



Westinghouse Non-Proprietary Class 3

ALS Configuration Management Plan

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APPROVALS

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WESTINGHOUSE NON-PROPRIETARY CLASS 3

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Revision	Name and Title

REVISION HISTORY

RECORD OF CHANGES

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DOCUMENT TRACEABILITY & COMPLIANCE

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OPEN ITEMS

Item	Description	Status

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ACRONYMS AND TRADEMARKS

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

Acronym	Definition
ABTS	ALS Board Test System
ALS	Advanced Logic System
ASE	ALS Simulation Environment
ASU	ALS Service Unit
BOM	Bill of Materials
CCB	Change Control Board
CI's	Configuration Items
CM	Configuration Management
CSA	Configuration Status Accounting
CSI	CS Innovations
CVS	Concurrent Versioning System
ECN	Engineering Change Notification
EQ	Equipment Qualification
FPGA	Field Programmable Gate Array
IDI	Isolated Development Infrastructure
IEEE	Institute of Electrical and Electronics Engineers
VV	Verification and Validation
IV&V	Independent Verification and Validation
M&TE	Measurement and Test Equipment
MSFIS	Main Steam and Feedwater Isolation System
NCR	Non-Conformance Reports
NVM	Non-Volatile Memory
PCB	Printed Circuit Board
PCBA	Printed Circuit Board Assembly
PM	Project Manager
QA	Quality Assurance
QAR	Quality Assurance Reports
RAI	Review Action Item
RTM	Requirements Traceability Matrix
TIR	Test Incident Report
WEC	Westinghouse Electric Company

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 to the owners' benefit, without intent to infringe.

GLOSSARY OF TERMS

Standard terms used in the document are defined in 6002-00040 – ALS Terms and Abbreviations, 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

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**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.

The ALS CM Plan is based on the guidance provided in IEEE Std 828-1998, the CSI document 9000-00000 -Quality Assurance Manual, WEC 23.20 – Westinghouse Nuclear Automation / CS Innovations Interface Agreement and 6002-00000 - ALS Management Plan.

1.2.1 ALS Development Overview

Each ALS board is developed in an independent development flow with separate:

- Requirements
- Specifications





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



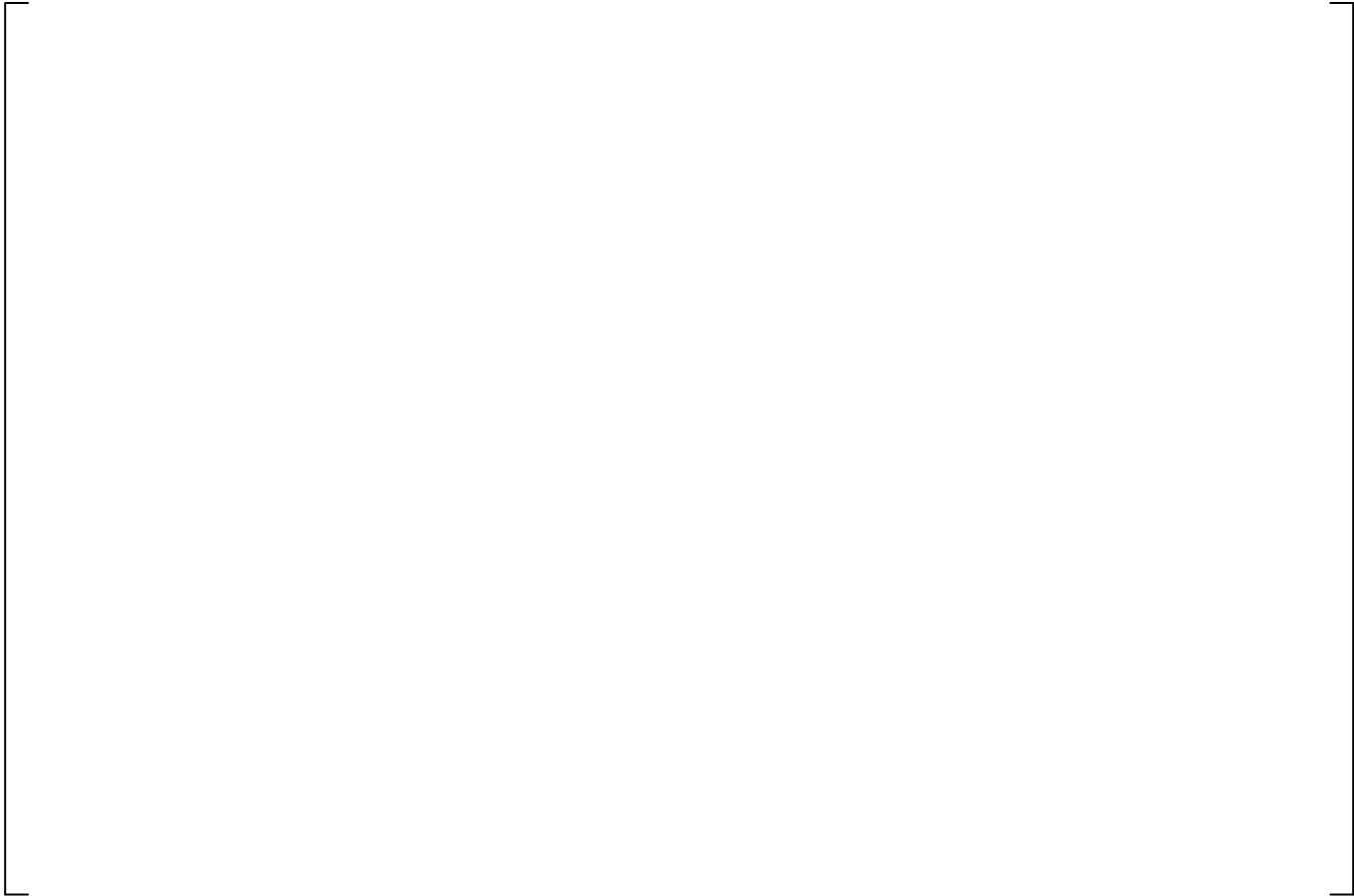


Figure 1-2: Multiple ALS Board Development Flow

1.2.2 ALS Board Configuration Items



Figure 1-3: Primary ALS Board CIs

a.c.c

1.2.3 Support Configuration Items

a.c.c

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C
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1.2.4 Other Items Under Configuration Control

A
C
C
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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.

(Last Page of Section 1)

SECTION 2 CONFIGURATION MANAGEMENT

2.1 ORGANIZATION

Refer to 6002-00000 – ALS Management Plan for information regarding the project organization.

2.2 CM RESPONSIBILITIES

Refer to Table 3-1: Roles and Responsibilities of 6002-00000 – ALS Management Plan

2.3 APPLICABLE POLICIES, DIRECTIVES, AND PROCEDURES

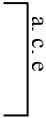
All activities performed in the ALS CM Plan shall be conducted in accordance with 9000-00000 – Quality Assurance Manual, WEC 23.20 – Westinghouse Nuclear Automation / CS Innovations Interface Agreement and 6002-00000 – ALS Management Plan.

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**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 version control. Unique identifiers are assigned to all CI's according to the document control procedures defined by 9000-00000 – Quality Assurance Manual.



3.1.1 Configuration Items (CIs)



3.1.1.1 Development Area

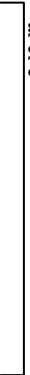


a.c.e

d. c. e

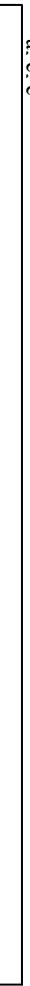
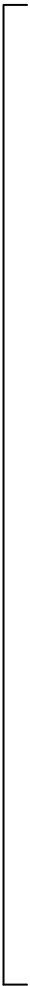
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3.1.1.3 Release Area



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3.1.1.4 Configuration Management Baseline

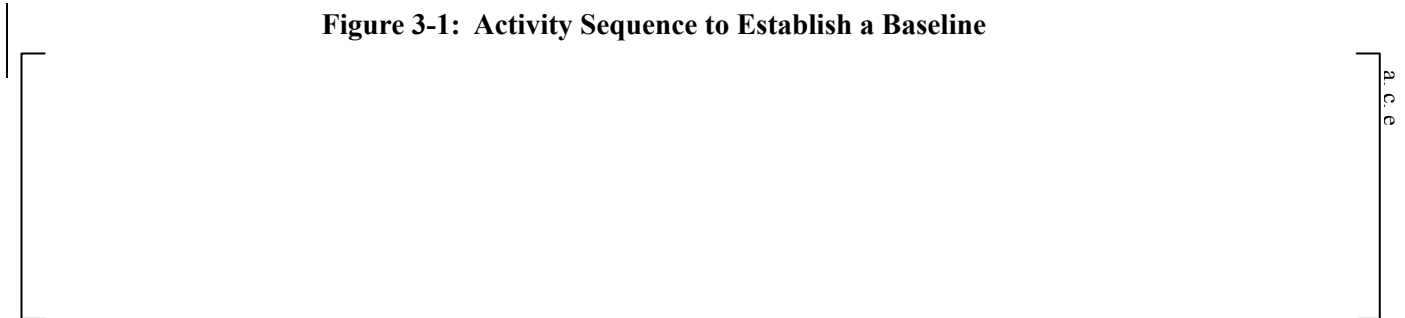


A
C
E



a. c. e

Figure 3-1: Activity Sequence to Establish a Baseline



a. c. e

3.1.2 Naming Configuration Items



a. c. e



a
c
e

3.1.2.1 Identification of the ALS board



a
c
e

a
c
c
e

3.1.3 Acquiring Configuration Items

All configuration items are released under their revision number following the 9000-00600 - Document Control Procedure.

3.1.4 Control of Software Tools

a
c
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

[Redacted content for section 3.2.1]

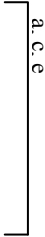
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3.2.2 [a,c,e

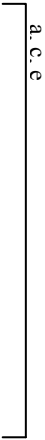
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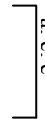
3.2.3 Configuration Item Release, Archive and Retrieve Activities



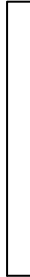
3.2.4 Issue Reporting, Tracking and Corrective Action Activities



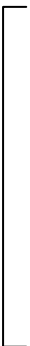
3.2.5 Approval Authority – the Change Control Board (CCB)



3.3 CONFIGURATION STATUS ACCOUNTING



3.4 CM SUMMARY REPORT



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3.4.1 [] a,c,e

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3.5 CONFIGURATION AUDITS AND REVIEWS

3.5.1 Internal Reviews

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3.5.2 Managerial Reviews

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.

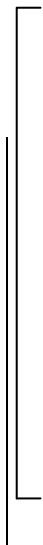
3.7 SUBCONTRACTOR / VENDOR CONTROL

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

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**SECTION 4
SCHEDULES**



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**SECTION 5
RESOURCES**

The tools, techniques, and procedures identified in the ALS CM Plan are similar or identical to the procedures described in 9000-00000 – Quality Assurance Manual CSI personnel require no additional training to follow the ALS CM Plan.

5.1 CONFIGURATION STATUS ACCOUNTING SPREADSHEET

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5.2 [] a,c,e

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] a.c.e

5.3 [] a,c,e

[

] a.c.e

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SECTION 6 PLAN MAINTENANCE

This plan may be amended as necessary. All revisions must be reviewed and approved following the 9000-00600 - Document Control procedure.

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.

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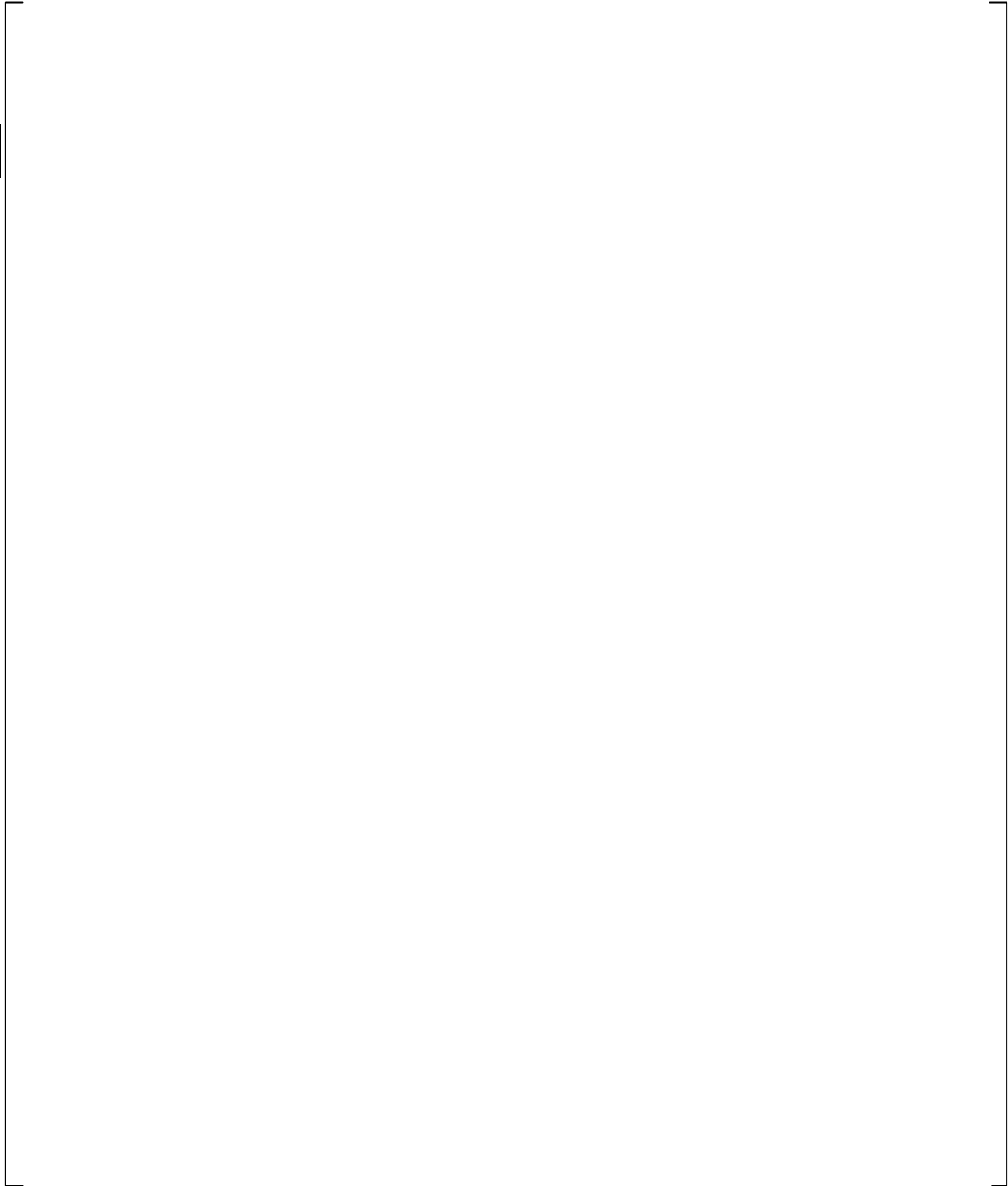
APPENDIX A

[a,c,e]

a,c,e

Figure A-1: CVS Repository Example

a.c.e



To enable review of the CVS tags a “Tag Report” may be generated for each release tag in the CVS repository. The Tag Report contains the information shown in the text box on the right. The Tag Report lists all files tagged with the specified tag (als301_1200-00002-0p52 in this case) and for each file the tagged revision is listed.



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