PSNN-2014-1202

US Safety-Related

		Project Document No.	Rev.	-	1
The use of the im anyone for any purp not authorized. In authorization from CORPORATION n assumes no liabilit usefulness of the inf TOS NUCLEAR ENE	formation contained in this do ose other than that for which it is the event the information is u TOSHIBA CORPORATION, nakes no representation or w y as to the completeness, a ormation contained in this docur SHIBA CORPORATION RGY SYSTEMS & SERVIO	becument by s intended is sed without TOSHIBA arranty and ccuracy, or nent. CES DIV.			
	Commer	cial Dedication Instru	ction fo	r	
	Dedication of]	Modules from Comm	ercial S	upplier	·
	(0	common Requirement	s)		
	····			-	
	Customer Name	N/A (As per each Job Ord	er)	_	
	Droject Namo	N/A (As per each Job Ord	er)		
	Floject Maille				
	Item Name	N/A (As per each Job Ord	er)	-	
	Item Name Item Number	N/A (As per each Job Ord N/A (As per each Job Ord	er)	_	
	Item Name Item Number Job Number	N/A (As per each Job Ord N/A (As per each Job Ord N/A (As per each Job Ord	er) er) er)	-	
	Item Name Item Number Job Number Product Name	N/A (As per each Job Ord N/A (As per each Job Ord N/A (As per each Job Ord N/A (As per each Job Ord	er) er) er) er)		
	Item Name Item Number Job Number Product Name Model Number	N/A (As per each Job Ord N/A (As per each Job Ord	er) er) er) er) er)		

Rev.	Initial Issue Date	Issued by	Approved by	Reviewed by	Prepared by	Document filing No.
0	Dec.21,2011	Nuclear Instrumentation Systems Development & Designing Group	K.Wakita Dec.21,2011	T. Tarumi Dec.21,2011	T. Furusawa Dec.20,2011	9B8K0057

Table of Contents

1	Int	roduction4
	1.1	Purpose ······4
	1.2	Scope ·····4
2	De	finitions and Abbreviations4
•	2.1	Definitions4
	2.2	Abbreviations ······4
3	Pro	duct Identification5
4	Pro	oduct Description6
5	Fu	nction of Parent Component6
6	Sat	fety-Related Function6
1	6.1	Functional Classification
7	Cri	tical Characteristics for Design6
	7.1	Physical and Performance Characteristics6
	7.2	Dependability
8	Cri	tical Characteristics for Acceptance, Verification Methods and
Re	espor	sibilities7
	8.1	Verification of Simple Characteristics7
	8.2	Verification of CC Depending on Supplier Testing7
	8.3	Verification of "Dependability" of FPGA modules7
	8.3.	1 Built-in Quality
	8.3.	2 Configuration Control and Traceability of Software and Hardware
9	Ve	rification Instruction10
	9.1	Recurring Activities 10
	9.1 9.1.	Recurring Activities 10 1 Oversight of Design Review Meeting
	9.1 9.1. 9.1.	Recurring Activities 10 1 Oversight of Design Review Meeting
	9.1 9.1. 9.1. 9.1.	Recurring Activities 10 1 Oversight of Design Review Meeting 10 2 Review of Supplier Documents 10 3 Oversight of Supplier Testing 11
	9.1 9.1. 9.1. 9.1. 9.1.	Recurring Activities 10 1 Oversight of Design Review Meeting 10 2 Review of Supplier Documents 10 3 Oversight of Supplier Testing 11 3.1 Oversight of FPGA Testing 11
	9.1 9.1. 9.1. 9.1. 9.1. 9.1.	Recurring Activities 10 1 Oversight of Design Review Meeting 10 2 Review of Supplier Documents 10 3 Oversight of Supplier Testing 11 3.1 Oversight of FPGA Testing 11 3.2 Oversight of Module Validation Testing 11

Ι

			9B8K0057 Rev.1		
9	P.2 Per	iodic Activities	12		
	9.2.1	CG Survey of PPDD			
	9.2.2	Survey of TDMS			
	9.2.3	Survey of Microsemi SoC (formerly Actel)			
	9.2.4	Survey of			
	9.2.5	Survey of () ^{a,c}	24		
10	Accept	ance Documentation	27		
11	Refere	nces	27		
12	Inspec	tion and Test Procedure			
13	Supple	ements	28		

1 Introduction

1.1 Purpose

The purpose of this Commercial Dedication Instruction (CDI) is to describe acceptance methods and acceptance criteria commonly applied to dedication of modules provided by commercial suppliers including Power Platform Development Department (PPDD).

1.2 Scope

This CDI addresses on verification of supplier control capability that can be verified through Commercial Grade (CG) Survey and source verification. This CDI is used with separate CDIs for each specific module. Separate CDIs specific to each module address on determination of physical and performance Critical Characteristics (CCs) specific to each module. This CDI is prepared in accordance with NQ-4001 (Reference (8)).

This CDI is applied to dedication of modules procured from PPDD that is manufactured by Toshiba Design and Manufacturing Service Corporation (TDMS) and (______).^{a,c} This CDI also addresses on evaluation of Microseimi Soc Product Group (formerly Actel), the supplier of FPGA devices, and (______).^{a,c} This distribution agent in Japan.

2 Definitions and Abbreviations

2.1 Definitions

Dependability: "As used in this document, a broad concept incorporating various characteristics of digital equipment, including reliability, safety, availability, maintainability, and others."

[This definition is extracted from EPRI TR-106439 (Reference (1))]

2.2 Abbreviations

- CC Critical Characteristic
- CCA Critical Characteristics for Acceptance
- CCD Critical Characteristics for Design
- CDI Commercial Dedication Instruction
- CG Commercial Grade
- DR Design Review
- EPRI Electrical Power Research Institute
- FE Functional Element
- FPGA Field Programmable Gate Array
- I&C Instrumentation and Control
- IV&V Independent Verification and Validation
- NED Nuclear Energy Systems & Services Division

株式会社 東芝 府中事業所原子力

TOSHIBA CORPORATION, NICSD

5/29

NICSD	Nuclear Instrumentation & Control Systems Department
NICS-QA	Quality Assurance Group for Nuclear Instrumentation & Control Systems
NICS-QC	Quality Control Group for Nuclear Instrumentation & Control Systems
NISD	Nuclear Instrumentation Systems Development & Designing Group
NQ	Nuclear Quality
PPDD	Power Platform Development Department
QA	Quality Assurance
QC	Quality Control
TDMS	Toshiba Design and Manufacturing Service Corporation
V&V	Verification and Validation

3 Product Identification

(1) Part Number

Specified in CDI specific to each module

(2) Model Number

Specified in CDI specific to each module

(3) Drawing Number

Specified in CDI specific to each module

(4) Manufacturer's Name

TOSHIBA Corporation, Power Systems Company, Power Platform Development Department (PPDD)

Sub supplier:

Toshiba Design and Manufacturing Service Corporation (TDMS)

(5) Manufacturer's Model Number

Specified in CDI specific to each module

(6) Manufacturer's Catalog Number

N/A

ĺ

(7) Name plate data

N/A

- (8) Applicable Material/Part Specification Number N/A
- (9) Identification of Parent Component

Specified in CDI specific to each module

(10) Software Version

N/A

(11)Firmware Version

FPGA code name and registration number are specified in CDI specific to each module

(Only applicable to module that has FPGAs)

4 Product Description

- General Name of Product
 Specified in CDI specific to each module
- (2) Product Name of Manufacturer Specified in CDI specific to each module

5 Function of Parent Component

Function of parent component shall be described in CDI specific to each module.

6 Safety-Related Function

Safety-related function of product shall be described in CDI specific to each module.

6.1 Functional Classification

The functional mode and functional classification shall be described in CDI specific to each module

7 Critical Characteristics for Design

7.1 Physical and Performance Characteristics

Critical Characteristics for Design (CCDs) that are physical and performance characteristics specific to each module are determined and documented in CDI specific to each module.

7.2 Dependability

FPGA modules that include FPGA logic need special attention when indentifying CCDs. Dependability becomes significantly more important when dedicating digital equipment. If there is a problem in the FPGA logic that degrades the dependability of a FPGA-based module, it reflects a design error that was built into the FPGA-based module, or a mismatch between the functional requirements and the FPGA-based module design. The "Dependability" is a CCD of FPGA-based module.

7/29

8 Critical Characteristics for Acceptance, Verification Methods and Responsibilities

8.1 Verification of Simple Characteristics

The relatively simple CCDs such as "Dimension" and "Mass" are be able to be verified as Critical Characteristics for Acceptance (CCAs) by measurement at receiving inspection or testing after receipt (Method 1). Special test and inspection (Method 1) are recurring activity. The detailed acceptance method shall be defined in CDI specific to each module.

8.2 Verification of CC Depending on Supplier Testing

Some CCDs are able to be measured as CCAs by the supplier testing and NICSD intends to receive Certificate of Conformance (C of C) and the supplier's test record during the receiving inspection, the following supplier's process to control CC shall be verified, as a minimum, through CG survey (Method 2) as described in Sections 9.2.1, and 9.2.5.

- Design Control (Document Control)
- Inspection and Test Control
- Measuring and Test Equipment (M&TE) Control

8.3 Verification of "Dependability" of FPGA modules

To verify the dependability of FPGA modules, the following CCAs ("Built-in Quality" and "Configuration Control and Traceability of Software and Hardware") related to supplier's control capability of CC shall be verified through CG survey (Method 2).

8.3.1 Built-in Quality

"Built-in Quality" through structured and controlled quality assurance processes for: design, testing, manufacturing, error tracking, problem reporting, and failure management shall be verified. The following PPDD processes to control CC shall be verified through CG survey (Method 2) as described in Section 9.2.1. For dedication of modules that do not have FPGAs, the following PPDD processes except "Software Control" shall also be verified through CG survey.

- Order Entry
- Design Control
- Manufacturing and Processes
- Inspection and Test Control
- Measuring and Test Equipment Control
- Software Control

Functional Element (FE) Development Process

Software Development Tool Control

To support the verification of "Built-in Quality," the following activities are performed as necessary.

• Oversight of design review meeting (Refer to Section 9.1.1)

8/29

- Review of supplier documents (Refer to Section 9.1.2)
- Oversight of supplier testing (Refer to Section 9.1.3)

8.3.2 Configuration Control and Traceability of Software and Hardware

The following supplier's process to control CC shall be verified through CG survey (Method 2) as described in Section 9.2.1. For dedication of modules that do not have FPGAs, the following PPDD processes except "Software Control" shall also be verified through CG survey.

- Order Entry
- Design Control
- Procurement Control (for verification of hardware configuration)
- Material Identification and Control (for verification of hardware configuration)
- Inspection and Test Control
- Software Control

Functional Element (FE) Development Process

Software Development Tool Control

To support the verification of "Configuration Control and Traceability of Software and Hardware," the following activity is performed as recurring activities.

• Witness of FPGA implementation at Toshiba Design and Manufacturing Service Corporation (TDMS) (Refer to Section 9.1.4)

In order to supplement the verification of module dependability, TDMS who manufactures printed circuit boards, procures parts, and assembles module, shall be evaluated. NICSD shall evaluate the following TDMS capabilities through survey to assure that the supplier ensure that TDMS procures the parts specified by PPDD, assembles modules using those parts and supplies those modules to PPDD as described in Section 9.2.2.

- Order Entry
- Design Control (Document Control)
- Procurement Control
- Material Identification and Control
- Manufacturing and Processes
- Inspection and test control
- Measuring and Test Equipment (M&TE) Control

In order to supplement the verification of FPGA-based module dependability, the supply chain of FPGA devices, which are critical parts to implement safety functions, shall be evaluated. NICSD shall evaluate the following Microsemi (Actel) capabilities through survey to assure that the supplier always supplies FPGAs specified by PPDD with a high and consistent quality as described in Section 9.2.3.

- Order Entry
- Design Control (Document Control)
- Procurement Control
- Material Identification and Control
- Manufacturing and Processes

- Inspection and test control
- Measuring and Test Equipment (M&TE) Control

- Order Entry
- Procurement Control
- Handling, Storage, Shipping and Distribution Control

For dedication of power supply modules, NICSD shall evaluate the following $\left(\begin{array}{c} \end{array}\right)^{a,c}$ capabilities through survey to assure that the supplier ensure that $\left(\begin{array}{c} \end{array}\right)^{a,c}$ procures the parts in accordance with parts list approved by Toshiba, assembles modules using those parts and supplies those modules to PPDD as described in Section 9.2.5.

- Order Entry
- Design Control (Document Control)
- Procurement Control
- Material Identification and Control
- Manufacturing and Processes
- Inspection and test control
- Measuring and Test Equipment (M&TE) Control

Item	Critical Characteristics for	Verification Method	Responsibi	Verification Method for	Responsibility
No	Acceptance	for Qualification	lity	Production	
1	Physical Characteristics Performance Characteristics (Simple characteristics that can be verified by special test and inspection)	-	-	Special test and inspection (See CDI specific to each module)	NICS-QC
2	Physical Characteristics Performance Characteristics (Depending of supplier testing)	CG Survey of supplier (Sections 9.2.1 and 9.2.5)	NICS-QA	Receiving inspection (See CDI specific to each module)	NICS-QC
3	Built-in Quality	CG Survey of PPDD (Section 9.2.1)	NICS-QA	Oversight of design review meeting (Section 9.1.1)	NICS-QC
				Review of supplier documents (Section 9.1.2)	NICSD IV&V Team
				Oversight of supplier testing (Section 9.1.3)	NICSD IV&V Team
4	Configuration Control and Traceability of Software and Hardware	CG Survey of PPDD (Section 9.2.1) Supplemental evaluation of sub-suppliers (Sections 9.2.2 to 9.2.5)	NICS-QA	Witness of FPGA implementation (Section 9.1.4)	NICS-QC

: Quality Control Group for Nuclear Instrumentation & Control Systems

Table 1 CCA and Verification Method

株式会社東芝府中事業所原子力 TOSHIBA CORPORATION, NICSD

NICS-QC

9B8K0057 Rev.1

NICSD IV&V Team : NICSD Independent Verification and Validation Team NISD : Nuclear Instrumentation Systems Development & Designing Group

9 Verification Instruction

9.1 Recurring Activities

9.1.1 Oversight of Design Review Meeting

The QC inspector of the NICSD performs oversight of Design Review (DR) meeting. The acceptance criteria are as follows;

- (1) The DR meeting shall be convened in accordance with the approved manufacturer's procedures.
- (2) The DR check sheet shall be prepared in accordance with the approved manufacturer's procedure.
- (3) The pending issue of the previous DR meeting shall be solved in accordance with the measures proposed in the previous DR meeting minutes, or the due date shall be revised appropriately.
- (4) The DR meeting minutes prepared by the manufacturer shall list issues (concerns) indicated during the DR meeting. Appropriate measures against these issues, responsibility and due date shall be proposed on the DR meeting minutes.

This activity is performed in accordance with the above criteria and using the form of "Source Verification Check Sheet and Record for Commercial Grade Dedication (Section 10(1))." The result is reported in the form of "Source Verification Report (Section 10(2))."

The oversight of DR meeting shall be performed as follows:

- PPDD shall identify module types subject to DR meeting in PPDD's development plan. PPDD may perform a DR meeting for all the multiple types of modules specified in the development plan at the same time. A QC Inspector identifies target module types in a "Source Verification Check Sheet and Record for Commercial Grade Dedication" and issues the record for each DR meeting that the inspector witnesses.
- DR meetings subject to witnessing for the first purchase order are DR-B2, C, E1, E2, F1 and F2 meeting. The DR meeting oversight phases after the first qualification are "DR-C and DR-F2," as a minimum. If any design changes are notified by PPDD, an oversight of DR meeting applicable to change activities is to be performed even for the second and subsequent purchase orders.

9.1.2 Review of Supplier Documents

The NICSD verifiers or independent reviewers perform review of the supplier documents. The results of the review are recorded in the "Design Verification Reports (Section 10(3))." This activity is conducted at the first qualification and when a major design change which needs documents review occurs after the first qualification. The acceptance criteria are as follow;

11/29

(1) The design and test documents shall satisfy requirements from procurement documents, and shall be complete, correct, consistent, and accurate.

9.1.3 Oversight of Supplier Testing

9.1.3.1 Oversight of FPGA Testing

The NICSD IV&V Team shall check PPDD Engineering Schedule and provide oversight at any point of time deemed necessary. Items to be checked during oversight include, but not limited to the following:

- Tester qualification status
- Tool control status
- Security environment
- Conformance of testing activities to test procedures that have been approved

The NICSD IV&V Team shall record what is checked during oversight and oversight results in a meeting minute.

The NICSD IV&V Team shall round up results of entire oversight activities for FPGA Testing in a V&V Report (Section 10(7)) created at the Integration and Implementation Phase. It shall be specified in a procurement document that NICSD has a right of access to PPDD.

9.1.3.2 Oversight of Module Validation Testing

The NICSD IV&V Team shall provide oversight on Module Validation Testing in the same manner as that provided in Section 9.1.3.1.

The NICSD IV&V Team shall round up results of entire oversight activities for Module Validation Testing in a V&V (Section 10(7)) Report created at the Module Validation Testing Phase.

9.1.4 Witness of FPGA Implementation

The QC inspector of the NICSD performs witness of the FPGA implementation. This witness verifies and ensures the validity of the FPGA Logic Implementation Request/Record Sheet and the implementation work by the Toshiba Design and Manufacturing Service Corporation (TDMS), the sub vendor of PPDD. The acceptance criteria for verification of this CCA are as follows;

- (1) FPGA implementation tool name and version shall be as specified by purchaser
- (2) Operations shall be performed under the antistatic work environment as below:
 - Wrist strap
 - Antistatic shoes
 - Antistatic mattress
- (3) Check sum

Check sum indication after implementation shall be identical the check sum specified by NICSD in the FPGA Logic Implementation Request/Record Sheet.

(Leading zero/zeroes of Check Sum NOT displayed in the screen:

e.g.) Check Sum "0203" => indication: 203 Check Sum "00FD" => Indication: FD)

- (4) FPGA program identification
 - The upper column of FPGA identification label shall be filled in as below:

A 6 digits ID number specified by NICSD in the FPGA Logic Implementation Request/Record Sheet, which is a part of the fuse-map registration number,

• It shall be confirmed that the control number printed in the lower column of FPGA identification label is as below:

YYMnnn

(Last 2 numbers of the year (2 digits), month (1 digit) and serial number (3 digits)).

(5) Labeling

FPGA identification label shall be attached onto FPGA device.

This activity is performed in accordance with the above criteria and using the form of "Source Verification Check Sheet and Record for Commercial Grade Dedication (Section 10(1))." The result is reported in the form of "Source Verification Report (Section 10(2))."

When the same type of multiple FPGA implementations is performed continuously over a certain duration by the same personnel and same procedure, a QC Inspector checks that a media provided by NICSD is used at the first FPGA implementation and also its checksum is a specified value. After all the FPGA implementations scheduled are complete, the inspector checks work records including FPGA implementation results prepared by TDMS.

The FPGAs which passed the inspection are mounted on printed circuit board and assembled as a module by TDMS. TDMS delivers the module to PPDD.

It shall be specified in a procurement document that NICSD has a right of access to PPDD and TDMS.

9.2 Periodic Activities

9.2.1 CG Survey of PPDD

NICSD performs CG Survey periodically. This activity is performed in accordance with the following criteria and using the form of "CG Survey Checklist (Section 10(5))." The result is reported in the form of "Commercial Grade Survey Report (Section 10(6))."

Process	No.	Acceptance Criteria (Process Details to be Surveyed)
Order Entry	1.1	PPDD shall have a process for the review and
		acceptance of NICSD purchase order including:
		• PPDD shall establish and implement the control to assure that
		when multiple manufacturing facilities are used, the purchase order
		requirements are being completely and correctly transmitted.
		• PPDD shall establish and implement the control to notify NICSD
		of any changes to CGI/CGS from previous purchase order.

4

		9B8K0057 Rev.1
Process	No.	Acceptance Criteria (Process Details to be Surveyed)
Design Control	2.1	PPDD shall establish and implement the control to assure that applicable design requirements and purchase order requirements are correctly translated into instructions, procedures or drawings. (Document Control)
		 PPDD shall establish and implement the controls to assure that the product complies with the manufacturers published product description. PPDD shall establish and implement the controls to assure that the published product description part numbers are traceable to design
	2.2	documents. The measures to control the issuance of documents including the changes shall be established and implemented. (Document Control) PPDD shall establish and implement the controls to assure that
		design changes are evaluated in a manner commensurate with the original design.
	2.3	Design and test documentation and records shall be collected, stored, and maintained in accordance with documented procedures.
	2.4	PPDD shall establish and implement failure management in their development process. PPDD shall evaluate failure modes and behavior of component under abnormal and faulted conditions to reflect the countermeasures to a design.
Procurement Control	3.1	PPDD shall establish and implement the measures to assure applicable requirement are included in procurement document to TDMS.
	3.2	PPDD shall establish and implement the control using procurement documents to ensure that TDMS procures the parts specified by PPDD, assembles modules using those parts and supplies those modules to PPDD. (PPDD shall establish and implement the control using procurement documents to ensure that () procures the parts in accordance with parts list approved by PPDD, assembles modules using those parts and supplies those modules to PPDD.)
		Procurement documents, including changes, include provisions for the following, as applicable:Scope of work
		 Technical requirements Documentation requirements Quality requirements
		 Special process control requirements (soldering, coating, in-circuit testing etc.) including procedure and personnel qualification. Requirements for FPGA implementation work (applied to TDMS). Necessary right of access to TDMS. Requirements for prevention and detection of counterfeit material
		and items • Necessary security requirements to TDMS

14/29

		<u>9B8K0057 Rev.1</u>
Process	No.	Acceptance Criteria (Process Details to be Surveyed)
	3.3	PPDD shall implement the control to assure that purchased items
		and services comply with procurement documents (receiving
		inspection, source inspection, validation testing).
	3.4	PPDD shall implement the control measure for evaluation and
		selection of supplier. PPDD shall ensure that only the selected
		suppliers are used for parts procurement.
	3.5	PPDD shall have a process to assure that changes to procurement
	}	documents are treated in the same manner as the original document
	3.6	PPDD shall implement inspection/testing processes (such as those
		used during receipt/in-process/final inspection or testing) for
		identifying suspect (including counterfeit/fraudulent) material, items
		or components that may not be those ordered.
Material	4.1	PPDD shall provide traceability to applicable chemical/physical
Identification and		analysis, certifications, test reports or other documents.
Control	4.2	PPDD shall establish and implement the controls to maintain
		lot/material identification throughout manufacturing operations
		including followings.
		• Definition of "lot" or "batch"
		Unique adding systems or practices used by the supplier to identify
		late
	4.2	DDDD shall actablish and implement the control to some items and
	4.5	PPDD shall establish and implement the control to assure items are
		adequately identified and maintained.
	4.4	PPDD shall establish and implement the control to prevent the use
	4.5	of incorrect of defective item.
	4.5	PPDD shall establish and implement the measures to control limited
		• Shelf life durations is established
		Storage/environmental controls is established
Manufacturing	5.1	PPDD shall establish and implement the control to assure that
and Processes		Instructions/Procedures/Drawings and their correct revision are
		specified on work instructions and are available where the activity is
		being performed.
	5.2	Personnel performing soldering, crimping, cable routing, assembly,
		coating, inspection and testing shall be trained and qualified as
		required, with documented records.
	5.3	PPDD shall establish and implement the methods for identification
		of finished parts and assemblies as specified in NICSD
1		procurement document including packing and preparation of C of C.
	5.4	PPDD shall establish and implement the methods for handling parts
		and assemblies to avoid damage due to electrostatic discharge
	55	
	5.5	Crimping, cable routing, and assembly shall be
		performed in accordance with correct revision of
Turner the state		Instructions/Procedures/Drawings
Inspection and	6.1	PPDD shall establish and implement the controls to assure that
1 est Control	1	activities affecting quality are inspected and tested for conformance
		to instructions, procedures, drawings and NICSD procurement
		aocuments.

_ _...

15/29

Process	No.	Acceptance Criteria (Process Details to be Surveyed)
	6.2	PPDD shall establish and implement the controls that include
	}	appropriate inspection/test planning, acceptance criteria and
		documentation of results.
	63	PPDD shall have a process to identify document and segregate
		nonconforming items PPDD shall implement problem reporting as
		required in NICSD procurement document
	6.4	PPDD shall establish and implement the control for the review
	0.7	accentance rejection renair or rework of nonconforming items
	6.5	The sumplier personnel performing inspection and testing shall be
	0.5	trained and qualified
Magazing and	71	The DDDD shall establish and implement the controls that M&TE is
Treasuring and	/.1	The PPDD shall establish and implement the controls that Mod IE is
Test Equipment		property controlled and calibrated.
Control:		The M&TE used during manufacturing and testing shall be
		identified in relevant records and test documents.
		The PPDD shall establish and implement calibration system
		including;
		• Calibration of M & TE and standards using standards traceable to
		nationally recognized standards shall be adequately controlled at
		periodic intervals.
		• Adequacy of standards to assure accuracy, stability, range and
		resolution required for their intended use.
		• Labeling/Identification of M&TE to prevent misuse
		• Adequate calibration records including as found/as left
		information is available
	1	A Evolution of nonconforming M&TE
		• Environmental conditions are controlled during calibration
Software Control	<u> </u>	DDDD shall perform on EDCA lifeguale development in accordance
Software Control	0.1	with documented docularment monodures
		DDDD -1-11
	8.2	PPDD shall establish and implement the measures to control
	1	software validation (i.e., the testing and evaluation of the completed
•		software to ensure compliance with software control requirements)
	8.3	PPDD shall establish and implement the corrective action measures
		to document software problems from internal and external sources.
	8.4	PPDD shall establish and implement the controls to ensure that all
		users (internal and external) that could potentially be impacted are
	Į	notified of the software problem and corrective actions and the
		impact of the deficiencies on that customer.
	8.5	PPDD shall establish and implement the documented measures to
		control software verification determining whether or not the product
		of a given phase of the software development cycle fulfill the
		requirements imposed by the previous phase.
	8.6	PPDD shall establish and implement the documented measures to
		control configuration baseline of the software code after review
		validation, verification, approval and release for use
	87	PPDD shall establish and implement the documented measures to
	0.7	control changes or revisions to the software code are developed and
		subjected to the same levels of control as the original code
		subjected to the same revers of control as the original code.

株式会社東芝府中事業所原子力 TOSHIBA CORPORATION, NICSD

1

16/29

		<u>9B8K0057 Rev.1</u>
Process	No.	Acceptance Criteria (Process Details to be Surveyed)
	8.8	PPDD shall establish and implement the documented measures to
		ensure that use of software tool is identified, controlled, and the
	,	configuration is traceable for the application used.
	8.9	FPGA designer and module designer shall be trained and qualified.
,	8.10	PPDD shall establish and implement the documented measures to control software development tool including followings.
		Systematic methodology used
		• Testing and evaluation of the software development tool to ensure compliance with software requirements
		• Software development tools are identified and controlled, and the configurations are traceable for the application used.
	8.11	PPDD shall establish and implement the documented measures to control Functional Elements (FEs) that are incorporated into the FPGA logic including followings.
		• Personnel who perform development of FEs are carried out suitable indoctrination/training, and qualified.
1		• Development approach, qualification and storage status of FEs.
ę. ż		• FEs are compliance with software requirement documents.
		• Functional test which shows FEs are compliance with software requirements, and its results.
		• Measures are established and implemented to track the operating
		 Measures are established and implemented to report the problem to NICSD.
	8.12	PPDD shall implement security control activities as required in NICSD procurement documents.

9.2.2 Survey of TDMS

.

NICSD performs survey periodically. This activity is performed in accordance with the following criteria and using the form of "Survey/Audit Checklist (Section 10(8))." The result is reported in the form of "Survey/Audit Report (Section 10(9))."

Process	No.	Acceptance Criteria (Process Details to be Surveyed)
Order Entry	1.1	TDMS shall have a process for the review and acceptance of PPDD purchase order including:
		• TDMS shall establish and implement the control to assure that
	1	when multiple manufacturing facilities are used, the purchase order
~		requirements are being completely and correctly transmitted.
		•TDMS shall establish and implement the control to notify PPDD of
		any changes to CGI/CGS from previous purchase order.
		• TDMS shall establish and implement the control to ensure that
		design changes are documented by a formal change procedure and

		<u>9DoR0037 Rev.1</u>
Process	No.	Acceptance Criteria (Process Details to be Surveyed)
		that notification is provided to PPDD of any changes that could
		affect the product (such as change of configuration, operation,
		performance, or manufacturing process)
Design Control	2.1	TDMS shall establish and implement the control to assure that
		applicable design requirements and purchase order requirements are
		correctly translated into instructions, procedures or drawings.
		(Document Control)
		• TDMS shall establish and implement the controls to assure that the
		product complies with the manufacturers published product
		description.
		• TDMS shall establish and implement the controls to assure that the
		published product description part numbers are traceable to design
		documents.
	2.2	The measures to control the issuance of documents including the
		changes shall be established and implemented. (Document
		Control)
		TDMS shall establish and implement the controls to assure that
		design changes are evaluated in a manner commensurate with the
		original design.
	2.3	Design and test documentation and records shall be collected,
		stored, and maintained in accordance with documented procedures.
	2.4	TDMS shall establish and implement the design control process and
		verification methods.
Procurement	3.1	TDMS shall establish and implement the measures to assure
Control		applicable requirement are included in procurement document to
		Microsemi and sub-tier supplier.
	3.2	TDMS shall establish and implement the control using procurement
		documents to ensure that TDMS procures the parts specified by
		PPDD, assembles modules using those parts and supplies those
		modules to PPDD.
		Procurement documents, including changes, include provisions for
		the following, as applicable:
		• Scope of work
		Technical requirements
		Documentation requirements
		• Quality requirements
		• Requirements for prevention and detection of counterfeit material
		and items
	33	TDMS shall implement the control to assure that purchased items
	5.5	and services comply with procurement documents (receiving
		inspection, source inspection, validation testing)
	3.4	TDMS establish and implement the control to ensure that PPDD
		provided Bill of Material (BOM) items are properly documented in
		the TDMS purchase orders and that part substitutions by TDMS are
		not allowed without PPDD approval.
	3.5	TDMS shall have a process to assure that changes to procurement
		documents are treated in the same manner as the original document
	1	

.....

_

18/29

	<u> </u>	9B8K0057 KeV:1	
Process	No.	Acceptance Criteria (Process Details to be Surveyed)	
	3.6	TDMS shall implement inspection/testing processes (such as those used during receipt/in-process/final inspection or testing) for	
		identifying suspect (including counterfeit/fraudulent) material, items	
	or components that may not be those ordered.		
Material 4.1 TDMS shall provide traceability to applicable chemical/ph		TDMS shall provide traceability to applicable chemical/physical	
Identification and		analysis, certifications, test reports or other documents.	
Control	4.2	TDMS shall establish and implement the controls to maintain	
		lot/material identification throughout manufacturing operations	
		including followings.	
		• Definition of "lot" or "batch".	
		• Unique coding systems or practices used by the supplier to identify	
		lots.	
	4.3	TDMS shall establish and implement the control to assure items are	
	-	adequately identified and maintained.	
	4.4	TDMS shall establish and implement the control to prevent the use	
		of incorrect or defective item.	
	4.5	TDMS shall establish and implement the measures to control	
		limited shelf life item.	
		• Shelf life durations is established	
·		Storage/environmental controls is established	
Manufacturing	5.1	TDMS shall establish and implement the control to assure that	
and Processes		Instructions/Procedures/Drawings and their correct revision are	
		specified on work instructions and are available where the activity is	
		being performed.	
		TDMS shall establish and implement the control using	
		manufacturing data for printed circuit boards (PCBs) to ensure that	
	-	TDMS manufactures the PCBs for module specified by PPDD.	
	5.2	Personnel performing soldering, crimping, cable routing, assembly,	
		coaling, inspection and testing shall be trained and qualified as	
	5.2	TDMS shall establish and implement the methods for identification	
	5.5	of finished parts and assemblies as specified in PDDD	
		procurement document including packaging and preparation of C of	
		C	
	5.4	TDMS shall establish and implement the methods for handling parts	
		and assemblies to avoid damage due to electrostatic discharge.	
	5.5	Crimping, cable routing, and assembly shall be	
		performed in accordance with correct revision of	
		Instructions/Procedures/Drawings	
	5.6	TDMS shall establish and implement the documented measures to	
		ensure that use of Silicon Sculptor is identified, controlled, traceable	
		to manufacturing records.	
	5.7	TDMS shall implement security control activities as required by PPDD.	
Inspection and	6.1	TDMS shall establish and implement the controls to assure that	
Test Control		activities affecting quality are inspected and tested for conformance	
		to instructions, procedures, drawings and PPDD procurement	
		documents.	

19/29

		<u>9B8K0057 Rev.1</u>
Process	No.	Acceptance Criteria (Process Details to be Surveyed)
	6.2	TDMS shall establish and implement the controls that include
		appropriate inspection/test planning, acceptance criteria and
		documentation of results.
	6.3	TDMS shall have a process to identify, document and segregate
		nonconforming items. TDMS shall implement problem reporting
		as required in PPDD procurement document.
	6.4	TDMS shall establish and implement the control for the review,
		acceptance, rejection, repair or rework of nonconforming items.
	6.5	The supplier personnel performing inspection and testing shall be
		trained and qualified.
Measuring and	7.1	TDMS shall establish and implement the controls that M&TE is
Test Equipment		properly controlled and calibrated.
Control:		The M&TE used during manufacturing and testing shall be
		identified in relevant records and test documents.
		TDMS shall establish and implement calibration system including;
		• Calibration of M & TE and standards using standards traceable to
		nationally recognized standards shall be adequately controlled at
		periodic intervals.
		• Adequacy of standards to assure accuracy, stability, range and
		resolution required for their intended use.
		• Labeling/Identification of M&TE to prevent misuse
		• Adequate calibration records, including as found/as left
		information is available
		• Evaluation of nonconforming M&TE
		• Environmental conditions are controlled during calibration

9.2.3 Survey of Microsemi SoC (formerly Actel)

NICSD performs survey periodically. This activity is performed in accordance with the following criteria and using the form of "Survey/Audit Checklist (Section 10(8))" The result is reported in the form of "Survey/Audit Report (Section 10(9))."

Process	No.	Acceptance Criteria (Process Details to be Surveyed)		
Order Entry	1.1 Microsemi SoC shall have a process for the review and acceptar			
		of Toshiba purchase order including:		
		• Microsemi SoC shall establish and implement the control to assure		
		that when multiple manufacturing facilities are used, the purchase		
		order requirements are being completely and correctly transmitted.		
		• Microsemi SoC shall establish and implement the control to notify		
		Toshiba of any changes to CGI/CGS from previous purchase order.		
		• Microsemi SoC shall establish and implement the control to ensure		
		that design changes are documented by a formal change procedure		
		and that notification is provided to Toshiba of any changes that		
		could affect the product (such as change of configuration, operation,		
		performance, or manufacturing process)		
Design Control	2.1	Microsemi SoC shall establish and implement the control to assure		

20/29

		<u>9B8K0057 Rev.1</u>
Process	No.	Acceptance Criteria (Process Details to be Surveyed)
		that applicable design requirements and purchase order
		requirements are correctly translated into instructions, procedures or
		drawings. (Document Control)
		• Microsemi SoC shall establish and implement the controls to
		assure that the product complies with the manufacturers published
		product description.
		• Microsemi SoC shall establish and implement the controls to
		assure that the published product description part numbers are
		traceable to design documents.
	2.2	The measures to control the issuance of documents including the
	2.2	changes shall be established and implemented (Document
		Control)
		Microsemi SoC shall establish and implement the controls to assure
		that design changes are evaluated in a manner commensurate with
		the original design
	23	Design and test documentation and records shall be collected
	2.5	stored, and maintained in accordance with documented procedures
Droouromont	2 1	Microsomi SoC shall establish and implement the measures to
Control	5.1	Microsenni Soc shan establish and implement the measures to
Control		assure applicable requirement are included in procurement
		accument to sub-tier supplier.
	3.2	Microsemi SoC shall establish and implement the control using
		procurement documents to ensure that Microsemi SoC procures
		correct material, assembles devices, and supplies those devices to
		Toshiba.
		Procurement documents, including changes, include provisions for
		the following, as applicable:
		• Scope of work
		Technical requirements
		Documentation requirements
		• Quality requirements
		• Requirements for prevention and detection of counterfeit material
		and items
	3.3	Microsemi SoC shall implement the control to assure that purchased
	5.5	items and services comply with procurement documents (receiving
		inspection source inspection validation testing)
	2.4	Microsomi SoC shall implement the control measure for evaluation
	5.4	and selection of sumplion Microsomi SoC shall ensure that only
		the selection of supplier. Indicident Soc shall ensure that only
	2.5	Microsomi SoC shall have a measure to secure that shares to
	3.5	where seems by shall have a process to assure that changes to
		producement documents are treated in the same manner as the
		original document
	3.6	Microsemi SoC shall implement inspection/testing processes (such
		as those used during receipt/in-process/final inspection or testing)
		tor identifying suspect (including counterfeit/fraudulent) material,
		items or components that may not be those ordered.
Material	4.1	Microsemi SoC shall provide traceability to applicable
Identification and		chemical/physical analysis, certifications, test reports or other

21/29

~		
Process	No	Acceptance Criteria (Process Details to be Surveyed)
Control	ļ	documents.
	4.2	Microsemi SoC shall establish and implement the controls to
		maintain lot/material identification throughout manufacturing
		operations including followings.
		• Definition of "lot" or "batch".
		• Unique coding systems or practices used by the supplier to identify
		lots.
	4.3	Microsemi SoC shall establish and implement the control to assure
		items are adequately identified and maintained.
	4.4	Microsemi SoC shall establish and implement the control to prevent
		the use of incorrect or defective item
	45	Microsemi SoC shall establish and implement the measures to
	1.5	control limited shelf life item
		• Shalf life durations is satablished
		• Storage/environmental controls is established
Manufacturing	5.1	Microsemi SoC shall establish and implement the control to assure
and Processes		that Instructions/Procedures/Drawings and their correct revision are
		specified on work instructions and are available where the activity is
		being performed.
	5.2	Personnel performing soldering, crimping, cable routing, assembly,
		coating, inspection and testing shall be trained and qualified as
		required, with documented records.
	5.3	Microsemi SoC shall establish and implement the methods for
		identification of finished parts and assemblies including packing and
		preparation of C of C.
	5.4	Microsemi SoC shall establish and implement the methods for
		handling parts and assemblies to avoid damage due to electrostatic
		discharge.
	5.5	Crimping, cable routing, and assembly shall be
		performed in accordance with correct revision of
		Instructions/Procedures/Drawings
Inspection and	6.1	Microsemi SoC shall establish and implement the controls to assure
Test Control		that activities affecting quality are inspected and tested for
		conformance to instructions, procedures, drawings and Toshiba
		procurement documents.
	6.2	Microsemi SoC shall establish and implement the controls that
		include appropriate inspection/test planning, acceptance criteria and
		documentation of results.
	63	Microsemi SoC shall have a process to identify document and
		segregate nonconforming items Microsemi SoC shall establish
		and implement problem reporting process
	64	Microsemi SoC shall establish and implement the control for the
	0.7	review acceptance rejection renair or rework of nonconforming
		items
	65	The supplier personnel performing inspection and testing shall be
	0.5	trained and qualified
		uameu anu yuamieu.

22/29

		9B8K0057 Rev.1
Process	No. Acceptance Criteria (Process Details to be Surveyed)	
Measuring and	asuring and 7.1 Microsemi SoC shall establish and implement the control	
Test Equipment	Image: Cest Equipment M&TE is properly controlled and calibrated.	
Control:		The M&TE used during manufacturing and testing shall be
		identified in relevant records and test documents.
		Microsemi SoC shall establish and implement calibration system
		including;
		• Calibration of M & TE and standards using standards traceable to
	nationally recognized standards shall be adequately control	
	 periodic intervals. Adequacy of standards to assure accuracy, stability, range 	
resolution required for their intended use.		resolution required for their intended use.
	1	• Labeling/Identification of M&TE to prevent misuse
		• Adequate calibration records, including as found/as left
		information is available
		• Evaluation of nonconforming M&TE
		• Environmental conditions are controlled during calibration

9.2.4 Survey of

}^{a,c}

NICSD performs survey periodically. This activity is performed in accordance with the following criteria and using the form of "Survey/Audit Checklist (Section 10(8))" The result is reported in the form of "Survey/Audit Report (Section 10(9))."

Process	No.	Acceptance Criteria (Process Details to be Surveyed)			
Order Entry	1.1	shall have a process for the review and			
		acceptance of Toshiba purchase order including:			
		•()shall establish and implement the control to			
	1	assure that when multiple manufacturing facilities are used, the			
		purchase order requirements are being completely and correctly			
		transmitted.			
		•[]shall establish and implement the control to			
		notify Toshiba of any changes to CGI/CGS from previous purchase			
		order.			
		\cdot () shall establish and implement the control to			
		ensure that design changes are documented by a formal change			
		procedure and that notification is provided to Toshiba of any			
		changes that could affect the product (such as change of			
		configuration, operation, performance, or manufacturing process)			
Procurement	2.1	Shall establish and implement the measures to			
Control		assure applicable requirement are included in procurement			
		document to Microsemi SoC.			
	2.2	Ishall establish and implement the control using			
		procurement documents to ensure that procures			
		the parts specified by Toshiba.			
L	<u> </u>	Procurement documents, including changes, include provisions for			

23/29

Process	No.	Acceptance Criteria (Process Details to be Surveyed)
		the following, as applicable:
		• Scope of work
		Technical requirements
		Documentation requirements
		Quality requirements
		• Requirements for prevention and detection of counterfeit material and items
	2.3	shall implement the control to assure that
		purchased items and services comply with procurement documents
		(receiving inspection, source inspection, validation testing)
	2.4	shall implement the control measure for
		evaluation and selection of supplier. ()shall ensure that only the selected suppliers are used for parts
	2.5	Procurement.
	2.5	procurement documents are treated in the same manner as the original document
	26	^[4] Chall implement inspection (testing mesoages)
	2.0	shall implement inspection/testing processes
		(such as mose used during receipt/in-process/iniai inspection of testing) for identifying suggest (including counterfait/fraudulant)
		material items or components that may not be those ordered
IIon dlin o Store oo	2.1	inaterial, items of components that may not be those of defed.
Shinning and	5.1	shamical/physical analysis, cortifications, test reports or other
Distribution		documents
Control	2.2	documents.
Control	5.2	maintain lot/material identification including followings
	Į	Definition of "lot" or "batch"
		• Unique coding systems or practices used by the supplier to identify lots
	33	shall establish and implement the control to
	J.J	assure items are adequately identified and maintained
	2.4	assure thems are adequately identified and maintained.
	J.4	prevent the use of incorrect or defective item
	2.5	be and implement the measures to
	5.5	control limited shelf life item
		• Shalf life durations is actablished
		Shen me durations is established
		• Storage/environmental controls is established
	3.6	shall establish and implement the methods for
		identification of finished parts and assemblies including packing and
		preparation of C of C.
	3.7	Shall establish and implement the methods for
		handling parts and assemblies to avoid damage due to electrostatic
	2.0	discharge.
	3.8	snall establish and implement the controls to
		assure that activities affecting quality are inspected and tested for
		conformance to instructions, procedures, drawings and 10sniba
		procurement documents.

24/29

			9B8K0057 Rev.1
Process	No.	Acceptance Criteria (Process Details to	be Surveyed)
	3.9	shall have a process to ident	ify, document and
		segregate nonconforming items.	shall implement
		problem reporting as required in Toshiba procu	rement document.

9.2.5 Survey of $\left(\right)^{a,c}$

NICSD performs survey periodically. This activity is performed in accordance with the following criteria and using the form of "Survey/Audit Checklist (Section 10(8))." The result is reported in the form of "Survey/Audit Report (Section 10(9))."

When NICSD directly procures the modules from (), NICSD performs CG survey of ..., CG survey is performed in accordance with the following criteria and using the form of "CG Survey Checklist (Section 10(5))." The result is reported in the form of "Commercial Grade Survey Report (Section 10(6))."

Process	No.	Acceptance Criteria (Process Details to be Surveyed)	
Order Entry	1.1	Shall have a process for the review and acceptance of	
		Toshiba purchase order including:	
		• ()shall establish and implement the control to assure that	
		when multiple manufacturing facilities are used, the purchase order	
		requirements are being completely and correctly transmitted.	
		• ()shall establish and implement the control to notify Toshiba	
		of any changes to CGI/CGS from previous purchase order.	
		• () shall establish and implement the control to ensure that	
	{	design changes are documented by a formal change procedure and	
		that notification is provided to Toshiba of any changes that could	
		affect the product (such as change of configuration, operation,	
		performance, or manufacturing process)	
Design Control	2.1	Shall establish and implement the control to assure that	
		applicable design requirements and purchase order requirements are	
		correctly translated into instructions, procedures or drawings.	
		(Document Control)	
		· Shall establish and implement the controls to assure that the	
		product complies with the manufacturers published product	
		description.	
		Shall establish and implement the controls to assure that the	
		published product description part numbers are traceable to design	
		documents.	
	2.2	The measures to control the issuance of documents including the	
		changes shall be established and implemented. (Document	
		Control)	
		shall establish and implement the controls to assure that	
		design changes are evaluated in a manner commensurate with the	
		original design.	
	2.3	Design and test documentation and records shall be collected,	
		stored, and maintained in accordance with documented procedures.	
	2.4	Jshall establish and implement the design control process and	
		verification methods.	

25/29

26/29

		<u>9B8K0057 Rev.1</u>			
Process	No.	Acceptance Criteria (Process Details to be Surveyed)			
	4	Storage/environmental controls is established			
Manufacturing	5.1	1 [Fhall establish and implement the control to assure that			
and Processes		Instructions/Procedures/Drawings and their correct revision are			
		specified on work instructions and are available where the activity is			
		being performed.			
		Shall establish and implement the control using			
	}	manufacturing data for printed circuit boards (PCBs) to ensure that			
		jmanufactures the PCBs for module specified by Toshiba.			
	5.2	Personnel performing soldering, crimping, cable routing, assembly,			
		coating, inspection and testing shall be trained and qualified as			
		required, with documented records.			
	5.3	[]Stall establish and implement the methods for identification			
		of finished parts and assemblies as specified in Toshiba			
		procurement document including packing and preparation of C of C.			
	5.4	[] If all establish and implement the methods for handling			
		parts and assemblies to avoid damage due to electrostatic discharge.			
	5.5	Crimping, cable routing, and assembly shall be			
		performed in accordance with correct revision of			
		Instructions/Procedures/Drawings			
Inspection and	6.1	[] Shall establish and implement the controls to assure that			
Test Control		activities affecting quality are inspected and tested for conformance			
		to instructions, procedures, drawings and Toshiba procurement			
		documents.			
	6.2	5 Shall establish and implement the controls that include			
		appropriate inspection/test planning, acceptance criteria and			
		documentation of results.			
	6.3	Shall have a process to identify, document and segregate			
		nonconforming items. []Shall implement problem reporting			
		as required in Toshiba procurement document.			
•	6.4	Shall establish and implement the control for the review,			
		acceptance, rejection, repair or rework of nonconforming items.			
	6.5	The supplier personnel performing inspection and testing shall be			
		trained and qualified.			
Measuring and	7.1	[]shall establish and implement the controls that M&TE is			
Test Equipment		properly controlled and calibrated.			
Control:		The M&TE used during manufacturing and testing shall be			
		identified in relevant records and test documents.			
		Jshall establish and implement calibration system including;			
		• Calibration of M & TE and standards using standards traceable to			
		nationally recognized standards shall be adequately controlled at			
		periodic intervals.			
		• Adequacy of standards to assure accuracy, stability, range and			
		resolution required for their intended use.			
		• Labeling/Identification of M&TE to prevent misuse			
		• Adequate calibration records, including as found/as left			
		information is available			
		• Evaluation of nonconforming M&TE			
		• Environmental conditions are controlled during calibration			
		Lat a control of a first and control of a first and a first and a first a firs			

10 Acceptance Documentation

- (1) Source Verification Check Sheet and Record for Commercial Grade Dedication (Exhibit-3 of AS-200A111 (Reference (3)))
- (2) Source Verification Report (Exhibit-1 of AS-300A005 (Reference (4)))
- (3) Design Verification Report (Exhibit-1 of AS-200A002 (Reference (2)))
- (4) FPGA Logic Implementation Request/Record Sheet (Attached form of NQ-2030 (Reference (5)))
- (5) CG Survey Checklist (Exhibit-2-2 of NQ-3005 (Reference (7)))
- (6) Commercial Grade Survey Report (Exhibit-5-2 of NQ-3005 (Reference (7)))
- (7) V&V Report (Section 5.2 of NQ-2014 (Reference (5)))
- (8) Survey/Audit Checklist (Exhibit-2-1 of NQ-3005 (Reference (7)))
- (9) Survey/Audit Report (Exhibit-5-1 of NQ-3005 (Reference (7)))

11 References

- (1) EPRI TR-106439, "Guideline on Evaluation and Acceptance of Commercial Grade Digital Equipment for Nuclear Safety Applications," October 1996
- (2) Toshiba Nuclear Energy Systems and Service Division AS-200A002"Design Verification Procedure"
- (3) Toshiba Nuclear Energy Systems and Service Division AS-200A111 "Acceptance Procedure for Commercial Grade Items"
- (4) Toshiba Nuclear Energy Systems and Service Division AS-300A005 "Preparation Procedure for Source Verification"
- (5) Toshiba Nuclear Instrumentation & Control Systems Department NQ-2014 "Preparation Guide for V&V Report"
- (6) Toshiba Nuclear Instrumentation & Control Systems Department NQ-2030 "Procedural Standard for FPGA Products Development"
- (7) Toshiba Nuclear Instrumentation & Control Systems Department NQ-3005 "Procedure for Evaluation of Suppliers"
- (8) Toshiba Nuclear Instrumentation & Control Systems Department NQ-4001 "Commercial Grade Dedication"
- Note: When NED, NICSD and other Toshiba internal standards listed above are applied, the latest version of them shall be used.

9B8K0057 Rev.1

12 Inspection and Test Procedure None

13 Supplements

None

29/E

9B8K0057 Rev.1

		変更記録 RE	VISIONS		<u> </u>	
変更記号 REV. MARK 変更発行日 REV. ISSUED	ページ PAGE	変更箇所 変更内容 CHANGED PLACE AND CONTENTS	承 認 APPROVED BY	調 査 REVIEWED BY	担当 PREPARED BY	保 管 REGISTERED
$ \begin{array}{c} 1 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0$, 7, 8, , 16, 9,22	Document proprietary class was changed from 2 to 3. Some of the words "CG Survey" in the document were replaced to "survey." These changes do not affect NICSD dedication activities. For detailed changed contents and impact evaluation, refer to DCN-9B8K0057-01 Rev.0.	NICSD K.Wakita Pec.26.2011	NISD T. Tarunu Dec. 26, 2011	N 150 T.Furusand P.ec. 26, 2011	
		~.				