



Department of Energy

Washington, DC 20585

QA: QA

APR 10 2002

M. A. Jaeger
Bechtel SAIC Company, LLC
1180 Town Center Drive, M/S 423
Las Vegas, NV 89144

ISSUANCE OF DEFICIENCY REPORT (DR) BSC-02-D-092 RESULTING FROM AN OBSERVATION BY JORGE E. MONROE-RAMMSY AND CELISTER J. HOUSTON

Enclosed is DR BSC-02-D-092 generated as a result of an observation.

Please provide a response to this deficiency that meets the applicable requirements of Administrative Procedure (AP) 16.1Q, *Management of Conditions Adverse to Quality*. Send the original of your response to Deborah G. Opielowski, Navarro Quality Services, P.O. Box 364629, Mail Stop 455, North Las Vegas, Nevada 89036-8629. Initial response to the DR is due ten working days from the date of this letter. Any extensions to this due date must be requested in accordance with AP-16.1Q.

If you have any questions, please contact either James Blaylock at (702) 794-1420 or Samuel E. Archuleta at (702) 794-1476.

OQA:JB-0996

James Blaylock
Ram Murthy, Acting Director
Office of Quality Assurance

Enclosure:
DR BSC-02-D-092



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*NM5507
WM-11*

APR 10 2002

cc w/encl:

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8. ☒ DEFICIENCY REPORT
☐ CORRECTIVE ACTION
REPORT

NO. BSC-02-D-092

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DEFICIENCY/CORRECTIVE ACTION REPORT

1. Controlling Document:
AP-SI.1Q revision 3, ICN 3

2. Related Report No.:
N/A

3. Responsible Organization:
CIO

4. Discussed With:
John Pelletier / Steve Splawn / Matt Knop

5. Requirement:

1. AP-SI.1Q, Section 2.0, Software item subject to QARD requirements cannot be used in quality affecting activities prior to the software being qualified and baselined.
2. AP-SI.1Q, 5.7.3.1 / 5.7.3.2B: Ensure that software being used in obtained from SCM. / Software obtained from SCM used outside the range of validation shall be considered unqualified.

6. Description of Condition:

Contrary to the above requirements the following examples were identified. See continuation pages for more specific details.

The following data sets were reviewed during this investigation:

SN0001T0872799.006, SN0004T0501600.005, SN0007T0872799.014, SN0010T0872799.015, SN9907T0872799.002
SN9908T0581699.001, SN0009T0581699.006, SN0004T0571599.004, SN0004T0501600.006.

Contrary to requirement 1: and 2: above

DTN's SN0001T0872799.006, and SN0004T0501600.005 contained some software (TH-msmabs_ver_1.f, Pillart1.00.f, maxtwp1.00.f, SZ_Pre, and SZ_Post) that were not obtained from SCM and were not qualified per AP-SI.1Q.

7. Initiator:
Jorge E. Monroe-Rammsy / CJ Houston

Date 03/15/02

9. Does a stop work condition exist? (Not required for a DR)

☐ Yes ☒ No

If Yes, Check One: ☐ A ☐ B ☐ C ☐ D

10. Recommended Actions:
None

11. QA Review:
Date 3/27/02

12. Response Due Date:
10 Working Days From Issuance

13. DOQA Issuance Approval:

Printed Name RAM MURPHY

James Blylock for

Date 4/10/02

22. Corrective Actions Verified:

QAR

Date

23. Closure Approved by:

DOQA

Date

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Rev 06/01/1990

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8. ☒ DR/CAR
☐ Stop Work Order
 NO **BSC-02-D-092**
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DEFICIENCY/CORRECTIVE ACTION REPORT/STOP WORK ORDER CONTINUATION PAGE

Example of Potential Quality Concern for Software Used as compared to Software Identified within the Baseline.

1	SN0001T0872799.008	THIS IS AN ABSTRACTION OF THE PROCESS-LEVEL MODEL: MULTISCALE TH MODEL. THE ABSTRACTION OF TH DATA PROVIDES THE TEMPERATURE, RELATIVE HUMIDITY, LIQUID SATURATION, EVAPORATION RATES, AND PERCOLATION FLUX IN THE NEAR-FIELD HOST ROCK AND IN THE ENGINEERED BARRIER SYSTEM. THE ABSTRACTED TH DATA PROVIDE A DIRECT INPUT TO THE TSPA-SR MODEL INCLUDING THE WASTE PACKAGE CORROSION MODEL AND THE IN-DRIFT GEOCHEMICAL ENVIRONMENT. THESE DATA SUPPORT SR AND ARE PRESENTED IN THE AMR UNDER DI NO: ANL-EBS-HS-000003.	Q	FEHM, GoldSim, TH- memaba_ver_1.1, Pflatt1.00.1, machwp1.00.1, SZ_Pra, SZ_Post	(CHRS 1613), (DR-86)	E0040, E0103, F0155	Applications: TH-memaba_ver_1.1, Pflatt1.00.1, machwp1.00.1, SZ_Pra, SZ_Post are not identified within the software baseline.
2	LA9008JC851331.001	MODEL INPUT AND OUTPUT FILES FOR MINERALOGIC MODEL "MAG.0" VERSION 3.0.	Q	STRATAMODEL; version 4, SigGen; version 2.	(CHRS 1613), (DR-86)	E0040, K0040, R0045, N0120, N0123, U0050, W0050	Versions of STRATAMODEL and SigGen are not identified within software baseline.
3	L80011DST1HCRI.002	THE DST THC MODEL IS USED TO INVESTIGATE THERMAL-HYDROLOGIC-CHEMICAL (THC) PROCESSES DURING THE DRIFT SCALE TEST (DST). THE TPTPMN SEEPAGE MODEL WITH BACKFILL, THE TPTPMN SEEPAGE MODEL WITHOUT BACKFILL, AND THE TPTPL SEEPAGE MODEL. THE NEAR FIELD ENVIRON	Q	TOUGHREACT; version 2.20, TOUGHREACT; version 2.30, SOLVED/CHILLER; version 1.00, SUPPORT92; version 1.00, TOUGH2; version 1.40, AMESH; version 1.00, G8U6; version 1.204, Rpt; version 1.000, switch, regress, mt_incon, kreg, kswitch, exclude.f, assign.f, mergpd2.f, mt_chc2, evpperm.f, 2gdriv1a.f,br, sew1d_get2d.f	(CHRS 1613), (DR-86)	none	codes not identified within the software baseline: switch, regress, mt_incon, kreg, kswitch, exclude.f, assign.f, mergpd2.f, mt_chc2, evpperm.f, 2gdriv1a.f,br, sew1d_get2d.f
4	SN0004T0501600.005	INPUT FILES AND SUPPORTING FILES FOR THE SZ SITE-SCALE FLOW AND TRANSPORT MODEL RUNS FOR TSPA ABSTRACTION. THESE DATA SUPERSEDE PREVIOUSLY IDENTIFIED BY DTN: SN0003T0501600.003. THESE DATA SUPPORT SITE RECOMMENDATION AND APPEAR IN ANALYSIS/AMODEL REPORT (AMR) UNDER DI NO: ANL-HBS-HS-000000.	Q	FEHM, GoldSim, TH- memaba_ver_1.1, Pflatt1.00.1, machwp1.00.1, SZ_Pra, SZ_Post	(CHRS 1613), (DR-86)	S0075	Codes not identified within the software baseline: TH- memaba_ver_1.1, Pflatt1.00.1, machwp1.00.1, SZ_Pra, SZ_Post
5	MO0011MWD0345.014	THESE ARE THE INPUT AND OUTPUT FILES FOR THE EQ36 PITZER SALTS MODEL VALIDATION USING THE YMP DATABASE, AS DESCRIBED IN THE IN-DRIFT PRECIPITATES/SALTS ANALYSIS AMR (ANL-EBS-MD-000049). THEY ARE USED TO COMPARE WITH PREDICTIONS USING THE PT4 DATABASE	Q	EQ36 V7.2b, EQ3MR, EQ3NR; ese13995	(CHRS 1613), (DR-86)	none	Codes not identified in the software baseline: EQ3NR, EQ3NR-ese13995

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8. ☒ DR/CAR
☐ Stop Work Order

NO BSC-02-D-022

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DEFICIENCY/CORRECTIVE ACTION REPORT/STOP WORK ORDER CONTINUATION PAGE

Example of Potential Quality Concern for Software Used as compared to Software Identified within the Baseline.

ITEM NO.	DESCRIPTION	Q	FEHM version 7, station version 2, failure_ca_card, failure_ca_half version 7	(CRS 1613), (DR-98)	none	No versions of the following codes are identified in the software baseline: failure_ca_half, failure_ca_card, failure_ca_half
6	PERCOLATION FLUX TIME-HISTORY CURVES FROM FOUR INFILTRATION BINS REPRESENTATIVE OF THE HIGH INFILTRATION FLUX CASE ARE MAPPED INTO TWO INFILTRATION BINS REPRESENTATIVE OF THE LOW INFILTRATION FLUX CASE BASED ON MATCHING REPOSITORY COORDINATE LOCATIONS. THIS IS USED AS A PROXY FOR ONE OF THE LOW-INFILTRATION FULL-GLACIAL CLIMATES. THESE DATA SUPPORT SR AND APPEAR IN THE AMR UNDER DI NO: AML-EB9-HS-000003.	Q	GoldSim version 6.04.007, manaba_ver_2.1, manup1.03.1, Fract_p_ase, Fract_p_ser, esdr2v1.00.1, esdr2v1.03.1	(CRS 1613), (DR-98)	E0130, W0050	Codes not identified in the software baseline: manaba_ver_2.1, manup1.03.1, Fract_p_ase, Fract_p_ser, esdr2v1.00.1, esdr2v1.03.1
7	THESE ARE THE ABSTRACTION RESULTS OF THE MULTISCALE TH MODEL FOR THE NO BACKFILL REPOSITORY DESIGN FOR TSRA-SR. THE TH ABSTRACTION PROVIDES DIRECT DATA AND AVERAGED DATA FOR THE TSRA MODEL ASSORTED IN TERMS OF TSRA DEFINED INFILTRATION RATE BINS (6 TOTAL BINS). THE ABSTRACTION FILES CONTAINED IN THIS SUBMITTAL INCLUDE THREE INFILTRATION FLUX CASES: LOW, MEAN (ALSO REFERRED TO AS MEDIUM), AND HIGH. THE ABSTRACTION RESULTS ARE FOR THE IN-DRAFT THERMODYNAMIC ENVIRONMENT AND THE THERMALLY ENHANCED PERCOLATION FLUX ABOVE THE CROWN OF THE DRIFT. THESE DATA SUPPORT SR AND APPEAR IN THE AMR UNDER DI NO: AML-EB9-HS-000003.	Q				

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