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NUCLEAR QUALIFIED PRODUCTS

Non -Proprietary copy per 10CFR2.390
- Areas of proprietary information have been redacted.
- Designation letter corresponds to Triconex proprietary policy categories (Ref. transmittal number TCXNRC-09-01, Affidavit, Section 4.)

SUMMARY OF THE INVENSYS PROJECT PROCEDURES MANUAL FOR SAFETY-RELATED WORK

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SUMMARY OF THE INVENSYS PROJECT PROCEDURES MANUAL FOR SAFETY-RELATED WORK

1.0 OVERVIEW

This attachment defines the administrative controls for Invensys nuclear and commercial application project activities conducted at the Invensys Irvine CA facility. An application project is defined as any project that incorporates standard Tricon products into a fully operational integrated system in accordance with customer specified requirements.

The procedures contained within the Project Procedures Manual (PPM) are intended to implement key areas of the Invensys Nuclear Quality Assurance Manual as they relate to application project activities.

The PPM and its implementation has been audited and deemed to be satisfactory by several outside organizations including nuclear customers, NUPIC, and the Quality & Vendor Branch of the NRC Office of New Reactors (See Inspection Report identified as ADAMS Accession # ML082460540).

See Appendix 2 for an overview of a typical application project implementation process. (Note: Specific procedure numbers and indicated section numbers are subject to change)

2.0 SCOPE

The Nuclear Quality Assurance Manual is part of the overall Invensys Quality Management System. Each Invensys facility/organization performing nuclear safety-related activities shall satisfy the requirements of the Nuclear Quality Assurance Manual, which complies with 10 CFR 50 Appendix B, in addition to the quality requirements of IS0 9001:2008. Project-specific Quality Manuals or Plans may be developed to supplement or clarify applicability of these requirements and to capture any unique customer contractual requirements or other nuclear quality standards when required.

The Project Procedures Manual (PPM) governs all project quality affecting activities performed by Project personnel at the Irvine facility. The PPM implements the requirements of 10CFR Appendix B, NQA-1, and applicable Regulatory Guides and industry Standards. Specific standards associated with software activities include, but are not limited to: Regulatory Guide 1.168, IEEE 830, IEEE 1016, and IEEE 1012. The Irvine facility PPM may also be used by other Invensys facilities.

For nuclear safety-related projects the applicable procedures contained within the Project Procedures Manual (PPM) will be followed. For nuclear non-safety-related and other projects where the customer has invoked augmented quality requirements, the Project Quality Plan will specify the applicable procedures or portions thereof to be followed.

3.0 ORGANIZATION

3.1 TYPICAL NUCLEAR APPLICATION PROJECT ORGANIZATION CHART

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5.0 REFERENCES AND RELATED DOCUMENTS

10 CFR 50 Appendix B
NRC NUREG 0800 Chapter 7 (2007)
NRC Branch Technical Position 7-14 (2007)
NRC Regulatory Guide 1.152 Rev 2
Invensys Quality Management System Requirements
Invensys Nuclear Quality Assurance Manual
PPM 0.0 Introduction
PPM 1.0 Application Project Administrative Control
PPM 2.0 Design Control
PPM 2.02 Preparation and Verification of Project Design Calculations
PPM 2.03 Project System Failure Modes and Effects Analysis
PPM 2.04 Application Software Specification Content & Format
PPM 3.0 Drawing Preparation & Control
PPM 4.0 Document & Data Control
PPM 5.0 Materials & Services
PPM 5.02 Receiving & Receipt Inspection
PPM 5.03 Material Handling & Storage
PPM 5.04 Material Packaging & Shipping
PPM 6.0 Test Control
PPM 7.0 Application Program Development
PPM 7.01 Software Verification
PPM 8.0 System Integration Implementation
PPM 8.02 Nuclear Project Certification of Materials & Services
PPM 9.0 Personnel Training & Qualification
PPM 10.0 Nonconformance & Corrective Action

Appendix 1

Terms and Acronyms Used In Project Procedures

ARR	Action Request Report
AVL	Approved Vendor List
BODD	Basis of Design Document
BOM	Bill of Materials
CAD	Computer Assisted Design
CAR	Corrective Action Request
CCE	Critical Characteristics Evaluation
CD/ER	Customer Deviation/Exception Request
CD-ROM	Compact Disk-Read Only Memory
DPE	Dedicated Parts Evaluation
DRC	Design Review Checklist
DRCS	Document Review Comment Sheet
DRR	Document Review/Release
DV	Design Verifier
EDM	Engineering Department Manual
FAT	Factory Acceptance Test
HMI	Human/Machine Interface
HRS	Hardware Requirements Specification
HVT	Hardware Validation Test
I/O	Input/Output
IPL	Integration Parts List
IRE	Independent Reviewer (not organizationally independent)
IRE/V&V	Independent Review/Verification and Validation (organizationally independent)
IT	Information Technology
IV&V	Independent Verification and Validation (not organizationally independent)
M&TE	Measuring and Test Equipment
MCL	Master Configuration List
MDM	Manufacturing Department Manual
NQEL	Nuclear Qualified Equipment List
NRC	Nuclear Regulatory Commission
PE	Project Engineer
PFVP	Proper Functioning Verification Procedure
PM	Project Manager
POCM	Purchase Order Compliance Matrix
PPM	Project Procedures Manual

Appendix 1 – (cont.)

Terms and Acronyms Used In Project Procedures

PQAE	Project Quality Assurance Engineer
PQAM	Project Quality Assurance Manager
PQP	Project Quality Plan
PRC	Project Review Committee
QA	Quality Assurance
QAM	Quality Assurance Manual
QARB	Quality Assurance Review Board
SDB	System Design Basis
SDC	Software Development Checklist
SDD	Software Design Description
SIDR	System Integration Deficiency Report
SRS	Software Requirements Specification
SVT	Software Verification Test
TRL	Technical Requirements List
TSAP	TriStation Application Program
UVA	Unverified Assumptions
V&V	Verification and Validation
VTP	Validation Test Procedure

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Appendix 2 – (cont.)
Typical Application Project Flow Chart

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Appendix 2 – (cont.)
Typical Application Project Flow Chart

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Appendix 2 – (cont.)
Typical Application Project Flow Chart

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Appendix 2 – (cont.)
Typical Application Project Flow Chart

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Appendix 2 – (cont.)
Typical Application Project Flow Chart

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Appendix 2 – (cont.)
Typical Application Project Flow Chart

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