HLWYM HEmails

From: James Winterle
Sent: Friday, May 11, 2007 4:15 PM
To: Donald Hooper; John Stamatkos; Debashis Basu; Kaushik Das; Roland Benke; Sitakanta Mohanty
Cc: Alan Morris; Robert Brient; Michael Simpson
Subject: Calculation checks on Teprhra and Lookup table
Attachments: Hooper Poster QAP-6 Q200611080012C.pdf

All:
I followed up by looking in ELF for the calculation checks on Don's poster that we discussed yesterday as the possible source of QA documentation for the ahsremob lookuptable. The QAP-6 for the poster indicated calculation checks should be done, but the reviewer and author annotated the form to say calculation checks were previously done in an earlier report, which I presume to be Hooper et al., "Realistic Modeling of Volcanic Eruption Plumes with the Tephra Code." So I checked the QAP-6 form for that and indeed there were calculation checks -- very thorough calculation checks I might add -- by Alan Morris. These calculation checks specifically include checks of teprhra input and output, and specifically of the lookuptable values; the documentation in the QAP-6 packages also includes relevant pages from Nathan's scientific notebook.

Attached to this email are the QAP-6 forms and review comments for both the poster and the paper. Don and John, can you look at these and let me know if they provide good verification of the lookup table calculations? From my point of view, I don't see any need for an NCR to add additional checks, but I'd like you two to make that call.

I learned from this that ELF is a very handy tool for tracking down this kind of information. Also Alan Morris is to be commended for the thorough and well documented calculation checks.

--Jim <<...>> <<...>>

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Jim Winterle
Manager, Performance Assessment Group
Geosciences and Engineering Division
ph: 210-522-5249
==========

Hearing Identifier: HLW_YuccaMountain_Hold_EX
Email Number: 1418

Mail Envelope Properties (005401c79409$1e9c1330$a5c8a281)

Subject: Calculation checks on Teprhra and Lookup table
Sent Date: 5/11/2007 4:15:29 PM
Received Date: 5/11/2007 4:15:55 PM
From: James Winterle

Created By: jwinterle@cnwra.swri.edu

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Files	**Size**	**Date & Time**
MESSAGE	1615	5/11/2007 4:15:55 PM
Hooper Poster QAP-6 Q200611080012C.pdf	2033805	

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

GEOSCIENCES AND ENGINEERING DIVISION
DOCUMENT REVIEW REQUEST AND TRANSMITTAL CONTROL (REF. QAP-002)

I. DOCUMENT INFORMATION

a. TITLE: **Modeling Potential Tephra Dispersal at Yucca Mountain, Nevada**

b. DOCUMENT TYPE

☐ Technical Report, Trip Report	☐ CQAM, QAPs, APs	☐ Abstracts*	☒ Posters*
☐ Guidance Documents	☐ TOPs	☐ Conference Papers*	☐ Presentations*
☐ Operations Plans, Proposals	☐ Project, Test, Validation Plans	☐ Journal Articles*	*Peer Reviewed Y ☐ N ☐

* Conference/JournalTitle/ Date/Location/Publisher/City, State: American Geophysical Union Fall Meeting, December 11-19, 2006, San Francisco, California

Copyright Permission Required and Obtained: Y ☐ N ■

c. DOCUMENT CLASSIFICATION Classified Y ☐ N ■ Sensitive Unclassified Y ☐ N ■ Export Controlled Y ☐ N ■

Special Markings (specify)

d. PROJECT INFORMATION

Project No. 06002.01.312 Milestone No. AI No.: 06002.01.312.701

CNWRA DOCUMENT NO. Y ☐ N ■ Assigned No. CNWRA 200X-XXX

e. SCHEDULE Today's Date October 20, 2006 Scheduled Transmittal Date November 10, 2006

II. RESPONSIBILITIES (Fill in names on each blank line in this section.)

Author(s) D. Hooper, N. Adams, D. Basu, N. Franklin, Manager John Stamatakos, Assigned Secretary Sharon Odam

III. REVIEW (See QAP-002 table 1 for applicable review types.)

Review Types & Reviewers Determined by Manager

(Manager Signature) (Date)

	Req'd Date	Initials	Completed
☒ TECHNICAL (Attach form QAP-12.) Reviewer(s): **Kevin Smart**	10/24/2006	KJS	10/24/06
☐ PEER (Attach form QAP-13.) Reviewer(s):			
☒ EDITORIAL Reviewer: **Lauren Mulverhill**	10/27/2006	LM	10/25/06
☐ CONCURRENCE Reviewer:			
☐ QUALITY ASSURANCE Reviewer:			
☒ PROGRAMMATIC/COPYRIGHT PERMISSION VERIFIED Reviewer: **Gordon Wittmeyer**	11/06/2006	GW	GW 10/7/2006
☐ FORMAT Reviewer/Style: **n/a**			
Verification of Compliance with QAP–002		WS	11/7/2006

Geosciences and Engineering Division calculations and analyses supporting this report are documented in Scientific Notebook(s): 755E .

IV TRANSMITTAL

TO: FROM:

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FORM QAP–6 (10/2005)

GEOSCIENCES AND ENGINEERING DIVISION INSTRUCTIONS TO TECHNICAL REVIEWERS
Technical Review Items to Verify

REVIEWER: Kevin Smart

TITLE: Modeling Potential Tephra Dispersal at Yucca Mountain, Nevada

Please perform a Technical Review of the subject document in accordance with QAP–002, verifying the specific items identified below. Technical comments shall be documented on the attached Comment Resolution Record and presented to the author for resolution. Initial blanks on right side of page to show completion of assigned review.

Required review completion date: October 24, 2006

	TECHNICAL CORRECTNESS	ACCOMPLISHED
X	Assumptions are reasonable and documented in sufficient detail that a technically qualified person may review, understand, and verify the analysis without recourse to the originator. (Do not assign if report does not contain data interpretation and analysis.)	KJS
X	Software versions used in analysis are controlled according to TOP–018.	KJS
	Regulatory reviews are performed using software validated according to TOP–018. Software use is within the range of validation.	
X	Appropriate techniques are used.	KJS
X	Data are appropriate and are properly referenced.	KJS
X	Conclusions are properly supported by correctly interpreted data.	KJS

Are there calculations? YES [X] NO [X] **If yes, are "over checks" required? If no "over checks" are required, explain why:** YES [ ] NO [X]

Calculations previously checked

Identify the calculation tools used and over checks needed: Poster describes output from TEPHRA code. D. Hooper (10/20/06)

X	**Controlled Software**	**Check input for accuracy and output for reasonableness.**
	Uncontrolled Software	**Check inputs, perform check calculations (copy of code is required for QA records)**
	Commercial Off-the-Shelf Software	**Check inputs and outputs, check formulae**
	Other Calculation(s)	**Check inputs, perform check calculations**

Document these reviews by a statement on QAP–3 form explaining which calculations were checked, and how they were checked. Attach verification calculation, in accordance with Section 3.2.5 of QAP–014.

X **Calculations are correct, documented and verified in accordance with QAP–014, Section 3.2.3.** KJS

Calculations have been previously checked in a report on the TEPHRA code.
D. Hooper (10/20/06)

FORM QAP–12 (Rev. 08/2005)

GEOSCIENCES AND ENGINEERING DIVISION INSTRUCTIONS TO TECHNICAL REVIEWERS

Technical Review Items to Verify

READABILITY		ACCOMPLISHED
X	Document is written for the intended audience, with correct grammar and syntax.	KJ
X	Illustrations and tables clearly present basic information and emphasize relationships.	KJ

CONTENT AND FORMAT		ACCOMPLISHED
X	Title reflects the objectives of the document.	KJ
	Abstract states purpose, describes study, and summarizes the pertinent results and conclusions.	
X	Introduction states the objectives and scope of the work and presents background information.	KJ
X	Body of the manuscript is logically organized and presents the basic information.	KJ
X	Conclusions and results summarize the principal findings and address each of the objectives of the work.	KJ
X	References are cited in the text and in the references section.	KJ
	Labor and cost estimates (e.g., PC-2 Cost Estimate, Labor and Spending Plans, or other summary) are consistent with the proposed scope of work.	

MANAGER	DATE	COGNIZANT DIRECTOR	DATE
John Stamatakos Manager, Geology and Geophysics	10/20/2006	Gordon W. Wittmeyer Assistant Director, Earth Sciences	10/23/06

FORM QAP–12 (Rev. 07/2006)

REPORT REVIEW / COMMENT RESOLUTION RECORD		PAGE 1 OF 2 PAGES
PROJECT NUMBER 06002.01.312.701	DOCUMENT DATE October 20, 2006	DOCUMENT NUMBER

TITLE: Modeling Potential Tephra Dispersal at Yucca Mountain, Nevada

COMMENTS:	RESPONSES:
(1) Nathan's affiliation should probably be changed to "DEMPS."	(1) Accept. DEMPS was included for Nathan.
(2) Suggest putting horizontal line between title section and main part of poster.	(2) Accept. A horizontal line was added.
(3) The $f_z(z)$ in equation is different from its definition in text below → $f_z(Z)$	(3) Accept. This was easily corrected.
(4) Suggest changing "amount" to "mass" in Table headings	(4) Accept. "Amount" was changed to "mass" in the table headings.
(5) "Incorporation Ratio" in table may need to be defined for reader.	(5) Accept. Incorporation ratio was removed from the table since this is not discussed elsewhere in the poster.

REVIEWER SIGNATURE:	DATE:	RESPONDER SIGNATURE:	DATE:
K. J. Smart	10/23/06	[illegible]	10/24/06
Response accepted by: K J Smart	10/24/06	If resolution cannot be achieved, the matter shall be elevated to the next level of authority.	
Signature	Date		

Form QAP–3 (10/2005)

REPORT REVIEW / COMMENT RESOLUTION RECORD		PAGE 2 OF 2 PAGES
PROJECT NUMBER 06002.01.312.701	DOCUMENT DATE October 20, 2006	DOCUMENT NUMBER

TITLE: Modeling Potential Tephra Dispersal at Yucca Mountain, Nevada

COMMENTS:	RESPONSES:
(6) Suggest breaking long sentence into two parts	(6) Accept- Sentence broken into two parts for clarity.
(7) Last sentence seems out of place for topic of this poster. Consider expanding reason for needing this information or perhaps deleting sentence.	(7) Accept- This information is not needed so the sentence was deleted.
(8) Suggest stating "Time" at which tephra maps are calculated	(8) Accept- Added to caption a sentence that states that eruption duration is a loguniform distribution ranging from 1 to 30 days.
(9) Suggest clarifying difference between tephra accumulation versus waste accumulation.	(9) Accept- Explained that waste deposition follows that of tephra distribution, but at reduced concentration (because only 1 MTU is erupted).

REVIEWER SIGNATURE:	DATE:	RESPONDER SIGNATURE:	DATE:
K. J. Smart	10/23/06	Donald Hoyt	10/24/2006
Response accepted by: K J Smart	10/24/06	If resolution cannot be achieved, the matter shall be elevated to the next level of authority.	
Signature	Date		

Form QAP–3 (10/2005)

REPORT REVIEW / COMMENT RESOLUTION RECORD		PAGE 1 OF 1 PAGES
PROJECT NUMBER 06002.01.312.701	DOCUMENT DATE October 20, 2006	DOCUMENT NUMBER

TITLE: Modeling Potential Tephra Dispersal at Yucca Mountain, Nevada

COMMENTS:	RESPONSES:
1. Introduction. Refering to YM on your case study almost suggests that a volcano has erupted through YM. Is this what you mean? Suggest deleting sentence	1. Accept. Sentence deleted, as suggested.
2. Editorial nits, suggested rewording, etc marked on printer.	2. Accept. Editorial suggestions accepted and made.
3. Poster is programmatically acceptable.	3. N/A

REVIEWER SIGNATURE:	DATE:	RESPONDER SIGNATURE:	DATE:
Gordon Wittmeyer	10/27/2006	Donald Hoyer	11/3/2006
Response accepted by: Gordon Wittmeyer	11/7/2006	If resolution cannot be achieved, the matter shall be elevated to the next level of authority.	
Signature	Date		

Form QAP–3 (10/2005)

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Geosciences and Engineering Division
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(210) 522-5160 • Fax (210) 522-5155

November 8, 2006
Contract No. NRC–02–02–012
Account No. 20.06002.01.312

U.S. Nuclear Regulatory Commission
ATTN: Mrs. Deborah A. DeMarco
Office of Nuclear Material Safety and Safeguards
Division of High-Level Waste Repository Safety
Two White Flint North
11545 Rockville Pike
Mail Stop T7-J8
Washington, DC 20555

Subject: Submittal of Poster: "Modeling Potential Tephra Dispersal at Yucca Mountain, Nevada" (AI 06002.01.312.701)

Dear Mrs. DeMarco:

The enclosed poster and Form 390A are being submitted for programmatic review. Following NRC approval, the information discussed in the poster will be presented at the American Geophysical Union Fall Meeting, December 11–15, 2006 in San Francisco, California.

The objective of this poster is to present the progress of modeling volcanic eruption plumes with the TEPHRA code. TEPHRA is an improvement over the previous ASHPLUME model and allows the user to calculate expected tephra (ash) and uranium (fuel) accumulation as areal mass density (variable thickness over a two-dimensional grid) by sedimentation out of the volcanic plume. The code calculates tephra accumulation using measured eruption data as input parameters and incorporates the effects of realistic, stratified wind fields on tephra dispersal.

Washington Office • Twinbrook Metro Plaza #500
12300 Twinbrook Parkway • Rockville, Maryland 20852-1652

Please advise me of the result of your programmatic review. If you have any questions regarding this abstract, please contact Dr. John Stamatakos at (210) 522-5247.

Sincerely,

Gordon Wittmeyer

Gordon W. Wittmeyer
Assistant Director, Earth Sciences

/slo
Enclosures: Abstract
NRC Form 390A

cc:

NRC
L. Kokajko
S. Kim
V. Whipple
E. Collins
T. McCartin
B. Hill
J. Guttman
M. Bailey
A. Campbell
K. Stablein
M. Wong
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P. Justus
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D. Basu
R. Benke
A. Simpkins
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L. Gutierrez

NRC Form 390A
(12-2003)
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(Please type or print)

1. TITLE (State in full as it appears on the speech, paper, or journal article)
Modeling Potential Tephra Dispersal at Yucca Mountain, Nevada

2. AUTHOR(s)
Donald Hooper, Nathan Franklin, Nancy Adams, Debashis Basu

3. NAME OF CONFERENCE, LOCATION, AND DATE(s)
American Geophysical Union Fall Meeting
San Francisco, California
December 11-15, 2006

4. NAME OF PUBLICATION
EOS, Transactions of the American Geophysical Union, Fall Meeting Supplement

5. NAME AND ADDRESS OF THE PUBLISHER
American Geophysical Union
2000 Florida Ave. NW
Washington, DC 20009-1277

TELEPHONE NUMBER OF THE PUBLISHER
202-462-6900

6. CONTRACTOR NAME AND COMPLETE MAILING ADDRESS (*Include ZIP code*)
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TELEPHONE NUMBER OF THE CONTRACTOR
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A. CONTRACTOR AUTHORIZING OFFICIAL *(Type or print name)*	SIGNATURE	DATE
Gordon Wittmeyer Assistant Director, Earth Sciences	Gordon Wittmeyer	11/7/06
B. NRC RESPONSIBLE PROJECT MANAGER *(Type or print name)*	OFFICE/DIVISION	MAIL STOP

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