Enclosure II to GC 08-0024

CS Innovations Report 6002-00002, "ALS Configuration Management Plan," Rev. 2, Non-proprietary

MAIN STEAM & FEEDWATER ISOLATION SYSTEM (MSFIS) CONTROLS REPLACEMENT

VENDOR SUBMITTAL APPROVAL

Name/Description	Document #/Rev	Date Submitted	Vendor Name	Comments
ALS CM Plan	6002-00002 Rev. 2	7/29/2008	CS Innovations	The purpose of Revision 2 is to provide proprietary and non-proprietary versions of the document. No other significant changes to the previously approved Revision 1.

Approver Signature	Approval Date
	7/30/2008

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ALS
Advanced Logic System

6002-00002
ALS Configuration Management Plan

Revision 2
July 28, 2008

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6002-00002 - ALS Configuration Management Plan
Revision 2
July 28, 2008

APPROVALS

Approvals are available in the
proprietary version of the document.

RECORD OF CHANGES

Revision	Date	Description of changes	Made by
1	Feb 21 2008	Initial release	Sten Sogaard
2	July 28 2008	Added Proprietary / Non-Proprietary statements.	Sten Sogaard

OPEN ITEMS

Item	Description	Status

Table of Content

1 Introduction

1.1 Purpose

The ALS Configuration Management Plan (ALS CM Plan) describes the CM organization and practices used for baseline control of ALS related configuration items. The ALS CM Plan is a platform specific CM Plan used for initial design activities related to ALS boards, but also for modifications to released ALS boards after baselining. Modifications include changes to ALS board hardware design, FPGA design or SetPoints.

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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 CS Innovations personnel associated with managing, developing, reviewing, and providing quality assurance of ALS based products.

The CM Plan is based on the guidance provided in IEEE Std 828-1998 and CS Innovations' QA Manual.

1.2.1 ALS Development Overview

The Advanced Logic System (ALS) technology is a control system platform designed by CS Innovations. The focus of the ALS technology is to make a reliable and deterministic control system which may be used in applications where safety is in focus. The ALS platform consists of control, input, output, and service boards mounted in 19" sub-racks to provide a specific control solution.

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The ALS platform is 19" rack mountable where sub-racks are configured with ALS board to perform a specific function. A sub-rack backplane allows for intercommunication between the ALS boards and for ALS input and output boards to connect to field signals. The field connectors will normally be accessible from the back side of the sub-rack.

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

- Requirements
- Specifications

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The ALS board developments may run in parallel, or be spread out over time. CS Innovations will add additional ALS board developments as needs and markets are identified. Whenever new ALS board developments are added it will result in a new revision of the project management plan. Figure 2 illustrates how ALS board developments are performed in parallel with additional developments being added as needed.

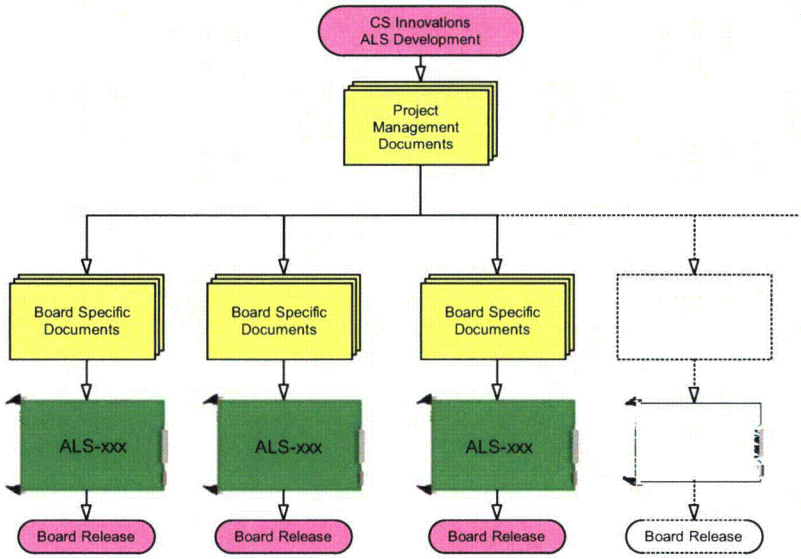

Figure 2: Multiple ALS board developments of the same Project Management documents.

1.2.2 ALS Board Configuration Items

The ALS board itself consists of the following 3 Configuration Items (CIs):

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Table 1: Ownership of ALS Board CIs

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1.2.3 Support Configuration Items

1.2.3.1 Hardware and software used for programming FPGA

The FPGA Image is programmed/burned into the FPGA using the appropriate programming tool endorsed by the FPGA manufacturer.

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1.2.4 Other Configuration Items

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1.2.5 Limitations

N/A

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1.4 Terms and Abbreviations

Generally all terms and abbreviations are defined at the first instance of use with the exception of terms and abbreviations which are determined to be industry standard. For a complete list refer to 6002-00040 which defines common terms and abbreviations used in the ALS Platform.

2 CM Management

2.1 Organization

Figure 3 shows the organizational structure of the development organization. CS Innovations is a small organization with a small management team, as a result some activities which in larger organizations require a separate management have been merged (e.g. Manufacturing and Engineering are under the Project Managers control).

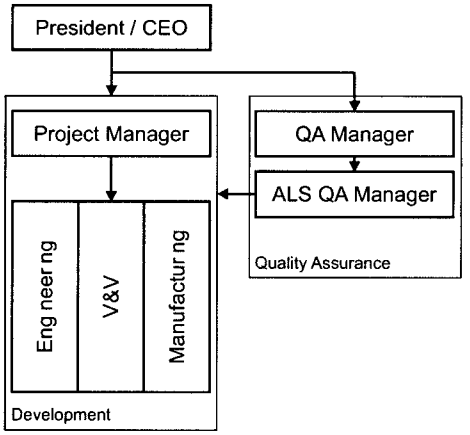

Figure 3: Organizational Structure

2.2 CM Responsibilities

Table 2: CM Roles and Responsibilities

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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", CS Innovations, LLC, Revision 3
- 6002-00001 – "ALS Quality Assurance Plan", CS Innovations, LLC

All configuration items must be reviewed and approved prior to release following the document control requirements defined by the CS Innovations Quality Assurance program. (Reference 9000-00600)

- 9000-00600 – "Document Control", CS Innovations, LLC

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 the CS Innovations Quality Assurance Program (Reference 9000-00600).

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3.1.1 Configuration Items (CIs)

All CIs associated with an ALS project are listed on the template in Appendix B. When an ALS board development is initiated, an Excel Spreadsheet containing the information show in Appendix B is prepared and placed in:

CVS: /D002/ALS-xyz/doc/ALS-xyz CM Report/Configuration Status.xls

The document is created and maintained by the person responsible for Configuration Management, generally the Project Manager.

As documents are completed and assigned a revision number the spreadsheet is updated to reflect the newest information. The Project Manager is responsible for identifying and adding CI's to the spreadsheet as needed.

The Configuration Status.xls document is printed to PDF files at milestones, baselines, and other points of interest during the board development and will later be used as a part of the CM report. The PDF printout must be reviewed and approved according to the document control procedure on baselines and releases.

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3.1.1.2 Release Area

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3.1.1.3 Baseline

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3.1.2 Naming Configuration Items

All documents are assigned a unique CS Innovations Part Number. Documents are named:

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3.1.2.1 Identification of the ALS board

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3.1.3 Acquiring Configuration Items

All configuration items are released under their revision number following the document control procedure described by the CS Innovations QA program (reference 9000-00600).

3.1.4 Control of Software Tools

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The exact revision number and storage location of each software tool used in the ALS development are tracked on the Configuration Status spreadsheet. (Reference Appendix B).

3.2 Configuration Control

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

3.2.1 Change Control

The purpose of the change control activities is to ensure the recording, evaluation, resolution and approval of changes. The CI must be baselined according to the schedule shown in Chapter 4.

Guidance includes:

1) Change control shall preserve the integrity of the configuration items by providing protection against unauthorized change.

2) Change control shall ensure a change is assessed to determine whether or not the configuration identity needs to be updated
3) Changes to configuration items under change control should be recorded, approved, and tracked.
4) Change control should ensure traceability of changes to the reason for the change
5) Change control should ensure that the impact of the change is assessed to determine the effect of the change on the outputs of the processes and that the output data is updated
6) Change control should ensure that feedback is provided to affected processes

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3.2.2 Change Control Prior to Baseline

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3.2.3 Configuration Item Release, Archive and Retrieve Activities

The purpose of the release activity is to place data items under configuration management control to ensure that only authorized data is used in other activities, and to ensure that data items associated with the product can be retrieved in case of a need to duplicate, regenerate, re-test or modify the product.

CS Innovation document control procedure (Reference 9000-00600) must be followed for all releases.

3.2.4 Issue Reporting, Tracking and Corrective Action Activities

The purpose of issue reporting, tracking and corrective action is to record problems and ensure correct disposition and resolution. Problems may include non-compliance with specifications or standards, deficiencies of life cycle process outputs, anomalous behavior of products, and inadequacy or deficiency of tools and technology processes. Issue reporting should be implemented no later than the establishment of a baselined.

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3.2.5 Approval Authority – the Change Control Board (CCB)

Approval authority for baselining and acceptance/rejection of ECNs shall be placed to members of the CCB.

CSI's CCB has the following members:

- President
- Project manager

3.3 Status Accounting

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3.4 Configuration Audits and Reviews

3.4.1 Internal Reviews

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3.4.2 Managerial Reviews

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4 Schedules

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5 Resources

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

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6 Plan Maintenance

This plan may be amended as necessary. All revisions must be reviewed and approved following the document control procedure (Reference 9000-00600).

6.1 Responsibilities

The Project Manager is responsible for monitoring the ALS CM Plan to ensure and request/perform changes if needed.

The Project Manager is responsible for maintaining the CM Report including (Reference 5.2).

6.2 Change Approvals

All changes to the CM Plan must be reviewed by the President, the Project Manager, and the ALS QA Manager.

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