

PPPL	PRINCETON PLASMA PHYSICS LABORATORY	PROCEDURE	No. ENG-032 Rev 8 page 1 of 11
	Subject: Work Planning Procedure	Effective Date: October 1, 2016	Initiated by: Head of Engineering Department
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Management System (Primary): 03.00 ENGINEERING (ENG)
Management System Owner: Head of Engineering Department
Management Process: 03.06 Technical Project Management
Process Owner: Head of Engineering Department
Sub-Process: 03.06.06 Work Planning And Execution
Sub-Process Owner: Head of Engineering Department; Head, Project Management
Subject Matter Expert Head, Project Management

Applicability

This procedure applies to all activities involving design, experimental and engineering projects, facilities, control computing, and technical infrastructure and equipment at PPPL, or involving collaborations, and associated work activities.

Scope

Per lab policy P-001, “Graded Approach,” work planning and control shall be implemented to all work at the Laboratory and at all levels of activity using a graded approach. Table I of this procedure provides the mission and programmatic impact, ES&H, Cost, and Compliance factors to categorize the risk of an activity as standard, serious, or major. Consistent with the categorization, this procedure shall be used to plan the anticipated requirements of a job, to define the scope of work, to perform hazards analysis, to provide for all environmental, safety, health and security issues as part of the work planning and review process, to establish procedural and testing requirements, to make other determinations as necessary, and to provide clear approvals indicating ownership of the work.

Regardless of the risk categorization, the following requirements apply to all work at the laboratory:

- GET and a supervisor for office work etc.
- AND an approved Job Hazard Analysis for skill of trade, shop etc, per ESH-004
- AND a procedure for installations, maintenance, repair, test, ops, etc. per ENG-030
- AND a Work Plan for jobs and small projects per this procedure
- AND a Project Execution Plan for capital projects, larger projects, and some collaborations per ENG-020.

Per Procedure ESH-025, Operations Hazard Classification Criteria and Safety Certification System, the Design Verification process shall identify and evaluate hazard potential and avoid or mitigate hazards as appropriate. Design considerations shall be weighed against any applicable Job Hazard Analyses, Safety Assessment Documents (SAD), and Safety Certificates for any change to

the safety envelope. Any design process for an existing project which affects the safety envelope shall communicate as necessary with the applicable Responsible Line Manager (RLM) management and Activity Certification Committee (ACC) if any exists.

Any activity, change or issue that may challenge a defined (per ESH-025) High Hazard Operation SAD, safety envelope or Safety Certificate must have an Unreviewed Safety Issue Determination (USID) performed in accordance with Procedure ESH-025. If a USID determines that a change is required to a Safety Certificate, then an Unreviewed Safety Issue (USI) exists and review by the applicable ACC for recommendation regarding revision to a Safety Certificate is required.

Lithium projects involving more than 1 gram of lithium or any amount of finely divided lithium (such as powder) must have a FMEA developed for Lithium based hazards. The Work Planning Form box for "Review of Materials for Lithium Impact and Safety" must be checked so that the Lithium Experts Committee is aware of the project and may review the process.

For Serious and Major risk categories, the Work Planning (WP) RLM will have additional oversight and approval at the Department level; these department roles will be filled by qualified RLMs also. The role may be held by one department head RLM or it may be divided between a requesting and performing department head RLM. For requesting department head RLM, the role may be that of defining requirements and providing funding and ensuring that the result of the activity meets the programmatic requirements. For performing department head RLM, the role may be to provide staffing and ensure timely completion and ensure that the work adheres to the PPPL Engineering, Conduct of Operations and Quality standards. The WP Cognizant Individual assigned to the job (COG) and RLM have to address the need to communicate with all of the stakeholders throughout the job or project.

Introduction

The purpose of this procedure includes establishing criteria by which work planning and control will proceed to integrate safety into all work planning, organize the avenues by which changes will be planned, prepared, reviewed, implemented, and documented into a systematic whole, provide activity level work planning and control, and provide key cross references to other lab procedures to expedite the planning and control process. Additional procedures are used to delineate steps in the project management process. These procedures are shown in the Project Management Flow Chart included as Attachment 2. This Work Planning procedure can be used for single jobs and projects or for collections of jobs needed to perform capital projects per the Project Management System Description and applicable DOE orders. For capital projects, larger jobs, and some collaborations the PMSD and a Project Execution Plan per ENG-020 will be employed for project management processes beyond the scope of this procedure.

The Responsible Line Manager is responsible for all phases of the project, job, or activity throughout the full life cycle of the process. The RLM shall be responsible for the use and implementation of this procedure and process, and shall select a graded approach commensurate with the work and hazards per Table I for the appropriate approval level. The RLM shall select the COG based on technical and safety experience appropriate to the scope. For off site collaborations reviews held elsewhere, the RLM will act as the coordinator for the Work Planning system and documentation of reviews to insure that the goals and objectives of ISM and Work Planning have been met.

The COG and RLM roles, as well as the Project Manager role for larger capital projects, require selection and training commensurate with the demands of the scope, cost, schedule, and risk. Procedure ENG-057 defines the selection and training criteria for COG/RLM/PM roles. On an ongoing basis, the Office of Project Management will provide annual training to update participants on system and procedure changes as well as lessons learned from other projects.

When a large job or collaboration requires multiple phases for successful completion, it may become necessary and desirable to transfer the ownership of the job from one COG or RLM to another. A collaboration division RLM may initiate a job, gather requirements, propose reviews, and obtain approval to execute the job but may hand off the job to a COG and RLM from a performing department to do design, fabrication, and testing. This transfer shall be made by making a request to change the Work Plan to the Office of Project Management.

Project and Job Level Work Planning and Control

Work Plans shall be used for any new systems and for changes to existing systems or spaces. For multiple jobs making up a capital or larger project or for stand alone smaller jobs, Work Plans shall be used and approved as early as possible to charter, initiate, plan, and execute the work. The Work Plan is initiated by the COG and reviewed and approved by the Responsible Line Manager (RLM). Additional approvals may be required depending on the Risk category. (See Attachment 1).

Work planning encompasses technical requirements and scope, cost, schedule, ES&H, and risk assessment. Stakeholders in the job include the requesting and performing Department Heads. For collaborations, special care must be taken to include sponsor requirements for the collaboration in all phases of the job. Work planning also encompasses Activity Level Work Planning and Control which is addressed in the next section.

For complex jobs with novel requirements beyond experience, the job requires a requirements document, initial Peer Reviews, R&D and prototypes, a Concept Design Review (CDR) to present the concept of choice, a Peer Design Review (PDR) to present the analysis confirming the concept, and an Final Design Review (FDR) to present a mature technical, cost, and schedule package. Interstitial Peer Reviews may be held to provide additional scope, cost, schedule, and risk decision making and approval by stakeholders and project management. A graded approach may be applied for less complex or challenging jobs as permitted by the RLM and delineated by the associated Work Plan. As part of the review of this work, the Design Verification process and the Design Review Chairperson provides DR results, disposition, and chits to the RLM and the Ops Center for further action.

Project Design to Cost Principles

A fundamental principle for designing to cost is to ensure that the project contains enough scope contingency (i.e., scope that can be removed from the project) such that the overall project cost objective can readily be met. This includes time-phasing the contingency scope in a way that allows it to be removed from the project before unintended costs are incurred.

Cost estimates and projections must be evaluated continuously throughout the life of the project to ensure that the design-to-cost objectives are being met. Whenever the estimate or projection for an

element of the project is anticipated to exceed the amount that was planned, one or more of the following steps must be taken:

1. The design of the element must be changed to fit the planned cost constraint.
2. The increased cost associated with the design must be traded off with one or more other elements within the total project.
3. The overall project design must be changed to accommodate the cost increase associated with the offending element and the overall project budget replanned.
4. Scope must be removed from the project (scope contingency) and the remaining budgets adjusted accordingly.

As with all projects, good project management practices are necessary to maintain cost and schedule.

Typically, a Design to Cost type project will have a Work Approval Form (WAF) review as part of every design review and will employ the Earned Value Management System (EVMS) with monthly status.

Activity Level Work Planning and Control

Work Planning and Control is required at every level of work activity at the laboratory. For routine activities with inherently low hazards routinely encountered by the general public per ESH-004 Attachment 2, GET training and a supervisor is sufficient for work planning and control.

For work beyond office work and routine tasks as delineated in ESH-004, an approved JHA is required. The JHA process and document provides an effective way for line managers and workers to identify and mitigate workplace hazards. Pre-job briefs are employed to review hazards and protection with workers, to communicate the intent of work planning and control responsibilities, and to provide feedback for continuous improvement of hazard controls. The supervisor or the RLM will approve the JHA and any revisions that may be needed.

For ongoing work on existing systems including maintenance, repair, testing, operations, etc., a procedure per ENG-030 and a JHA are required. The procedure provides review and approval of pre-requisites, ordered steps, use of hazard controls, limits, cautionary notes, and documentation of completed work or problems for post-job debriefings. Typically the RLM associated with the procedure will approve the JHA also.

For Activity Level Work Planning and Control, a Work Plan may be used at the discretion of the RLM. For example, an existing system may require several different procedures, processes, or groups to implement work. While no new changes will be introduced, an approved Work Plan may still be appropriate for planning and control purposes.

Work Planning Review Board

The Head of Engineering Department shall convene a Work Planning Review Board (WPRB) to monitor the use of the main Engineering procedures governing work planning, drawing changes, procedures, and design verification and definitions. The Head of Engineering shall choose the Chair

and membership of the WPRB. The WPRB Chair will schedule and hold WPRB meetings regularly to monitor the use of the Work Planning system. The WPRB Chair will provide feedback to RLMs on all work planning for continuous improvement. With regard to Work Planning forms in progress, the WPRB will evaluate the usage and risk criteria selection as delineated in this procedure and will monitor WPs for timely completion and closure.

The WPRB Chair will also monitor the use of the other main Engineering procedures as constituent parts of the work planning process for compliance and usage by COGs and RLMs, including drawings and ECNs, procedures, and the design verification process and Design Reviews. The WPRB Chair will implement RLM and Cognizant training as may be necessary for consistent usage of these Engineering instruments. The WPRB Chair purview includes the associated functions and records management that are required by COGs and RLMs and the Operations Center. As part of the design verification process, the Head of Engineering and Infrastructure shall select a roster of Design Review Chairpersons. In conjunction with RLMs and Design Review Chairpersons, the WPRB Chair will monitor the results of Design Reviews for consistency and compliance with laboratory procedures and provide feedback to RLMs and Design Review Chairpersons for continuous improvement of Engineering work planning systems.

The Work Planning Form and system has been implemented electronically and is available via the PPPL Employee Website at <http://workplanning.pppl.gov/> or on the Project Management home page.

References (see Attachment 2 PM Flow Chart for additional procedure references)

P-001	Graded Approach
PMSD	Project Management System Description
ENG-033	Design Verification
ENG-010	Control of Drawings, Software, and Firmware
ENG-030	PPPL Technical Procedures for Experimental Facilities
ESH-004	Job Hazard Analysis
ESH-016	Lockout/Tagout of Energy Sources
ESHD 5008	Section 11, Chapter 1– Operations Hazard Controls
ESH-014	NEPA Review System
GEN-023	Records Management
Plan	PPPL Integrated Safety Management System Description
ENG-029	Technical Definitions and Acronyms
ENG-057	COG/RLM/PM Selection and Training
ESH-025	Operations Hazard Classification Criteria and Safety Certification System

Definitions

Cognizant Individual (COG)	The individual assigned responsibility for performing the work. These individuals are identified by the RLM.
Engineering Change Notice (ECN)	The system used to make changes to drawings. See procedure ENG-010.

Environmental Services (ES)	The Division responsible for providing services for environmental compliance remediation, waste management, pollution prevention, and environmental stewardship.
FMEA	Failure Modes and Effect Analysis (see ENG-008)
Health Physics (HP)	ES&H Division providing health physics services for the Laboratory.
Industrial Hygiene (IH)	Part of ES&H Safety Division responsible for providing industrial hygiene and industrial safety support.
Job Hazard Analysis (JHA)	Process and form used to analyze and mitigate job related hazards per ESH-004 for work activities.
Operations Center (Ops Center)	The organization chartered with responsibility for maintaining central files for the Laboratory (except for Drawings, which are the responsibility of Drafting) and for registering project files as satellite files to the Ops Center as appropriate.
Quality Control (QC)	A function within Quality Assurance with the responsibility for performing inspections of components, items, and installations (mechanical, electrical, and welding).
Procurement Quality Assurance (PQA)	A function within Quality Assurance with the responsibility to provide quality services associated with procurements (quality requirements in statements of work/specification, supplier reviews and audits, supplier adherence to quality requirements, etc.)
Responsible Line Manager (RLM)	The manager responsible for the work and the process leading to the performance of the work. These individuals are identified by approved list on the web site. The list of approved RLMs is available on the Engineering & Infrastructure Department home page.
Head of Engineering Department	Responsible for the operation, configuration and content of the on-line Work Planning System and Form. Where risk scenarios have been identified as Major, the Head of Engineering shall also approve the Work Plan.
Department Head	Requesting or Performing Department for the job. (Where risk scenarios have been identified as Serious, a requesting and a performing Department Head shall also approve the Work Plan. See Org Chart.)
Work Planning Review Board	Review board that the Head of Engineering Department shall appoint to review and monitor the Work Plans in progress to determine compliance with this and other Engineering procedures

and specifically Table I. The Head of Engineering shall chair or designate a chair for the WPRB.

Responsibilities

The RLM is responsible for assigning a Cognizant individual (COG) to the work activity, for approving the Work Planning Form (WP) to initiate the work, for approving WP revisions, and for approving the form again at closure indicating that all the documentation is complete. The RLM is responsible for the completeness of the documentation, filing of records, identification of any lessons learned, and compliance with the applicable PPPL policies and procedures for safety, security, engineering, quality, environmental compliance, and property management.

The Work Planning process and any delineated deliverables produce a collection of documentation associated with each job. The RLM is responsible for the documentation and its records management. When closing the WP, the RLM is also responsible for the completeness of the documentation and its location. It is permissible for documentation to exist and reside on COG and RLM computers and files or project files after job completion; it is recommended that all documentation eventually be transferred to the Ops Center after closeout. This transmittal is especially important if a COG or RLM changes jobs or is no longer a PPPL staff member. Design and job documentation can include design presentations, chits or chit logs, calculations, SOWs and Specs, NEPAs, JHAs, and other deliverables. Procedures are also stored and maintained by the Ops Center. Drawings are retained by Drafting. Large models and analyses are stored by the COG, Analyst, or RLM on hard drives and logged by the Head of Mechanical Engineering Division. All storage locations should have adequate backup arrangements to ensure preservation. Note: the Ops Center typically stores all documentation by Work Plan number on the Ops Center WP file server.

For collaborations, special care must be taken to include sponsor requirements for the collaboration in all phases of the job. The COG and RLM must coordinate the gathering of requirements, design reviews, cost estimates, and schedules with the appropriate collaborations division to adequately attend to the needs of the job and the sponsor. It may be necessary for the RLM or COG of record to request that a collaborations manager view and critique the Work Plan to include stakeholder input. This need can also be addressed by the requesting department head during the approval process for Serious and Major category jobs.

For tasks involving potentially Standard risk consequences as defined by Table I, the RLM shall have approval authority for the entire Work Plan. Additionally, for those with Serious risk consequences as defined by Table I, a requesting and a performing Department Head shall also approve the Work Plan at the Initial Work approval step. For tasks with potentially Major risk consequences, in addition to the Department Head, the Head of Engineering Department shall also approve the Work Plan at the Initial Work approval step. See Table I for definitions of standard, serious, and major risk scenarios.

The COG has overall responsibility to perform the work safely and within the budget and schedule. With respect to this procedure, the COG is responsible for completing the Work Planning Form for RLM approval. Upon approval, the COG is responsible for following applicable procedures to execute the body of work specified by the form. The COG is also responsible for obtaining RLM approval on revisions as work proceeds, and at closure. The COG is responsible for the form while it is in progress and shall copy such documents to the Operations Center as may be required.

The Operations Center is responsible for maintaining the Work Planning data files. The Work Plan web site contains a current list of WPs. In the event that a project uses a project specific procedure encompassing work planning, the project shall register its project files as satellite files of the Ops Center as appropriate to maintain the linkage to central files. References to the Ops Center in this procedure shall be understood to include these types of satellite files.

The Head of Engineering Department is responsible for the configurations and content of the web-based Work Planning System and Form.

The electronic Work Planning System will automatically make one-time e-mail notifications to the Heads of Engineering, Quality Assurance, Training, ES&H, and Facilities and Site Services upon the initial approval of a Work Planning Form (and assignment of a form identifying number).

Drafting is responsible for maintaining all drawings and logging and tracking ECNs.

Procedure

This procedure and Work Planning Form requires that the Responsible Line Manager and COG formally define the steps that will be necessary to perform a work activity. The form offers the RLM the options to select a graded approach in advance to define work scope for the COG, to balance priorities, identify environmental, safety, health and security requirements, insure proper controls, and supply an auditable package on which to base operations authorization.

Responsibility

Action

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| COG | 1. Generates a Work Planning Form and completes the description box. The job description must adequately document the work and its location, areas, interfaces, and impacts. Consults system engineers if impacts are not known. The interactive WP is available at http://workplanning.pppl.gov/ . |
| COG/RLM | 2. Defines documentation. The required documentation must be selected and initiated early enough in the job to permit the participation of any other group supporting the change. The documentation must adequately reflect the change, the process, and the controls to make the change such that the RLM may refer to the package if it were to become necessary at a future date. If drawings must be created or changed as a result of the work, an Engineering Change Notice must be used. Use procedure ENG-010. |
| COG/RLM | 3. Determines Engineering Controls. Engineering controls such as reviews, analyses, and calculations should help assure the design, authorization basis, and safety concerns. Implement per procedure ENG-033. |
| | 4. Determines Safety and Security Controls for the Safety Envelope. All work shall be covered by an approved NEPA form per ESH-014. Some projects require added safety documents including Safety Assessment Documents and/or Safety Certificates. Consult with ES&H, ES personnel and the Activity Certification Committee for work activities that may impact |

personnel safety, security, waste management, and environmental impacts. Consult Procedure ESH-025.

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|--------------------------------|--|
| COG/RLM | 5. Defines required procedures and Job Hazard Analysis (JHA) for all activity level work planning and controls. Note: Most shop work will be covered by standing and current (≤ 1 year old) JHAs for each shop. |
| | 6. Defines required testing to verify performance. Testing shall be comprehensive and implemented in such a manner as to include verification of the integrity of controls to insure the protection of the environment, the equipment, personnel, and the public. |
| COG/RLM | 7. Evaluates other questions. The questions cover a range of topics and considerations in planning and implementing work. The RLM is responsible for contacting the appropriate group to determine if these categories apply if there are questions. |
| RLM | 8. Approves the work plan. The initial approval of the Work Planning Form by the RLM indicates the path forward by which the COG may proceed. For Risk scenarios Serious and Major, see steps 9 and 10. |
| Department Head | 9. Approves the WP if the risk scenario has been deemed Serious per Table I. The RLM approves the WP and also has the appropriate Department Head approve the WP. In cases where there are separate requesting and performing department Heads, both shall approve the WP. The Initial approval of the Work Planning Form by the RLM and Dept. Head indicates the path forward by which the COG may proceed. |
| Head of Engineering Department | 10. Approves the WP if the risk scenario has been deemed Major per Table I. The RLM approves the WP and also has the appropriate Department Head and the Head of Engineering Department approve the Work Plan. The initial approval of the Work Planning Form by the RLM, Dept. Head, and Head of Engineering indicates the path forward by which the COG may proceed. |
| COG | 11. Confirms that the Work Plan is correct and approved in the database and proceeds with work. |
| COG | 12. Performs all steps identified in the approved plan. The steps defined by the work plan so generated shall be adhered to or revised by the COG and new approval given by the RLM and previous approvers. |
| COG/RLM | 13. Compiles documentation package required by Work Planning Form and associated lab procedures. (Multiple procedures may be invoked here.) References each document number on the Work Planning Form. |

Note: For some high profile jobs, the COG/RLM will report on status and progress at the Project Status Review Board per ENG-049.

- COG 14. Requests approval of RLM to close Work Planning Form once all work is completed. All drawings must be available in Drafting. All other required documentation must be available at this time and, unless specified differently by a project specific procedure encompassing work planning, must be stored in a file location agreed upon with the RLM. Examples of such locations include the Operations Center or other central file locations, file cabinets in the responsible engineer's office, or electronic files on a specified computer or server.
- RLM 15. Approves package indicating that all documentation has been generated. Assures that drawings are available in Drafting.
- Work Planning Review Board 16. The Head of Engineering Department shall convene a Work Planning Review Board comprised of constituents appropriate to the task and designate a Chairperson. The WPRB shall review Work Plans in progress for compliance and appropriate graded approach. The WPRB shall review the graded approach and shall instruct the RLM to take appropriate measures to improve the Work Plan as necessary. The review board shall also monitor WPs for timely completion and closure.

Training

- Head, Project Management 1. Specifies the appropriate training methods and means below; obtains concurrence of the Head of Engineering Department; and ensures the training is provided.
- A. Target Audience: Cognizant Engineers/Physicists and RLMs
 Instructor: Head, Project Management
 Training Method: Classroom/Group training session
 Frequency: Upon major revision of this procedure and/or related work planning and control procedures.
- B. Target Audience: Supervisors
 Instructor: Best Practices Division
 Training Method: Standard email distribution of revised procedures.
 Frequency: Upon revision and TCR of this procedure.
- C. Target Audience: Council
 Instructor: Head of Engineering Department
 Training Method: Briefing of Council on the procedure changes at a weekly Laboratory Management Meeting (LMM).
 Frequency: Upon significant revision of this procedure.
- Head, Project Management 2. Notifies the Human Resources Training Office of the training so that they will be aware of the training requirements and be able to provide assistance and guidance in the course development, implementation, tracking, and maintenance.

Records Requirements Specific To This Procedure

Records Custodians must assure records are maintained as follows:

Record Title	Record Custodian	Location	Retention Time
Work Planning Form/Work Plan	Cognizant Individual	Operations Center or Department -designated Central File Location	<p><i>[Reference DOE records schedule Admin 16 (30)]</i></p> <p>(1) Records of completed projects <i>[costing more than \$750,000, or which involve special equipment, systems, or processes]</i> <u>Retain until dismantlement or disposal of facility, equipment, system, or process; or when superseded or obsolete, whichever is earlier.</u></p> <p>(2) Records of completed projects <i>[costing \$750,000, or less, which do not involve special equipment, systems, or processes]</i> <u>Destroy 10 years after completion of project.</u></p> <p>(3) Records of terminated projects <i>[costing more than \$750,000, or which involve special equipment, systems, or process projects.]</i> <u>Destroy 10 years after project is terminated</u></p> <p>(4) Records of terminated projects <i>[costing \$750,000, or less which do not involve special equipment, systems, or process projects.]</i> <u>Destroy 5 years after project is terminated.</u></p>

Attachments:

1. TABLE I – Graded Approach for Risk and Requirements
2. Project Management Flow Chart Diagram

Graded Approach for Risk and Requirements

Risk Type	Level 1. Major	Level 2. Serious	Level 3. Standard
Mission / Program Impact	Potential for failure to cause <ol style="list-style-type: none"> (1) Significant adverse impact (≥6 months) to completion of a PPPL Project or/collaboration, or to achieving key performance goals/milestones, or (2) Halt of operations for greater than six months (3) Failure to meet DOE or Presidential milestones. (4) Significant impact to safety envelope, SAD, or ACC 	Potential for failure to cause <ol style="list-style-type: none"> (1) Moderately adverse impact (3-6 months) to a PPPL Project/collaboration (2) Halting, delaying or significantly limiting operations for 1-6 months, or (3) Failure to meet FWP or PEP approved performance goals. (4) Minor impact to safety envelope, SAD, or ACC 	<ol style="list-style-type: none"> (1) Potential for Minimal impact to a PPPL task, system, component or operations due to a failure. (2) No impact to safety envelope, SAD, or ACC
Environment, Safety, Health and Security	Potential for failure to cause <ol style="list-style-type: none"> (1) Death, total disability or other severe adverse impact on the health or safety of a worker or the public, (2) Exposure/release to/of radiation or radioactive or hazardous material ≥ 50% of PPPL or regulatory limits, or (3) Environmental damage beyond site boundary or requiring cleanup costs greater than \$250k. 	Potential for failure to cause <ol style="list-style-type: none"> (1) Lost time injury or illness, (2) Exposure/release to/of radiation or radioactive or hazardous material <50% of PPPL or regulatory limits but ≥10% of those limits, or (3) On-site environmental damage requiring cleanup costs less than \$250k but ≥\$25k. (4) Threat to nuclear material (tritium); threat to sensitive equipment, parts and technology 	Potential for failure to cause <ol style="list-style-type: none"> (1) Injury or illness not resulting in lost time, (2) Exposure/release to/of radiation or radioactive or hazardous material <10% of PPPL or regulatory limits, or (3) Negligible impact on the environment that can be mitigated completely at costs <\$25k.
Cost (includes all costs – design, mfr, etc.)	Potential for failure to cause financial loss or damage to a facility or equipment of \$1,000,000 or more.	Potential for failure to cause financial loss or damage to a facility or equipment of \$250,000 - \$1,000,000.	Potential for failure to cause financial loss or damage less than \$250,000.
Compliance	Potential for inadvertent noncompliance with local, state or federal laws, regulations, contract requirements, or DOE requirements that result in fines or disciplinary actions or require emergency notification of a regulatory agency.	Potential for inadvertent noncompliance with regulations or administrative orders resulting in notification of regulatory agency (e.g., Notices of Violation/Deficiency) or requiring non-routine reporting to an agency.	Potential for minor noncompliance with established management practices, policies or procedures.

PPPL Project Management Work Flow Diagram

