



Westinghouse Non-Proprietary Class 3

ALS Configuration Management Plan

**6002-00002-NP,
Rev. 9**

Nuclear Safety Related

February, 2013

APPROVALS

Function	Name and Signature
Author	Bill Irmen* Manager, Scottsdale Operations
Reviewer	Kevin Neumann* ALS Project Manager
Approver	Scott Roberts* Director, Scottsdale Operations

*Electronic Approval – Refer to Release Record

WESTINGHOUSE PROPRIETARY CLASS 3

LIST OF CONTRIBUTORS

Revision	Name and Title

REVISION HISTORY

RECORD OF CHANGES

a. c. e

DOCUMENT TRACEABILITY & COMPLIANCE

Created to Support the Following Document(s)	Document Number	Revision

OPEN ITEMS

Item	Description	Status

TABLE OF CONTENTS

Section	Title	Page
	LIST OF CONTRIBUTORS	i
	REVISION HISTORY	ii
	DOCUMENT TRACEABILITY & COMPLIANCE	iii
	OPEN ITEMS	iii
	TABLE OF CONTENTS	iv
	LIST OF TABLES	vi
	LIST OF FIGURES	vi
	ACRONYMS AND TRADEMARKS	vii
	GLOSSARY OF TERMS	viii
	REFERENCES	ix
SECTION 1	INTRODUCTION	1-1
1.1	PURPOSE	1-1
1.2	SCOPE	1-1
1.2.1	ALS Development Overview	1-1
1.2.2	ALS Board Configuration Items	1-3
1.2.3	Support Configuration Items	1-5
1.2.3.1	[.....] ^{a,c,e}	1-5
1.2.3.2	[.....] ^{a,c,e}	1-5
1.2.3.3	[.....] ^{a,c,e}	1-5
1.2.3.4	[.....] ^{a,c,e}	1-5
1.2.4	Other Items Under Configuration Control	1-6
1.2.5	Limitations	1-6
1.2.6	Assumptions	1-6
SECTION 2	CONFIGURATION MANAGEMENT	2-1
2.1	ORGANIZATION	2-1
2.2	CM RESPONSIBILITIES	2-1
2.3	APPLICABLE POLICIES, DIRECTIVES, AND PROCEDURES	2-1
SECTION 3	CM ACTIVITIES	3-1
3.1	CONFIGURATION IDENTIFICATION	3-1
3.1.1	Configuration Items (CIs)	3-1
3.1.1.1	Development Area	3-2
3.1.1.2	[.....] ^{a,c,e}	3-5
3.1.1.3	Release Area	3-6
3.1.1.4	Configuration Management Baseline	3-6
3.1.2	Naming Configuration Items	3-7
3.1.2.1	Identification of the ALS board	3-8

3.1.3	Acquiring Configuration Items	3-9
3.1.4	Control of Software Tools	3-10
3.2	CONFIGURATION CONTROL	3-10
3.2.1	Change Control	3-10
3.2.2	[.....] ^{a,c,e}	3-10
3.2.3	Configuration Item Release, Archive and Retrieve Activities.....	3-11
3.2.4	Issue Reporting, Tracking and Corrective Action Activities.....	3-11
3.2.5	Approval Authority – the Change Control Board (CCB)	3-11
3.3	CONFIGURATION STATUS ACCOUNTING	3-11
3.4	CM SUMMARY REPORT	3-12
3.4.1	[.....] ^{a,c,e}	3-12
3.5	CONFIGURATION AUDITS AND REVIEWS.....	3-12
3.5.1	Internal Reviews	3-12
3.5.2	Managerial Reviews	3-13
3.6	INTERFACE CONTROL.....	3-13
3.7	SUBCONTRACTOR / VENDOR CONTROL	3-13
SECTION 4	SCHEDULES	4-1
SECTION 5	RESOURCES	5-1
5.1	CONFIGURATION STATUS ACCOUNTING SPREADSHEET.....	5-1
5.2	[.....] ^{A,C,E}	5-1
5.3	[.....] ^{A,C,E}	5-1
SECTION 6	PLAN MAINTENANCE.....	6-1
6.1	RESPONSIBILITIES	6-1
6.2	CHANGE APPROVALS	6-1
APPENDIX A	[.....] ^{A,C,E}	A-1

TABLE OF CONTENTS (cont.)

LIST OF TABLES

Table	Title	Page
Table 1-1:	Configuration Items Created By CS Innovations	1-4
Table 3-1:	Naming Configuration Items	3-8

LIST OF FIGURES

Figure	Title	Page
Figure 1-1:	Typical development flow for an ALS board.....	1-2
Figure 1-2:	Multiple ALS Board Development Flow	1-3
Figure 1-3:	Primary ALS Board CIs.....	1-4
Figure 3-1:	Activity Sequence to Establish a Baseline	3-7
Figure A-1:	CVS Repository Example	A-2
Figure A-2:	CVS Repository Example	A-3
Figure A-3:	Tag Report.....	A-5
Figure A-4:	CVS Report	A-6

ACRONYMS AND TRADEMARKS

Acronyms used in the document are defined in 6002-00040, “ALS Terms and Abbreviations” (Reference 4), or included below to ensure unambiguous understanding of their use within this document.

All other product and corporate names used in this document may be trademarks or registered trademarks of other companies, and are used only for explanation and for the owners’ benefit, without intent to infringe.

GLOSSARY OF TERMS

Standard terms used in the document are defined in 6002-00040 (Reference 4) or included below to ensure unambiguous understanding of their use within this document.

Term	Definition
VHDL	A hardware description language used in electronic design automation to describe digital and mixed-signal systems such as field-programmable gate arrays and integrated circuits.

REFERENCES

a. c. c

SECTION 1
INTRODUCTION

1.1 PURPOSE

The Advanced Logic System (ALS) Configuration Management (CM) Plan describes the Configuration Management organization and practices used for control of ALS related configuration items. Generally ALS Platform development performed by CS Innovations (CSI) is customer independent. The ALS boards are designed to be generic boards which are configured to meet different customer needs. Consequently only the NVMs and ALS-102 FPGA are application-specific. ALS board development is performed under the internal project number D002.

1.2 SCOPE

The ALS CM Plan is to be applied consistently and uniformly throughout the Life-Cycle of ALS boards. The intended audience for the ALS CM Plan is personnel associated with managing, developing, reviewing, and providing quality assurance of ALS based products.

21. The ALS CM Plan is based on the guidance provided in IEEE Std 828-1998, "IEEE Standard for Software Configuration Management Plans" (Reference 15), the QMS, "Quality Management System" (Reference 7), WEC 23.20, "Westinghouse Nuclear Automation / CS Innovations Interface Agreement" (Reference 17), and 6002-00000, "ALS Management Plan" (Reference 1).

1.2.1 ALS Development Overview

--	--



Figure 1-1: Typical development flow for an ALS board





Figure 1-2: Multiple ALS Board Development Flow

1.2.2 ALS Board Configuration Items



Figure 1-3: Primary ALS Board CIs

Table 1-1: [

a,c,e

1.2.3 Support Configuration Items

1.2.3.1 []^{a,c,e}

[

] ^{a,c,e}

1.2.3.2 []^{a,c,e}

[

] ^{a,c,e}

1.2.3.3 []^{a,c,e}

[

] ^{a,c,e}

1.2.3.4 []^{a,c,e}

[

] ^{a,c,e}

1.2.4 Other Items Under Configuration Control

	2 C e
--	-------------

1.2.5 Limitations

None

1.2.6 Assumptions

No assumptions have been identified which will affect cost, schedule or ability to perform configuration management activities.

SECTION 2 CONFIGURATION MANAGEMENT

2.1 ORGANIZATION

Refer to 6002-00000, “ALS Management Plan” (Reference 1) and the project specific management plan as applicable, for information regarding the project organization.

2.2 CM RESPONSIBILITIES

Refer to “Table 3-1: Roles and Responsibilities” in the 6002-00000, “ALS Management Plan” (Reference 1) and/or the project specific management plan as appropriate.

2.3 APPLICABLE POLICIES, DIRECTIVES, AND PROCEDURES

All activities performed in the ALS CM Plan shall be conducted in accordance with QMS, “Quality Management System” (Reference 7), WEC 23.20, “Westinghouse Nuclear Automation / CS Innovations Interface Agreement” (Reference 17), and 6002-00000, “ALS Management Plan” (Reference 1).

SECTION 3
CM ACTIVITIES

3.1 CONFIGURATION IDENTIFICATION

A Configuration Item (CI) is an object or collection of objects that are treated as a self-contained unit for the purpose of revision control. Unique identifiers are assigned to all CIs according to the document control procedures defined by the QMS, “Quality Management System” (Reference 7).

3.1.1 Configuration Items (CIs)

3.1.1.1 Development Area

	a. c. e
--	---------

a
c
e

3.1.1.2 [

] a,c,e

a
c
e

3.1.1.3 Release Area

[]^{a,c,e}

[

]^{a,c,e}

3.1.1.4 Configuration Management Baseline

		a c e
--	--	-------------



Figure 3-1: Activity Sequence to Establish a Baseline



3.1.2 Naming Configuration Items



[

 $\top_{a,c,e}$

[

] ^{a,c,e}

3.1.3 Acquiring Configuration Items

All configuration items are released under their revision number following the procedure NA 6.5, “Document Control (Scottsdale Operations)” (Reference 9).

3.1.4 Control of Software Tools

[

a
c
e
]

3.2 CONFIGURATION CONTROL

Configuration control describes the activities for requesting, evaluating, approving or disapproving, and implementing changes to configuration items.

3.2.1 Change Control

[

a.
c.
e
]

3.2.2 [] a,c,e

[

] a,c,e

[

] ^{a,c,e}

3.2.3 Configuration Item Release, Archive and Retrieve Activities

3.2.4 Issue Reporting, Tracking and Corrective Action Activities

3.2.5 Approval Authority – the Change Control Board (CCB)

3.3 CONFIGURATION STATUS ACCOUNTING

3.4 CM SUMMARY REPORT

[a c e]

3.4.1 [] a,c,e

[a c e]

3.5 CONFIGURATION AUDITS AND REVIEWS

3.5.1 Internal Reviews

[] a,c,e

[

]a,c,e

3.5.2 Managerial Reviews

[

a.c.e

3.6 INTERFACE CONTROL

Interface with external design organizations is not part of the ALS Platform project. Interface control with external design organizations will be defined as part of application specific projects, as applicable.

3.7 SUBCONTRACTOR / VENDOR CONTROL

Subcontracted software is not used in the ALS platform. If subcontractor or vendor software is used the application specific project will describe these activities.

**SECTION 4
SCHEDULES**



A
C
C

SECTION 5
RESOURCES

The tools, techniques, and procedures identified in the ALS CM Plan are similar or identical to the procedures described in QMS, “Quality Management System” (Reference 7), CSI personnel require no additional training to follow the ALS CM Plan.

5.1 CONFIGURATION STATUS ACCOUNTING SPREADSHEET

[a c e	
5.2	[] A,C,E	
[a c e	
5.3	[] A,C,E	
[a c e	

SECTION 6 PLAN MAINTENANCE

This plan may be amended as necessary. All revisions must be reviewed and approved following the procedure NA 6.5, “Document Control (Scottsdale Operations)” (Reference 9).

6.1 RESPONSIBILITIES

The Configuration Manager is responsible for monitoring the ALS CM Plan to request/perform changes as needed.

The Configuration Manager is responsible for maintaining the CM Summary Reports and the Configuration Status Accounting documents.

6.2 CHANGE APPROVALS

All changes to the ALS CM Plan must be reviewed by the Configuration Manager, reviewer and approver listed in the approvals section. Changes are also reviewed by the Project Manager if he is not serving as the Configuration Manager.

APPENDIX A

[

] A,C,E

a c e



Figure A-1: []^{a,c,e}



Figure A-2: []^{a,c,e}

a. c. e

Figure A-4: []^{a,c,e}