RETRAN-3D MOD004.9 Trouble Report List

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
1	Pressure decrease at 950 btu/lb	1	MOD001a
2	Slip differences between PREREL and PRESS	1	----
3	Code fails in subroutine STEPIT	1	MOD001a
4	Time-dependent BC from tape	1	MOD001a
5	Pressure increase in last SL volume	1	----
6	1-D kinetics power level not converging	1	Mdl. Limit.
7	Steam separator model fails	1	MOD002.0
8	Two-phase junction choking error	1	mod_095
9	5-Equation steady-state fails	3	MOD001a
10	1st iteration failure during steady-state	1	MOD002.0
11	Negative enthalpy when flow reverses	1	Mdl. Limit.
12	Anomalous temperature transport results	1	MOD001a
13	Wrong temperature was used in CXGEN	1	MOD001a
14	Added logic to detect input error INCDHT	1	MOD001a
15	Corrected error in time-dependent QFRACS	1	MOD001a
16	Changed literal const. to double precision	1	MOD001a
17	Corrected an error in the input processing	1	MOD001a
18	Strange spikes in temperature response	1	MOD001b
19	Steady-state area adj. for powered conductor	1	mod_053
20	RESTRT fails when MOC option used	1	MOD001b
21	RESTRT does not produce base deck results	1	MOD001b
22	Problem using Wilson bubble rise model & error when using low power initialization	1	mod_169
23	Roundoff error in PRZR subroutine	1	MOD001b
24	Pressurizer mixture level not consistent with the liquid level (RETRAN-03 and -02)	3	mod_092
25	SS init. fails to compute loss coefficient for junction with negative flow	1	MOD001b
26	Choked flow failure	1	MOD001g
27	Flow oscillation as junc. void goes to zero	1	Mdl. Limit.
28	Low power steam generator init. fails	1	Input Error
29	Fails with minimum time-step size	1	Input Error
30	2-loop Oconee w/5-eq. fails in steady state	1	mod_264
31	Failure in QDOT14	1	mod_005
32	Fails in the two-region nonequilibrium model	1	MOD002.0
33	000040 data not read during restart	1	MOD002.0
34	Different laminar flow friction transition	1	mod_001
35	Initial NCG states not propagated correctly	1	mod_042

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
36	CHF calculation for a single volume	1	mod_007
37	Choked flow numerical instability	1	mod_013
38	Core dump occurs for one case not others	1	MOD002.0
39	Time-step error; pressure is 5997 psia	1	MOD002a
40	Results do not agree with data (MOC)	1	Closed
41	Anomalous downcomer level	3	mod_141
42	Fails with time-step error in pressurizer	1	mod_081
43	Steady-state convergence error	1	MOD002.0
44	Direct moderator heating error	1	mod_015
45	Restart incorrect transient values	1	mod_090
46	Steady state does not converge	1	MOD002.0
47	Standard Problem One difference	1	MOD002.0
48	Steady state fails after 6 iterations	1	mod_006 mod_258
49	Edits for volume data actually used	1	mod_009
50	Void fraction comparisons are poor	1	mod_002
51	Pressure search failure for two-phase MOC	1	mod_109
52	MOC does not return to the initial temp.	3	Closed
53	MOC does not work with noncondensables	1	Mdl. Limit.
54	MOC solution; no null transient for two-phase	3	Closed
55	Condensation heat transfer; core dump	1	mod_008
56	SS fails - dynamic slip used; 135 vol.	1	mod_035
57	Enthalpy error at steady-state iteration #6	1	MOD002.0
58	Condensation mass transfer model error	1	mod_002
59	Error in fill & TDV BCs for pure error	1	mod_011
60	Anomalous countercurrent flooding	3	Mdl. Limit.
61	REEDIT job causes FTB error	1	mod_014
62	Code error discovered on PC installation	1	mod_003
63	Multi-D kinetics input and SS error proc.	1	mod_004
64	Format error for card 146000	1	mod_018
65	Error turning enth. transport off; 5-eq. used	1	mod_028
66	Error in TRIPDT when DT<TMIN	1	mod_004
67	No check for TMIN or TRTG<TMAX	1	mod_019
68	Error in 5-equation wall heat/mass transfer	1	mod_024
69	5-Equation option fails to initialize	1	mod_054
70	Fails in subroutine DERIVS	1	MOD004.2
71	Pressurizer model does not match theory	1	mod_025
72	Allow old TDV input when no NCG	1	mod_017
73	Output format error in subroutine INGAS	1	mod_020
74	Correct EOS failure in GENOPT	1	mod_021
75	Eliminate call to CCFPRP in steady state	1	mod_022

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
76	Remove extraneous deriv. in XANDH	1	mod_023
77	Reactivate slip after single phase	1	mod_026
78	Correct phase flag in STATNE	1	mod_027
79	Error in Wilson bubble rise model	1	mod_030
80	Error with restart; pressures = NaN	1	mod_032
81	Steady-state failure at iteration #6	1	MOD004.2
82	Water properties routines do not give unique answers	1	mod_046
83	Separated volumes fail to converge	1	mod_037
84	A reedit error; FTB error #11	1	mod_014
85	Initialization error for accumulator volume	1	Input Error
86	The Prandtl number is discontinuous	1	mod_036
87	Subroutine WAT17; VFLAG & DVLP used, but not defined	1	mod_061
88	Code fails when 5-equation model activated	1	mod_045
89	Failure in steady state producing NaN	1	mod_039
90	Flow reversal causes MOC solution failure	1	mod_038
91	Steady state does not converge	1	mod_040
92	Failure if momentum flux turned off	1	mod_034
93	Temp. transp. mdl. provides erroneous results	1	mod_033
94	Energy balance for 12 node core	1	MOD002.0
95	Derivative terms in error	1	mod_049
96	Water vapor converted to NCG	1	mod_041
97	Failure when pressurizer fills with liquid (NUMRCS=3)	1	mod_050
98	Failure with two-region nonequilibrium volume (NUMRCS=3)	1	mod_050
99	Default value of uduf (W6-R)	1	mod_055
100	Valid direct moderator heating cards	1	mod_056
101	Error when R3D ported to Linux OS on P6	1	mod_057
102	Error corrections to R2 applicable to R3D	1	mod_015
103	Incorrect error message in INGTRN	1	mod_043
104	Water mass converted to air mass	1	mod_047
105	Difference in unit conversion factor	1	mod_048
106	Core dump when >50 data points used	1	mod_061
107	Floating point exception in STEPIT	1	mod_062
108	Error corrections to CORETRAN appl. to R3D	1	CSA003
109	FORTRAN not compiling on Linux - 3-D kin.	1	CSA003
110	FORTRAN not compiling on Linux - envir. lib.	1	MD5
111	SS balance equation linearization error	1	mod_066
112	Pump linearization error	1	mod_065
113	Problem in subroutine XANDH	1	mod_067

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
114	Discrepancy in pressure calculation	1	Mdl. Limit.
115	Dynamic & alg. slip results are different	1	mod_073
116	Fails in steady-state initialization	1	mod_264
117	Step change in power during first time step	3	armd_001
118	Calc. void profile sensitive to nodalization	1	----
119	SS fails to converge for some cases (alg.)	1	mod_089
120	Core dump occurs @ 989.02 seconds	1	mod_083
121	Calculation failure on second time step	1	mod_080
122	Problems with EOS convergence	1	MOD004.2
123	Sum of flows do not agree	1	mod_085
124	SS init. does not converge	1	mod_089
125	Failure due to floating point exception	1	mod_084
126	Alternative cross section input format	1	armd_003
127	Lack of convergence error	1	mod_114
128	Lower index out of range for pressure	1	mod_099
129	Code forces input on single card	1	mod_082
130	Decay heat N/A w/ 3D kinetics	1	mod_086
131	Restart fails with a segmentation error	1	mod_087
132	"Fine mesh" option for Z-axis fails	1	armd_002
133	Fails to read SI input card on restart	1	mod_088
134	Can't initialize pressurizer with P,x	1	mod_100
135	Fails in POLATE on restart	1	mod_090
136	Critical mass flux derivative DGDH incorrect	1	mod_091
137	Infinite friction factor for low flow	1	mod_080
138	Pump stop card will not stop pump	1	mod_096
139	Extraneous edits in output file w/ 3-D kin.	1	armd_005
140	Post-CHF heat tran on shell side of SG @ SS	3	mod_101
141	MOC model failure - stability analysis	1	mod_106
142	Timestep selection causes 3-D kin to fail	1	MOD002a
143	SS convergence failure using ISFLAG = 3	1	mod_103
144	TAUGL model doesn't apply for horiz. flow	1	Mdl. Limit.
145	SS fails to converge for low press. and flow	1	Mdl. Limit.
146	VY stability run fails with MOC option	1	mod_107
147	No optimization causes point kinetics to fail	1	mod_110
148	F2D general data table input processing error	1	mod_112
149	Invalid NEWEQS will give erroneous results	1	mod_113
150	SS solution void fraction oscillation	1	Mdl. Limit.
151	Heat transfer mode switches from 20 to 1 & 5	3	mod_106
152	Junct pressure lags vol pressure 1 time step	1	Mdl. Limit.
153	EPRI TFFM should use flowing quality	3	mod_111
154	Conductor edit labels incorrect	1	mod_116

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
155	3D kinetics errors	1	mod_117 mod_125 armd_010 armd_012
156	Error in ADFs when 157 compositions used	1	armd_011
157	Mass flux minor edit different than maj edit	1	mod_118
158	EPRI CHF cor. should use thermodynamic qual	3	mod_119
159	Dyn slip error if SS converges < 8 iterations	3	mod_120
160	Development of the taugl model is not correct	1	----
161	Errors in steady state dyn-slip eq. doc.	1	----
162	Time dependent decay heat multiplier	3	mod_121
163	MOC input error on 67000Y card	1	mod_122
164	3-D kinetics causes floating point exceptions	1	armd_037
165	3-D kin - unable to specify profile fit mdl	1	mod_162
166	Corrected error message formats in IMPSTP	1	mod_124
167	Incorrect gas temp. in the 5-eq model w/NCG	3	mod_123
168	Incorrect null trans w/3d Kin., mod ht & 5eq	3	****
169	PARCS numerics doesn't calculate adjoint flux	1	armd_018
170	PARCS numerics will not hold a null transient	3	armd_040
171	Format errors for channel junct./vol. edits	1	mod_126
172	Subcooled boiling using Dhe instead of Dhy	3	mod_127
173	User's Manual error decay heat fractions	3	----
174	5-EQ error in steam lines	1	mod_158
175	Xsection model error	3	armd_014
176	Errors in new Xsection model when processing BXF file converted from old TAPE67	3	armd_014
177	Undocumented trip card number is allowed	1	mod_128
178	Revise 67000Y and 232XXX card input	1	mod_130
179	Negative Re number causes numerical errors	1	mod_131
180	Bad minor edit headings for chan components	1	mod_132
181	No rod cusping treatment in 3D kinetics	3	armd_020
182	Kinetics problem type is fixed at 3	1	armd_028
183	Channel dependent boron model error	3	armd_014
184	No SS convergence trap for kinetics solution	1	mod_134 armd_015
185	4 node/asmb option fails if using the general transport model for 3D boron concentration	3	mod_137 armd_018
186	Unused code in subroutine DRIFTV	1	mod_128
187	Error in manipulating the ADF data	3	armd_016
188	Error in computing reactivity components	3	armd_017
189	Water/Air sample problem won't run w/ new EOS	1	mod_135

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
190	Error when reversing from/to junc. w/ angle	1	mod_154
191	No boron/XISP reactivities calculations	3	mod_136 armd_018
192	PARCS numerics doesn't calculate reactivities	3	armd_018
193	4 node/asmb option fails on PARCS ragged-edge	3	armd_018
194	BWR sample prob.w/flow split won't run on IBM	1	mod_139
195	PARCS numerics sample problem fails on PC	1	MOD003
196	Correct typos in various subroutines	1	armd_021
197	>1 geometry data set is supplied on the CDI	1	mod_142
198	Mom flux err - jun angl not 0 or mult of 90	3	mod_154
199	3D kinetics decay heat model option	1	mod_143
200	SS failure for NCG (WAT0 ERROR may be WAT17)	1	mod_293
201	SS failure when flow split option used	1	Closed
202	Error when pcrit reached during tran - 5-Eq	1	mod_188
203	Pressurizer time step selectn when Przr solid	1	mod_190
204	Impl Przr - Int reg HT and spray mdl errors	3	mod_151
205	Channel model doesn't allow dyn gap cond mdl	1	mod_162
206	PARCS inner iteration BICGSTAB fails	3	armd_022
207	Xsec Extrapolation on DM is not supported	1	armd_023
208	PARCS BC=2 (no return flux) is not allowed	1	armd_024
209	SLB sample problem using direct mod. heating	1	mod_204
210	Error in STF control block implementation	1	mod_145
211	PC version of MOD003 gives different results	1	mod_166
212	Possible errors in dynamic flow regime model	1	Closed
213	Channel model heated diameter expansion	1	mod_147
214	Freeze option freezes all feedback	1	armd_025
215	AXIAL KAPPA-FIS.RATE not correctly averaged	1	armd_026
216	Integer conversion error in subroutine CONV	1	enmd_004
217	FTB 41 error with 3D kinetics & Purdue Num.	1	mod_142
218	XISP effects not supported in RETRAN-3D	1	armd_028
219	NEDIT default value	1	armd-029
220	Error in processing the MOC cards	1	mod_149
221	Error with post-CHF heat transfer with 5eq	1	mod_150
222	Error in gen transport with iterative soln	1	mod_159
223	Liquid mass & level not defined for time=0	1	mod_167
224	Mom Eqn error when mult jun connect to vol	1	mod_163
225	Error in TDV using control sys - input error	1	mod_146
226	MOC error when flow reverses	1	Closed
227	Error in control rod cross section model	1	armd_030
228	Problem fails using TDV from restart file	1	mod_158

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
229	Momentum flux different for TDV case	1	mod_153
230	Transient code failure when ISFLAG = 3	1	mod_155
231	Error in momentum flux for tdv	3	mod_156
232	Code fails after 17.4 seconds w/NaNQs	1	mod_157
233	Error in processing stacks w/ 3D kinetics	1	mod_160
234	Error in input processing for Catton-Swanson	1	mod_161
235	Error in flow splits intialization	3	mod_165
236	Error in critical boron search w/ 3D kinetics	1	mod_164
237	Model fails to hold a null transient	3	mod_170
238	3-D kinetics writes restart to TAPE13	1	armd_033
239	Steady-state fails with algebraic slip	1	mod_168
240	Junction property error after 92 sec transient	1	MOD004.2
241	Error in dynamic slip for fill junction	1	mod_172
242	Unreachable statements and unused variables	1	armd_035
243	Centrifugal pump linearization limitation	1	mod_173
244	Different alg slip vel when from-to reversed	1	mod_174
245	QDOT23 fails to converge (Tw+0.2=Tsat)	1	mod_178
246	Control system floating point exception	1	mod_179
247	Scratch space overlaps with other FTB files	1	mod_184
248	Critical heat flux exceeded in SG secondary	3	----
249	PNM floating parameter defaults not set on PC	1	armd_038
250	Index used before defined - Zolotar-Lellouche	1	mod_180
251	Slip vel. incorrect for vol. w/ multipl con.	3	mod_181
252	Temp tran vol description incorrectly printd	1	mod_182
253	Concentration instability in surgeline press.	1	----
254	Model cannot hold a null transient	3	armd_040
255	Segmentation Fault in 3D Kinetics Case	1	mod_186
256	Logical flag error for Chexal-Lellouche w/air	1	mod_183
257	Nonequilbrium volume initialization problem	1	mod_185
258	The XISP options do not match user's manual	3	armd_039
259	670040 card is not correctly initialized	1	armd_040
260	Core expansion function is not complete	1	mod_196
261	Enth tran model error when used with FIBWR	1	mod_189
262	Stdy st fails to convrg at boiling boundary	1	mod_191
263	Branching pressure drop in separated volumes	1	mod_200
264	Thermodynamics Failure in volume with NCG	1	mod_192
265	Problem with 5-eq Null Transient	1	mod_193
266	Prob specifying init. cond. for 5-eq vols	1	mod_194
267	Enthalpy not specified in zero flow volume	1	mod_195
268	Heat transfer Mode 18 is not defined in Vol 1	1	----
269	Cocurrent slip from single phase liq volume	1	mod_197

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
270	Pressurizer pres. search failure near tcrit	1	mod_198
271	Segmentation fault - 23 Channel BWR model	1	mod_199
272	NUMERCS=2 & 3 give different results	1	mod_286
273	The pump stop option fails to work sometimes	1	mod_222
274	Divide by zero in VAPOR1 - WAT9 convrgnc err	3	mod_201
275	SUN Compiler Optimizer Problems on 6.2	1	----
276	SUN NOSIGNED ZERO Compiler Support	3	----
277	Decay heat changes first time step	1	mod_208
278	Bad jun enthalpy for zero flow fill	1	mod_210
279	Temp tran delay can't be turned of at restart	1	----
280	Time step failure due to pressurizer vol	1	mod_211
281	Two surface conduction fails to converge	3	mod_212
282	Anomalous slip vel for low or high void frac	1	mod_213
283	Hot channel pressure drop incorrect at TDV	1	mod_214
284	R3D cont syst initialization diff than R02	1	mod_215
285	Bad Valve area calculated from Control block	1	mod_216
286	Error in pump speed - two-phase torque error	3	mod_217
287	Inadequate space for 180 vol straight pipe	1	mod_224
288	Anomalous upper downcomer flow behavior	1	MOD004.2
289	Liquid hangs up in separator and upper DC	3	MOD004.2
290	SS fails to converge for 2 reg nonequil vol	1	mod_225
291	Anomalous results from the temp tran model	3	mod_226
292	Input error for P>0, T=0, x=-1 for zm=zvol	1	mod_227
293	Enthalpy not specified in a zero flow volume	1	mod_228
294	Incorrect pres drop at PRZR surge line inlet	1	mod_229
295	Incor heat flx for local cond with fixed HTC	1	mod_230
296	Pressurizer HORN failure 1st time step	1	mod_232
297	Dynamic slip failure - NaNs for phasic flows	1	mod_254
298	MOC initialization failure	1	Closed
299	Zero fluid temp in 2-reg nonequil vol	1	mod_233
300	Input error for Chun-Seban cond HT in PRZR	1	mod_234
301	Discontinuous positive vslip for low voids	1	mod_252
302	Pump input error - motor torq from cont sys	1	mod_239
303	Pressure search failurer	1	----
304	Anomalous reverse choked flow	3	mod_251
305	Potential memory leakage - channel model	1	mod_240
306	SS error for negative fills with slip	1	mod_242
307	Low power SG initialization model error	1	mod_244
308	SS bubble rise vel calc error -- C*W*X < 0	1	mod_246
309	Low power SG init SS failure with bad enth	1	mod_247

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
310	An access violation (memory protection fault) occurs in subroutine CONMAT when there are unused bubble rise definitions in the input deck.	1	mod_255
311	The new short form problem dimension input can result in an error indicating that there are an incorrect number of junctions.	1	mod_256
312	The description of the Chexal-Lellouche algebraic slip velocity multiplier added in mod_220 was inadvertently omitted from Volume 3.	1	V3-Rev 6.1
313	The CDI file description in Volume 2 is missing the information related to part length rods, water rods, and the FIBWR leakage paths.	1	V2-Rev 6.1
314	The card input data description for the FIBWR model was inadvertently omitted from Volume 3.	1	V3-Rev 6.1
315	Failed in mode 16 heat transfer evaluating material properties for a pressure in excess of 86,000 psi.	1	mod_257
316	The volume convergence error field for the steady-state debug output is misaligned.	1	mod_259
317	Failure in POL2 from TFFM – Y value is NaN	1	mod_260
318	The description of IPURDU, W6 on card 670020, is incorrect (Vol. 3). The ten's unit description for the NEMTAB format should be Z not 2.	1	V3-Rev 6.1
319	An input error indicates that six (6) time dependent volumes were specified but only three (3) were encountered. Only 3 were specified on the conventional RETRAN-3D problem dimension card.	1	mod_261
320	Five Compiler warning messages issued by an Intel platform compiler. The CSA PC compiler issues three warnings. No warning messages are issued when the code is compiled on UNIX platforms.	1	mod_262 armd_048
321	The slip option (ISFLAG) and profile fit (ITVOID) option flag descriptions in the short form problem control and description input data are reversed (Vol. 3). The slip option should be W5-I and the profile file should be W8-I.	3	V3-Rev 6.1
322	Certain values used for thermal conductivity multiplier cause a fatal code error on the Intel platform. The error does not occur on UNIX platforms.	1	mod_263
323	Peak RCS pressure would not converge for an ATWS transient. Multiple time step sizes were tried and a converged RCS pressure could not be obtained.	3	Mdl. Limit.

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
324	The code fails to converge in 50 iterations during steady-state initialization when the 5-eqation model is activated.	1	mod_264
325	IREAD on all of the volume cards was inadvertently set to 1 (time dependent volume). While this is an input error, the error is not trapped and the code fails with a FTB 16 error.	1	mod_268
326	The left surfaces of heat conductors 2 and 3 are in condensation heat transfer (Chun-Seban) but the liquid temperature in the volume is subcooled.	1	----
327	An incorrect branch gives an infinite loop when certain input errors are encountered	1	mod_266
328	The JCHOKE choking selection descriptions on the junction card are incorrect (Vol. 3).	1	V3-Rev 6.1
329	There is an error in the pump speed equation, Eqn. VI.1-6 (Vol. 1).	1	V1-Rev 6.1
330	Option to perturb 1-D cross-sections has an error.	1	mod_267
331	The 3D kinetics bypass heating option description was inadvertently omitted from Vol. 1 Revision 6.0.	1	V1-Rev 6.1
332	CDI file does not allow more than 1 material region in the fuel pin.	1	mod_270
333	Single phase volumes using the temperature transport delay model are set to 4-eqn volumes. They should be allowed to be 5-eqn volumes when two phase conditions develop and the temp trans delay model is no longer used.	1	mod_271
334	When using the Chexal-Lellouche model with the SP1 sample problem, the results look more like the HEM results when they should agree with the corresponding results using the Zolotar-Lellouche model.	3	mod_272
335	The problem, which uses the turbine model, fails in steady-state with an enthalpy error. The output appears to indicate an energy imbalance.	1	Input Error
336	There is a change in the slip terms from the steady-state values seen during the first time step for several junctions.	3	mod_273
337	The grid loss model pressure drop is in error by the ratio of the mixture and liquid density.	3	mod_274
338	An error evaluating the initial saturation properties for a pressurizer volume leads to an infinite loop.	1	mod_266

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
339	Several situations were encountered where messages written to the ERRLOG either contained incomplete information or the information was incorrect.	1	mod_271
340	Various output formats contain misalignments.	1	mod_275
341	After a rapid power rise followed by a drop in core power, the total power eventually becomes negative and the calculation fails.	1	mod_378
342	The code limits the normalized valve area from a control block to a maximum of 1.	3	mod_277
343	Initiation of countercurrent flow can be delayed or prevented in some instances.	3	mod_278
344	An option to active debug output for the iterative time-step control is undocumented. As a result, the new short form input did not allow the option.	1	mod_279
345	The lrhr sample fails in the pressure search.	1	mod_280
346	The pressure equation of state fails to converge early in the problem solution (four-equation with noncondensable gas model).	1	mod_292
347	On a generalized restart, the problem terminates because the code thinks the numerical solution option is being changed.	1	mod_281
348	The problem fails in the pressure search due to the use of incorrect countercurrent slip junction properties.	1	mod_282
349	Two type mismatch compile errors are encountered for the MOD10 environmental library when the g95 compiler is used (not detected by most other compilers).	1	enmd_011
350	The problem fails in the pressure search due to incorrect choking values.	1	mod_283
351	After the problem converges in steady state the problem terminates without any errors.	1	mod_284
352	Several type mismatch errors are detected in subroutine INCHAN when installing RETRAN-3D on a LINUX system using the Lahey compiler.	1	mod_285
353	Code failed because time dependent volume boundary conditions could not be located on the restart file for the requested volume.	1	mod_288
354	Several errors were encountered when installing MOD004.2 using the Intel 9.1 Fortran compiler.	1	mod_289

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
355	The pipe sample problem drifts from its initial steady-state condition when the time-step size is increased after 10 seconds.	1	mod_378
356	The function that computes the partial derivative of the superheated steam temperature with respect to pressure is not consisted with the temperature function.	1	mod_290
357	A PWR main steam line break transient calculation fails with a pressure search for the upper head, which is modeled as a two-region non-equilibrium volume.	1	mod_286
358	After correcting the equation of state failure reported in trouble report 200, steady-state initialization failed to converge (5-eqn w/ noncondensable gas).	1	mod_294
359	In the "BUBBLE DATA ACTUALLY BEING USED" edit, following steady-state initialization, the values listed as input values for bubble velocity and bubble gradient are not correct.	1	mod_295
360	In trying to initialize the model at various power levels, the user was unable to achieve a null transient. Upon close examination, pressure spikes were noted in the non-equilibrium separator volume	1	mod_286
361	During steady-state initialization the problem goes into an infinite loop while trying to compute system pressures and loss coefficients (due to under specification).	1	mod_298
362	During input processing for time dependent cards following message is displayed " ****** WARNING ****** DUE TO A DISCONTINUITY IN THE SATURATED LIQUID ENTHALPY FUNCTION AT 850.0 PSI, STEADY STATE MAY NOT CONVERGE".	1	mod_300
363	For five-equation solutions, the mixture temperature is equal to the vapor temperature rather than the mixing cup temperature.	3	mod_301
364	Steady-State error in the energy equation when the level model is active in some volumes.	1	mod_302
365	FIBWR leakage flags are omitted from the junction major edit when the channel model isn't used.	1	mod_303
366	Zero slip velocity in two-phase volumes where slip is activated.	3	mod_304
367	The run failed with an exp: DOMAIN run-time error.	1	mod_305
368	The run failed with a floating point exp: OVERFLOW run-time error.	1	mod_306

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
369	Input error indicating that steam generator number 1 is not equal to IHXQF on any of the heat conductor data cards.	1	mod_307
370	The minor edit summary edits incorrect values for minor edit variables (normalized power, etc.) when time interval between minor edits is increased.	1	mod_308
371	Use of cards 15xxx0 to input heat conductor data leads to a misleading error.	1	mod_309
372	When attempting to perform a RESTART job, the code hangs up if super blocks are used.	1	mod_310
373	The bubble velocity remains constant after time zero when it is controlled by a control system.	3	mod_311
374	The liquid mass minor edit for an accumulator volume is zero.	1	mod_312
375	The stacked bubble rise level model is not working correctly.	1	mod_372
376	During steady state initialization, the problem terminates with access violation.	1	mod_333
377	The minor edit summary edits incorrect values for minor edits LIQV and LIQL. Also, subroutine GENOPT was calling STATEW when it should have called STATAC.	1	mod_316
378	Messages are being written to the restart output file indicating the enthalpy transport model was being disabled even though it had been turned off in the original run.	1	mod_315
379	When the implicit two-region non-equilibrium model is applied to volumes that are initially single phase liquid, two regions don't develop when the volume goes two-phase.	1	mod_313
380	Wall heat flux in a two-region non-equilibrium volume increases 3 orders of magnitude when it switches from forced convection to vapor to nucleate boiling (Thom).	1	mod_317
381	When the implicit two-region non-equilibrium model encounters a volume that transitions from liquid only to two-phase, the nonequilibrium pressure search often fails to converge.	1	mod_319
382	Heat transfer mode 21 fails to converge (results are NaNs).	1	mod_317
383	Strange characters appeared in the HT Mode column in the conductor section of the major edit.	1	mod_320

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
384	Constant mixture level in bubble rise volume, even though void and quality are changing	1	mod_327
385	The steam generator downcomer to plenum junction (351) was switched to countercurrent flow the first time step even though the junction was located below the mid-points of both connecting volumes.	3	mod_321
386	During steady-state initialization, an error is generated indicating that the fill junction pressure is out of range for a negative fill. The pressure in the donor volume is zero at this point.	1	mod_322
387	A warning message is printed when a fill junction is located at the bottom of a bubble rise volume.	1	mod_323
388	The code returns an error stating there is reverse energy flow in the conductors and fails steady state initialization. However, when the pump specification is replaced with a fill junction the initialization converges.	1	mod_325
389	When moving from the source code from SLIB77 to QVCS, the SLIB77 BOY and STAR8 switch logic was removed. All code related to STAR8 was removed since it is not longer needed for any platform, but the data statements for both BOY definitions were retained (multiply defined).	1	enmd_015 mod_324
390	A warning message is issued from steady-state initialization that MORE STEAM IS FLOWING INTO THE VAPOR REGION OF BUBBLE RISE VOLUME 34 THAN IS LEAVING FROM ABOVE THE MIXTURE LEVEL.	1	mod_326
391	A failure occurs in Steady-State for a pipe problem that tries to initialize above Pcrit. Bad values for pressure and enthalpy (NaN) are indicated at iteration 2.	1	mod_328
392	Two subroutines used data statements to initialize variables that are in common. This produced compiler warnings. Five subroutines and an include file are in DOS format	1	mod_330 enmd_017
393	The old bubble velocity used in selection logic for coefficients used to compute the Wilson bubble velocity is undefined.	1	mod_332
394	When running with the SMX block, the code fails immediately with an access violation (MOD004.3 with modifications mod_304 through mod_328).	1	mod_334

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
395	Heat conductor 1 input is not read during input processing.	1	mod_335
396	8 subroutines fail while compiling on the IBM.	1	mod_336
397	Compiler warning that the variable DASDA in the argument list in subroutine FLOWMP.f is not used.	1	mod_337
398	A line of code was inadvertently deleted in mod_305.	1	mod_338
399	The SPERT test 86 results differ when MOD004.2 and MOD004.3 results are compared. While the MOD004.2 results over predicted the measured power by ~20%, MOD004.3 under predicts the power by ~20%.	1	mod_340
400	The dynamic gap model is calculating a gap width and temperatures that differ from a reference calculation.	1	mod_349
401	Restart fails for a case using the flow split option.	1	mod_341
402	Wrong index for volume in subroutine PRZDER by modification mod_319.	1	mod_343
403	The variable 'DT' in subroutine WAT8 is not defined.	1	mod_345
404	When the gain on an integrator block was changed to -1.0, the code failed with an access violation while editing the "CONTROL DATA ACTUALLY BEING USED".	1	mod_344
405	The void fraction in the subcooled boiling region (m_{lg} >0) of the core is in the range of 1.e-14 to 1.e-15. Steady state converges but the flow in this region changes by up to 10% during the first time step.	1	mod_350
406	Condensation heat transfer was used on both surfaces of a two-surface heat conductor during steady state.	1	mod_351
407	The wall heat flux/surface temperature fails to converge in heat transfer mode 22 after two time steps. The error message also shows incorrect values for the previous iteration surface temperature and heat flux derivative.	1	mod_353
408	The drift flux bubble distribution coefficient C_0 is not saved as a junction variable. When a time step reset occurs the old value of C_0 can be corrupt and lead to the slip velocity being a NaN, which results in all flows, slip velocities and all masses and energies being NaNs after the matrix solution.	1	mod_354

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
409	For problems where no initial power data card (010005) is provided, the code initializes the initial power to an illegal value and the code fails with an error message.	1	mod_355
410	A negative flux is calculated for neutronic regions during the first few time steps for SPERT86 model. This leads to a code failure.	1	mod_362
411	When MOD004.5f95 is run using the checkin script on an IBM AIX or Windows Vista PC, some minor may not contain the correct values.	1	mod_356
412	Definition of the new minor edit variable vlqj is missing.	1	mod_357
413	Simple channel model with power and pressure boundary conditions obtained from TAPE14 fails.	1	mod_359
414	The Purdue T-H numerical solution option the problem fails in steady state with singular solution.	1	mod_360
415	When using the 3D Kinetics Fine Mesh Option, the problem stops running after the 1st neutronics iteration.	1	mod_361
416	A type specification error in a water property function causes a real*8 to real conversion, which leads to the pressure convergence error.	1	mod_358
417	BOXX array is not allocated but 1 word is reset when when a time step does not converged. This may overwrite one word of data in memory.	1	mod_363
418	Pipe flow with steam and water for reverse junction orientation with algebraic slip model fails with access violation	1	mod_364
419	Time dependent volume having non-condensable flow problem fails abruptly when NCFLOW flag on problem dimension card is 0	1	mod_365
420	Volume with humid air fails to initialize in input processing.	1	mod_367
421	The ratio of mean fuel surface roughness to wavelength based on the GAPCON-2.	1	mod_371
422	The mixture quality in a two-region nonequilibrium volume is zero but should be > zero.	1	mod_369
423	When the heat transfer mode changes from Collier (33) to Siddique (23) in the presence of noncondensables there is a very large jump in the surface heat flux	1	mod_370

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
424	Code fails during steady state while evaluating the equation of state for air/water mixture.	1	----
425	Code fails during steady state by calculating negative pressures and enthalpies when dynamic slip or 5-equations is turned on.	1	mod_377
426	Code fails during pressure search in a pressure vessel with a discharge pipe and test nozzle at the bottom, when choked flow model is used for the nozzle.	1	----
427	When running fine mesh neutronics case 'neacrp', edit for kappa-fission reaction rates Show NANs	1	mod_374
428	When running the SLB sample problem out to 200 seconds, MOD4.5 shows a much higher power spike than MOD4.3.	1	mod_375
429	When the option to perform the adjoint calculation is turned on, the results of the calculation change drastically, when the option should have no effect on the calculation other than the reactivity.	1	mod_376
430	Sample problems lrhr and pwr_121 fail due to an index out of bounds exception on a Linux machine.	1	mod_379
431	Printer plots don't work with the short form problem dimension card.	1	mod_381
432	NaNs appear for some critical heat flux values in the major edit	1	mod_382
433	Steady-state initialization does not converge, but the run stops even though LCOUNT < 0.	1	mod_383
434	A restart run fails with an access violation while processing the input.	1	mod_384
435	A restart run terminates with a minimum time-step size error and then fails with an access violation error while writing the trip summary edit (can occur for RETRAN runs also). The error can also write erroneous trip summary information when no trips have occurred.	1	mod_385
436	If IPURDU is less than 20 and the units digit is not 1, the code fails during input processing.	1	mod_386
437	The junction pressure minor edit pjun is incorrect when the junction from-to orientation is reversed.	1	mod_390
438	When using a slip multiplier from a control system output, different results are obtain on 32- and 64-bit PC applications.	1	mod_389
439	An index out of range error was encountered in subroutine xncalc during steady-state initialization.	1	mod_390
440	Argument mismatch error encountered while evaluating trouble report 439 in debug mode (with arguments checking option turned on)	1	mod_399

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
441	A BWR ATWS case with 1-D kinetics fails during the transient with a negative enthalpy.	1	mod_393
442	A BWR pressurization transient shows pressure discontinuities in the upper plenum and stand pipe volumes.	1	mod_398
443	An access violation occurs when using core region wise Doppler and density reactivity tables.	1	mod_394
444	When steady-state initialization computes a reverse loss coefficient, it is erroneously stored as the forward loss coefficient for the next junction. SS fails to converge.	1	mod_391
445	Original problem using the long form problem control and description data card failed to restart. Also encountered error in general transport concentrations and non-conducting heat exchanger output after restart.	1	mod_392
446	Printer plots are not plotted and program does not end when NaN's are encountered in TAPE20	1	mod_395
447	The SUN compiler does not normalize the computed quality e-17, which results in an inconsistency between the bubble mass (=0) and the quality (>0).	1	mod_397
448	The trip summary edited at the end of transient is incorrect for several trips on control system output signals. Also, the problem end trip (indirect trip) is not edited at the end of trip summary.	1	mod_400
449	The code goes into an infinite loop if a flow reversal occurs when it's taking the minimum time-step size.	1	mod_401
450	The conductor numbers in the conductor stack description in the output are printed incorrectly.	1	mod_402
451	The code fails during input processing in module m_R3D_plot_file with an illegal plot variable region for some trip IDs.	1	mod_403
452	SPERT81 (hot zero power) fails in transient with a pressure search error caused by invalid nodal powers.	1	mod_404
453	When restarting and not saving a new restart file, the code goes into an infinite loop. The error occurs when using the debug PC version but not the release version.	1	mod_405
454	When a replacement time-step data card is used in a restart run, the code uses incorrect time intervals between edits.	1	mod_406
455	All flows are exiting a two-phase volume (inlet flow reversed) which encounters a pressure search failure due to a depleted mass inventory. The dynamic head terms for the associated junctions are unrealistically large and are causing the flows to accelerate.	1	Model Limitation
456	In some instances incorrect error messages are being printed when a problem fails during steady-state.	1	mod_408

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
457	Requesting the DNBR minor edit flag results in an input error. After correcting the error it was discovered that in certain situations an incorrect DNBR value and quality are computed near the bottom of a DNBR calculation.	1	mod_410
458	Indirect trips are not activated even though the primary trip is activated. The trip summary edit is also incorrect.	1	mod_409
459	When using the junction initial condition data cards 232XXX to specify that a loss coefficient is to be computed, both the forward and reverse values are set to -1.0. This can reset a desired reverse loss coefficient that is intended to be different than the forward value.

In some instances, the code does not detect that a calculated loss coefficient has been requested for a junction with no flow. The loss coefficient remains defined at -1.0, which would be used during the transient solution. | 1 | mod_411 |
460	When the low power steam generator initialization option was activated, the code failed with bad enthalpies in the steam generators during the first steady-state initialization iteration.	1	mod_412
461	When volume flow area is changed during a generalized restart run, it is ignored and the flow area from original input deck is used.	1	mod_413
462	The code will either fail with an address exception or an illegal minor edit region number if an accumulator minor edit variable request is made.	1	mod_414
463	When the flow reverses at the inlet to a two-region volume used to model the upper head, the explicit two-region model gets the wrong liquid region energy when slip is on.	1	mod_415
464	Changes from mod_388 were not included when subroutine INVOL was checked into QVCS.	1	mod_417
465	For RESTART runs, the intervals between edits differ from those requested.	1	mod_416
466	A two-phase negative fill junction is used to model the MSIV relief flow. For the slip model given by ISFLAG=5, the coding does not consider that there is no "from" volume, which results in a bad array index.	1	mod_418
467	3D Kinetics case fails when XISP is requested	1	mod_419

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
468	3D Kinetics cases fail with an index out of bounds error when with bounds checking on.	1	mod_420
469	Low power SG initialization fails if junctions with closed valves are connected to SG tubes (ie. tube rupture model)	1	mod_421
470	The enthalpy convergence error fails to converge even when the convergence limit is increased.	1	mod_424
471	The minor edit region number in the minor edit summary displays *s for region numbers longer than 4 digits.

genmt3/genmt4 debugs are activated in the output file after time step 100000. | 1 | mod_422 |
472	The problem fails when the dry air temperature is greater than the critical temperature.	1	mod_426
473	Restarting from a restart file generated by a prior RESTRT job fails to restart.	1	mod_423
474	Major edit frequency differs from that which the user requested.	1	mod_425
475	An extraneous error message occurs occasionally.	1	mod_438
476	GENRST allows the pressurizer inter-region HTC and other parameters to be modified at restart time, but the original values are used upon restart.	1	mod_427
477	For qualities in the vicinity of 0.95, the heat transfer mode oscillates between modes 3 and 8 for the combined HT map (IHTMAP=1).	1	mod_428
478	Heat transfer mode 22 fails to converge in the pressurizer during steady-state initialization.	1	mod_430
479	RETRAN fails when trying to read in volume boundary conditions from a previous run.	1	mod_432
480	The code fails with a Windows 7 error message that "r3dm004p6.exe has stopped in working", while attempting to run.	1	mod_429
481	Error number 5002 checks if lturb (Word-1 on card 2331XX) is valid before lturb is defined. This error causes the code to fail if this card is used.	1	mod_431
482	The code fails with an error from inslab indicating an illegal geometry during input processing when attempting to run a system model with 3d kinetics with conductor stack in pressurizer.	1	mod_433
483	The code does not terminate when negative losses are calculated by steady-state for 3d kinetics model.	1	mod_434

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
484	Junctions where calculated losses are specified using 08XXXY or 672xxx cards are not included in the initial condition summary table.	1	mod_435
485	Minor edit 'Hxxx' is an invalid minor edit request (not implemented in F95 version).	1	mod_439
486	The R3D plot file does not handle channel model volume, junction or conductor numbers.	1	mod_436
487	The code terminates running when running a very large input file.	1	mod_437
488	The code terminates with a "forrtl: severe (27): too many records in I/O statement.	1	mod_440
489	After the pressurizer fills and the system then depressurizes, the vapor region is not re-established until the void fraction is > ~10%.	1	mod_441
490	When the minor edit or major edit frequency is not an integer multiple of the maximum time-step size, the major or minor edits are at a different frequency than requested.	1	mod_447
491	Fails with input error message indicating mixture quality has to be non-zero.	1	mod_444
492	During long transient, code stops using specified edit frequency and generates too many edits.	1	mod_448
493	When conductors are used with pressurizer, changing pressurizer volume number causes significantly different pressure response	1	mod_449
494	Benign code initialization error in subroutine WATHUM	1	mod_444
495	Enthalpy transport deactivation by trip does not deactivate enthalpy transport model in all junctions	1	mod_443
496	The warning message about a mass impurity balance in the general transport model is unclear and vague.	1	mod_453
497	Input error messages and memory allocation error messages may not be edited correctly	1	mod_442
498	Encountered an input error on restart due to trip data, but no trips modified on restart	1	mod_450
499	Printer plots are activated on restart without being requested.	1	mod_451
500	When a 3D-kinetics minor edit variable is requested and 3D-kinetics is not being used the problem fails with no warning or error message.	1	mod_454
501	Warning messages appear in the build log when compile time warning messages are turned on in Visual Studio.	1	mod_452
502	Code reports input error because input data exceeds 80 columns	1	----
503	The output edit of the super summer block input description is in error.	1	mod_458

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
504	Pressure rate of change time step controller does not reset when time step selected is 1e-6 due to time step lower than minimum allowed time step	1	mod_459
505	For a junction connected to the pressurizer, changing JVRTL from 0 to 3 causes failure to converge during steady state.	1	----
506	Output of a RCP leakage transient shows pressure search error in accumulator volume, but the volume listed is not an accumulator.	1	mod_462
507	Nonequilibrium pressurizer pressure solution convergence error. Output of shows NaN's for the major edits of some junction and volume variables.	1	mod_463
508	Error messages indicating that the initial time is zero when several subroutines were called. Only affects pre-MOD004.5f95 versions.	1	----
509	When using the JVERTL = 3 option, enthalpy is calculated with the new zvol, and when compared to the set enthalpy, steady-state convergence is not reached.	1	mod_464
510	Subroutine derivs uses non-condensable quality of volumes instead of junctions when computing several non-condensable variables.	1	mod_464
511	Physically incorrect results calculated during transient; appears to be a momentum flux issue.	-	----
512	Heat transfer coefficient is not allowed to fall below 5 for combined forced and natural convection heat transfer	1	mod_465
513	Error code 68011 is used for two different errors.	1	mod_457
514	An incorrect variable is used in the 1D arrays dpdm2 and dpdu2 that causes the solution to fail when mechanistic heat transfer is selected.	1	mod_456
515	When SI output is used, the major edit for the two-region nonequilbrium vapor temperature is incorrect.	1	mod_456
516	An error in a format leads to a run time error in subroutine conv if a card number contains alphanumeric characters. Errors in real or integer data will result in similar failure.	1	mod_456
517	Values in the minor edit summary are not output in SI units, only English although the units labels are SI.	1	mod_474
518	RETRAN doesn't interpolate between quality points in a TDV table. Instead uses enthalpy.	1	----
519	Several subroutines fail to compile with the IBM compiler and several others contain warnings.	1	mod_466
520	The computed results for a transient change when a restart tape is saved. (installation problem)	1	----
521	Several error messages contain formatting errors in that make them misleading and or confusing.	1	mod_475

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
522	Enthalpy transport is inadvertently turned on when the default for the wall friction is not turned on.	1	mod_471
523	The GPM* minor edit variable is initialized to zero rather that the correct time zero value.	1	mod_469
524	While attempting to initialize the model, the liquid level increases gradually as the specified enthalpy is reduced. At some point a small enthalpy change leads to the liquid level increasing step-wise (nearly doubles) to the mixture level.	1	----
525	An enthalpy convergence error is encountered during steady-state initialization (model limitation).	1	----
526	The User's Manual implies that IDSIG = -3 (low period) is a valid request, but it is not. The manual will be revised. (not a code error)	1	----
527	The code fails with an invalid control block error when the slip multiplier SLPMUL is defined using a control block.	1	mod_468
528	DLY blocks are reset to zero during restart.	1	mod_470
529	A negative index is used to retrieve the control block output that defines the junction inertia (optional model).	1	mod_468
530	Steady-state initialization fails to converge but the final error message indicates that steady state failed in control and no useful diagnostic information is written.	1	mod_460
531	The error message for a converged pressure that is out of range contains incorrect current and old parameter values.	1	mod_467
532	Error 208 is encountered for the pressurizer volume.	1	mod_472
533	Pressurizer stratification model error when multiple junctions are connected to pressurizer.	1	mod_467
534	Spray flow WSPRAY is undefined for interregion heat transfer option IHTC=3, and implicit solution is specified for pressurizer.	1	mod_473
535	Bubble velocity is zero during the transient when Wilson bubble rise model is specified and steady state initialization option is not used.	1	mod_473
536	The GPM* minor edit variable gives an incorrect value of zero flow for fill junctions.	1	mod_476
537	A large momentum flux term leads to a flow reversal that continues to increase in magnitude, driving the volume pressure above 6000 psia.	1	mod_530
538	A hot channel model that uses a RESTART file to provide boundary conditions fails.	1	mod_478
539	The enthalpy for a volume is different in the time zero edit than it is in the volume data actually being used.	1	mod_489
540	A RESTRT error occurs when using the multinode pressurizer model.	1	mod_481

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
541	A RESTRT error occurs when using the accumulator model.	1	mod_481
542	The multinode pressurizer pressure is unexpectedly lower than the single-node pressurizer pressure for an insurge transient	1	mod_480
543	The code fails with an error when a heat transfer coefficient is specified to be calculated by the control system on the specified heat transfer coefficient data cards (015XXX),	1	mod_492
544	For some countercurrent flow situations it appears that boron is sequestered in vapor only volumes and significant boron creation indicated by the ADDM term	1	mod_483
545	Restart with title, 010001 card and ".end" fails with error 205.	1	mod_484
546	Incorrect initialization for the LIQL minor edit used with the JVERT=3 option.	1	mod_489
547	Steady state initialization does not use the local conditions model resulting in a step change in the heat transfer when the transient begins.	1	mod_493
548	A run time error occurs in subroutine edit for unit 60 when the code is installed with the Intel Composer 13.1 Fortran compiler.	1	mod_482
549	An area adjustment for the right surface is much larger than for the left surface.		mod_495
550	The pressurizer inter-region heat transfer uses a fixed heat transfer coefficient of 500. It is giving zero heat transfer, resulting in a higher pressure that MOD004.6.	1	mod_485
551	The run fails with a negative pressure in the jet pump diffuser volume. The drive and suction flows are extremely large and negative. The velocity head terms for the drive and suction junctions are also very large.	1	mod_487
552	The linear interpolation error message is incorrectly numbered – 802 should be 602.	1	mod_490
553	Steady-state initialization fails when a conductivity multiplier is calculated by a control system.	1	mod_486
554	The heat transfer mode for several heat conductors appears as "USER" defined in the major edit but should not.	1	mod_488
555	The code calculates a net positive reactivity but the power does not respond for a "return-to-power" following a ~5000 second shutdown.	1	mod_494
556	Subroutine rken reports a "Time Step Size Too Small" error and the run terminates during a restart run.	1	mod_494
557	Extraneous input reflections are present in the restart output file.	1	mod_496

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
558	Error in the volume average flow calculation when an angle is specified on the junction cards.	1	mod_495
559	Error in backwards compatibility for a gamma of zero on the accumulator card.	1	mod_497
560	When the local conditions model is used with a nonequilibrium volume, the conductor temperatures and stored energy are not being updated with the new power to coolant value that was adjusted to reflect the location of the mixture level.	1	----
561	When using super blocks and corresponding super summers to output the total system fluid mass and internal energy, the problem fails with error 225 which states the 703XXX and 704XXX blocks are unused.	1	mod_499
562	Vapor trapped in the liquid region of a non-equilibrium volume when the level model (06500X) is used.	1	mod_498
563	Errors when using conductors with the pressurizer stratification option.	1	mod_500
564	A liquid convection heat transfer regime is used at a conductor that is only covered with vapor.	1	mod_501
565	When the pressurizer stratification option is used, the code fails with an error that says the mixture level is higher than the volume height.	1	mod_500
566	Two-region pressure search failure occurs approximately half way through a 24 hr ELAP case.	1	mod_502
567	When a two-region nonequilibrium volume is stacked above a bubble rise in the vessel upper head, the lower volume drains before the upper volume.	1	mod_503
568	Incorrect set numbers are written for the pump curve input edits in the output file.	1	mod_511
569	Error initializing thermodynamic properties for zero flow volumes.	1	mod_504
570	Wall and inter-region heat transfer coefficient multipliers for the accumulator model are reversed in Section 26.2 of the input manual.	1	Vol. 3 Revised
571	When SI units are requested for output, the plot file is still printed in English Units.	1	mod_506
572	The quality of noncondensables is being reset as 0 in TDVs for which the input quality is given as 1.	1	mod_507
573	Long (70,000 sec) running transient fails with a negative internal energy.	1	----
574	The pressurizer spray flow changes significantly from the steady-state to the first few transient time steps when the pressurizer steady-state initialization option is used	1	----
575	An input processing error (1006) is encountered when a value for MESH (temperature transport model) is entered on a volume data card.	1	508

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
576	Value edited for minor edit parameter TEMJ is incorrect when the 5-equation model is used.	1	mod_508
577	The Catton-Swanson free convection heat transfer correlation fails to converge (error 402).	1	mod_516
578	An error occurs when subdividing a volume with conductors using the automatic subnodalization option.	1	mod_509
579	Condensation heat transfer is not used even though the volume is two-phase and the wall temperature is well below T_{sat}.	1	mod_510
580	When a flow and temperature dependent a non-conducting heat exchanger is used, the power fraction, secondary temp, and heat transfer coefficients are incorrectly entered into the nonconducting heat exchanger arrays resulting in a code failure.	1	mod_512
581	Not enough reactivity coefficient cards available for the desired number of core volumes.	1	mod_513
582	Incorrect fluid temperature in a TDV controlled by pressure and quality inputs from the control system	1	mod_513
583	Incorrect heat transfer regime used at an air only volume. Restart failure with noncondensable flow.	1	mod_514
584	A conductor temperature fails to converge and initializes incorrectly when steady state is not used.	1	mod_515
585	Memory allocation error when the two-region enthalpy transport model is used.	1	mod_519
586	Error in the numerics option used in a generalized restart run when noncondensables are present.	1	mod_520
587	Error in the Chun & Seban condensation correlation	1	mod_517
588	Step changes were observed in the cumulative mixture and liquid levels for the pressurizer stratification model as the sub-node is deactivated and combined with the two-region node.	1	mod_521
589	When a previous null transient was run as a restart, the flows immediately decreased and the system underwent a transient as it readjusted to a new steady-state condition.	1	mod_522
590	The problem fails with an HEM pressure search error. The volume mass, junction flow, slip velocity, phasic flows and velocities are NaNs.	1	mod_523
591	The problem fails with a pressure search error 206 in the non-equilibrium pressurizer (implicit solution). Additional information printed with the error reveals that the error occurs as the pressurizer is draining and the liquid region is very small.	1	mod_524
592	As the two-region (pressurizer) volume drains, an anomalous pressure increase occurs, the vapor region superheats, and the calculated level has a step increase.	1	----

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
593	The code fails with a pressure search error for water and noncondensible gas as the reactor vent valves open and steam from the reactor blows into the containment volumes.	1	mod_525
594	During steady-state initialization, the containment conductors fail to converge. The time zero major edit reveals that the left side of the containment conductors are using heat transfer mode 4 (McDonough for transition film boiling).	1	mod_527
595	The pressurizer fills with liquid and RETRAN-3D fails with pressure search error 216 caused by a NAN being entered into the matrix.	1	mod_528
596	Extraneous error descriptions are included in subroutine errlog (never used).	1	mod_553
597	Steady-state warning message 917 edits an incorrect junction number	1	mod_529
598	Siddique condensation correlation (with non-condensables) fails to converge	1	mod_536
599	Saturation temperature below 0.1 psia shows discontinuities. The error was introduced in modification mod_525.	1	mod_532
600	The addition of a problem end trip on restart causes the problem to fail with a block mismatch error indicating that the restart files are not compatible.	1	mod_538
601	When Collier Vapor Convection is used with non-condensable gas present, the viscosity and thermal conductivity used in the correlation are for vapor only rather than for the non-condensable gas, or vapor-gas mixture.	1	mod_535
602	When the Dittus-Boelter correlation is selected by the user (imcl = 48 on the conductor cards), a higher heat transfer coefficient is calculated than when Dittus-Boelter is selected by the heat transfer map built into RETRAN.	1	mod_534
603	Infinite loop during volume input processing that results in repeated occurrences of the same error message.	1	mod_531
604	Boiling heat transfer correlations used when a liquid-air mixture and surface temperature are well below saturation.	1	mod_547
605	For a long term transient, noncondensable mass error accumulates due to flow reversals.	1	mod_564
606	Unrealistic wall condensation in a volume that has subcooled nucleate boiling with 5-equation model.	1	mod_537
607	A SSM refers to invalid minor edit regions (specified on 704XXX), but is allowed to run.	1	mod_539
608	Variable delay time for the DLY control block cannot be specified via another control block with an expanded control block ID.	1	mod_539

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
609	Errors 70051 – 70054 in subroutine incnt2 have no related error descriptions in the User Manual.	1	mod_539
610	Incorrect input for ifrj on the junction input cards can result in slip being inadvertently turned off at the junction without informing the user.	1	mod_551
611	The heat transfer coefficient of the conductor at the top of a local conditions stack next to a water-solid volume is incorrect.	1	mod_540
612	A step decrease in the decay heat is observed after the reactor scram. The error occurs during a time-step reset, where decay heat precursors are not reset to the converged values from the previous time-step. The error affects both 1973 and 1979 models. The error results in the decay power being lower than the actual value.	3	mod_541
613	For a junction connected to a two-phase volume, slip is not calculated. Slip should have been active for this junction.	1	mod_551
614	During a restart, the enthalpy bias calculated by steady-state initialization for a feedwater fill junction is not restored so zero is used	1	mod_542
615	Two-phase flow into a pressurizer with vapor only conditions vaporizes instantly causing a drop in pressure and temperature of the pressurizer. This eventually results in code failure.	1	mod_544
616	Output editing errors for expanded control block numbers (-xxx).	1	mod_539
617	During input processing for a single node steam generator with stacked conductors using the local condition model, the code fails indicating the stacked conductors' height does not match the adjacent volume. The error message should not occur for a single node SG with the stack model.	1	mod_543
618	Incorrect values are edited for the system minor edit variables for mass added (AMAS) and water mass (BMSW).	1	mod_545
619	A BWR feedwater pump trip transient with MOD004.7.1 shows a slower level decrease in the upper downcomer than the MOD004.2 results. This causes the L4-low level trip signal to be delayed by 2 seconds when compared with the MOD004.2 results. This results in a delayed turbine runback.	1	----
620	Siddique round-tube experiment model for condensation in the presence of noncondensables does not converge in steady state. The model converged in RETRAN-3D MOD4.6 version.	1	mod_554

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
621	Input processing errors are edited as warnings instead of errors, but the code is terminated due to input errors.	1	mod_553
622	A trip on a mixture level signal and no delay is not activated although the set point is reached.	1	mod_548
623	Siddique correlation (condensation in the presence of nonconensables) fails to converge at high noncondensable mass fractions (>0.99).	1	mod_546
624	For MOC model, variables are not saved and reset correctly during time-step resets	1	mod_545
625	A code failure occurs in subroutine genopt without an error message being issued when the noncondensable quality approaches zero or one.	1	mod_564
626	Several errors were observed for a volume containing noncondensables. Oscillations occur in the volume pressure, minor edit HUM* is incorrect for relative humidity close to unity and incorrect saturation temperature is calculated for the water/noncondensable mixture.	1	mod_547
627	When the input model designed to trip based on control system variable, an error results in time-step controller selecting a time-step size that may not coincide with the trip actuation time. This would result in the trip being delayed 1 time step.	1	mod_548
628	Errors in ccf slip logic that determines junction properties and checks the validity of the calculated ccf values for junctions connected to a bubble rise volume.	**1**	mod_552
629	Derivatives of convective quantities are not calculated when noncondensables are present in a bubble rise volume. This could lead to numerical instabilities in pressure and flow.	1	mod_565
630	Editing error in the output file for large cpu times and for large component numbers in the time-step control edit.	1	mod_553
631	Interpolation error 803 should be 603 to match description in the user manual.	1	mod_547
632	For the 5-equation option with noncondensable flow, a conductor associated with a volume containing air/liquid mixture is in Dittus-Boelter liquid convection heat transfer mode (1). It should be in Dittus-Boelter air/liquid convection heat transfer mode (32).	1	mod_556
633	When noncondensables are present in a simple two volume model with TDVs at each end, the system total mass, system NC mass added, NC mass error, total energy error, and water mass error minor edit variables edited are incorrect.	1	mod_564

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
634	During steady-state initialization of a bubble rise volume full of air, code fails with error 23112 indicating the initial state is overspecified for a volume without noncondensables.	1	mod_547
635	After a steady-state initialization, the fill flow changes immediately due to non-converged control block. Fill enthalpy and pressure supplied via a control system are also affected.	1	----
636	When there are no card numbers greater than 110000 in an input deck, the input processing fails with an error number 1006 indicating that word 3 is out of range for the long form input when the short form was actually used.	1	mod_549
637	Pressurizer thermal stratification model with automatic subnodalization option fails when local conditions model is specified in steam generator conductors. When manual subnodalization option is used, the null transient does not hold steady after 0.12 seconds.	1	mod_558
638	When an accumulator starts draining, the energy error (ERRU) minor edits increases to 3800 BTU. This is an editing error and has no impact on the accumulator model performance.	1	mod_580
639	The off rated power initialization option fails to converge at full power conditions when a steam generator level is targeted.	1	mod_557
640	McAdams vapor free convection heat transfer correlation fails to converge, the code edits the non-convergence warning message and continues running the transient.	1	mod_556
641	Memory allocation error when attempting to use the two region enthalpy transport model.	1	mod_519
642	When the steady-state initialization option is used with the pressurizer stratification option, steady-state initialization fails due to enthalpy mismatch between input value and code calculated value.	1	mod_553
643	When running a null transient with the thermal stratification model for the pressurizer using local conditions model, mass and energy anomalously move from the vapor region to the liquid region.	1	mod_558
644	When the combined heat transfer map (ihtmap=2) option is used, the code fails with iterative heat transfer convergence solution error. The error resulted due to incorrect surface temperature used for Chun and Seban condensation correlation.	1	mod_555

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
645	When non sequential control blocks are used in the feedback control system, control input was initialized to the incorrect value. When those control blocks were numbered sequentially, the control input initialized to the correct value.	1	----
646	When a long form of problem dimension input cards are used, the code fails with error stating that the non-equilibrium volume data cards are unused. The problem control and description data and summary correctly shows that number of non-equilibrium volume specified are greater than zero. The short form input for the same model, correctly reads the non-equilibrium volume cards.	1	mod_555
647	Noncondensable mass error was observed for situations where counter current flow conditions exist at the junction but code does not calculate junction properties based on counter current flow.	1	mod_559
648	For two-region nonequilibrium thermal stratification model, different pressurizer pressure was calculated for cases with and without the time-step controller. For the case with time-step controller activated, lower pressure is obtained compared to the case without the time step controller.	1	mod_562
649	The Direct Moderator heating fraction (DMHF) edited on the VBC file is different than the initial input value of the moderator heating fractions. The moderator heating fraction value edited on the VBC file is incorrectly calculated.	1	mod_566
650	A calculation with VBC file records (TVBC) = minor edit time interval (TMIN) = 1.0 sec. and maximum time-step size, DELTM = 0.02 sec. provides minor and VBC edits correctly at 1.0 sec. intervals. Decreasing TMIN to 0.1 sec. provides the minor edit interval to 0.1 sec. as expected, but it decreased the VBC file interval to 0.2 sec. Changing TMIN should not change the frequency of VBC edits.	1	mod_566
651	For a pressurizer thermal stratification model using the automatic subnodalization option, the code fails with an error stating that the number of subnode volumes defined for the stratification model is incorrect. Although, both two-region nonequilibrium volume cards (611XXX) and automatic subnodalization cards (58XXXY) cards specify the same number of subnodes.	1	----

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
652	For a pressurizer thermal stratification model with automatic subnodalization input, the steady state initialization fails with a water property error. However, when the pressurizer volume number is changed from 30 to 990 (highest volume number in the model), steady state initialization converges.	1	mod_567
653	For the 3- and 4-equation options, the fluid temperature derivatives are calculated incorrectly. This has no effect on calculated results.	1	mod_568
654	When enthalpy transport model is used at the bottom of the SG downcomer volume, flow and temperature oscillations occur for single phase conditions. The oscillations eventually cause premature reactor trip.	1	----
655	An input error on control block minimums and maximums forces the CB to give a fixed value.	1	----
656	RETRAN-3D SER states that the local conditions heat transfer model assumes that saturated fluid conditions are present in the fluid volumes. However, the local conditions model can be used with the two-region nonequilibrium model (Documentation deficiency).	1	----
657	When junction enthalpy smoothing option JVERTL=1 is used without an overlap, the junction enthalpy is calculated as vapor enthalpy although the junction is below the mixture level. The junction enthalpy should be equal to the liquid or mixture enthalpy. The error is limited to outsurge from the two-region nonequilibrium volume.	1	mod_567
658	Minor edit values (WGJ*, WLJ*) are zero for junctions associated with the two-region nonequilibrium thermal stratification model. Total mass error and energy error are also incorrect for the thermal stratification model.	1	mod_567
659	For the two-region nonequilibrium volume using the thermal stratification model, the second iteration of the iterative numerics solution may cause an oscillation or sudden drop in the mixture level and cumulative mixture level. The error does not occur if a solution reset were to occur.	1	mod_567
660	MOD004.8 fails with input error 23103 for each of the 4 accumulator volumes, indicating that volumes containing air (noncondensable gas) are not permitted when NCFLOW = 0.	1	mod_569

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
661	When using the two-region enthalpy transport model, there are occasional spikes in the secondary side temperature which greatly exceed the primary side temperature. Additionally, there is an extended period of time when there are two mixture levels predicted in one SG.	1	mod_573
662	The thermal conductivity and thermal expansion tables use the wrong "last used" value for each material. The interpolation is correct, but inefficient.	1	mod_570
663	The jvertl=3 smoothing option is unavailable for use with the stratification model.	1	mod_571
664	When an empty two-region nonequilibrium thermal stratification volume refills with large amount of liquid, the level never reaches the top of the pressurizer. When the water-packing model is turned off, the liquid level reaches the top of the pressurizer. The level should reach the top of the pressurizer with or without water packing model activated.	1	mod_572
665	When the noted SGTR model was run with RETRAN-3D MOD004.7.1.506.541 at two different times on a Windows 7 platform, different results were calculated. Multiple runs for any case on the same machine, with the same executable, should produce identical results. However, they did not in this instance.	3	MOD004.8
666	When the TTWOB sample problem was run with the water packing time-step controller with every iteration edit, pressure spikes were observed. This pressure spikes occurred when one of the volume transforms from two-phase to single-phase. The water packing time-step controller reduces the magnitude of the pressure spikes but does not eliminate them as intended.	1	mod_572
667	When TTWOB sample problem was run in the visual studio debugger, an access violation error occurs. For the release version no error was observed.	1	mod_572
668	When the noted Overfill model was run with RETRAN-3D MOD4.7.1.506.541 at different time-step sizes, different values were calculated for cumulative steam release from four SG. Converged solution for this case could not be obtained by reducing the time-step size to the practical limit.	1	----
669	Error found in license library file, LicCheck.lib and libLicenseChecker.a.	1	****

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
670	For the OTSG model, two-region enthalpy transport model fails with the code error. The code fails with NaNs.	1	mod_573
671	Derivatives of the convective terms with respect to vapor region mass and energy are not initialized to zero at the beginning of each time-step. This may result in conversion of liquid into vapor when pressurizer empties and refills with a very tiny amount of liquid.	1	mod_572
672	When the stratified pressurizer model is added to a case, a mass and energy error accumulates.	1	mod_574
673	In the Volume 3: User's Manual, description and guidelines for word 17 IFRJ (slip flow regime/orientation flag) on junction data cards 08XXXY is vague and difficult to understand.	1	----
674	For two-phase pump model; when the value specified for NPTM (number of points on the torque multiplier data on cards - 092XXY) does not match the actual data input, the code goes into infinite loop. Also, when the pump volume is superheated, the two-phase multipliers are ignored, and the single-phase liquid homologous values are used.	1	mod_581
675	When a non-conducting heat exchanger is specified in the upper head in a model that separately uses the pressurizer thermal stratification model, non-conducting heat exchanger removes/adds energy from the wrong volume.	1	mod_567
676	For a case involving specifying initial conditions of pressure and quality using the 5XXXY series data cards, MOD004.8.574 executable results in an input error indicating NCFLOW = 1 setting is required. However, the model does not contain Non-Condensables.	1	mod_576
677	When too many enthalpies are specified for the steady-state initialization option, RETRAN-3D issues the following warning message WARNING THERE MAY BE TO MANY ENTHALPIES SUPPLIED FOR ENERGY EQUATION SET. OVER SPECIFICATION MAY CAUSE AN ILL-CONDITIONED MATRIX OR STEADY STATE CONVERGENCE PROBLEMS".	1	----

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
678	When McAdams correlations (vapor) is used for the natural circulation conditions for conductors above the mixture level, heat transfer coefficient, heat flux, and surface temperature are dependent on the number of conductors specified for the vapor space. For several different conductors, a different value of heat transfer coefficient is calculated although conductors are subjected to the same fluid conditions.	1	mod_582
679	Code review of subroutine HTRC shows that when the possibility of condensation occurs, the preliminary calculated surface temperature is overwritten by previous time-step surface temperature. If the condensation is not possible, the incorrect surface temperature is used for the following conduction solution.	1	mod_577
680	RETRAN-3D MOD004.8 Volume 3, "User's Manual" describes two different guidelines for providing control block initial condition CIC for DLY, INT, LAG, LLG, STF and VLM control blocks.	1	----
681	While performing heat transfer V&V analysis simulating the Schrock-Grossman heat transfer experiment, a few test conditions (high heat flux and low flow), show wall temperature spikes that begin when the heat transfer mode changes from Thom (2) to the combination of Thom and Schrock-Grossman (17). This interpolation heat transfer mode is used for void fractions greater than 0.8 and less than 0.9. The temperature increases until a void fraction of 0.9 is reached. The heat transfer coefficient drops significantly for mode 17, causing the wall temperature to increase.	1	----

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
682	When modeling a pressurizer PORV, it was expected from reading the manuals that building the opening/closing delay into the general tables would produce the same results as building into the trip. This was not true, as the valve subroutines invert the tables on subsequent openings/closings in order to preserve the current area, which has the side effect of stripping out delay in the tables. Manuals should be updated.	1	----
683	Code review of mdotwf showed that the flashing model used with nucleate boiling is under-documented and contains errors in the partial derivatives.	1	mod_579
684	Code review of Taitel-Dukler flow regime map used with 5-equation model showed that the existing models are inconsistent with planned enhancements. Also found errors in interfacial area calculation for slug flow.	1	mod_593
685	Method of characteristics model causes code failure when the time step is reset.	1	****
686	The pressure for the volume upstream of a negative fill boundary (anglej2 = 180) is incorrect. This is due to an error in the momentum flux for the volume.	1	mod_588
687	When using the local conditions heat transfer model, the local water density is calculated incorrectly.	1	mod_585
688	When the critical pressure is exceeded, the viscosity, thermal conductivity, and surface tension are improperly calculated.	1	mod_585
689	When a stratified pressurizer expands or contracts at the same time that the iterative solution iterates, the pressurizer mass is not conserved. This is avoided if the second iteration causes a time step reduction.	1	mod_586
690	In some long term transients, NaNs can occur in the slip equation. Additionally, the edit intervals may become offset.	1	mod_589

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
691	5 different errors: • Incorrect pressurizer stratification solution when level is in top subnode • "False convergence" in vessel model when mixture level is very low • Sign error in an equation in subroutine przssi • Possible index error in subroutine junh when flow reverses in a junction connected to a NEQ volume Incorrect initialization for bubble rise volumes which have no air and quality is entered as -1.0	1	mod_587
692	Documentation errors in Volume 1 of the RETRAN-3D manual	1	----
693	When using the cross section debug edit (W11, ICRXP = 1 on card 30000Y), the code terminates without any indication of what caused the termination. Minor edits TEMV and TEML were being used without the 5-equation model; this caused an error message, but it was obscure.	1	----
694	When the junction ordering is reversed for the sp1 sample problem, results for the Chexal-Lellouche algebraic slip model are not the same as for the forward case results.	1	mod_589
695	When the junction ordering is reversed for the sp1 sample problem, results for the reverse case are not the same as for the forward case results when slip is turned off, but choked flow is active for both the forward and reverse cases. The water packing mitigation time-step control also gives different results for the reverse case than for the forward case.	1	mod_588
696	When the junction ordering is reversed for the sp1 sample problem, results for the dynamic slip models and the Zolotar-Lellouche algebraic slip model are not the same as for the forward case results.	1	mod_589
697	Errors in trip input processing for restart runs.	1	mod_590

Trouble[1] Report Number	Description	Part 21 Status Code	Corr.[2] Status
698	When using the iterative time step solution, the control blocks may not be reset to the beginning of time step value if a second iteration is taken. The error is not present if the DLY, FNG, STF, or super blocks are used anywhere in the model. The error affects INT, LAG, LLG, RAT, and VLM blocks.	1	mod_592
699	Errors in interregion heat transfer prediction for the pressurizer model.	3	mod_594
700	Chexal-Lellouche algebraic slip does not apply to negative fills.	1	mod_595
701	The RETRAN-02 dynamic slip model had been removed in mod_593. It needs to be added back into the code.	1	mod_596

(1) **num**   bold indicates a new trouble report or an old one whose status changed since last report
(2) ----   indicates the reported problem is not an error
    ****   indicates the reported problem has not been resolved
    num   indicates modification number or document and revision number for corrections