

Work Breakdown Structure (WBS) Dictionary

Biomass Energy Project

SKP Projects

Calgary, AB

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## Project Description

The objective of this project involves replacing one of the older used propane boilers with a new 400 kW wood pellet boiler. The new boiler supplies 80-85% of the heat demand for the entire ERC.

Secondly, the project is to modify the infrastructure of the building to combine the heating systems of two buildings to layout the common piping and to facilitate the heat supply to both the buildings from the single boiler.

## Purpose of the WBS Dictionary

The overall duration of the project is estimated at 4.5 months, with start and end dates of Jan 1, 2015 and May 20, 2015, respectively. Activity sequencing is used to determine the order of work packages and assign relationships between project activities. Activity duration estimating is used to calculate the number of work periods required to complete work packages.

Once a preliminary schedule has been developed using Gantter, it will be reviewed by the project team and any resources tentatively assigned to project tasks. The project team and resources must agree to the proposed work package assignments, durations, and schedule.

## High Level Project WBS



##  Planning Components

|  |  |
| --- | --- |
| 1 Biomass Energy Project | Description: |
| Duration: 97 |
| Acceptance Criteria: |
| Resources: |
| 1.1 Engineering | Description: |
| Duration: 24 |
| Acceptance Criteria: |
| Resources: |
| 1.1.1 Process Engineering/Design | Description: |
| Duration: 18 |
| Acceptance Criteria: |
| Resources: |
| 1.1.1.1 PFD( Revised) | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: Site: Process Team |
| 1.1.1.2 Mechanical Design / Calculation Diagram(Revised) | Description: |
| Duration: 4 |
| Acceptance Criteria: |
| Resources: Site: Mechanical Team |
| 1.1.1.3 PID's Revised | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: Site: Mechanical Team; Site: Instrumentation Team |
| 1.1.1.4 Equipment Datasheets | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: Site: Mechanical Team |
| 1.1.1.5 Instrument Datasheets (Revised) | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: Site: Instrumentation Team |
| 1.1.1.6 Operating Manual | Description: |
| Duration: 10 |
| Acceptance Criteria: |
| Resources: Site: Process Team |
| 1.1.2 Safety/ Environmental Engineering / Design | Description: |
| Duration: 17 |
| Acceptance Criteria: |
| Resources: Site: Quality & Safety Team |
| 1.1.2.1 Administration | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.1.2.2 HAZOP Participation | Description: |
| Duration: 1 |
| Acceptance Criteria: |
| Resources: Site: Process Team |
| 1.1.2.3 F&G detector Layout and modification diagram | Description: |
| Duration: 4 |
| Acceptance Criteria: |
| Resources: Site: Process Team |
| 1.1.2.4 Noise and Vibration studies (Revised) | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: |
| 1.1.2.5 Escape route Layouts (revised) | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.1.2.6 Firefighting & safety equipment layout (Revised) | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.1.2.7 HAZOP review & report | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: Site: Process Team |
| 1.1.2.8 HSE Execution Plan (Revised) | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: Site: Process Team |
| 1.1.3 Mechanical Equipment | Description: |
| Duration: 15 |
| Acceptance Criteria: |
| Resources: Site: Mechanical Team |
| 1.1.3.1 General | Description: |
| Duration: 8 |
| Acceptance Criteria: |
| Resources: |
| 1.1.3.1.1 Administration | Description: |
| Duration: 1 |
| Acceptance Criteria: |
| Resources: |
| 1.1.3.1.2 Equipment List | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: |
| 1.1.3.1.3 Mechanical Initial Design | Description: |
| Duration: 4 |
| Acceptance Criteria: |
| Resources: |
| 1.1.3.2 Boilers (New Revamp) | Description: |
| Duration: 7 |
| Acceptance Criteria: |
| Resources: |
| 1.1.3.2.1 Retrieval of existing documents | Description: |
| Duration: 1 |
| Acceptance Criteria: |
| Resources: |
| 1.1.3.2.2 Check New design conditions with existing static Equip. | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: |
| 1.1.3.2.3 RFQ-Wood Pellet Boiler (new) | Description: |
| Duration: 1 |
| Acceptance Criteria: |
| Resources: |
| 1.1.3.2.4 Work Package preparation- Boiler system Revamp | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.1.3.3 Storage Area (Revamp) | Description: |
| Duration: 7 |
| Acceptance Criteria: |
| Resources: |
| 1.1.3.3.1 Retrieval of existing documents | Description: |
| Duration: 1 |
| Acceptance Criteria: |
| Resources: |
| 1.1.3.3.2 Check New design conditions with existing static Equip. | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: |
| 1.1.3.3.3 RFQ-Wood Pellet Storage (Indigenous/Independent) | Description: |
| Duration: 1 |
| Acceptance Criteria: |
| Resources: |
| 1.1.3.3.4 Work Package preparation- Pellet Storage system | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.1.4 Piping Engineering /Design ( Air and Water Heating System) | Description: |
| Duration: 17 |
| Acceptance Criteria: |
| Resources: |
| 1.1.4.1 Administration & Retrieval of Existing Documents | Description: |
| Duration: 1 |
| Acceptance Criteria: |
| Resources: |
| 1.1.4.2 Piping stress analysis design initial calculation | Description: |
| Duration: 4 |
| Acceptance Criteria: |
| Resources: |
| 1.1.4.3 Piping MTO initial | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.1.4.4 Isometrics (New & Existing) | Description: |
| Duration: 4 |
| Acceptance Criteria: |
| Resources: |
| 1.1.4.5 Supporting Isometric's- Standard & Special Supports | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.1.4.6 Piping Stress Analysis Detail Design Calc's | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.1.4.7 3D Model Review | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.1.5 Civil Engineering Design ( Air Heating System Layout) | Description: |
| Duration: 8 |
| Acceptance Criteria: |
| Resources: Site: Civil & Structural Team |
| 1.1.5.1 Administration & Retrieval of exisitng Plot Plan | Description: |
| Duration: 1 |
| Acceptance Criteria: |
| Resources: |
| 1.1.5.2 Existing Main Piperack Design Pkg. Revison | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.1.5.3 Existing Sec Pipe rack Design Pkg. Revison | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.1.5.4 Main Piperack Design - ReCalculations | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.1.5.5 Main Piperack Drawings - AFC ( Rev.) | Description: |
| Duration: 1 |
| Acceptance Criteria: |
| Resources: |
| 1.1.5.6 Shop & Facilities Drawing Preparation-By Const. Contractor | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: |
| 1.1.5.7 Shop & Facilities Drawing Review( By Field Engg. Team) | Description: |
| Duration: 1 |
| Acceptance Criteria: |
| Resources: |
| 1.1.6 Electrical Engineering /Design ( Wood Pellet Boiler) | Description: |
| Duration: 9 |
| Acceptance Criteria: |
| Resources: Site: Electrical Team |
| 1.1.6.1 Administration & Retrieval of Existing Documents | Description: |
| Duration: 1 |
| Acceptance Criteria: |
| Resources: |
| 1.1.6.2 Electrical Execution Plan | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.1.6.3 Hazardous Area Classification Drgs. – AFD | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.1.6.4 Cable routing Layout (U/G)-AFP (CLE) for Boiler | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: |
| 1.1.6.5 Earthing Layout- AFP (CLE) for Boiler | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.1.6.6 Power Layout- AFP (CLE) for Boiler | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: |
| 1.1.7 Instrument Engineering/Design | Description: |
| Duration: 10 |
| Acceptance Criteria: |
| Resources: Site: Instrumentation Team |
| 1.1.7.1 Administration | Description: |
| Duration: 1 |
| Acceptance Criteria: |
| Resources: |
| 1.1.7.2 Instrument Layout Diagram | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.1.7.3 Input to 3D Model | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.1.7.4 Input to Package model | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: |
| 1.1.7.5 Wiring diagram-AFP for Boiler & Storage Area | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.2 Procurement | Description: |
| Duration: 26 |
| Acceptance Criteria: |
| Resources: Site:Procurement Team; Site: Mechanical Team; Site: Electrical Team; Site: Instrumentation Team; Site: Civil & Structural Team; Site: Process Team |
| 1.2.1 Mechanical Equipment and Packages | Description: |
| Duration: 21 |
| Acceptance Criteria: |
| Resources: |
| 1.2.1.1 Boiler (Wood Pellet Package) | Description: |
| Duration: 21 |
| Acceptance Criteria: |
| Resources: |
| 1.2.1.1.1 Purchase Requistion | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.2.1.1.2 Bid Evaluation | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: |
| 1.2.1.1.3 Purchase order | Description: |
| Duration: 1 |
| Acceptance Criteria: |
| Resources: |
| 1.2.1.1.4 Seller Docs. Review-AFC | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.2.1.1.5 Order Followup | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: |
| 1.2.1.1.6 Manufacturing and Del. | Description: |
| Duration: 10 |
| Acceptance Criteria: |
| Resources: |
| 1.2.1.2 Storage system for Wood pellets | Description: |
| Duration: 21 |
| Acceptance Criteria: |
| Resources: |
| 1.2.1.2.1 Purchase Requistion | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.2.1.2.2 Bid Evaluation | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: |
| 1.2.1.2.3 Purchase order | Description: |
| Duration: 1 |
| Acceptance Criteria: |
| Resources: |
| 1.2.1.2.4 Seller Docs. Review- AFC | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.2.1.2.5 Order Followup | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: |
| 1.2.1.2.6 Manufacturing and Del. | Description: |
| Duration: 10 |
| Acceptance Criteria: |
| Resources: |
| 1.2.2 Civil/Steel Structures | Description: |
| Duration: 25 |
| Acceptance Criteria: |
| Resources: |
| 1.2.2.1 Receiving Vendor Quotation | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: |
| 1.2.2.2 PO Placement | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.2.2.3 Seller Docs. Review- AFC | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.2.2.4 Order Followup | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: |
| 1.2.2.5 Manufacturing and Delivery | Description: |
| Duration: 15 |
| Acceptance Criteria: |
| Resources: |
| 1.2.3 Piping | Description: |
| Duration: 16 |
| Acceptance Criteria: |
| Resources: |
| 1.2.3.1 Piping Bulks ( Air and Water Heating System) | Description: |
| Duration: 16 |
| Acceptance Criteria: |
| Resources: |
| 1.2.3.1.1 Purchase Requistion- Piping Bulks | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.2.3.1.2 Bid Evaluation-Piping Bulks | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: |
| 1.2.3.1.3 Purchase order- Piping Bulks | Description: |
| Duration: 1 |
| Acceptance Criteria: |
| Resources: |
| 1.2.3.1.4 Seller Docs. Review- Piping Bulks- AFC | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.2.3.1.5 Order Followup-Piping bulks | Description: |
| Duration: 8 |
| Acceptance Criteria: |
| Resources: |
| 1.2.3.2 Piping Supports ( Air and Water Heating System) | Description: |
| Duration: 16 |
| Acceptance Criteria: |
| Resources: |
| 1.2.3.2.1 Purchase Requistion- Piping Supports | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.2.3.2.2 Bid Evaluation-Piping Supports | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: |
| 1.2.3.2.3 Purchase order- Piping Supports | Description: |
| Duration: 1 |
| Acceptance Criteria: |
| Resources: |
| 1.2.3.2.4 Seller Docs. Review- Piping Supports- AFC | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.2.3.2.5 Order Followup-Piping Supports | Description: |
| Duration: 8 |
| Acceptance Criteria: |
| Resources: |
| 1.2.3.3 U/G Piping Materials (Water Heating System New Revamp) | Description: |
| Duration: 16 |
| Acceptance Criteria: |
| Resources: |
| 1.2.3.3.1 Purchase Requisition- U/G Piping | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.2.3.3.2 Bid Evaluation-U/G Piping | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: |
| 1.2.3.3.3 Purchase order- U/G Piping | Description: |
| Duration: 1 |
| Acceptance Criteria: |
| Resources: |
| 1.2.3.3.4 Seller Docs. Review- Piping Supports-AFC | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.2.3.3.5 Order Followup-Piping Supports | Description: |
| Duration: 8 |
| Acceptance Criteria: |
| Resources: |
| 1.2.4 Electrical ( Cables- U/G & A/G Electrical Package) | Description: |
| Duration: 17 |
| Acceptance Criteria: |
| Resources: |
| 1.2.4.1 Receiving Vendor Quotation | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.2.4.2 PO Placement | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.2.4.3 Seller Docs. Review- AFC | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.2.4.4 Order Followup | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: |
| 1.2.4.5 Manufacturing and Delivery | Description: |
| Duration: 8 |
| Acceptance Criteria: |
| Resources: |
| 1.2.5 Instrumentation & Control | Description: |
| Duration: 21 |
| Acceptance Criteria: |
| Resources: |
| 1.2.5.1 Instrument Cables | Description: |
| Duration: 19 |
| Acceptance Criteria: |
| Resources: |
| 1.2.5.1.1 Receiving Vendor Quotation | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.2.5.1.2 PO Placement | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.2.5.1.3 Seller Docs. Review- AFC | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.2.5.1.4 Order Followup | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: |
| 1.2.5.1.5 Manufacturing and Delivery | Description: |
| Duration: 10 |
| Acceptance Criteria: |
| Resources: |
| 1.2.5.2 Instrument Package with Field Instruments | Description: |
| Duration: 19 |
| Acceptance Criteria: |
| Resources: |
| 1.2.5.2.1 Receiving Vendor Quotation | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.2.5.2.2 PO Placement | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.2.5.2.3 Seller Docs. Review- AFC | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.2.5.2.4 Order Followup | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: |
| 1.2.5.2.5 Manufacturing and Delivery | Description: |
| Duration: 10 |
| Acceptance Criteria: |
| Resources: |
| 1.2.6 Construction Contract | Description: |
| Duration: 16 |
| Acceptance Criteria: |
| Resources: |
| 1.2.6.1 Construction Work | Description: |
| Duration: 16 |
| Acceptance Criteria: |
| Resources: |
| 1.2.6.1.1 Issue Inquiry Pack. for Construction contractor | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.2.6.1.2 Bidding / Negotiation for Construction Contractor | Description: |
| Duration: 4 |
| Acceptance Criteria: |
| Resources: |
| 1.2.6.1.3 Contract Award | Description: |
| Duration: 10 |
| Acceptance Criteria: |
| Resources: |
| 1.3 Construction and Pre-Commisioning | Description: |
| Duration: 61 |
| Acceptance Criteria: |
| Resources: |
| 1.3.1 Temporary Facilities | Description: |
| Duration: 14 |
| Acceptance Criteria: |
| Resources: |
| 1.3.1.1 Warehouse & Storage Facilities ( Facilities Site Preparation) | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: Civil & Structural Contractor; Civil Resources; Civil & Structural Materials |
| 1.3.1.2 Fabrication Facilities | Description: |
| Duration: 4 |
| Acceptance Criteria: |
| Resources: Civil & Structural Contractor; Civil Resources |
| 1.3.1.3 Maintenance & other Facilities | Description: |
| Duration: 6 |
| Acceptance Criteria: |
| Resources: Civil & Structural Contractor; Civil Resources |
| 1.3.1.4 Blasting & painting facilities | Description: |
| Duration: 4 |
| Acceptance Criteria: |
| Resources: Civil & Structural Contractor; Civil Resources |
| 1.3.2 Site Preparation | Description: |
| Duration: 10 |
| Acceptance Criteria: |
| Resources: |
| 1.3.2.1 Ground Preparation, Mark up and Leveling | Description: |
| Duration: 10 |
| Acceptance Criteria: |
| Resources: |
| 1.3.3 Concrete Structures | Description: |
| Duration: 20 |
| Acceptance Criteria: |
| Resources: Civil & Structural Contractor; Heavy Lifting & Shifting Equipments; Civil Resources |
| 1.3.3.1 RC Pipe Rack | Description: |
| Duration: 10 |
| Acceptance Criteria: |
| Resources: |
| 1.3.3.2 Equipment & Structure Foundation | Description: |
| Duration: 5 |
| Acceptance Criteria: |
| Resources: |
| 1.3.3.3 Civil Work for Piping ( Excavation Foundation) | Description: |
| Duration: 5 |
| Acceptance Criteria: |
| Resources: |
| 1.3.3.4 Civil Work for Electrical.Instrumentation | Description: |
| Duration: 5 |
| Acceptance Criteria: |
| Resources: |
| 1.3.4 Structural Steel | Description: |
| Duration: 20 |
| Acceptance Criteria: |
| Resources: Civil & Structural Contractor; Heavy Lifting & Shifting Equipments; Civil & Structural Materials |
| 1.3.4.1 Refurbishment | Description: |
| Duration: 4 |
| Acceptance Criteria: |
| Resources: |
| 1.3.4.2 Steel Structure Fabrication | Description: |
| Duration: 8 |
| Acceptance Criteria: |
| Resources: |
| 1.3.4.3 Equipment Structure | Description: |
| Duration: 8 |
| Acceptance Criteria: |
| Resources: |
| 1.3.5 Equipment Installation | Description: |
| Duration: 53 |
| Acceptance Criteria: |
| Resources: |
| 1.3.5.1 Refurbish & Revamp Equipments | Description: |
| Duration: 5 |
| Acceptance Criteria: |
| Resources: Maintenance Team; Mechanical Consumables and Machines |
| 1.3.5.2 New Equipments | Description: |
| Duration: 8 |
| Acceptance Criteria: |
| Resources: Site: Mechanical Team; Maintenance Team; Heavy Lifting & Shifting Equipments; Boiler; Storage Silo; Mechanical Contractor ( Mech. Equipment, Insulation, Painting,Fire Proofing,Scaffolding); Electrical Contractor; Instrument Contractor; Mechanical Consumables and Machines; Electrical Cables and Equipments; Instrument Cables and Equipments |
| 1.3.6 Piping Work | Description: |
| Duration: 18 |
| Acceptance Criteria: |
| Resources: |
| 1.3.6.1 Shop Fabrication | Description: |
| Duration: 4 |
| Acceptance Criteria: |
| Resources: Maintenance Team; Mechanical Contractor ( Mech. Equipment, Insulation, Painting,Fire Proofing,Scaffolding); Electrical Contractor; Heavy Lifting & Shifting Equipments; Mechanical Consumables and Machines; Electrical Cables and Equipments |
| 1.3.6.1.1 Piping Prefabrication | Description: |
| Duration: 4 |
| Acceptance Criteria: |
| Resources: |
| 1.3.6.2 Underground piping | Description: |
| Duration: 4 |
| Acceptance Criteria: |
| Resources: Site: Mechanical Team; Maintenance Team; Mechanical Contractor ( Mech. Equipment, Insulation, Painting,Fire Proofing,Scaffolding); Heavy Lifting & Shifting Equipments; Mechanical Consumables and Machines |
| 1.3.6.3 Piping On rack | Description: |
| Duration: 4 |
| Acceptance Criteria: |
| Resources: Maintenance Team; Mechanical Contractor ( Mech. Equipment, Insulation, Painting,Fire Proofing,Scaffolding); Heavy Lifting & Shifting Equipments; Mechanical Consumables and Machines |
| 1.3.6.4 Piping Around Equipments | Description: |
| Duration: 4 |
| Acceptance Criteria: |
| Resources: Maintenance Team; Mechanical Contractor ( Mech. Equipment, Insulation, Painting,Fire Proofing,Scaffolding); Heavy Lifting & Shifting Equipments; Mechanical Consumables and Machines |
| 1.3.6.5 Small Bore Piping | Description: |
| Duration: 2.997916666666667 |
| Acceptance Criteria: |
| Resources: Maintenance Team; Mechanical Contractor ( Mech. Equipment, Insulation, Painting,Fire Proofing,Scaffolding); Electrical Contractor; Mechanical Consumables and Machines |
| 1.3.6.6 Pipe & Pipe Loop Testing | Description: |
| Duration: 18 |
| Acceptance Criteria: |
| Resources: Site: Quality & Safety Team; Maintenance Team; Mechanical Contractor ( Mech. Equipment, Insulation, Painting,Fire Proofing,Scaffolding); Mechanical Consumables and Machines |
| 1.3.6.6.1 Non Destructive testing for Pipe Weld Joints | Description: |
| Duration: 15 |
| Acceptance Criteria: |
| Resources: |
| 1.3.6.6.2 Hydrotesting | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: |
| 1.3.7 Electrical Work | Description: |
| Duration: 18.5 |
| Acceptance Criteria: |
| Resources: |
| 1.3.7.1 Electrical Work U/G | Description: |
| Duration: 4 |
| Acceptance Criteria: |
| Resources: Site: Electrical Team; Electrical Contractor; Heavy Lifting & Shifting Equipments; Electrical Cables and Equipments |
| 1.3.7.2 Electrical Work A/G | Description: |
| Duration: 4 |
| Acceptance Criteria: |
| Resources: Site: Electrical Team; Maintenance Team; Electrical Contractor; Heavy Lifting & Shifting Equipments; Electrical Cables and Equipments |
| 1.3.7.3 Electrical Installation | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: Maintenance Team; Heavy Lifting & Shifting Equipments; Electrical Cables and Equipments |
| 1.3.7.4 Testing | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: Site: Electrical Team; Maintenance Team |
| 1.3.8 Instrumentation Work | Description: |
| Duration: 27 |
| Acceptance Criteria: |
| Resources: |
| 1.3.8.1 Instrumentation Work U/G | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: Maintenance Team; Instrument Contractor; Heavy Lifting & Shifting Equipments; Instrument Cables and Equipments; Site: Instrumentation Team |
| 1.3.8.2 Instrumentation Work A/G | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: Maintenance Team; Instrument Contractor; Instrument Cables and Equipments; Site: Instrumentation Team |
| 1.3.8.3 Instrument Installation | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: Instrument Contractor; Instrument Cables and Equipments |
| 1.3.8.4 Testing | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: Site: Instrumentation Team; Instrument Contractor |
| 1.3.9 Painting | Description: |
| Duration: 50 |
| Acceptance Criteria: |
| Resources: |
| 1.3.9.1 Shop Blasting/Painting | Description: |
| Duration: 48 |
| Acceptance Criteria: |
| Resources: |
| 1.3.9.1.1 Equipment Painting | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: Mechanical Contractor ( Mech. Equipment, Insulation, Painting,Fire Proofing,Scaffolding); Mechanical Consumables and Machines |
| 1.3.9.1.2 Piping Painting | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: Mechanical Contractor ( Mech. Equipment, Insulation, Painting,Fire Proofing,Scaffolding); Mechanical Consumables and Machines |
| 1.3.9.2 Field Painting | Description: |
| Duration: 5 |
| Acceptance Criteria: |
| Resources: Maintenance Team; Mechanical Contractor ( Mech. Equipment, Insulation, Painting,Fire Proofing,Scaffolding) |
| 1.3.9.2.1 Field Equipment painting | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: |
| 1.3.9.2.2 Field Piping painting | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: |
| 1.3.9.2.3 Field Structure Painting | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.3.10 Insulation/Fireproofing/Refractory | Description: |
| Duration: 5 |
| Acceptance Criteria: |
| Resources: |
| 1.3.10.1 Insulation | Description: |
| Duration: 5 |
| Acceptance Criteria: |
| Resources: Mechanical Contractor ( Mech. Equipment, Insulation, Painting,Fire Proofing,Scaffolding); Mechanical Consumables and Machines |
| 1.3.10.1.1 Equipment Insulation | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: |
| 1.3.10.1.2 Piping Insulation | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.3.10.2 Fireproofing | Description: |
| Duration: 4 |
| Acceptance Criteria: |
| Resources: Mechanical Contractor ( Mech. Equipment, Insulation, Painting,Fire Proofing,Scaffolding); Mechanical Consumables and Machines |
| 1.3.10.2.1 Fireproofing of Structure | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.3.10.2.2 Fireproofing of New Equipments and Pipelines | Description: |
| Duration: 2 |
| Acceptance Criteria: |
| Resources: |
| 1.3.11 Precommisioning | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: Site: Process Team; Site: Mechanical Team; Site: Electrical Team; Site: Instrumentation Team; Site: Civil & Structural Team; Site: Quality & Safety Team; Maintenance Team |
| 1.3.11.1 Precommisioning/Operations Handover | Description: |
| Duration: 3 |
| Acceptance Criteria: |
| Resources: |

## Authorization

If approval is required, provide the names of those business sponsors that must sign the Project Management Plan.

Approved by the Project Sponsor:

 Date:

[City of Grand Prairie]

CoGP, Alberta Government

***Note: Add other signatories as needed***