

CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES 33/43

NONCONFORMANCE REPORT

Project No. 20-1402-762 NCR No. 98-02

PART 1: DESCRIPTION OF NONCONFORMANCE

- 1.) Source Code Header information is not referencing applicable SPCRs in accordance with procedure TOP-018 paragraph 5.4.6.
2.) There is no Design Verification Report for TPA Code revision 3.1.1 as required by procedure TOP-018 paragraph 5.5.7.

Initiated by: Mark R. Ehnstrom Date: 6 Feb 1998

PART 2: PROPOSED DISPOSITION AND CORRECTIVE ACTION

Disposition: See Attached Page

Basis of Disposition: See Attached Page

Action to correct nonconformance: See Attached Page Target date for completion: N/A, however implementation of TOP-018 Rev 6 will clarify these issues. Date: 2/20/98

Proposed by: Bruce Mabrito

PART 3: APPROVAL

Element Manager: [Signature] Date: 2/26/98

Director of QA: [Signature] Date: 3/17/98

Comments/Instructions: This NCR 98-02 has had input from several individuals which has caused a delay in its completion. Since the CNWRA QA director has proposed the disposition/corrective action, he cannot stand in judgement of his own work. The CNWRA president will review and sign the approval block for QA. SEM

PART 4: CLOSE OUT TOP-018 REV 6 WAS

Comments: distributed 5/1/98 to CNWRA & NRC STAFF who need the procedure.

- Distribution: ELEMENT MANAGERS B. SAGAR P. MACKIN J. RUSSELL W. PATRICK B. MABRITO M. EHNSTROM

Verified by: [Signature] Date: 5/1/98

NCR 98-02

Disposition:

1) Source Code Header information is not referencing applicable SPCRs in accordance with TOP-018, para. 5.4.6. -- Accept product as is, without any changes.

Basis of Disposition:

1) SPCRs were received, maintained, and acted on throughout the modification of the TPA Version 3.1.2 scientific and engineering software. Control numbers to each SPCR page were assigned just prior to release of the TPA Version 3.1.2 code and were verified by CNWRA QA staff during the Design Verification process for TPA Version 3.1.2. It should be noted that this requirement of putting SPCR numbers in the header of revised code has been removed from the "80% draft" copy of TOP-018 Revision 6 (which was submitted to the NRC for review in February 1998) because there is no value added by this process and the SPCR objective evidence is fully accessible in the QA Records Room along with the appropriate version of the TPA software.

Action to correct nonconformance:

1) No action required due to availability of SPCRs which has been found to be an acceptable way to document changes requested by the NRC staff. The next version of TOP-018 (being finalized during the time period this NCR was written and responded to); provides the option to document changes via the SPCR process (soon to be called the Software Change Request form) or in Scientific Notebooks. Since completing an SPCR will not be a mandatory requirement in the revised version of TOP-018, there will be no need to place the SPCR numbers in the software source code header.

Disposition:

2) There is no Design Verification Report for TPA Code revision 3.1.1 as required by procedure TOP-018 para. 5.5.7 -- Accept the S. Mohanty memorandum of transmittal of 10/1/97 as sufficient documentation to describe the changes performed to TPA Code Version 3.1.1. The S. Mohanty to T. McCartin delivery of TPA code Version 3.1.1 memo is attached.

Basis of Disposition:

2) The S. Mohanty transmittal letter of 10/1/97 describes in adequate detail the specific changes performed to the TPA Code at the request of NRC staff. Objective evidence is present in the TPA 3.1.1 folder in the QA Records Room and there were only minor modifications to the Code from Version 3.1 to Version 3.1.1. SPCRs were used by the NRC and CNWRA staff to clearly identify and document the requested changes. It should be noted that there were no specification changes whatsoever between TPA Versions 3.1 and 3.1.1. Changes were made primarily to make the Code functional (to operate) on NRC platforms. Now that the TPA Code has been changed twice since Version 3.1.1 (as of 2/20/98), it serves no value to generate a Design Verification Report after the fact.

Action to Correct Nonconformance:

2) After discussions between the Software Developer and the Director of QA, it was decided that no further action related to TPA Version 3.1.1 should be taken at this time as there would be no added value to the retrofitting such a Design Verification Report in the TPA software folder.

Discussion: In TOP-018 Revision 6, currently under review at the NRC, a Design Verification Report is required of released CNWRA developed software. After consulting with CNWRA code developers, there was an expression of concern that very minor (as little as a one-line modification) changes to CNWRA software will require major documentation efforts that will have to be repeated each time a minor variation of a code is released. This is a genuine concern not fully addressed in TOP-018 at this time. One possible recommended approach to this is to have a Design Verification Report issued only when there is a formal specification change to the scientific and engineering software. Another approach is to construct a relatively brief Design Verification Report Checklist which would be used in place of the current (narrative) report now utilized (this Design Verification Report Checklist would be completed for any code release that calls for a specification change or any change).

CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES

Date: October 1, 1997
To: Tim McCartin
From: Sitakanta Mohanty 
Subject: Delivery of TPA code Version 3.1.1

Enclosed please find a copy of TPA code Version 3.1.1 in an 8-mm tape. TPA code Version 3.1.1 is an updated version of TPA code Version 3.1 and includes the following changes suggested by the NRC staff:

- Modifications to the stand-alone code nefmks.f provided by R. Codell to make the code single precision for reducing memory requirement were incorporated. This will amount to a slight change in the accuracy of output data. No changes to CCDF output values were observed.
- Array out-of-bound problem in nefmks.f was fixed. Please note that the copy of the nefmks.f sent to the CNWRA by R. Codell already had necessary changes. These changes were retained to avoid duplication of effort.
- Array dimension for number of subareas was reduced from 100 to 30. Although a value of 7 instead of 30 was suggested by R. Codell, the value of 30 was used to avoid assigning a new version number when CNWRA staff would need to use the code for more than 7 subareas. Based on our teleconference on September 29, R. Codell will change the value to 7 in the NRC copy of TPA 3.1.1 so that the computer memory issue at the NRC can be addressed. We recommend that you assign a version number 3.1.1a following this change so that the next version that may be sent to the NRC will carry 3.1.2.
- The waste package failure data are now reported in the wpsfail.res file for all vectors even if there are zero failures for some vectors. This change was requested by V. Colten-Breadley.
- Changes to releaset.f proposed by R. Codell to speed up the TPA code were not implemented in the version. This was okayed by R. Codell over a telephone conversation.
- Input data set was changed based on data from the NRC staff. These changes included Alluvium Kds and fowfactor. Please note that a new tpa.inp.meanvalues file was created based on the new data. Also, in the tpa.inp.meanvalues data set, only the selected flow parameters provided by you are sampled while other parameters are kept fixed at mean values.

cc: Keith McConnell, R. Baca, B. Sagar, B. Mabrito, R. Janetzke

To: Bruce Mabrito at CNWRA-OS2
CC: Connie Cruz at CNWRA-OS2
CC: Robert Baca at CNWRA-OS2
CC: Henry Garcia at CNWRA-OS2
From: Robin K Juhl
Subject: TPA version 3.1.1
10-02-97 01:06 PM

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Sir,

I placed the TPA, version 3.1.1, files from the tape into the Revision Control System directory of the server mammoth (in `/lan/rcs/tpa_v3.1.1`). The contents of all files, including those in the subdirectories "Release" and "Verify," were placed under SCCS control.

Formal Details --

Program Name: TPA, V3.1.1
Date Entered: 1 Oct 97
Control Method: SCCS
Location: mammoth:/lan/rcs/tpa_v3.1.1

V/R,
Robin Juhl

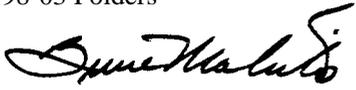
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MEMORANDUM

March 9, 1998

TO: Nonconformance Reports (NCRs) Numbered 98-02 and 98-03 Folders

FROM: Bruce Mabrito, CNWRA Director of Quality Assurance 

SUBJECT: Status of Responses to NCRs Numbered 98-02 and 98-03

REFERENCE: CNWRA Surveillance Report 98-02A QA Procedure-009; Nonconformance Control

NCRs 98-02 and 98-03 were written February 6, 1998 following surveillance on Total System Performance Assessment and Integration (TSPAI) activities. Both NCRs were responded to on February 20, 1998 with proposed disposition and corrective actions and signed by individuals who had been identified (S. Mohanty and B. Mabrito). They were presented to Element Manager R. Baca which he signed the Approval block for both documents on February 23, 1998, although he was responsible for only the one submitted primarily by S. Mohanty (NCR 98-03). Following that action, B. Sagar was provided with the two NCRs so he could review them and be aware of the responses and the general direction of the disposition and corrective actions. Due to travel commitments, B. Sagar was unable to review the two NCRs and provided them to CNWRA President W. Patrick who marked up the responses with his comments. This action was appropriate since both NCRs have corrective actions that are required of B. Mabrito, and I will not be able to approve the NCRs, but will be submitting them to the CNWRA President for approval.

The purpose of this memorandum is to document for the historical files the actions that have been taken to date as the disposition and corrective actions proposed are addressed.

This memorandum will be filed with NCRs 98-02 and 98-03 to provide a traceable "bridge" as the NCR forms are completed. Please call me at ext. 5149 if there are any questions regarding this matter.

cc: W. Patrick
B. Sagar
G. Wittmeyer
S. Mohanty