
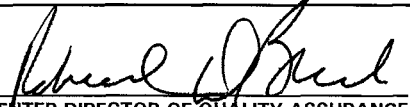




CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES QUALITY ASSURANCE SURVEILLANCE REPORT

PROJECT NO.: 20.06002.01.031	REPORT NO.: 2003-19	PAGE 1 OF 1
SURVEILLANCE SCOPE: Surveillance on Software Control and Maintenance of the CNWRA Master Directory of Scientific & Engineering Software		
REFERENCE DOCUMENTS: QAP-004 Surveillance Control		
STARTING DATE: 09/22/02		ENDING DATE: 11/06/03
QA REPRESENTATIVE: Mark R. Ehnstrom 		
PERSONS CONDUCTING TEST/EXAM/ACTIVITY: CNWRA personnel responsible for obtaining, developing, conducting, documenting, and controlling software.		
SATISFACTORY FINDINGS: This surveillance was performed to check the status of software validation and to determine progress toward completion. The CNWRA Master Directory Of Scientific & Engineering Software was used as a guide in performing this surveillance. The surveillance was able to update the master directory with the most current estimates for software validation. The surveillance also provided opportunity to update other portions of the master directory including new revisions to codes; new personnel responsible for certain codes; and codes which should be retired. The attachment identifies the areas where changes were made to the current master directory.		
UNSATISFACTORY FINDINGS: None		
NONCONFORMANCE REPORT NO.: N/A CORRECTIVE ACTION REQUEST NO.: N/A		
ATTACHMENTS: Highlighted CNWRA master directory showing changes made during the surveillance. (Pages 1-10)		
RECOMMENDATIONS/ACTIONS: No.1-The surveillance found that the time element for some validation test processes has not yet been determined. This is due to a number of reasons which include funding and direction from the client, These areas are identified on the master directory as "TBD". These TBD areas should be evaluated and decisions made to determine which codes need to be expedited through to validation completion. No. 2- Determine if Dtherm is going to proceed through the validation process. No.3- The surveillance found that the master directory identified three codes where newer revisions are being used. These codes, Geochemists Work Bench, MCNP, and MATLAB should be evaluated to determine if the earlier versions should be retired. No.4- Evaluations should be made to determine if the following codes should be retired: D and D Version 2.1.0 EZ-FRISK Version 4.4 MEPAS Version 3.2g STELLA Version 6.0.1 GEOINVERT Version 1.0 NRC-WVDP-GIS.		
APPROVED:  CENTER DIRECTOR OF QUALITY ASSURANCE DATE: 11/7/03	DISTRIBUTION: ORIGINAL - QA Records CNWRA QA DIRECTOR ORIGINATOR PRINCIPAL INVESTIGATOR ELEMENT MANAGER <i>DIRECTOR</i>	

CNWRA MASTER DIRECTORY OF SCIENTIFIC & ENGINEERING SOFTWARE

November 7, 2003

November 7, 2005

Name	Version	SRN Date	Software Category ¹	Software Validation ³				Key Staff
				Category	SVTP Due Date	Target Completion Date	SVTR Completion Date	
CATEGORY I SOFTWARE								
3DStress	3.0	08/15/03	D	I	10/03	12/03	Planned	N. Franklin
ABAQUS	5.8-16	01/08/99	A/NTBM	I	—	—	Completed by supplier	G. Ofogebu
ABAQUS	6.2	06/14/02	A/NTBM	I	—	—	Completed by supplier	D. Gute
AMESH	2.0	10/19/01	A/NTBM	I			04/16/03	C. Dinwiddie
ANSYS/LS-DYNA	5.7	05/03/01	A/NTBM	I	Complete	09/03		A. Chowdhury/ P.A. Cox
Arc/Info	7.0.2	08/16/00	A/NTBM	I	—	—	09/15/00	M. Necsoiu
ArcView	3.2/3.2a	05/04/01	A/NTBM	I	Complete	05/03	08/06/03	D. Waiting/ D. Wyrick
D and D	2.1.0	08/09/01	A/NTBM	I	TBD Funding	TBD		M. Smith Remove
Dtherm	1.1	06/03/02	A/TBM	I	Complete	TBD	TBD	D. Gute/ A. Grohmann
EarthVision	5.0.1	09/27/00	A/NTBM	I	—	—	09/26/00*	S. Colton
EarthVision	5.1	03/01/01	A/NTBM	I	03/03	06/03	Planned	S. Colton
EQ 3/6	7.2 b	02/08/96	A/TBM	I	—	—	10/01/02*	D. Pickett
HyperMesh	5.0	04/19/02	A/NTBM	I	04/03	10/03	Planned	D. Gute

CNWRA MASTER DIRECTORY OF SCIENTIFIC & ENGINEERING SOFTWARE

November 7, 2003

Name	Version	SRN Date	Software Category ¹	Software Validation ³				Key Staff
				Category	SVTP Due Date	Target Completion Date	SVTR Completion Date	
MELCOR	1.8.5	08/28/01	A/NTBM	I	—	—	07/16/02	R. Benke
MINTEQA2/ PRODEFA2	4.02	02/22/02	A/NTBM	I	—	—	05/08/02	D. Turner
MULTIFLO	1.5.2	11/12/02	D	I	—	—	02/25/03	S. Painter
OLYMPUS DISS	1.0	SDP Waiver/ SRD Only	D	I	11/03	11/03	Planned	M. Necsoiu/ B. Winfrey
PCSA	3.0	TBD	D	I	10/03	12/04	Planned	B. Dasgupta
PVHA_YM	2.0	08/27/02	D	I	—	—	08/27/02	B. Hill
RSAC	5.2	09/21/00	A/NTBM	I	—	—	01/23/03	R. Benke
RSAC	6.1	02/04/03	A/NTBM	I	08/03	09/03	In Process	R. Benke
SAPHIRE	6.7	07/26/02	A/NTBM	I	N/A	11/03	Planned	B. Dasgupta
SOLCALC	1.0	07/31/01	A/NTBM	I	—	—	01/30/02	R. Pabalan
STEREONET	3.0	09/20/00	A/NTBM	I			08/06/03	D. Waiting/ D. Wyrick
TPA	5.0p	08/22/03	D	I	Complete	09/03	Planned	R. Janetzke
TPA/GPP	1.01	03/08/02	D	I	—	—	01/31/03	O. Pensado
CATEGORY II SOFTWARE								
AQTESOLV	2.12	03/22/99	A/NTBM	II	—	—	07/07/02	J. Winterle
BREATH	1.2	10/02/97	D	II	—	—	5/02/02	R. Fedors

CNWRA MASTER DIRECTORY OF SCIENTIFIC & ENGINEERING SOFTWARE

November 7, 2003

Name	Version	SRN Date	Software Category ¹	Software Validation ³				Key Staff
				Category	SVTP Due Date	Target Completion Date	SVTR Completion Date	
DICTRA	21	09/05/02	A/NTBM	II	04/03	09/03	Planned	Y.-M. Pan
DRIFTVNT	1.0	SDP Waiver	D	II	Complete	03/03		R. Fedors /S. Painter
ESP/CSP	6.5/2.2	08/17/01	A/NTBM	II	Complete	03/03	Planned	L. Yang
EZ-FRISK	4.4	08/06/99	A/NTBM	II	TBD	TBD	Planned	A. Ghosh
FITEQL	2.0	08/02/96	A	II	Complete	05/03	6/23/03	D. Turner
FLAC	4.0	07/01/02	A/NTBM	III/II	06/03	12/03		S. Hsiung
Geochemists Work Bench (GWB)	3.04 0.2	11/11/98	A/NTBM	II	06/03	06/03	08/03	L. Browning
GENII-S	1.485	07/30/96	E	II	TBD	TBD	Planned	P. LaPlante
GMS (Modflow96)	3.1	07/05/02	A/NTBM	II	—	—	11/25/02*	C. Manepally
GMS (ModPath)	3.1	07/05/02	A/NTBM	II	01/04	03/04	Planned	J. Winterle
GMT	3.4.2	01/31/03	A/NTBM	II	11/03	11/03	Planned	B. Winfrey
HYDRUS2D	2.05	01/25/01	A/NTBM	II	12/03	02/04	Planned	R. Fedors
KINEROS2	00_04 (1.4)	05/12/00	A/NTBM	II	11/03	12/03	Planned	R. Fedors
MCNP	4A5.0	07/30/97	A/NTBM	II	TBD	TBD	TBD	O. Povetko
MCNP	4C2	1/29/03	A/NTBM	II	TBD	TBD	Planned	O. Povetko
MEPAS	3.2g	08/17/98	A/NTBM	II	TBD Funding	TBD	Planned	P. LaPlante

CNWRA MASTER DIRECTORY OF SCIENTIFIC & ENGINEERING SOFTWARE

November 7, 2003

Name	Version	SRN Date	Software Category ¹	Software Validation ³				Key Staff
				Category	SVTP Due Date	Target Completion Date	SVTR Completion Date	
MODFLOW96	3.1	07/05/02	A/NTBM	II	—	—	11/25/02*	C. Manepally
MULTIFLO/GUI	1.2Beta	3/26/02	D	II	TBD	N/A	N/A	S. Painter/M. Wallis
MULTIFLO	2.0	SRD/SDP	D	II	TBD	TBD	Planned	S. Painter
NRC-WVDP-GIS	1.1	07/27/02	D	II	TBD Funding	TBD	Planned	D. Farrell
OLI Stream Analyzer	1.1	08/30/02	A/NTBM	II	Complete ESP/CSP	03/03	11/03	L. Yang
ORIGEN-ARP	2.0	1/29/03	A/NTBM	II	TBD	TBD	Planned	O. Povetko
PHREEQC	2.6	02/20/03	A/NTBM	II	Complete	02/03	05/06/03	D. Turner
ProShake	1.1	11/16/02	A/NTBM	II	11/03	07/04	In process	G. Ofoegbu
RESRAD	5.82	06/08/98	A/NTBM	II	TBD Funding	09/03	Planned	P. LaPlante
RESRAD	6.1	06/21/02	A/NTBM	II	TBD Funding	TBD	Planned	O Povetko
Scale	4.4a	1/29/03	A/NTBM	II	TBD	TBD	Planned	O. Povetko
Soil Flow	1.0	SRD Only	D	II	05/04	09/04	Planned	R. Fedors
SOIL REUSE TOOL	1.0Beta	03/13/03	D	II	TBD Funding	N/A	N/A	M. Smith
STELLA	6.0.1	03/06/01	A/NTBM	II	TBD	TBD	Not Planned	O. Povetko
THCPROB	1.0	SRD/SDP	D	II	TBD	TBD	TBD	R. Janetzke

CNWRA MASTER DIRECTORY OF SCIENTIFIC & ENGINEERING SOFTWARE

November 7, 2003

Name	Version	SRN Date	Software Category ¹	Software Validation ³				Key Staff
				Category	SVTP Due Date	Target Completion Date	SVTR Completion Date	
THERMOCALC	N	09/05/02	A/NTBM	II	04/03	09/03	02/04	Y.-M. Pan
TPA/GUI	1.0 β	SRD/SDP Only	D	II	03/03	06/03	Planned	S. Mohanty
UDEC	3.1	04/19/00	A/NTBM	II	Complete	TBD	Planned	S. Hsiung
Vnet PC 2000	1.0.4	4/26/02	A/NTBM	II	TBD	TBD	Planned	T. Maxwell
CATEGORY III SOFTWARE								
3DStress	2.0 Irix/Solaris	09/24/02	D	III				N. Franklin
ArcView	3.1	11/07/00	A/NTBM	III			08/05/03	D. Waiting
EINVRT	6.0	07/09/99	A/NTBM	III				D. Farrell
GEOINVRT	1.0	SRD Only	D	III				D. Farrell
GM-SYS	4.04.08C	08/04/99	A/NTBM	Upgrade to Category				R. Green
ISATIS	3.1.3	10/24/98	A/NTBM	III				D. Farrell/ R. Fedors
OASIS	4.5	08/04/99	A/NTBM	Upgrade to category II			12/03	R. Green
ORIGEN	2.1	10/10/97	A/NTBM	III				O. Povetko
Slide	4.0	11/14/02	A/NTBM	III				G. Ofoeghu

CNWRA MASTER DIRECTORY OF SCIENTIFIC & ENGINEERING SOFTWARE

November 7, 2003

Name	Version	SRN Date	Software Category ¹	Software Validation ³				Key Staff
				Category	SVTP Due Date	Target Completion Date	SVTR Completion Date	
CATEGORY IV SOFTWARE								
3DStress	1.3.2	09/08/99	D	IV	Not to be retired per Larry		N/A	N. Franklin
3DStress	1.3.3 Irix	09/20/00	D	IV	—	—	11/16/01	N. Franklin
3DStress	1.3.3 Solaris	09/20/00	D	IV	—	—	11/16/01	N. Franklin
Crystal Ball 2000	5.1	04/27/01	A/NTBM	IV	Complete			I. Chichkov
DDA-CT	2.0	SRD Only	D	IV	N/A	N/A		S. Hsiung
NRC-WVDP-GIS	1.0	08/20/01	D	IV				D. Farrell
MatCad	8.0	09/07/99	A/NTBM	IV				R. Fedors
MATLAB	5.26.0 Rev 12	07/07/99	A/NTBM	Upgrade to Category II		TBD	TBD	R. Fedors
MULTIFLO	1.2.3	12/22/00	D	IV				S. Painter
MULTIFLO	1.5	07/24/01	D	IV				S. Painter
PCSA	2.0	06/25/03	D	IV	N/A	N/A	N/A	B. Dasgupta
PHREEQC	2.4.2	02/25/02	A/NTBM	IV	N/A	N/A		D. Turner
TPA/GPP	1.0	02/01/02	D	IV				O. Pensado
TPA	V.4.0ipd	09/16/2003	D	IV	N/A	N/A	N/A	R. Janetzke

CNWRA MASTER DIRECTORY OF SCIENTIFIC & ENGINEERING SOFTWARE

November 7, 2003

Name	Version	SRN Date	Software Category ¹	Software Validation ³				Key Staff
				Category	SVTP Due Date	Target Completion Date	SVTR Completion Date	
TPA	5.0	02/27/03	D	IV	Complete	10/03		R. Janetzke
TPA	5.0beta	09/27/02 SRD/SDP	D	IV	N/A	N/A		R. Janetzke
TPA	5.0d	04/7/03	D	IV	Complete	10/03		R. Janetzke
RETIRED SOFTWARE								
ASHPLUME	1.0	06/24/97	D	IV	Retired Software			B. Hill
Dtherm	1.0	08/12/01	A/TBM	IV	Retired Software			D. Gute/ A. Grohmann
FLOW-3D	8.0.1	10/18/02	A/NTBM	II	Retired Software			R. Fedors /S. Green
GMS	3.0	01/02/01	A/NTBM	IV	Retired Software			C. Manepally
HyperMesh	4.0	11/26/01	A/NTBM	IV	Retired Software			D. Gute
MINTEQA2	3.11/3.12	08/02/96	A/NTBM	IV	Retired Software			D. Turner
MULTIFLO	1.5.1	06/21/02	D	IV	Retired Software			S. Painter
PCSA	1.0	07/29/02	D	IV	Retired Software			B. Dasgupta
PHREEQC	1.6	04/15/99	A/NTBM	IV	Retired Software			D. Turner
PPSGS	1.0	07/02/99	A/NTBM	IV	Retired Software			B. Hill
PPSGS	1.1	10/13/00	A/NTBM	IV	Retired Software			B. Hill
PVHVIEW	1.0	02/17/00	D	IV	Retired Software			B. Hill
RESRAD	6.0	08/09/01	A/NTBM	IV	Retired Software			P. LaPlante

CNWRA MASTER DIRECTORY OF SCIENTIFIC & ENGINEERING SOFTWARE

November 7, 2003

Name	Version	SRN Date	Software Category ¹	Software Validation ³				Key Staff
				Category	SVTP Due Date	Target Completion Date	SVTR Completion Date	
S-PLUS	3.4	11/07/97	A	IV	Retired Software			S. Mohanty
TECTRAN	1.0	09/05/02	D	IV	Retired Software			N. Sridhar
TPA	3.2 PP β	11/25/98	D	IV	Retired Software			S. Mohanty / H. Thomas
TPA	3.3	11/29/99	D	IV	Retired Software			S. Mohanty / R. Janetzke
TPA	3.2.3	07/19/99	D	IV	Retired Software			R. Janetzke
TPA	4.0	03/30/00	D	IV	Retired Software			S. Mohanty
TPA	4.1	09/27/00	D	IV	Retired Software			S. Mohanty
PCSA	2.0 Beta	11/14/02	D	IV		Retired Software		B. Dasgupta
TPA	4.1j	5/02/01	D	IV	Not to be retired - see e-mail in folder			R. Janetzke
TPA	4.1e	01/31/01	D	IV	Retired Software			R. Janetzke

CNWRA MASTER DIRECTORY OF SCIENTIFIC & ENGINEERING SOFTWARE

November 7, 2003

Name	Version	SRN Date	Software Category ¹	Software Validation ³				Key Staff
				Category	SVTP Due Date	Target Completion Date	SVTR Completion Date	
CATEGORY TO BE DETERMINED								
ASHPLUME-P	1.0	SRD Only	D	I	TBD	TBD	Planned	B. Hill
FLOW-3D	8.1.1		A/NTBM	TBD				R. Fedors
Geochemists Work Bench (GWB)	3.0.2	SVTP Only	A/NTBM	TBD	Complete			L. Browning
Geochemists Work Bench (GWB)	4.0.2	SVTP Only	A/NTBM	TBD	Complete		Complete	L. Browning
NIMHIT	1.0	SRD Only		TBD	06/03			A.Ghosh
Mag-Parrellel	1.0	12/03	A/TBM	II	TBD	TBD	TBD	B. Winfrey
PFC2D/3D	3.0/2.0	04/28/03	A	TBD				A. Ghosh
SHOCK	None Provided	SRD Only	D	TBD				B. Hill
Thermocalc & Dicitra	V. N V.21	SVTP Only	A	TBD				Y.-M. Pan
TPA	V.5.0o	07/29/2003	D	TBD				R. Janetzke
TPA	V.5.0p	08/22/2003	D	TBD				R. Janetzke

NOTES:

- (1) A (Acquired): Software developed by an individual or organization other than the CNWRA or by such individual or organization while not employed by or under contract to the CNWRA. Acquired software is controlled in accordance with the pertinent provisions of TOP-018 (Table 1).

D (Developed): Software that has been developed or modified by the CNWRA or by an individual or organization employed by or under contract to the CNWRA. Developed software is controlled in accordance with the pertinent provisions of TOP-018 (Table 1).

E (Existing): Software that has been acquired or developed by the CNWRA outside of the controls provided by TOP-018. Typically, codes in this category were acquired or developed before the procedure was implemented and have since been superseded by other codes or later versions of the same code. The CNWRA management has made a decision that Existing software will not be brought into compliance with the provisions of TOP-018 (Table 1). Such codes cannot be used in support of NRC licensing actions or regulatory reviews.

NTBM (Not To Be Modified): This term applies only to Acquired software, and affects the provisions of TOP-018 that are pertinent to the code (Table 1).

TBM (To Be Modified): This term applies only to Acquired software, and affects the provisions of TOP-018 that are pertinent to the code (Table 1).

- (2) Validation Category I: Highly likely that these will be used in regulatory review—validate in FY 2002 and FY 2003
Validation Category II: Likely that these will be used in regulatory review—validate in FY 2004.
Validation Category III: Commercial use software but will not be used in regulatory reviews—decide when validation is needed.
Validation Category IV: Will not be used for regulatory reviews or commercial work—do not validate.
- (3) In all case the validation plan and report should be reviewed to determine the scope of the validation prior to use of the software.