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1	1	Design Authority	<i>[Signature]</i>	1/14/97							
		Design Agent	<i>[Signature]</i>	1/14/97							
1	1	Cog.Eng. J. R. Weidert	<i>[Signature]</i>	1/14/97	14-52						
1	1	Cog. Mgr. R. J. Botteneus	<i>[Signature]</i>	1/14/97	14-52						
1	1	QA J. R. McGee	<i>[Signature]</i>	1/14/97	T4-02						
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DMS Release 2 Quality Assurance (QA) Plan

J. R. Weidert

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Abstract: This document defines the QA activities that will be pursued during the development of the WRAP 1 DMS Release 2 software.

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Release Approval

Date

Approved for Public Release

1.0 Purpose

This Quality Assurance (QA) Plan will be used to manage the in-process quality of the DMS Release 2 development software. QA reviews will provide an opportunity to catch and resolve programming bugs while the code is still in a state of development, rather than after the fact when rework and debug could be more time consuming and troublesome. QA reviews also provide a source of additional insights regarding the selected problem solutions and general programming efficiencies which can be reviewed by the programmer for their potential to make the delivered product better.

2.0 Software QA

2.1 Screen QA Process

2.1.1 General

Screen "source code" is considered to be the necessary combination of ORACLE*FORMS 4.5 code and associated stored procedures, triggers, etc which combine to make a screen function as specified.

All screen source code will undergo QA review by a "third party" ORACLE programmer. Comments received from the QA review will be addressed during revisions to the development copy of the source code. Once this is completed, the screen will be considered ready for user functional testing as part of the related module testing sequence (see the DMS Release 2 Test Plan).

A separate BDM office will be used to perform QA Reviews. The INTERNET will be used to transmit source code to that office and to receive QA comments.

Software undergoing the QA process will be managed within the guidelines of the DMS Configuration Management Plan. A QA directory will be used to store all software while it is undergoing QA review.

2.1.2 Review Steps

STEP	ACTIVITY	MANAGEMENT CONTROL	RESULT
1	Programmer completes screen and programmer level testing	Tech Lead approves for transfer to QA review	1) Source code file is placed in QA directory 2) Source code file is attached to INTERNET message for transmission 3) Programmer provides latest copy of specs, with mark ups 4) Tech Lead marks check off block on CM check list
2	Source code file is placed in QA directory	CM/QA manager assumes CM control of version	Source code is "frozen" until comments come back from QA review
3	Source code file is attached to INTERNET message for transmission	CM/QA manager is provided copy of transmission message	Message is transmitted to QA reviewer
4	Latest copy of specs and any other pertinent information is sent to QA reviewer by either FEDEX or INTERNET message	CM/QA manager will provide FEDEX service or receive copy of transmission message	Specs are provided to QA reviewer
5	Comments received from QA review	CM/QA manager approves release of version for correction work	Source code is moved to development for correction work
6	Corrections completed	Tech Lead verifies corrections completed	1) Tech Lead marks check off block on CM check list. 2) Source code is placed under version control in the appropriate development library

2.1.3 Review Schedule

The Screen QA Schedule is attached. Programmers have these work tasks embedded in their respective portions of the Project Plan. If any change in the schedule is required, the CM/QA manager must be notified so the change can be coordinated with the QA reviewer.

2.1.4 Coordination

The CM/QA manager will ensure that the following is provided for the QA reviewer:

- DMS specifications
- DMS data base
- Test records (using the same 12 drums being used by the DMS developers)
- Updated specifications for each screen
- Point of contact and team coordination

2.2 Non-Screen Source Code

Source Code for DMSCOM Messages, Reports, SCRs, and any test scripts will not be sent out for "third party" review. These will undergo a combination of internal peer review and user testing which will preclude the need for formal QA review.

2.2.1 DMSCOM Messages.

DMSCOM messages are considered too interlinked with the DMS system as a whole, to be able to explain to a third party reviewer. These will be tested as an extension of integration testing with the PCS and in conjunction with other development programmers who will be interacting with the messages. The Team Technical Lead will perform QA review over any messages that do not perform properly during integration testing and will work with the message programmer to resolve noted problems.

2.2.2 Reports.

Reports are considered straight forward interactions with the data base using the ORACLE Report Writer software. These will undergo a cycle of prototype-user review-update-user test. The Team Technical Lead will work with the report programmer to resolve technical problems prior to user acceptance of the final report.

2.2.3 SCRs

SCRs will be completed, reviewed, and implemented into production within the procedures specified in the DMS Configuration Management Plan.

2.2.4 Test Scripts

Any test script code produced is considered to be "throw away" code necessary to support the associated testing cycle. It will be tested by the programmer and is not considered to need the formality of QA control.

Solid Waste

Task Name	96	Qtr 4, 1996				Qtr 1, 1997			Qtr 2, 1997			Qtr 3, 1997			Qtr 4, 1997			Qtr 1, 1998			Qtr 2, 1998			Qtr 3, 1998			
		S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	
TASK 3 - REL 2 1st PRIORITY MODULES (Thru Shop Test)	10/22											2/26															
Data Review Module	10/28											2/11															
DMSS1201 Processed Waste NDA Data Review & Mod	10/28											11/27															
Code QA Review/Debug	11/21											11/27															
DMSS1202 Compacted Drum NDA Data Review	11/21											12/17															
Code QA Review/Debug	12/11											12/17															
DMSS1211: Verification of NDA Data	12/11											12/26															
Code QA Review/Debug	12/18											12/26															
DMSS1212 Comparison of NDA Certification & Verification Data	12/18											1/10															
Code QA Review/Debug	1/7											1/10															
DMSS1231 Verification Data Review Screen	1/7											1/24															
Code QA Review/Debug	1/21											1/24															
Shipping Module	1/3											2/14															
SCR #089: Screens 602 & 904 (Task 5 Work)	1/14											1/20															
DMSS0601 Loading Dock Shipping Data	1/21											1/28															

See PROJECT PLAN FOR PRIORITY
(1211, 1212, 1231, 1201 & 1202 SEQUENCE)

SEE PROJECT PLAN FOR PRIORITY
(1211, 1212, 1231, 1201 & 1202 SEQUENCE)

ATTACHMENT 1

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x: 11/5/96

Task		Milestone		Rolled Up Milestone	
Task Progress		Summary		Rolled Up Progress	
Critical Task		Rolled Up Task			
Critical Task Progress		Rolled Up Critical Task			