PROCEDURE: NSTXU–PROC–002		Page: 1 of 8
Title **NSTXU Requestf for Deviation (RFD)**	**Initiated by:** Bob Simmons Digitally signed by Bob Simmons DN: cn=Bob Simmons, o, ou, email=bsimmons@pppl.gov, c=US Reason: I am the author of this document Date: 2011.03.03 08:08:07 -05'00' NSTXU Systems Engineer	**Effective Date:** **3/3/2011**
Concurred by: Judy Malsbury Digitally signed by Judy Malsbury DN: cn=Judy Malsbury, o=PPPL, ou=QA, email=jmalsbur@pppl.gov, c=US Date: 2011.03.03 08:17:47 -05'00' NSTXU Quality Assurance Manager	**Approved by:** Ron Strykowsky Digitally signed by Ron Strykowsky DN: cn=Ron Strykowsky, o, ou=PPPL, email=rstrykow@pppl.gov, c=US Date: 2011.03.18 10:16:36 -04'00' NSTXU Project Manager	**Supersedes:**

Record of Revisions

Revision	Date	Description of Changes
0	**3/3/2011**	**Initial Issue**

Applicability

This procedure covers the process for preparing and processing Requests for Deviation (RFDs) on the NSTXU Project. The "stamp" process outlined for drawings via an ECN in ENG-010 shall apply both for drawing changes and RFDs. In addition, if desired, the RFD can also be used to request deviations to NSTXU Specifications prepared using ENG-006.

Introduction

Prior to performing a specified step in a manufacturing or fabrication process, either the Project or a supplier may identify an alternative design/method/material to the requirements that could result in simpler or easier design to fabricate, cost, or schedule savings. The documentation to formally define this proposed departure from the established performance or design requirements is called a Request for Deviation (RFD). ***The RFD is a specific written request to depart from a particular requirement(s) of the item's current approved design basis documentation.*** RFDs shall be processed and adjudicated under the Engineering Change Process (ECP) process defined in the NSTXU PPPL Project Management System Project Description (PMSPD) and the accompanying NSTXU Configuration Control Procedure (NSTXU-PROC-001) unless a determination is made by the NSTXU Engineering Manager that an ECP is not required (generally for editorial-type RFDs or process RFDs). Until the ECP associated with the RFD is approved or approval by the NSTXU Engineering Manager is received to process without an ECP, the item or process may not deviate from the technical requirements. The RFD may be either a letter or tabular format and shall contain the specific required information as defined in this procedure.

A deviation is distinguished from non-conformance reports (NCRs) in that NCRs address the departure after the manufacturing step or process that incorporates the requirement (design/method/material) has begun. The processing of NCRs is addressed in PPPL Quality Assurance Procedure QA-005, "Control of Nonconformances." RFDs are forward looking and may result from a dispositioned NCR that may provide an alternate design for future work.

The design documentation for any technical design includes a combination of the product specification and the electronic models and drawings, and any approved deviations. The "read me" file on the Supplier FTP site will contain a clarifying note that clearly identifies these three legs of the technical design documentation. However, rather than revise all the design documentation for every deviation, the NSTXU Project has adopted a policy of minimizing the changes to the

impacted design documentation. The majority of deviations result in a design change, however, it is left to the discretion of the Design or the Manufacturing RLM to determine if a change to the documentation is immediately warranted or can be deferred. When deciding whether or not a particular specification, model(s) or drawing(s) need to be updated, the RLMs should consider the significance of the deviation. If the deviation has a significant impact on the way a particular part is designed or manufactured, then an update of the impacted design documentation is generally warranted. However, if a minor change or a correction of dimensions or tolerances, the RLM must decide whether or not to immediately update the documentation or to defer the update to a later date.

No matter the decision on when, or ever, to update impacted design basis documentation, the Systems Engineer should notify project personnel that the RFD is approved, post the approved RFD on the NSTXU Engineering Web, and, if it also impacts an existing contract, ensure that the PPPL Procurement Representative is provided a copy to forward to the supplier.

If the decision is made to defer the updating of the documentation, the RFD should clearly identify the specific impacts of a deviation and whether or not that decision is to update or not update the documentation.

For drawings, the “stamp” process outlined in ENG-010 and PROC-001 shall be used. Models do not use a “stamp” process, however the “read me” files should be annotated if the decision is made to defer updating models .

The RFD is equally applicable to specifications prepared using the guidelines of ENG-006. For specifications pertinent to existing contracts, the product specification does include a list of approved RFDs that are applicable to the contract. However, if the decision is made to defer updating a specification, the PPPL Procurement Representative should provide a copy of the approved RFD to the supplier. In addition, the index listing of specifications on the NSTXU Engineering Web should be annotated to show a listing of unincorporated RFDs that impact the specification (whether impacting requirements or the listing of drawings.

MIT/QA Plan and detailed manufacturing procedures address specific processes to be utilized. The vendor and cognizant engineer have freedom to modify the MIT/QA Plan and manufacturing procedures as long as the changes do not have the potential to impact the design, quality or cost and schedule. While the RFD is NOT the vehicle to process these implementation deviations or changes, the text of the RFD should identify the impacts on these lower tier documents if known.

Part A of this procedure provides the general flow chart for processing and approving RFDs. Part B of this procedure provides the flow chart for incorporating RFDs into electronic drawings.

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Referenced Documents

PMSPD	PPPL Project Management System Program Description (PMSPD)
PPPL- ENG-006	PPPL Procedure on the Review and Approval of Specifications and Statements of Work
PPPL-ENG-010	Control of Drawings, Software, and Firmware
PPPL-QA-005	PPPL Non-Conformance Reports
NSTXU-PROC-001	NSTXU Configuration Control

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Procedure

Part A - Processing RFDs

Initiator (Anyone on the Project or a Supplier) proposes an alternative design, approach , material, etc. than currently specified in specifications or models/drawings, etc.
NOTE: The RFD should NOT be used to process deviations to process plans or procedures.

Supplier (if existing contract) or **Job Manager** prepares and submits RFD:

- To the PPPL Procurement Technical Representative (PTR) and PPPL Procurement Representative if Supplier RFD. PTR then provides copy to the Systems Engineer; or
- To the Systems Engineer if Project RFD.

Note: An e-mail from the supplier, describing the requested deviation, is satisfactory.. In this case, the PTR will complete the RFD and include the information or simply attach the e-mail

Supplier RFD?

Yes

No

PPPL Procurement Representative notifies the supplier that they are ***NOT*** authorized to proceed with the proposed departure until such time that the RFD is approved.

PTR (if procurement) or **Job Manager** coordinates refinement and recommended disposition of RFD with Supplier (if procurement) and WBS Manager. Consideration of the impact on ongoing or future manufacturing activities are part of the evaluation process. Forwards recommended disposition to RLM(s) for approval.

Design and Manufacturing RLMs review the proposed RFD and determine whether or not the proposed RFD:

- Has an impact on ongoing or future manufacturing activities;
- Whether the RFD should be approved; and
- If the design documentation [CSPEC, model(s), drawing(s)] should be updated immediately or can be deferred.

Forwards RFD to the **Systems Engineer** for final processing.

A1

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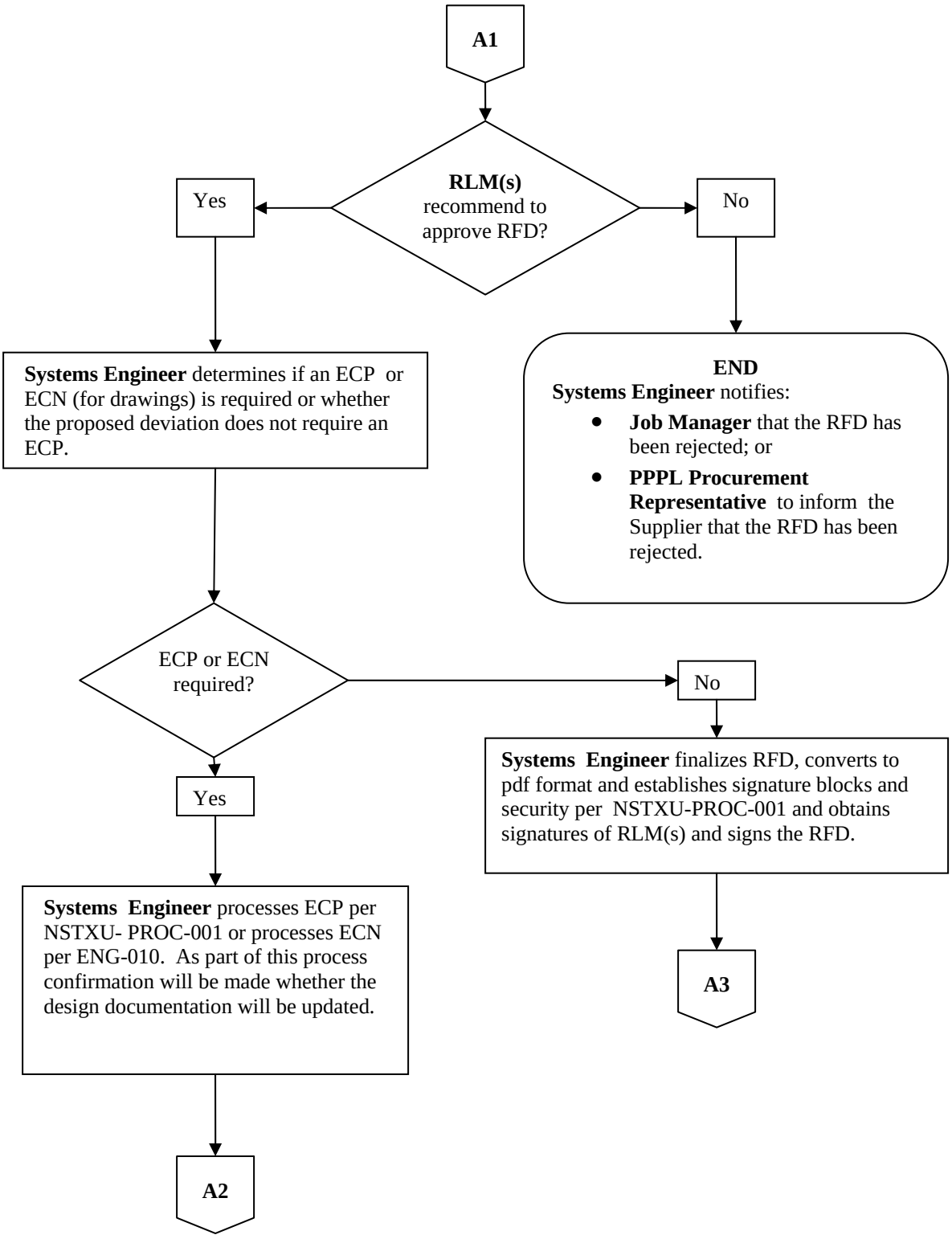

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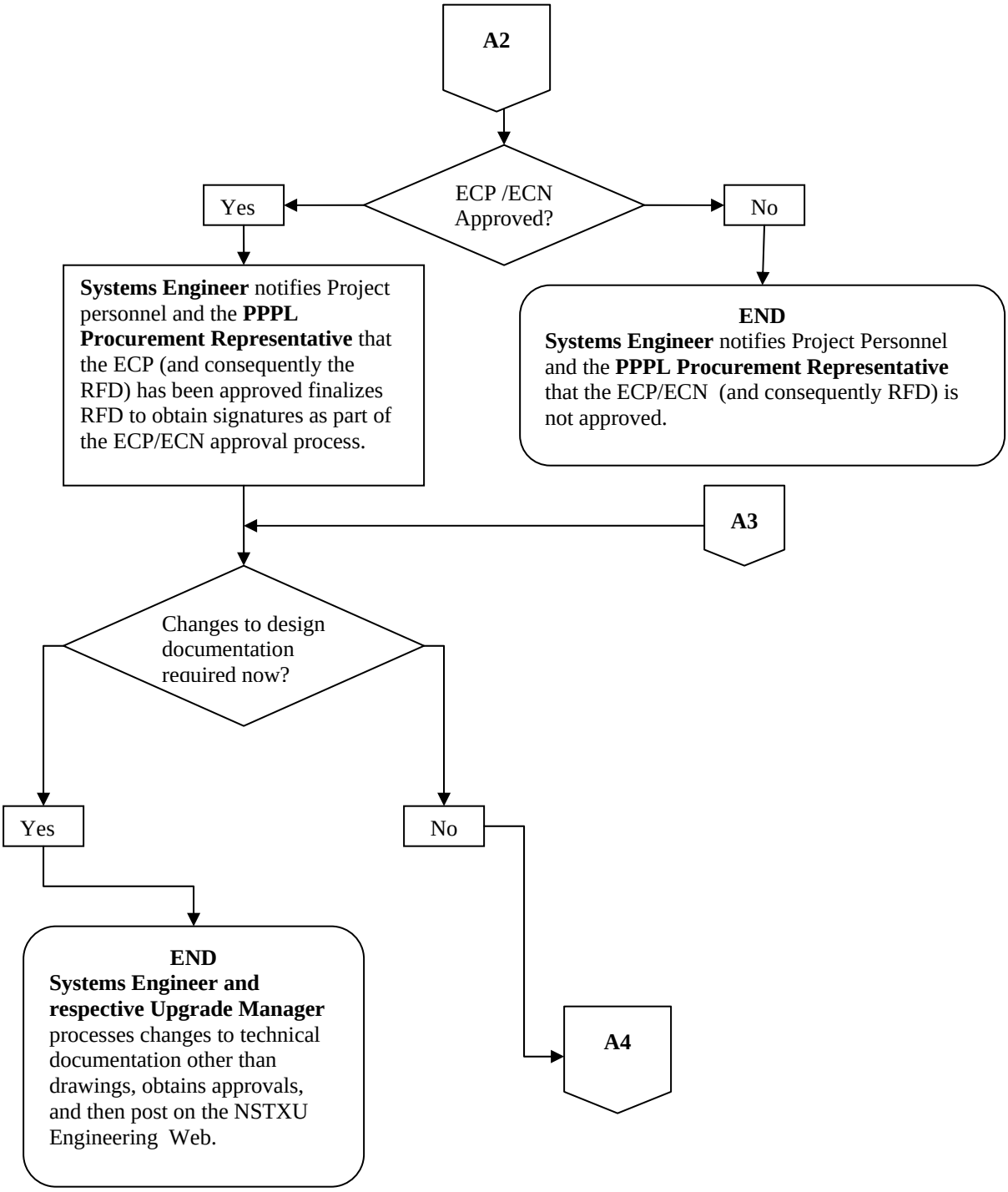

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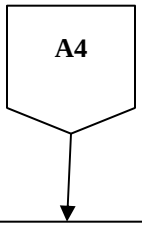

Systems Engineer notifies project personnel and the PPPL Procurement Representative (if impacting an existing contract) that the RFD has been approved, but that the update has been deferred.**:**

- If drawing, processes "stamp" per Part B of this Procedure/ENG-010**.**
- If a model, works with the **respective Upgrade Manager** to ensure that the "read me file is updated to indicate that the RFD is approved, but that the update of the model is deferred.
- If a specification, ensures that the specification list on the NSTXU Engineering web is annotated to show a listing of unincorporated RFDs.

If impacts an existing contract**, PPPL Procurement Representative** also notifies Supplier via contract addendum:

- That RFD has been approved;
- Of the forthcoming changes in contract documents that will be made if they will be formally update or merely annotated with a "stamp" per part B of this procedure; and
- That the Supplier is authorized to proceed and that a revised MIT/QA Plan (if impacted) should be submitted for PPPL approval.

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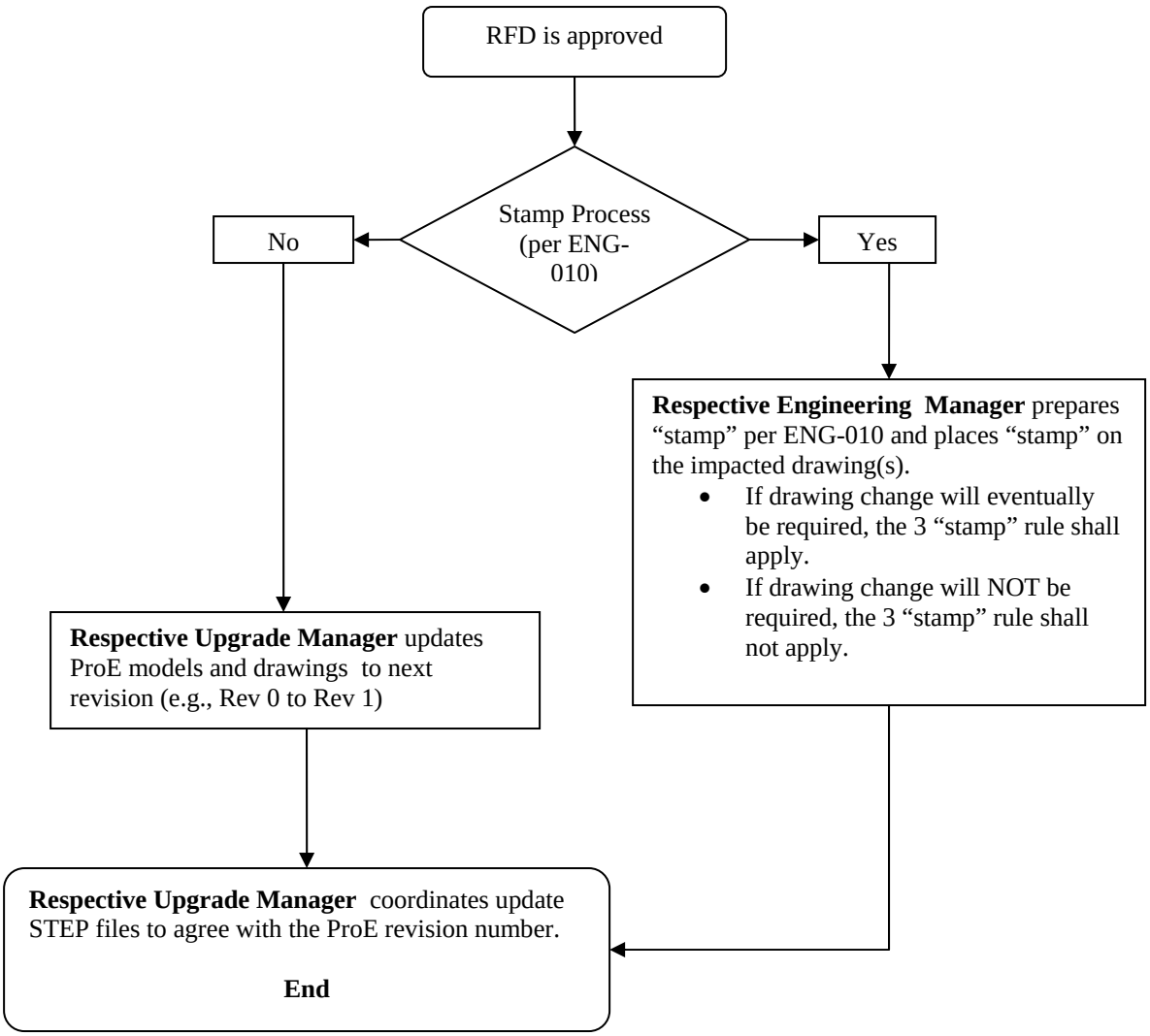
Part B – Incorporating RFDs into Electronic Drawings



Attachments:

1 – Necessary Information Needed on a RFD

2 – RFD Forms

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ATTACHMENT 1

The RFD has two parts – Part I is the initial proposal and Part II is the Project review and RLM disposition.

PART I

The RFD may be provided in any format (i.e., letter, tabular, or supplier format), but the initiator must provide at a minimum (If supplier initiated, the supplier must either submit a RFD form or request a deviation in an e-mail to the PTR, who will then complete the RFD) the following information in sufficient detail to permit NSTXU Project assessment of the RFD:

- Initiator Name and Organization
- Date RFD was initiated
- RFD Title – short description of the deviation requested
- List of impacted documents (e.g., specification and sections, each model and drawing, MIT/QA Plan sections/steps, SOW sections – if the SOW has been used to convey technical information). Be as specific as possible.
- Impact on cost, schedule, and interfaces with other items – if none so state. If there are impacts, be as specific as possible.
- Full description of the deviation requested, including specific item/part impacted by this RFD and the rationale on why this deviation is needed, including the impact if not accepted - (Should provide sufficient justification to permit Project to make an informed decision). Include amplifying information that may assist in the NSTXU Project's assessment of this RFD. This part should contain the specific design documentation impacted (e.g., list the changes to the specification and the specific drawings impacted).
- Attachments – to include e-mail or letter requests or sketches
- Signature of the initiator (actual or electronic or e-mail approval are all satisfactory).

PART II

Once the initiator has provided Part I of the RFD, the Procurement Technical Representative (PTR) or Job Manager (JM) shall review and provide a recommended disposition proposal to the respective RLM as per the attached flow chart (assuming that the PTR and/or JM concurs in the RFD). The RLM shall review the proposed RFD and provide the following disposition information on Part II:

- Impacted WBS Elements
- Whether or not he/she recommends approval
- Action items needed (e.g., whether or not the RLM deems it necessary to revise project documentation – CSPEC and drawings), including any other actions needed.

The following sections of the RFD shall be completed by the Systems Engineering Manager:

- RFD number (using format of NSTXU-RFD-XX-###-RRR) where:

- XX is the two digit WBS element identifier;
- ### is a sequential number; and
- RRR is the revision number of the RFD.

- ECP number to be assigned to the RFD (Coordinates with the Systems Engineering Manager).

Sample Part I RFD Form (Deviation Request)

NSTXU RFD Part I	Number:	RFD Description:
Initiator:	**Organization:**	
List of Impacted Documents: ***(Specification, MIT/QA Plan, SOW, drawing, etc.)***		
Cost Impact: ***(If none, so state)***		
Schedule Impact: ***(If none, so state)***		
Quality Impact: ***(If none, so state)***		
State Requirement Deviation is Requested For***: (Specification, MIT/QA Plan, SOW, drawing, etc.)***		
Full Description of the Deviation Requested: ***(Use continuation pages, e-mails, letter, sketches, etc. as needed and include amplifying information as appropriate to support deviation request.)***		
Attachments:		
Initiator Signature: _____ Date: _____		

Sample Part II RFD Form (Project RLM Recommendation)

NSTXU RFD Part II	Number:	RFD Description:

RLM(s): Design: Manufacturing:	Organization: Design: Manufacturing:

Impact on Interfaces with Other WBS Elements/Items: ***(If none, so state)***

Design RLM Recommendations:

☐ **Approve** ☐ **Do Not Approve**

Manufacturing RLM Recommendations:

☐ **Approve** ☐ **Do Not Approve**

Additional remarks:

Should the impacted drawings be formally revised or should the "stamp" process outlined in NSTXU Procedure PROC-007 be utilized and should the specification (or other documents) be updated?

☐ **No, a formal revision required to the drawing or specification is required**

☐ **"Stamp" process outlined in ENG-010 is authorized for a drawing.**

- ☐ **If the change is substantial, a revision to the impacted drawings will be required after the third RFD stamp marking a substantial revision is placed on the drawing.**
- ☐ **This change is NOT substantial and no update to the drawing will ever be required => in this case the "3" RFD stamp process does NOT apply.**

☐ **Specification index is annotated to show unincorporated RFDs.**

Does this Change Impact Material Already Procured or Parts/Assemblies Already Assembled/Manufactured using this Material: ☐ **Yes** ☐ **No**

If "Yes", what is the recommended disposition of this material/part/assembly and what is the impact?

Sample Part II RFD Form (Project RLM Recommendation)

NSTXU RFD Part II	Number:	RFD Description:
RLM:	Organization:	

Design RLM Signature: _____

Manufacturing RLM Signature: _____

Project Disposition:

☐ **Approved. No ECP required.** _____

NSTXU Systems Engineer

☐ **Approved. ECP - assigned and processed.**

☐ **Not Approved. Reason(s) for disapproval:**