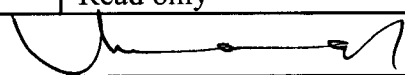


SOFTWARE RELEASE NOTICE

1. SRN Number: 273		
2. Project Title: RDTME		Project No. 20.01402.671
3. SRN Title: SAPHIRE version 6.70		
4. Originator/Requestor: B. Dasgupta		Date: 7/26/02
5. Summary of Actions <div style="display: flex; justify-content: space-between;"> <div> <input checked="" type="checkbox"/> Release of new software <input type="checkbox"/> Release of modified software: <div style="margin-left: 20px;"> <input type="checkbox"/> Enhancements made <input type="checkbox"/> Corrections made </div> </div> <div> <input type="checkbox"/> Change of access software <input type="checkbox"/> Software Retirement </div> </div>		
6. Validation Status <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> Validated <input type="checkbox"/> Limited Validation <input checked="" type="checkbox"/> Not Validated </div> <div> Explain: Validation test plan scheduled on 6/03 Validation test scheduled on 12/03 </div> </div>		
7. Persons Authorized Access		
Name	Read Only/Read-Write	Addition/Change/Delete
B. Dasgupta	Read only	Addition
R. Benke	Read only	Addition
A. Ghosh	Read only	Addition
S. Hsiung	Read only	Addition
8. Element Manager Approval: 		Date: 7-26-02
9. Remarks:		

SOFTWARE SUMMARY FORM

01. Summary Date: 7/26/02	02. Summary prepared by (Name and phone) Biswajit Dasgupta	03. Summary Action: NEW	
04. Software Date:	05. Short Title: SAPHIRE Version 6.70		
06. Software Title: System Analysis Program for Hands-on Integrated Reliability Evaluation (SAPHIRE)		07. Internal Software ID: None	
08. Software Type: <input type="checkbox"/> Automated Data System <input checked="" type="checkbox"/> Computer Program <input type="checkbox"/> Subroutine/Module	09. Processing Mode: <input checked="" type="checkbox"/> Interactive <input type="checkbox"/> Batch <input type="checkbox"/> Combination	10. Application Area a. General: <input checked="" type="checkbox"/> Scientific/Engineering <input type="checkbox"/> Auxiliary Analyses <input type="checkbox"/> Total System PA <input type="checkbox"/> Subsystem PA <input type="checkbox"/> Other b. Specific:	
11. Submitting Organization and Address: CNWRA/SwRI 6220 Culebra Road San Antonio, TX 78228		12. Technical Contact(s) and Phone: B. Dasgupta (210.522.6815) S. Ted Wood (208.526.8729) STW@ind.gov	
13. Software Application: SAPHIRE perform those functions necessary to create and analyze a complete probabilistic risk assessment. The software function allows the user to create event trees and fault tree, to define event sequence and basic event failure data, to solve system and event sequence fault trees, to quantify cutsets and perform uncertainty analysis. In addition, software defines database structure, create, analyze and quantify data, display graphical result, generate reports and perform and sensitivity analysis.			
14. Computer Platform PC	15. Computer Operating System: Windows NT 4	16. Programming Language(s): NA	17. Number of Source Program Statements: NA
18. Computer Memory Requirements: 32 mb RAM	19. Tape Drives: NA	20. Disk Units: NA	21. Graphics: NA
22. Other Operational Requirements None			
23. Software Availability: <input checked="" type="checkbox"/> Available <input type="checkbox"/> Limited <input type="checkbox"/> In-House ONLY		24. Documentation Availability: <input checked="" type="checkbox"/> Available <input type="checkbox"/> Preliminary <input type="checkbox"/> In-House ONLY	
25. Software Developer: <u>Biswajit Dasgupta</u> Date: <u>7/26/02</u>			

CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES

QA VERIFICATION REPORT

FOR

→ ACQUIRED SOFTWARE NOT TO BE MODIFIED ←

Software Title/Name: _____

Saphire

Version: _____

6.70

Demonstration workstation: _____

Draco

Operating System: _____

Windows NT

User: _____

B. Dasgupta

NOTE: Acquired software may or may not meet all requirements and will be evaluated on a case-by-case basis.

Installation Testing [TOP-018, Section 5.6]

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

Yes: ☒ No: ☐ N/A: ☐

Computer Platforms: PC Operating Systems: NT

Location of ~~Acceptance~~ Test Results: See sample output

Comments: 7/13/02 Scientific notebook # 407 pages 79-87 dated 7/18-19/01.

Software Output [TOP-018, Section 5.5.4]

Is software designed so that individual runs are uniquely identified by date, time, name of software and version?

Yes: ☐ No: ☒ N/A: ☐

Date and Time Displayed: N/A

Name/Version Displayed: N/A

Comments: Sample Output does not display date nor version. See 7/26/02

NOTE: Output identification content and format is typically taken as is. a threded sample output.

Medium Documentation [TOP-018, Section 5.5.6]

The physical labeling of software medium (tapes, disks, etc.) contains: Program Name, Module/Name/Title, Module Revision, File type (ASCII, OBJ, EXE), Recording Date, and Operating System(s)?

Yes: ☒ No: ☐ N/A: ☐

Comments: See enclosed cd.

**CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES
QA VERIFICATION REPORT**

FOR

→ ACQUIRED SOFTWARE NOT TO BE MODIFIED ←

User Documentation [TOP-018, Section 5.5.7]

Is there a Users' Manual for the software and is it up-to-date?

only for v.6.0

Yes: ☒

No: ☐

N/A: ☐

User's Manual Version and Date:

User's manual on-line with

Comments:

help files. User's manual is for version 6.0.

Are there basic instructions for the *installation* and *use* of the software?

Yes: ☒

No: ☐

N/A: ☐

Location of Instructions:

On-line & See attached software requirements, hardware requirements and installation instructions

Configuration Control [TOP-018, Section 5.7, 5.9.3]

Is the Software Summary Form (Form TOP-4-1) completed and signed?

Yes: ☒

No: ☐

N/A: ☐

Date of Approval:

July 26, 2002

Is the list of files attached to the Software Summary Form complete and accurate?

Yes: ☒

No: ☐

N/A: ☐

Comments:

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:

See enclosed CD copy of code

Comments:

No Source code.

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

Only the executable files are being submitted.

Yes: ☒

No: ☐

N/A: ☐

Location of executable files:

See enclosed CD copy.

Comments:

No script/make file - Executable only.

CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES

QA VERIFICATION REPORT

FOR

→ ACQUIRED SOFTWARE NOT TO BE MODIFIED ←

Software Release [TOP-018, Section 5.9]

Upon acceptance of the software as verified above, has a Software Release Notice (SRN), Form TOP-6 been issued and does the version number of the software match the documentation?

Yes: ☒ No: ☐ N/A: ☐

SRN Number: 273

Comments:

Software Validation [TOP-018, Section 5.10]

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

Yes: ☐ No: ☒ N/A: ☐

Version and Date of SVTP: _____

Date Reviewed and Approved via QAP-002: _____

Comments: Scheduled for validation June 2003.

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 and Date of SVTR: _____

Date Reviewed and Approved via QAP-002: _____

Comments.: Scheduled for validation June 2003.

Additional Comments:

[Signature] 7/26/02
Software Evaluator/User/Date

[Signature] 7/26/02
Software Custodian/Date

sapphire-list.txt

SAPHIRE VERSION 6.70

July 26, 2002

Volume in drive F is NEW

Volume Serial Number is BC22-80F6

Directory of F:\

01/01/01	12:00a	<DIR>	.
01/01/01	12:00a	<DIR>	..
07/26/02	10:38a	<DIR>	Sapphire6-70
	3 File(s)		0 bytes

Directory of F:\Sapphire6-70

01/01/01	12:00a	<DIR>	.
01/01/01	12:00a	<DIR>	..
03/16/01	03:11p		7,232,943 SAPHIRE-6-70-232985274-XH.EXE
07/26/02	10:38a	<DIR>	Sapphire670
	4 File(s)		7,232,943 bytes

Directory of F:\Sapphire6-70\Sapphire670

01/01/01	12:00a	<DIR>	.
01/01/01	12:00a	<DIR>	..
07/26/02	10:37a		8,713 DeIsL1.isu
07/26/02	10:38a	<DIR>	Samples
07/19/96	11:32a		33,792 _ISREG32.DLL
07/26/02	10:38a	<DIR>	demo
07/26/02	10:38a	<DIR>	tools
	7 File(s)		42,505 bytes

Directory of F:\Sapphire6-70\Sapphire670\Samples

01/01/01	12:00a	<DIR>	.
01/01/01	12:00a	<DIR>	..
07/26/02	10:38a	<DIR>	Templates
	3 File(s)		0 bytes

Directory of F:\Sapphire6-70\Sapphire670\Samples\Templates

01/01/01	12:00a	<DIR>	.
01/01/01	12:00a	<DIR>	..
09/09/97	05:53a		4,828 EGG-SSRE-8875-Templates-ASEP.be
a			
09/09/97	05:56a		1,530 EGG-SSRE-8875-Templates-ASEP.be
d			
09/09/97	05:45a		2,683 EGG-SSRE-8875-Templates-ASEP.be
i			
09/09/97	05:52a		12,704 EGG-SSRE-8875-Templates-EIDE.be

sapphire-list.txt

```

a
09/09/97  05:57a                4,476 EGG-SSRE-8875-Templates-EIDE.be
d
09/09/97  05:48a                7,010 EGG-SSRE-8875-Templates-EIDE.be
i
09/11/97  12:19p                2,385 Template.txt
          9 File(s)              35,616 bytes
  
```

Directory of F:\Sapphire6-70\Sapphire670\demo

```

01/01/01  12:00a                <DIR>          .
01/01/01  12:00a                <DIR>          ..
10/29/99  02:18p              150,016 ANALYSIS.BLK
10/29/99  02:18p                2,318 ANALYSIS.DAT
10/29/99  02:18p                 849 ANALYSIS.IDX
10/29/99  02:15p              4,368 CURRENT.DAT
01/09/01  02:13p                 0 DEMO.SRA
10/29/99  02:18p                128 ENDSTATE.BLK
10/29/99  02:18p                232 ENDSTATE.DAT
10/29/99  02:18p                887 ENDSTATE.IDX
01/01/92  04:00a                128 EVATTR.BLK
10/29/99  02:18p              1,526 EVATTR.DAT
10/29/99  02:18p                768 EVATTR.IDX
10/29/99  02:18p                128 EVENT.BLK
10/29/99  02:18p              4,758 EVENT.DAT
10/29/99  02:18p              7,985 EVENT.IDX
10/29/99  02:18p                128 EVENTCNG.BLK
10/29/99  02:18p                147 EVENTCNG.DAT
10/29/99  02:18p              2,292 EVENTCNG.IDX
10/29/99  02:18p              1,408 EVENTREE.BLK
10/29/99  02:18p                168 EVENTREE.DAT
10/29/99  02:18p              1,659 EVENTREE.IDX
10/29/99  02:15p                 85 FAM.DAT
10/29/99  02:18p              2,560 FAMILY.BLK
12/07/00  09:21a                428 FAMILY.DAT
10/29/99  02:18p                887 FAMILY.IDX
10/29/99  02:18p              1,239 GATE.DAT
10/29/99  02:18p                887 GATE.IDX
01/17/96  04:19p                128 GRAPHICS.BLK
10/29/99  02:18p                 30 GRAPHICS.DAT
10/29/99  02:18p                202 GRAPHICS.IDX
10/29/99  02:18p                326 HISTGRAM.DAT
10/29/99  02:18p              1,482 HISTGRAM.IDX
01/01/92  04:00a                128 PLANT.BLK
01/01/92  04:00a                198 PLANT.DAT
01/01/92  04:00a                172 PLANT.IDX
01/01/92  04:00a                128 PRA.BLK
01/01/92  04:00a                116 PRA.DAT
01/01/92  04:00a                146 PRA.IDX
01/17/96  04:19p                128 REPORTS.BLK
12/12/97  08:01a                 30 REPORTS.DAT
  
```

sapphire-list.txt

12/12/97	08:01a	202	REPORTS.IDX
10/29/99	02:18p	8,448	RESULTS.BLK
10/29/99	02:18p	2,460	RESULTS.DAT
10/29/99	02:18p	602	RESULTS.IDX
11/27/00	06:59a	40,419	SCHEMA.DFL
10/29/99	02:18p	192	SEQUENCE.BLK
10/29/99	02:18p	416	SEQUENCE.DAT
10/29/99	02:18p	2,096	SEQUENCE.IDX
07/30/97	09:42a	128	SLICE.BLK
10/29/99	02:18p	30	SLICE.DAT
10/29/99	02:18p	202	SLICE.IDX
10/29/99	02:18p	11,840	SYSTEM.BLK
10/29/99	02:18p	422	SYSTEM.DAT
10/29/99	02:18p	1,482	SYSTEM.IDX
10/29/99	02:18p	2,432	USERINFO.BLK
10/29/99	02:18p	1,666	USERINFO.DAT
57 File(s)		262,230	bytes

Directory of F:\Sapphire6-70\Sapphire670\tools

01/01/01	12:00a	<DIR>	.
01/01/01	12:00a	<DIR>	..
01/09/01	06:59a	128	CLASS.BLK
01/09/01	06:59a	1,930	CLASS.DAT
01/09/01	06:59a	1,637	CLASS.IDX
01/09/01	06:59a	95,232	ETERes.DLL
01/09/01	06:59a	154,112	FTERes.DLL
01/09/01	06:59a	68,156	GEMDATA.DFL
01/09/01	06:59a	849,472	GEMHELP.HLP
01/09/01	06:59a	12,970	GEMHelp.CNT
01/09/01	06:59a	94,208	PIDDLL.DLL
01/09/01	06:59a	26,112	PIDRes.DLL
01/09/01	06:59a	128	PLANT.BLK
01/09/01	06:59a	31,998	PLANT.DAT
01/09/01	06:59a	23,907	PLANT.IDX
01/09/01	06:59a	861	README.DOC
01/09/01	06:59a	128	RECEVENT.BLK
01/09/01	06:59a	231,850	RECEVENT.DAT
01/09/01	06:59a	207,000	RECEVENT.IDX
01/09/01	06:59a	47,781	SAFHELP.CNT
01/09/01	06:59a	1,793,024	SAGEDLL.DLL
01/09/01	06:59a	215,463	SAPHIRE.DFL
01/09/01	06:59a	791,611	SAPHTECH.HLP
01/09/01	06:59a	144,896	SEDITDLL.DLL
01/09/01	06:59a	3,967	SGKSMALL.FNT
01/09/01	06:59a	8,260	SGKTHICK.FNT
01/09/01	06:59a	17,084	SMBLFILE.GEN
01/09/01	06:59a	22,264	SMBLFILE.STB
01/09/01	06:59a	3,317,872	Safhelp.hlp
01/09/01	06:59a	1,910,272	SaphRes.DLL
01/09/01	06:59a	6,111	SaphTech.CNT


```


sapphire-list.txt
07/26/02  10:37a          128 USERINFO.BLK
07/26/02  10:37a          818 USERINFO.DAT
01/09/01  06:59a       117,248 etedll.DLL
01/09/01  06:59a       56,843 fixes.DOC
01/09/01  06:59a       267,264 ftedll.DLL
01/09/01  06:59a          766 gem.ico
01/09/01  06:59a       67,114 gemdata5.dfl
01/09/01  06:59a       174,592 plugccfalpha.DLL
01/09/01  06:59a       66,560 plugccfmgl.DLL
01/09/01  06:59a       174,592 plugccfstag.DLL
01/09/01  06:59a       56,832 plugtimeseries.DLL
01/09/01  06:59a       113,664 plugutil.DLL
01/09/01  06:59a         2,238 sapphire.ico
01/09/01  06:59a     1,581,568 saphwin.exe
01/09/01  06:59a        10,155 schemag5.DFL
01/09/01  06:59a        40,419 schemax.dfl
01/09/01  06:59a       157,696 sgkdll.DLL
          48 File(s)     12,966,931 bytes

```

```

Total Files Listed:
    131 File(s)      20,540,225 bytes
                      0 bytes free

```

	Loss of Offsite Power	Emergency Cooling System	Containment Cooling System	#	STATE	FREQUENCY
	LOSP	ECS	CCS			
 The diagram is a horizontal event tree starting from a single line on the left. It branches into two paths. The upper path continues horizontally to the right. The lower path drops down and then branches into two paths: one that continues horizontally to the right, and another that drops down and continues horizontally to the right. <p>1 2 3</p>				1 2 3	OK SMALL-RELEASE LARGE-RELEASE	4.840E-002 1.759E-003
LOSP - Loss of offsite power event tree						

