SOFTWARE RELEASE NOTICE

01. SRN Number: RDCO-SRN-113	
02. Project Title: ORIGEN2 - Isotope Generation and Depletion Code Matrix Expotential Method.	Project No. 20-5702-623
03. SRN Title: ORIGEN2	
04. Originator/Requestor: Budhi Sagar	Date: 01/22/96

05. Summary of Actions

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

06. Persons Authorized Access

Name	RO/RW	A/C/D
N/A		

07. Element Manager Approval: [signature] Date: 1/31/96

08. Remarks:

Not considered important to regulatory reviews in revised FY96 OPS Plans.

CNWRA Form TOP-6 (06/95)

SOFTWARE SUMMARY FORM

01.Summary Date: 06/30/94	02. Summary prepared by(Name and Phone) T.J. Ratchford 522-3083	03. Summary Action: New
04. Software Date: 8/30/94	05. Short Title: ORIGEN2	
06. Software Title: ORIGEN2 - Isotope Generation and Depletion Code Matrix Exponential Method.		07. Internal Software ID: NONE

08. Software Type: ☐ Automated Data System ■ Computer Program ☐ Subroutine/Module	09.Processing Mode: ☐ Interactive ☐ Batch ■ Combination	10. APPLICATION AREA A. General: ☐ Scientific/Engineering ☐ Auxiliary Analyses ☐ Total System PA ☐ Subsystem PA ■ Other b. Specific:
11. Submitting Organization and Address: CNWRA, SwRI, San Antonio, Texas		12. Technical Contact(s) and Phone: H. Karimi, (210) 522-5253

13. Narrative:

ORIGEN2 - Origen2 is a revised version of Origen and incorporates updates of the reactor models, cross sections, fission product yeilds, decay data, and decay photon data, as well as the source code.

14. Computer Platform CRAY/XMP	15. Computer Operating System: UNIX	16. Programming Language(s): FORTRAN	17. Number of Source Program Statements: 41,599 lines of code
18. Computer Memory Requirements: UNKNOWN	19. Tape Drives: NONE	20. Disk/Drum Units: N/A	21. Graphics: UNKNOWN

22. Other Operational Requirements

NONE

23. Software Availability: ■ Available ☐ Limited ☐ In-House ONLY	24. Documentation Availability: ■ Available ☐ Inadequate ☐ In-House ONLY

25. Submission Package Status:

Acceptance Criteria: Met ■ Not Met ☐ Software QA Assessment: Successful ■ Unsuccessful ☐

Code Custodian: T.J. Ratchford Date: 6/30/94

CNWRA Form TOP-4-1 (08/93)

CENTER FOR NUCLEAR REGULATORY WASTE ANALYSES

CHECKLIST FOR CNWRA CMS CODE CUSTODIAN UNDER TOP-018

CODE: ORIGEN2 Ver.1.1 RESPONSIBLE: H. Karimi

TARGET SUBMISSION DATE: Apr. 94

☐ Software Licensing Agreement (if not needed, N/A ■)

■ Software Summary Form [6.1.1.1, 8.2.2, Appendix A]

☐ Software Requirements Document [7.3.1, 8.2.1]
(if not needed, N/A ■)

■ Code User's Manual [6.1.1.2, 6.2.2.1, 8.2.3.1]

☐ preliminary (final date _____) OR ■ final

■ Code Technical Description [6.2.2.2, 8.2.2]
(if not needed, N/A ☐)

■ Two Copies of Code in Electronic Format [6.1.1.3, 7.4.3]

■ Evidence of Input Data Tractability to Output [6.1.1.4, 6.2.4]

■ Evidence of Verification Reliability [6.1.1.5]

■ Evidence of Benchmark Test Reliability [6.2.5]
(if not possible or necessary, N/A ☐)

■ CRAFT Analyses (N/A ☐)

■ FORWARN Analyses (N/A ☐)

■ PC-Metric (N/A ☐)

IF ALL OF THE ABOVE ARE COMPLETE, THEN THE CODE PACKAGE IS READY FOR SUBMISSION.

■ Date Code Package Submitted: 06/30/94

CNWRA CMS Custodian

[...] - refer to applicable sections of TOP-18

ORIGEN2 CRAY DIRECTORY LISTING

```
-r--r-----   1 tjr1     tjr1        2285 Jun 24 08:56 Makefile
-r-x------   1 tjr1     tjr1    13172736 Jun 24 08:58 PC.files.tar*
-r--r-----   1 tjr1     tjr1       10099 Jun 24 08:59 addmov.F
-r--r-----   1 tjr1     tjr1        3828 Jun 24 08:59 ansf.F
-r--r-----   1 tjr1     tjr1        7533 Jun 24 08:59 aread.F
-r--r-----   1 tjr1     tjr1       22295 Jun 24 08:59 bd.F
-r--r-----   1 tjr1     tjr1       22437 Jun 24 08:59 decay.F
-r--r-----   1 tjr1     tjr1      275238 Jun 24 08:59 decay.lib
-r--r-----   1 tjr1     tjr1        2025 Jun 24 08:59 decred.F
-r--r-----   1 tjr1     tjr1       18221 Jun 24 08:59 dread.F
-r--r-----   1 tjr1     tjr1        5265 Jun 24 08:59 equil.F
-r--r-----   1 tjr1     tjr1          56 Jun 24 08:59 errset.F
-r--r-----   1 tjr1     tjr1       27309 Jun 24 08:59 fluxo.F
-r--r-----   1 tjr1     tjr1       11583 Jun 24 08:59 fudge.F
-r--r-----   1 tjr1     tjr1       15285 Jun 24 08:59 gamma.F
-r--r-----   1 tjr1     tjr1      165483 Jun 24 08:59 gxuo2brm.lib
-r--r-----   1 tjr1     tjr1         977 Jun 24 08:59 head.F
-r--r-----   1 tjr1     tjr1        5184 Jun 24 08:59 header.o2.H
-r--r-----   1 tjr1     tjr1         692 Jun 24 08:59 identify.F
-r--r-----   1 tjr1     tjr1        1863 Jun 24 08:59 ipage.F
-r--r-----   1 tjr1     tjr1         405 Jun 24 08:59 iread.F
-r--r-----   1 tjr1     tjr1        2985 Jun 24 08:59 listit.F
-r--r-----   1 tjr1     tjr1       15438 Jun 24 08:59 main1.F
-r--r-----   1 tjr1     tjr1       37626 Jun 24 08:59 main2.F
-r--r-----   1 tjr1     tjr1       71388 Jun 24 08:59 main3.F
-r--r-----   1 tjr1     tjr1        3969 Jun 24 08:59 matrex.F
-r--r-----   1 tjr1     tjr1        1053 Jun 24 08:59 noah.F
-r--r-----   1 tjr1     tjr1       17509 Jun 24 08:59 nudat1.F
-r--r-----   1 tjr1     tjr1       25670 Jun 24 08:59 nudat2.F
-r--r-----   1 tjr1     tjr1       24132 Jun 24 08:59 nudat3.F
-r--r-----   1 tjr1     tjr1       13515 Jun 24 08:59 nudoc.F
-r--r-----   1 tjr1     tjr1        9141 Jun 24 08:59 nutron.F
-r--r-----   1 tjr1     tjr1        8813 Jun 24 08:59 origen2.F
-r--r-----   1 tjr1     tjr1      896539 Jun 24 08:59 origen2.SRC
-rw-r-----   1 tjr1     tjr1           0 Jun 29 11:55 origen2.dir
-r--r-----   1 tjr1     tjr1      879908 Jun 24 08:59 origen2.src
-r--r-----   1 tjr1     tjr1        9009 Jun 24 08:59 out1.F
-r--r-----   1 tjr1     tjr1       20896 Jun 24 08:59 out2.F
-r--r-----   1 tjr1     tjr1       12225 Jun 24 08:59 output.F
-r--r-----   1 tjr1     tjr1        3969 Jun 24 08:59 params.o2.H
-r--r-----   1 tjr1     tjr1        9390 Jun 24 08:59 pholib.F
-r--r-----   1 tjr1     tjr1      171153 Jun 24 08:59 pwru.lib
-r--r-----   1 tjr1     tjr1          49 Jun 24 08:59 q105f.F
-r--r-----   1 tjr1     tjr1         224 Jun 24 08:59 qapage.F
-r--r-----   1 tjr1     tjr1        1624 Jun 24 08:59 qqpack.F
-r--r-----   1 tjr1     tjr1         405 Jun 24 08:59 read.F
-r--r-----   1 tjr1     tjr1         486 Jun 24 08:59 rmass.F
-r--r-----   1 tjr1     tjr1        1620 Jun 24 08:59 rtime.F
-r--r-----   1 tjr1     tjr1         578 Jun 24 08:59 samp_1.u3
-r--r-----   1 tjr1     tjr1        8921 Jun 24 08:59 samp_1.u5
-r--r-----   1 tjr1     tjr1        2673 Jun 24 08:59 sigred.F
-r--r-----   1 tjr1     tjr1       23247 Jun 24 08:59 term.F
-r--r-----   1 tjr1     tjr1        9831 Jun 24 08:59 toc.F
-r--r-----   1 tjr1     tjr1         641 Jun 24 08:59 x.origen2.covr
-r--r-----   1 tjr1     tjr1         781 Jun 24 08:59 x.origen2.test
-r--r-----   1 tjr1     tjr1       10692 Jun 24 08:59 xsec01.F
-r--r-----   1 tjr1     tjr1       10692 Jun 24 08:59 xsec02.F
-r--r-----   1 tjr1     tjr1       10692 Jun 24 08:59 xsec03.F
-r--r-----   1 tjr1     tjr1       12393 Jun 24 08:59 xsec04.F
-r--r-----   1 tjr1     tjr1       12393 Jun 24 08:59 xsec05.F
-r--r-----   1 tjr1     tjr1       12393 Jun 24 08:59 xsec06.F
-r--r-----   1 tjr1     tjr1       10443 Jun 24 08:59 xsec07.F
-r--r-----   1 tjr1     tjr1       10443 Jun 24 08:59 xsec08.F
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TJR 6/29/94

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-r--r-----   1 tjr1     tjr1       12474 Jun 24 08:59 xsec09.F
-r--r-----   1 tjr1     tjr1       10443 Jun 24 08:59 xsec10.F
-r--r-----   1 tjr1     tjr1       10443 Jun 24 08:59 xsec11.F
-r--r-----   1 tjr1     tjr1        8991 Jun 24 08:59 xsec12.F
-r--r-----   1 tjr1     tjr1        8991 Jun 24 08:59 xsec13.F
-r--r-----   1 tjr1     tjr1       12393 Jun 24 08:59 xsec14.F
-r--r-----   1 tjr1     tjr1        8991 Jun 24 08:59 xsec15.F
-r--r-----   1 tjr1     tjr1        8991 Jun 24 08:59 xsec16.F
-r--r-----   1 tjr1     tjr1       12393 Jun 24 08:59 xsec17.F
-r--r-----   1 tjr1     tjr1        7290 Jun 24 08:59 xsec18.F
-r--r-----   1 tjr1     tjr1        7290 Jun 24 08:59 xsec19.F
-r--r-----   1 tjr1     tjr1       12393 Jun 24 08:59 xsec20.F
-r--r-----   1 tjr1     tjr1        8991 Jun 24 08:59 xsec21.F
-r--r-----   1 tjr1     tjr1        8991 Jun 24 08:59 xsec22.F
-r--r-----   1 tjr1     tjr1        8991 Jun 24 08:59 xsec23.F
-r--r-----   1 tjr1     tjr1        8991 Jun 24 08:59 xsec24.F
-r--r-----   1 tjr1     tjr1       12393 Jun 24 08:59 xsec25.F
-r--r-----   1 tjr1     tjr1        8991 Jun 24 08:59 xsec26.F
-r--r-----   1 tjr1     tjr1        8991 Jun 24 08:59 xsec27.F
-r--r-----   1 tjr1     tjr1       12393 Jun 24 08:59 xsec28.F
-r--r-----   1 tjr1     tjr1        8991 Jun 24 08:59 xsec29.F
-r--r-----   1 tjr1     tjr1        8991 Jun 24 08:59 xsec30.F
-r--r-----   1 tjr1     tjr1       12393 Jun 24 08:59 xsec31.F
-r--r-----   1 tjr1     tjr1        8991 Jun 24 08:59 xsec32.F
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-r--r-----   1 tjr1     tjr1        8991 Jun 24 08:59 xsec35.F
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-r--r-----   1 tjr1     tjr1       12393 Jun 24 08:59 xsec37.F
-r--r-----   1 tjr1     tjr1        5072 Jun 24 08:59 xsec38.F
-r--r-----   1 tjr1     tjr1        5321 Jun 24 08:59 xsec39.F
-r--r-----   1 tjr1     tjr1        5071 Jun 24 08:59 xsec40.F
-r--r-----   1 tjr1     tjr1        5144 Jun 24 08:59 xsec41.F
-r--r-----   1 tjr1     tjr1        5428 Jun 24 08:59 xsec42.F
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dJR 6/29/94