ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

1407 West North Temple, Suite 310
Salt Lake City, Utah 84116

March 17, 2017

VIA ELECTRONIC FILING

Public Service Commission of Utah
Heber M. Wells Building, 4th Floor
160 East 300 South
Salt Lake City UT 84111

Attention: Gary Widerburg
Commission Administrator

Re: **Docket No. 13-035-02**
In the Matter of the Application of Rocky Mountain Power for Authority to Change its Depreciation Rates

As requested by the Public Service Commission, attached is a copy of the Currant Creek Generation Facility Demolition Study that was referenced in the Company's March 1, 2017, compliance report submitted in the above-referenced matter.

Questions regarding this filing may be directed to Bob Lively at (801) 220-4052.

Very truly yours,

Jeffrey K. Larsen
Vice President, Regulation

PacifiCorp

Currant Creek Generation Facility

Demolition Study

Date of Issue: August 15, 2014
Revision: 1

PACIFICORP ENERGY
A DIVISION OF PACIFICORP

CB&I

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1.0 Decommissioning and Demolition Sequencing

1.1 Introduction

The Currant Creek plant was commissioned in 2005 and is located on a 160 acre site near Mona, UT. Currant Creek was the first generating station that was built by PacifiCorp in nearly 20 years. Natural gas is the fuel source of the plant via a dedicated pipeline pressurized at about 1,075 pounds per square inch and is capable of delivering about 90,000 British thermal units (Btu) per day. Natural gas fuels the two gas turbines at the plant. Heat recovery steam generators connected to the turbines allow for the plant to operate in a combined cycle mode. The heat recovery steam generators take the 1,125 degree Fahrenheit exhaust gas from the turbines and heat water into steam and pass it through a conventional steam turbine at 1,951 pounds per square inch (psi). In addition, each heat recovery boiler has the capability for 'duct firing', or burning natural gas to supplement the exhaust gas energy which produces additional steam to the steam turbine. The exhaust steam from the turbines is passed through an air-cooled condenser and transformed back into water for re-use in the heat recovery steam generators. The air-cooled condenser is nearly as large as a football field and work on the same principal as an automobile radiator. Thirty large motor driven fans blow air across the radiator tubes to condense the steam into water.

The air-cooled condensation process requires only 10 percent of the water needed by most of PacifiCorp's conventional, water cooled steam electric plants. The water for Currant Creek operations is supplied by two deep bore wells on the outskirts of Mona, UT. The plant itself was located adjacent to a major intersection of high voltage power lines ideal for delivering power to the area grid.

The combined cycle process increases the operating efficiency at Currant Creek from 36 percent efficiency that is conventionally delivered by gas turbines to 55 percent. The efficiency of the combined cycle process contributes to low fuel consumption and low emissions.

The purpose of preparing this study for Currant Creek is to evaluate the potential revenue value and the costs in 2014 dollars of this Plant and its associated facilities if it were to be closed today.

The following sections presents an overall suggested project sequencing approach for the decommissioning and demolition of the Currant Creek Generating Station in its entirety. It has been assumed that complete demolition of the Currant Creek Station will be performed down to concrete slabs and foundations to existing grade. The report also provides costs for the decommissioning and anticipated salvage revenue of the plant. For the purposes of this engineering estimate, demolition includes the razing of all structures associated with the plant down to and includes removal of the existing slab and above grade concrete. Demolition of the plant will not take place at Currant Creek until all project plans are assembled, reviewed and approved. Due to the young age of the facility, asbestos containing materials were not used in its construction and are therefore not a concern in regard to abatement costs associated with older, pre-1980 power plant construction. Typically, a demolition permit can only be issued once any environmental work of concern has been completed and final plan inspections are performed prior to the onset of deconstruction activities.

Additional details related to the demolition estimate can also be found in **Section 1.4** of this report.

1.2 Decommissioning

Decommissioning of the plant is defined as placing the plant in an environmentally neutral, zero-energy state. This requires the removal of all hazardous and waste materials that could result in a release during plant dismantlement. This includes materials such as lubricating fluids/oils, fuel oil, coal combustion residuals, PCBs, ACM, lead paint, process chemicals, and universal wastes including mercury switches/mercoids. Most of these materials are not a major concern at Currant Creek. **Section 2** of this report provides the details related to addressing all environmental concerns

Utility cut and cap activities, completed in accordance with PacifiCorp and Currant Creek Station lock out/tag out program requirements (short term measure) and air gapping procedures (long term measure), would also be completed and verified during the decommissioning project phase. The estimated cost associated with the demolition phase of the plant begins with the pre-mobilization submittals. The utility cut and cap phase is part of the demolition site setup phase of the plant. It is assumed that the demolition contractor will work closely with plant electrical personnel in affecting the de-energizing of the plant prior to the onset of demolition activities. The transmission assets will remain operational and in place since they are owned by Rocky Mountain Transmission. The costs included are assumed in this estimate to include removal of transmission lines that enter the plant back to a pre-designated transmission supporting structure far enough away from the power block structure to allow for safe dismantlement activities. The estimate at this time does not include the cost to reconnect the transmission lines once removed. It is recommended that additional due diligence be performed to finalize the logistics required for the re-connection to maintain the transmission assets in an undisrupted and operational order throughout plant decommissioning and dismantlement.

1.2.1 Investment Recovery - Sold Assets

Any assets sold by the Plant or its designees would be removed from the power house utilizing small forklifts and the existing overhead (OH) cranes if applicable, prior to demolition. Sold assets will be moved to the truck/rail bay via crane and loaded on customer trucks or loaded on the demolition contractor's trailers for transfer to plant approved staging area for processing. The turbine generators will be removed during demolition of Turbine Hall using cranes when dismantlement of the plant begins.

Any contractor who intends to remove an item of equipment must provide a rigging plan and in some cases, an asbestos abatement plan to Currant Creek Station oversight personnel for review and final approval prior to the disturbance of any equipment slated for relocation from the plant. Limits on the removal of ancillary wiring and piping must also be overseen to avoid excess removal of salvageable materials. Typically, the removal of supporting lines, cables or piping would not exceed a distance greater than two foot from the equipment slated for removal.

1.2.2 Pre-Mobilization Activities Prior to Plant Demolition

Prior to initiation of demolition activities the following project plans and submittals would be required by the demolition contractor and its engineers:

1. Demolition & Dismantlement Execution Plan
2. Application for all Permits including in accordance to the Final Permitting Matrix
3. Site Specific Health and Safety Plan
4. Scrap/Salvage Materials Management Plan
5. Waste Management Plan

6. Utility Cut and Cap Plan
7. Erosion and Sediment Control Plan
8. Quality Control Plan
9. Sampling and Analytical Plan (if necessary for Basin/impoundment closures)
10. Preparation and finalization of a final CPM project schedule;

The demolition permit will be the primary permit vehicle governing the planned work and as provided in the PacifiCorp Design Basis document, specifically the project permitting matrix for the Currant Creek Plant dismantlement. The final project design package, including the technical specifications and drawing package will be utilized to support the Demolition Permit application package. This permit is issued by the State of Utah and the local municipality.

Drawings and environmental information that are available for contractor review should be used in the preparation of the demolition design and specification package prior to procurement of an environmental remediation or demolition contractor.

1.2.3 Pre-Construction Meeting

Prior to commencement of site activities a pre-construction meeting will be held at the Currant Creek Generating Station. This meeting will be attended by all project stakeholders, including but not limited to the following:

a) Currant Creek Generating Station Project Manager and Corporate Sponsor;
b) Currant Creek Generating Station Technical Leads;
c) Currant Creek Generating Station managers and key operations staff;
d) Engineer's demolition project design team;
e) Engineer's construction management team;
f) Demolition Contractor Project Managers/Superintendents

The primary purpose of this meeting will be to communicate all project objectives to the project team, define project safety as the primary project objective, complete a detailed review of the project plans, scope of work, technical specifications, schedule, introduce key project staff, and establish the reporting requirements for the project.

1.3 Currant Creek Generating Station Demolition

An integral part of the valuation of the Currant Creek Generating Station in Mona, UT is to demolish the plant in order to obtain access to the salvageable assets from the facility. Demolition represents the cost to access all salvageable revenue and is therefore an inherent component of cost while salvage in the form of recyclable metal represents one revenue stream in the economics of this valuation.

The following sections describe the means and methods that were developed during the site visit conducted at the plant on July 2014 to develop a demolition approach for this site. The overall Sequence of work for dismantlement is as follows:

- Pre Mobilization Plans, permitting, submittals and final approvals
- Mobilization of all labor, equipment and materials
- Site setup, install erosion control measures and commence utility disconnections and cut and caps including protection of transmission assets as required by the Interconnection Agreement
- Water intake and discharge pipes plug and grout
- Coal pile closure – remove all waste coal, minimal backfill, grade and seed

- Dismantle all outer structures
- Dismantle the turbine generators
- Dismantle turbine generator building
- Prepare the boiler implosion,
- Dismantle and process four stacks by implosion
- Prepare and process steel on site
- Load and ship salvage by truck, rail or barge
- General conditions
- Reclaim and restore the site and remaining basins (not included in demolition estimate detail, but provided in environmental estimate).

Facility demolition will take approximately 217 working days to complete. The sequencing of the work will be performed in accordance with the schedule provided in **Section 1.5 – Demolition Schedule.** The approach used in the dismantlement of the plant will start with the outer low profile buildings first. This allows for a safer and more effective access to the taller structures such as the boiler house and associated turbine hall structures. It also further creates ample room to process steel while the coal pile is being closed. The turbine generator building and the boiler house structure (i.e. the Power Block of the plant) will be the final above grade structure to be dismantled and it is anticipated that this structure would be safer to take down by implosion once all of the outer structures have been physically removed.

The estimate assumes that the transmission lines and yards will be de-energized during decommissioning by Currant Creek Station personnel in conjunction with Rocky Mountain Transmission personnel. For the purposes of this estimate, equipment such as transmission lines and transformers are assumed to be removed relocated and/or protected prior to demolition activities. Additional planning will be required to remove any transmission assets from the power block (i.e. the turbine hall wall) to allow for dismantlement either by mechanical means or by implosive methods. The protection of the transmission assets must be accounted for in all implosive modelling efforts. These assets include the associated grounding grid and fencing during the entire demolition phase of work.

1.3.1 Task 1: Pre-mobilization Plans, Submittals and Permitting

Prior to mobilization, an integral step must be taken where all plans and submittals are prepared by the selected demolition contractor and provided to the oversight engineer for review and approval. The plans must be approved by the oversight engineer for submittal, review and approval to local and State regulatory entities for the acquisition of the demolition permit. Four (4) working weeks were allocated for this process. These plans specific to the demolition scope of work are anticipated to be as follows:

- Demolition / Construction Execution Plan (including completed Permitting Matrix)
- Site specific Health and Safety Plan
- Implosion Work and Safety Plan
- Salvage Management Plan
- Erosion and Sediment Control Plan
- Storm Water Pollution Prevention Plan
- Remedial Action Work Plan?
- Quality Control Plan
- CPM Schedule
- Final Report

1.3.2 Task 2: Demolition Contractor Mobilization

Site Mobilization is expected to take approximately Fifteen (15) days. The following shows the labor and equipment that will mobilize to the site to begin the work. The costs for management are carried under in the General Conditions portion of the Demolition estimate found in **Section 1.4**.

Table 16 – Task 2: Contractor Mobilization - Labor and Equipment

Description	Quantity/Duration
Labor	
Health and Safety officer	1
Site Superintendent	1
Foremen	2
Operator	6
Laborers	7
Equipment	
Manlift (80ft boom)	2
Cat 950G rubber tire loader with demo Bucket	2
Lull with Forks	2
Cat 345 Excavator with Grappler	2
Cat 345 Excavator with Grappler/Shear Attachment	2
Cat 345 Excavator with Grappler	2
Cat 345 UHD	1
Bobcat 220 Skidsteer with Solid rubber Tires	4
Water Pump for dust control	1
End dump - 25 ton	4
50-75 KW Generator	2
4WD Pickup Trucks	2
Portable toilets	4
Conex Box	1
Office Trailer	1

1.3.3 Task 3: Site Setup, Install Erosion Control Measures, Utility Cut and Cap

Site setup activities are expected to take one (1) month and are concurrent with the completion of the utility cut and cap task and installation of the erosion control measures. Utility cut and caps are expected to progress for approximately three (3) weeks starting with any utilities associated with the boiler house, the admin building, turbine hall and along with the utilities associated with the outer buildings. This task also calls for the retaining of one of the plant engineers that will serve as liaison to the contractor and the plant in assisting with providing information that may require attention in the planning stages of the project or to guide setup activities

As part of this task, the crew will also be setting up the site office trailer, communications, preliminary steel preparation and staging areas, portable site scale calibration and preparing crane critical lift plans for the initial picks to be performed as part of dismantlement efforts. Some of the equipment will be transported to the site on multiple trailers such as the larger excavators, and associated attachments. The large cranes and other long reach equipment will arrive when high reach duct work and pipe racks are ready for dismantlement in addition to any large tanks or holding vessels.

A critical component of the utility cut and cap program will involve all lock out tag out requirements for the project. The selected demolition contractor and engineer must be required to provide its LOTO

procedures for this work and must demonstrate that its program meets all Currant Creek Station, OSHA, state and local regulatory requirements.

The following table shows the labor and equipment that will mobilize to the site to begin the work.

Table 17 shows the items required for Task 3:

Table 17 – Task 3: Site Setup, Utility cut and Cap - Labor and Equipment

Description	Quantity/Duration
Labor	
Plant Engineer	1
Operator	4
Laborer	4
Foremen	2
Millwrights	4
Structural Engineer	1
Equipment	
Cat 345 Excavator with Grappler	1
Cat 345 Excavator with Shear	1
Manitowoc 12000	1
Lull forklift	1
Calibrate Scales	2
Manlift (80 ft. boom)	2

1.3.4 Task 4: Water Intake Pipes Plug and Grout

The plugging and grouting of the Water Intakes will be performed by installing inflatable plugs into the intakes followed by plugging the pipes with cement below grade. The intakes at current Creek here mean any piping from the cooling ponds or associated with the water supply wells entering the Mona plant property. All above grade portions of the intake pipe will be removed and cut to 1 foot below grade and backfilled. The rough-order-magnitude (ROM) demolition estimate budgets two (2) weeks to perform this task. The resources required for this effort are as follows:

Table 18 – Task 4: Plug and Grout Water Intake piping, Compromise Blowdown Pipes - Labor and Equipment

Description	Quantity/Duration
Labor	
Operator	2
Laborer	2
Foreman	1
Equipment	
Inflatable Plug and Grout allowance	1
50 ton Crane	1

1.3.5 Task 5: Dismantle All Outer Structures, Cooling Tower, Low Profile Structures, Admin Building, Support Buildings

Task 5 begins with the removal of all outer structures outside of the plant's Power Block (i.e. outside of the boiler and turbine structures). The compliment of Cat 345 excavators and Ultra High Demolition machines equipped with shear/grappling attachments will begin the dismantlement of exterior tanks/vessels, the cooling towers, pipe racks, cable trays and other equipment and support buildings

outside of the turbine hall and boiler structures. All support buildings and those structures associated with ancillary treatment systems will also be removed as part of this task. The intent is to create as much room as possible around the power block for the safe implosion of the two boiler house structures. It will also create additional safe operating room for processing of all removed steel from the first two floors of each boiler house to lighten the structure as much as possible.

Crews will be working within the power block concurrently with this task cutting and removing piping runs, wire and plate steel as part of the preparation for implosive demolition. The crews will also systematically go through the boiler houses further preparing the structure for implosion. The lower two floors of the boiler houses will be worked to remove as much equipment as possible in accordance to the approved implosion plan. The demolition work plan must address all critical lifts anticipated to be performed as part of the operation.

Transmission lines will have to be relocated to keep transformers in service prior to powerhouse demolition. It is assumed that required relocation activities will be completed prior to the initiation of demolition, and there is budget to remove the lines back to a designated support tower well away from the Turbine/Boiler Structures to allow for protection of the asset during implosive demolition/dismantlement of these structures.

Task 5 is anticipated to take approximately three (3) months to complete. All scrap generated as a result of the removal of the outer structures will be processed for loadout to the scrap recycler while general demolition and construction debris will be transported to a local landfill. Metal scrap from the outer structures and other associated metals will be separately staged for eventual steel recycling. Sizable concrete (< 2 foot by 2 foot) generated from the hammering of the pedestals and silos will be staged and reused for eventual backfill where needed. Size reduction will take place to accommodate fill use around the site as demolition proceeds.

Table 19 shows the estimated resources required for performing Task 5:

Table 19 – Task 5: Dismantle Outer Structures - Labor and Equipment

Description	Quantity/Duration
Labor	
Operator	5
Laborer	4
Equipment	
Cat 345 Excavator with Grappler	3 mo.
Cat 345 Excavator with Shear	3 mo.
Cat 950 G Solid Tire Front end Loader	3 mo.
Cat 345 Ultra High Demolition with shear/grappler Attachment	3 mo.
End Dumps	3 mo.
Cat 345 Excavator with 15,000 lb. hammer	3 mo.

1.3.6 Task 6: Dismantle the Turbine Generators

Task 6 involves the dismantlement of the turbines within the turbine hall structure. All associated equipment will also be removed from the building for salvage processing or sale to the pre designated preparation areas. A crane will lift segments of the turbines for placement onto lowboy trucks that will remove the equipment in route for salvage preparation and/or asset sale. The buyers/contractor's lift plan and rigging arrangements must be reviewed and approved by the oversight engineer and plant

management prior to the onset of this work. The task is expected to take 1 month to complete. The anticipated resource requirements for this task are as follows:

Table 20 – Task 6: Dismantle the Turbine Generators - Labor and Equipment

Description	Quantity/Duration
Labor	
Operator	2
Laborer	7
Millwrights	3
Equipment	
Front end loader with 5 cy bucket	1 mo.
Cat 345 Excavator with Grappler/Shear attachment	1 mo.
Cat 345 Excavator with 15,000 lb. hammer	1 mo.
Truck with Lowboy Trailer	2 wk.

1.3.7 Task 7: Dismantle Turbine Generator Building

Task 7 involves the dismantlement of the Turbine Generator Building once all of the major equipment and appurtenances are removed from the structure. Most of the time in this estimate is for preparing the structure and boiler houses for implosive demolition including removal of all material for processing and the removal of all turbine supports. All internal and associated tanks will also be removed as part of this task. A crew will systematically begin the internal dismantlement of turbine hall removing all steel components for the recovery and processing of ferrous and non-ferrous metals. The processing of these materials will take place concurrently with the removal of all piping and non-structural support steel being removed from the lower floors of the adjacent Boiler House structure that is being performed as part of Task 9. In the case of the Currant Creek, implosion of the turbine hall structures is estimated and will include preparation of the boiler house. This is to allow for implosion of both turbine deck and the power block to be performed simultaneously.

The demolition of the turbine building including preparation time is expected to take approximately 60 days to perform culminating in the final implosion event which the schedule shows to coincide with the implosion of the boilers and stacks. Table 21 shows the resources for Task 7.

Table 21 – Task 7: Dismantle Turbine Generator Building - Labor and Equipment

Description	Quantity/Duration
Labor	
Operators	5
Laborers	3
Equipment	
Front end Loader with 5 cubic yard bucket	1 mo.
Cat 345 Excavators with Grappler and shear attachments	1 mo.
Excavator with 15,000 lb. hammer	1 mo.

1.3.8 Task 8: Prepare Boiler Structure for Implosion; Implode Boiler House Structure Units 1-4

The preparation of the boiler house structure involves the removal of all non-structural supporting components for processing and recycling. The purpose for the removal is to create enough void space low in the structures to accommodate the collapse of the structure during implosion. The removal will involve two excavators that will work exclusively in removing all ferrous and non-ferrous assets from the lowermost floors and a high reach excavator to remove interior equipment from outside of the structure.

Labor crews equipped with torches will also work to cutaway interior equipment prior to preparing the building for implosion. The demolition contractor and the implosion contractor will coordinate all of these activities in accordance to the approved implosion work and safety plan. It is anticipated that 4 months will be required for this task. Table 22 summarizes the resources in the estimate for Task 8.

Table 22 – Task 8: Prepare Boiler Structure for Implosion - Labor and Equipment

Description	Quantity/Duration
Labor	
Operators	3
Laborers	7
Equipment	
Front end loader with 5 cy bucket	2 mo.
Cat 345 Excavator with Grappler	2 mo.
Cat 345 Excavator with Grappler	2 mo.
Cat 345 Excavator with Grappler	2 mo.
Manitowoc 12000	100 hrs.
Subcontractors	
Implosion subcontractor	1

1.3.9 Task 9: Prepare and Process Steel, Load and Salvage

In essence the preparation and processing of all recyclable materials on site will be a continuous site task throughout the project. Manpower will vary throughout the duration of the project as the processing task evolves from the processing of material resulting from the demolition of the main plant structures to the processing of the outer plant structures. To process material from the outer buildings and the power block of the plant, 140 working days were allocated to process and prepare steel. A total of approximately 160 days are allocated in the ROM estimate for processing, preparation and eventual load out of all salvageable/recyclable metal. These tasks are separately presented in the cost estimate but are consolidated here and on the demolition schedule. This task is approximate due to several factors for example, the sequencing of dismantlement tasks that can be scheduled concurrently thus shortening the duration of the overall project schedule, space availability developed as a result of dismantlement activities, and the availability of trucking. An estimate of the resources for this task is found in Table 23 as follows:

Table 23 – Task 9: Prepare and Process Steel; Load Salvage

Description	Quantity
Labor	
Operator	4
Laborer	9
Equipment	
Cat Front End Loader	7 mo.
Cat 345 Excavator with Grappler	7 mo.
Cat 345 Excavator with Shear	7 mo.

1.3.10 Demolition Scope General Conditions - Administration

General Conditions/Site administration is dedicated to the project for approximately 217 working days or 26 months including pre-mobilization activities. The following, shown in Table 24, resources are anticipated and included in the demolition costs:

Table 24 – Project Resource Summary

Description	QTY	UOM	HRS
Labor			
Project Manager	1	ea.	1736
Site Superintendent	1	ea.	1736
Foreman	2	ea.	3472
Health and Safety Officer	1	ea.	1200
Project Controls	1	ea.	800
Project Accountant	1	ea.	1736
Subcontractor Management	1	ea.	1736
Structural Engineer	1	ea.	800
Mechanic with full Service Truck	1	ea.	1736
Travel			
Per diems + lodging MI&E rate - $145/day for Provo, UT	1650	ea.	
Misc. travel Expenses @ $1500 each	15	ea.	
Miscellaneous Equipment			
Pickup Trucks (2)	10.7	mo.	
Conex Box (2)	10.7	mo.	
50-75 KW Generator	10.7	mo.	
Cutting Torch assembly including gases	10.7	mo.	
Manlift (80 ft. boom) (2)	10.7	mo.	
Dust Boss	10.7	mo.	
Water Truck (2)	10.7	mo.	
Bobcat 220 Skidsteer (2)	10.7	mo.	
10,000# Lull forklift	10.7	mo.	
End Dump 25 Ton 2nd, Swing (2)	10.7	mo.	
Office Trailer plus block, level tie down and stairs	10.7	mo.	
Low Value Equipment Allowance	15	ea.	
Heavy Equipment Contingency of 10% of total (see estimate detail)	1	ea.	
Portable Toilets (4)	10.7	mo.	
Project supplies	2	ea.	
Fit testing, turnover, Medical Testing @ $400 ea.	50	ea.	
Project Meetings	8	ea.	
Landfill Disposal Fees			
Construction Debris Disposal @$1100/load	95	Loads	
Equipment FOGMA			
Manlift (80' boom)	2	ea.	1605
Front End Loader	1	ea.	1605
Lull Forklift	1	ea.	1605
Cat 345 Excavator with Grappler/Processor	1	ea.	1605
Cat 345 Excavator with Shear	1	ea.	1605
Cat 345 Excavator with Grappler	1	ea.	1605
Cat 345 UHD	2	ea.	8480
Water Trucks	2	ea.	8480
Excavator with 15000# Hammer	1	ea.	1605
Manitowoc 12000 Crane	1	ea.	100
End dump - 25 ton	2	ea.	3210

Description	QTY	UOM	HRS
50-75 KW Generator	1	ea.	1605
4WD Pickup Trucks	6	ea.	1605
CAT (equiv.) D5 Dozer	1	ea.	160
BobcatS220 Skidsteer	4	ea.	3210

An additional allowance for heavy equipment repair and maintenance is included at 10% of the total equipment rental cost for the project.

The estimate for demolition assumes that all heavy equipment is based on current rental rates. CB&I rental rates were assumed for this estimate based on national agreements with Hertz Rental Equipment.

PACIFICORP CURRANT CREEK POWER PLANT, MONA, UT ROM ESTIMATE SUMMARY	
TASK DESCRIPTION	**BASE COST ($)**
Pre mobilization Plans and Permitting	$43,720
Mobilization/demobilization of manpower and equipment	$102,700
Site Setup and Utility Cut and Cap	$205,640
Water Intake Pipes Plug and Grout	$50,200
Dismantle All Outer Structures, Crusher House, Scrubber buildings, Lime Handling, Tanks, Conveyors Precipitators	$1,175,100
Dismantle Turbine Generators	$232,100
Dismantle Turbine Generator Building	$253,400
Prepare boiler Structures for Implosion, Implode Structure Units 1-2	$691,200
Prepare and Process Steel on site	$1,348,200
Load and ship salvage	$511,200
Administrative/General Conditions	$3,093,209
SUBTOTAL	**$7,706,669**
Total Administrative Costs	$3,093,209
Remainder of Project Costs	$4,613,460
SUBTOTAL	**$7,706,669**
MARKUP OF 8%	**$616,534**
GRAND TOTAL	**$8,323,203**

1.4 Plant Demolition Cost Detail

PacifiCorp Currant Creek Generating Facility, Mona, UT						
Task 1						
Pre mobilization Plans and Permitting		**20 days**		**(4 weeks)**		
1 month = 20 working days						
1 day = 8 hours						
1 week = 40 hours						
Permitting		**QTY**	**UOM**	**HRS**	**RATE**	**SUBTOTAL**
Site Superintendent		1	ea.	40	$ 75.00	$ 3,000.00
Structural / Engineer		1	ea.	40	$ 100.00	$ 4,000.00
Health and Safety		1	ea.	20	$ 60.00	$ 1,200.00
Civil Engineer		1	ea.	30	$ 80.00	$ 2,400.00
Administrative Assistant		1	ea.	20	$ 31.00	$ 620.00
Mass LSP		1	ea.	50	$ 100.00	$ 5,000.00
Plans						
Implosion Work and Safety Plan	Subcontractor	1	LS	1	$ 15,000.00	$ 15,000.00
Salvage/Asset Management Plan		1	LS	1	$ 2,000.00	$ 2,000.00
Erosion and Sediment Control Plan		1	LS	1	$ 2,500.00	$ 2,500.00
Demolition/Construction Execution Plan		1	LS	1	$ 2,500.00	$ 2,500.00
Health and Safety Plan		1	LS	1	$ 2,500.00	$ 2,500.00
Permits						
General Construction Permits Allowance		1	LS	1	$ 3,000.00	$ 3,000.00
						$ 43,720.00
Task 2						
Mobilization/Demobe of Manpower and Equipment		**15 days**		**(3 Weeks)**		
Labor		**QTY**	**UOM**	**HRS**	**RATE**	**SUBTOTAL**
Operators		6	ea.	48	$ 80.00	$ 23,040.00
Laborers		7	ea.	48	$ 80.00	$ 26,880.00
Equipment (Mobe and Demobe is 1 event)						
Manlift (80' boom)		2	ea.	2	$ 1,200.00	$ 4,800.00
Cat 950G rubber tire loader with demo Bucket		2	ea.	1	$ 1,500.00	$ 3,000.00
Lull Forklift		2	ea.	1	$ 1,200.00	$ 2,400.00
Cat 345 Excavator with Grappler		2	ea.	1	$ 4,000.00	$ 8,000.00
Cat 345 Excavator with Grappler/Shear attachment		2	ea.	1	$ 4,000.00	$ 8,000.00
Cat 345 Excavator with Grappler attachment		2	ea.	1	$ 4,000.00	$ 8,000.00
BobcatS220 Skidsteer		4	ea.	1	$ 500.00	$ 2,000.00
End dump - 25 ton		4	ea.	1	$ 1,000.00	$ 4,000.00
50-75 KW Generator		2	ea.	1	$ 300.00	$ 600.00
4WD Pickup Trucks		6	ea.	1	$ 30.00	$ 180.00
Portable toilets		4	ea.	1	$ 200.00	$ 800.00
Conex Box		2	ea.	1	$ 1,000.00	$ 2,000.00
Office Trailer		1	ea.	1	$ 1,000.00	$ 1,000.00
Cat 345 UHD with attachment		1	ea.	1	$ 8,000.00	$ 8,000.00
						$ 102,700.00
Task 3						
Site Setup, Utility Cut and Cap		**20 days**		**(1 months)**		
There are many subsurface utilities on the main plant property						
Assumes all lines are dead or de-energized						
All piping will be located and capped 1-2 foot below surface. If fuel line, the lines will be flushed and capped and left in place.						
Most terminations will be done on plant floor drains. Underground fuel lines will be pulled near the vessel and plugged but not removed from the subsurface unless accessible						
Task does not include retaining of transmission line representative for line removal off of TH wall						
Three crews will perform the cut and caps. Equipment is already on site.						
The transmission asset detachment from turbine bldg wall will occur in this task. Trans lines to be moved off Turbine Hall wall to nearest dead end structure to allow for implosion						
Reconnection of trans lines to be by others.						
An additional $30,000 allowance is added to handle line and conduit removal for subsurface piping shallower than 2 feet below grade						
Labor		**QTY**	**UOM**	**HRS**	**RATE**	**SUBTOTAL**
Plant Engineer		1	ea.	120	$ 100.00	$ 12,000.00
Operators		4	ea.	160	$ 56.00	$ 35,840.00
Laborers		4	ea.	160	$ 40.00	$ 25,600.00
Millwrights		4	ea.	80	$ 80.00	$ 25,600.00

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Equipment		QTY	UOM	HRS	RATE	SUBTOTAL
Cat 345 Excavator		1	month	1	$ 25,500.00	$ 25,500.00
Cat 345 Excavator with shear		1	month	1	$ 25,500.00	$ 25,500.00
Manitowoc 12000		1	ea.	80	$ 70.00	$ 5,600.00
ODC						
Allowance for Shallow subsurface line removal		1	ea	1	$ 50,000.00	$ 50,000.00
						$ 205,640.00

Task 4

Water Intake Pipes, Plug and grout		**2 weeks**		**(0.5 months)**		
This task handles the cost for plugging any water intake and discharge lines feeding the plant with process water						
Balloon plugs will be used for insertion into the discharge line as a cement retainer that will then be displaced by concrete or flowable fill to seal below grade.						
At currant Creek these will be the lines coming from and discharging to the cooling ponds						
Labor		**QTY**	**UOM**	**HRS**	**RATE**	**SUBTOTAL**
Operators		2	ea.	80	$80.00	$12,800.00
Laborers		2	ea.	80	$80.00	$12,800.00
Equipment						
50 ton crane		8	days	1	$1,200.00	$9,600.00
Plug allowance		1	ea	1	$15,000	$15,000.00
						$50,200.00

Task 5

Dismantle All Outer Strucutures, Cooling Tower, Low Profile Structures, admin bldg, Including Slabs		**60 days**		**(3 months)**		
All outer structures to be dimantled prior to power block. Assumes all asbestos is abated						
Construction debris to be deposited into onsite landfills						
Slab removal to be accomplished using hammers and loadout of end dumps for disposal into onsite landfills						
Crane to used to lower conveyors and appurtenances around new stacks to ground for recycle preparation						
Includes removal to dead structures for Transmission lines						
Labor		**QTY**	**UOM**	**HRS**	**RATE**	**SUBTOTAL**
Operators		5	ea.	480	$ 80.00	$ 192,000.00
Laborers		4	ea.	480	$ 80.00	$ 153,600.00
Equipment						
Cat 345 Excavator with Gappler		3	month	2	$ 25,500.00	$ 153,000.00
Cat front end Loader		3	month	1	$ 25,500.00	$ 76,500.00
Cat 345 Excavator with Grappler		3	mo.	1	$ 25,500.00	$ 76,500.00
Cat 345 Excavator with shear		3	mo.	1	$ 25,500.00	$ 76,500.00
Cat 345 Ultra High Demolition with shear/grapple attachment		3	mo.	2	$ 49,000.00	$ 294,000.00
Excavator with 15000 lb hammer		3	mo.	2	$ 25,500.00	$ 153,000.00
						$ 1,175,100.00

Task 6

Dismantle Turbine Generators and Turbine bldg Appurtenances		**20 days**		**(1 month)**		
The transmission assets are against the turbine bldg. They will be dismantled during utility cut and cap						
Assume that the gantry cranes in turbine bldg will be used to remove turbines and assoicated assets for scraping						
Hammer will take out turbine pedestals and used for above slab grade, high psi concrete						
Trucking to transport turbines offsite for sale or recycle.						
Labor		**QTY**	**UOM**	**HRS**	**RATE**	**SUBTOTAL**
Operators		2	ea.	160	$ 80.00	$ 25,600.00
Laborers		7	ea.	160	$ 80.00	$ 89,600.00
Millwrights		3	ea.	160	$ 80.00	$ 38,400.00
Equipment						
Front end Loader with 5 yard bucket		1	mo.	1	$ 13,500.00	$ 13,500.00
Cat 345 Excavator with Grappler		1	mo.	1	$ 25,500.00	$ 25,500.00
Truck with lowboy		2	wk	1	$ 7,000.00	$ 14,000.00
Excavator with 75,000 lb hammer		1	mo.	1	$ 25,500.00	$ 25,500.00
						$ 232,100.00

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Task 7

Dismantle Turbine Generator building		20 days		(1 month)		
Turbine Hall is approximately 75 feet x 775 feet =58,125 square feet in area						
Demoltion of the structure assumes a daily production rate of dismantling 3,000 square feet/ day.						
Therefore physical dismantlement is 20 days or 1 month. Allow additional week for potential pick down of areas						
Labor		**QTY**	**UOM**	**HRS**	**RATE**	**SUBTOTAL**
Operators		5	ea.	160	$ 80.00	$ 64,000.00
Laborers		3	ea.	160	$ 80.00	$ 38,400.00
Equipment						
Front end Loader with 5 yard bucket		1	mo.	1	$ 25,500.00	$ 25,500.00
Cat 345 Excavator with Grappler		1	mo.	1	$ 25,500.00	$ 25,500.00
Cat 345 Excavator with shear		1	mo.	1	$ 25,500.00	$ 25,500.00
Cat 345 Ultra High Demolition with shear/grapple attachment		1	mo.	1	$ 49,000.00	$ 49,000.00
Excavator with 15,000 lb hammer		1	mo.	1	$ 25,500.00	$ 25,500.00
						$ 253,400.00

Task 8

Prepare Boiler Structures for Implosion, Implode structure Units 1-2 and stacks		60 days		(2 months)		
Stacks are low profile and will be dismantled in Task						
1200 LF x $200 LF to prep and implode is $240,000						
Labor		**QTY**	**UOM**	**HRS**	**RATE**	**SUBTOTAL**
Operators		3	ea.	480	$ 80.00	$ 115,200.00
Laborers		7	ea.	480	$ 80.00	$ 268,800.00
Equipment						
Cat 950G rubber tire loader with demo Bucket		2	mo.	1	$ 13,600.00	$ 27,200.00
Cat 345 Excavator with Grappler		2	mo.	1	$ 25,500.00	$ 51,000.00
Cat 345 Excavator with Grappler		2	mo.	1	$ 25,500.00	$ 51,000.00
Cat 345 Excavator with Grappler		2	mo.	1	$ 25,500.00	$ 51,000.00
Manitowoc 12000		1	ea.	100	$ 70.00	$ 7,000.00
ODC						
Implosion contractor for Twin Boilers		1	ea.	1	$ 120,000.00	$ 120,000.00
						$ 691,200.00

Task 9

Prepare and process steel		140 days		(7 months)		
Labor		**QTY**	**UOM**	**HRS**	**RATE**	**SUBTOTAL**
Operators		3	ea.	1120	$ 80.00	$ 268,800.00
Laborers		7	ea.	1120	$ 80.00	$ 627,200.00
Equipment						
Cat 950G rubber tire loader with demo Bucket		7	mo.	1	$ 13,600.00	$ 95,200.00
Cat 345 Excavator with Grappler		7	mo.	1	$ 25,500.00	$ 178,500.00
Cat 345 Excavator with Shear		7	mo.	1	$ 25,500.00	$ 178,500.00
						$ 1,348,200.00

Task 10

Load and Ship Salvage		161 days		(8 months)		
Labor		**QTY**	**UOM**	**HRS**	**RATE**	**SUBTOTAL**
Operators		1	ea.	1280	$ 80.00	$ 102,400.00
Laborers		2	ea.	1280	$ 80.00	$ 204,800.00
Equipment						
Cat 345 Excavator with Grappler		8	mo.	1	$ 25,500.00	$ 204,000.00
						$ 511,200.00

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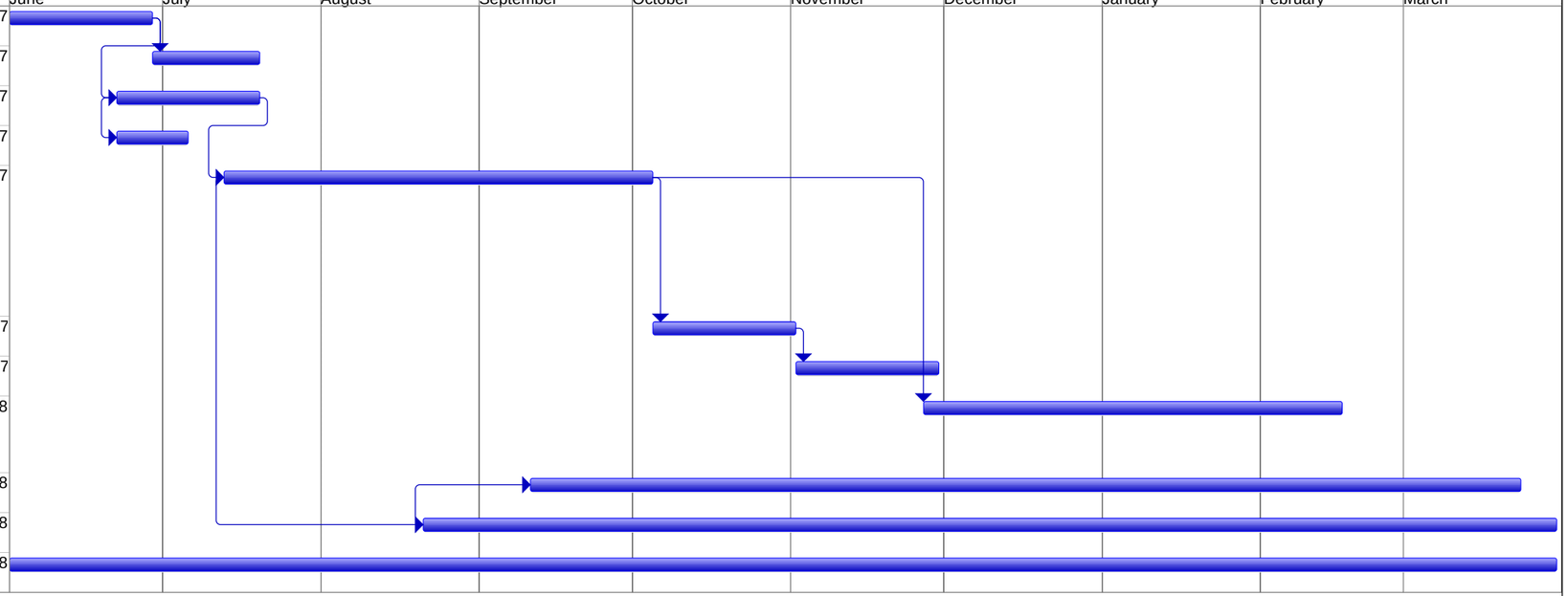
Task 11

Administrative - General Conditions		$ 217.00		10.7 Months		
Labor		**QTY**	**UOM**	**HRS**	**RATE**	**SUBTOTAL**
Project Manager		1	ea.	1736	$ 80.00	$ 138,880.00
Site Superintendent		1	ea.	1736	$ 75.00	$ 130,200.00
Health and Safety Officer		1	ea.	1200	$ 60.00	$ 72,000.00
Project Controls		1	ea.	800	$ 60.00	$ 48,000.00
Project Accountant		1	ea.	1736	$ 43.00	$ 74,648.00
Subcontractor Management		1	ea.	1736	$ 45.00	$ 78,120.00
Mechanic with full service truck		1	ea.	1736	$ 125.00	$ 217,000.00
Foremen		2	ea.	1736	$ 70.00	$ 243,040.00
Structural Engineer		1	ea.	800	$ 100.00	$ 80,000.00
						$ 1,081,888.00
Travel		**QTY**	**UOM**	**HRS**	**RATE**	**SUBTOTAL**
Per diems + lodging (JTR @ $1436day) Rock Springs, WY (5 people. Local labor assumed at no per diem)		1650	ea.	1	$ 136.00	$ 224,400.00
Misc. travel Expenses		15	ea.	1	$ 1,500.00	$ 22,500.00
						$ 246,900.00
Misc. Equipment/Materials		**QTY**	**UOM**	**HRS**	**RATE**	**SUBTOTAL**
Pickup Trucks		10.7	mo.	1	$ 1,650.00	$ 17,655.00
Conex Box		10.7	mo.	1	$ 900.00	$ 9,630.00
50-75 KW Generator		10.7	mo.	1	$ 1,860.00	$ 19,902.00
Manlift (80' boom)		10.7	mo.	2	$ 1,358.00	$ 29,061.20
Cutting Torch assembly including gases		10.7	mo.	1	$ 500.00	$ 5,350.00
Small tool Allowance		10.7	ea.	1	$ 1,500.00	$ 16,050.00
End dump - 25 Ton		9	mo.	2	$ 7,000.00	$ 126,000.00
Re certify gantry cranes		0	ea.	1	$ 5,000.00	$ -
Lull forklift 10,000#		10.7	mo.	1	$ 7,000.00	$ 74,900.00
BobcatS220 Skidsteer		8	ea.	1	$ 3,500.00	$ 28,000.00
Office Trailer plus block, level tie down and stairs		10.7	mo.	1	$ 850.00	$ 9,095.00
Portable Toilets (4)		10.7	mo.	4	$ 276.00	$ 11,812.80
Dust Boss		10.7	mo.	1	$ 2,500.00	$ 26,750.00
Project Meetings		8	ea.	1	$ 2,500.00	$ 20,000.00
Fit testing, turnover and Medical testing		50	ea.	1	$ 400.00	$ 20,000.00
Water Truck		10.7	mo.	2	$ 3,200.00	$ 68,480.00
Project Supplies, small tools and Misc materials		2	ea.	1	$ 10,000.00	$ 20,000.00
						$ 502,686.00
Landfill Disposal Fees		**QTY**	**UOM**	**HRS**	**RATE**	**SUBTOTAL**
Assorted construction debris assume 95 loads to send to offsite landfills at $1100/load		95	loads	1	$ 1,100.00	$104,500.00
						$104,500.00
Equipment, FOGMA		**QTY**	**UOM**	**HRS**	**RATE**	**SUBTOTAL**
Manlift (80' boom)		2	ea.	1605	$ 5.00	$ 16,050.00
Cat 950G rubber tire loader with demo Bucket		1	ea.	1605	$ 30.00	$ 48,150.00
Lull Forklift		1	ea.	1605	$ 25.00	$ 40,125.00
Cat 345 Excavator with Grappler/Processor		1	ea.	1605	$ 50.00	$ 80,250.00
Cat 345 Excavator with Shear		1	ea.	1605	$ 50.00	$ 80,250.00
Cat 345 Excavator with Grappler		2	ea.	1605	$ 50.00	$ 160,500.00
Cat 345 UHD (160 days)		1	ea.	480	$ 50.00	$ 24,000.00
Cat D-5 Dozer		1	ea.	160	$ 30.00	$ 4,800.00
Water Trucks		2	ea.	1605	$ 50.00	$ 160,500.00
Excavator with 75000# Hammer		1	ea.	1605	$ 50.00	$ 80,250.00
Manitowoc 12000 crane		1	ea.	100	$ 50.00	$ 5,000.00
End dump - 25 ton		2	ea.	1605	$ 60.00	$ 192,600.00
50-75 KW Generator		1	ea.	1605	$ 10.00	$ 16,050.00
4WD Pickup Trucks		4	ea.	1605	$ 3.50	$ 22,470.00
BobcatS220 Skidsteer		2	ea.	1605	$ 10.00	$ 32,100.00
Heavy Equipment Repair Contingency of 10% of total cost for tasks 1 -6. This is an allowance.		0.1	ea.	1	$ 1,941,400.00	$ 194,140.00
						$ 1,157,235.00

ROLLUP	
TOTAL PRICE	**$ 7,706,669.00**
STD MARKUP OF 8%	**$ 616,533.52**
GRAND TOTAL DEMOLITON	**$ 8,323,202.52**

1.5 Schedule

ID	Task Name	Duration	Start	Finish
1	Premobilization Plans and Permitting	20 days	Thu 6/1/17	Wed 6/28/17
2	Mobilization Demobilization	15 days	Thu 6/29/17	Wed 7/19/17
3	Site Setup/ Utility cut and Cap	20 days	Thu 6/22/17	Wed 7/19/17
4	Plug and Grout Water Intake Pipes	10 days	Thu 6/22/17	Wed 7/5/17
5	Dismantle All Outer Structures,Tanks, Buildings, Scrubbers, Silos, Transmission lines etc	60 days	Thu 7/13/17	Wed 10/4/17
6	Dismantle Turbine Generators	20 days	Thu 10/5/17	Wed 11/1/17
7	Dismantle Turbine Generator Buildings	20 days	Thu 11/2/17	Wed 11/29/17
8	Prepare boiler Structures for Implosion, Implode Structure Units 1-4	60 days	Mon 11/27/17	Fri 2/16/18
9	Prepare and Process Steel	140 days	Mon 9/11/17	Fri 3/23/18
10	Load and ship All Salvage	160 days	Mon 8/21/17	Fri 3/30/18
11	Administrative	217 days	Thu 6/1/17	Fri 3/30/18



Project: DRAFT Currant Creek Plant D
Date: Wed 9/3/14

Task		Project Summary		Inactive Milestone		Manual Summary Rollup		Progress			
Split		External Tasks		Inactive Summary		Manual Summary		Deadline			
Milestone		External Milestone		Manual Task		Start-only					
Summary		Inactive Task		Duration-only		Finish-only					

2.0 Environmental

The following section presents a summary of environmental considerations and projected costs for the decommissioning and demolition of the Currant Creek Generating Station and surrounding grounds in its entirety. The plant was constructed in 2007 and based on this date is not expected to have any asbestos containing materials. There are no onsite landfills and no known soil or groundwater contamination that would require remediation. Estimated closure costs are summarized in the table below.

Closure Area	Estimated Cost
Environmental Permits/Plans	$50,000
Hazardous/Universal Waste Disposal	$75,000
Pond Closure	$2,000,000
Total Estimated Environmental Costs	**$2,125,000**

2.1 Environmental Permits/Plans

A number of environmental permits and plans will be required prior to and during decommissioning and demolition of the generating station. Two main categories of permits exists: 1) active permits such as Title V Air Emissions and NPDES water discharge that will need to be cancelled, and 2) demolition permits/plans that will need to be obtained by the demolition contractor.

CB&I has incorporated an allowance of $50,000 for the cancellation of active permits and obtaining new demolition permits and plans.

2.2 Hazardous and Universal Waste Disposal

Hazardous materials are located through the main generating station, support facilities and in equipment, tanks, piping, drums and totes. For the purposes of this study it is assumed that hazardous materials not stored in containers (tanks, drums and totes) will be used entirely or sent to another plant for use. These materials are commonly used by the maintenance department and would include commercial-sized products such as spray paint, solvents, greases, oils, etc…

To determine the cost of hazardous wastes during decommissioning and demolition, CB&I primarily considered the amount of product stored onsite in storage tanks and drums. Based on the SPCC plan provided by PacifiCorp, there are 9 aboveground storage tanks (ASTs) and equipment reservoirs storing oil-based products such as fuel oil, lube oil, diesel fuel, gasoline and used oil with a total capacity of 21,794-gallons. In addition the plan estimates there are 41 drums (55-gallons each) onsite storing oil-based products. Finally, the SPCC plan lists 20 transformers with a total capacity of 66,192-gallons storing mineral oil.

PacifiCorp provided CB&I with a plant layout drawing that identified structures, storage tanks and process tanks. CB&I also reviewed Currant Creek's container management inventory and lists of laboratory and process treatment chemicals stored/used at the plant.

No inventories of hazardous and universal wastes were conducted as part of this study so CB&I relied on the data provided in the documents noted above and other demolition studies of similar generating stations. Universal wastes include items such as fluorescent lamps, batteries and mercury containing devices. For disposal of hazardous wastes not contained in tanks, drums or totes an allowance was estimated. No inventory was conducted for compressed gases so an allowance was also made for disposal of the cylinders.

Item	Estimated Cost
Removal and disposal of product in tanks, totes, drums and transformers	$40,000
Cleaning and rinsing of storage tanks	$45,000
Other hazardous waste disposal	$25,000
Other universal waste disposal	$25,000
Compressed gases disposal	$25,000
Laboratory analytical costs for determining disposal	$15,000
Total	$175,000

Assumptions:

- All tanks, totes, drums and transformers are at 25% of capacity at time decommissioning starts
- Used oils, diesel and gasoline can be recycled
- Mineral oils in transformers do not contain PCBs
- Transformers will be drained but not cleaned
- The raw and demineralized storage tanks do not requiring cleaning prior to demolition
- Tank structures and transformers are included in salvage value estimates

2.3 Pond Closure

The Currant Creek Generating Station has three lined evaporation ponds for storage of plant wastewater discharges and stormwater control. Based on drawings PacifiCorp provided CB&I each pond has a capacity of approximately 2.5 million cubic feet or 57 acre feet. Based upon a non-coal combustion residual (CCR) pond closure cost of $11,700 per acre foot (provided by PacifiCorp), the estimated closure cost for each Currant Creek evaporation pond is $666,900 or $2,000,000 for all three ponds.

3.0 Salvage

The salvage value associated with the Currant Creek Station Generating Facility was compiled and estimated using available drawings of the plant's structural steel, equipment specifications available at the plant, and actual measurements taken during the onsite inspection. The team conducted a review of critical documents provided by PacifiCorp. The team conducted a brief walk-down visually confirming the data provided in the documents, as well as speaking directly with plant personnel to answer critical questions. As a result of these valuation methods, the total weights of ferrous metals (steel), non-ferrous metals (copper and brass), stainless steel, and other alloys have been estimated and are presented below in Table 1. All ferrous and non-ferrous weights are reported in gross tons.

Table 1 – Material Salvage Estimate

Category	Steel (gross tons)	Copper (tons)	Stainless Steel (gross tons)
Structural and Rebar			
All Structural Steel and Recoverable Rebar	2,310		
Equipment			
Pipe, Supports & Valves	1058		
Equipment/Boilers	8,483	85	14
Control and Electrical Wire		120	
Miscellaneous	789		
Transformers	684	15	
Tanks and Ductwork			
Tanks & Ductwork	314		
Facility Totals	**13,638**	**220**	**14**

The salvage summary is presented in Table 2. Based on the remote location of the plant, the scrap that is recycled can be transported to Salt Lake City. All material will be required to leave site by truck. The cost associated with shipping the material to market is included in the demolition cost analysis. The value of the salvage summary is based on the latest market values as published by the American Metals Market. A detailed summary is also included in section 3.3. When a smaller plant, such as Currant Creek, is decommissioned, it is ideal to negotiate with several scrap dealers to determine who will provide the best value for the material. Since this facility in close proximity to several scrap dealers and reasonable trucking rates can easily be negotiated it should be considered to bundle scrap and trucking. Costs associated with processing and material sizing as well as transporting should be included in the financial analysis when selecting a dealer.

Table 2 – Salvage Value Summary

	Steel	Copper	Stainless Steel
Current Average Salvage Value	$285/gross ton	$5,777/ton	$1,278/ton
Total Salvage Value Subtotal	$3,886,955	$1,272,517	$17,918
Total Salvage Value	**$5,177,389**		

3.1 Materials by Category

3.1.1 Structural Steel and Rebar

The modular design of the combined cycle plants has eliminated much of the structural steel that would normally been seen in a coal plant. Therefore this plant has a modest amount of structural steel used in the construction which includes I-beams and other structural shapes, as well as tanks, vessels and duct work constructed of plate steel. Rebar is also a sizable portion of the overall recoverable steel depending on the extent of demolition. The flue stacks, boiler feed pump pedestals, and other concrete foundations contain rebar throughout their structures.

The structural steel and rebar summary for the plant includes:

- the steam turbine building foundation
- the Heat Recovery Steam Generator (HRSG) boiler

The rebar summary includes:

- gas turbine foundation
- steam turbine generator pedestals
- stack foundations rebar
- cooling tower foundation pedestals

3.1.2 Boiler Material

The boiler steam drums, water walls, exterior piping and safety valves were included in this material summary. All of the boiler material is assumed to be carbon steel and is reflected in the overall salvage value accordingly. Some alloy rich sections may have additional value depending on arrangements with the scrap purchaser. Generally scrap yards follow the line of thought that if a magnet sticks to the material, then it is carbon steel. If a magnet does not adhere to the material then it is stainless. Clearly marked grades of stainless steel have varying values, which should be specified with the scrap purchaser.

3.1.3 Rotating Equipment

The rotating equipment section includes the motor weights as well, so there is both ferrous material and copper. Rotating equipment for each boiler area includes boiler circulation pumps, and other equipment that is captured in the ferrous material estimate. The motors for these pieces of equipment will have additional value due to the copper windings. The rotor and frame have been included in the ferrous material estimate, and the windings have been included in the copper material estimate.

Due to the relatively little age of the variety of pumps throughout the plant site lend them to be able to sell, however, by the time this plant is decommissioned it will be assumed pumps and motors have little life left and therefore have little resale value. This includes the boiler feed pumps, lube oil pumps and other turbine support systems. As part of the estimate they were included in the ferrous material estimate. The motors for these pieces of equipment will have additional value due to the copper windings. The rotor and frame have been included in the ferrous material estimate and the windings have been included in the copper material estimate.

3.1.4 Turbine/Generator Set

The turbines are simple cycle gas turbine which the exhaust is then directed to the Heat Recovery Steam Generator (HRSG). The casings, rotors, steam flow control and turbine stop valves and associated equipment have been included in the ferrous material salvage estimate. The steam turbine is connected to a generator, and the gas turbine is connected to a separate generator. This configuration has three generators (2 TOPAIR) (1 TOPGAS) The generators, rotors and stators have been evaluated and divided into ferrous for a portion of the rotor and casing of the stator and the remaining weight represented in the copper material salvage estimate.

3.1.5 Cabling

Combined cycle plants are more compact and of newer design and therefore do not require the same amount of cabling as steam power plants require. There is a modest amount of cabling to power the equipment and provide communication and indication to the control room. Copper currently has the greatest scrap value of any material on-site, and its' removal and reselling should be maximized. It is recommended that the pulling of cable occur early on in the project to maximize the amount that is recovered. The copper is around 40% more valuable if the insulation has been removed. Depending on the insulation material, it is encouraged to have a insulation stripping operation to ensure maximum revenue. Some insulation contains asbestos, which complicates the removal process.

3.1.6 Piping and Valves

Piping is routed throughout the plant site. The salvage summary includes the major connecting systems such as condensate, feedwater, main steam and service water. Most of the piping was conservatively valued as carbon steel. Additionally, the piping in condensate systems are often stainless steel, which accounts for additional value compared to carbon steel.

3.1.7 Transformers

Transformers have the highest potential resale because they are able to be reconditioned and returned to service. For the purposes of this report, as requested by PacifiCorp, CB&I conservatively estimated the value of generating station transformers as recycled material. The analysis accounted for transformers from the GSU into the plant. The large switchyard and its' assets was assumed to belong to the transmission company, and therefore not included in this analysis. The primary transformers identified as part of the decommissioning of the facility are the Generator Step Up (GSU) transformers, the unit

auxiliary transformers, and the start-up transformers. The transformer shells and portions of their cores have been included in the ferrous material estimate. The copper windings in the transformers have been included in the copper material estimate.

3.1.8 Tanks and Ductwork

Tanks represent a significant portion of carbon steel salvage. Examples of tanks include the condensate polishing vessels, other water storage tanks, lube oil reservoirs, and compressed air receivers.

3.1.9 Spare Parts

Spare parts are not accounted for in this analysis as it is assumed that spares are either returned to suppliers for a credit or transported to other sites for re-use. Depending on the quantity and type of spares, there is a possibility of additional revenue that should be looked at when it becomes time for decommissioning. Direct sales and marketing activities associated with monetizing spare parts inventory typically will require one to two years to initiate revenue generation with no certainty for resale. Not all parts generate revenue for the project as the probability of resale is low.

3.2 Market Analysis of Salvage Prices

A critical component of the valuation assessment of the Currant Creek facility is the determination of commodity pricing for ferrous and non-ferrous metals to be used in the estimate. As discussed further in this section development of commodity pricing requires an understanding of local, regional and global conditions. CB&I developed a current market analysis (August 2014) which shows fluctuation in scrap metal prices across the United States associated with proximity to steel mills and other metal processing facilities. According to data gathered from American Metal Market (AMM) publications show the average price for scrap steel delivered to the mill varied from a low $300.00/gross ton in the San Francisco area to a high of $367.00/gross ton in Pittsburgh. The price range is shown in Table 3.

Table 3 – August 2014 Scrap Price for Steel Across the United States (per gross ton)

Steel Scrap Price/ Gross Ton	Birmingham	Chicago	Detroit	Pittsburgh	South Caroline
	$360.00	$363.00	$363.00	$367.00	$358.00

Source: AMM

With the global market for materials some scrap metals are exported to other countries for reprocessing. The metals are prepared and then sent to the nearest port for shipment overseas. The price paid for scrap steel to be shipped overseas also varies throughout the country. The average price for scrap steel delivered to the port was provided by AMM's August Export Yards Buying Prices data and is shown in Table 4.

Table 4 – August 2014 Export Yard Scrap Steel Prices (per ton)

Export Yard Steel Scrap Price	Boston	Los Angeles	New York	Philadelphia	San Francisco
	$330.00	$285.00	$328.00	$328.00	$295.00

Source: AMM

To provide some perspective of the annual range of steel pricing, as well as multi-year fluctuations, the three city composite monthly scrap price for ferrous materials over the last two years is shown in Table 6. The three cities included in the average are Chicago, Philadelphia and Pittsburgh.

Pricing provided for ferrous materials in this valuation assessment reflects an unprepared condition, considered conservative for the estimate. Prepared steel, for example heavy melt that was processed on site into 2'x5' pieces, would generate a per ton price that is 10-30% higher than unprepared material. Please note that on-site processing may result in an increase in demolition costs to compensate for additional equipment and manpower to complete processing tasks.

3.3 Salvage Detail

	A	B	C	D	E	F	G	H	I	J	K
1	**CLIENT: PACIFICORP**					**CB&I PROJECT NO: 151902**					
2											
3	**ESTIMATE NO: 1.00**										
4	**DESCRIPTION: CURRENT CREEK GENERATING STATION (3 UNITS/COMBINED CYCLE)**										
5	**LOCATION: Mona Utah**										
6	**Gross Ton = 2240 Pounds; Regular Ton = 2000 Pounds**										
7											
8	ITEM NO.	DESCRIPTION	UNIT	METAL TYPE	VALUE/UNIT	POUNDS	REGULAR TONS	GROSS TONS	STAINLESS DOLLAR AMOUNT	COPPER DOLLAR AMOUNT	FERROUS DOLLAR AMOUNT
9	**STRUCTURAL**										
10	Turbine Hall Structure (Unit 3 - Steam Turbine)	Total Structure (includes roof) & Lower Portion	Gross T	Ferrous	$ 285.00	252,032	126.02	112.51			$ 32,066.00
11	Support Buildings	Total Structure (all levels + roof + sheathing)	Gross T	Ferrous	$ 285.00	340,200	170.10	151.88			$ 43,284.00
12	Cooling Tower (1)	Total Structure	Gross T	Ferrous	$ 285.00	2,484,000	1,242.00	1,108.93			$ 316,044.00
13	Exhaust Stacks (4)	Exhaust Stacks (4)	Gross T	Ferrous	$ 285.00	2,100,000	1,050.00	937.50			$ 267,187.00
14		**SUBTOTAL:**				**5,176,232**	**2,588.12**	**2,310.82**	**$ -**	**$ -**	**$ 658,581.00**
15	ITEM NO.	DESCRIPTION	UNIT	METAL TYPE	VALUE/UNIT	POUNDS	REGULAR TONS	GROSS TONS	STAINLESS DOLLAR AMOUNT	COPPER DOLLAR AMOUNT	FERROUS DOLLAR AMOUNT
16	**EQUIPMENT**										$ -
17	Unit 1 Gas Turbine/Generator (GTG) & Equipment	Unit 1 Gas Turbine/Generator (GTG)	Gross T	Ferrous	$ 285.00	2,569,935	1,284.97	1,147.29			$ 326,978.00
18	Unit 1 Gas Turbine/Generator (GTG) & Equipment	Unit 1 Gas Turbine/Generator (GTG)	Pounds	Copper	$ 2.89	67,284	33.64			$ 194,349.00	$ -
19	Unit 2 Gas Turbine/Generator (GTG) & Equipment	Unit 2 Gas Turbine/Generator (GTG)	Gross T	Ferrous	$ 285.00	2,569,935	1,284.97	1,147.29			$ 326,978.00
20	Unit 2 Gas Turbine/Generator (GTG) & Equipment	Unit 2 Gas Turbine/Generator (GTG)	Pounds	Copper	$ 2.89	67,284	33.64			$ 194,349.00	$ -
21	Unit 3 Steam Turbine/Generator (STG)	Unit 3 Steam Turbine/Generator (STG)	Gross T	Ferrous	$ 285.00	2,080,139	1,040.07	928.63			$ 264,660.00
22	Unit 3 Steam Turbine/Generator (STG)	Unit 3 Steam Turbine/Generator (STG)	Pounds	Copper	$ 2.89	34,920	17.46			$ 100,866.00	$ -
23	Unit 1 Heat Recovery Steam Generator (HRSG)	Heat Recovery Steam Generator (HRSG)	Gross T	Ferrous	$ 285.00	5,200,000	2,600.00	2,321.43			$ 661,607.00
24	Unit 2 Heat Recovery Steam Generator (HRSG)	Heat Recovery Steam Generator (HRSG)	Gross T	Ferrous	$ 285.00	5,200,000	2,600.00	2,321.43			$ 661,607.00
25	Unit 3 Condenser	Condenser	Gross T	Ferrous	$ 285.00	641,605	320.80	286.43			$ 81,632.00
26	Unit 3 Condenser	Condenser	Pounds	Stainless	$ 0.57	31,395	15.70	14.02	$ 17,895.15		$ -
27	Power Distribution Centers	Units 1, 2, 3	Gross T	Ferrous	$ 285.00	425,750	212.88	190.07			$ 54,169.00
28	(4) Boiler Feed Water Pumps	Grade Floor	Gross T	Ferrous	$ 285.00	166,568.00	83.28	74.36			$ 21,192.00
29	(2) Boiler Circulating Water Pumps	Grade Floor	Gross T	Ferrous	$ 285.00	78,550.00	39.28	35.07			$ 9,994.00
30	(2) Cooling Water Pumps	Grade Floor	Gross T	Ferrous	$ 285.00	19,450.00	9.73	8.68			$ 2,474.00
31	Air Compressor	Grade Floor	Gross T	Ferrous	$ 285.00	29,350	14.68	13.10			$ 3,734.00
32	Emergency Diesel Generator	Grade Floor	Gross T	Ferrous	$ 285.00	20,575	10.29	9.19			$ 2,617.00
33		**SUBTOTAL:**				**19,202,740**	**9,601.37**	**8,496.99**	**$ 17,895.15**	**$ 489,564.00**	**$ 2,417,642.00**

	A	B	C	D	E	F	G	H	I	J	K
8	ITEM NO.	DESCRIPTION	UNIT	METAL TYPE	VALUE/UNIT	POUNDS	REGULAR TONS	GROSS TONS	STAINLESS DOLLAR AMOUNT	COPPER DOLLAR AMOUNT	FERROUS DOLLAR AMOUNT
34	ITEM NO.	DESCRIPTION	UNIT	METAL TYPE	VALUE/UNIT	POUNDS	REGULAR TONS	GROSS TONS	STAINLESS DOLLAR AMOUNT	COPPER DOLLAR AMOUNT	FERROUS DOLLAR AMOUNT
35	**INTERNAL/EXTERNAL PIPING**										$ -
36	Piping + Valves + Actuators	Units 1 - 3 Inside/Outside Piping	Gross T	Ferrous	$ 285.00	2,371,250	1,185.63	1,058.59			$ 301,699.00
37		**SUBTOTAL:**				**2,371,250**	**1,185.63**	**1,058.59**	**$ -**	**$ -**	**$ 301,699.00**
38	**OH CRANES**										$ -
39	STG OH Crane (1)	Twin Girder OH Crane	Gross T	Ferrous	$ 285.00	66,200	33.10	29.55			$ 8,422.00
40		**SUBTOTAL:**				**66,200**	**33.10**	**29.55**	**$ -**	**$ -**	**$ 8,422.00**
41	**TANKS**										$ -
42	Closed Top Vertical Tank (1)	Vertical Tanks (Closed Top) - 60' D	Gross T	Ferrous	$ 285.00	496,860	248.43	221.81			$ 63,216.00
43	Closed Top Vertical Tank (2)	Vertical Tanks (Closed Top) - 44' D	Gross T	Ferrous	$ 285.00	206,055	103.03	91.99			$ 26,216.00
44		**SUBTOTAL:**				**702,915**	**351.46**	**313.80**	**$ -**	**$ -**	**$ 89,432.00**
45	ITEM NO.	DESCRIPTION	UNIT	METAL TYPE	VALUE/UNIT	POUNDS	REGULAR TONS	GROSS TONS	STAINLESS DOLLAR AMOUNT	COPPER DOLLAR AMOUNT	FERROUS DOLLAR AMOUNT
46	**ELECTRICAL/CONTROL WIRE**										$ -
47	Internal & External	Complete	Pounds	Copper	$ 2.89	240,115	120.06			$ 693,572.00	$ -
48		**SUBTOTAL:**				**240,115**	**120.06**	**0.00**	**$ -**	**$ 693,572.00**	**$ -**
49	**TRANSFORMERS**										$ -
50	3 Mains and Assorted Plant Transformers	3 Mains and Assorted Plant Transformers	Gross T	Ferrous	$ 285.00	1,531,742	765.87	683.81			$ 194,886.00
51	3 Mains and Assorted Plant Transformers	3 Mains and Assorted Plant Transformers	Pounds	Copper	$ 2.89	30,944	15.47			$ 89,381.00	$ -
52		**SUBTOTAL:**				**1,562,686**	**781.34**	**683.81**	**$ -**	**$ 89,381.00**	**$ 194,886.00**
53	**MISCELLANEOUS**										$ -
54	Extra Parts, Pipes, Etc. (Units 1 - 4)	Surplus Material	Gross T	Ferrous	$ 285.00	50,000	25.00	22.32			$ 6,361.00
55	Reinforcing Rebar	Foundations above Grade, Pedestals, Floors above Grade, Tank Foundations	Gross T	Ferrous	$ 285.00	1,650,000	825.00	736.61			$ 209,933.00
56		**SUBTOTAL:**				**1,700,000**	**850.00**	**758.93**	**$ -**	**$ -**	**$ 216,294.00**
57	ITEM NO.	DESCRIPTION	UNIT	METAL TYPE	VALUE/UNIT	POUNDS	REGULAR TONS	GROSS TONS	STAINLESS DOLLAR AMOUNT	COPPER DOLLAR AMOUNT	FERROUS DOLLAR AMOUNT
58	**TOTAL SALVAGE WEIGHT & VALUE ESTIMATED:**					**31,022,138**	**15,511**	**13,652**	**$ 17,895.15**	**$ 1,272,517.00**	**$ 3,886,956.00**
59	**TOTAL FERROUS VALUE ESTIMATED:**		**GT**	**Ferrous**	**$ 285.00**			**13638.44**			**$3,886,956.00**
60	**TOTAL COPPER VALUE ESTIMATED:**		**LBS**	**Copper**	**$ 2.89**			220.27			**$1,272,517.00**
61	**TOTAL STAINLESS STEEL VALUE ESTIMATED:**		**LBS**	**SS**	**$ 0.57**			14.00			**$ 17,895.15**
62	**TOTAL FERROUS, COPPER, STAINLESS VALUE ESTIMATED:**										**$5,177,368.15**
64											
65											

3.4 Analysis of Transportation

Material	Tons/lbs	Unit	Cost Per Unit	Total
Steel				
Scrap Steel (Units 12)	13,638	Ton	$285.00	$3,886,955
Trucking Cost (20 Tons Net/Load)	682		1225	($835,354)
Railcar Cost (90 Tons Net/load)	152		3460	$0
Subtotal				**$3,051,601**
Stainless				$ -
Scrap Stainless Steel (Units 12)	14.02	Ton	$1,278.00	$17,912
Trucking Cost (20 Tons Net/Load)	1		1225	($858)
Railcar Cost (90 Tons Net/load)	0		3460	$0
Subtotal				**$17,055**
Copper				
Scrap Copper (Units 12)	220.27	Ton	$5,777.00	$1,272,517
Trucking Cost (20 Tons Net/Load)	11		1225	($13,492)
Railcar Cost (90 Tons Net/load)	2		3460	$0
Subtotal				**$1,259,025**
Alloy				
Scrap Alloy (Units 12)	0		$1,760	$0
Trucking Cost (20 Tons Net/Load)	0		1750	$0
Railcar Cost (90 Tons Net/load)	0		3460	$0
Subtotal				**$0**
** 3.5 hour round trip to SLC $350/hr			**Total**	**$4,327,680**
			Salvage	$5,177,384.97
			Transportation	($849,704.76)

Transportation of scrap by rail is not feasible directly from Currant Creek and therefore would require trucking from the site. Since it is in close proximity to the Salt Lake City metropolitan area, it would be recommended to truck to a salvage yard in the Salt Lake City metro area and trucks can run two round trips each day minimum. Salvage yards can make special deals with the volume from a facility like Currant Creek so as not to get local scrap pricing but rather higher rates. Due to this reason we estimated conservatively at $285/ton for carbon steel, $1,278/ton stainless steel and $5,777 for copper.

Total Salvage Value $5,177,385
Total Transportation Cost $849,704
Total Net Salvage Income $4,327,680

4.0 Summary of Costs

The CB&I estimate for the total demolition, reclamation and remediation costs of the Currant Creek Plant to be $6,120,523. The summary table demonstrates the costs of each component and expected salvage value. This plant closure is due to its smaller size and newer design is considerably less to decommission and remediate.

Summary Table	Amount
Demolition	$8,323,203
Environmental (Asbestos, Ponds, Tanks, et al)	$2,125,000
Salvage Value (Income)	($4,327,680)
Total Cost of Demolition	**$6,120,523**