

MINOR CHANGE REQUEST FORM

MCR NO. **ENG-010,R8-003**

(e.g., MCR-ENG-021,R0-001)

The Minor Change Request (MCR) Form is to be used to process Minor, or in some necessary cases, Urgent or Temporary changes to PPPL Lab-wide procedures). The MCR should be used when changes are:

- 1) **minor** and do not warrant further SME review;
- 2) **urgent** and cannot wait the 2-4 week period for further SME review; or
- 3) **temporary**, to revert to original state by a given expiration date (must be within 6 months).

For questions about definitions of “minor,” “urgent,” and “temporary” changes, please review Lab-wide Procedure GEN-001, **Development, Review, and Approval of Lab-wide Documents**.

Person Requesting Change: Valeria Riccardo

Phone Ext: 2866

Department Name: Engineering

Document Number: ENG-010

Revision No.: 8

Document Title: Control of Drawings

Reason for change:

Necessary updates for Engineering Training; simplified to strengthen controls of drawings

Change description: (Summarize and attach changed pages, with changes clearly indicated)

Throughout: Clarified the meaning of “stamped” and “released”

Throughout: Clarified the role of CAD group in maintaining official drawings in repository

Throughout: Clarified requirements for in-house drawings, as well as “vendor” produced drawings

Limited the defined types of drawings: Preliminary, released, obsolete

Reordered procedure sections to define required terms ahead of action sequences

1. Does this change significantly alter the intent or scope of the document? **YES:** ☐ **NO:** ☒

2. Does this change significantly impact ES&H? **YES:** ☐ **NO:** ☒

If 1 or 2 is **YES**, explain why the changes should not be submitted as a revision:

Place a check mark next to the appropriate type of change request:

- Minor change? ☐
- Urgent change? (revision must follow within 2 weeks) ☒
- Temporary change? ☐

If “temporary change” is checked, provide expiration date, allowing document to revert to original state (must be within 6 months): _____

Management System Owner/Designee Approval

Date

Head, PACM/Designee

Date

Release/Effective date of this MCR: 10/29/19

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Subject: Control of Drawings	Effective Date: 8/1/2018	Initiated by: Head, Engineering Department	
	Supersedes: Rev. 7 dated Jan. 31, 2018	Approved: Director	

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Management System (Primary): 03.00 Engineering
Management System Owner: Head, Engineering
Management Process: 03.02 Engineering Design; 03.03 Configuration Management
Process Owner: Head, Engineering Department
Sub-Process: 03.02.02 Design Output; 03.03.01 Document Creation and Control
Sub-Process Owner: Head, CAD Group
Subject Matter Experts: Head, CAD Group; Head, Fabrication Group

1. APPLICABILITY AND INTRODUCTION

This procedure defines the process to create, modify, check, and use drawings at PPPL in accordance with the graded approach defined in the PPPL Quality Assurance Program Description (QAPD), which requires different levels of approval based on category. Laboratory activities, external collaborations, and engineering services often require production and revision of drawings. This procedure describes how drawings are requested, created, revised, and released.

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If drawings are generated as part of a design process that includes a Final Design Review (FDR), they shall be identified on the Design Approval Form (see ENG-033) and shall not be used in formal procurement until the form is signed. However, a signed Design Approval Form may precede a Final Design Review when used for long lead items as the scope of a Final Design Review may be divided among more than one Design Approval Form.

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Before the Design Approval Form has been signed, preliminary drawings and sketches may be used for budgetary estimates and other non-binding requests for information. After the Design Approval Form has been signed, drawings listed therein may be used for procurement quotes and bid documents.

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Only approved, signed, drawings shall be used to award subcontracts, as well as fabrication and installations of experimental equipment and supporting infrastructure. Part C of this procedure defines details and exceptions.

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Requests to the PPPL CAD Group to create or revise drawings are performed using a CAD Request Form (Attachment 1). If the request is a revision, it shall be accompanied by an Engineering Change Notice (ECN, Attachment 2) approved and complete with all the necessary information.

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QAPD	Quality Assurance Program Description
ES-DRFT-001	Drafting/CAD Guidelines and Standards
ENG-032	Work Planning Procedure
ENG-033	Design Verification
ENG-050	Job Requirements Documentation & Control
ENG-063	Breakdown Structure and Graded Approach Categorization
P-075	Configuration Management
QA-005	Control of Nonconformances
ESH-025	Operations Hazard Classification Criteria and Safety Certification System
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3. DEFINITIONS

CAD Request Form	Form used by the CAD Group that defines a new drawing or revised, existing drawing, including all administrative and approval information.
Engineering Change Notice (ECN)	Form used to authorize revisions of existing, approved drawings.
Sketch	A graphic depiction (e.g. of an object, a circuit, a process, etc.) that is not subject to checking, releasing and configuration management processes. Sketches are also used to define components for on-site fabrication, with limitations detailed in Section C. Sketches are given a number by CAD. Sketches are not released or controlled by the ECN process.
Controlled copy of Drawing	The released drawing maintained and distributed by the CAD group. Controlled drawings are provided by CAD to Procurement to place subcontracts, as well as to the authors of technical procedures, authors of travelers, etc., to use in fabrication and installation.
Convenience copy of Drawing	Copies of drawings held by teams during fabrication or installation, available on the “Engineering Drawing” web site, on the dashboard of reviews, etc. These shall not be used to place subcontracts nor in fabrication and installation.
Convenience extract from Drawing	A portion of a controlled drawing copied for convenience. This shall include the drawing number and “revision #”. This shall be checked with CAD to be the current revision against the controlled copy before being used for fabrication or installation.
Revision Level	The revision number used for configuration control of Released Drawings. The Revision Level is used to identify the configuration of a given particular drawing within governing documents such as Technical Procedures, Technical Specifications, Statements of Work, Purchase Orders, Work Requests, Travelers, etc. The format of the Revision Level is a single integer.

The Revision Level of a drawing is at the bottom right corner of the title block on each sheet of the drawing.

(Windchill) Release Level

A category within Windchill identifying the current state of the drawing within its development cycle.

- **WIP:** Work In Process. It is used to denote Preliminary Drawings. Changes to drawings at WIP level can be made without incrementing the Revision Level of the drawing (only the Windchill Drawing Version Number is incremented). WIP drawings can be promoted to RELEASED, incrementing the revision #.
- **RELEASED:** This state indicates that a drawing has been approved and was part of a signed off Design Approval Form. Changes to drawings at this level must follow the ECN process. The Revision Level of the drawing must be incremented when promoting from WIP to RELEASED and when making changes to released drawings.
- **OBSOLETE:** This state indicates that a drawing is no longer part of a managed configuration.

The Release Level of a drawing is near the center of its lower grid reference frame on each sheet of the drawing.

Preliminary Drawing

When a graphic depiction has been placed on a lab drawing frame format and given a number, it is considered a drawing.

Prior to being listed on an approved Design Approval Form and released, a drawing is considered preliminary.

PPPL drawing templates include, by default, the following label: "Preliminary - For Reference Only"

Released Drawing

For in-house developed drawings, after a drawing has been

- Verified by the CAD Group Head or designee to comply with the CAD standards
- Reviewed, checked and signed by the Responsible Engineer
- Listed in an approved Design Approval Form

it can be released.

Once released the "Preliminary - For Reference Only" label is removed.

Drawings managed in Windchill will show "RELEASED" in the release level. Other in-house drawings will be stamped "RELEASED". The revision history of the drawing will include the Design Approval Form number.

For vendor drawings, after a drawing has been

- Listed in an approved Design Approval Form

it can be considered released (Design Approval Form will accompany the drawings).

Legacy released drawings may be at revision 0.

Obsolete Drawing	A drawing no longer subject to configuration management, this will bear this label: “Obsolete – For Reference Only”
Redlined Drawing	A marked-up released drawing, as discussed in Part B.
As-built (legacy)/Record Drawing	After any deviations from the original approved drawing have been incorporated into a revised version, this becomes an as-built or “record” drawing. It is acceptable for this drawing to be a redlined drawing.

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4. GENERAL REQUIREMENTS FOR DRAWINGS

Drawings with a PPPL drawing number are required for the manufacture/installation of equipment or hardware incorporated into any experimental device or facility located on site at PPPL, or experimental components supplied to another plasma physics research establishment.

The CAD Group issues drawing numbers for all new PPPL drawings, per ES-DRFT-001, whether drawn by the CAD Group or not, and records the numbers in the CAD group’s records. For new project drawings, the project manager or the principal investigator bears full responsibility for turning over all drawings and their numbering systems, whether electronic or hardcopy, to the CAD Group as required during the project lifecycle.

The CAD Group is responsible for the latest revision of PPPL engineering drawings, and for logging and posting convenience copies with the items’ category as a drawing attribute on “Engineering Drawing” website. The “Engineering Drawing” website maintains convenience copies of the released drawings only.

Redlined drawings cannot be used to place a subcontract.

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4.1 Drawings and models generated and revised within PPPL

Drawings and models that are generated or modified within PPPL will follow, as a minimum, these control steps:

1. The models and the drawings presented to a Final Design Review (FDR) will be logged, so that any changes after the review can be tracked. For those managed in Windchill, the version number (revision.iteration, e.g. “0.4”) of each part will be logged in a Windchill Baseline. For all others, a revision will be created and saved for the FDR.
2. Once checked and approved, drawings can be listed in a Design Approval Form. When the Design Approval Form is signed, the drawings listed within can be released. For those managed in Windchill, the revision level will be increased, and the release level will be set to “RELEASED.” For all others, if any change occurred from the FDR, a revision will be

created, the revision level will be increased and the drawing stamped “RELEASED.” From this point onwards, changes to models and drawings will be subject to Engineering Change Notices (ECNs).

3. When a part or assembly is replaced with one of a different design, the drawings and models describing it become obsolete. They are removed from a managed configuration through an ECN, their revision level is increased, and their release level is changed to “OBSOLETE” in Windchill. Any drawing not managed in Windchill is stamped “OBSOLETE.”
4. Projects must provide a full set of current redlined drawings and update the managed configurations accordingly.
5. Whether produced by the CAD Group or not, all models and drawings shall be sent independently by the Cog for electronic storage in the CAD repository. MCR-ENG-010,R8-003

4.2 Drawings generated and revised by external Collaborators

Drawings that are generated or modified as part of a Collaboration must be included in a design review and released after the design is approved. The specific controls shall be documented in accordance with PPPL procedure ENG-050 in the Collaboration Agreement, or in the General Requirements Document.

Drawings generated by Collaborators require the Collaborator’s release stamp (or equivalent, as detailed in the Collaboration Agreement). A PPPL drawing number is required for components installed onto any experimental device at PPPL.

Drawings generated by Collaborators shall be sent to CAD; the CAD Group shall store the drawings electronically in the CAD repository.

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4.3 Drawings generated and revised by external Vendors and Engineering Subcontractors

Design outputs, including drawings that are generated or modified by an external engineering subcontractor, may be accepted by PPPL for general use providing they:

- 1) meet the requirements developed in accordance with PPPL Procedure ENG-050,
- 2) are reviewed and issued in accordance with the subcontractor’s procedure(s), and
- 3) have been included in a design review performed in accordance with PPPL Procedure ENG-033.

General use as used herein is intended to apply to all use including fabrication, installation, or use in conjunction with PPPL procurement activities.

Once listed in an approved Design Approval Form, drawings generated by external vendors and engineering firms can be used in procurement quotes and bid documents. These drawings do not need to be signed or stamped by PPPL.

Only approved, signed, stamped drawings generated by external vendors and engineering firms shall be used to award subcontracts. These drawings do not need to be stamped by PPPL as they

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are stamped by the vendor. However, if the vendor does not stamp their drawings, the Responsible Engineer (RE) can initialize a release stamp added by PPPL.

Drawings generated by Vendors shall be sent to CAD by the PTR; Drawings are stored electronically by the CAD Group in the CAD repository.

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4.4 ITER Related Drawings

Drawings that are related to the ITER project are created using CATIA CAD-software. Currently, this process is aligned with requirements outlined in this procedure, but may be modified by US ITER headquarters if new CAD policies and procedures are issued. Changes of this kind shall be referred and incorporated to herein.

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5. PROCEDURE

This procedure is divided in the following parts:

- Part A – Creating and Revising Drawings
- Part B – Use of ECNs and Redlined Drawings
- Part C – Using drawings for fabrication, procurement and installation
- Part D – Transmitting Electronic Files of PPPL Approved Drawings
- Part E – Training
- Part F – Records Requirements Specific to this Procedure

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A. Creating and Revising Drawings

When drawings are to be created or revised by the CAD Group, the requestor submits a CAD Request Form (Attachment 1).

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The CAD Group will initiate work once the CAD Request Form is approved. Any change to a CAD Request Form after initial approval must undergo the same approval process. It is advisable to define beforehand the expected variability in the scope of the work requested.

The CAD Group Leader, or designee, is responsible for tracking CAD Request Form numbers, assigning the work to CAD personnel, monitoring the performance of the work scope, coordinating drawing checking with the Responsible Engineer, releasing and posting convenience copies of the latest revision of PPPL engineering drawings on the “Engineering Drawing” website.

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RESPONSIBILITY

ACTION

Requestor

1. Completes pertinent information on the CAD Request Form, including the cost center and the category of all the drawings, individually or in groups. Uses the most demanding Category of the drawings affected as the Category of the form. If any Category is not available, refers to the RE who will follow ENG-063 to obtain it.

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If the request is a modification, attaches the approved ECN.
If the request is part of a design undergoing design verification, notes that on the form.

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2. Details the scope of the work to be implemented by the CAD Group, for example attaching sketches or marked up prints.

Responsible
Engineer (RE)

COG (authorized
to spend on the
cost center)

CAD Group
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3. Signs the form to confirm technical agreement.
4. Signs the form to confirm financial commitment.
5. Confirms the categories stated on the CAD Request form are consistent with those in the approved categorization form for the system, then acknowledges receipt of a fully signed CAD Request Form to the requestor.

6. Performs work, assigns a checker to check work.

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Checker

7. Verifies the technical accuracy, dimensions, and tolerances of the drawing, and forwards the checked drawing with comments to the CAD Group for revision.

CAD Group

8. Makes the necessary modifications based upon the input from the Checker.
9. Forwards electronically to Checker and Responsible Engineer for approval.

Checker and RE

10. Approve the drawing by signing the final version of the drawing.

CAD Group

11. Prepares the drawing for release.
12. If drawings are part of a design verification process (as noted on the CAD Request form), asks for the Design Approval Form (DAF) and releases the drawing with DAF reference next to the revision number.
13. If the drawings are not part of a design verification process, asks for the ECN and releases the drawing noting the ECN number next to the revision number. **MCR-ENG-010,R8-003**
14. Posts a convenience copy of the new or revised drawing onto the "Engineering Drawing" webpage.

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B. Use of ECNs and Redlined Drawings

When drawings need to be revised, an ECN shall be submitted. The initiator is responsible for

defining the scope and obtaining approval per Graded Approach as defined on the ECN Form (Attachment 2). The final approver of the ECN shall determine if a completed Work Planning Form is required per procedure ENG-032 prior to the implementation of an ECN.

Field changes may be redlined on the drawings and implemented using an ECN. Work on components affected by problems with a drawing must be stopped until the problems are resolved, e.g. by agreeing to a solution on redlined drawings appended to an approved ECN. Redlined drawings are posted to the PPPL web with an “ECN pending” stamp.

Discrepancies between drawings and as-built conditions, as recorded on a redlined drawing, shall be documented via a non-conformance report (NCR) per QA-005; the RE states in the NCR whether the change requires a drawing revision.

Drawings, that are pending changes via the ECN system (with or without redlined drawings), shall have an “ECN pending” stamp with the ECN number placed on them. This identifies to any individual that changes are pending on that drawing and that they should check with the CAD Group to see what changes are being planned before using the drawing in design or on the field. If a redlined drawing is available, this becomes the controlled copy of the drawing and a convenience copy is posted on the “Engineering Drawing” website. Once the ECN changes have been completed, the revised drawing becomes the controlled copy and a convenience copy is posted on the “Engineering Drawing” website, the redlined drawing is archived.

The CAD Group Leader, or designee, is responsible for adding any other drawing numbers to the ECN form which may be entailed as part of the change. Any ECN with drawings added after the initial approval (excluding those added for administrative reasons by the CAD Group, e.g. parent drawings) must undergo the same approval process.

When a drawing is removed by a controlled configuration (for example because a component is replaced by a differently designed component), this change is approved using an ECN.

RESPONSIBILITY

ACTION

- | | |
|--|--|
| Initiator | 1. Completes pertinent information on the ECN form, in consultation with RE, including quoting the most demanding category of all the items involved and providing a description to adequately document the change and its location, areas impacted, interfaces, and system impacts. |
| Initiator and RE
(and TA for
A1/A2 (and CE
for A1)) | 2. Discuss and agree to the change to be implemented. If the change is driven by field work or inspections, the affected drawings are redlined and will be attached to the ECN. |
| RE | 3. Signs the form prior to submittal to the CAD Group for A3, or to the relevant TA if A2 or A1; if the “safety impact” factor in the categorization form indicates that the item affects the Accelerator Safety Envelope, marks this on the form. |

- | | |
|---|--|
| TA | 4. If the Category is A2 or higher, reviews and signs the form, before submitting to drafting for A2, or to the next approver. |
| Head, ES&H | 5. If the Category is A1 and affects the Accelerator Safety Envelope, reviews and signs the form (Procedure ESH-025 must also be followed as applicable) before passing to the CE. |
| CE | 6. If the Category is A1, reviews and signs the form, before submitting to drafting. |
| RE (for A3)/
TA (for A2)/
CE (for A1) | 7. The final approver determines, by completing the checklist, whether a Work Planning Form (per ENG-032) is required to address the change. MCR-ENG-010,R8-003 |
| CAD Group | 8. Confirms the categories listed on the form are consistent with those in the approved system categorization form and issues the ECN number once an approved ECN is received. Projects may request additional approvers; CAD group must be aware of these requirements and confirm they are followed. The ECN number opens a log record for the ECN, which includes the name of the RE responsible for the scope. CAD group places an "ECN pending" stamp on the drawings that need to be revised. Drawings that are not available in digital form shall use a hard "ECN pending" sticker. All CAD generated drawings shall use an electronically placed "ECN Pending" stamp. |
| CAD Group | 9. If Redlined drawings are available, scans the Redlined drawing and posts the redlined drawing with an "ECN pending" stamp onto the "Engineering Drawing" web site. Proceed to step 14 (unless required for continued field work). |

Steps 10-13 are only required when the redlined drawings are needed to continue field work

- | | |
|-------------------------------|--|
| Cognizant
Individual
QC | 10. Completes field installation with the redlined drawings. |
| Cognizant
Individual | 11. Inspects to verify compliance with the redlined drawings, confirming that all modifications are associated with an ECN. |
| CAD Group | 12. After QC verification, delivers to CAD all of the redlined drawings used for the job and any other relevant information. |
| CAD Group | 13. Ensures the verified redlined drawing is posted. |
| CAD Group | 14. Complete the work defined in the ECN, when this is requested using Section A of this procedure. |

C. Using drawings for fabrication, procurement or installation

Bid documents shall use “RELEASED” drawings if developed within PPPL or drawings provided to Procurement together with an approved Design Approval Form if developed by an external vendor.

Subcontracts, fabrications and installations shall use “RELEASED” drawings if developed within PPPL or signed and stamped drawings if developed by an external vendor.

Non-safety related auxiliary items not for permanent installation on an experimental device, including but not limited to mock-ups, fixtures, tools jigs, and modified off-the-shelf components, may be fabricated or modified at PPPL based on a sketch. All lift fixtures and items with structural welding require released drawings.

Sketches used for fabrication may be generated by hand (for example for simple geometries), but are preferably produced using a CAD program (e.g. SolidWorks). Sketches have a title and an author, reference the relevant project and are filed with the CAD Group. Before being used for fabrication, sketches are signed by the Technical Authority to confirm technical content and by the budget owner to authorize the machining costs.

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D. Transmitting Electronic Files of PPPL Approved drawings

The CAD Group is responsible for transmitting all electronic files of PPPL drawings to the assigned procurement agent for issuance to outside party or manufacturer as part of pre-contractual and contractual documentation.

When 3D CAD models are required to support fabrication, a model file will be transferred in STP or IGES format. Parts will be inspected to released drawings. All files being sent to vendors will be recorded on a PPPL 3D CAD FILE TRANSMITTAL form and log. Transmittals and transmittal numbers will be logged and issued by the CAD group leader. Transmittals and model files will be tracked (e.g. stored in Windchill). 3D CAD files will be controlled by file name and date created as listed on the transmittal. See ES-DRFT-001 for file naming conventions.

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RESPONSIBILITY**ACTION**

- | | |
|----------------------|---|
| Cognizant Individual | 1. Asks by email CAD Group to transmit an electronic file of a PPPL drawing outside of the laboratory and sends a copy of the request to procurement |
| CAD Group | 2. Assures that electronic file is current and with no outstanding ECNs. |
| | 3. Transmits electronic file to assigned PPPL Procurement agent for issuance to outside party or manufacturer. |
| Procurement | 4. Issues drawings to outside party or contractor. A printout identifying the drawing numbers s with revision will also be provided to the vendor through |

procurement.

5. If changes occur prior to completion of the order, provides updated drawings to the subcontractor.

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E. Training

Head, Engineering
Department

Target Audience: Responsible Engineers, Cognizant Individuals,
Engineering Department Staff

Training Method/Frequency: ☒ Briefings (major re-issue, new positions)
☒ Email distribution (minor revisions)

CAD Group Head

Specifies the appropriate training methods and means (below) and obtains concurrence of the Management System Owner and the Management Process Owner.

Target Audience: CAD Group

Training Method/ Frequency: ☒ Training Briefing
☒ Once Only, upon every revision of this procedure

F. Records Requirements Specific To This Procedure

Records Custodians must assure records are maintained as follows:

Record Title	Record Custodian	Location	Retention Time
CAD Request Form	CAD Group Leader	CAD Request Web Site	Admin 20 (4) Delete when the laboratory determines that they are no longer needed for administrative, legal, audit, or other operational purposes.
Engineering Change Notice Form	CAD Group Leader	ECN Web Site	Admin 20 (2.b) Delete when data have been entered into master file or database and verified, or when no longer required to support reconstruction of, or serve as back-up to a Master file or database, whichever is later
Engineering Drawing	CAD Group Records	CAD controlled database	Admin 17 Various depending on type of drawing

	Coordinator		
ECN Log	CAD Group Leader	ECN Web Site	Admin 20 (4) Delete when the laboratory determines that they are no longer needed for administrative, legal, audit, or other operational purposes.

6. ATTACHMENTS:

1. CAD Request Form
2. Engineering Change Notice Form
3. Use of CAD Request Form
4. Use of Change Notice Form

The editable form (Filemaker) can be found on the Engineering website.
This form is a sample.

**CLICK HERE TO ACTIVATE
THE CAD REQUEST FORM**

CAD Request

Request No **Work Requ**
Date Submitted **Date Request**
Status **Status**

Section A: To be completed by Requestor: REQUIRED ITEMS HIGHLIGHTED IN YELLOW

NOTE: Due to numerous duplicate Names, please enter your E-mail first.
E-mail HINT: Click the E-mail down arrow first then begin typing your E-mail address and click on yours.

Requestor Email **Job Requestor Email**
Requestor **Job Requestor**
Phone **Phone**

Project: Task Title **Job Title**

Project
COST CTR **WORK PKG** **JOB NO**
Categorization
Work Plan No.
WAF or Rollover No.

Charge Number **Cost Ctr**
Work Pkg **Job No**
A1 **A2** **A3**
Work Plan
WAF Rollover No

Select Responsible Engineer **RE Username**
RE Email

Select Cost Center Approver (COG) **COG Username**
COG Email

Finish Need Date **Date Needed**
Est Time Days **Est Time Days**

Design Group **Craft of Work**
Ref. Dwg (if any) **Dwg No**

SELECT ALL DESIGN / CAD REQUIREMENTS (YES / NO)

ROOT_SBS (e.g. NSTXU_1-3-3) **ROOT_SBS**
DAF Pending **YES** **NO**

Welding Required? **YES** **NO**
ECN Provided? **YES** **NO**

Develop Estimate? **YES** **NO**
Create BOM? **YES** **NO**

AC power Shutdown? **YES** **NO**
Order Materials? **YES** **NO**

Description of Work

Please be detailed.
(Include drawing links, specs, sketches, material requirements and any test requirements)
If more room is needed or attachments are desired
 please reply-to-all to the e-mail generated **AFTER** this work request is submitted.

**ENTER REQUEST
OR CANCEL AND
DELETE**

Section B: To be completed by Approval Leadership:

RE Sign **RE Sign**
CC/COG sign: **COG Sign**

Section C: To be completed by CAD Leadership:

Lead: **Lead**
Lead Email: **Lead Email**

Assign: **Assign**
Assign Email: **Assign Email**

Priority: **Priority**
Est. Start: **Estimated**
Est. Man Days: **Shop Time Est**
Est. Completion: **Est Complet**

Approved?: **APPROVED**
Date Approved: **Date Approved**

HOLD


ACCEPT

The editable form (excel) can be found on the Engineering website. The editable form has comments in each of the editable cells explaining the expected content. This form is a sample.

Where providing redlined drawings, all the edits must be on the drawing.

The "Description" section should include the rationale for the revision.

Engineering Change Notice (ECN) Form



Category
☐ A1 ☐ A2 ☐ A3

Red-lined drawings attached
☐ Yes ☐ No

ECN _____

If A1, affecting ASE? ☐ Y ☐ N

Work Planning # (if applicable): _____

Installation Procedure # (if applicable): _____

ECN # issued Date: _____

ECN complete Date: _____

INITIATOR: _____

ECN TITLE: _____

ROOT_SBS (e.g. NSTXU_1-3-3): _____

LIMITATION OF SCOPE - NOTE: A Work Planning Form (ENG-032) is NOT required if the total change to be accomplished satisfies ALL of the following conditions:

- ☐ Is not large or complex or does not represent a new installation into a usable space.
- ☐ Does not require USID.
- ☐ Does not involve tritium or other radioactive contaminated or activated equipment.
- ☐ Does not impact multiple projects, systems, or groups.
- ☐ Does not affect the analyzed and approved design AND
- ☐ Does not change the scope or intent of the original design.

Drawing(s) Affected NUMBER	Current Revision	DRAWING TITLE	Category	Updated Drawing Release Date

Continued on back: ☐ Yes ☐ No

DESCRIPTION OF CHANGE: (State drawing number, zone, group, or list attachments) (Return = Alt + Enter)

ENGINEERING CHANGE NOTICE APPROVALS:	APPROVAL SIGNATURE / DATE
RESPONSIBLE ENGINEER:	
CONDITIONALLY REQUIRED SIGNATURES (see tooltip for examples):	
TECHNICAL AUTHORITY (CAT A1 & A2 ONLY):	
CHIEF ENGINEER (CAT A1 ONLY):	



Engineering Change Notice (ECN) Form

ECN

[illegible]

Reference Procedure:
ENG010 - Control of Drawings

PPPL ECN Form Rev 4.xlsx
10/23/2019

