PWS 1: FACILITY PLANS, STRATEGIES, AND ANALYSES (INDIRECT)

1. OBJECTIVES:

1.1. To develop and update plans and strategies for overall facility management to include capacity planning, strategic planning, and investment planning. The results of this planning will provide a tool/roadmap for decision makers regarding facility and investment strategies at Holston Army Ammunition Plant (HSAAP).

2. BACKGROUND:

2.1. Joint Program Executive Office Armaments & Ammunition (JPEO A&A), as executor of Department of Defense's Single Manager for Conventional Ammunition, is responsible for conventional ammunition production base strategic planning and execution of the Production Base Support (PBS) program.

2.1.1. Industrial Preparedness Planning (IPP) is performed to document production capabilities and capacities, perform production base analyses, assist in developing acquisition strategies, and assessing risks, as well as make proper production base decisions. This PWS is for the Contractor to provide HSAAP production base data as required for the Government to perform the IPP mission.

2.1.2. The PBS program provides funding for investment and modernization for industrial base capabilities. The effort under this PWS is for the planning and analyses for PBS projects at HSAAP as well as to support long term strategic planning at HSAAP. Execution of individual PBS projects are direct funded via separate Statements of Works (SOWs), or in some instances, separate support SOWs for the Operating Contractor to support PBS projects performed by others. The PBS program supports three types of projects:

- Provision of Industrial Facilities (PIF). PIF projects may include a new production capability, expansion of current capacity, or modernization of existing facilities to current standards. Modernization efforts should consider improved operating efficiency and reduced operating costs as well as sustainment and readiness of critical capabilities. Modernization efforts should consider improving operational safety, quality of the product, and the quality of the work environment. Modernization efforts should consider emerging environmental requirements.
- Layaway of Industrial Facilities (LIF). LIF projects transition industrial facilities or equipment from production status to long-term storage. LIF projects may also include decontamination, disposal, and/or demolition of excess Government owned property.
- Maintenance of Inactive Facilities (MIF). MIF projects fund efforts to maintain inactive facilities in a laid-away state, ensuring they are available

for future use. MIF projects only apply to facilities approved for long-term storage under the LIF program.

3. REQUIREMENTS:

3.1. Industrial Preparedness Planning (IPP):

3.1.1. The Contractor shall respond to Government requests for information related to HSAAP production base data and HSAAP operations on an informal as needed basis.

3.2. Production Base Support (PBS):

3.2.1. The Contractor shall develop and submit a Modernization Strategy and Planning Document no later than (NLT) the end of March of each year. (CDRL A1-001). This document shall include, but not limited to, the following:

Introduction / Executive Summary:

- Holston Overview
- Facility Layout
- Description of Facilities and Capabilities (high level)
- Production Capacities (high level)
- Production Constraints (high level)

Modernization Strategy – This strategy shall be captured in an Integrated Program Strategy and Schedule and shall encompass all of the bullets below describing and/or justifying the prioritization, sequencing, phasing, dependencies, timing, estimated project schedules, and estimated funding requirements of all of the proposed projects, to include the proposed projects that are identified as a result of paragraphs 3.2.2. and 3.2.3.

- Discussion of future production (including projected demand and new products) and facility requirements (next Army Budget Cycle)
- Discussion of future production (including projected demand and new products) and facility requirements and trends (5-15 years ahead)
- Strategic Goals and Recommendations (capacity, capability, environmental, safety, quality of the product, Quality Work Environment (QWE), single point failure reduction, etc.)
- Description of the planning process and prioritization methodology
- Prioritization of Projects
- Estimated Funding Requirements
- Project Sequencing and Phasing considering the following:

  - Next Army Budget Cycle, contract period of performance, and well beyond
  - National Environmental Policy Act (NEPA) requirements and required efforts

- Identify and summarize NEPA pre-planning, efforts, studies, and/or conceptual designs required to support NEPA
  - Summarizing the effects and constraints on the planning and execution of projects

- Science and Technology:
  - Review of candidate emerging technologies
  - Development of Science and Technology focus areas
  - Review of Science and Technology efforts
  - Technology transition planning for future projects

Detailed Summary of Current Facilities and Proposed Modernization by Functional Area (Acids, RDX, HMX, IMX, Utilities, Direct Production Support, Indirect Production Support/Other Infrastructure, etc.)

- Description of Facilities and Capabilities (detailed) (Active/Layaway) including:
  - Current condition and remaining useful life
  - Intermediates storage and handling
  - Raw material storage and handling
- Production Capacities/Constraints (detailed)
  - Process flow diagrams (including raw materials/intermediates/final products)
- Capability/Capacity Goals and Recommendations (including environmental, safety, quality of the product, QWE, etc.)
- Constraints, Risks, Past Issues, Current Issues, and Expected Issues (environmental, safety, QWE, maintenance, single point failures, quality of the product, first pass yield, rework, etc.)
- Functional Area Modernization Strategies (focusing on the current Army Budget Cycle and well beyond) to include:
  - Current available technology and advances
  - Project sequencing, phasing, prioritization, and estimated schedules
  - Environmental planning (permitting, NEPA, etc.)
  - Production projections and potential opportunities for Modernization while limiting impacts to production
  - Production projections and potential impacts to production due to Modernization

  - Infrastructure modernization and potential impacts to production
  - LIF/MIF
  - Critical spares over and above normal maintenance
- Review of equipment and infrastructure lifecycles. Prediction of end of life and obsolescence
- Specific Project Details (see P-25 requirements in section 3.2.3 below)

Information required for modernization planning and strategy development, which shall be provided as requested, may include, but not be limited to, actual production records by process facility, process cycle times, process yields, quality metrics, and energy consumption records.

3.2.2. PBS Call Letter

3.2.2.1. The Contractor shall respond to the annual PBS Call Letter and shall fulfill its requests and requirements. Independent of the PBS Call Letter requests and requirements or if the annual PBS Call Letter is not received, the Contractor shall submit a package that also meets the requirements in this PWS. Whether or not the PBS Call Letter is received, this submission package shall still be considered and referred to as the PBS Call Letter submission. The PBS Call Letter submission shall be provided by the Contractor NLT than the end of May of each year. (CDRL A1-002) The PBS Call Letter submission document shall include, but not limited to, the following:

3.2.2.1.1. The Contractor shall submit a package containing the current, new and emerging PBS HSAAP project requirements in addition to the re-validation of the current PBS HSAAP project requirements.

3.2.2.1.2. The Contractor shall use the Modernization Strategy and Planning Document / Modernization Strategy prepared in section 3.2.1 as the basis for the PBS Call Letter submission.

3.2.2.1.3. The Contractor shall submit candidate projects (each in P-25 format, see P-25 requirements in section 3.2.3 below) that are intended to meet the current, new, and emerging PBS HSAAP project requirements and shall review, revise, revalidate, and/or propose deletion of all previously submitted P-25s on an annual basis. The rationale for any P-25 revisions or deletions shall be captured in an organized P-25 log, which shall track the history of current and prior P-25s at a high level. The P-25 log shall also track the date and summarize the findings of the annual reviews of the existing P-25s. The review of current P-25s shall occur to determine if the information, assumptions, cost estimates, schedule

estimates, etc. are still accurate and revisions shall occur as needed. The Contractor shall provide this P-25 log in the Call Letter submission.

3.2.2.1.4. The Contractor shall submit a 1-N prioritized list of the proposed candidate projects following the format and scoring criteria provided in the Call Letter or provided separately. The 1-N prioritized list shall provide at a minimum, the projects in order of Contractor determined priority, the project title, project number, primary capability/product supported, primary project classification, predecessor and successor projects, estimated cost, recommended fiscal year of execution, and the detailed scoring results. The Contractor's Call Letter submission will be used as a basis for project programming for the next Army budget request, based on priority and the availability of funds. The next Army budget request is the Government Fiscal Year 3 years into the future from the current Government Fiscal Year and includes a total of 5 consecutive years. Any new or existing requirement(s) that the Contractor deems critical to execute sooner than the next Army budget cycle, shall be provided with strong justification. If requested by the Government, the Contractor shall assist the Government in possibly reprioritizing projects when an out of budget cycle project request occurs. Projects requested sooner than the next Army budget cycle will likely not be resourced.

3.2.2.2. The Contractor shall prepare briefing charts and hold an annual PBS Call Letter Review in June of each year, which shall mirror and summarize the overall strategies and proposed projects contained in the Modernization Strategy and Planning Document and the PBS Call Letter submission to aid discussions with the Government on the proposed projects and strategies. Each of the proposed candidate projects shall have a quad chart summarizing key information from the project P-25. The briefing charts and support documentation shall be provided 15 working days prior to the PBS Call Letter Review (CDRL A1-003). In any chart or document where the Government's rights are less than Unlimited Rights, only the specific chart or document shall be marked as such.

3.2.2.3. Information required for modernization planning, strategy development, and P-25 evaluation, shall be provided by the Contractor as requested and may include, but not be limited to, actual production records by process facility, process cycle times, process yields, quality metrics, and energy consumption records.

3.2.2.4. The Contractor, if requested, shall update the Call Letter submission per Government request.

3.2.2.5. The Contractor, if requested, shall provide supporting data for the potential HSAAP projects in support of the Government preparing and finalizing its own 1-N project prioritized list.

3.2.3. P-25

3.2.3.1. The Contractor shall submit a minimum of ten new P-25s annually. (CDRL A1-004) Each P-25 shall meet the following requirements:

3.2.3.1.1. A P-25 is a project planning document with data including, but not limited to: title, objective, background, need, requirement, planned work to be performed, benefits, justification (including an analysis and data supporting), project prioritization, investment cost estimates, schedule estimates, schedule dependencies (to include any predecessor and/or successor relationships), risk analysis, impacts (operational continuity, safety, environmental, quality of product, QWE, energy consumption, etc.), and economic analyses (including savings, cost avoidance, impact to maintenance costs, impact to production/operational costs, and return on investment) for modernization, LIF, and MIF projects. Appendix A provides the P-25 format and an example.

3.2.3.1.2. Each P-25 shall address the facility project requirements, projecting project requirements outward by a minimum of eight years.

3.2.3.1.3. In the project objective and justification sections, issues such as operational continuity to assure production, environmental impact/issues, cost avoidances/savings, safety, quality of product, QWE, strategic importance, and security shall be addressed, as appropriate.

3.2.3.1.4. Each P-25 shall provide performance, environmental, safety, and other project requirements.

3.2.3.1.5. Each P-25 shall provide the assumptions made overall and for the cost and schedule estimates.

3.2.3.1.6. Each P-25 shall provide any conceptual designs and major equipment assumed. The Contractor shall provide any analysis of alternatives conducted, to include but not be limited to, potential HSAAP location(s) considered.

3.2.3.1.7. The Contractor shall provide a robust cost estimating capability for the various types of modernization projects (studies, design, construction, design/construction, rehabilitation of facilities, LIF, MIF, etc.). While the P-25s shall only provide the high level details of each project

cost estimate, the Contractor shall provide the detailed supporting data for each project cost estimate with each P-25 submission.

3.2.3.1.8. The Contractor shall identify and update the target year of execution for each P-25 with input from the Government. The Contractor shall review each P-25 annually and shall revise, revalidate, and/or propose deletion of each P-25 as required and In Accordance With (IAW) the requirements in the PWS. Included in the annual review, the Contract shall review the cost and schedule estimates in each P-25, taking into account the latest information available, past assumptions, market conditions, and other factors, and as the projects get closer to the target year of execution, the cost and schedule estimates shall become more refined, detailed, and accurate. For P-25s with a target year of execution in the near term (0-4 years out into the future), the cost estimate shall be at a level acceptable and mature for possible budgeting (Class 4 IAW American Association of Cost Engineering (AACE) International Cost Estimation Classifications (18R-97)). For P-25s with a target year of execution in the midterm (5-7 years out into the future), the cost estimate shall be at a level acceptable and mature for planning (Class 4 IAW AACE International Cost Estimation Classifications (18R-97)). For P-25s with a target year of execution in the long term (8-15+ years out into the future), the cost estimate shall be at a level acceptable and mature for planning (Class 5 IAW AACE International Cost Estimation Classifications (18R-97)). With any schedule adjustments, the Contractor shall review and update as required, the related strategy overall and as it relates to project sequencing. With Modernization design projects that could be executed, the Contractor may be required under those separate statements of work/requirements to provide cost estimates, possibly at different stages of design. The Contractor is requested to have a cost estimate format and structure consistent whenever cost estimates are provided.

3.2.3.2. The Contractor shall submit a quarterly P-25 plan for Government review and approval. As part of the P-25 plan submittal, the Contractor shall provide an updated P-25 log as described in section 3.2.2.1.3 of this PWS. (CDRL A1-005).

3.2.4. The Contractor shall perform pre-contract actions for projects scheduled for execution. These tasks include, but are not limited to, supporting Determination and Findings (D&Fs), supporting SOW development and review, and any pre-design activities required by the Contractor to support these activities. Support to the D&Fs process may include development of Rough Order of Magnitude (ROM) cost estimates, including detailed basis of estimate documents. Final or full design of the proposed efforts shall be addressed as a proposed project on a case-by-case basis.

3.3. Program Management Reviews

3.3.1. The Contractor shall support/host onsite quarterly Program Management Reviews (PMRs) at the request of JPEO A&A, HSAAP Government Staff and/or Joint Munitions Command (JMC). The draft agenda shall be provided by the Contractor 1 month prior to the scheduled PMR (CDRL A1-006).

3.3.2. Briefing charts shall be provided 5 working days prior to the scheduled PBS review (CDRL A1-006). In any chart or document where the Government's rights are less than Unlimited Rights, only the specific chart or document shall be marked as such.

3.3.3. The PMRs shall include, at a minimum, the following agenda items:

- Review Previous PMR Action Items
- Organization and Staffing Updates
- Contract Updates
- General Contractual Performance to include open Corrective Action Requests (CARs)
- Explosives Production Activity (all orders), Status, Issues, Contractual Performance, and Projected Workload/Orders (all orders)
- Quality and Continuous Improvement Updates (foreign object debris occurrences, Product Quality Deficiency Reports, etc.)
- Key Materials Risk Assessment & Diminishing Manufacturing Sources and Material Shortages
- Safety, Health, Environment Performance and Updates
- Facilities Update Including Current and Proposed Major Maintenance and Armament Retooling and Manufacturing Support (ARMS) Projects
- Modernization Planning and Execution Improvements
- Modernization Projects in Planning and Execution
- Modernization Proposals Being Developed
- Modernization Planning Update Including Current and Proposed Modernization Project Requirements (P-25s)
- Review of Captured Action Items
- Government Tour of Facilities (provided by the Contractor)

3.3.4. After each PMR, updated briefing charts shall be provided by the Contractor 5 working days after the PMR (CDRL A1-006). After each PMR, the updated action item list shall be provided 5 working days after the PMR, with status updates provided each month. The Government will determine if actions can be considered closed. (CDRL A1-007).

4. INSPECTION AND ACCEPTANCE

4.1. JPEO A&A, JMC, and HSAAP Government Staff will periodically review and validate the Contractor's performance against this PWS.

5. DEFINITIONS

5.1. Production Base: The privately-owned and Government-owned industrial production capacity available to manufacture items required by the U.S. Armed Forces. The production base together with the maintenance base comprises the industrial base.

Attachment 0001
November 19, 2021

Appendix A: P-25 Format/Example

PRODUCTION SUPPORT AND FACILITIES PROJECTS
Production Base Support (PBS)

Industrial Facilities (IF) or Layaway
of Industrial Facilities (LIF) Exhibit
P-25 Feeder

DATE:

1. Project Information:
   a. Project Number/Classification:
   b. Category:
   c. First Year Available:

2. Fund Code: PAA, 4210

3. Project Title:

4. Facility:
   a. Name & Location:
   b. Contractor:

5. Project Prioritization Rating

Installation Name						Weight	50%	20%	20%	10%										
						Scoring Criteria	Magnitude: 0-9				Probability: 1-5				Criteria Scoring					
Project No.	Project Title	Primary Capability/ End Item Supported	Primary Project Classification	Predecessor/Successor Projects	Project Cost ($M)	FY Available	Readiness/ Operational Continuity	Environmental	Safety	Cost	Readiness/ Operational Continuity	Environmental	Safety	Cost	Readiness/ Operational Continuity	Environmental	Safety	Cost	Raw Score	Commander's Priority (1-10)
															0.00	0.00	0.00	0.00	0.00	

6. Project Narrative:

   a. Objective:
   b. Background:
   c. Need:
   d. Requirement:

7. Project Investment Costs:

8. Project Schedule:

9. Economic Analysis:

10. Risk Analysis

11. Supporting Documentation:
    a. Equipment List.
    b. Environmental Documentation.
    c. Safety Documentation
    d. Add any other applicable documentation

Attachment 0001
November 19, 2021

Example

PRODUCTION SUPPORT AND FACILITIES PROJECTS
Production Base Support (PBS)

Industrial Facilities (IF) or Layaway
of Industrial Facilities (LIF) Exhibit
P-25 Feeder

DATE: DD MMM YYYY

1. Project Information:

a) Project Number/Classification: PD-JS will provide the project number. Contractor/onsite site Government staff determine the Classification of project (see enclosure 3)
b) Category: PIF or LIF
c) First Yr. Available: When the project should be completed/align phases/align related projects

2. Fund Code: PAA, 4210

3. Project Title: Recommended project title (4-star General needs to understand the need)

4. Facility:

a. Name & Location: Holston Army Ammunition Plant, Kingsport, TN (Example)
b. Contractor:

5. Project Prioritization Rating (The rating needs to be reflected within the document; i.e. if the environmental criteria has a magnitude rating of 9 and a probability of 5, the document needs to describe the potential violations, new regulations, current status/issue based on production output, etc.).

Installation Name						Weight	50%	20%	20%	10%												
						Scoring Criteria	Magnitude: 0-9				Probability: 1-5				Criteria Scoring							
Project No.	Project Title	Primary Capability/ End Item Supported	Primary Project Classification	Predecessor/Successor Projects	Project Cost ($M)	FY Available	Readiness/ Operational Continuity	Environmental	Safety	Cost	Readiness/ Operational Continuity	Environmental	Safety	Cost	Readiness/ Operational Continuity	Environmental	Safety	Cost	Raw Score	Commander's Priority (1-10)
															0.00	0.00	0.00	0.00	0.00	

6. Project Narrative:

   a. **Objective**: Objective statement should be one or two sentences which clearly states the objective of the project. What is the desired end state? What is to be accomplished with this project?

      Example: Road Upgrade Repairs Project

      Objective: Provide a safe and reliable vehicular transportation network.

      Example: Electrical Distribution Upgrade Project

      Objective: A more reliable, more efficient, modernized electrical distribution infrastructure that will reduce maintenance costs and exposure to failure events that would otherwise result in significant production stoppages.

   b. **Background:** Explain the current state of the system, infrastructure, equipment, etc. Provide specifics as applicable: age, products or mission supported, any previous phases and assessments with findings. Why is this equipment needed? Is it in compliance with an Army Regulation or other Safety/Environmental compliance requirements?

      (Example) Currently, the electrical distribution XXXX operating area of XXAAP are archaic and in most cases beyond serviceable repair. The majority of the electrical system in the XXXX area has not been replaced since their original installation in 1960's. Following the Electrical Distribution Phase 2 project, which updated the electrical distribution systems for the XXXX area based on the 2015 assessment and findings. The assessment determined the scope of phase 2 and will factor into the scope of this project. This project will be of similar size and scope and will focus on updating the distribution systems for XXXX. The year 2017 alone has been the cause of XXX production outages. The infrastructure is beyond its expected performance life and requires updating of numerous vital components. The electrical infrastructure , poles and cross arms, are found to be rotted at the base of the poles underground, and the cross arms are severely deformed due to the tensions and stresses they hold. Electrical components in the area are equally failing and unreliable due to their age and susceptibility to weather events.

      The major challenge of continuing operations under current conditions involves exposing critical areas of operations to unnecessary failure modes that will only continue to compound in complexity and probability the longer this

modernization effort is delayed.

c. **Need:** Explain why the project is required. Provide specifics regarding failure rates and impacts to mission. What deliveries have been delayed because of issues? Are there new Safety, Security, Environmental, or Operational requirements that need to be implemented to maintain compliance?

(Example) The electrical infrastructure of the AAP is becoming increasingly difficult to keep operational because of the scarcity of spare parts for the aging electrical systems and the amount of downtime caused by the long lead time obtaining these parts.

d. **Requirement:** Provide specifics for what you will be doing in this project? Is it an assessment? Will demolition be required? Are you replacing equipment? If so, what equipment including ancillary will be removed and replaced? Is this project design only? Explain what you will be included in design. If the project is Design/Build explain the specific activities associated with each. Explain the technical approach: Processes to be included, items to be addressed and equipment to be used in the final design or execution of this project.

(Example) A preliminary list of items to be replaced or repaired is as follows:

i. (350) Power poles with cross arms and hardware, including Grounding wire/clamps with Butt Ground, and Ground Rods 5/8”x10’. Including all Guy Wire, Guy Breaks, Guy Protectors, Guy Hardware, Strand Vices, Bust anchors. Including hardware for reattachment of communication (snowshoe) and secondary circuits.
ii. (250) Intermediate Communications poles with hardware, including Grounding wire/clamps with Butt Ground, and Ground Rods 5/8”x10’. Including all Guy Wire, Guy Breaks, Guy Protectors, Guy Hardware, Strand Vices, Bust anchors. Including hardware for reattachment of communication (snowshoe) and secondary circuits.
iii. (14,000) Ft runs * 4 cables per runs = (56,000) Ft 4/0 ACSR.
iv. (30,000) Ft runs * 2 cables per runs = (60,000) Ft 1/0 ACSR.
v. (42,000) Ft runs * 2 cables per runs = (84,000) Ft #2 ACSR.
vi. (65,000) Ft Static Line#4 ACSR Wire.
vii. (7,000) Ft Duplex 600VAC Wire 60 amp.
viii. (2,000) Ft Triplex 600VAC Wire 100 amp.
ix. (2,000) Ft Quadruplx 600 VAC Wire 200 amp.
x. (25) 15kV single throw 3 phase gang switch including lugs.
xi. (68) 15kV pairs of fuse cutouts.
xii. (75) Surge arrestors at each transformer.
xiii. Replace (4) 3 phase bank 480V substations with pad mount transformers.
xiv. Replace (25) single phase transformers.
xv. Demolition and staging of old poles, hardware and circuit components.

xvi. Service drop (35) including 50ft underground.
xvii. Demolition (4) of transformer pads and associated fencing.
xviii. Street lights (250) extender arms, contactors, transformers, pig tails.
xix. (200) Dead Ends.
xx. (200) Hot Tap Saddles including eyelet screws
xxi. Complete Pole and hardware replacement at the river crossing, cabling replacement is not required. Pole count for river crossing is approximately 15 poles
xxii. Various spare parts and mounting pads as required.
xxiii. Tree removal and trimming

Areas of consideration related to requirements:

Code Requirements:

- Evaluate existing system and identify upgrade requirements based on code changes from 1960s

Poles:

- Develop a drawing for placement of new poles within an acceptable distance from existing poles so as to enable seamless transition without significant power interruption
- An accounting of the number of poles, and height of each pole
- An accounting of cross arms needed for replacement
- Any other pertinent data related to poles for the repair and replacement of the system

Lighting:

- An accounting of the number of lights for replacement. With recommendations for efficiencies with the new pole layout (identify areas where light poles can be combined with power poles)

Conduit and Connections

- All cable connections made on the primary line using barrel connectors shall be double checked to verify that proper crimping is done to prevent premature failure. If at all possible, where a cable is ended and has to be continued, the use of double dead-ends should be utilized. If the cable spool ends in the middle of a span and barrel connectors are to be used, then refer back to the above mentioned statement.
- All connections to a primary of a pole mount transformer or cutout shall be made using hot-tap saddles.

Tree/Brush Clearing:

- Identify areas where there is a need to trim back any trees and brush that

may or will interfere with the access, maintenance, and operation of the circuits or replacement efforts.

7. Project Investment Costs: Provide the summary Investment costs here. Provide the backup details, which includes detailed equipment list with costs, labor, etc. in an attached excel file.

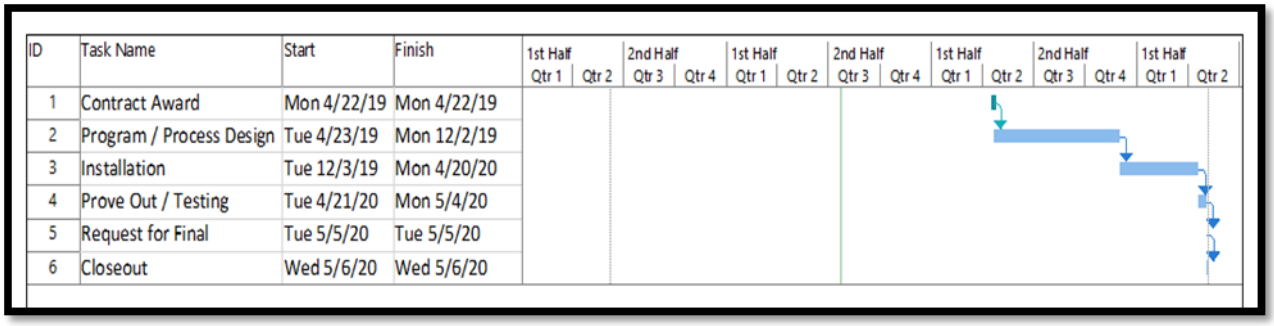
(Example)

Investment Costs	FY23 Constant ($M)
Acquisition (Contracting and Program Mgt.)	$$
Transportation*	$$
Installation*	$$
Testing*	$$
Training	$$
Materials / Machinery	$$
Subcontractor Costs	$$
Other Engineering	$$
Operating Contractor's Engineering & Support Hours	$$
G&A (XX)	$$
Fee (XX)	$$
Total Project Cost (Constant $M)	**$$**

Note: Define costs and provide backup documentation (i.e. Labor rates, Labor hours, vendor quotes, or record of telephone quotes etc.). State all assumptions made with regard to cost.

8. Project Schedule: Total project duration is: XX Months.

(Example)



ID	Task Name	Start	Finish
1	Contract Award	Mon 4/22/19	Mon 4/22/19
2	Program / Process Design	Tue 4/23/19	Mon 12/2/19
3	Installation	Tue 12/3/19	Mon 4/20/20
4	Prove Out / Testing	Tue 4/21/20	Mon 5/4/20
5	Request for Final	Tue 5/5/20	Tue 5/5/20
6	Closeout	Wed 5/6/20	Wed 5/6/20

9. Economic Analysis: This section needs to provide the details to support the project. Need to present cost benefit data. See below for example formats.

(Example)

Operational Costs: **Status Quo** **Alternative 1** **Alternative 2**

(FY XX Constant $s) (FY XX Constant $s) (FY XX Constant $s)

Labor
Production
Maintenance
Equipment
Consumables
Non-compliance
(i.e. OSHA/Env fines)
Utilities
Production Impact

Note: Define costs and provide backup documents, (i.e., labor rates and hours, historical maintenance costs, vendor quotes or record of telephone quotes, etc.). State all assumptions made with respect to operating costs.

Project Benefits: **Alternative 1** **Alternative 2**

(FY XX Constant $s) (FY XX Constant $s)

Quantifiable cost benefits
Cost Avoidances
Revenues
Maintenance Reductions

Non-quantifiable benefits Alternative 1 Alternative 2

Safety
Security
Environmental
QWE

Note: State all assumptions made with respect to project benefits.

Investment Costs for Alternatives

Provide the investment cost details for any alternative that was considered (besides the preferred alternative, including modifications to status quo that are different than those proposed as the preferred alternative) along with any assumptions made or unknowns that need to be considered. Provide the backup details, which includes detailed equipment list with costs, labor, labor rates/hours, vendor quotes (if pursued), etc. in an attached excel file.

10. Risk Analysis:

11. Supporting Documentation:
    a. Equipment List: List major purchased items of equipment and their associated costs. Show in constant dollars.
    b. Environmental Documentation: Applicable correspondence to include the Environmental Protection Act (EPA) and/or state mandates, regulations, citations, etc.
    c. Safety Documentation: Applicable correspondence to include Occupational Safety and Health Administration (OSHA) and/or state mandates, regulations, citations, etc.
    d. Add any other applicable enclosure, i.e. cost summary sheet, economic analysis, analysis of alternatives, pictures, etc.