sunuser      4303 May 29  2002 srchpos.f
-rwxr-xr-x   1 cscherer sunuser     19890 Nov 17 18:01 weldfail.f

scr394/codes/gentpa:
total 1068
drwxr-xr-x   2 cscherer sunuser      3584 Dec 13 11:40 .
drwxr-xr-x   6 cscherer sunuser      2560 Dec 13 11:40 ..
-rw-r--r--   1 cscherer sunuser       543 Feb 11  2000 AFPPAR.CMN
-rw-r--r--   1 cscherer sunuser      1044 Feb 11  2000 AIRPAR.CMN
-rw-r--r--   1 cscherer sunuser       872 Feb 11  2000 ANMPAR.CMN
-rw-r--r--   1 cscherer sunuser       615 Feb 11  2000 AQUPAR.CMN
-rw-r--r--   1 cscherer sunuser      1089 Feb 11  2000 CONC.CMN
-rw-r--r--   1 cscherer sunuser       461 Feb 11  2000 DAYPC.CMN
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-rw-r--r--   1 cscherer sunuser       400 Feb 11  2000 DECAY.CMN
-rw-r--r--   1 cscherer sunuser       571 Feb 11  2000 DFPAR.CMN
-rw-r--r--   1 cscherer sunuser      1359 Feb 11  2000 DOSALL.CMN
-rw-r--r--   1 cscherer sunuser       574 Feb 11  2000 ENVPAR.CMN
-rw-r--r--   1 cscherer sunuser       310 Feb 11  2000 EXPALL.CMN
-rw-r--r--   1 cscherer sunuser       637 Feb 11  2000 EXTPAR.CMN
-rw-r--r--   1 cscherer sunuser       327 Feb 11  2000 FILES.CMN
-rw-r--r--   1 cscherer sunuser       814 Feb 11  2000 FODPAR.CMN
-rw-r--r--   1 cscherer sunuser       438 Feb 11  2000 INVIN.CMN
-rw-r--r--   1 cscherer sunuser       569 Feb 11  2000 LABELS.CMN
-rw-r--r--   1 cscherer sunuser      1161 Feb 11  2000 MTBPAR.CMN
-rw-r--r--   1 cscherer sunuser      1688 Feb 28  2000 Make.bat
-rw-r--r--   1 cscherer sunuser      1884 Dec  3 08:47 Makefile
-rw-r--r--   1 cscherer sunuser      1849 Feb 24  2000 Makefile_betaB
-rw-r--r--   1 cscherer sunuser      1884 Dec  3 08:47 Makefile_solapps
-rw-r--r--   1 cscherer sunuser      1746 Feb 11  2000 Mkenv.fig
-rw-r--r--   1 cscherer sunuser      1548 Feb 11  2000 Mkenvin.fig
-rw-r--r--   1 cscherer sunuser      2762 Feb 11  2000 OPT.CMN
-rw-r--r--   1 cscherer sunuser       444 Feb 11  2000 ORGMAS.CMN
-rw-r--r--   1 cscherer sunuser       728 Feb 11  2000 ORGPAR.CMN
-rw-r--r--   1 cscherer sunuser       589 Feb 11  2000 RAD.CMN
-rw-r--r--   1 cscherer sunuser       788 Feb 11  2000 RADIN.CMN
-rw-r--r--   1 cscherer sunuser       722 Feb 11  2000 RMD.CMN
-rw-r--r--   1 cscherer sunuser       489 Feb 11  2000 RMD2.CMN
-rw-r--r--   1 cscherer sunuser       891 Feb 11  2000 SOLPAR.CMN
-rw-r--r--   1 cscherer sunuser       489 Feb 11  2000 SWPAR.CMN
-rw-r--r--   1 cscherer sunuser       586 Feb 11  2000 TIMES.CMN
-rw-r--r--   1 cscherer sunuser       316 Feb 11  2000 TITL.CMN
-rw-r--r--   1 cscherer sunuser     12777 Feb 11  2000 accmod.f
-rw-r--r--   1 cscherer sunuser     24096 Dec 10 12:21 accmod.o
-rw-r--r--   1 cscherer sunuser     10094 Feb 11  2000 acute1.f
-rw-r--r--   1 cscherer sunuser     16196 Dec 10 12:21 acute1.o
-rw-r--r--   1 cscherer sunuser      9579 Feb 11  2000 acutea.f
-rw-r--r--   1 cscherer sunuser     11188 Dec 10 12:22 acutea.o
-rw-r--r--   1 cscherer sunuser      7118 Feb 11  2000 acutec.f
-rw-r--r--   1 cscherer sunuser      8488 Dec 10 12:22 acutec.o
-rw-r--r--   1 cscherer sunuser      8669 Feb 11  2000 aircal.f
-rw-r--r--   1 cscherer sunuser     11232 Dec 10 12:22 aircal.o
-rw-r--r--   1 cscherer sunuser      8383 Feb 11  2000 anmcal.f
-rw-r--r--   1 cscherer sunuser     12716 Dec 10 12:22 anmcal.o
-rw-r--r--   1 cscherer sunuser      2043 Feb 11  2000 aqucal.f
-rw-r--r--   1 cscherer sunuser      3984 Dec 10 12:22 aqucal.o
-rw-r--r--   1 cscherer sunuser      1217 Feb 11  2000 biocal.f
-rw-r--r--   1 cscherer sunuser      1944 Dec 10 12:21 biocal.o
-rw-r--r--   1 cscherer sunuser      4174 Feb 11  2000 blockd.f
-rw-r--r--   1 cscherer sunuser      6664 Dec 10 12:21 blockd.o
-rw-r--r--   1 cscherer sunuser      1405 Feb 11  2000 bsort.f
-rw-r--r--   1 cscherer sunuser      1200 Dec 10 12:21 bsort.o
-rw-r--r--   1 cscherer sunuser     13008 Feb 11  2000 candh.f
-rw-r--r--   1 cscherer sunuser     10420 Dec 10 12:22 candh.o
-rw-r--r--   1 cscherer sunuser      6653 Feb 11  2000 chain.f
-rw-r--r--   1 cscherer sunuser      5368 Dec 10 12:22 chain.o
-rw-r--r--   1 cscherer sunuser     23921 Feb 11  2000 check.f
-rw-r--r--   1 cscherer sunuser     48600 Dec 10 12:21 check.o
-rw-r--r--   1 cscherer sunuser     10189 Feb 11  2000 cronmod.f
-rw-r--r--   1 cscherer sunuser     22452 Dec 10 12:21 cronmod.o
-rw-r--r--   1 cscherer sunuser      5153 Feb 11  2000 crpcal.f
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-rw-r--r--   1 cscherer sunuser      8556 Dec 10 12:22 crpcal.o
-rw-r--r--   1 cscherer sunuser      3842 Feb 11  2000 dkharv.f
-rw-r--r--   1 cscherer sunuser      6120 Dec 10 12:22 dkharv.o
-rw-r--r--   1 cscherer sunuser      5426 Feb 11  2000 dose.f
-rw-r--r--   1 cscherer sunuser      2398 Feb 11  2000 drfbiv.f
-rw-r--r--   1 cscherer sunuser      2628 Dec 10 12:21 drfbiv.o
-rw-r--r--   1 cscherer sunuser      6728 Feb 11  2000 drfsec.f
-rw-r--r--   1 cscherer sunuser      5248 Dec 10 12:21 drfsec.o
-rw-r--r--   1 cscherer sunuser      1877 Feb 11  2000 drkcal.f
-rw-r--r--   1 cscherer sunuser      2276 Dec 10 12:22 drkcal.o
-rw-r--r--   1 cscherer sunuser      1325 Feb 11  2000 dumred.f
-rw-r--r--   1 cscherer sunuser      3600 Dec 10 12:21 dumred.o
-rw-r--r--   1 cscherer sunuser      3958 Feb 11  2000 edranm.f
-rw-r--r--   1 cscherer sunuser      7244 Dec 10 12:22 edranm.o
-rw-r--r--   1 cscherer sunuser      3567 Feb 11  2000 edrcrp.f
-rw-r--r--   1 cscherer sunuser      7652 Dec 10 12:22 edrcrp.o
-rw-r--r--   1 cscherer sunuser      2525 Feb 11  2000 edrnon.f
-rw-r--r--   1 cscherer sunuser      4696 Dec 10 12:22 edrnon.o
-rw-r--r--   1 cscherer sunuser      2853 Feb 11  2000 edrres.f
-rw-r--r--   1 cscherer sunuser      4136 Dec 10 12:22 edrres.o
-rw-r--r--   1 cscherer sunuser     10581 Feb 11  2000 env.f
-rw-r--r--   1 cscherer sunuser      4885 Feb 11  2000 envin.f
-rw-r--r--   1 cscherer sunuser      4561 Feb 11  2000 envlib.f
-rw-r--r--   1 cscherer sunuser      8708 Dec 10 12:21 envlib.o
-rw-r--r--   1 cscherer sunuser      1912 Feb 11  2000 exposr.f
-rw-r--r--   1 cscherer sunuser      2236 Dec 10 12:22 exposr.o
-rw-r--r--   1 cscherer sunuser      6774 Feb 11  2000 extcal.f
-rw-r--r--   1 cscherer sunuser      7572 Dec 10 12:22 extcal.o
-rw-r--r--   1 cscherer sunuser      1489 Feb 11  2000 filerr.f
-rw-r--r--   1 cscherer sunuser      3860 Dec 10 12:21 filerr.o
-rw-r--r--   1 cscherer sunuser      1986 Feb 11  2000 fntdrf.f
-rw-r--r--   1 cscherer sunuser      2000 Dec 10 12:21 fntdrf.o
-rw-r--r--   1 cscherer sunuser      3003 Feb 11  2000 headng.f
-rw-r--r--   1 cscherer sunuser      5740 Dec 10 12:21 headng.o
-rw-r--r--   1 cscherer sunuser      2203 Feb 11  2000 idnuc.f
-rw-r--r--   1 cscherer sunuser      3000 Dec 10 12:21 idnuc.o
-rw-r--r--   1 cscherer sunuser      2842 Feb 11  2000 inhcal.f
-rw-r--r--   1 cscherer sunuser      5704 Dec 10 12:22 inhcal.o
-rw-r--r--   1 cscherer sunuser      2392 Feb 11  2000 initnv.f
-rw-r--r--   1 cscherer sunuser      2756 Dec 10 12:21 initnv.o
-rw-r--r--   1 cscherer sunuser      1841 Feb 11  2000 intpol.f
-rw-r--r--   1 cscherer sunuser      3724 Dec 10 12:22 intpol.o
-rw-r--r--   1 cscherer sunuser      1348 Feb 11  2000 invmol.f
-rw-r--r--   1 cscherer sunuser      1160 Dec 10 12:21 invmol.o
-rw-r--r--   1 cscherer sunuser       677 Feb 11  2000 makda2.f
-rw-r--r--   1 cscherer sunuser      1048 Dec 10 12:21 makda2.o
-rw-r--r--   1 cscherer sunuser      5870 Feb 11  2000 opnfil.f
-rw-r--r--   1 cscherer sunuser     11748 Dec 10 12:21 opnfil.o
-rw-r--r--   1 cscherer sunuser      4217 Feb 11  2000 order.f
-rw-r--r--   1 cscherer sunuser      5732 Dec 10 12:21 order.o
-rw-r--r--   1 cscherer sunuser      2325 Feb 11  2000 packag.f
-rw-r--r--   1 cscherer sunuser      3480 Dec 10 12:22 packag.o
-rw-r--r--   1 cscherer sunuser      3366 Feb 11  2000 plmriz.f
-rw-r--r--   1 cscherer sunuser      2184 Dec 10 12:21 plmriz.o
-rw-r--r--   1 cscherer sunuser      1861 Feb 11  2000 prior.f
-rw-r--r--   1 cscherer sunuser      2236 Dec 10 12:22 prior.o
-rw-r--r--   1 cscherer sunuser      4080 Feb 11  2000 prob.f
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-rw-r--r--   1 cscherer sunuser      2108 Dec 10 12:21 prob.o
-rw-r--r--   1 cscherer sunuser      2079 Feb 11  2000 profile.f
-rw-r--r--   1 cscherer sunuser      1612 Dec 10 12:21 profile.o
-rw-r--r--   1 cscherer sunuser     11351 Feb 11  2000 readin.f
-rw-r--r--   1 cscherer sunuser     47520 Dec 10 12:21 readin.o
-rw-r--r--   1 cscherer sunuser      6174 Feb 11  2000 redcas.f
-rw-r--r--   1 cscherer sunuser     24420 Dec 10 12:21 redcas.o
-rw-r--r--   1 cscherer sunuser      3867 Feb 11  2000 redcha.f
-rw-r--r--   1 cscherer sunuser      9248 Dec 10 12:22 redcha.o
-rw-r--r--   1 cscherer sunuser      8483 Feb 11  2000 redflt.f
-rw-r--r--   1 cscherer sunuser     35388 Dec 10 12:21 redflt.o
-rw-r--r--   1 cscherer sunuser      1694 Feb 11  2000 redist.f
-rw-r--r--   1 cscherer sunuser      1792 Dec 10 12:22 redist.o
-rw-r--r--   1 cscherer sunuser      8548 Feb 11  2000 ritenv.f
-rw-r--r--   1 cscherer sunuser     37152 Dec 10 12:21 ritenv.o
-rw-r--r--   1 cscherer sunuser      4371 Feb 11  2000 ritexp.f
-rw-r--r--   1 cscherer sunuser     10940 Dec 10 12:21 ritexp.o
-rw-r--r--   1 cscherer sunuser      2584 Feb 11  2000 ritmed.f
-rw-r--r--   1 cscherer sunuser      7300 Dec 10 12:22 ritmed.o
-rw-r--r--   1 cscherer sunuser     27222 Feb 11  2000 ritqa.f
-rw-r--r--   1 cscherer sunuser     93708 Dec 10 12:21 ritqa.o
-rw-r--r--   1 cscherer sunuser      4346 Feb 11  2000 rlibin.f
-rw-r--r--   1 cscherer sunuser     10192 Dec 10 12:21 rlibin.o
-rw-r--r--   1 cscherer sunuser      4399 Feb 11  2000 rwake.f
-rw-r--r--   1 cscherer sunuser      3392 Dec 10 12:21 rwake.o
-rw-r--r--   1 cscherer sunuser      2396 Feb 11  2000 sigma.f
-rw-r--r--   1 cscherer sunuser      1832 Dec 10 12:21 sigma.o
-rw-r--r--   1 cscherer sunuser      8387 Feb 11  2000 swcal.f
-rw-r--r--   1 cscherer sunuser      5868 Dec 10 12:21 swcal.o
-rw-r--r--   1 cscherer sunuser      1894 Feb 11  2000 trnspt.f
-rw-r--r--   1 cscherer sunuser      2048 Dec 10 12:22 trnspt.o
-rw-r--r--   1 cscherer sunuser      1771 Feb 11  2000 ustar.f
-rw-r--r--   1 cscherer sunuser      1500 Dec 10 12:21 ustar.o
-rw-r--r--   1 cscherer sunuser      9276 Feb 11  2000 xqcal.f
-rw-r--r--   1 cscherer sunuser     17128 Dec 10 12:22 xqcal.o
-rw-r--r--   1 cscherer sunuser      5277 Feb 11  2000 xqin.f
-rw-r--r--   1 cscherer sunuser     12472 Dec 10 12:21 xqin.o

scr394/codes/itym:
total 6
drwxr-xr-x   3 cscherer sunuser       512 Nov 15 13:05 .
drwxr-xr-x   6 cscherer sunuser      2560 Dec 13 11:40 ..
-rw-r--r--   1 cscherer sunuser       596 Oct  1 10:06 makefile
drwxr-xr-x   2 cscherer sunuser       512 Nov 15 13:05 src

scr394/codes/itym/src:
total 323
drwxr-xr-x   2 cscherer sunuser       512 Nov 15 13:05 .
drwxr-xr-x   3 cscherer sunuser       512 Nov 15 13:05 ..
-rw-r--r--   1 cscherer sunuser     29776 Mar 22  2000 array.f
-rw-r--r--   1 cscherer sunuser     15856 Mar 22  2000 check_valid.f
-rw-r--r--   1 cscherer sunuser     59186 Sep 25 18:51 estimator.f
-rw-r--r--   1 cscherer sunuser      4911 Sep 25 18:53 init_itym.f
-rw-r--r--   1 cscherer sunuser      9420 Sep 25 18:55 itym.f
-rw-r--r--   1 cscherer sunuser     10129 Sep 25 18:57 itym.i
-rw-r--r--   1 cscherer sunuser     26752 Sep 26 14:19 itymutils.f
-rw-r--r--   1 cscherer sunuser       261 Mar 22  2000 path.i
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-rw-r--r--   1 cscherer sunuser        55 Mar 22  2000 preuzf.i
-rw-r--r--   1 cscherer sunuser     42671 Mar 22  2000 ran.f
-rw-r--r--   1 cscherer sunuser     38406 Sep 26 14:20 strtokfunc.f
-rw-r--r--   1 cscherer sunuser     60346 Sep 26 14:22 uncertain.f
-rw-r--r--   1 cscherer sunuser     12265 Mar 22  2000 uncertain.i
-rw-r--r--   1 cscherer sunuser        55 Mar 22  2000 unctab.i
-rw-r--r--   1 cscherer sunuser     10904 Mar 22  2000 zportunx.f

scr394/codes/test_exes:
total 3916
drwxr-xr-x   2 cscherer sunuser      1024 Dec 13 10:49 .
drwxr-xr-x   6 cscherer sunuser      2560 Dec 13 11:40 ..
-rwxr-xr-x   1 cscherer sunuser    161984 Dec 10 12:20 ashplume_basesolapps.e
-rwxr-xr-x   1 cscherer sunuser    161984 Dec 10 13:20 ashplume_solapps.e
-rwxr-xr-x   1 cscherer sunuser     43236 Dec 10 12:21 dsfailt_basesolapps.e
-rwxr-xr-x   1 cscherer sunuser     43236 Dec 10 13:20 dsfailt_solapps.e
-rwxr-xr-x   1 cscherer sunuser     41596 Dec 10 12:21 ebsfilt_basesolapps.e
-rwxr-xr-x   1 cscherer sunuser     41968 Dec 10 13:20 ebsfilt_mod394solapps.e
-rwxr-xr-x   1 cscherer sunuser    191664 Dec 10 12:22 env_basesolapps.e
-rwxr-xr-x   1 cscherer sunuser    191664 Dec 10 13:20 env_solapps.e
-rwxr-xr-x   1 cscherer sunuser    282984 Dec 10 12:21 envin_basesolapps.e
-rwxr-xr-x   1 cscherer sunuser    282984 Dec 10 13:20 envin_solapps.e
-rwxr-xr-x   1 cscherer sunuser    140336 Dec 10 12:19 failt_basesolapps.e
-rwxr-xr-x   1 cscherer sunuser    140336 Dec 10 13:19 failt_solapps.e
-rwxr-xr-x   1 cscherer sunuser    113840 Dec 10 12:18 mechfail_basesolapps.e
-rwxr-xr-x   1 cscherer sunuser    113840 Dec 10 13:18 mechfail_solapps.e
-rwxr-xr-x   1 cscherer sunuser    391504 Dec 10 12:19 nefmks_basesolapps.e
-rwxr-xr-x   1 cscherer sunuser    391504 Dec 10 13:19 nefmks_solapps.e
-rwxr-xr-x   1 cscherer sunuser    125324 Dec 10 12:20 releaset_basesolapps.e
-rwxr-xr-x   1 cscherer sunuser    130252 Dec 11 14:41 releaset_mod394_d.e
-rwxr-xr-x   1 cscherer sunuser    120048 Dec 12 14:13 releaset_mod394c_real8.e
-rwxr-xr-x   1 cscherer sunuser    130228 Dec 10 13:19 releaset_mod394solapps.e
-rwxr-xr-x   1 cscherer sunuser    130396 Dec 12 13:08 releaset_solapps_real8.e
-rwxr-xr-x   1 cscherer sunuser    212836 Dec 10 12:21 snllhs_basesolapps.e
-rwxr-xr-x   1 cscherer sunuser    212836 Dec 10 13:20 snllhs_solapps.e

scr394/data:
total 7091
drwxr-xr-x   2 cscherer sunuser      1536 Dec 13 11:06 .
drwxr-xr-x  20 cscherer sunuser      9216 Dec 13 13:58 ..
-rw-r--r--   1 cscherer sunuser       965 Feb 11  2000 FILENAME.DAT
-rw-r--r--   1 cscherer sunuser    121789 Mar 22  2000 bunitdem.dat
-rw-r--r--   1 cscherer sunuser      1025 Mar 29  2000 burnup.dat
-rwxr-xr-x   1 cscherer sunuser    468925 Sep 25 19:00 careadem.dat
-rwxr-xr-x   1 cscherer sunuser    515693 Sep 25 19:01 cdepdem.dat
-rw-r--r--   1 cscherer sunuser    850000 Aug 15  1997 climato1.dat
-rw-r--r--   1 cscherer sunuser      2200 Feb  1  1999 climato2.dat
-rw-r--r--   1 cscherer sunuser      4791 Sep 25 17:29 coefkdeq.dat
-rw-r--r--   1 cscherer sunuser      2033 May 31  2002 dilution.dat
-rw-r--r--   1 cscherer sunuser       519 Oct 19  2000 drythick.dat
-rw-r--r--   1 cscherer sunuser       791 Jul 23 15:39 dsfailt.def
-rw-r--r--   1 cscherer sunuser      6265 Jul 17 09:54 ebsfail.def
-rw-r--r--   1 cscherer sunuser       790 May 28  1998 ebsfilt.def
-rw-r--r--   1 cscherer sunuser      5546 Dec  9 11:31 ebsrel.def
-rw-r--r--   1 cscherer sunuser      5553 Dec 13 11:06 ebsrel_base_ileach0.def
-rw-r--r--   1 cscherer sunuser      5546 Dec  9 11:31 ebsrel_mod394.def
-rw-r--r--   1 cscherer sunuser      5553 Sep  3 09:27 ebsrel_orig.def
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-rw-r--r--   1 cscherer sunuser    298679 Mar 22  2000 elevdem.dat
-rw-r--r--   1 cscherer sunuser      9381 May 29  2002 fluoride.dat
-rw-r--r--   1 cscherer sunuser      6513 Feb 11  2000 gbioac1.dat
-rw-r--r--   1 cscherer sunuser      3383 Sep  4 19:18 gdefauls.def
-rw-r--r--   1 cscherer sunuser      3383 Feb 11  2000 gdefault.def
-rw-r--r--   1 cscherer sunuser        64 Feb 11  2000 gdosinc2.dat
-rw-r--r--   1 cscherer sunuser      7011 Feb 11  2000 gftrans.def
-rw-r--r--   1 cscherer sunuser      7011 Sep  4 19:18 gftranss.def
-rw-r--r--   1 cscherer sunuser     15214 Feb 11  2000 ggamen.dat
-rw-r--r--   1 cscherer sunuser     13855 Feb 11  2000 ggenii.def
-rw-r--r--   1 cscherer sunuser     13173 Sep  4 19:18 ggeniis.def
-rw-r--r--   1 cscherer sunuser      5351 Feb 11  2000 ggrdf.dat
-rw-r--r--   1 cscherer sunuser      9897 Mar 29  2000 gnewdf.dat
-rw-r--r--   1 cscherer sunuser     13200 Mar 20  2000 grmdlib.dat
-rw-r--r--   1 cscherer sunuser      3048 Sep 15  2000 gs_cb_ad.dat
-rw-r--r--   1 cscherer sunuser      2487 Jun  4  1998 gs_cb_ci.dat
-rw-r--r--   1 cscherer sunuser      3045 Sep 15  2000 gs_pb_ad.dat
-rw-r--r--   1 cscherer sunuser      2487 Jun  4  1998 gs_pb_ci.dat
-rw-r--r--   1 cscherer sunuser      7521 May 31  2002 ia.dat
-rw-r--r--   1 cscherer sunuser     20530 Sep 25 18:59 itym.dat
-rw-r--r--   1 cscherer sunuser    943774 Mar 29  2000 maidtbl.dat
-rw-r--r--   1 cscherer sunuser     10978 Mar 22  2000 maswtbl.dat
-rwxr-xr-x   1 cscherer sunuser    943775 Sep 26 14:48 maydtbl.dat
-rw-r--r--   1 cscherer sunuser     11267 Sep 21 09:55 mechfail.def
-rw-r--r--   1 cscherer sunuser      1254 Sep 20 20:42 multifaf.dat
-rw-r--r--   1 cscherer sunuser      1255 Sep 20 20:42 multifbe.dat
-rw-r--r--   1 cscherer sunuser    116965 Jul 17 09:56 multiflo.dat
-rw-r--r--   1 cscherer sunuser      6890 Sep 25 11:51 nuclides.dat
-rw-r--r--   1 cscherer sunuser      7111 Sep 24  2000 organdf.dat
-rw-r--r--   1 cscherer sunuser       548 Sep 21  2000 repdes.dat
-rwxr-xr-x   1 cscherer sunuser    130088 Sep 21 09:55 seisbs1.dis
-rwxr-xr-x   1 cscherer sunuser    130088 Sep 21 09:56 seisbs2.dis
-rwxr-xr-x   1 cscherer sunuser    943788 Sep 26 14:48 smaydtbl.dat
-rw-r--r--   1 cscherer sunuser    489858 Mar 22  2000 soildem.dat
-rw-r--r--   1 cscherer sunuser      4506 Feb  7  2000 strmtube.dat
-rw-r--r--   1 cscherer sunuser    119673 Mar 22  2000 sunitdem.dat
-rw-r--r--   1 cscherer sunuser    162404 May  8  2000 tefkti.inp
-rw-r--r--   1 cscherer sunuser     97497 Sep 26 14:24 tpanames.dbs
-rw-r--r--   1 cscherer sunuser    471041 Mar 22  2000 winddem.dat
-rw-r--r--   1 cscherer sunuser     17410 Feb  2  2000 wpflow.def

scr394/diffs:
total 2098
drwxr-xr-x   2 cscherer sunuser       512 Dec 13 11:55 .
drwxr-xr-x  20 cscherer sunuser      9216 Dec 13 13:58 ..
-rw-r--r--   1 cscherer sunuser    412992 Nov 27 12:13 diff2.lst
-rwxrwxrwx   1 cscherer sunuser      2896 Nov 27 12:37 diff2_files
-rwxr--r--   1 cscherer sunuser    599040 Nov 27 12:17 diff2_lst.doc
-rw-r--r--   1 cscherer sunuser    852822 Nov 27 12:13 diff3.lst
-rwxrwxrwx   1 cscherer sunuser      1230 Nov 27 12:12 diff3_files
-rwxrwxrwx   1 cscherer sunuser     19924 Nov 27 11:31 diff_files
-rwxrwxrwx   1 cscherer sunuser     14408 Nov 27 11:46 diff_some_files
-rw-r--r--   1 cscherer sunuser    107000 Nov 27 12:24 ebsnef_dat.dif
-rw-r--r--   1 cscherer sunuser      9835 Dec 12 10:12 ebsrelB_mod.diff
-rw-r--r--   1 cscherer sunuser      4792 Dec  2 11:10 ebsrel_mod_beta.diff
-rw-r--r--   1 cscherer sunuser     13109 Dec 12 10:07 execB_mod.diff
-rw-r--r--   1 cscherer sunuser     11185 Dec  2 11:11 exec_mod_beta.diff
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-rw-r--r--   1 cscherer sunuser     25431 Dec 12 14:40 out.diff

scr394/docs:
total 124
drwxr-xr-x   2 cscherer sunuser       512 Dec 16 13:50 .
drwxr-xr-x  20 cscherer sunuser      9216 Dec 13 13:58 ..
-rwxr--r--   1 cscherer sunuser     36155 Dec 16 13:52 Test Plan PA-SCR-394.wpd
-rwxr--r--   1 cscherer sunuser     78865 Dec 16 12:33 scr_394.wpd

scr394/fromron:
total 218
drwxr-xr-x   2 cscherer sunuser       512 Nov 14 12:44 .
drwxr-xr-x  20 cscherer sunuser      9216 Dec 13 13:58 ..
-rwxr--r--   1 cscherer sunuser    201774 Nov 14 12:46 PA-SCR-394.zip

scr394/fromv411:
total 698
drwxr-xr-x   3 cscherer sunuser       512 Dec  4 16:20 .
drwxr-xr-x  20 cscherer sunuser      9216 Dec 13 13:58 ..
drwxr-xr-x   3 cscherer sunuser       512 Nov 14 15:10 PROJ-1402-762
-rwxr--r--   1 cscherer sunuser     13828 Jun  4  2002 ebsfilt.f
-rwxr--r--   1 cscherer sunuser    155203 Jun  5  2002 ebsnef_newformat.dat
-rwxr--r--   1 cscherer sunuser     55268 Jun  4  2002 ebsrel.f
-rwxr--r--   1 cscherer sunuser    306860 Jun  4  2002 exec.f
-rwxr--r--   1 cscherer sunuser      2806 Jun  5  2002 relcum.out
-rwxr--r--   1 cscherer sunuser    134891 Jun  4  2002 releaset.f

scr394/fromv411/PROJ-1402-762:
total 3
drwxr-xr-x   3 cscherer sunuser       512 Nov 14 15:10 .
drwxr-xr-x   3 cscherer sunuser       512 Dec  4 16:20 ..
drwxr-xr-x   4 cscherer sunuser       512 Nov 14 15:10 PA-SCR-394

scr394/fromv411/PROJ-1402-762/PA-SCR-394:
total 555
drwxr-xr-x   4 cscherer sunuser       512 Nov 14 15:10 .
drwxr-xr-x   3 cscherer sunuser       512 Nov 14 15:10 ..
-rwxr--r--   1 cscherer sunuser     27642 Jun  5  2002 Test Plan PA-SCR-394.wpd
-rwxr--r--   1 cscherer sunuser     13828 Jun  4  2002 ebsfilt.f
-rwxr--r--   1 cscherer sunuser     55268 Jun  4  2002 ebsrel.f
-rwxr--r--   1 cscherer sunuser    306860 Jun  4  2002 exec.f
drwxr-xr-x   3 cscherer sunuser       512 Nov 14 15:10 pltest
-rwxr--r--   1 cscherer sunuser    134891 Jun  4  2002 releaset.f
drwxr-xr-x   3 cscherer sunuser       512 Nov 14 15:10 sltest

scr394/fromv411/PROJ-1402-762/PA-SCR-394/pltest:
total 3
drwxr-xr-x   3 cscherer sunuser       512 Nov 14 15:10 .
drwxr-xr-x   4 cscherer sunuser       512 Nov 14 15:10 ..
drwxr-xr-x   2 cscherer sunuser       512 Nov 14 15:10 pl-1

scr394/fromv411/PROJ-1402-762/PA-SCR-394/pltest/pl-1:
total 572
drwxr-xr-x   2 cscherer sunuser       512 Nov 14 15:10 .
drwxr-xr-x   3 cscherer sunuser       512 Nov 14 15:10 ..
-rwxr--r--   1 cscherer sunuser       332 Jun  5  2002 PA-SCR-394_PL1.out
-rwxr--r--   1 cscherer sunuser     58130 Jun  5  2002 cumrelse.out
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```
-rwxr--r--   1 cscherer sunuser     12250 Jun  5  2002 diagnose.out
-rwxr--r--   1 cscherer sunuser     17479 Jun  5  2002 ebsflo.dat
-rwxr--r--   1 cscherer sunuser    155203 Jun  5  2002 ebsnef.dat
-rwxr--r--   1 cscherer sunuser      1723 Jun  5  2002 ebspac.nuc
-rwxr--r--   1 cscherer sunuser      8888 Jun  5  2002 ebsrel.inp
-rwxr--r--   1 cscherer sunuser     13668 Jun  5  2002 ebstrh.dat
-rwxr--r--   1 cscherer sunuser     58130 Jun  5  2002 frac_rel.out
-rwxr--r--   1 cscherer sunuser      1102 Jun  5  2002 inv1000.out
-rwxr--r--   1 cscherer sunuser      1095 Jun  5  2002 maxrel.dat
-rwxr--r--   1 cscherer sunuser      2806 Jun  5  2002 relcum.out
-rwxr--r--   1 cscherer sunuser       695 Jun  5  2002 relfrac.out
-rwxr--r--   1 cscherer sunuser    227339 Jun  5  2002 trelease.out

scr394/fromv411/PROJ-1402-762/PA-SCR-394/sltest:
total 3
drwxr-xr-x   3 cscherer sunuser       512 Nov 14 15:10 .
drwxr-xr-x   4 cscherer sunuser       512 Nov 14 15:10 ..
drwxr-xr-x   2 cscherer sunuser       512 Nov 14 15:10 sl-1

scr394/fromv411/PROJ-1402-762/PA-SCR-394/sltest/sl-1:
total 6838
drwxr-xr-x   2 cscherer sunuser       512 Nov 14 15:10 .
drwxr-xr-x   3 cscherer sunuser       512 Nov 14 15:10 ..
-rwxr--r--   1 cscherer sunuser    100682 Jun  5  2002 PA-SCR-394_SL1.out
-rwxr--r--   1 cscherer sunuser    155203 Jun  5  2002 ebsnef.dat
-rwxr--r--   1 cscherer sunuser    406782 Jun  5  2002 ebsnef2.dat
-rwxr--r--   1 cscherer sunuser   1376041 Jun  5  2002 ebsrel.ech
-rwxr--r--   1 cscherer sunuser   4838165 Jun  5  2002 ebsrel.rlt
-rwxr--r--   1 cscherer sunuser      2806 Jun  5  2002 relcum.out
-rwxr--r--   1 cscherer sunuser     66180 Jun  5  2002 tpa.inp

scr394/georgemods:
total 534
drwxr-xr-x   2 cscherer sunuser       512 Nov 15 13:00 .
drwxr-xr-x  20 cscherer sunuser      9216 Dec 13 13:58 ..
-rwxr--r--   1 cscherer sunuser     13828 Jun  4  2002 ebsfilt.f
-rwxr--r--   1 cscherer sunuser     55268 Jun  4  2002 ebsrel.f
-rwxr--r--   1 cscherer sunuser    306860 Jun  4  2002 exec.f
-rwxr--r--   1 cscherer sunuser    134891 Jun  4  2002 releaset.f

scr394/merge:
total 3532
drwxr-xr-x   2 cscherer sunuser      1024 Dec  4 15:41 .
drwxr-xr-x  20 cscherer sunuser      9216 Dec 13 13:58 ..
-rw-r--r--   1 cscherer sunuser      1450 Nov 18 13:45 ebsfilt.diff
-rw-r--r--   1 cscherer sunuser      1124 Nov 18 10:46 ebsfilt394.f
-rw-r--r--   1 cscherer sunuser     13418 Nov 15 14:18 ebsfilt_ga.f
-rw-r--r--   1 cscherer sunuser     13526 Nov 18 12:47 ebsfilt_mod394.f
-rwxr--r--   1 cscherer sunuser     13828 Jun  4  2002 ebsfilt_v411.f
-rw-r--r--   1 cscherer sunuser     12568 Sep 26  2000 ebsfilt_v41j.f
-rw-r--r--   1 cscherer sunuser     12568 Sep 26  2000 ebsfilt_v50.f
-rw-r--r--   1 cscherer sunuser      1286 Nov 15 14:20 ebsfiltga_50.diff
-rw-r--r--   1 cscherer sunuser      4611 Nov 18 13:45 ebsrel.diff
-rw-r--r--   1 cscherer sunuser      3247 Nov 18 10:52 ebsrel394.f
-rw-r--r--   1 cscherer sunuser     35275 Nov 15 13:26 ebsrel41j_50.diff
-rw-r--r--   1 cscherer sunuser     53714 Nov 15 14:19 ebsrel_ga.f
-rw-r--r--   1 cscherer sunuser     80215 Nov 26 13:09 ebsrel_mod394.f
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-rwxr--r--   1 cscherer sunuser     55268 Jun  4  2002 ebsrel_v411.f
-rw-r--r--   1 cscherer sunuser     50784 Sep 26  2000 ebsrel_v41j.f
-rw-r--r--   1 cscherer sunuser     77369 Sep 25 15:06 ebsrel_v50.f
-rw-r--r--   1 cscherer sunuser     36394 Nov 15 14:21 ebsrelga_50.diff
-rw-r--r--   1 cscherer sunuser      1059 Nov 26 08:47 exec.diff
-rw-r--r--   1 cscherer sunuser       430 Nov 26 09:33 exec.tmp
-rw-r--r--   1 cscherer sunuser       263 Nov 26 10:04 exec2.tmp
-rw-r--r--   1 cscherer sunuser      9997 Nov 18 11:10 exec394.f
-rw-r--r--   1 cscherer sunuser    102020 Nov 15 13:27 exec41j_50.diff
-rw-r--r--   1 cscherer sunuser    298524 Nov 15 14:20 exec_ga.f
-rw-r--r--   1 cscherer sunuser    359815 Nov 26 10:07 exec_mod394.f
-rwxr--r--   1 cscherer sunuser    306860 Jun  4  2002 exec_v411.f
-rw-r--r--   1 cscherer sunuser    280312 May  8  2001 exec_v41j.f
-rw-r--r--   1 cscherer sunuser    349787 Sep 27 15:21 exec_v50.f
-rw-r--r--   1 cscherer sunuser    350165 Nov 18 11:24 exec_v50B.f
-rw-r--r--   1 cscherer sunuser    103718 Nov 15 14:21 execga_50.diff
-rw-r--r--   1 cscherer sunuser       162 Dec  4 15:41 rel394.tmp
-rw-r--r--   1 cscherer sunuser     10562 Nov 26 10:45 releaset.diff
-rw-r--r--   1 cscherer sunuser      6317 Nov 18 11:24 releaset394.f
-rw-r--r--   1 cscherer sunuser     41680 Nov 15 13:27 releaset41j_50.diff
-rw-r--r--   1 cscherer sunuser    131128 Nov 15 14:20 releaset_ga.f
-rw-r--r--   1 cscherer sunuser    155824 Nov 26 13:27 releaset_mod394.f
-rwxr--r--   1 cscherer sunuser    134891 Jun  4  2002 releaset_v411.f
-rw-r--r--   1 cscherer sunuser    122299 Sep 26  2000 releaset_v41j.f
-rw-r--r--   1 cscherer sunuser    147326 Sep 20 09:33 releaset_v50.f
-rw-r--r--   1 cscherer sunuser     54340 Nov 15 14:21 releasetga_50.diff

scr394/mods:
total 729
drwxr-xr-x   2 cscherer sunuser       512 Dec 13 13:44 .
drwxr-xr-x  20 cscherer sunuser      9216 Dec 13 13:58 ..
-rw-r--r--   1 cscherer sunuser     13526 Nov 18 12:47 ebsfilt.f
-rw-r--r--   1 cscherer sunuser      5546 Dec  9 11:31 ebsrel.def
-rw-r--r--   1 cscherer sunuser     82484 Dec 12 12:39 ebsrel.f
-rw-r--r--   1 cscherer sunuser    361507 Dec 12 12:48 exec.f
-rw-r--r--   1 cscherer sunuser    160258 Dec 12 12:53 releaset.f
-rw-r--r--   1 cscherer sunuser     83951 Dec 10 13:36 tpa.inp

scr394/pltest:
total 642
drwxr-xr-x   4 cscherer sunuser      1024 Dec 10 09:20 .
drwxr-xr-x  20 cscherer sunuser      9216 Dec 13 13:58 ..
-rw-r--r--   1 cscherer sunuser     46580 Dec 10 09:20 cumrelse.out
-rw-r--r--   1 cscherer sunuser      9800 Dec 10 09:20 diagnose.out
-rw-r--r--   1 cscherer sunuser     14029 Nov 27 08:44 ebsflo.dat
-rw-r--r--   1 cscherer sunuser     14029 Nov 27 08:44 ebsflo_betaB.dat
-rw-r--r--   1 cscherer sunuser    124203 Dec 10 09:20 ebsnef.dat
-rw-r--r--   1 cscherer sunuser      1883 Nov 27 08:44 ebspac.nuc
-rw-r--r--   1 cscherer sunuser      1883 Nov 27 08:44 ebspac_betaB.nuc
-rw-r--r--   1 cscherer sunuser     11211 Dec  6 13:42 ebsrel.inp
-rw-r--r--   1 cscherer sunuser     11211 Nov 27 08:44 ebsrel_betaB.inp
-rw-r--r--   1 cscherer sunuser     17315 Nov 27 08:44 ebstrh.dat
-rw-r--r--   1 cscherer sunuser     17315 Nov 27 08:44 ebstrh_betaB.dat
-rw-r--r--   1 cscherer sunuser      1930 Dec  4 15:10 fort.25
-rw-r--r--   1 cscherer sunuser     46580 Dec 10 09:20 frac_rel.out
-rw-r--r--   1 cscherer sunuser      1102 Dec 10 09:20 inv1000.out
-rw-r--r--   1 cscherer sunuser      1095 Dec 10 09:20 maxrel.dat
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```
drwxr-xr-x   2 cscherer sunuser      1024 Dec  4 16:28 pl-1
drwxr-xr-x   2 cscherer sunuser       512 Dec 10 09:18 pl-1b
-rw-r--r--   1 cscherer sunuser       682 Dec 10 09:20 rel_flow.out
-rw-r--r--   1 cscherer sunuser      2266 Dec 10 09:20 relcum.out
-rwxr--r--   1 cscherer sunuser      2806 Jun  5  2002 relcum_v411.out
-rwxr-xr-x   1 cscherer sunuser    130228 Dec  9 13:11 releaset.e
-rw-r--r--   1 cscherer sunuser       665 Dec 10 09:20 relfrac.out
-rw-r--r--   1 cscherer sunuser       332 Dec  6 13:28 scr394_pl1.out
-rw-r--r--   1 cscherer sunuser       332 Dec 10 09:20 scr394_pl1b.out
-rw-r--r--   1 cscherer sunuser    144139 Dec 10 09:20 trelease.out

scr394/pltest/pl-1:
total 647
drwxr-xr-x   2 cscherer sunuser      1024 Dec  4 16:28 .
drwxr-xr-x   4 cscherer sunuser      1024 Dec 10 09:20 ..
-rw-r--r--   1 cscherer sunuser     46580 Dec  5 13:00 cumrelse.out
-rw-r--r--   1 cscherer sunuser      9800 Dec  5 13:00 diagnose.out
-rw-r--r--   1 cscherer sunuser     14029 Nov 27 08:44 ebsflo.dat
-rw-r--r--   1 cscherer sunuser     14029 Nov 27 08:44 ebsflo_betaB.dat
-rw-r--r--   1 cscherer sunuser    124203 Dec  5 13:00 ebsnef.dat
-rw-r--r--   1 cscherer sunuser      1883 Nov 27 08:44 ebspac.nuc
-rw-r--r--   1 cscherer sunuser      1883 Nov 27 08:44 ebspac_betaB.nuc
-rw-r--r--   1 cscherer sunuser     11211 Nov 27 08:44 ebsrel.inp
-rw-r--r--   1 cscherer sunuser     11211 Nov 27 08:44 ebsrel_betaB.inp
-rw-r--r--   1 cscherer sunuser     17315 Nov 27 08:44 ebstrh.dat
-rw-r--r--   1 cscherer sunuser     17315 Nov 27 08:44 ebstrh_betaB.dat
-rw-r--r--   1 cscherer sunuser      1930 Dec  4 15:10 fort.25
-rw-r--r--   1 cscherer sunuser     46580 Dec  5 13:00 frac_rel.out
-rw-r--r--   1 cscherer sunuser      1102 Dec  5 13:00 inv1000.out
-rw-r--r--   1 cscherer sunuser      1095 Dec  5 13:00 maxrel.dat
-rw-r--r--   1 cscherer sunuser       637 Dec  5 13:00 rel_flow.out
-rw-r--r--   1 cscherer sunuser      2626 Dec  5 13:00 relcum.out
-rwxr--r--   1 cscherer sunuser      2806 Jun  5  2002 relcum_v411.out
-rwxr-xr-x   1 cscherer sunuser    131160 Dec  5 12:53 releaset.e
-rw-r--r--   1 cscherer sunuser       696 Dec  5 13:00 relfrac.out
-rw-r--r--   1 cscherer sunuser       332 Dec  5 13:00 scr394_pl1.out
-rw-r--r--   1 cscherer sunuser    149451 Dec  5 13:00 trelease.out

scr394/pltest/pl-1b:
total 2
drwxr-xr-x   2 cscherer sunuser       512 Dec 10 09:18 .
drwxr-xr-x   4 cscherer sunuser      1024 Dec 10 09:20 ..

scr394/postmodb:
total 9691
drwxr-xr-x   2 cscherer sunuser      8192 Dec  9 12:10 .
drwxr-xr-x  20 cscherer sunuser      9216 Dec 13 13:58 ..
-rw-r--r--   1 cscherer sunuser       965 Dec  4 14:47 FILENAME.DAT
-rw-r--r--   1 cscherer sunuser       381 Dec  4 14:47 NEFII.VEL
-rw-r--r--   1 cscherer sunuser      2746 Dec  4 14:47 airpkdos.res
-rw-r--r--   1 cscherer sunuser      2746 Dec  4 14:47 arpkds_c.res
-rw-r--r--   1 cscherer sunuser       914 Dec  4 14:47 ashout.res
-rw-r--r--   1 cscherer sunuser      1025 Dec  4 14:45 burnup.dat
-rw-r--r--   1 cscherer sunuser      5047 Dec  4 14:47 chlrdmf.dat
-rw-r--r--   1 cscherer sunuser    850000 Dec  4 14:45 climato1.dat
-rw-r--r--   1 cscherer sunuser      2200 Dec  4 14:45 climato2.dat
-rw-r--r--   1 cscherer sunuser      4791 Dec  4 14:45 coefkdeq.dat
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-rw-r--r--   1 cscherer sunuser     14506 Dec  4 14:47 corrode.out
-rw-r--r--   1 cscherer sunuser     78539 Dec  4 14:47 cp.tpa
-rw-r--r--   1 cscherer sunuser      2252 Dec  4 14:47 cumrel.res
-rw-r--r--   1 cscherer sunuser      2252 Dec  4 14:47 cumrel_c.res
-rw-r--r--   1 cscherer sunuser     46580 Dec  4 14:47 cumrelse.out
-rw-r--r--   1 cscherer sunuser      6693 Dec  4 14:47 deltaec.inp
-rw-r--r--   1 cscherer sunuser      9800 Dec  4 14:47 diagnose.out
-rw-r--r--   1 cscherer sunuser      2033 Dec  4 14:47 dilution.dat
-rw-r--r--   1 cscherer sunuser      3870 Dec  4 14:45 drifts.dat
-rw-r--r--   1 cscherer sunuser       519 Dec  4 14:45 drythick.dat
-rw-r--r--   1 cscherer sunuser      2951 Dec  4 14:45 dsfailt.dat
-rw-r--r--   1 cscherer sunuser       791 Dec  4 14:45 dsfailt.def
-rw-r--r--   1 cscherer sunuser       610 Dec  4 14:45 dsfailt.inp
-rw-r--r--   1 cscherer sunuser        34 Dec  4 14:45 dsfailt.out
-rw-r--r--   1 cscherer sunuser     56160 Dec  4 14:47 ebscld.out
-rw-r--r--   1 cscherer sunuser      6265 Dec  4 14:45 ebsfail.def
-rw-r--r--   1 cscherer sunuser      6222 Dec  4 14:47 ebsfail.inp
-rw-r--r--   1 cscherer sunuser       790 Dec  4 14:45 ebsfilt.def
-rw-r--r--   1 cscherer sunuser      3030 Dec  4 14:47 ebsfilt.inp
-rw-r--r--   1 cscherer sunuser       551 Dec  4 14:47 ebsfilt.out
-rw-r--r--   1 cscherer sunuser     14029 Dec  4 14:47 ebsflo.dat
-rw-r--r--   1 cscherer sunuser    167701 Dec  4 14:47 ebsnef.dat
-rw-r--r--   1 cscherer sunuser    136852 Dec  4 14:47 ebsnef.out
-rw-r--r--   1 cscherer sunuser    167681 Dec  4 14:47 ebsnef2.dat
-rw-r--r--   1 cscherer sunuser    124203 Dec  3 11:33 ebsnef_3cols.dat
-rw-r--r--   1 cscherer sunuser    146101 Nov 27 08:44 ebsnef_betaB.dat
-rwxr--r--   1 cscherer sunuser    155203 Jun  5  2002 ebsnef_newformat.dat
-rw-r--r--   1 cscherer sunuser    146101 Nov 27 10:53 ebsnef_solapps.dat
-rw-r--r--   1 cscherer sunuser      1883 Dec  4 14:47 ebspac.nuc
-rw-r--r--   1 cscherer sunuser      5553 Dec  4 14:45 ebsrel.def
-rw-r--r--   1 cscherer sunuser     11211 Dec  4 14:47 ebsrel.inp
-rw-r--r--   1 cscherer sunuser    124203 Dec  4 14:47 ebssf.dat
-rw-r--r--   1 cscherer sunuser     17315 Dec  4 14:47 ebstrh.dat
-rw-r--r--   1 cscherer sunuser     12335 Dec  4 14:47 ebstrhc.inp
-rw-r--r--   1 cscherer sunuser      2711 Dec  4 14:47 echofail.dat
-rw-r--r--   1 cscherer sunuser    321286 Dec  4 14:47 echofilt.dat
-rw-r--r--   1 cscherer sunuser     39354 Dec  4 14:47 epa_ave.out
-rw-r--r--   1 cscherer sunuser      1707 Dec  4 14:47 epapktim.out
-rw-r--r--   1 cscherer sunuser     17398 Dec  4 14:47 failt.out
-rw-r--r--   1 cscherer sunuser      6281 Dec  4 14:45 fluoride.dat
-rw-r--r--   1 cscherer sunuser      1930 Dec  4 14:47 fort.25
-rw-r--r--   1 cscherer sunuser     46580 Dec  4 14:47 frac_rel.out
-rw-r--r--   1 cscherer sunuser      6513 Dec  4 14:47 gbioac1.dat
-rw-r--r--   1 cscherer sunuser      3383 Dec  4 14:47 gdefault.def
-rw-r--r--   1 cscherer sunuser      3387 Dec  4 14:47 gdefault.inp
-rw-r--r--   1 cscherer sunuser        64 Dec  4 14:47 gdosinc2.dat
-rw-r--r--   1 cscherer sunuser         0 Dec  4 14:47 gentoo.out
-rw-r--r--   1 cscherer sunuser     35173 Dec  4 14:47 genv.in
-rw-r--r--   1 cscherer sunuser     18393 Dec  4 14:47 genv.out
-rw-r--r--   1 cscherer sunuser      7011 Dec  4 14:47 gftrans.def
-rw-r--r--   1 cscherer sunuser      7142 Dec  4 14:47 gftrans.inp
-rw-r--r--   1 cscherer sunuser     15214 Dec  4 14:47 ggamen.dat
-rw-r--r--   1 cscherer sunuser     13855 Dec  4 14:47 ggenii.def
-rw-r--r--   1 cscherer sunuser     13164 Dec  4 14:47 ggenii.inp
-rw-r--r--   1 cscherer sunuser     10074 Dec  4 14:47 ggenii.out
-rw-r--r--   1 cscherer sunuser      5351 Dec  4 14:47 ggrdf.dat
-rw-r--r--   1 cscherer sunuser      5673 Dec  4 14:47 gmedia.out
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-rw-r--r--   1 cscherer sunuser      9897 Dec  4 14:47 gnewdf.dat
-rw-r--r--   1 cscherer sunuser     13200 Dec  4 14:47 grmdlib.dat
-rw-r--r--   1 cscherer sunuser       572 Dec  4 14:47 gsccdf.res
-rw-r--r--   1 cscherer sunuser       572 Dec  4 14:47 gsccdf_c.res
-rw-r--r--   1 cscherer sunuser      3561 Dec  4 14:47 gw_cb_ad.dat
-rw-r--r--   1 cscherer sunuser      1264 Dec  4 14:47 gw_cb_ci.dat
-rw-r--r--   1 cscherer sunuser      3557 Dec  4 14:47 gw_pb_ad.dat
-rw-r--r--   1 cscherer sunuser      1261 Dec  4 14:47 gw_pb_ci.dat
-rw-r--r--   1 cscherer sunuser       572 Dec  4 14:47 gwccdf.res
-rw-r--r--   1 cscherer sunuser       572 Dec  4 14:47 gwccdf_c.res
-rw-r--r--   1 cscherer sunuser         9 Dec  4 14:47 gwork.buf
-rw-r--r--   1 cscherer sunuser      1738 Dec  4 14:47 gwpkdos.res
-rw-r--r--   1 cscherer sunuser      1738 Dec  4 14:47 gwpkds_c.res
-rw-r--r--   1 cscherer sunuser      2170 Dec  4 14:47 gwttuzsz.res
-rw-r--r--   1 cscherer sunuser      2330 Dec  4 14:47 infilper.res
-rw-r--r--   1 cscherer sunuser      1102 Dec  4 14:47 inv1000.out
-rw-r--r--   1 cscherer sunuser         0 Nov 26 13:55 lhs.csv
-rw-r--r--   1 cscherer sunuser     40006 Dec  4 14:45 lhs.inp
-rw-r--r--   1 cscherer sunuser      5268 Dec  4 14:45 lhs.out
-rw-r--r--   1 cscherer sunuser     69312 Dec  4 14:45 lhse.out
-rw-r--r--   1 cscherer sunuser      1095 Dec  4 14:47 maxrel.dat
-rwxr-xr-x   1 cscherer sunuser    943775 Dec  4 14:45 maydtbl.dat
-rw-r--r--   1 cscherer sunuser    347679 Dec  4 14:45 mechfail.dat
-rw-r--r--   1 cscherer sunuser     11267 Dec  4 14:45 mechfail.def
-rw-r--r--   1 cscherer sunuser     11341 Dec  4 14:45 mechfail.inp
-rw-r--r--   1 cscherer sunuser         0 Dec  4 14:45 mechfail.out
-rw-r--r--   1 cscherer sunuser      1254 Dec  4 14:45 multifaf.dat
-rw-r--r--   1 cscherer sunuser      1255 Dec  4 14:45 multifbe.dat
-rw-r--r--   1 cscherer sunuser     61241 Dec  4 14:47 mv.tpa
-rw-r--r--   1 cscherer sunuser      2330 Dec  4 14:47 nearfld.res
-rw-r--r--   1 cscherer sunuser    135512 Dec  4 14:47 nefii.dis
-rw-r--r--   1 cscherer sunuser     11320 Dec  4 14:47 nefii.inp
-rw-r--r--   1 cscherer sunuser    226823 Dec  4 14:47 nefii.out
-rw-r--r--   1 cscherer sunuser       603 Dec  4 14:47 nefii.rel
-rw-r--r--   1 cscherer sunuser    135512 Dec  4 14:47 nefiisz.dis
-rw-r--r--   1 cscherer sunuser     11320 Dec  4 14:47 nefiisz.inp
-rw-r--r--   1 cscherer sunuser    226823 Dec  4 14:47 nefiisz.out
-rw-r--r--   1 cscherer sunuser    144717 Dec  4 14:47 nefiisz.src
-rw-r--r--   1 cscherer sunuser       381 Dec  4 14:47 nefiisz.vel
-rw-r--r--   1 cscherer sunuser    763574 Dec  4 14:47 nefiiuz.dis
-rw-r--r--   1 cscherer sunuser     10100 Dec  4 14:47 nefiiuz.inp
-rw-r--r--   1 cscherer sunuser    806774 Dec  4 14:47 nefiiuz.out
-rw-r--r--   1 cscherer sunuser    145762 Dec  4 14:47 nefiiuz.src
-rw-r--r--   1 cscherer sunuser       171 Dec  4 14:47 nefiiuz.vel
-rw-r--r--   1 cscherer sunuser       570 Dec  4 14:47 nefmks.log
-rw-r--r--   1 cscherer sunuser      2506 Dec  4 14:47 npkdoset.res
-rw-r--r--   1 cscherer sunuser      2506 Dec  4 14:47 npkdst_c.res
-rw-r--r--   1 cscherer sunuser      6890 Dec  4 14:45 nuclides.dat
-rw-r--r--   1 cscherer sunuser      7111 Dec  4 14:47 organdf.dat
-rw-r--r--   1 cscherer sunuser       698 Dec  4 14:47 pkmndose.out
-rw-r--r--   1 cscherer sunuser      8244 Dec  4 14:47 pkreltim.res
-rw-r--r--   1 cscherer sunuser      8244 Dec  4 14:47 pkrltm_c.res
-rw-r--r--   1 cscherer sunuser      1393 Dec  4 14:47 rel_flow.out
-rw-r--r--   1 cscherer sunuser       572 Dec  4 14:47 relccdf.res
-rw-r--r--   1 cscherer sunuser        41 Dec  4 14:47 relcum.out
-rw-r--r--   1 cscherer sunuser       412 Dec  4 14:47 releaset.out
-rw-r--r--   1 cscherer sunuser       696 Dec  4 14:47 relfrac.out
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-rw-r--r--   1 cscherer sunuser       722 Dec  4 14:47 relgwgs.res
-rw-r--r--   1 cscherer sunuser       548 Dec  4 14:45 repdes.dat
-rw-r--r--   1 cscherer sunuser     47561 Dec  4 14:47 rgwna.tpa
-rw-r--r--   1 cscherer sunuser     47561 Dec  4 14:47 rgwnapani.tpa
-rw-r--r--   1 cscherer sunuser     47561 Dec  4 14:47 rgwnapdw.tpa
-rw-r--r--   1 cscherer sunuser     47561 Dec  4 14:47 rgwnapext.tpa
-rw-r--r--   1 cscherer sunuser     47561 Dec  4 14:47 rgwnapinh.tpa
-rw-r--r--   1 cscherer sunuser     47561 Dec  4 14:47 rgwnapmlk.tpa
-rw-r--r--   1 cscherer sunuser     47561 Dec  4 14:47 rgwnappla.tpa
-rw-r--r--   1 cscherer sunuser     47561 Dec  4 14:47 rgwnr.tpa
-rw-r--r--   1 cscherer sunuser      5137 Dec  4 14:47 rgwsa.tpa
-rw-r--r--   1 cscherer sunuser     16137 Dec  4 14:47 rgwsap.tpa
-rw-r--r--   1 cscherer sunuser      5183 Dec  4 14:47 rgwsr.tpa
-rw-r--r--   1 cscherer sunuser       572 Dec  4 14:47 rlccdf_c.res
-rw-r--r--   1 cscherer sunuser       722 Dec  4 14:47 rlgwgs_c.res
-rw-r--r--   1 cscherer sunuser      3597 Dec  4 14:45 samplpar.abb
-rw-r--r--   1 cscherer sunuser     27397 Dec  4 14:45 samplpar.hdr
-rw-r--r--   1 cscherer sunuser      5914 Dec  4 14:47 samplpar.res
-rwxr-xr-x   1 cscherer sunuser    130088 Dec  4 14:45 seisbs1.dis
-rwxr-xr-x   1 cscherer sunuser    130088 Dec  4 14:45 seisbs2.dis
-rwxr-xr-x   1 cscherer sunuser    943788 Dec  4 14:45 smaydtbl.dat
-rw-r--r--   1 cscherer sunuser    144717 Dec  4 14:47 sotnef.dat
-rw-r--r--   1 cscherer sunuser     28459 Dec  4 14:47 sp.tpa
-rw-r--r--   1 cscherer sunuser      4506 Dec  4 14:45 strmtube.dat
-rw-r--r--   1 cscherer sunuser      2703 Dec  2 14:52 test_isa.out
-rw-r--r--   1 cscherer sunuser     13122 Dec  4 14:47 totdos_c.res
-rw-r--r--   1 cscherer sunuser     13122 Dec  4 14:47 totdose.res
-rw-r--r--   1 cscherer sunuser     83835 Nov 18 11:19 tpa.inp
-r--r--r--   1 cscherer sunuser      9325 Mar  4  2002 tpa_.out
-rw-r--r--   1 cscherer sunuser     83835 Nov 18 11:19 tpa_base.inp
-rw-r--r--   1 cscherer sunuser      2703 Dec  2 15:22 tpa_isa.out
-rw-r--r--   1 cscherer sunuser      2620 Dec  2 10:42 tpa_test1.out
-rw-r--r--   1 cscherer sunuser     86103 Dec  4 14:45 tpameans.out
-rw-r--r--   1 cscherer sunuser     97497 Dec  4 14:45 tpanames.dbs
-rw-r--r--   1 cscherer sunuser    149451 Dec  4 14:47 trelease.out
-rw-r--r--   1 cscherer sunuser     14132 Dec  4 14:47 weldfail.out
-rw-r--r--   1 cscherer sunuser      8805 Dec  4 14:45 wpflow.dat
-rw-r--r--   1 cscherer sunuser     17410 Dec  4 14:45 wpflow.def
-rw-r--r--   1 cscherer sunuser       818 Dec  4 14:47 wpsfail.res

scr394/pre-final-exes:
total 21482
drwxr-xr-x   2 cscherer sunuser       512 Dec 13 10:06 .
drwxr-xr-x  20 cscherer sunuser      9216 Dec 13 13:58 ..
-rwxr-xr-x   1 cscherer sunuser   2424744 Nov 27 10:42 tpa_50solapps.e
-rwxr-xr-x   1 cscherer sunuser   2408820 Nov 27 08:27 tpa_betaB.e
-rwxr-xr-x   1 cscherer sunuser   2434348 Dec  2 14:10 tpa_mod394abetaB.e
-rwxr-xr-x   1 cscherer sunuser   2434348 Nov 27 13:48 tpa_mod394asolapps.e
-rwxr-xr-x   1 cscherer sunuser   2435968 Dec  4 14:17 tpa_mod394bsolapps.e
-rwxr-xr-x   1 cscherer sunuser   2434156 Dec 10 13:17 tpa_mod394csolapps.e
-rwxr-xr-x   1 cscherer sunuser   2434028 Dec 11 15:39 tpa_mod394dsolapps.e
-rwxr-xr-x   1 cscherer sunuser   2434200 Dec 12 13:06 tpa_mod394esolapps.e
-rwxr-xr-x   1 cscherer sunuser   2424744 Dec 10 12:51 tpa_solappsbase.e

scr394/sltest:
total 37510
drwxr-xr-x   7 cscherer sunuser      4608 Dec 13 11:57 .
```

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drwxr-xr-x  20 cscherer sunuser      9216 Dec 13 13:58 ..
-rwxrwxrwx   1 cscherer sunuser       965 Dec 10 10:39 FILENAME.DAT
-rwxrwxrwx   1 cscherer sunuser      1437 Dec 10 10:39 NEFII.VEL
-rwxrwxrwx   1 cscherer sunuser      2746 Dec 10 10:39 airpkdos.res
-rwxrwxrwx   1 cscherer sunuser      2746 Dec 10 10:39 arpkds_c.res
-rwxrwxrwx   1 cscherer sunuser       914 Dec 10 10:39 ashout.res
drwxr-xr-x   2 cscherer sunuser      8192 Dec 13 11:03 basecase
drwxr-xr-x   2 cscherer sunuser      8192 Dec 13 11:24 basecase_ileach0
-rwxrwxrwx   1 cscherer sunuser      1025 Dec 10 10:31 burnup.dat
-rwxrwxrwx   1 cscherer sunuser      7547 Dec 10 10:39 chlrdmf.dat
-rwxrwxrwx   1 cscherer sunuser    850000 Dec 10 10:31 climato1.dat
-rwxrwxrwx   1 cscherer sunuser      2200 Dec 10 10:31 climato2.dat
-rwxrwxrwx   1 cscherer sunuser      4791 Dec 10 10:32 coefkdeq.dat
-rwxrwxrwx   1 cscherer sunuser     18979 Dec 10 10:39 corrode.out
-rwxrwxrwx   1 cscherer sunuser     78539 Dec 10 10:39 cp.tpa
-rwxrwxrwx   1 cscherer sunuser      2252 Dec 10 10:39 cumrel.res
-rwxrwxrwx   1 cscherer sunuser      2252 Dec 10 10:39 cumrel_c.res
-rwxrwxrwx   1 cscherer sunuser     69680 Dec 10 10:39 cumrelse.out
-rwxrwxrwx   1 cscherer sunuser      9993 Dec 10 10:39 deltaec.inp
-rwxrwxrwx   1 cscherer sunuser     14700 Dec 10 10:39 diagnose.out
-rw-r--r--   1 cscherer sunuser   7239330 Dec 13 11:57 diff_files.out
-rwxrwxrwx   1 cscherer sunuser     18966 Dec 13 11:56 diff_files_sl2
-rwxrwxrwx   1 cscherer sunuser      2033 Dec 10 10:39 dilution.dat
-rwxrwxrwx   1 cscherer sunuser      3870 Dec 10 10:31 drifts.dat
-rwxrwxrwx   1 cscherer sunuser       519 Dec 10 10:31 drythick.dat
-rwxrwxrwx   1 cscherer sunuser      2951 Dec 10 10:31 dsfailt.dat
-rwxrwxrwx   1 cscherer sunuser       791 Dec 10 10:31 dsfailt.def
-rwxrwxrwx   1 cscherer sunuser       610 Dec 10 10:31 dsfailt.inp
-rwxrwxrwx   1 cscherer sunuser        34 Dec 10 10:31 dsfailt.out
-rwxrwxrwx   1 cscherer sunuser     56860 Dec 10 10:39 ebscld.out
-rwxrwxrwx   1 cscherer sunuser      6265 Dec 10 10:32 ebsfail.def
-rwxrwxrwx   1 cscherer sunuser      6222 Dec 10 10:39 ebsfail.inp
-rwxrwxrwx   1 cscherer sunuser       790 Dec 10 10:32 ebsfilt.def
-rwxrwxrwx   1 cscherer sunuser      3030 Dec 10 10:39 ebsfilt.inp
-rwxrwxrwx   1 cscherer sunuser       239 Dec 10 10:39 ebsfilt.out
-rwxrwxrwx   1 cscherer sunuser     20929 Dec 10 10:39 ebsflo.dat
-rwxrwxrwx   1 cscherer sunuser    219001 Dec 10 10:39 ebsnef.dat
-rwxrwxrwx   1 cscherer sunuser    162252 Dec 10 10:39 ebsnef.out
-rwxrwxrwx   1 cscherer sunuser    658449 Dec 10 10:39 ebsnef2.dat
-rwxrwxrwx   1 cscherer sunuser      1883 Dec 10 10:39 ebspac.nuc
-rwxrwxrwx   1 cscherer sunuser    184320 Dec  5 10:51 ebsre_r5sa101.doc
-rwxrwxrwx   1 cscherer sunuser      8101 Dec 10 10:39 ebsrel.cum
-rwxrwxrwx   1 cscherer sunuser      5546 Dec 10 10:32 ebsrel.def
-rwxrwxrwx   1 cscherer sunuser    426149 Dec 10 10:39 ebsrel.ech
-rwxrwxrwx   1 cscherer sunuser     11211 Dec 10 10:39 ebsrel.inp
-rwxrwxrwx   1 cscherer sunuser   1288156 Dec 10 10:39 ebsrel.rlt
-rwxrwxrwx   1 cscherer sunuser    162203 Dec 10 10:39 ebssf.dat
-rwxrwxrwx   1 cscherer sunuser     25515 Dec 10 10:39 ebstrh.dat
-rwxrwxrwx   1 cscherer sunuser     18435 Dec 10 10:39 ebstrhc.inp
-rwxrwxrwx   1 cscherer sunuser      2711 Dec 10 10:39 echofail.dat
-rwxrwxrwx   1 cscherer sunuser    667001 Dec 10 10:39 echofilt.dat
-rwxrwxrwx   1 cscherer sunuser     39354 Dec 10 10:39 epa_ave.out
-rwxrwxrwx   1 cscherer sunuser      1707 Dec 10 10:39 epapktim.out
-rwxrwxrwx   1 cscherer sunuser     22703 Dec 10 10:39 failt.out
-rwxrwxrwx   1 cscherer sunuser      9381 Dec 10 10:31 fluoride.dat
-rwxrwxrwx   1 cscherer sunuser     69680 Dec 10 10:39 frac_rel.out
-rwxrwxrwx   1 cscherer sunuser      6513 Dec 10 10:39 gbioac1.dat
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-rwxrwxrwx   1 cscherer sunuser      3383 Dec 10 10:39 gdefault.def
-rwxrwxrwx   1 cscherer sunuser      3387 Dec 10 10:39 gdefault.inp
-rwxrwxrwx   1 cscherer sunuser        64 Dec 10 10:39 gdosinc2.dat
-rwxrwxrwx   1 cscherer sunuser         0 Dec 10 10:39 gentoo.out
-rwxrwxrwx   1 cscherer sunuser     35173 Dec 10 10:39 genv.in
-rwxrwxrwx   1 cscherer sunuser     18393 Dec 10 10:39 genv.out
-rwxrwxrwx   1 cscherer sunuser      7011 Dec 10 10:39 gftrans.def
-rwxrwxrwx   1 cscherer sunuser      7142 Dec 10 10:39 gftrans.inp
-rwxrwxrwx   1 cscherer sunuser     15214 Dec 10 10:39 ggamen.dat
-rwxrwxrwx   1 cscherer sunuser     13855 Dec 10 10:39 ggenii.def
-rwxrwxrwx   1 cscherer sunuser     13164 Dec 10 10:39 ggenii.inp
-rwxrwxrwx   1 cscherer sunuser     10074 Dec 10 10:39 ggenii.out
-rwxrwxrwx   1 cscherer sunuser      5351 Dec 10 10:39 ggrdf.dat
-rwxrwxrwx   1 cscherer sunuser      5673 Dec 10 10:39 gmedia.out
-rwxrwxrwx   1 cscherer sunuser      9897 Dec 10 10:39 gnewdf.dat
-rwxrwxrwx   1 cscherer sunuser     13200 Dec 10 10:39 grmdlib.dat
-rwxrwxrwx   1 cscherer sunuser       572 Dec 10 10:39 gsccdf.res
-rwxrwxrwx   1 cscherer sunuser       572 Dec 10 10:39 gsccdf_c.res
-rwxrwxrwx   1 cscherer sunuser      3561 Dec 10 10:39 gw_cb_ad.dat
-rwxrwxrwx   1 cscherer sunuser      1264 Dec 10 10:39 gw_cb_ci.dat
-rwxrwxrwx   1 cscherer sunuser      3557 Dec 10 10:39 gw_pb_ad.dat
-rwxrwxrwx   1 cscherer sunuser      1261 Dec 10 10:39 gw_pb_ci.dat
-rwxrwxrwx   1 cscherer sunuser       572 Dec 10 10:39 gwccdf.res
-rwxrwxrwx   1 cscherer sunuser       572 Dec 10 10:39 gwccdf_c.res
-rwxrwxrwx   1 cscherer sunuser         9 Dec 10 10:39 gwork.buf
-rwxrwxrwx   1 cscherer sunuser      1738 Dec 10 10:39 gwpkdos.res
-rwxrwxrwx   1 cscherer sunuser      1738 Dec 10 10:39 gwpkds_c.res
-rwxrwxrwx   1 cscherer sunuser      2170 Dec 10 10:39 gwttuzsz.res
-rwxrwxrwx   1 cscherer sunuser      3110 Dec 10 10:39 infilper.res
-rwxrwxrwx   1 cscherer sunuser      1102 Dec 10 10:39 inv1000.out
-rwxrwxrwx   1 cscherer sunuser         0 Dec  4 16:33 lhs.csv
-rwxrwxrwx   1 cscherer sunuser     40006 Dec 10 10:31 lhs.inp
-rwxrwxrwx   1 cscherer sunuser      5268 Dec 10 10:31 lhs.out
-rwxrwxrwx   1 cscherer sunuser     69312 Dec 10 10:31 lhse.out
-rwxrwxrwx   1 cscherer sunuser      1095 Dec 10 10:39 maxrel.dat
-rwxrwxrwx   1 cscherer sunuser    943775 Dec 10 10:31 maydtbl.dat
-rwxrwxrwx   1 cscherer sunuser    519279 Dec 10 10:32 mechfail.dat
-rwxrwxrwx   1 cscherer sunuser     11267 Dec 10 10:31 mechfail.def
-rwxrwxrwx   1 cscherer sunuser     35413 Dec 10 10:31 mechfail.inp
-rwxrwxrwx   1 cscherer sunuser         0 Dec 10 10:31 mechfail.out
-rwxrwxrwx   1 cscherer sunuser      1254 Dec 10 10:31 multifaf.dat
-rwxrwxrwx   1 cscherer sunuser      1255 Dec 10 10:31 multifbe.dat
-rwxrwxrwx   1 cscherer sunuser     61241 Dec 10 10:39 mv.tpa
-rwxrwxrwx   1 cscherer sunuser      3110 Dec 10 10:39 nearfld.res
-rwxrwxrwx   1 cscherer sunuser   1550574 Dec 10 10:39 nefii.dis
-rwxrwxrwx   1 cscherer sunuser     11320 Dec 10 10:39 nefii.inp
-rwxrwxrwx   1 cscherer sunuser   1952215 Dec 10 10:39 nefii.out
-rwxrwxrwx   1 cscherer sunuser       603 Dec 10 10:39 nefii.rel
-rwxrwxrwx   1 cscherer sunuser   1550574 Dec 10 10:39 nefiisz.dis
-rwxrwxrwx   1 cscherer sunuser     11320 Dec 10 10:39 nefiisz.inp
-rwxrwxrwx   1 cscherer sunuser   1952215 Dec 10 10:39 nefiisz.out
-rwxrwxrwx   1 cscherer sunuser    302368 Dec 10 10:39 nefiisz.src
-rwxrwxrwx   1 cscherer sunuser      1437 Dec 10 10:39 nefiisz.vel
-rwxrwxrwx   1 cscherer sunuser    188100 Dec 10 10:37 nefiiuz.dis
-rwxrwxrwx   1 cscherer sunuser     10100 Dec 10 10:37 nefiiuz.inp
-rwxrwxrwx   1 cscherer sunuser    448930 Dec 10 10:37 nefiiuz.out
-rwxrwxrwx   1 cscherer sunuser    255898 Dec 10 10:37 nefiiuz.src
```

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-rwxrwxrwx   1 cscherer sunuser       822 Dec 10 10:37 nefiiuz.vel
-rwxrwxrwx   1 cscherer sunuser      2935 Dec 10 10:39 nefmks.log
-rwxrwxrwx   1 cscherer sunuser      2506 Dec 10 10:39 npkdoset.res
-rwxrwxrwx   1 cscherer sunuser      2506 Dec 10 10:39 npkdst_c.res
-rwxrwxrwx   1 cscherer sunuser      6890 Dec 10 10:31 nuclides.dat
-rwxrwxrwx   1 cscherer sunuser      7111 Dec 10 10:39 organdf.dat
-rwxrwxrwx   1 cscherer sunuser       698 Dec 10 10:39 pkmndose.out
-rwxrwxrwx   1 cscherer sunuser      8244 Dec 10 10:39 pkreltim.res
-rwxrwxrwx   1 cscherer sunuser      8244 Dec 10 10:39 pkrltm_c.res
-rwxrwxrwx   1 cscherer sunuser       764 Dec 10 10:39 rel_flow.out
-rwxrwxrwx   1 cscherer sunuser       572 Dec 10 10:39 relccdf.res
-rwxrwxrwx   1 cscherer sunuser       721 Dec 10 10:39 relcum.out
-rwxrwxrwx   1 cscherer sunuser       413 Dec 10 10:39 releaset.out
-rwxrwxrwx   1 cscherer sunuser       620 Dec 10 10:39 relfrac.out
-rwxrwxrwx   1 cscherer sunuser       722 Dec 10 10:39 relgwgs.res
-rwxrwxrwx   1 cscherer sunuser       548 Dec 10 10:31 repdes.dat
-rwxrwxrwx   1 cscherer sunuser     70761 Dec 10 10:39 rgwna.tpa
-rwxrwxrwx   1 cscherer sunuser     70761 Dec 10 10:39 rgwnapani.tpa
-rwxrwxrwx   1 cscherer sunuser     70761 Dec 10 10:39 rgwnapdw.tpa
-rwxrwxrwx   1 cscherer sunuser     70761 Dec 10 10:39 rgwnapext.tpa
-rwxrwxrwx   1 cscherer sunuser     70761 Dec 10 10:39 rgwnapinh.tpa
-rwxrwxrwx   1 cscherer sunuser     70761 Dec 10 10:39 rgwnapmlk.tpa
-rwxrwxrwx   1 cscherer sunuser     70761 Dec 10 10:39 rgwnappla.tpa
-rwxrwxrwx   1 cscherer sunuser     70761 Dec 10 10:39 rgwnr.tpa
-rwxrwxrwx   1 cscherer sunuser      7437 Dec 10 10:39 rgwsa.tpa
-rwxrwxrwx   1 cscherer sunuser     23937 Dec 10 10:39 rgwsap.tpa
-rwxrwxrwx   1 cscherer sunuser      7483 Dec 10 10:39 rgwsr.tpa
-rwxrwxrwx   1 cscherer sunuser       572 Dec 10 10:39 rlccdf_c.res
-rwxrwxrwx   1 cscherer sunuser       722 Dec 10 10:39 rlgwgs_c.res
-rwxrwxrwx   1 cscherer sunuser      3597 Dec 10 10:31 samplpar.abb
-rwxrwxrwx   1 cscherer sunuser     27397 Dec 10 10:31 samplpar.hdr
-rwxrwxrwx   1 cscherer sunuser      5914 Dec 10 10:39 samplpar.res
-rwxrwxrwx   1 cscherer sunuser     25920 Dec 10 10:39 scr394_basecase.out
-rwxrwxrwx   1 cscherer sunuser     26164 Dec 10 09:58 scr394_sl2.out
-rwxrwxrwx   1 cscherer sunuser    130088 Dec 10 10:31 seisbs1.dis
-rwxrwxrwx   1 cscherer sunuser    130088 Dec 10 10:31 seisbs2.dis
drwxr-xr-x   2 cscherer sunuser      4096 Dec  9 12:07 sl-1
drwxr-xr-x   2 cscherer sunuser      4096 Dec 10 08:55 sl-1b
drwxr-xr-x   2 cscherer sunuser      8192 Dec 13 11:55 sl-2
-rwxrwxrwx   1 cscherer sunuser    943788 Dec 10 10:31 smaydtbl.dat
-rwxrwxrwx   1 cscherer sunuser    302368 Dec 10 10:39 sotnef.dat
-rwxrwxrwx   1 cscherer sunuser     28459 Dec 10 10:39 sp.tpa
-rwxrwxrwx   1 cscherer sunuser     82874 Dec 10 10:39 spquery.tpa
-rwxrwxrwx   1 cscherer sunuser      4506 Dec 10 10:32 strmtube.dat
-rwxrwxrwx   1 cscherer sunuser     13122 Dec 10 10:39 totdos_c.res
-rwxrwxrwx   1 cscherer sunuser     19322 Dec 10 10:39 totdose.res
-rwxrwxrwx   1 cscherer sunuser   2424744 Nov 27 10:42 tpa.e
-rwxrwxrwx   1 cscherer sunuser     83835 Dec 10 12:14 tpa.inp
-rwxrwxrwx   1 cscherer sunuser   2424744 Nov 27 10:42 tpa_50Bsolapps.e
-rwxrwxrwx   1 cscherer sunuser     83835 Nov 18 11:19 tpa_base.inp
-rwxrwxrwx   1 cscherer sunuser     83835 Dec 10 12:14 tpa_basecase.inp
-rwxrwxrwx   1 cscherer sunuser   2408820 Nov 27 08:27 tpa_betaB.e
-rwxrwxrwx   1 cscherer sunuser   2434156 Dec  9 13:08 tpa_ileach.e
-rwxrwxrwx   1 cscherer sunuser     83951 Dec  9 11:21 tpa_mod394.inp
-rwxrwxrwx   1 cscherer sunuser     83951 Dec 10 12:12 tpa_sl2.inp
-rwxrwxrwx   1 cscherer sunuser   2434568 Dec  6 11:25 tpa_tleach.e
-rwxrwxrwx   1 cscherer sunuser     86103 Dec 10 10:31 tpameans.out
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-rwxrwxrwx   1 cscherer sunuser     97497 Dec 10 10:31 tpanames.dbs
-rwxrwxrwx   1 cscherer sunuser    220443 Dec 10 10:39 trelease.out
-rwxrwxrwx   1 cscherer sunuser     21032 Dec 10 10:39 weldfail.out
-rwxrwxrwx   1 cscherer sunuser     13105 Dec 10 10:32 wpflow.dat
-rwxrwxrwx   1 cscherer sunuser     17410 Dec 10 10:32 wpflow.def
-rwxrwxrwx   1 cscherer sunuser       912 Dec 10 10:39 wpsfail.res

scr394/sltest/basecase:
total 18198
drwxr-xr-x   2 cscherer sunuser      8192 Dec 13 11:03 .
drwxr-xr-x   7 cscherer sunuser      4608 Dec 13 11:57 ..
-rw-r--r--   1 cscherer sunuser       965 Dec 13 10:57 FILENAME.DAT
-rw-r--r--   1 cscherer sunuser      1437 Dec 13 10:57 NEFII.VEL
-rw-r--r--   1 cscherer sunuser      2746 Dec 13 10:57 airpkdos.res
-rw-r--r--   1 cscherer sunuser      2746 Dec 13 10:57 arpkds_c.res
-rw-r--r--   1 cscherer sunuser       914 Dec 13 10:57 ashout.res
-rw-r--r--   1 cscherer sunuser      1025 Dec 13 10:51 burnup.dat
-rw-r--r--   1 cscherer sunuser      7547 Dec 13 10:57 chlrdmf.dat
-rw-r--r--   1 cscherer sunuser    850000 Dec 13 10:51 climato1.dat
-rw-r--r--   1 cscherer sunuser      2200 Dec 13 10:51 climato2.dat
-rw-r--r--   1 cscherer sunuser      4791 Dec 13 10:51 coefkdeq.dat
-rw-r--r--   1 cscherer sunuser     18979 Dec 13 10:57 corrode.out
-rw-r--r--   1 cscherer sunuser     78539 Dec 13 10:57 cp.tpa
-rw-r--r--   1 cscherer sunuser      2252 Dec 13 10:57 cumrel.res
-rw-r--r--   1 cscherer sunuser      2252 Dec 13 10:57 cumrel_c.res
-rw-r--r--   1 cscherer sunuser     69680 Dec 13 10:57 cumrelse.out
-rw-r--r--   1 cscherer sunuser      9993 Dec 13 10:57 deltaec.inp
-rw-r--r--   1 cscherer sunuser     14700 Dec 13 10:57 diagnose.out
-rw-r--r--   1 cscherer sunuser      2033 Dec 13 10:57 dilution.dat
-rw-r--r--   1 cscherer sunuser      3870 Dec 13 10:51 drifts.dat
-rw-r--r--   1 cscherer sunuser       519 Dec 13 10:51 drythick.dat
-rw-r--r--   1 cscherer sunuser      2951 Dec 13 10:51 dsfailt.dat
-rw-r--r--   1 cscherer sunuser       791 Dec 13 10:51 dsfailt.def
-rw-r--r--   1 cscherer sunuser       610 Dec 13 10:51 dsfailt.inp
-rw-r--r--   1 cscherer sunuser        34 Dec 13 10:51 dsfailt.out
-rw-r--r--   1 cscherer sunuser     56860 Dec 13 10:57 ebscld.out
-rw-r--r--   1 cscherer sunuser      6265 Dec 13 10:51 ebsfail.def
-rw-r--r--   1 cscherer sunuser      6222 Dec 13 10:57 ebsfail.inp
-rw-r--r--   1 cscherer sunuser       790 Dec 13 10:51 ebsfilt.def
-rw-r--r--   1 cscherer sunuser      3030 Dec 13 10:57 ebsfilt.inp
-rw-r--r--   1 cscherer sunuser       239 Dec 13 10:57 ebsfilt.out
-rw-r--r--   1 cscherer sunuser     20929 Dec 13 10:57 ebsflo.dat
-rw-r--r--   1 cscherer sunuser    219001 Dec 13 10:57 ebsnef.dat
-rw-r--r--   1 cscherer sunuser    162252 Dec 13 10:57 ebsnef.out
-rw-r--r--   1 cscherer sunuser    658449 Dec 13 10:57 ebsnef2.dat
-rw-r--r--   1 cscherer sunuser      1883 Dec 13 10:57 ebspac.nuc
-rw-r--r--   1 cscherer sunuser      9451 Dec 13 10:57 ebsrel.cum
-rw-r--r--   1 cscherer sunuser      5553 Dec 13 10:51 ebsrel.def
-rw-r--r--   1 cscherer sunuser    426149 Dec 13 10:57 ebsrel.ech
-rw-r--r--   1 cscherer sunuser     11211 Dec 13 10:57 ebsrel.inp
-rw-r--r--   1 cscherer sunuser   1288156 Dec 13 10:57 ebsrel.rlt
-rw-r--r--   1 cscherer sunuser     11211 Dec  6 12:53 ebsrel_ileach.inp
-rw-r--r--   1 cscherer sunuser    162203 Dec 13 10:57 ebssf.dat
-rw-r--r--   1 cscherer sunuser     25515 Dec 13 10:57 ebstrh.dat
-rw-r--r--   1 cscherer sunuser     18435 Dec 13 10:57 ebstrhc.inp
-rw-r--r--   1 cscherer sunuser      2711 Dec 13 10:57 echofail.dat
-rw-r--r--   1 cscherer sunuser    667001 Dec 13 10:57 echofilt.dat
```

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-rw-r--r--   1 cscherer sunuser     39354 Dec 13 10:57 epa_ave.out
-rw-r--r--   1 cscherer sunuser      1707 Dec 13 10:57 epapktim.out
-rw-r--r--   1 cscherer sunuser     22703 Dec 13 10:57 failt.out
-rw-r--r--   1 cscherer sunuser      9381 Dec 13 10:51 fluoride.dat
-rw-r--r--   1 cscherer sunuser      1930 Dec  4 14:47 fort.25
-rw-r--r--   1 cscherer sunuser     69680 Dec 13 10:57 frac_rel.out
-rw-r--r--   1 cscherer sunuser      6513 Dec 13 10:57 gbioac1.dat
-rw-r--r--   1 cscherer sunuser      3383 Dec 13 10:57 gdefault.def
-rw-r--r--   1 cscherer sunuser      3387 Dec 13 10:57 gdefault.inp
-rw-r--r--   1 cscherer sunuser        64 Dec 13 10:57 gdosinc2.dat
-rw-r--r--   1 cscherer sunuser         0 Dec 13 10:57 gentoo.out
-rw-r--r--   1 cscherer sunuser     35173 Dec 13 10:57 genv.in
-rw-r--r--   1 cscherer sunuser     18393 Dec 13 10:57 genv.out
-rw-r--r--   1 cscherer sunuser      7011 Dec 13 10:57 gftrans.def
-rw-r--r--   1 cscherer sunuser      7142 Dec 13 10:57 gftrans.inp
-rw-r--r--   1 cscherer sunuser     15214 Dec 13 10:57 ggamen.dat
-rw-r--r--   1 cscherer sunuser     13855 Dec 13 10:57 ggenii.def
-rw-r--r--   1 cscherer sunuser     13164 Dec 13 10:57 ggenii.inp
-rw-r--r--   1 cscherer sunuser     10074 Dec 13 10:57 ggenii.out
-rw-r--r--   1 cscherer sunuser      5351 Dec 13 10:57 ggrdf.dat
-rw-r--r--   1 cscherer sunuser      5673 Dec 13 10:57 gmedia.out
-rw-r--r--   1 cscherer sunuser      9897 Dec 13 10:57 gnewdf.dat
-rw-r--r--   1 cscherer sunuser     13200 Dec 13 10:57 grmdlib.dat
-rw-r--r--   1 cscherer sunuser       572 Dec 13 10:57 gsccdf.res
-rw-r--r--   1 cscherer sunuser       572 Dec 13 10:57 gsccdf_c.res
-rw-r--r--   1 cscherer sunuser      3561 Dec 13 10:57 gw_cb_ad.dat
-rw-r--r--   1 cscherer sunuser      1264 Dec 13 10:57 gw_cb_ci.dat
-rw-r--r--   1 cscherer sunuser      3557 Dec 13 10:57 gw_pb_ad.dat
-rw-r--r--   1 cscherer sunuser      1261 Dec 13 10:57 gw_pb_ci.dat
-rw-r--r--   1 cscherer sunuser       572 Dec 13 10:57 gwccdf.res
-rw-r--r--   1 cscherer sunuser       572 Dec 13 10:57 gwccdf_c.res
-rw-r--r--   1 cscherer sunuser         9 Dec 13 10:57 gwork.buf
-rw-r--r--   1 cscherer sunuser      1738 Dec 13 10:57 gwpkdos.res
-rw-r--r--   1 cscherer sunuser      1738 Dec 13 10:57 gwpkds_c.res
-rw-r--r--   1 cscherer sunuser      2170 Dec 13 10:57 gwttuzsz.res
-rw-r--r--   1 cscherer sunuser      3110 Dec 13 10:57 infilper.res
-rw-r--r--   1 cscherer sunuser      1102 Dec 13 10:57 inv1000.out
-rw-r--r--   1 cscherer sunuser         0 Nov 26 13:55 lhs.csv
-rw-r--r--   1 cscherer sunuser     40006 Dec 13 10:51 lhs.inp
-rw-r--r--   1 cscherer sunuser      5268 Dec 13 10:51 lhs.out
-rw-r--r--   1 cscherer sunuser     69312 Dec 13 10:51 lhse.out
-rw-r--r--   1 cscherer sunuser      1095 Dec 13 10:57 maxrel.dat
-rwxr-xr-x   1 cscherer sunuser    943775 Dec 13 10:51 maydtbl.dat
-rw-r--r--   1 cscherer sunuser    519279 Dec 13 10:51 mechfail.dat
-rw-r--r--   1 cscherer sunuser     11267 Dec 13 10:51 mechfail.def
-rw-r--r--   1 cscherer sunuser     35413 Dec 13 10:51 mechfail.inp
-rw-r--r--   1 cscherer sunuser         0 Dec 13 10:51 mechfail.out
-rw-r--r--   1 cscherer sunuser      1254 Dec 13 10:51 multifaf.dat
-rw-r--r--   1 cscherer sunuser      1255 Dec 13 10:51 multifbe.dat
-rw-r--r--   1 cscherer sunuser     61241 Dec 13 10:57 mv.tpa
-rw-r--r--   1 cscherer sunuser      3110 Dec 13 10:57 nearfld.res
-rw-r--r--   1 cscherer sunuser   1550574 Dec 13 10:57 nefii.dis
-rw-r--r--   1 cscherer sunuser     11320 Dec 13 10:57 nefii.inp
-rw-r--r--   1 cscherer sunuser   1952215 Dec 13 10:57 nefii.out
-rw-r--r--   1 cscherer sunuser       603 Dec 13 10:57 nefii.rel
-rw-r--r--   1 cscherer sunuser   1550574 Dec 13 10:57 nefiisz.dis
-rw-r--r--   1 cscherer sunuser     11320 Dec 13 10:57 nefiisz.inp
```

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-rw-r--r--   1 cscherer sunuser   1952215 Dec 13 10:57 nefiisz.out
-rw-r--r--   1 cscherer sunuser    302368 Dec 13 10:57 nefiisz.src
-rw-r--r--   1 cscherer sunuser      1437 Dec 13 10:57 nefiisz.vel
-rw-r--r--   1 cscherer sunuser    188100 Dec 13 10:55 nefiiuz.dis
-rw-r--r--   1 cscherer sunuser     10100 Dec 13 10:55 nefiiuz.inp
-rw-r--r--   1 cscherer sunuser    448930 Dec 13 10:55 nefiiuz.out
-rw-r--r--   1 cscherer sunuser    255898 Dec 13 10:55 nefiiuz.src
-rw-r--r--   1 cscherer sunuser       822 Dec 13 10:55 nefiiuz.vel
-rw-r--r--   1 cscherer sunuser      1740 Dec 13 10:57 nefmks.log
-rw-r--r--   1 cscherer sunuser      2506 Dec 13 10:57 npkdoset.res
-rw-r--r--   1 cscherer sunuser      2506 Dec 13 10:57 npkdst_c.res
-rw-r--r--   1 cscherer sunuser      6890 Dec 13 10:51 nuclides.dat
-rw-r--r--   1 cscherer sunuser      7111 Dec 13 10:57 organdf.dat
-rw-r--r--   1 cscherer sunuser       698 Dec 13 10:57 pkmndose.out
-rw-r--r--   1 cscherer sunuser      8244 Dec 13 10:57 pkreltim.res
-rw-r--r--   1 cscherer sunuser      8244 Dec 13 10:57 pkrltm_c.res
-rw-r--r--   1 cscherer sunuser       899 Dec 13 10:57 rel_flow.out
-rw-r--r--   1 cscherer sunuser       572 Dec 13 10:57 relccdf.res
-rw-r--r--   1 cscherer sunuser       721 Dec 13 10:57 relcum.out
-rw-r--r--   1 cscherer sunuser       413 Dec 13 10:57 releaset.out
-rw-r--r--   1 cscherer sunuser       620 Dec 13 10:57 relfrac.out
-rw-r--r--   1 cscherer sunuser       722 Dec 13 10:57 relgwgs.res
-rw-r--r--   1 cscherer sunuser       548 Dec 13 10:51 repdes.dat
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 10:57 rgwna.tpa
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 10:57 rgwnapani.tpa
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 10:57 rgwnapdw.tpa
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 10:57 rgwnapext.tpa
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 10:57 rgwnapinh.tpa
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 10:57 rgwnapmlk.tpa
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 10:57 rgwnappla.tpa
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 10:57 rgwnr.tpa
-rw-r--r--   1 cscherer sunuser      7437 Dec 13 10:57 rgwsa.tpa
-rw-r--r--   1 cscherer sunuser     23937 Dec 13 10:57 rgwsap.tpa
-rw-r--r--   1 cscherer sunuser      7483 Dec 13 10:57 rgwsr.tpa
-rw-r--r--   1 cscherer sunuser       572 Dec 13 10:57 rlccdf_c.res
-rw-r--r--   1 cscherer sunuser       722 Dec 13 10:57 rlgwgs_c.res
-rw-r--r--   1 cscherer sunuser      3597 Dec 13 10:51 samplpar.abb
-rw-r--r--   1 cscherer sunuser     27397 Dec 13 10:51 samplpar.hdr
-rw-r--r--   1 cscherer sunuser      5914 Dec 13 10:57 samplpar.res
-rw-r--r--   1 cscherer sunuser     25920 Dec 13 10:57 scr394_basecase.out
-rwxr-xr-x   1 cscherer sunuser    130088 Dec 13 10:51 seisbs1.dis
-rwxr-xr-x   1 cscherer sunuser    130088 Dec 13 10:51 seisbs2.dis
-rwxr-xr-x   1 cscherer sunuser    943788 Dec 13 10:51 smaydtbl.dat
-rw-r--r--   1 cscherer sunuser    302368 Dec 13 10:57 sotnef.dat
-rw-r--r--   1 cscherer sunuser     28459 Dec 13 10:57 sp.tpa
-rw-r--r--   1 cscherer sunuser     82874 Dec 13 10:57 spquery.tpa
-rw-r--r--   1 cscherer sunuser      4506 Dec 13 10:52 strmtube.dat
-rw-r--r--   1 cscherer sunuser     13122 Dec 13 10:57 totdos_c.res
-rw-r--r--   1 cscherer sunuser     19322 Dec 13 10:57 totdose.res
-rw-r--r--   1 cscherer sunuser     83835 Dec 10 12:14 tpa.inp
-r--r--r--   1 cscherer sunuser      9325 Mar  4  2002 tpa_.out
-rw-r--r--   1 cscherer sunuser     83835 Nov 18 11:19 tpa_base.inp
-rw-r--r--   1 cscherer sunuser     83835 Dec 10 12:14 tpa_basecase.inp
-rw-r--r--   1 cscherer sunuser     83951 Dec 10 13:36 tpa_mod394.inp
-rw-r--r--   1 cscherer sunuser     86103 Dec 13 10:51 tpameans.out
-rw-r--r--   1 cscherer sunuser     97497 Dec 13 10:51 tpanames.dbs
-rw-r--r--   1 cscherer sunuser    220911 Dec 13 10:57 trelease.out
```

```
-rw-r--r--   1 cscherer sunuser     21032 Dec 13 10:57 weldfail.out
-rw-r--r--   1 cscherer sunuser     13105 Dec 13 10:51 wpflow.dat
-rw-r--r--   1 cscherer sunuser     17410 Dec 13 10:51 wpflow.def
-rw-r--r--   1 cscherer sunuser       912 Dec 13 10:57 wpsfail.res

scr394/sltest/basecase_ileach0:
total 18344
drwxr-xr-x   2 cscherer sunuser      8192 Dec 13 11:24 .
drwxr-xr-x   7 cscherer sunuser      4608 Dec 13 11:57 ..
-rw-r--r--   1 cscherer sunuser       965 Dec 13 11:17 FILENAME.DAT
-rw-r--r--   1 cscherer sunuser      1437 Dec 13 11:17 NEFII.VEL
-rw-r--r--   1 cscherer sunuser      2746 Dec 13 11:17 airpkdos.res
-rw-r--r--   1 cscherer sunuser      2746 Dec 13 11:17 arpkds_c.res
-rw-r--r--   1 cscherer sunuser       914 Dec 13 11:17 ashout.res
-rw-r--r--   1 cscherer sunuser      1025 Dec 13 11:11 burnup.dat
-rw-r--r--   1 cscherer sunuser      7547 Dec 13 11:17 chlrdmf.dat
-rw-r--r--   1 cscherer sunuser    850000 Dec 13 11:12 climato1.dat
-rw-r--r--   1 cscherer sunuser      2200 Dec 13 11:12 climato2.dat
-rw-r--r--   1 cscherer sunuser      4791 Dec 13 11:12 coefkdeq.dat
-rw-r--r--   1 cscherer sunuser     18979 Dec 13 11:17 corrode.out
-rw-r--r--   1 cscherer sunuser     78539 Dec 13 11:17 cp.tpa
-rw-r--r--   1 cscherer sunuser      2252 Dec 13 11:17 cumrel.res
-rw-r--r--   1 cscherer sunuser      2252 Dec 13 11:17 cumrel_c.res
-rw-r--r--   1 cscherer sunuser     69680 Dec 13 11:17 cumrelse.out
-rw-r--r--   1 cscherer sunuser      9993 Dec 13 11:17 deltaec.inp
-rw-r--r--   1 cscherer sunuser     14700 Dec 13 11:17 diagnose.out
-rw-r--r--   1 cscherer sunuser      2033 Dec 13 11:17 dilution.dat
-rw-r--r--   1 cscherer sunuser      3870 Dec 13 11:11 drifts.dat
-rw-r--r--   1 cscherer sunuser       519 Dec 13 11:12 drythick.dat
-rw-r--r--   1 cscherer sunuser      2951 Dec 13 11:12 dsfailt.dat
-rw-r--r--   1 cscherer sunuser       791 Dec 13 11:12 dsfailt.def
-rw-r--r--   1 cscherer sunuser       610 Dec 13 11:12 dsfailt.inp
-rw-r--r--   1 cscherer sunuser        34 Dec 13 11:12 dsfailt.out
-rw-r--r--   1 cscherer sunuser     56860 Dec 13 11:17 ebscld.out
-rw-r--r--   1 cscherer sunuser      6265 Dec 13 11:12 ebsfail.def
-rw-r--r--   1 cscherer sunuser      6222 Dec 13 11:17 ebsfail.inp
-rw-r--r--   1 cscherer sunuser       790 Dec 13 11:12 ebsfilt.def
-rw-r--r--   1 cscherer sunuser      3030 Dec 13 11:17 ebsfilt.inp
-rw-r--r--   1 cscherer sunuser       239 Dec 13 11:17 ebsfilt.out
-rw-r--r--   1 cscherer sunuser     20929 Dec 13 11:17 ebsflo.dat
-rw-r--r--   1 cscherer sunuser    219001 Dec 13 11:17 ebsnef.dat
-rw-r--r--   1 cscherer sunuser    162252 Dec 13 11:17 ebsnef.out
-rw-r--r--   1 cscherer sunuser    658449 Dec 13 11:17 ebsnef2.dat
-rw-r--r--   1 cscherer sunuser    107000 Nov 27 12:24 ebsnef_dat.dif
-rw-r--r--   1 cscherer sunuser      1883 Dec 13 11:17 ebspac.nuc
-rw-r--r--   1 cscherer sunuser      9451 Dec 13 11:17 ebsrel.cum
-rw-r--r--   1 cscherer sunuser      5553 Dec 13 11:12 ebsrel.def
-rw-r--r--   1 cscherer sunuser    426149 Dec 13 11:17 ebsrel.ech
-rw-r--r--   1 cscherer sunuser     11211 Dec 13 11:17 ebsrel.inp
-rw-r--r--   1 cscherer sunuser   1288156 Dec 13 11:17 ebsrel.rlt
-rw-r--r--   1 cscherer sunuser     11211 Dec  6 12:53 ebsrel_ileach.inp
-rw-r--r--   1 cscherer sunuser    162203 Dec 13 11:17 ebssf.dat
-rw-r--r--   1 cscherer sunuser     25515 Dec 13 11:17 ebstrh.dat
-rw-r--r--   1 cscherer sunuser     18435 Dec 13 11:17 ebstrhc.inp
-rw-r--r--   1 cscherer sunuser      2711 Dec 13 11:17 echofail.dat
-rw-r--r--   1 cscherer sunuser    667001 Dec 13 11:17 echofilt.dat
-rw-r--r--   1 cscherer sunuser     39354 Dec 13 11:17 epa_ave.out
```

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-rw-r--r--   1 cscherer sunuser      1707 Dec 13 11:17 epapktim.out
-rw-r--r--   1 cscherer sunuser     22703 Dec 13 11:17 failt.out
-rw-r--r--   1 cscherer sunuser      9381 Dec 13 11:12 fluoride.dat
-rw-r--r--   1 cscherer sunuser      1930 Dec  4 14:47 fort.25
-rw-r--r--   1 cscherer sunuser     69680 Dec 13 11:17 frac_rel.out
-rw-r--r--   1 cscherer sunuser      6513 Dec 13 11:17 gbioac1.dat
-rw-r--r--   1 cscherer sunuser      3383 Dec 13 11:17 gdefault.def
-rw-r--r--   1 cscherer sunuser      3387 Dec 13 11:17 gdefault.inp
-rw-r--r--   1 cscherer sunuser        64 Dec 13 11:17 gdosinc2.dat
-rw-r--r--   1 cscherer sunuser         0 Dec 13 11:17 gentoo.out
-rw-r--r--   1 cscherer sunuser     35173 Dec 13 11:17 genv.in
-rw-r--r--   1 cscherer sunuser     18393 Dec 13 11:17 genv.out
-rw-r--r--   1 cscherer sunuser      7011 Dec 13 11:17 gftrans.def
-rw-r--r--   1 cscherer sunuser      7142 Dec 13 11:17 gftrans.inp
-rw-r--r--   1 cscherer sunuser     15214 Dec 13 11:17 ggamen.dat
-rw-r--r--   1 cscherer sunuser     13855 Dec 13 11:17 ggenii.def
-rw-r--r--   1 cscherer sunuser     13164 Dec 13 11:17 ggenii.inp
-rw-r--r--   1 cscherer sunuser     10074 Dec 13 11:17 ggenii.out
-rw-r--r--   1 cscherer sunuser      5351 Dec 13 11:17 ggrdf.dat
-rw-r--r--   1 cscherer sunuser      5673 Dec 13 11:17 gmedia.out
-rw-r--r--   1 cscherer sunuser      9897 Dec 13 11:17 gnewdf.dat
-rw-r--r--   1 cscherer sunuser     13200 Dec 13 11:17 grmdlib.dat
-rw-r--r--   1 cscherer sunuser       572 Dec 13 11:17 gsccdf.res
-rw-r--r--   1 cscherer sunuser       572 Dec 13 11:17 gsccdf_c.res
-rw-r--r--   1 cscherer sunuser      3561 Dec 13 11:17 gw_cb_ad.dat
-rw-r--r--   1 cscherer sunuser      1264 Dec 13 11:17 gw_cb_ci.dat
-rw-r--r--   1 cscherer sunuser      3557 Dec 13 11:17 gw_pb_ad.dat
-rw-r--r--   1 cscherer sunuser      1261 Dec 13 11:17 gw_pb_ci.dat
-rw-r--r--   1 cscherer sunuser       572 Dec 13 11:17 gwccdf.res
-rw-r--r--   1 cscherer sunuser       572 Dec 13 11:17 gwccdf_c.res
-rw-r--r--   1 cscherer sunuser         9 Dec 13 11:17 gwork.buf
-rw-r--r--   1 cscherer sunuser      1738 Dec 13 11:17 gwpkdos.res
-rw-r--r--   1 cscherer sunuser      1738 Dec 13 11:17 gwpkds_c.res
-rw-r--r--   1 cscherer sunuser      2170 Dec 13 11:17 gwttuzsz.res
-rw-r--r--   1 cscherer sunuser      3110 Dec 13 11:17 infilper.res
-rw-r--r--   1 cscherer sunuser      1102 Dec 13 11:17 inv1000.out
-rw-r--r--   1 cscherer sunuser         0 Nov 26 13:55 lhs.csv
-rw-r--r--   1 cscherer sunuser     40006 Dec 13 11:11 lhs.inp
-rw-r--r--   1 cscherer sunuser      5268 Dec 13 11:12 lhs.out
-rw-r--r--   1 cscherer sunuser     69312 Dec 13 11:12 lhse.out
-rw-r--r--   1 cscherer sunuser      1095 Dec 13 11:17 maxrel.dat
-rwxr-xr-x   1 cscherer sunuser    943775 Dec 13 11:12 maydtbl.dat
-rw-r--r--   1 cscherer sunuser    519279 Dec 13 11:12 mechfail.dat
-rw-r--r--   1 cscherer sunuser     11267 Dec 13 11:12 mechfail.def
-rw-r--r--   1 cscherer sunuser     35413 Dec 13 11:12 mechfail.inp
-rw-r--r--   1 cscherer sunuser         0 Dec 13 11:12 mechfail.out
-rw-r--r--   1 cscherer sunuser      1254 Dec 13 11:12 multifaf.dat
-rw-r--r--   1 cscherer sunuser      1255 Dec 13 11:12 multifbe.dat
-rw-r--r--   1 cscherer sunuser     61241 Dec 13 11:17 mv.tpa
-rw-r--r--   1 cscherer sunuser      3110 Dec 13 11:17 nearfld.res
-rw-r--r--   1 cscherer sunuser   1550562 Dec 13 11:17 nefii.dis
-rw-r--r--   1 cscherer sunuser     11320 Dec 13 11:17 nefii.inp
-rw-r--r--   1 cscherer sunuser   1952215 Dec 13 11:17 nefii.out
-rw-r--r--   1 cscherer sunuser       603 Dec 13 11:17 nefii.rel
-rw-r--r--   1 cscherer sunuser   1550562 Dec 13 11:17 nefiisz.dis
-rw-r--r--   1 cscherer sunuser     11320 Dec 13 11:17 nefiisz.inp
-rw-r--r--   1 cscherer sunuser   1952215 Dec 13 11:17 nefiisz.out
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-rw-r--r--   1 cscherer sunuser    301832 Dec 13 11:17 nefiisz.src
-rw-r--r--   1 cscherer sunuser      1437 Dec 13 11:17 nefiisz.vel
-rw-r--r--   1 cscherer sunuser    188096 Dec 13 11:15 nefiiuz.dis
-rw-r--r--   1 cscherer sunuser     10100 Dec 13 11:15 nefiiuz.inp
-rw-r--r--   1 cscherer sunuser    448930 Dec 13 11:15 nefiiuz.out
-rw-r--r--   1 cscherer sunuser    255898 Dec 13 11:15 nefiiuz.src
-rw-r--r--   1 cscherer sunuser       822 Dec 13 11:15 nefiiuz.vel
-rw-r--r--   1 cscherer sunuser      1820 Dec 13 11:17 nefmks.log
-rw-r--r--   1 cscherer sunuser      2506 Dec 13 11:17 npkdoset.res
-rw-r--r--   1 cscherer sunuser      2506 Dec 13 11:17 npkdst_c.res
-rw-r--r--   1 cscherer sunuser      6890 Dec 13 11:11 nuclides.dat
-rw-r--r--   1 cscherer sunuser      7111 Dec 13 11:17 organdf.dat
-rw-r--r--   1 cscherer sunuser       698 Dec 13 11:17 pkmndose.out
-rw-r--r--   1 cscherer sunuser      8244 Dec 13 11:17 pkreltim.res
-rw-r--r--   1 cscherer sunuser      8244 Dec 13 11:17 pkrltm_c.res
-rw-r--r--   1 cscherer sunuser       899 Dec 13 11:17 rel_flow.out
-rw-r--r--   1 cscherer sunuser       572 Dec 13 11:17 relccdf.res
-rw-r--r--   1 cscherer sunuser       721 Dec 13 11:17 relcum.out
-rw-r--r--   1 cscherer sunuser       413 Dec 13 11:17 releaset.out
-rw-r--r--   1 cscherer sunuser       620 Dec 13 11:17 relfrac.out
-rw-r--r--   1 cscherer sunuser       722 Dec 13 11:17 relgwgs.res
-rw-r--r--   1 cscherer sunuser       548 Dec 13 11:11 repdes.dat
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 11:17 rgwna.tpa
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 11:17 rgwnapani.tpa
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 11:17 rgwnapdw.tpa
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 11:17 rgwnapext.tpa
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 11:17 rgwnapinh.tpa
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 11:17 rgwnapmlk.tpa
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 11:17 rgwnappla.tpa
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 11:17 rgwnr.tpa
-rw-r--r--   1 cscherer sunuser      7437 Dec 13 11:17 rgwsa.tpa
-rw-r--r--   1 cscherer sunuser     23937 Dec 13 11:17 rgwsap.tpa
-rw-r--r--   1 cscherer sunuser      7483 Dec 13 11:17 rgwsr.tpa
-rw-r--r--   1 cscherer sunuser       572 Dec 13 11:17 rlccdf_c.res
-rw-r--r--   1 cscherer sunuser       722 Dec 13 11:17 rlgwgs_c.res
-rw-r--r--   1 cscherer sunuser      3597 Dec 13 11:11 samplpar.abb
-rw-r--r--   1 cscherer sunuser     27397 Dec 13 11:11 samplpar.hdr
-rw-r--r--   1 cscherer sunuser      5914 Dec 13 11:17 samplpar.res
-rw-r--r--   1 cscherer sunuser     25920 Dec 13 10:57 scr394_basecase.out
-rw-r--r--   1 cscherer sunuser     25981 Dec 13 11:17
scr394_basecase_ileach0.out
-rwxr-xr-x   1 cscherer sunuser    130088 Dec 13 11:12 seisbs1.dis
-rwxr-xr-x   1 cscherer sunuser    130088 Dec 13 11:12 seisbs2.dis
-rwxr-xr-x   1 cscherer sunuser    943788 Dec 13 11:12 smaydtbl.dat
-rw-r--r--   1 cscherer sunuser    301832 Dec 13 11:17 sotnef.dat
-rw-r--r--   1 cscherer sunuser     28459 Dec 13 11:17 sp.tpa
-rw-r--r--   1 cscherer sunuser     82874 Dec 13 11:17 spquery.tpa
-rw-r--r--   1 cscherer sunuser      4506 Dec 13 11:12 strmtube.dat
-rw-r--r--   1 cscherer sunuser     13122 Dec 13 11:17 totdos_c.res
-rw-r--r--   1 cscherer sunuser     19322 Dec 13 11:17 totdose.res
-rw-r--r--   1 cscherer sunuser     83835 Dec 10 12:14 tpa.inp
-r--r--r--   1 cscherer sunuser      9325 Mar  4  2002 tpa_.out
-rw-r--r--   1 cscherer sunuser     83835 Nov 18 11:19 tpa_base.inp
-rw-r--r--   1 cscherer sunuser     83835 Dec 10 12:14 tpa_basecase.inp
-rw-r--r--   1 cscherer sunuser     83951 Dec 10 13:36 tpa_mod394.inp
-rw-r--r--   1 cscherer sunuser     86103 Dec 13 11:11 tpameans.out
-rw-r--r--   1 cscherer sunuser     97497 Dec 13 11:11 tpanames.dbs
```

```
-rw-r--r--   1 cscherer sunuser    218079 Dec 13 11:17 trelease.out
-rw-r--r--   1 cscherer sunuser     21032 Dec 13 11:17 weldfail.out
-rw-r--r--   1 cscherer sunuser     13105 Dec 13 11:12 wpflow.dat
-rw-r--r--   1 cscherer sunuser     17410 Dec 13 11:12 wpflow.def
-rw-r--r--   1 cscherer sunuser       912 Dec 13 11:17 wpsfail.res

scr394/sltest/sl-1:
total 33846
drwxr-xr-x   2 cscherer sunuser      4096 Dec  9 12:07 .
drwxr-xr-x   7 cscherer sunuser      4608 Dec 13 11:57 ..
-rw-r--r--   1 cscherer sunuser       965 Dec  9 10:45 FILENAME.DAT
-rw-r--r--   1 cscherer sunuser      1041 Dec  9 11:27 NEFII.VEL
-rw-r--r--   1 cscherer sunuser      5682 Dec  9 11:27 airpkdos.res
-rw-r--r--   1 cscherer sunuser      5682 Dec  9 11:27 arpkds_c.res
-rw-r--r--   1 cscherer sunuser      1418 Dec  9 11:27 ashout.res
-rw-r--r--   1 cscherer sunuser      1025 Dec  9 10:34 burnup.dat
-rw-r--r--   1 cscherer sunuser      6297 Dec  9 11:25 chlrdmf.dat
-rw-r--r--   1 cscherer sunuser    850000 Dec  9 10:34 climato1.dat
-rw-r--r--   1 cscherer sunuser      2200 Dec  9 10:34 climato2.dat
-rw-r--r--   1 cscherer sunuser      4791 Dec  9 10:35 coefkdeq.dat
-rw-r--r--   1 cscherer sunuser     16849 Dec  9 11:25 corrode.out
-rw-r--r--   1 cscherer sunuser     78539 Dec  9 11:27 cp.tpa
-rw-r--r--   1 cscherer sunuser      8492 Dec  9 11:27 cumrel.res
-rw-r--r--   1 cscherer sunuser      8492 Dec  9 11:27 cumrel_c.res
-rw-r--r--   1 cscherer sunuser     58130 Dec  9 11:26 cumrelse.out
-rw-r--r--   1 cscherer sunuser      8343 Dec  9 11:25 deltaec.inp
-rw-r--r--   1 cscherer sunuser     12250 Dec  9 11:26 diagnose.out
-rw-r--r--   1 cscherer sunuser      2033 Dec  9 10:45 dilution.dat
-rw-r--r--   1 cscherer sunuser      3870 Dec  9 10:34 drifts.dat
-rw-r--r--   1 cscherer sunuser       519 Dec  9 10:34 drythick.dat
-rw-r--r--   1 cscherer sunuser       330 Dec  9 11:19 dsfailt.dat
-rw-r--r--   1 cscherer sunuser       791 Dec  9 10:35 dsfailt.def
-rw-r--r--   1 cscherer sunuser       610 Dec  9 11:19 dsfailt.inp
-rw-r--r--   1 cscherer sunuser       170 Dec  9 11:19 dsfailt.out
-rw-r--r--   1 cscherer sunuser     70160 Dec  9 11:26 ebscld.out
-rw-r--r--   1 cscherer sunuser      6265 Dec  9 10:35 ebsfail.def
-rw-r--r--   1 cscherer sunuser      6222 Dec  9 11:25 ebsfail.inp
-rw-r--r--   1 cscherer sunuser       790 Dec  9 10:35 ebsfilt.def
-rw-r--r--   1 cscherer sunuser      3030 Dec  9 11:25 ebsfilt.inp
-rw-r--r--   1 cscherer sunuser       239 Dec  9 11:26 ebsfilt.out
-rw-r--r--   1 cscherer sunuser     17479 Dec  9 11:25 ebsflo.dat
-rw-r--r--   1 cscherer sunuser    209551 Dec  9 11:26 ebsnef.dat
-rw-r--r--   1 cscherer sunuser    171002 Dec  9 11:26 ebsnef.out
-rw-r--r--   1 cscherer sunuser    549099 Dec  9 11:26 ebsnef2.dat
-rw-r--r--   1 cscherer sunuser      1883 Dec  9 11:25 ebspac.nuc
-rwxr--r--   1 cscherer sunuser    184320 Dec  5 10:51 ebsre_r5sa101.doc
-rw-r--r--   1 cscherer sunuser     44457 Dec  9 11:26 ebsrel.cum
-rw-r--r--   1 cscherer sunuser      5553 Dec  9 10:35 ebsrel.def
-rw-r--r--   1 cscherer sunuser   1779045 Dec  9 11:27 ebsrel.ech
-rw-r--r--   1 cscherer sunuser     11211 Dec  9 11:25 ebsrel.inp
-rw-r--r--   1 cscherer sunuser   6509718 Dec  9 11:27 ebsrel.rlt
-rw-r--r--   1 cscherer sunuser    155203 Dec  9 11:26 ebssf.dat
-rw-r--r--   1 cscherer sunuser     21415 Dec  9 11:25 ebstrh.dat
-rw-r--r--   1 cscherer sunuser     15385 Dec  9 11:25 ebstrhc.inp
-rw-r--r--   1 cscherer sunuser      2711 Dec  9 11:25 echofail.dat
-rw-r--r--   1 cscherer sunuser    556301 Dec  9 11:26 echofilt.dat
-rw-r--r--   1 cscherer sunuser     48904 Dec  9 11:27 epa_ave.out
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-rw-r--r--   1 cscherer sunuser      3171 Dec  9 11:27 epapktim.out
-rw-r--r--   1 cscherer sunuser     20303 Dec  9 11:25 failt.out
-rw-r--r--   1 cscherer sunuser      7831 Dec  9 11:19 fluoride.dat
-rw-r--r--   1 cscherer sunuser     58130 Dec  9 11:26 frac_rel.out
-rw-r--r--   1 cscherer sunuser      6513 Dec  9 10:45 gbioac1.dat
-rw-r--r--   1 cscherer sunuser      3383 Dec  9 10:45 gdefault.def
-rw-r--r--   1 cscherer sunuser      3387 Dec  9 11:27 gdefault.inp
-rw-r--r--   1 cscherer sunuser        64 Dec  9 10:45 gdosinc2.dat
-rw-r--r--   1 cscherer sunuser         0 Dec  9 11:27 gentoo.out
-rw-r--r--   1 cscherer sunuser     35173 Dec  9 11:27 genv.in
-rw-r--r--   1 cscherer sunuser     18393 Dec  9 11:27 genv.out
-rw-r--r--   1 cscherer sunuser      7011 Dec  9 10:45 gftrans.def
-rw-r--r--   1 cscherer sunuser      7142 Dec  9 11:27 gftrans.inp
-rw-r--r--   1 cscherer sunuser     15214 Dec  9 10:45 ggamen.dat
-rw-r--r--   1 cscherer sunuser     13855 Dec  9 10:45 ggenii.def
-rw-r--r--   1 cscherer sunuser     13164 Dec  9 11:27 ggenii.inp
-rw-r--r--   1 cscherer sunuser     10074 Dec  9 11:27 ggenii.out
-rw-r--r--   1 cscherer sunuser      5351 Dec  9 10:45 ggrdf.dat
-rw-r--r--   1 cscherer sunuser      5673 Dec  9 11:27 gmedia.out
-rw-r--r--   1 cscherer sunuser      9897 Dec  9 10:45 gnewdf.dat
-rw-r--r--   1 cscherer sunuser     13200 Dec  9 10:45 grmdlib.dat
-rw-r--r--   1 cscherer sunuser       572 Dec  9 11:27 gsccdf.res
-rw-r--r--   1 cscherer sunuser       572 Dec  9 11:27 gsccdf_c.res
-rw-r--r--   1 cscherer sunuser      3561 Dec  9 11:27 gw_cb_ad.dat
-rw-r--r--   1 cscherer sunuser      1264 Dec  9 11:27 gw_cb_ci.dat
-rw-r--r--   1 cscherer sunuser      3557 Dec  9 11:27 gw_pb_ad.dat
-rw-r--r--   1 cscherer sunuser      1261 Dec  9 11:27 gw_pb_ci.dat
-rw-r--r--   1 cscherer sunuser       712 Dec  9 11:27 gwccdf.res
-rw-r--r--   1 cscherer sunuser       712 Dec  9 11:27 gwccdf_c.res
-rw-r--r--   1 cscherer sunuser         9 Dec  9 11:27 gwork.buf
-rw-r--r--   1 cscherer sunuser      3330 Dec  9 11:27 gwpkdos.res
-rw-r--r--   1 cscherer sunuser      3330 Dec  9 11:27 gwpkds_c.res
-rw-r--r--   1 cscherer sunuser      4338 Dec  9 11:27 gwttuzsz.res
-rw-r--r--   1 cscherer sunuser     10832 Dec  9 11:27 infilper.res
-rw-r--r--   1 cscherer sunuser      1102 Dec  9 11:26 inv1000.out
-rw-r--r--   1 cscherer sunuser         0 Dec  4 16:33 lhs.csv
-rw-r--r--   1 cscherer sunuser     40006 Dec  9 10:34 lhs.inp
-rw-r--r--   1 cscherer sunuser     26340 Dec  9 10:34 lhs.out
-rw-r--r--   1 cscherer sunuser     69312 Dec  9 10:34 lhse.out
-rw-r--r--   1 cscherer sunuser      1095 Dec  9 11:26 maxrel.dat
-rwxr-xr-x   1 cscherer sunuser    943775 Dec  9 10:34 maydtbl.dat
-rw-r--r--   1 cscherer sunuser    433479 Dec  9 11:19 mechfail.dat
-rw-r--r--   1 cscherer sunuser     11267 Dec  9 10:35 mechfail.def
-rw-r--r--   1 cscherer sunuser     34141 Dec  9 11:19 mechfail.inp
-rw-r--r--   1 cscherer sunuser         0 Dec  9 11:19 mechfail.out
-rw-r--r--   1 cscherer sunuser      1254 Dec  9 10:34 multifaf.dat
-rw-r--r--   1 cscherer sunuser      1255 Dec  9 10:34 multifbe.dat
-rw-r--r--   1 cscherer sunuser    132109 Dec  9 11:27 mv.tpa
-rw-r--r--   1 cscherer sunuser     10832 Dec  9 11:27 nearfld.res
-rw-r--r--   1 cscherer sunuser    338046 Dec  9 11:27 nefii.dis
-rw-r--r--   1 cscherer sunuser     11320 Dec  9 11:27 nefii.inp
-rw-r--r--   1 cscherer sunuser    623191 Dec  9 11:27 nefii.out
-rw-r--r--   1 cscherer sunuser       603 Dec  9 11:27 nefii.rel
-rw-r--r--   1 cscherer sunuser    338046 Dec  9 11:27 nefiisz.dis
-rw-r--r--   1 cscherer sunuser     11320 Dec  9 11:27 nefiisz.inp
-rw-r--r--   1 cscherer sunuser    623191 Dec  9 11:27 nefiisz.out
-rw-r--r--   1 cscherer sunuser    291840 Dec  9 11:27 nefiisz.src
```

```
-rw-r--r--   1 cscherer sunuser      1041 Dec  9 11:27 nefiisz.vel
-rw-r--r--   1 cscherer sunuser   7241665 Dec  9 11:27 nefiiuz.dis
-rw-r--r--   1 cscherer sunuser     10100 Dec  9 11:27 nefiiuz.inp
-rw-r--r--   1 cscherer sunuser   7407190 Dec  9 11:27 nefiiuz.out
-rw-r--r--   1 cscherer sunuser    263568 Dec  9 11:27 nefiiuz.src
-rw-r--r--   1 cscherer sunuser       543 Dec  9 11:27 nefiiuz.vel
-rw-r--r--   1 cscherer sunuser      1405 Dec  9 11:27 nefmks.log
-rw-r--r--   1 cscherer sunuser      5122 Dec  9 11:27 npkdoset.res
-rw-r--r--   1 cscherer sunuser      5122 Dec  9 11:27 npkdst_c.res
-rw-r--r--   1 cscherer sunuser      6890 Dec  9 10:34 nuclides.dat
-rw-r--r--   1 cscherer sunuser      7111 Dec  9 10:45 organdf.dat
-rw-r--r--   1 cscherer sunuser       882 Dec  9 11:27 pkmndose.out
-rw-r--r--   1 cscherer sunuser     36244 Dec  9 11:27 pkreltim.res
-rw-r--r--   1 cscherer sunuser     36244 Dec  9 11:27 pkrltm_c.res
-rw-r--r--   1 cscherer sunuser       854 Dec  9 11:26 rel_flow.out
-rw-r--r--   1 cscherer sunuser       712 Dec  9 11:27 relccdf.res
-rw-r--r--   1 cscherer sunuser      2266 Dec  9 11:26 relcum.out
-rw-r--r--   1 cscherer sunuser       413 Dec  9 11:26 releaset.out
-rw-r--r--   1 cscherer sunuser       665 Dec  9 11:26 relfrac.out
-rw-r--r--   1 cscherer sunuser       970 Dec  9 11:27 relgwgs.res
-rw-r--r--   1 cscherer sunuser       548 Dec  9 10:34 repdes.dat
-rw-r--r--   1 cscherer sunuser     59161 Dec  9 11:27 rgwna.tpa
-rw-r--r--   1 cscherer sunuser     59161 Dec  9 11:27 rgwnapani.tpa
-rw-r--r--   1 cscherer sunuser     59161 Dec  9 11:27 rgwnapdw.tpa
-rw-r--r--   1 cscherer sunuser     59161 Dec  9 11:27 rgwnapext.tpa
-rw-r--r--   1 cscherer sunuser     59161 Dec  9 11:27 rgwnapinh.tpa
-rw-r--r--   1 cscherer sunuser     59161 Dec  9 11:27 rgwnapmlk.tpa
-rw-r--r--   1 cscherer sunuser     59161 Dec  9 11:27 rgwnappla.tpa
-rw-r--r--   1 cscherer sunuser    293017 Dec  9 11:27 rgwnr.tpa
-rw-r--r--   1 cscherer sunuser      6287 Dec  9 11:27 rgwsa.tpa
-rw-r--r--   1 cscherer sunuser     20037 Dec  9 11:27 rgwsap.tpa
-rw-r--r--   1 cscherer sunuser     29517 Dec  9 11:27 rgwsr.tpa
-rw-r--r--   1 cscherer sunuser       712 Dec  9 11:27 rlccdf_c.res
-rw-r--r--   1 cscherer sunuser       970 Dec  9 11:27 rlgwgs_c.res
-rw-r--r--   1 cscherer sunuser      3597 Dec  9 10:34 samplpar.abb
-rw-r--r--   1 cscherer sunuser     27397 Dec  9 10:34 samplpar.hdr
-rw-r--r--   1 cscherer sunuser     26986 Dec  9 11:27 samplpar.res
-rw-r--r--   1 cscherer sunuser     41140 Dec  9 10:33 scr394_sl1.out
-rwxr-xr-x   1 cscherer sunuser    130088 Dec  9 10:35 seisbs1.dis
-rwxr-xr-x   1 cscherer sunuser    130088 Dec  9 10:35 seisbs2.dis
-rwxr-xr-x   1 cscherer sunuser    943788 Dec  9 10:34 smaydtbl.dat
-rw-r--r--   1 cscherer sunuser    291840 Dec  9 11:27 sotnef.dat
-rw-r--r--   1 cscherer sunuser     57103 Dec  9 11:27 sp.tpa
-rw-r--r--   1 cscherer sunuser    412222 Dec  9 11:27 spquery.tpa
-rw-r--r--   1 cscherer sunuser      4506 Dec  9 10:35 strmtube.dat
-rw-r--r--   1 cscherer sunuser     78470 Dec  9 11:27 totdos_c.res
-rw-r--r--   1 cscherer sunuser     78470 Dec  9 11:27 totdose.res
-rw-r--r--   1 cscherer sunuser     83833 Dec  4 16:33 tpa.inp
-rw-r--r--   1 cscherer sunuser     86101 Dec  9 10:34 tpameans.out
-rw-r--r--   1 cscherer sunuser     97497 Dec  9 10:34 tpanames.dbs
-rw-r--r--   1 cscherer sunuser    232919 Dec  9 11:26 trelease.out
-rw-r--r--   1 cscherer sunuser     17582 Dec  9 11:25 weldfail.out
-rw-r--r--   1 cscherer sunuser     10955 Dec  9 10:35 wpflow.dat
-rw-r--r--   1 cscherer sunuser     17410 Dec  9 10:35 wpflow.def
-rw-r--r--   1 cscherer sunuser      1758 Dec  9 11:27 wpsfail.res

scr394/sltest/sl-1b:
```

```
total 16084
drwxr-xr-x   2 cscherer sunuser      4096 Dec 10 08:55 .
drwxr-xr-x   7 cscherer sunuser      4608 Dec 13 11:57 ..
-rw-r--r--   1 cscherer sunuser       965 Dec  9 13:18 FILENAME.DAT
-rw-r--r--   1 cscherer sunuser       249 Dec  9 13:33 NEFII.VEL
-rw-r--r--   1 cscherer sunuser      5682 Dec  9 13:33 airpkdos.res
-rw-r--r--   1 cscherer sunuser      5682 Dec  9 13:33 arpkds_c.res
-rw-r--r--   1 cscherer sunuser      1418 Dec  9 13:33 ashout.res
-rw-r--r--   1 cscherer sunuser      1025 Dec  9 13:13 burnup.dat
-rw-r--r--   1 cscherer sunuser      5047 Dec  9 13:33 chlrdmf.dat
-rw-r--r--   1 cscherer sunuser    850000 Dec  9 13:14 climato1.dat
-rw-r--r--   1 cscherer sunuser      2200 Dec  9 13:14 climato2.dat
-rw-r--r--   1 cscherer sunuser      4791 Dec  9 13:14 coefkdeq.dat
-rw-r--r--   1 cscherer sunuser     14506 Dec  9 13:33 corrode.out
-rw-r--r--   1 cscherer sunuser     78539 Dec  9 13:33 cp.tpa
-rw-r--r--   1 cscherer sunuser      8492 Dec  9 13:33 cumrel.res
-rw-r--r--   1 cscherer sunuser      8492 Dec  9 13:33 cumrel_c.res
-rw-r--r--   1 cscherer sunuser     46580 Dec  9 13:33 cumrelse.out
-rw-r--r--   1 cscherer sunuser      6693 Dec  9 13:33 deltaec.inp
-rw-r--r--   1 cscherer sunuser      9800 Dec  9 13:33 diagnose.out
-rw-r--r--   1 cscherer sunuser      2033 Dec  9 13:18 dilution.dat
-rw-r--r--   1 cscherer sunuser      3870 Dec  9 13:13 drifts.dat
-rw-r--r--   1 cscherer sunuser       519 Dec  9 13:14 drythick.dat
-rw-r--r--   1 cscherer sunuser      2572 Dec  9 13:29 dsfailt.dat
-rw-r--r--   1 cscherer sunuser       791 Dec  9 13:14 dsfailt.def
-rw-r--r--   1 cscherer sunuser       610 Dec  9 13:29 dsfailt.inp
-rw-r--r--   1 cscherer sunuser       170 Dec  9 13:29 dsfailt.out
-rw-r--r--   1 cscherer sunuser     56160 Dec  9 13:33 ebscld.out
-rw-r--r--   1 cscherer sunuser      6265 Dec  9 13:14 ebsfail.def
-rw-r--r--   1 cscherer sunuser      6222 Dec  9 13:33 ebsfail.inp
-rw-r--r--   1 cscherer sunuser       790 Dec  9 13:14 ebsfilt.def
-rw-r--r--   1 cscherer sunuser      3030 Dec  9 13:33 ebsfilt.inp
-rw-r--r--   1 cscherer sunuser       551 Dec  9 13:33 ebsfilt.out
-rw-r--r--   1 cscherer sunuser     14029 Dec  9 13:33 ebsflo.dat
-rw-r--r--   1 cscherer sunuser    167701 Dec  9 13:33 ebsnef.dat
-rw-r--r--   1 cscherer sunuser    136852 Dec  9 13:33 ebsnef.out
-rw-r--r--   1 cscherer sunuser    167681 Dec  9 13:33 ebsnef2.dat
-rw-r--r--   1 cscherer sunuser      1883 Dec  9 13:33 ebspac.nuc
-rwxr--r--   1 cscherer sunuser    184320 Dec  5 10:51 ebsre_r5sa101.doc
-rw-r--r--   1 cscherer sunuser     36029 Dec  9 13:33 ebsrel.cum
-rw-r--r--   1 cscherer sunuser      5546 Dec  9 13:14 ebsrel.def
-rw-r--r--   1 cscherer sunuser   1431545 Dec  9 13:33 ebsrel.ech
-rw-r--r--   1 cscherer sunuser     11211 Dec  9 13:33 ebsrel.inp
-rw-r--r--   1 cscherer sunuser   5260450 Dec  9 13:33 ebsrel.rlt
-rw-r--r--   1 cscherer sunuser    124203 Dec  9 13:33 ebssf.dat
-rw-r--r--   1 cscherer sunuser     17315 Dec  9 13:33 ebstrh.dat
-rw-r--r--   1 cscherer sunuser     12335 Dec  9 13:33 ebstrhc.inp
-rw-r--r--   1 cscherer sunuser      2711 Dec  9 13:33 echofail.dat
-rw-r--r--   1 cscherer sunuser    326416 Dec  9 13:33 echofilt.dat
-rw-r--r--   1 cscherer sunuser     39354 Dec  9 13:33 epa_ave.out
-rw-r--r--   1 cscherer sunuser      3171 Dec  9 13:33 epapktim.out
-rw-r--r--   1 cscherer sunuser     17398 Dec  9 13:33 failt.out
-rw-r--r--   1 cscherer sunuser      6281 Dec  9 13:29 fluoride.dat
-rw-r--r--   1 cscherer sunuser     46580 Dec  9 13:33 frac_rel.out
-rw-r--r--   1 cscherer sunuser      6513 Dec  9 13:18 gbioac1.dat
-rw-r--r--   1 cscherer sunuser      3383 Dec  9 13:18 gdefault.def
-rw-r--r--   1 cscherer sunuser      3387 Dec  9 13:33 gdefault.inp
```

```
-rw-r--r--   1 cscherer sunuser        64 Dec  9 13:18 gdosinc2.dat
-rw-r--r--   1 cscherer sunuser         0 Dec  9 13:33 gentoo.out
-rw-r--r--   1 cscherer sunuser     35173 Dec  9 13:33 genv.in
-rw-r--r--   1 cscherer sunuser     18393 Dec  9 13:33 genv.out
-rw-r--r--   1 cscherer sunuser      7011 Dec  9 13:18 gftrans.def
-rw-r--r--   1 cscherer sunuser      7142 Dec  9 13:33 gftrans.inp
-rw-r--r--   1 cscherer sunuser     15214 Dec  9 13:18 ggamen.dat
-rw-r--r--   1 cscherer sunuser     13855 Dec  9 13:18 ggenii.def
-rw-r--r--   1 cscherer sunuser     13164 Dec  9 13:33 ggenii.inp
-rw-r--r--   1 cscherer sunuser     10074 Dec  9 13:33 ggenii.out
-rw-r--r--   1 cscherer sunuser      5351 Dec  9 13:18 ggrdf.dat
-rw-r--r--   1 cscherer sunuser      5673 Dec  9 13:33 gmedia.out
-rw-r--r--   1 cscherer sunuser      9897 Dec  9 13:18 gnewdf.dat
-rw-r--r--   1 cscherer sunuser     13200 Dec  9 13:18 grmdlib.dat
-rw-r--r--   1 cscherer sunuser       572 Dec  9 13:33 gsccdf.res
-rw-r--r--   1 cscherer sunuser       572 Dec  9 13:33 gsccdf_c.res
-rw-r--r--   1 cscherer sunuser      3561 Dec  9 13:33 gw_cb_ad.dat
-rw-r--r--   1 cscherer sunuser      1264 Dec  9 13:33 gw_cb_ci.dat
-rw-r--r--   1 cscherer sunuser      3557 Dec  9 13:33 gw_pb_ad.dat
-rw-r--r--   1 cscherer sunuser      1261 Dec  9 13:33 gw_pb_ci.dat
-rw-r--r--   1 cscherer sunuser       712 Dec  9 13:33 gwccdf.res
-rw-r--r--   1 cscherer sunuser       712 Dec  9 13:33 gwccdf_c.res
-rw-r--r--   1 cscherer sunuser         9 Dec  9 13:33 gwork.buf
-rw-r--r--   1 cscherer sunuser      3330 Dec  9 13:33 gwpkdos.res
-rw-r--r--   1 cscherer sunuser      3330 Dec  9 13:33 gwpkds_c.res
-rw-r--r--   1 cscherer sunuser      4338 Dec  9 13:33 gwttuzsz.res
-rw-r--r--   1 cscherer sunuser      8882 Dec  9 13:33 infilper.res
-rw-r--r--   1 cscherer sunuser      1102 Dec  9 13:33 inv1000.out
-rw-r--r--   1 cscherer sunuser         0 Dec  4 16:33 lhs.csv
-rw-r--r--   1 cscherer sunuser     40006 Dec  9 13:13 lhs.inp
-rw-r--r--   1 cscherer sunuser     26340 Dec  9 13:14 lhs.out
-rw-r--r--   1 cscherer sunuser     69312 Dec  9 13:14 lhse.out
-rw-r--r--   1 cscherer sunuser      1095 Dec  9 13:33 maxrel.dat
-rwxr-xr-x   1 cscherer sunuser    943775 Dec  9 13:14 maydtbl.dat
-rw-r--r--   1 cscherer sunuser    347679 Dec  9 13:29 mechfail.dat
-rw-r--r--   1 cscherer sunuser     11267 Dec  9 13:14 mechfail.def
-rw-r--r--   1 cscherer sunuser     11725 Dec  9 13:29 mechfail.inp
-rw-r--r--   1 cscherer sunuser         0 Dec  9 13:29 mechfail.out
-rw-r--r--   1 cscherer sunuser      1254 Dec  9 13:14 multifaf.dat
-rw-r--r--   1 cscherer sunuser      1255 Dec  9 13:14 multifbe.dat
-rw-r--r--   1 cscherer sunuser    132109 Dec  9 13:33 mv.tpa
-rw-r--r--   1 cscherer sunuser      8882 Dec  9 13:33 nearfld.res
-rw-r--r--   1 cscherer sunuser     32293 Dec  9 13:33 nefii.dis
-rw-r--r--   1 cscherer sunuser     11320 Dec  9 13:33 nefii.inp
-rw-r--r--   1 cscherer sunuser     84799 Dec  9 13:33 nefii.out
-rw-r--r--   1 cscherer sunuser       603 Dec  9 13:33 nefii.rel
-rw-r--r--   1 cscherer sunuser     32293 Dec  9 13:33 nefiisz.dis
-rw-r--r--   1 cscherer sunuser     11320 Dec  9 13:33 nefiisz.inp
-rw-r--r--   1 cscherer sunuser     84799 Dec  9 13:33 nefiisz.out
-rw-r--r--   1 cscherer sunuser    145819 Dec  9 13:33 nefiisz.src
-rw-r--r--   1 cscherer sunuser       249 Dec  9 13:33 nefiisz.vel
-rw-r--r--   1 cscherer sunuser    610754 Dec  9 13:33 nefiiuz.dis
-rw-r--r--   1 cscherer sunuser     10100 Dec  9 13:33 nefiiuz.inp
-rw-r--r--   1 cscherer sunuser    653954 Dec  9 13:33 nefiiuz.out
-rw-r--r--   1 cscherer sunuser    147054 Dec  9 13:33 nefiiuz.src
-rw-r--r--   1 cscherer sunuser       171 Dec  9 13:33 nefiiuz.vel
-rw-r--r--   1 cscherer sunuser      2265 Dec  9 13:33 nefmks.log
```

```
-rw-r--r--   1 cscherer sunuser      5122 Dec  9 13:33 npkdoset.res
-rw-r--r--   1 cscherer sunuser      5122 Dec  9 13:33 npkdst_c.res
-rw-r--r--   1 cscherer sunuser      6890 Dec  9 13:13 nuclides.dat
-rw-r--r--   1 cscherer sunuser      7111 Dec  9 13:18 organdf.dat
-rw-r--r--   1 cscherer sunuser       882 Dec  9 13:33 pkmndose.out
-rw-r--r--   1 cscherer sunuser     36244 Dec  9 13:33 pkreltim.res
-rw-r--r--   1 cscherer sunuser     36244 Dec  9 13:33 pkrltm_c.res
-rw-r--r--   1 cscherer sunuser       682 Dec  9 13:33 rel_flow.out
-rw-r--r--   1 cscherer sunuser       712 Dec  9 13:33 relccdf.res
-rw-r--r--   1 cscherer sunuser      2266 Dec  9 13:33 relcum.out
-rw-r--r--   1 cscherer sunuser       412 Dec  9 13:33 releaset.out
-rw-r--r--   1 cscherer sunuser       665 Dec  9 13:33 relfrac.out
-rw-r--r--   1 cscherer sunuser       970 Dec  9 13:33 relgwgs.res
-rw-r--r--   1 cscherer sunuser       548 Dec  9 13:13 repdes.dat
-rw-r--r--   1 cscherer sunuser     47561 Dec  9 13:33 rgwna.tpa
-rw-r--r--   1 cscherer sunuser     47561 Dec  9 13:33 rgwnapani.tpa
-rw-r--r--   1 cscherer sunuser     47561 Dec  9 13:33 rgwnapdw.tpa
-rw-r--r--   1 cscherer sunuser     47561 Dec  9 13:33 rgwnapext.tpa
-rw-r--r--   1 cscherer sunuser     47561 Dec  9 13:33 rgwnapinh.tpa
-rw-r--r--   1 cscherer sunuser     47561 Dec  9 13:33 rgwnapmlk.tpa
-rw-r--r--   1 cscherer sunuser     47561 Dec  9 13:33 rgwnappla.tpa
-rw-r--r--   1 cscherer sunuser    235017 Dec  9 13:33 rgwnr.tpa
-rw-r--r--   1 cscherer sunuser      5137 Dec  9 13:33 rgwsa.tpa
-rw-r--r--   1 cscherer sunuser     16137 Dec  9 13:33 rgwsap.tpa
-rw-r--r--   1 cscherer sunuser     23767 Dec  9 13:33 rgwsr.tpa
-rw-r--r--   1 cscherer sunuser       712 Dec  9 13:33 rlccdf_c.res
-rw-r--r--   1 cscherer sunuser       970 Dec  9 13:33 rlgwgs_c.res
-rw-r--r--   1 cscherer sunuser      3597 Dec  9 13:13 samplpar.abb
-rw-r--r--   1 cscherer sunuser     27397 Dec  9 13:13 samplpar.hdr
-rw-r--r--   1 cscherer sunuser     26986 Dec  9 13:33 samplpar.res
-rw-r--r--   1 cscherer sunuser     41140 Dec  9 10:33 scr394_sl1.out
-rw-r--r--   1 cscherer sunuser    109543 Dec  9 13:59 scr394_sl1b.out
-rwxr-xr-x   1 cscherer sunuser    130088 Dec  9 13:14 seisbs1.dis
-rwxr-xr-x   1 cscherer sunuser    130088 Dec  9 13:14 seisbs2.dis
-rwxr-xr-x   1 cscherer sunuser    943788 Dec  9 13:14 smaydtbl.dat
-rw-r--r--   1 cscherer sunuser    145819 Dec  9 13:33 sotnef.dat
-rw-r--r--   1 cscherer sunuser     57103 Dec  9 13:33 sp.tpa
-rw-r--r--   1 cscherer sunuser    412222 Dec  9 13:33 spquery.tpa
-rw-r--r--   1 cscherer sunuser      4506 Dec  9 13:14 strmtube.dat
-rw-r--r--   1 cscherer sunuser     62970 Dec  9 13:33 totdos_c.res
-rw-r--r--   1 cscherer sunuser     62970 Dec  9 13:33 totdose.res
-rw-r--r--   1 cscherer sunuser     83835 Dec  9 12:36 tpa.inp
-rw-r--r--   1 cscherer sunuser     86103 Dec  9 13:13 tpameans.out
-rw-r--r--   1 cscherer sunuser     97497 Dec  9 13:13 tpanames.dbs
-rw-r--r--   1 cscherer sunuser    151003 Dec  9 13:33 trelease.out
-rw-r--r--   1 cscherer sunuser     14132 Dec  9 13:33 weldfail.out
-rw-r--r--   1 cscherer sunuser      8805 Dec  9 13:14 wpflow.dat
-rw-r--r--   1 cscherer sunuser     17410 Dec  9 13:14 wpflow.def
-rw-r--r--   1 cscherer sunuser      1194 Dec  9 13:33 wpsfail.res

scr394/sltest/sl-2:
total 18610
drwxr-xr-x   2 cscherer sunuser      8192 Dec 13 11:55 .
drwxr-xr-x   7 cscherer sunuser      4608 Dec 13 11:57 ..
-rw-r--r--   1 cscherer sunuser       965 Dec 13 11:49 FILENAME.DAT
-rw-r--r--   1 cscherer sunuser      1437 Dec 13 11:49 NEFII.VEL
-rw-r--r--   1 cscherer sunuser      2746 Dec 13 11:49 airpkdos.res
```

```
-rw-r--r--   1 cscherer sunuser      2746 Dec 13 11:49 arpkds_c.res
-rw-r--r--   1 cscherer sunuser       914 Dec 13 11:49 ashout.res
-rw-r--r--   1 cscherer sunuser      1025 Dec 13 11:43 burnup.dat
-rw-r--r--   1 cscherer sunuser      7547 Dec 13 11:49 chlrdmf.dat
-rw-r--r--   1 cscherer sunuser    850000 Dec 13 11:44 climato1.dat
-rw-r--r--   1 cscherer sunuser      2200 Dec 13 11:44 climato2.dat
-rw-r--r--   1 cscherer sunuser      4791 Dec 13 11:44 coefkdeq.dat
-rw-r--r--   1 cscherer sunuser     18979 Dec 13 11:49 corrode.out
-rw-r--r--   1 cscherer sunuser     78453 Dec 13 11:49 cp.tpa
-rw-r--r--   1 cscherer sunuser      2252 Dec 13 11:49 cumrel.res
-rw-r--r--   1 cscherer sunuser      2252 Dec 13 11:49 cumrel_c.res
-rw-r--r--   1 cscherer sunuser     69680 Dec 13 11:49 cumrelse.out
-rw-r--r--   1 cscherer sunuser      9993 Dec 13 11:49 deltaec.inp
-rw-r--r--   1 cscherer sunuser     14700 Dec 13 11:49 diagnose.out
-rw-r--r--   1 cscherer sunuser      2033 Dec 13 11:49 dilution.dat
-rw-r--r--   1 cscherer sunuser      3870 Dec 13 11:43 drifts.dat
-rw-r--r--   1 cscherer sunuser       519 Dec 13 11:44 drythick.dat
-rw-r--r--   1 cscherer sunuser      2951 Dec 13 11:44 dsfailt.dat
-rw-r--r--   1 cscherer sunuser       791 Dec 13 11:44 dsfailt.def
-rw-r--r--   1 cscherer sunuser       610 Dec 13 11:44 dsfailt.inp
-rw-r--r--   1 cscherer sunuser        34 Dec 13 11:44 dsfailt.out
-rw-r--r--   1 cscherer sunuser     65260 Dec 13 11:49 ebscld.out
-rw-r--r--   1 cscherer sunuser      6265 Dec 13 11:44 ebsfail.def
-rw-r--r--   1 cscherer sunuser      6222 Dec 13 11:49 ebsfail.inp
-rw-r--r--   1 cscherer sunuser       790 Dec 13 11:44 ebsfilt.def
-rw-r--r--   1 cscherer sunuser      3030 Dec 13 11:49 ebsfilt.inp
-rw-r--r--   1 cscherer sunuser       239 Dec 13 11:49 ebsfilt.out
-rw-r--r--   1 cscherer sunuser     20929 Dec 13 11:49 ebsflo.dat
-rw-r--r--   1 cscherer sunuser    251401 Dec 13 11:49 ebsnef.dat
-rw-r--r--   1 cscherer sunuser    186252 Dec 13 11:49 ebsnef.out
-rw-r--r--   1 cscherer sunuser    658449 Dec 13 11:49 ebsnef2.dat
-rw-r--r--   1 cscherer sunuser      1883 Dec 13 11:49 ebspac.nuc
-rw-r--r--   1 cscherer sunuser      9451 Dec 13 11:49 ebsrel.cum
-rw-r--r--   1 cscherer sunuser      5546 Dec 13 11:44 ebsrel.def
-rw-r--r--   1 cscherer sunuser    426149 Dec 13 11:49 ebsrel.ech
-rw-r--r--   1 cscherer sunuser     11211 Dec 13 11:49 ebsrel.inp
-rw-r--r--   1 cscherer sunuser   1554514 Dec 13 11:49 ebsrel.rlt
-rw-r--r--   1 cscherer sunuser     11211 Dec  6 12:53 ebsrel_ileach.inp
-rw-r--r--   1 cscherer sunuser    186203 Dec 13 11:49 ebssf.dat
-rw-r--r--   1 cscherer sunuser     25515 Dec 13 11:49 ebstrh.dat
-rw-r--r--   1 cscherer sunuser     18435 Dec 13 11:49 ebstrhc.inp
-rw-r--r--   1 cscherer sunuser      2711 Dec 13 11:49 echofail.dat
-rw-r--r--   1 cscherer sunuser    667001 Dec 13 11:49 echofilt.dat
-rw-r--r--   1 cscherer sunuser     39354 Dec 13 11:49 epa_ave.out
-rw-r--r--   1 cscherer sunuser      1707 Dec 13 11:49 epapktim.out
-rw-r--r--   1 cscherer sunuser     22703 Dec 13 11:49 failt.out
-rw-r--r--   1 cscherer sunuser      9381 Dec 13 11:44 fluoride.dat
-rw-r--r--   1 cscherer sunuser     69680 Dec 13 11:49 frac_rel.out
-rw-r--r--   1 cscherer sunuser      6513 Dec 13 11:49 gbioac1.dat
-rw-r--r--   1 cscherer sunuser      3383 Dec 13 11:49 gdefault.def
-rw-r--r--   1 cscherer sunuser      3387 Dec 13 11:49 gdefault.inp
-rw-r--r--   1 cscherer sunuser        64 Dec 13 11:49 gdosinc2.dat
-rw-r--r--   1 cscherer sunuser         0 Dec 13 11:49 gentoo.out
-rw-r--r--   1 cscherer sunuser     35173 Dec 13 11:49 genv.in
-rw-r--r--   1 cscherer sunuser     18393 Dec 13 11:49 genv.out
-rw-r--r--   1 cscherer sunuser      7011 Dec 13 11:49 gftrans.def
-rw-r--r--   1 cscherer sunuser      7142 Dec 13 11:49 gftrans.inp
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-rw-r--r--   1 cscherer sunuser     15214 Dec 13 11:49 ggamen.dat
-rw-r--r--   1 cscherer sunuser     13855 Dec 13 11:49 ggenii.def
-rw-r--r--   1 cscherer sunuser     13164 Dec 13 11:49 ggenii.inp
-rw-r--r--   1 cscherer sunuser     10074 Dec 13 11:49 ggenii.out
-rw-r--r--   1 cscherer sunuser      5351 Dec 13 11:49 ggrdf.dat
-rw-r--r--   1 cscherer sunuser      5673 Dec 13 11:49 gmedia.out
-rw-r--r--   1 cscherer sunuser      9897 Dec 13 11:49 gnewdf.dat
-rw-r--r--   1 cscherer sunuser     13200 Dec 13 11:49 grmdlib.dat
-rw-r--r--   1 cscherer sunuser       572 Dec 13 11:49 gsccdf.res
-rw-r--r--   1 cscherer sunuser       572 Dec 13 11:49 gsccdf_c.res
-rw-r--r--   1 cscherer sunuser      3561 Dec 13 11:49 gw_cb_ad.dat
-rw-r--r--   1 cscherer sunuser      1264 Dec 13 11:49 gw_cb_ci.dat
-rw-r--r--   1 cscherer sunuser      3557 Dec 13 11:49 gw_pb_ad.dat
-rw-r--r--   1 cscherer sunuser      1261 Dec 13 11:49 gw_pb_ci.dat
-rw-r--r--   1 cscherer sunuser       572 Dec 13 11:49 gwccdf.res
-rw-r--r--   1 cscherer sunuser       572 Dec 13 11:49 gwccdf_c.res
-rw-r--r--   1 cscherer sunuser         9 Dec 13 11:49 gwork.buf
-rw-r--r--   1 cscherer sunuser      1738 Dec 13 11:49 gwpkdos.res
-rw-r--r--   1 cscherer sunuser      1738 Dec 13 11:49 gwpkds_c.res
-rw-r--r--   1 cscherer sunuser      2170 Dec 13 11:49 gwttuzsz.res
-rw-r--r--   1 cscherer sunuser      3110 Dec 13 11:49 infilper.res
-rw-r--r--   1 cscherer sunuser      1102 Dec 13 11:49 inv1000.out
-rw-r--r--   1 cscherer sunuser         0 Nov 26 13:55 lhs.csv
-rw-r--r--   1 cscherer sunuser     40006 Dec 13 11:43 lhs.inp
-rw-r--r--   1 cscherer sunuser      5268 Dec 13 11:44 lhs.out
-rw-r--r--   1 cscherer sunuser     69312 Dec 13 11:44 lhse.out
-rw-r--r--   1 cscherer sunuser      1095 Dec 13 11:49 maxrel.dat
-rwxr-xr-x   1 cscherer sunuser    943775 Dec 13 11:44 maydtbl.dat
-rw-r--r--   1 cscherer sunuser    519279 Dec 13 11:44 mechfail.dat
-rw-r--r--   1 cscherer sunuser     11267 Dec 13 11:44 mechfail.def
-rw-r--r--   1 cscherer sunuser     35413 Dec 13 11:44 mechfail.inp
-rw-r--r--   1 cscherer sunuser         0 Dec 13 11:44 mechfail.out
-rw-r--r--   1 cscherer sunuser      1254 Dec 13 11:44 multifaf.dat
-rw-r--r--   1 cscherer sunuser      1255 Dec 13 11:44 multifbe.dat
-rw-r--r--   1 cscherer sunuser     61241 Dec 13 11:49 mv.tpa
-rw-r--r--   1 cscherer sunuser      3110 Dec 13 11:49 nearfld.res
-rw-r--r--   1 cscherer sunuser   1550562 Dec 13 11:49 nefii.dis
-rw-r--r--   1 cscherer sunuser     11320 Dec 13 11:49 nefii.inp
-rw-r--r--   1 cscherer sunuser   1952215 Dec 13 11:49 nefii.out
-rw-r--r--   1 cscherer sunuser       603 Dec 13 11:49 nefii.rel
-rw-r--r--   1 cscherer sunuser   1550562 Dec 13 11:49 nefiisz.dis
-rw-r--r--   1 cscherer sunuser     11320 Dec 13 11:49 nefiisz.inp
-rw-r--r--   1 cscherer sunuser   1952215 Dec 13 11:49 nefiisz.out
-rw-r--r--   1 cscherer sunuser    301832 Dec 13 11:49 nefiisz.src
-rw-r--r--   1 cscherer sunuser      1437 Dec 13 11:49 nefiisz.vel
-rw-r--r--   1 cscherer sunuser    188096 Dec 13 11:47 nefiiuz.dis
-rw-r--r--   1 cscherer sunuser     10100 Dec 13 11:47 nefiiuz.inp
-rw-r--r--   1 cscherer sunuser    448930 Dec 13 11:47 nefiiuz.out
-rw-r--r--   1 cscherer sunuser    255898 Dec 13 11:47 nefiiuz.src
-rw-r--r--   1 cscherer sunuser       822 Dec 13 11:47 nefiiuz.vel
-rw-r--r--   1 cscherer sunuser      1900 Dec 13 11:49 nefmks.log
-rw-r--r--   1 cscherer sunuser      2506 Dec 13 11:49 npkdoset.res
-rw-r--r--   1 cscherer sunuser      2506 Dec 13 11:49 npkdst_c.res
-rw-r--r--   1 cscherer sunuser      6890 Dec 13 11:43 nuclides.dat
-rw-r--r--   1 cscherer sunuser      7111 Dec 13 11:49 organdf.dat
-rw-r--r--   1 cscherer sunuser       698 Dec 13 11:49 pkmndose.out
-rw-r--r--   1 cscherer sunuser      8244 Dec 13 11:49 pkreltim.res
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-rw-r--r--   1 cscherer sunuser      8244 Dec 13 11:49 pkrltm_c.res
-rw-r--r--   1 cscherer sunuser       899 Dec 13 11:49 rel_flow.out
-rw-r--r--   1 cscherer sunuser       572 Dec 13 11:49 relccdf.res
-rw-r--r--   1 cscherer sunuser      2266 Dec 13 11:49 relcum.out
-rw-r--r--   1 cscherer sunuser       413 Dec 13 11:49 releaset.out
-rw-r--r--   1 cscherer sunuser       665 Dec 13 11:49 relfrac.out
-rw-r--r--   1 cscherer sunuser       722 Dec 13 11:49 relgwgs.res
-rw-r--r--   1 cscherer sunuser       548 Dec 13 11:43 repdes.dat
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 11:49 rgwna.tpa
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 11:49 rgwnapani.tpa
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 11:49 rgwnapdw.tpa
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 11:49 rgwnapext.tpa
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 11:49 rgwnapinh.tpa
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 11:49 rgwnapmlk.tpa
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 11:49 rgwnappla.tpa
-rw-r--r--   1 cscherer sunuser     70761 Dec 13 11:49 rgwnr.tpa
-rw-r--r--   1 cscherer sunuser      7437 Dec 13 11:49 rgwsa.tpa
-rw-r--r--   1 cscherer sunuser     23937 Dec 13 11:49 rgwsap.tpa
-rw-r--r--   1 cscherer sunuser      7483 Dec 13 11:49 rgwsr.tpa
-rw-r--r--   1 cscherer sunuser       572 Dec 13 11:49 rlccdf_c.res
-rw-r--r--   1 cscherer sunuser       722 Dec 13 11:49 rlgwgs_c.res
-rw-r--r--   1 cscherer sunuser      3597 Dec 13 11:43 samplpar.abb
-rw-r--r--   1 cscherer sunuser     27397 Dec 13 11:43 samplpar.hdr
-rw-r--r--   1 cscherer sunuser      5914 Dec 13 11:49 samplpar.res
-rw-r--r--   1 cscherer sunuser     25920 Dec 13 10:57 scr394_basecase.out
-rw-r--r--   1 cscherer sunuser     25981 Dec 13 11:17
scr394_basecase_ileach0.out
-rw-r--r--   1 cscherer sunuser     25981 Dec 13 11:49 scr394_sl2.out
-rwxr-xr-x   1 cscherer sunuser    130088 Dec 13 11:44 seisbs1.dis
-rwxr-xr-x   1 cscherer sunuser    130088 Dec 13 11:44 seisbs2.dis
-rwxr-xr-x   1 cscherer sunuser    943788 Dec 13 11:44 smaydtbl.dat
-rw-r--r--   1 cscherer sunuser    301832 Dec 13 11:49 sotnef.dat
-rw-r--r--   1 cscherer sunuser     28459 Dec 13 11:49 sp.tpa
-rw-r--r--   1 cscherer sunuser     82808 Dec 13 11:49 spquery.tpa
-rw-r--r--   1 cscherer sunuser      4506 Dec 13 11:44 strmtube.dat
-rw-r--r--   1 cscherer sunuser     13122 Dec 13 11:49 totdos_c.res
-rw-r--r--   1 cscherer sunuser     19322 Dec 13 11:49 totdose.res
-rw-r--r--   1 cscherer sunuser     83951 Dec 10 13:36 tpa.inp
-r--r--r--   1 cscherer sunuser      9325 Mar  4  2002 tpa_.out
-rw-r--r--   1 cscherer sunuser     83835 Nov 18 11:19 tpa_base.inp
-rw-r--r--   1 cscherer sunuser     83835 Dec 10 12:14 tpa_basecase.inp
-rw-r--r--   1 cscherer sunuser     83951 Dec 10 13:36 tpa_mod394.inp
-rw-r--r--   1 cscherer sunuser     86219 Dec 13 11:43 tpameans.out
-rw-r--r--   1 cscherer sunuser     97497 Dec 13 11:43 tpanames.dbs
-rw-r--r--   1 cscherer sunuser    236079 Dec 13 11:49 trelease.out
-rw-r--r--   1 cscherer sunuser     21032 Dec 13 11:49 weldfail.out
-rw-r--r--   1 cscherer sunuser     13105 Dec 13 11:44 wpflow.dat
-rw-r--r--   1 cscherer sunuser     17410 Dec 13 11:44 wpflow.def
-rw-r--r--   1 cscherer sunuser       912 Dec 13 11:49 wpsfail.res

scr394/test_screen_outputs:
total 329
drwxr-xr-x   2 cscherer sunuser       512 Dec 13 11:02 .
drwxr-xr-x  20 cscherer sunuser      9216 Dec 13 13:58 ..
-rw-r--r--   1 cscherer sunuser     25920 Dec 10 13:03 scr394_basecase.out
-rw-r--r--   1 cscherer sunuser     25920 Dec 12 13:42 scr394_basecaseg.out
-rw-r--r--   1 cscherer sunuser     26164 Dec 10 13:49 scr394_sl2.out
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-rw-r--r--   1 cscherer sunuser     25920 Dec 11 14:49 scr394_sl2b.out
-rw-r--r--   1 cscherer sunuser     25920 Dec 11 15:05 scr394_sl2c.out
-rw-r--r--   1 cscherer sunuser     25920 Dec 12 11:50 scr394_sl2d.out
-rw-r--r--   1 cscherer sunuser     25920 Dec 12 12:21 scr394_sl2e.out
-rw-r--r--   1 cscherer sunuser     26042 Dec 12 13:14 scr394_sl2f.out
-rw-r--r--   1 cscherer sunuser     25920 Dec 12 13:32 scr394_sl2g.out
-rw-r--r--   1 cscherer sunuser     25981 Dec 12 14:09 scr394_sl2h.out
-rw-r--r--   1 cscherer sunuser     25981 Dec 12 14:21 scr394_sl2i.out
-rw-r--r--   1 cscherer sunuser      2703 Dec  2 14:52 test_isa.out
-rw-r--r--   1 cscherer sunuser      2703 Dec  2 15:22 tpa_isa.out
-rw-r--r--   1 cscherer sunuser     23887 Dec  6 12:54 tpa_postmodc.out
-rw-r--r--   1 cscherer sunuser      2620 Dec  2 10:42 tpa_test1.out
```