

<b>Subject:</b>  <b>Facilities and Infrastructure Mission Readiness</b>	<b>Effective Date:</b> <b>July 2, 2010</b>	<b>Initiated by:</b>  Head, Facilities Division
	<b>Supersedes:</b> NEW	<b>Approved:</b>  Director

**I. APPLICABILITY**

This procedure applies to all work related to PPPL facilities and infrastructure except as noted, and to the workers that manage, perform, and assess the work necessary to ensure that these facilities are provided effectively, efficiently, safely, securely, and in compliance with contractual requirements. This procedure does not apply to programmatic equipment and infrastructure equipment directly associated with the programmatic equipment .

**II. DEFINITIONS**

**Work Prioritization** is the process by which requests for work related to the repair, maintenance and improvement of the Laboratory’s infrastructure and site are funded on the basis of need and risk and within available resources.

**OPEX (Operating Expense Projects)** include projects of with a total estimated cost of \$5,000 to \$50,000 that are not expensed as capital expenditures. OPEX projects – managed by the PPPL Facilities Division – and are necessary for needed repairs, construction, maintenance, and alterations of existing PPPL facilities.

**GPP (General Plant Projects)** are typically larger construction projects of a general nature that must be capitalized, cost less than \$10,000,000, and have a useful life in excess of two years.

**III. INTRODUCTION**

Mission Readiness and Infrastructure Support (Mission Readiness) is the systematic method to provide the buildings, facilities, and infrastructure that support the needs of PPPL research, experiments, and operations and enable delivery of the PPPL mission objectives (see Attachment 1 for a process overview). Mission Readiness is managed by the PPPL Facilities Division to ensure that Laboratory infrastructure investments are aligned with the scientific mission needs. The Facilities Division goal is to provide for the safe and reliable operation of facilities in support of mission needs. As the availability of funds is limited, a premium is placed upon establishing a systematic process for determining priorities for proposed investments based upon risks and benefits.

The Head of Facilities Division, with concurrence from the Associate Laboratory Director for Engineering & Infrastructure, is the authority for recommending priorities, and establishing work plans and resource investments for facilities and infrastructure work. the processes are depicted in Attachment 1. The objectives of the Mission Readiness process are to propose, plan, and prioritize facilities and infrastructure investments (short-, mid-, and long-term) and to manage the resulting work activities. These objectives are accomplished primarily by implementing the following methods, which comprise the sections of this procedure:

- A. Assessing Conditions and Identifying Mission Needs and Gaps
- B. Line Item Projects
- C. General Plant Projects (GPP)
- D. OPERating EXpense Projects (OPEX)
- E. The Facilities Maintenance Program (preventive, predictive, and corrective).

**IV. PROCEDURE**

**A. ASSESSING CONDITIONS AND IDENTIFYING MISSION NEEDS AND GAPS**

**Procedure**

**Responsibility**

**Action**

Head, Facilities  
Division

1. a. Schedules and conducts “Mission Readiness meetings” and interviews with the individuals responsible for the Laboratory’s identified Key Core Capability Objectives, at least annually. Invites the Associate Director of Engineering and Infrastructure, and appropriate Division Heads of the Engineering and Infrastructure Department.
- b. Inquires how plans for facilities and infrastructure will support the PPPL missions in the near future, and in five and ten-years.
- c. Facilitates identification of any gaps that exist between the Key Core Capability Needs and existing facility conditions.

Individuals  
Responsible for the  
Laboratory’s Key  
Core Capability  
Objectives and other  
Attendees of  
“Mission Readiness  
meetings”

2. Attends “Mission Readiness meetings” and discuss what facilities and infrastructure will be needed to support the PPPL missions now, in the near future, and in five and ten-years.
3. Identifies any gaps that exist between the Key Core Capability Needs and existing conditions.
4. Makes recommendations and requests for addressing the identified gaps.

Head, Facilities  
Division

5. Documents (using Attachment 2 “Core Capability & Mission Readiness Checklist”) the identified gaps between mission needs and facility conditions, the recommendations/requests, and plans for addressing the gaps.
6. Obtains comments from individuals responsible for the Laboratory’s Key Core Capability Objectives and resolves comments and indicates plans on Attachment 2.

Facilities Division

7. Performs annual comprehensive building inspections of a minimum of 20% of the overall PPPL facilities, resulting in all buildings and facilities being inspected at least once every 5 years.

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|------------------------------------|---|
| Facilities Division                | 8. Conducts periodic walkthroughs of infrastructure support assets, documenting and tracking the infrastructure and facility conditions and needs.  |
|                                    | 9. Conducts annual inspections of Infrastructure Support Assets (listed in Attachment 3) and documents and tracks the Infrastructure requirements and any gaps or deficiencies to be corrected to meet the mission needs of the Laboratory.   |
| Line Managers                      | 10. Assesses the short-, mid-, and long-term facility and infrastructure needs of the managed organization and discusses these needs with direct reports.   |
|                                    | 11. Submits requests for facilities and infrastructure work (that was not already identified via Line Items, GPP, OPEX, or Maintenance Work Order System) to the Facilities Division via a written request or the Work Order Request system.  |
| Head, Facilities Division          | 12. Issues an annual call for proposed facilities and infrastructure projects and work requests, on at least an annual basis to Council members and Division Heads.   |
| Council Members and Division Heads | 13. Discuss facility needs with subordinate managers, compile listings and descriptions of proposed projects and work requests, and forward to Head, Facilities.  |
| Any Individual                     | 14. Submits requests for facilities and infrastructure work by submitting a Work Order Request or suggesting the work for pursuit by line management.   |
| Head, Facilities Division          | 15. Reviews any deficiencies, deferred maintenance, and mission readiness gaps identified by facility inspections and walkthroughs or submitted via GPP, OPEX, or line managers/workers; and incorporates the necessary actions in the Core Capability & Mission Readiness Checklists, as appropriate.        |
|                                    | 16. Incorporates the actions identified above into the appropriate work stream (i.e., Line Item projects, GPP, OPEX, and Maintenance Work Order System) by following the corresponding sections of this procedure, which include appropriate feedback to Council members, TRC members, and stakeholders.      |
|                                    | 17. Discusses any facilities and infrastructure work requests that are critical to mission needs and cannot be funded within the existing Laboratory funding streams with the Associate Director for Engineering and Infrastructure to review priorities and determine potential alternative funding sources. |

**B. LINE ITEM PROJECTS****Responsibility****Action**

Associate Director  
for Engineering and  
Infrastructure

1. Leads the pursuit for additional line item funding to adequately address mission readiness gaps. This might involve vetting the proposed projects with Council, forming a project team and following DOE project management directives (e.g., Order 413.3) and the PPPL Project Management System Description. Engagement of science program managers, principal investigators, cognizant engineering managers, and other stakeholders would be required for development and approval of mission need, technical functional requirements, cost and schedule ranges, etc.

**C. GENERAL PLANT PROJECTS (GPP)****Responsibility****Action**

Head, Facilities  
Division

1. Invokes procedures GEN-009 “GPP Prioritization” and ENG-005 “General Plant Projects Administration” for projects and activities that can be funded as a General Plant Project (GPP) -- typically for larger projects that must be capitalized. These procedures govern the assessment of risks, establishment of priorities, scheduling, funding, and implementation of GPP projects.

**D. OPERATING EXPENSE PROJECTS (OPEX)****Responsibility****Action**

Head, Facilities  
Division

1. Invokes procedure ENG-052 “Operating Expense (OPEX) Projects Prioritization and Administration” for establishing priorities, schedules, funding, and implementation of small projects completed using operational funds (OPEX).

**E. FACILITIES MAINTENANCE PROGRAM (PREVENTIVE, PREDICTIVE, AND CORRECTIVE)****Responsibility****Action**

Head, Facilities  
Division

1. Invokes procedure EFA-003 “Work Prioritization – Facilities Division” for establishing priorities, schedules, funding, and implementation of routine plant maintenance (corrective, predictive, and preventive).

**V. REFERENCES**

Facilities Mission Readiness and Infrastructure Support System Description

GEN-009, GPP Prioritization

ENG-005, General Plant Projects Administration

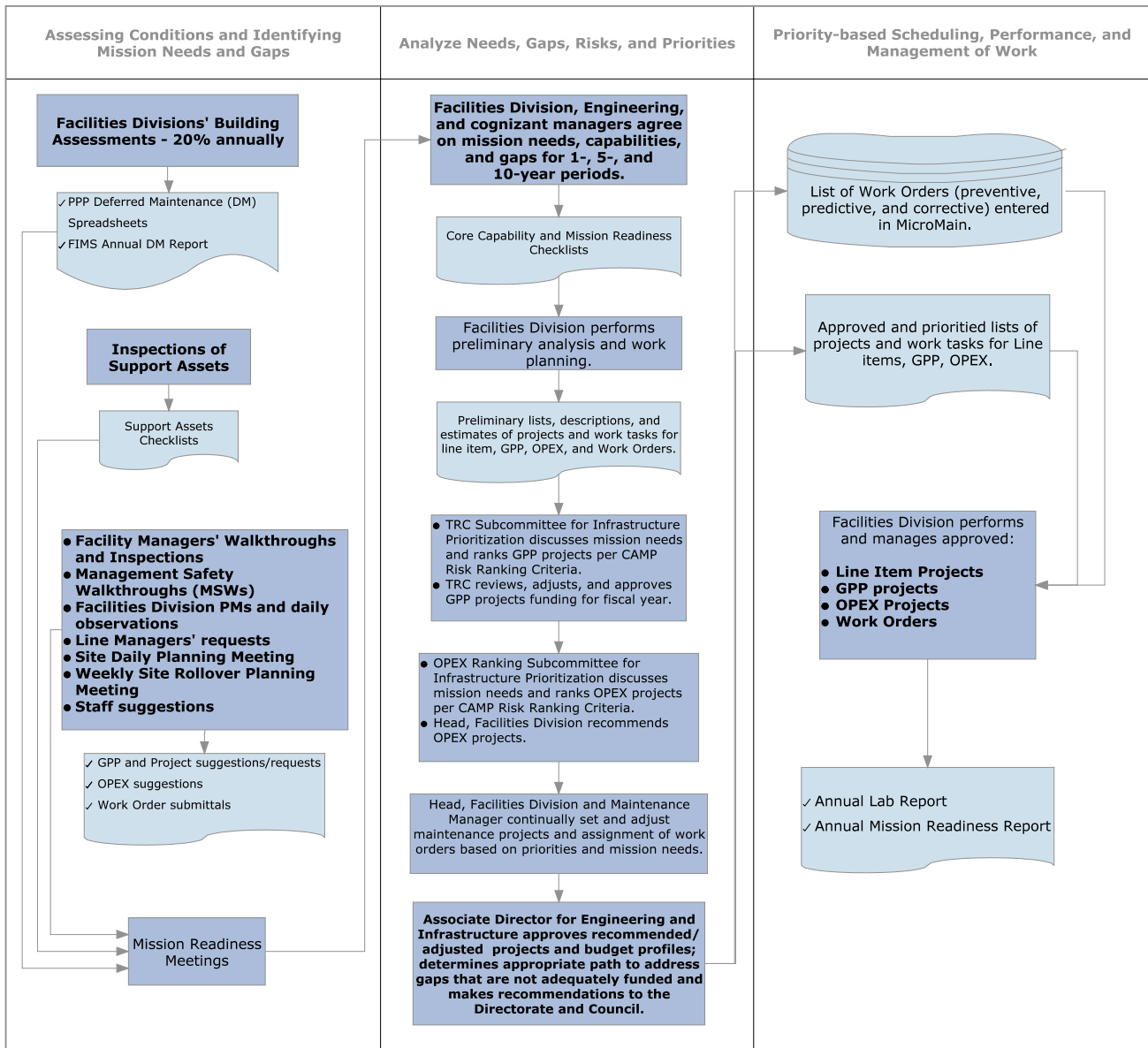
ENG-052, Operating Expense (OPEX) Projects Prioritization and Administration

EFA-003, Work Prioritization – Facilities Division

**VI. ATTACHMENTS**

1. Simplified Process Flow of Mission Readiness Work Planning
2. Typical Core Capability & Mission Readiness Checklist
3. List of Infrastructure Support Assets
4. Typical Infrastructure Support Asset Checklist

**Simplified Process Flow of Mission Readiness Work Planning**



**Core Capability & Mission Readiness Checklist**

<u>Core Capability:</u>				
<u>Key Core Capability Objective:</u>				
<u>Vision:</u>				
<u>Distinguishing Capabilities:</u>				
<u>Distinguishing Performance:</u>				
<u>Relevance:</u>				
Can specific buildings be tied to Mission Relevance?				
<u>Key Buildings or Utility System:</u>				
Total Funding Volume: Now? 5-Years? 10-Years?				
Describe the ability of the infrastructure to serve this mission area now. And the impact these changes in mission will have on each of the following infrastructure systems/capability:				
Infrastructure System or Capability	Now	5-Years	10-Years	Description/Comments
	* (Assumes no facility or infrastructure investments)			
Storage/warehouse				
Computing facilities				
Electrical Loads				
Cooling loads				
Visitor facilities				
Roadways				
Parking				
General chemistry facilities				
General office space				
Unique facilities (e.g. vibration sensitive microscope)				
Others				
Recommendations to obtain mission readiness:				

<sup>a</sup>N = Not Capable   <sup>b</sup>M = Marginal   <sup>c</sup>P = Partial   <sup>d</sup>C = Capable

### Infrastructure Support Assets

[Infrastructure Support Assets are of a general nature and support multiple missions at the Laboratory.]

Canal to Water Tower Line
Fire Alarm System
Fire Sprinkler System
Roads, Walks & Pavement
Steam Generation & Distribution
Fuel Storage & Containment
Sewer System
Gas Facility
D-Site Helium Gas Yard
Radwaste Storage Building
Hazardous Waste Facility
D-Site Electric Utility
C Site Electric Utility
Building Automation System (BAS)
C/D Water Utility System
Retention Basin
D-Site Fences
Support Structure ICRF Power
C-Site Prep-Grading
D-Site Prep-Grading
Natural Gas Piping
Calibration and Service Laboratory (CASL)
Princeton Environmental, Analytical, and Radiological Laboratory (PEARL)



**Infrastructure Support Asset Checklist**

<i>Infrastructure Asset</i>		– Ten-Year Planning		
Facilities, networks and support structures (owned asset or acquired capability) used to move commodities (in this case electricity) between the point of production, treatment, processing, storage, or consumption external to the facility consuming the commodity.				
System Condition and Output:				
Meets Requirement	Now	5 Years	10 Years	Deficiency
	Without Additional Investments			
Do assets have attributes that safely accommodate all authorized workers and prevent contact by non-authorized workers?				
Does system output and condition fully meet known existing and future requirements:				
– load capacity				
– reliability				
– redundancy				
– age and physical condition of components				
Do assets have adequate property protection?				
Is asset constructed and/or laid out to support efficient and effective service provider work processes and economical operations?				
Does asset configuration address potential environmental concerns stemming from equipment operation?				
Are there regulatory or code of record violations?				
<b>Total</b>				
List recommendations to obtain mission readiness:				