20180501163225
Filed Date: 05/01/2018
State Corporation Commission
of Kansas

BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS

DIRECT TESTIMONY OF

RONALD A. KLOTE

ON BEHALF OF
KANSAS CITY POWER & LIGHT COMPANY

IN THE MATTER OF THE APPLICATION OF KANSAS CITY POWER & LIGHT COMPANY TO MAKE CERTAIN CHANGES IN ITS CHARGES FOR ELECTRIC SERVICE

DOCKET NO. 18-KCPE-____-RTS

Table of Contents

BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS

DIRECT TESTIMONY OF

RONALD A. KLOTE

ON BEHALF OF
KANSAS CITY POWER & LIGHT COMPANY

IN THE MATTER OF THE APPLICATION OF
KANSAS CITY POWER & LIGHT COMPANY
TO MAKE CERTAIN CHANGES IN
ITS CHARGES FOR ELECTRIC SERVICE

DOCKET NO. 18-KCPE-____-RTS

I. INTRODUCTION

Q: Please state your name and business address.

A: My name is Ronald A. Klote. My business address is 1200 Main, Kansas City, Missouri 64105.

Q: By whom and in what capacity are you employed?

A: I am employed by Kansas City Power & Light Company ("KCP&L" or "Company") as Director – Regulatory Affairs.

Q: What are your responsibilities?

A: My responsibilities include the coordination, preparation and review of financial information and schedules associated with Company rate case filings and other regulatory filings.

Q: Please describe your education, experience and employment history.

A: In 1992, I received a Bachelor of Science Degree in Accountancy from the University of Missouri-Columbia. In May 2016, I completed my Master of Business Administration

Degree from the University of Missouri – Kansas City. I am a Certified Public Accountant holding a certificate in the State of Missouri. In 1992, I joined Arthur Andersen, LLP holding various positions of increasing responsibilities in the auditing division. I conducted and led various auditing engagements of company financial statements. In 1995, I joined Water District No. 1 of Johnson County as a Senior Accountant. This position involved operational and financial analysis of water operations. In 1998, I joined Overland Consulting, Inc. as a Senior Consultant. This position involved special accounting and auditing projects in the electric, gas, telecommunications and cable industries. In 2002, I joined Aquila, Inc. ("Aquila") holding various positions within the Regulatory department until 2004 when I became Director of Regulatory Accounting Services. This position was primarily responsible for the planning and preparation of all accounting adjustments associated with regulatory filings in the electric jurisdictions. As a result of the acquisition of Aquila by Great Plains Energy Incorporated ("GPE"), I began my employment with KCP&L as Senior Manager, Regulatory Accounting in July 2008. In April 2013, I joined the Regulatory Affairs department as a Senior Manager remaining in charge of Regulatory Accounting responsibilities. In December 2015, I became Director, Regulatory Affairs responsible for the coordination, preparation and filing of rate cases in our electric jurisdictions.

Q: Have you previously testified in a proceeding before the Kansas Corporation Commission ("Commission" or "KCC") or before any other utility regulatory agency?

A: Yes. I have testified before the KCC, the Missouri Public Service Commission, the California Public Utilities Commission, and the Public Utilities Commission of Colorado.

Q: What is the purpose of your testimony?

A: The purpose of my testimony is to: (i) describe the revenue requirement model and schedules that are used to support the rate increase KCP&L is requesting in this proceeding (Schedules RAK-1 through RAK-3 attached to this testimony); and (ii) to identify the witnesses who support various accounting adjustments listed on the Rate Base and Summary of Adjustments (Schedule RAK-2 and RAK-4 attached to this testimony); and (iii) provide support on various accounting adjustments impacting the revenue requirement calculation in this rate case.

Q: Do you provide any schedules in support of your testimony?

A: Yes. I include eight schedules with my testimony.

- Schedule RAK-1 – Revenue Requirement Summary;
- Schedule RAK-2 – List of Rate Base Components;
- Schedule RAK-3 – Adjusted Income Statement;
- Schedule RAK-4 – Summary of Adjustments;
- Schedule RAK-5 – Cash Working Capital;
- Schedule RAK-6 – Allocation Factors;
- Schedule RAK-7 – Description of Allocators;
- Schedule RAK-8 – Income Tax.

Q: Were the schedules listed above prepared either by you or under your direction?

A: Yes, they were.

II. REVENUE REQUIREMENT MODEL AND SCHEDULES

Q: What is the purpose of Schedules RAK-1 through RAK-3?

A: These schedules represent the key outputs of the Company's revenue requirement model used to support the rate increase that KCP&L requests in this proceeding. Schedule RAK-1 shows the revenue requirement calculation. Schedule RAK-2 lists the rate base components, along with the sponsoring witnesses. Schedule RAK-3 is the adjusted income statement.

Q: Please describe the process the Company used to determine the requested rate increase.

A: We utilized our historical ratemaking preparation process to determine the rate increase request. We used historical test year data from the financial books and records of the Company as the basis for operating revenues, operating expenses and rate base. We then adjusted the historical test year data to reflect: (i) normal levels of revenues and expenses that would have occurred during the test year; (ii) annualizations of certain revenues and expenses; (iii) amortizations of regulatory assets and liabilities; and (iv) known and measurable changes that have been identified since the end of the historical test year. We then allocated the adjusted test year data to arrive at operating revenues, operating expenses, and rate base applicable to the Kansas jurisdiction. We subtracted operating expenses from operating revenues to arrive at operating income. We multiplied the net adjusted cost of rate base times the requested rate of return to determine the net operating income requirement. This was compared with the net operating income available to determine the additional net operating income before income taxes that would be needed to achieve the requested rate of return. Additional current income taxes were then added to arrive at the gross revenue requirement. This requested rate increase is the amount necessary for the post-increase calculated rate of return to equal the rate of return supported by KCP&L witness Robert B. Hevert in his Direct Testimony.

Q: Are the effects of the Tax Cuts and Jobs Act of 2017 (TCJA) reflected in the revenue requirement model attached to this testimony?

A: Yes. An estimate of the impact of the Tax Cuts and Jobs Act of 2017 has been included in the CS-125 Income Tax adjustment. Please see the section for CS-125 Income Taxes for more details.

III. TEST YEAR

Q: What historical test year did KCP&L use in determining rate base and operating income?

A: The revenue requirement schedules are based on a historical test year of the 12 months ending September 30, 2017, with known and measurable changes projected through June 30, 2018, the anticipated update period in this rate case.

Q: Why was this test year selected?

A: The Company used the 12-month period ending September 30, 2017, for the test year in this rate proceeding because that period reflects the most currently available quarterly financial information to provide adequate time to prepare the revenue requirement for this case.

Q: Does test year expense reflect an appropriate allocation of KCP&L overhead to KCP&L Greater Missouri Operations Company ("GMO") and other affiliated companies?

A: Yes, KCP&L incurs costs for the benefit of GMO and other affiliated companies and these costs are billed out as part of the normal accounting process. Certain projects and operating units are set up to allocate costs among the various affiliated companies based on appropriate cost drivers while others are set up to assign costs directly to the benefiting affiliate.

Q: Does GMO incur costs that are allocated to KCP&L?

A: Yes, although not as significant as costs allocated by KCP&L, GMO does incur certain costs that are allocated to KCP&L.

Q: Why is an update period proposed to be used in this rate case?

A: Based on the anticipated filing date of this rate case, we assumed that a June 30, 2018 update period would coincide with the timing of KCC Staff ("Staff") and the Citizens' Utility Ratepayer Board ("CURB") audit work in the preparation of their respective direct testimonies in this rate case. This process allows for changes in cost levels included in the test year to be updated to the most current information as of a specified date which is closer to the date rates are effective. Additionally, this date allows for the inclusion of a significant asset addition associated with the Company's new Customer Information System.

IV. JURISDICTIONAL ALLOCATIONS

Q: Why is it necessary to allocate revenues, expenses and rate base to the Company's various jurisdictions?

A: KCP&L does not have separate operating systems for its Kansas, Missouri, and firm wholesale jurisdictions. It operates a single production and transmission system that is used to provide service to retail customers in Kansas and Missouri, as well as the full-requirements firm wholesale customers. Therefore, jurisdictional allocations of operating expenses, certain operating revenues and rate base are necessary.

Q: Why is the method by which the allocations are made critical?

A: First, the method of allocation is critical to ensure that the rates charged to each jurisdiction of customers reflect the full cost of serving those customers but not the cost of serving customers in other jurisdictions. Second, and very important, is the method of allocation must allow the Company the opportunity to recover fully its prudently incurred costs of serving those customers. That is, if the sum of the allocation factors allowed in each jurisdiction is less than 100%, then the Company is unable to recover its prudently incurred cost of service and return on rate base.

Q: What allocators did the Company use?

A: The allocators that were utilized can be classified as input allocators and calculated allocators. The input allocators are based on weather-normalized demand and energy, described in the Direct Testimony of KCP&L witness Albert R. Bass, Jr., and customer information. Attached as Schedule RAK-6 is a listing of the allocation factors for this rate proceeding. The calculated allocators are, at their root, based on the Demand, Energy, and Customer allocators. The calculated allocators are calculated as a combination of amounts that have previously been allocated using one or more of the input allocators.

Q: Please describe the Demand allocator.

A: The Demand allocator used for this case is a 12-month weather normalized average of the coincident peak demands for the Missouri and Kansas retail jurisdictional customers and the firm wholesale jurisdiction which covered the period October 2016 to September 2017.

Q: Please describe the Energy allocator.

A: The Energy allocator is based on the total weather-normalized kilowatt-hour usage by the Missouri and Kansas retail customers and the firm wholesale jurisdiction which covered the period October 2016 to September 2017.

Q: Please describe the Customer allocator.

A: The Customer allocator is based on the average number of customers in Missouri, Kansas, and the firm wholesale jurisdiction which covered the period October 2016 to September 2017.

Q: Please explain how the various revenue, expense and rate base components are allocated among KCP&L's regulatory jurisdictions.

A: Attached as Schedule RAK-7 is a narrative describing the allocation methodology.

V. ACCOUNTING ADJUSTMENTS

Q: Please discuss Schedule RAK-4.

A: This schedule presents a listing of adjustments to net operating income for the 12 months ended September 30, 2017, along with the sponsoring Company witnesses. Various

Company witnesses will support, in their direct testimonies, the need for each of these adjustments.

Q: Please explain the adjustments to reflect normal levels of revenues and expenses.

A: Adjustments such as normalization adjustments are made to reflect “normal” levels of revenues and expenses; for example, retail revenues are adjusted to remove abnormal climate occurrences to reflect if the weather had been more typical of historical averages during the test year.

Q: Please explain the adjustments to annualize certain revenues and expenses.

A: Annualization adjustments have been made to reflect an annual level of revenues and expenses in cost of service, such as the annualization of payroll and depreciation expenses. The former reflects a full year’s impact of recent pay increases, and also reductions in staff levels, while the latter reflects the impact of a full year’s depreciation on plant additions included in rate base.

Q: Please explain the adjustments to amortize regulatory assets and liabilities.

A: Various regulatory assets and liabilities have been established in past Kansas rate cases. These assets/liabilities are then amortized over the number of years authorized in the orders for the applicable rate cases. Adjustments are sometimes necessary to annualize the amortization amount included in the test year or remove amortizations that have ceased during the test year.

Q: Please explain the adjustments to reflect known and measurable changes that have been identified since the end of the historical test year.

A: These adjustments are made to reflect changes in the level of revenue, expense, rate base and cost of capital that either have occurred or are expected to occur prior to the update period in this rate case. For example, payroll expense has been adjusted for known and measurable changes.

Q: Do the adjustments listed on Schedule RAK-4 and discussed throughout the remainder of this testimony and other Company witness's testimony entail an adjustment of test year amounts?

A: Yes, the adjustments summarized on Schedule RAK-4 and discussed in this testimony reflect adjustments to the test year ended September 30, 2017.

Q: Will certain accounting adjustments in this case be impacted by the Westar Merger Non-Unanimous Settlement Agreement ("Settlement Agreement") in Docket No. 18-KCPE-095-MER?

A: Yes. Certain accounting adjustments will be impacted if the Settlement Agreement is approved by the Commission in Docket No. 18-KCPE-095-MER and the merger with Westar is completed. This Settlement Agreement is discussed in the Direct Testimony of Company witness Darrin Ives.

RB-20 PLANT IN SERVICE

Q: Please explain adjustment RB-20.

A: KCP&L rolled the test year end September 30, 2017 plant balances forward to June 30, 2018, by using the Company's actual results through September 2017 and the 2017-2018 capital budgets for subsequent additional capital additions post September 2017. Projected plant additions net of projected retirements were added to actual balances through September 2017 to arrive at projected plant balances at June 30, 2018.

Q: Does RB-20 include amounts associated with the Clean Charge Network?

A: Yes. In January 2015, KCP&L announced a plan to install and operate more than 1,000 electric vehicle charging stations throughout the Greater Kansas City region. Included in adjustment RB-20 are the actual capital costs for the Clean Charge Network through September 2017. Any additional capital costs post September 2017 will be included in the Update date in this case June 30, 2018. Please see the testimony of Company witness Charles Caisley and Tim Rush for further explanation of the Clean Charge Network and its inclusion in this case.

Q: Does the capital additions through June 2018 include projections for the new Customer Information System ("CIS")?

A: Yes. The CIS system, and all of its related parts, is expected to be in service prior to the June 30, 2018 update period in this case. As such, projected costs have been included in plant-in-service estimates in this case. The Company expects the actual amount incurred as of June 30, 2018 will be included in the Update in this case. Please see the testimony of Company witnesses Forrest Archibald and Charles Caisley for more information on the CIS project.

RB-21 CONSTRUCTION WORK IN PROGRESS

Q: Please explain adjustment RB-21.

A: The Company has included in rate base the anticipated June 30, 2018 Construction Work in Progress ("CWIP") balance as included in our 2018 capital budget process. CWIP inclusion in rate base is provided by and discussed in K.S.A. 66-128. The relevant provisions of K.S.A. 66-128 states the following:

> **(b)(1) For the purposes of this act, except as provided by subsection (b)(2), property of any public utility which has not been completed and dedicated to**

> **commercial service shall not be deemed to be used and required to be used in the public utility's service to the public.**
>
> **(2) Any public utility property described in subsection (b)(1) shall be deemed to be completed and dedicated to commercial service if: (A) Construction of the property will be commenced and completed in one year or less; (B) the property is an electric generation facility that converts wind, solar, biomass, landfill gas or any other renewable source of energy; (C) the property is an electric generation facility or addition to an electric generation facility; or (D) the property is an electric transmission line, including all towers, poles and other necessary appurtenances to such lines, which will be connected to an electric generation facility.**

Q: How was the June 30, 2018 anticipated CWIP balance derived?

A: The Company used the 2018 capital budget for the anticipated balances at June 30, 2018 and then excluded any projects with an in-service date greater than one year from the Update date in this case. In addition, the company excluded any balances budgeted to be recorded to a transmission plant account. As with the Plant in-service amounts, the Company anticipates the actual June 30, 2018 CWIP balance will replace the budgeted June 30, 2018 CWIP balance.

RB-30 RESERVE FOR DEPRECIATION

Q: Please explain adjustment RB-30.

A: This adjustment rolls forward the Kansas-basis Reserve for Depreciation from September 30, 2017 to balances projected as of June 30, 2018.

Q: How was this roll-forward accomplished?

A: The depreciation/amortization provision component was calculated in two steps: (i) the September 2017 depreciation provision was multiplied by nine months to approximate the provision that will be charged to the Reserve for Depreciation from October 2017 through June 2018 for plant existing at September 30, 2017; and (ii) by estimating the depreciation/amortization through June 30, 2018 attributable to projected net plant additions from October 2017 through June 2018. In the second step, we assumed the net plant additions occurred ratably over this period.

Q: Was the impact of retirements included in the roll-forward?

A: Yes. Projected retirements for the period October 2017 through June 2018 were based on actual test period retirements with adjustments to exclude retirements that occurred in the test period for two material streetlight sales in Olathe, KS and Prairie Village, KS. In addition, the Company adjusted the reserve for actual cost of removal and salvage activity that occurred October 2017 through December 2017.

Q: Does RB-30 include amounts associated with the Clean Charge Network?

A: Yes, actual Kansas-basis Reserve for Depreciation for the Clean Charge Network was included in RB-30 through September 2017. Any additional reserve activity post September 2017 will be included in the Update date in this case June 30, 2018.

RB-82/R-82/CS-82 – TRANSMISSION DELIVERY CHARGE ("TDC") RIDER

Q: What adjustment numbers are used for the TDC Rider adjustments included in this case.

A: These adjustments are identified as adjustments RB-82, R-82 and CS-82.

Q: Please explain why it is necessary to make these adjustments for the TDC Rider.

A: In Docket number 15-KCPE-116-RTS the Company was granted a TDC rider. The TDC Rider tracks the annual revenue requirement determined from the application of the Company's transmission formula rate ("TFR") which has been approved by the Federal Energy Regulatory Commission ("FERC"). Principally, transmission costs reflected in the TFR are unbundled from KCP&L's base rates and set out separately in the TDC Rider that is adjusted at least annually to reflect changes in the application of the TFR.

Therefore, CS-82, RB-82 and R-82 remove from KCP&L’s cost of service the test-year transmission cost components that are reflected in the TFR

.Q: What elements from KCP&L’s base rates were removed from cost of service in this rate case?

A: On the whole, any cost element that will be recovered through the application of the TFR was removed from cost of service using the same direct assignment and allocation percentages as reflected in the TFR. Particularly, all operations and maintenance (“O&M”) expenses, depreciation and amortization expenses, revenue credits, plant in service, and accumulated depreciation directly identified as transmission costs in KCP&L’s accounting records were removed using the same direct assignment and allocation as reflected in the TFR. In addition, joint costs such as administrative and general expenses, depreciation of general plant, taxes other than income taxes, general plant, general plant accumulated depreciation, accumulated deferred income taxes, and working capital (including materials and supplies and prepayments) were removed using the same direct assignment or allocation percentages as used in the application of the TFR. Because KCP&L’s rate base has been adjusted to remove all non-excluded transmission-related costs, the operating income and associated income taxes shown in KCP&L’s cost of service do not include a return on TDC Rider related rate base and associated income taxes.

RB-125 ACCUMULATED DEFERRED INCOME TAXES

Q: Please explain adjustment RB-125.

A: We adjusted September 30, 2017 Accumulated Deferred Income Taxes (“ADIT”) in adjustment RB-125. Deferred income taxes represent the tax on timing differences for deductions and income reported on KCP&L's income tax returns compared to what is reported for book purposes. ADIT represents the accumulated balance of these income tax timing differences at a point in time.

Q: What are the ADIT adjustments to KCP&L's rate base?

A: Adjustment RB-125 related to items included in KCP&L's rate base or net operating income. This schedule reflects the deferred tax liabilities relating to depreciation and other expenses deducted for the tax return in excess of book deductions (including bonus depreciation), resulting in a rate base decrease. This adjustment also reflects deferred tax assets that serve to increase rate base. The most significant of the deferred tax assets is the net operating losses. For tax purposes, the deductions for accelerated depreciation (including bonus depreciation) created a net operating loss for KCP&L. Under the Internal Revenue Service normalization rules, deferred tax liabilities that have not been used to reduce the tax liability of the company should not be included as a rate base reduction. The inclusion of the deferred tax assets related to net operating losses created by accelerated depreciation deductions partially offsets the deferred tax liabilities for accelerated depreciation deduction in order to reflect the proper amount of deferred taxes in rate base for the Company.

Q: Why does ADIT affect rate base?

A: ADIT liabilities such as accelerated depreciation are considered a cost-free source of financing for ratemaking purposes. Customers should not be required to provide for a return on plant in service that has been funded by the government in the form of reduced (albeit temporarily) taxes. As a result, ADIT liabilities are reflected as a rate base offset (reduction in rate base). Conversely, ADIT assets such as the timing difference related to

SO_2 allowance proceeds and net operating losses increase rate base. KCP&L has paid taxes to the government in advance of the time when such taxes are included in cost of service and collected from customers. To the extent taxes are paid, KCP&L must borrow money and/or use shareholder funds. The increase to rate base for deferred income tax assets allows shareholders to earn a return on shareholder-provided funds until recovered from customers through ratemaking.

Q: What time period was used for ADIT in this case?

A: ADIT is based in general on September 30, 2017 general ledger balances, with the plant-related ADIT balances adjusted for projected plant activity through June 30, 2018 as reflected in rate case adjustment RB-20.

Q: Does the projected ADIT in this case include the impact of the Tax Cuts and Jobs Act enacted on December 22, 2017?

A: Yes. However, there is minimal impact of the Tax Cuts and Jobs Act of 2017 on ADIT included in rate base. The amount of ADIT computed using the historical statutory rates versus the new federal tax rate of 21%, is considered excess ADIT. This excess ADIT remains in rate base until it is amortized and has been included in the income tax expense component of cost of service. The amortization of the excess ADIT for plant related temporary differences is computed using the normalization rules included in the Tax Cuts and Jobs Act of 2017. All other excess ADIT is amortized using the appropriate time period for those items. See the adjustment for CS-125 Income Taxes for more detailed information related to the amortization of excess ADIT.

Q: Will the impact of the Tax Cuts and Jobs Act of 2017 on ADIT in rate base be included in the Update of rate base as of June 30, 2018?

A: Yes. The Company will true-up the ADIT included in rate base (including impacts of the Tax Cuts and Jobs Act of 2017) at the Update period of June 30, 2018.

CASH WORKING CAPITAL

Q: Please discuss Cash Working Capital ("CWC").

A: CWC is included in rate base as summarized on Schedule RAK-5.

Q: Why is it necessary to calculate an amount of CWC?

A: CWC is the amount of cash required by a utility to pay the day-to-day expenses incurred to provide utility service to its customers. A lead/lag study is generally used to analyze the cash inflows from payments received by the company and the cash outflows for disbursements paid by the company. When the utility receives payment from its retail customers for utility service less quickly than it makes the disbursements for utility expenses, then the company has a positive CWC requirement. Conversely, when the utility receives payment from its retail customers for utility service more quickly than it makes the disbursements for utility expenses it has a negative CWC requirement.

Q: How did you determine the amount of CWC?

A: We applied lead/lag factors used consistently in the Company's previous rate cases to the appropriate cost of service amounts. The application of the individual lead/lag factors to applicable amounts is shown on Schedule RAK-5.

Q: Were any of the factors updated from those used in the 15-116 Docket?

A: Yes, the Company updated the retail revenue lag factor for this case.

Q: Please explain why these factors were updated.

A: The Company revised the retail revenue lag factor primarily to reflect the proper collection lag. The retail revenue factor used by the Company in this case was 28.569 (rounded to 28.570) days, made up of three components: service period lag, billing lag and collection lag. The service period lag remained the same as last case at 15.208 days. The billing lag was retained in this case at 2.00 days. However, we reflected a change in the collection lag from 8.092 days in the 15-116 Docket to 11.361 days. This resulted in a total retail revenue lag of 28.570 days.

Q: Why was it necessary to update the collection lag?

A: The collection lag is a weighted value that reflects two components: 1) a zero-day lag for the percentage of receivables sold under KCP&L's Accounts Receivable facility (the facility is discussed in the Direct Testimony of Company witness Linda Nunn (adjustment CS-78)); and 2) an average number of days outstanding for the percentage that is not sold. The percentage of receivables sold was revised from 64.750% in the 15-116 Docket to 54.599% in the current rate case. The average number of days that bills are outstanding was recalculated for the period October 1, 2016 to September 30, 2017, resulting in a revision from 22.957 days in the 15-116 Docket to 25.024 days in the current rate case.

Q: Did KCP&L make any other changes to the CWC lead/lag factors determined in the 15-116 Docket?

A: No, the Company did not. The expense leads remained unchanged from those in 15-116 Docket.

Q: Are you aware of any changes in KCP&L's processes which would cause any of the other lead/lag factors to require modification from those used in the 15-116 Docket?

A: No, none that I am aware of.

Q: How were the resulting lead/lag factors used?

A: Lags for both blended revenues and payments were posted to Schedule RAK-5. On this schedule, the net blended revenue/payment lag for each payment group was calculated and the result was divided by 365 days to arrive at a net lead/lag factor. These factors were subsequently applied to the applicable Kansas jurisdictional cost of service amounts on Schedule RAK-5. The total resulting CWC amount was then carried forward to Schedule RAK-2 (rate base schedule).

CS-27 WOLF CREEK WATER CONTRACT

Q: Please explain adjustment CS-27.

A: The Company annualized costs for a water purchase contract at the Wolf Creek nuclear power plant. The plant has an agreement for rights to use water from the lake adjacent to the plant to ensure proper lake levels for cooling purposes. Beginning in January 2018, the rate per 1,000 gallons will increase from $0.10 to $0.392. Since this contract is set to substantially increase during the first part of 2018, the adjustment includes the new contract amount that will be in place at the true-up date.

CS-35 WOLF CREEK MID-CYCLE OUTAGE

Q: Please explain adjustment CS-35.

A: In the 2014 case, KCP&L's test year included a planned mid-cycle outage at Wolf Creek. An adjustment was included in the rate case which included a 5-year amortization of the mid-cycle outage costs. Effective October 1, 2015, KCP&L began amortizing the mid-cycle outage costs over 5-years. Since the test year already reflects an annualized level of the 5-year amortization of the mid-cycle outage costs, there was no adjustment necessary.

CS-36 WOLF CREEK REFUELING OUTAGE

Q: Please explain adjustment CS-36.

A: This adjustment consists of two components. The first component addresses the Wolf Creek refueling outage annualization. The Wolf Creek nuclear generating station refueling cycle is normally about 18 months. The Company defers the O&M outage costs and amortizes the costs over the 18 months leading up to the next refueling. This adjustment annualizes the Wolf Creek refueling expense.

Q: Why is a refueling annualization adjustment necessary in this case?

A: The test period amortization includes the beginning of the amortization period for refueling 21. Annualized expense that is included in this case should reflect the level of amortization expense associated with the most recently completed refueling outage. As such, costs associated with refueling outage number 21 were used to determine the monthly amortization expense. This annualization adjustment results in a full year's amortization expense for refueling number 21.

Q: Please discuss the second component of adjustment CS-36.

A: The second component of Adjustment CS-36 relates to an established regulatory asset that is amortized only in the KCP&L Missouri jurisdiction. As such, it does not have an impact on the KCPL-KS revenue requirement calculation.

Q: Is refueling number 22 expected to be completed before June 30, 2018?

A: Yes. Refueling number 22 is expected to be completed in May, 2018. As such, it is expected that this adjustment will be updated to reflect the new monthly amortization from that refueling.

CS-37 WOLF CREEK DECOMMISSIONING

Q: Please explain adjustment CS-37.

A: This adjustment annualizes the expense associated with decommissioning the Wolf Creek nuclear generating station.

Q: What is the annualized nuclear decommissioning expense the Company seeks in this case?

A: The Company seeks an annualized amount of $2,036,230 (Kansas jurisdictional). Since the test year cost of service reflects this amortization, net operating income is properly stated and requires no adjustment.

Q: Is the requested annualized amount the same as that requested in the 2015 Rate Case (15-KCPE-116-RTS)?

A: Yes.

Q: Why is the amount the same?

A: The annual expense/accrual level is based on a cost study conducted every three years. The most recent study, conducted by TLG Services, Inc., was filed with the Commission on September 1, 2017 in Docket No. 18-WCNE-107-GIE along with an analysis prepared by KCP&L of funding levels necessary to defray the decommissioning cost estimated in the study. In that application, KCP&L requested that the Commission approve the continuation of the annual accrual at the current level.

CS-39 IT SOFTWARE MAINTENANCE

Q: Please explain adjustment CS-39.

A: Adjustment CS-39 was made to include an annualized level of contracted software maintenance costs in this rate case. The annualized level of these costs has been historically increasing and is projected to continue to increase during 2018. KCP&L included an annualized June 2018 budgeted amount to reflect an annual level of expense. The types of maintenance contracts that were annualized include: Microsoft premier support and software licenses, Oracle systems and service contracts, PowerPlan system, and various hardware and software maintenance contracts.

CS-50 PAYROLL

Q: Please explain adjustment CS-50.

A: KCP&L annualized payroll expense based on the employee headcount as of September 30, 2017 adjusted for labor impacts of the KCP&L Missouri jurisdiction’s energy efficiency rider implementation, multiplied by salary and wage rates expected to be in effect as of June 30, 2018.

Q: How were salary and wage rates determined?

A: Wage rates for bargaining (union) employees were based on contractual agreements. Salary rates for non-bargaining employees were based on annual salary adjustments expected to be in effect as of June 30, 2018.

Q: Were amounts over and above base pay, such as overtime, premium pay, etc. included in the payroll annualization?

A: Yes, overtime was annualized at an amount equal to the average of the amounts incurred for the 12 month periods ending December 2014, December 2015 and September 2017, adjusted for labor escalations. Wolf Creek overtime was also annualized at an amount equal to the average overtime amounts incurred for the same 12 month periods, which was then escalated to equivalent 2018 levels. Temporary and summer employees O&M labor were annualized at an average of these same 12 months periods as well. Amounts were included for other categories at test year levels.

Q: Does annualized payroll include payroll KCP&L billed to GMO and other affiliates?

A: The annualization process includes all payroll, since all employees are KCP&L employees. However, annualized payroll included in this rate proceeding was reduced by the amount that would be billed out to these affiliated companies.

Q: Was payroll expense associated with the Company's interest in the Wolf Creek generating station annualized in a similar manner?

A: Yes, it was.

Q: Does the payroll annualization adjustment take into consideration payroll billed to joint venture partners and payroll charged to capital?

A: Yes, the payroll annualization adjustment takes these factors into consideration.

Q: How was the payroll capitalization factor determined?

A: The Company used a three-year average payroll capitalization factor, as being representative of payroll capitalization going forward. The periods included in the three-year average capitalization factor included the 12 months ending December 2014, December 2015 and September 2017.

CS-51 INCENTIVE COMPENSATION

Q: Please explain adjustment CS-51.

A: KCP&L annualized incentive compensation based on the March 2018 projected payout amount. Adjustments were made to the annual amount to remove all incentive compensation that was associated with metrics tied to earnings per share for the AIP Plan (executives only), and also the non-regulated portion included in the ValueLink Plan (non-union management personnel).

Q: Does this adjustment take into consideration incentive compensation billed to joint venture partners, billed to affiliated companies, and charged to capital?

A: Yes**,** based on data from the payroll adjustment discussed earlier in this testimony (adjustment CS-50).

CS-52 401(k)

Q: Please explain adjustment CS-52.

A: KCP&L adjusted 401(k) expense to an annualized level by applying the average matching percentage which is based on five separate pay periods during the test year (9/30/2016, 12/31/2016, 3/31/2017, 6/30/2017, and 9/30/2017) to the O&M adjustment for annualized payroll (adjustment CS-50), excluding bargaining unit overtime, and including eligible incentive compensation (adjustment CS-51).

Q: Please explain the change to the 401(k) plan that occurred beginning January 1, 2014.

A: Beginning January 1, 2014, all new hire non-union employees are no longer eligible to be a part of the company sponsored pension plan. Instead, new hire retirement benefits will be provided exclusively through the 401(k) savings plan. A non-elective contribution will be made to the new hires 401(k) account in the calendar quarter following the end of each plan year. The non-elective contribution totals 4% of actual base pay. Adjustment CS-52 includes an additional adjustment reflecting the actual amount that was contributed for new hires in March 2017.

Q: Does this adjustment take into consideration 401(k) expense billed to joint venture partners, billed to affiliated companies, and charged to capital?

A: Yes**,** based on data from the payroll adjustment discussed earlier in this testimony (adjustment CS-50).

CS-53 PAYROLL TAXES

Q: Please explain adjustment CS-53.

A: The Company annualized FICA, Medicare, and FUTA payroll tax expense by applying the tax rate (assuming the FUTA and SUTA ceiling had been achieved) to the annualized O&M portions of base salary plus ValueLink, executive incentive compensation, overtime, premium, temporary wages, and KCPL' share of Wolf Creek.

Q: Does this adjustment take into consideration payroll tax expense billed to joint venture partners, billed to affiliated companies, and charged to capital?

A: Yes**,** based on data from the payroll adjustment discussed earlier in this testimony (adjustment CS-50).

CS-60 OTHER BENEFITS

Q: Please explain adjustment CS-60.

A: KCP&L annualized other benefit costs based on the projected costs included in the 2018 Budget. This adjustment will be trued up to actual in the update period of this rate case.

Q: What types of benefits are included in this category?

A: The most significant benefit is medical expense. In addition, dental, various insurance and other miscellaneous benefits are included with the other benefits adjustment.

Q: Does this adjustment take into consideration benefits expense billed to joint venture partners, billed to affiliated companies, and charged to capital?

A: Yes**,** based on data from the payroll adjustment discussed earlier in this testimony (adjustment CS-50).

Q: Was other benefit expense associated with the Company's interest in the Wolf Creek generating station annualized in a similar manner?

A: Yes, it was.

CS-61 – OTHER POST-EMPLOYMENT BENEFITS

Q: Please explain the basis of adjustment CS-61.

A: This adjustment consists of two components. The first component provides the level of annualized Other Post-Employment Benefits ("OPEB") expense as provided by the Company's actuary, Willis Towers Watson, that is requested to be included in cost of service in this case. The second component includes the amount of the tracker to be included in cost of service through amortization of the respective regulatory liability projected as of June 30, 2018. Also, I will discuss the application of the OPEB-related tracker related to contributions made to the OPEB trusts.

Q: Please explain the first component.

A: In the first component, we annualized OPEB expense based on 2018 actuarial projections from Willis Towers Watson. This annualization will be updated as part of the June 30, 2018 update with revised projections from the actuary. OPEB expense primarily results from the provisions of Accounting Standards Codification 715, "*Compensation – Retirement Benefits*," (previously referred to as Financial Accounting Standard No. 106). This amount, calculated by our actuary, establishes a base amount to include in rates and will be used to track future actual OPEB expenses against.

Q: Please explain the second component of adjustment CS-61.

A: Effective December 1, 2010, KCP&L initiated a new tracker, Tracker 1, for OPEB expense, as authorized in the Stipulation and Agreement in Docket No. 07-GIMX-1041-GIV ("07-1041 Docket" and "07-1041 S&A"), approved by the Commission on August 17, 2011. This treatment was continued in the 15-116 Docket. Tracker 1 reflects the difference between current period OPEB expense and expense included in rates, with the cumulative difference being amortized in the next case. Because OPEB expense has decreased resulting in a regulatory liability, the amortization expense is reflected as a reduction in cost of service.

Q: What amortization period was used for this regulatory liability?

A: A three-year amortization period was used.

Q: Does this adjustment take into consideration OPEB expense billed to joint venture partners, billed to affiliated companies, and charged to capital?

A: Yes, based on data from the payroll adjustment discussed earlier in this testimony (adjustment CS-50).

Q: Was OPEB expense associated with the Company's interest in the Wolf Creek generating station annualized in a similar manner?

A: Yes, it was.

Q: Please explain the tracker related to contributions.

A: The 07-1041 S&A authorized establishment of an OPEB-related Tracker 2 which was continued in the 15-116 Docket. Tracker 2 recognizes that KCP&L's share of actual contributions to its OPEB Trust could be greater than its required funding contribution for ratemaking purposes, as defined in the 07-1041 S&A. This tracker is similar to the pension-related Tracker 2 which I discuss more fully later in this testimony (adjustment CS-65).

Q: Do you project a balance in the OPEB Tracker 2 as of June 30, 2018?

A: No. It is the Company's policy to fully fund in December of each calendar year the amount of OPEB costs determined by the Company's actuary for that year. Consequently, we do not anticipate having a balance in Tracker 2 at the end of any calendar year.

Q: Is there any specific request that the Company is making regarding OPEB costs?

A: Yes. The Company requests that the balances at June 30, 2018 for Tracker 1 and Tracker 2 be specifically identified so as to establish the beginning amount to be used in the next rate proceeding. Additionally, KCP&L requests that the OPEB expense built in rates in this case (the first component above) be established.

CS-65 – PENSION COSTS

Q: Please explain adjustment CS-65.

A: This adjustment consists of two components relating to the level of annualized pension expense recognized in cost of service in this case and amount to be recovered in future cases through the amortization of the regulatory asset projected as of June 30, 2018. The adjustment relates to adjusting pension expense as recorded under Accounting Standards

Codification No. 715, Compensation-Retirement Benefits, previously referred to as Financial Accounting Standard No. 87 "*Employers' Accounting for Pensions*" ("FAS 87") and No. 88 "*Employers' Accounting for Settlements and Curtailments of Defined Benefit Pension Plans*" ("FAS 88") to an annualized level for ratemaking purposes. The components of the pension annualization include:

a) Annualization of KCP&L's share of pension expense, relating to recurring pension costs, net of amounts capitalized as identified by the Company's actuaries;

b) Amortization of Tracker 1 consisting of rolling forward the FAS 87 and FAS 88 regulatory assets included in Tracker 1 to the projected update period balance at June 30, 2018 and amortizing them over a three-year period as previously authorized by the Commission; and

Additionally, I will discuss the roll forward of the Tracker 2 balance to the projected update of June 30, 2018 for future offset against required contributions.

Q: Do these pension adjustments take into consideration pension expense billed to joint venture partners, billed to affiliated companies, and charged to capital?

A: Yes, they do, based on data from the payroll adjustment discussed earlier in this testimony (adjustment CS-50).

Q: Do these pension adjustments include the effects of the Company's interest in the Wolf Creek generating station pension plans?

A: Yes, they do.

Q: Please explain component (a) of the pension adjustment.

A: FAS 87 expense was annualized based on the 2018 actuarial projection provided by Willis Towers Watson. This annualization adjustment will be updated as part of the June 30, 2018 update in this case based on more current actuarial information from the actuary.

Q: Was annualized pension expense determined in accordance with established regulatory practice?

A: Yes, the calculation was made in accordance with the methodology documented in the 07-1041 S&A.

Q: How is the total GPE consolidated FAS 87 expense allocated to KCP&L to ensure that Kansas ratepayers are not paying for GMO costs?

A: The consolidated expense is allocated to each jurisdiction based on a labor allocation factor, consistent with the payroll annualization allocation discussed earlier in this testimony (adjustment CS-50).

Q: Please explain component (b).

A: This adjustment was made to amortize the balance in the Tracker 1 regulatory asset, expressed on a total company Kansas basis, projected as of June 30, 2018.

Q: What is the nature of this Tracker 1 regulatory asset?

A: In accordance with the provisions of the 07-1041 S&A, and continued in the 15-116 Docket, Tracker 1 represents the cumulative unamortized difference in FAS 87 and FAS 88 pension expense for ratemaking purposes (as discussed in component (a) above) and pension expense built into rates during the corresponding periods.

Q: When was the beginning point for accumulating this difference in FAS 87 and FAS 88 pension expense for ratemaking purposes and FAS 87 and FAS 88 pension expense built into rates?

A: The 07-1041 S&A specified the accumulation was to begin December 1, 2010.

Q: How was the Tracker 1 regulatory asset rolled forward to June 30, 2018?

A: The Tracker 1 pension regulatory asset was $18,018,306 at March 30, 2015 in accordance with the 15-116 Docket. It was adjusted by the difference between actual pension expense based on FAS 87 costs as provided by Willis Towers Watson and pension expense included in rates through the update period in this case which is June 30, 2018. In addition, any FAS 88 settlement charges for the periods and regulatory asset amortizations determined in the 15-116 Docket where recorded and projected through June 30, 2018.

Q: Why was a three-year amortization used for the Tracker 1 regulatory asset?

A: The 15-116 Docket continued the three-year amortization period for the Tracker 1 regulatory asset.

Q: What is FAS 88?

A: FAS 88 is a previous financial accounting standard that addresses, among other issues, accounting for settlement of defined benefit plan obligations and curtailments of defined benefit plans.

Q: How is FAS 88 expense determined?

A: FAS 88 expense is based on information provided by the Company's actuarial firm. KCP&L's share of such expense is determined in the same manner that its share of FAS 87 expense is determined.

Q: What is the nature of the FAS 88 regulatory asset amortization in this case?

A: This case includes two settlements: (1) the 2017 settlement related to Non-Union pension plan; and (2) the 2017 settlement related to the Joint Trusteed pension plan.

Q: Is the Tracker 1 regulatory asset properly includable in rate base?

A: No, the Commission did not authorize rate base inclusion in the 07-1041 Docket.

Q: Please explain Tracker 2.

A: The 07-1041 S&A authorized establishment of Tracker 2 to recognize that KCP&L's share of actual contributions to its pension Trusts required by law may be greater than its required funding contribution for ratemaking purposes, as defined in the 07-1041 S&A. When KCP&L's share of actual contributions exceeds its required funding level, the Company reflects the excess in an off-book schedule that tracks the amount that KCP&L has prepaid for ratemaking purposes. The Company may use this prepayment to offset or partially offset cash contributions in future years that would be required for ratemaking purposes but would not be necessary to meet contributions required by law. Although Tracker 2 does not have an impact on pension expense included in cost of service, the schedule must be rolled forward in each case in order to establish the amount that is available in future periods.

Q: Does the Company report the balances in Tracker 1 and Tracker 2 other than in a rate case proceeding?

A: Yes. The Company is required to submit an annual report to both the Staff and to CURB.

Q: Is there any specific request that the Company is making regarding pension costs?

A: Yes. The Company requests that the balances at June 30, 2018 for Tracker 1 and Tracker 2 be specifically identified so as to establish the beginning amount to be used in the next rate proceeding. Additionally, KCP&L requests that the establishment of pension expense built into rates in this case (component (a) above) be established.

CS-70 INSURANCE

Q: Please explain adjustment CS-70.

A: We annualized insurance costs based on premiums projected to be in effect on June 30, 2018. These premiums include the following types of coverage: property, directors and officers, workers' compensation, bonds, fiduciary liability, excess liability, crime, cyber liability and auto liability.

Q: Does this adjustment take into consideration insurance billed to joint venture partners and affiliated companies?

A: Yes, it does.

CS-88 CRITICAL INFRASTRUCTURE PROTECTION ("CIPS")/CYBER SECURITY O&M

Q: Please explain adjustment CS-88.

A: Adjustment CS-88 is an adjustment that includes capturing increased costs associated with the Company's investment and ongoing maintenance and support of systems and infrastructure for cyber and physical security needs related to the North American Electric Reliability Corporation Critical Infrastructure Protection Standards. The adjustment projects annualized costs based on budgeted non-labor O&M expenses for 2018. The Company proposes to use these annualized levels of CIPS/Cybersecurity costs on a going forward basis and update the base annual costs included in the CIPS/Cybersecurity tracker (discussed below).

Q: In Docket No. 15-KCPE-116-RTS, was a tracker established for CIPS/Cybersecurity non-labor O&M costs?

A: Yes. In Docket No. 15-KCPE-116-RTS a CIPS/Cybersecurity tracker was established for non-labor costs. The base amount for CIP costs included in that case was $4,592,958 (Total KCP&L Share) and the base amount for Cybersecurity costs was $933,304 (Total KCP&L Share). This tracker methodology included a sunset provision that would expire at completion of KCP&L's first full general rate case proceeding filed on or after January 1, 2020.

Q: Does this rate case still fall within the timeframe of the sunset provision identified in Docket No. 15-KCPE-116-RTS?

A: Yes it does.

Q: What does the Company request in regards to the CIPS/Cybersecurity tracker in this rate case?

A: The Company's request in this rate case proceeding is in two parts. First, the Company requests that during the update period of this rate case the amount of the regulatory asset or regulatory liability that has accumulated from the effective date of rates in the last rate case October 1, 2015 through June 30, 2018 be identified. This amount will not be known until actual costs are incurred through June 30, 2018. The Company then proposes to amortize the regulatory asset or liability over a 5 year period and include this amortization in the revenue requirement calculation in this rate case. Secondly, due to the projected significant increase in total CIPS/Cybersecurity costs expected in the coming years especially in the area of Cybersecurity, the Company requests that the base amount for CIPS/Cybersecurity costs be changed to the amounts reflected in adjustment no. CS-88. The CIPS annualized base level of costs would be set at $4,544,448 (Total KCP&L share). The Cybersecurity annualized base level of costs would be set at $2,552,577 (Total KCP&L share). Both of these amounts will be updated for actual non-labor O&M costs at June 30, 2018. Further, these base amounts would then continue to be used to track against actual costs until the effective date of rates in KCP&L's next general rate review case in which the CIPS/Cybersecurity tracker would be re-evaluated.

CS-95 AMORTIZATION OF MERGER TRANSITION COSTS

Q: Please explain this adjustment.

A: This adjustment reflects KCP&L's share of the annualized level of transition costs that are being amortized over a five-year period. These transition costs are currently being incurred for activities relating to the merger of Great Plains Energy, Incorporated. and Westar Energy, Inc, Docket number 18-KCPE-095-MER. The adjustment calculates actual transition costs incurred through September 2017 and adds forecasted transition costs through June 2018. The total transition costs are then amortized over five year period.

Q: What is the Company's proposal regarding rate recovery of transition costs?

A: First, the Company is requesting the Commission to defer any transition costs incurred through the true-up date of June 2018. Secondly, the Company is requesting to recover an amortized amount over a five year period provided that demonstrated Merger savings exceed the requested recovery of transition costs. The adjustment calculates the merger savings that will be reflected in rates and demonstrates that the merger efficiency savings are greater than the annualized amortized transition costs.

Q: Please explain the terms "transition costs" and "transaction costs".

A: Transition costs are necessary to effectively integrate Westar and Great Plains Energy in order to create the merger efficiencies and savings. Some examples of transition costs are voluntary severance, costs incurred in integration planning as well as costs incurred to enable network connectivity for the merged company. In contrast, transaction costs are different from transition costs in that they support efforts to evaluate, negotiate and complete a transaction and its agreements through and including approval of the transaction.

Q: Is the Company seeking recovery of transaction costs in this rate case proceeding?

A: No. The Company is not seeking recovery of transaction costs in this rate case proceeding.

Q: What is the amount of transition costs incurred to date and projected through June 30, 2018?

A: The table below depicts actual transition costs incurred through September 2017, and also forecasted transition costs through the true-up date of June 2018. Transition costs through June 2018 total $49.8 million, of which $6.9 million has been allocated to KCP&L Kansas retail operations.

GPE & Westar Transition Costs Costs by Resource Category	Actuals 2016	Actuals YTD Sep-2017	**Total Actuals**	2017 Forecast (Oct - Dec)	2018 Forecast (Jan - Jun)	**Total thru True-Up**
Severance	1,081,528	4,899,655	5,981,183	-	11,060,537	**17,041,720**
Consulting fees and outside services	14,413,311	9,639,637	24,052,948	2,073,578	3,202,680	**29,329,206**
Contractor costs	207,262	1,046,886	1,254,148	-	275,000	**1,529,148**
Travel & meals	121,633	158,639	280,272	-	-	**280,272**
IT hardware	57,199	24,952	82,151	-	-	**82,151**
IT software		165,051	165,051	-	50,000	**215,051**
Other costs	28,583	131,387	159,970	-	1,195,333	**1,355,303**
	15,909,516	**16,066,207**	**31,975,723**	**2,073,578**	**15,783,550**	**49,832,851**

Q: Please explain in more detail the types of transition costs.

A: Each category of transition costs is further described below:

Severance – consists of two voluntary separation plans that were offered to both GPE and Westar non-union employees.

Consulting fees and outside services – costs were incurred for integration planning as a whole (including organizational design and Day-1 requirements); such as IT systems planning and technical integration consulting, and also in the Supply Chain function around combined spend, inventory levels, and prioritization of competitive solicitation.

Contractor costs –primarily IT contractors working on specific projects in preparation for Day 1 network and system integration.

IT hardware – primarily costs incurred to enable network connectivity for the merged company.

IT software –primarily software to synchronize employee access across the two company networks and software to optimize supply chain and inventory planning.

Other costs -primarily data network fiber capacity fees to enable network connectivity for the merged company and modifications to certain physical access systems to permit employee access between the two companies.

Q: How did you allocate the amortized transition costs to KCP&L Kansas customers ?

A: We allocated transition costs to each jurisdiction based on the allocation of projected efficiency savings identified by the integration teams as part of the merger integration process. Each merger efficiency was analyzed separately to determine the appropriate allocation methodology based on the most representative cost driver. Cost drivers are defined as an activity that causes a cost to be incurred. For purposes of allocating transition costs to each jurisdiction, cost drivers were developed based on 2016 data. This period was selected as it reflected the last full calendar year of stand-alone financial information and statistics prior to the application of the merger.

Q: Please summarize your testimony regarding transition cost amortization.

A: The Company is requesting that the Commission authorize transition costs amortization in this rate case in the amount of $1.3M. This level of amortization reflects the annual recovery over a five year period of KCP&L Kansas's jurisdictional share of transition costs projected through June 30, 2018 incurred during integration of GPE's and Westar's operations.

Q: Could the approval of the Settlement Agreement in Docket No. 18-KCPE-095-MER impact the calculation of CS-95 Transition Cost Amortization?

A: Yes. If the Settlement Agreement is approved, total transition costs and the amortization period have been identified. See the Direct Testimony of Company Witness Darrin Ives for further discussion of the Settlement Agreement.

CS-117 COMMON USE BILLINGS – COMMON PLANT ADDS

Q: What are common use billings?

A: Common use billings represent the monthly billings of common use plant maintained by KCP&L. Assets belonging to KCP&L may be used by another entity. This property, referred to as common use plant, is primarily service facilities, telecommunications equipment, network systems and software. In order to ensure that KCP&L's regulated entity does not subsidize other GPE companies or jurisdictions, KCP&L charges for the use of their respective common use assets. Monthly billings are based on the depreciation and/or amortization expense of the underlying asset and a rate of return is applied to the net plant basis. The total cost of all common use plant is then accumulated.

Q: Why was an adjustment needed from amounts included in the test year?

A: Included in plant adjustment RB-20 are plant additions that are expected to be placed into service prior to the true-up date in this rate case proceeding. These include capital additions associated with network systems and software that will become a part of the Common Use Billing Process. Since these common use plant additions are expected to occur after the test year, the portion of the common use assets that are billable to other GPE entities and jurisdictions needs to be removed from the cost of service in this rate case proceeding.

Q: Please explain adjustment CS-117.

A: Adjustment CS-117 computes the annual amortization expense and expected return on the new common use plant additions that will be included in rate base in this rate case proceeding. The annual amortization expense for the common use software additions is based on lives lasting five to fifteen years. The return component is based on the expected rate of return that will be used in this rate case proceeding. These annual amounts are accumulated and multiplied by one minus the KCP&L jurisdictional share of these assets which is based on the General Allocator. The resulting amount is then removed from the cost of service in this case through adjustment CS-117.

CS-120 DEPRECIATION

Q: Please explain adjustment CS-120.

A: We calculated annualized depreciation expense by applying jurisdictional depreciation rates to adjusted Plant in Service balances. The jurisdictional rates used in the annualization were those included in the depreciation study sponsored and described by Company witness Dane A. Watson in his direct testimony. The Depreciation Study includes a proposed rate for Electric Vehicle Charging Stations.

Q: Why was a depreciation study completed for this rate case?

A: In Docket No. 08-GIMX-1142-GIV, it was Ordered by the Commission that utilities in the state of Kansas would file depreciation studies every five to seven years and would do so concurrent with or just before a rate case. As such, the last time KCPL filed a full depreciation study was in Docket No. 12-KCPE-764-RTS which covered the plant balance period of December 31, 2011. In Docket No. 15-KCPE-116-RTS, KCP&L updated this study only for selected accounts which were focused mainly on the LaCygne generating station. As such, in this case KCP&L is filing a depreciation study covering the plant balance period of December 31, 2016 to be in compliance with Docket No. 08-GIMX-1142-GIV time frame of "five to seven years." This study is described fully in the Direct Testimony of Company witness Dane A. Watson.

Q: Were decommissioning costs included as a component of the depreciation study filed in this rate case?

A: Partially yes.

Q: Please explain what is included in decommission costs.

A: Decommissioning is described as the planned and orderly retirement of a generating unit and the dismantlement and reclamation of the site. Decommissioning costs can be separated into two distinct buckets which I will refer to as "Retirement Costs" and "Dismantlement Costs." Retirement costs are defined as costs associated with the shutdown or closure and removal from service of a generating unit and includes the disconnection, de-energization, cleanout, and securing of the generating units to render them safe. Dismantlement costs are associated with the orderly demolition of the generating unit in a controlled and safe manner so as to preserve the scrap value of reclaimed materials

Q: Who conducted the decommissioning study that is used in the depreciation study in this case?

A: The Company engaged Sega, Inc.(now Power Engineers) to perform a decommissioning study to examine the costs of retirement and dismantlement on all of KCP&L's generating stations except for the Wolf Creek Nuclear Generating Facility. A copy of this study is attached to my testimony as Schedule RAK- 9. Mr. Watson used the results of the decommissioning study in his depreciation study.

Q: You mentioned early that the Company's depreciation study included a "partial" amount of decommissioning study costs. What did you mean by this?

A: The Company believes that decommissioning costs of generating units which include both retirement costs and dismantling costs should be included as a component cost of the generating unit and should be considered as part of the depreciation rate analysis as a matter of intergenerational equity to ensure the customers who are receiving the benefit of electricity from generating units are also the same customers that are paying for a generating units total cost. In order for this to happen, the depreciation rates associated with each generating unit should include the cost of retirement and dismantlement. Yet, adding both the cost of retiring a generating plant and dismantling a generating plant can have a significant impact on customers rates. As such, the Company has chosen to take a more gradual approach in this rate case and has only included retirement costs in its depreciation study as supported by the decommissioning study conducted by Sega, Inc.

Q: What specific action does the Company request in regard to depreciation expense?

A: The Company requests that the Commission authorize the use of depreciation rates proposed by Company witness Dane A. Watson as described above which are used to compute total depreciation expense in this rate case proceeding.

CS-121 AMORTIZATION

Q: Please explain adjustment CS-121.

A: We annualized amortization expense applicable to certain plant including computer software, land rights, leasehold improvements and other intangible plant, by multiplying

September 2017 amortization expense on a total company Kansas basis by twelve. To the intangible plant amounts, was added an annualized amortization expense amount on projected plant net additions for the period October 2017 through June 2018.

Q: What amortization periods were used to amortize intangible assets?

A: Computer software is amortized over either a five or ten year amortization period, depending on the nature of the asset, consistent with the Company's past practice. However, we have included in the current case and are proposing a new 15 year amortization period on the new CIS project. Please see the testimony of Company witness Forrest Archibald for more details on this project. Cost of land rights is amortized using rates that vary by function, consistent with the Company's past practice. Amortization of individual Leasehold Improvements is based on the length of the lease. Accumulated amortization is maintained by each individual intangible asset, other than land rights which is maintained in total by account, and amortization stops when the net book value reaches zero.

CS-125 INCOME TAX

Q: Please explain adjustment CS-125.

A: We adjusted test period income tax expense based on various adjustments to test year taxable income. The adjusted income tax calculation is shown on Schedule RAK-8. The income tax adjustment includes current income taxes, deferred income taxes, and the amortization of investment tax credits ("ITC") and certain other amortizations.

Q: Does the adjustment include the impact of the Tax Cuts and Jobs Act of 2017?

A: Yes. The reduction of the federal tax rate in 2018 to 21% and an estimate of the annual amount of amortization related to excess ADIT (included in certain other amortizations) created as a result of the legislation is included in the income tax expense calculation.

Q: Please explain the current income tax component in cost of service as calculated in Schedule RAK-8.

A: Jurisdictional operations and maintenance deductions and other adjustments are applied against jurisdictional revenues to derive net jurisdictional taxable income, which is then used to compute the jurisdictional current income tax expense component (current provision) for cost of service. For book purposes, these adjustments are the result of book versus tax differences and their implementation under normalization or flow through tax methods. Each adjustment is either added to or subtracted from net income to derive net taxable income for ratemaking. For Schedule RAK-8, however, a simplified methodology is used that eliminates the need to specifically identify all book and tax differences. Most significantly, all basis differences between the book basis and tax basis of assets are ignored in the current tax provision. Accelerated tax depreciation is used in the currently payable calculation based on the tax basis of projected Plant in Service as identified in adjustment RB-20. The difference between the accelerated depreciation deduction for tax depreciation on tax basis assets and the depreciation deduction calculated on a straight-line basis generates offsetting deferred income tax. The resulting income tax expense, considering both the current and deferred income tax components, reflects a level of total income taxes as if the depreciation deduction to arrive at taxable income was based solely on depreciation of projected tax basis assets calculated on a straight-line basis. This modified approach normalizes depreciation relating to the method differences (*e.g.*, accelerated versus straight-line) and life differences. The Company and the Staff have used this modified approach in previous rate cases.

Q: Please describe the adjustments to derive net taxable income for ratemaking.

A: The following are the primary adjustments to derive net taxable income for ratemaking purposes:

- Book depreciation and amortization expense (adjustments CS-120 through CS-121), have been excluded from the deductions listed on Schedule RAK-8. As previously discussed, accelerated tax depreciation on both projected depreciable plant and projected amortizable plant is subtracted to derive taxable income.
- The deduction for nuclear fuel amortization is treated consistently with the treatment of depreciation and amortization on Plant in Service.
- A portion of Meals and Entertainment expense is added back in deriving net taxable income, since a portion of certain meals and entertainment expenses is not tax deductible. This adjustment increases taxable income and ultimately increases the current income tax provision. The amount by which taxable income was increased is equal to the amount for the 2016 federal income tax return.
- Interest expense is subtracted to derive net taxable income. It is calculated by multiplying the adjusted jurisdictional rate base by the weighted average cost of debt as recommended in this proceeding. This is referred to as “interest synchronization” because this calculation ensures that the interest expense deducted for deriving current taxable income equals the interest expense provided for in rates.

Q: How are the current income tax components calculated?

A: The current provision calculation utilizes the new 21% federal tax rate for 2018, and a 7.00% Kansas state tax rate, each of which is applied independently to the appropriate level of taxable income as discussed above. The federal and state income tax rates are used to compute the composite tax rate of 26.53% which is used to calculate deferred income taxes, discussed below. The composite tax rate reflects the federal benefit relating to deductible Kansas state income tax.

Q: Is the current federal tax expense, determined by multiplying current taxable income by the federal income tax rate, further reduced by tax credits?

A: Yes, the wind production tax credit, the R&D tax credit, the federal excise tax credit reduce the current federal income tax due.

Q: Please explain the wind production tax credit on Schedule RAK-8.

A: IRC Section 45 allows for a federal tax credit based on the amount of electricity produced by a qualifying wind generating facility. The credit is allowed for ten years after the facility is placed in service. The adjustment shown on this schedule as a direct reduction of the federal currently payable income tax expense reflects the estimated production tax credits for KCP&L's wind generation facilities for the twelve months ending June 30, 2018. This adjustment uses the presently allowable $24 per megawatt hour of generation multiplied by the annualized amount of estimated megawatt hours of wind generation to determine the amount of credit.

Q: Please explain the R&D tax credit on Schedule RAK-8.

A: IRC Section 41 allows for a federal tax credit based on the amount of qualified research expenses incurred. The adjustment shown on this schedule as a direct reduction of the federal currently payable income tax expense reflects the estimated R&D tax credit for KCP&L's operations for twelve months ending June 30, 2018.

Q: Please explain the federal excise tax credit on Schedule RAK-8.

A: IRC Section 212 allows for a federal tax credit for excise taxes paid on fuel used for off-highway business use by a taxpayer in a trade or business or in an income-producing activity. The adjustment shown on this schedule as a direct reduction of the federal currently payable income tax expense reflects the federal excise tax credit reported on KCP&L's 2016 federal tax return.

Q: Please explain the deferred income tax component of cost of service as calculated in Schedule RAK-8.

A: The deferred income tax component of cost of service is primarily the result of applying the composite income tax rate (26.53%) to the difference between projected accelerated tax depreciation used to compute current income tax, as discussed earlier in this testimony, and projected book depreciation.

The other main deferred tax item is the average rate assumption method of deferred tax amortization, AFUDC Equity reversal, and other miscellaneous flow-through items.

This average rate assumption method adjustment represents the amortization of excess deferred income taxes. It primarily reduces the income tax component of cost of service. During the 1980s and up until 2017, the federal tax rate was higher than 2018's 21% rate. Since deferred taxes were provided at the rate in effect when the originating timing differences were generated, the deferred income taxes were provided at a rate higher than the tax rate that is expected to be in existence when the timing differences reverse and the taxes are due to the government. This difference in rates is being amortized into cost of service over the remaining book lives of the assets that generated the timing differences for plant related temporary differences and over the appropriate period of time for other non-plant related temporary differences. The AFUDC Equity reversal adjustment represents the reversal of the book amortization of AFUDC Equity placed in service in prior years not allowed for tax purposes. The other miscellaneous flow-through items represent the reversal of book amortization of other small items placed in service and flowed-through to customers in prior years.

Q: Please explain the ITC amortization component in cost of service as calculated in Schedule RAK-8.

A: ITC amortization reduces the income tax component of cost of service. ITC is amortized ratably over the remaining book lives of the underlying assets.

Q: Does the projected income tax expense in this case include the impact of the TDC Rider?

A: Yes. The Company has adjusted the income tax expense in cost of service to include the impact of TDC Rider.

CS-126 PROPERTY TAX

Q: Please explain adjustment CS-126.

A: The amount included in cost of service for real estate and personal property tax expense and payments-in-lieu-of-taxes (“PILOT”) was based on the actual 2017 property tax expense that will be paid.

Q: Do the various components of the real estate and personal property tax adjustment discussed above take into effect tax amounts allocated to vehicles and charged to accounts other than property tax expense and amounts allocated to non-utility plant?

A: Yes, these components have been excluded from both the plant in-service and property taxes paid components of the calculation.

Q: Please explain the PILOT adjustment.

A: The Company has placed in-service two wind generating facilities located in Ford County, Kansas. The first facility was placed in-service in 2006 and the second facility was placed in-service during 2010. Pursuant to K.S.A. 79-201 *Eleventh*, such property is exempt from real and personal property taxes.

Q: Does Kansas law provide for a PILOT on property that is exempt from property taxes?

A: Yes. Pursuant to K.S.A. 12-147, taxing subdivisions of the state of Kansas are authorized and empowered to enter into contracts for a PILOT with the owners of property that are exempt from ad valorem taxes.

Q: Please explain the PILOT agreements relating to the wind generating facility located in Ford County, Kansas.

A: Separate agreements exist with Ford County and USD #381 that provide for 30 annual payments for both facilities. The first wind farm that was in-serviced in 2006 had the first PILOT payment due in 2007 and the payments escalating between 2.5% and 3% per year. The second wind farm that was in serviced in 2010 had the first PILOT payment due in 2011 and these payments also escalate between 2.5% and 3% per year. These payments were necessary to secure agreements with landowners and community leaders to site the wind facility.

Q: Will including the 2017 property tax expenses in cost of service in this case and in the Property Tax Surcharge ("PTS") Rider double count (or double collect) this increase in property taxes from customers?

A: No. The Company's PTS Rider is reset each year to recover only the incremental increase or decrease from the amount of property tax expense included in base rates. The 2018 PTS Rider will be computed with the assumption that the amount in base rates will be updated to the actual 2017 property tax expense at the same time as new rates are expected to go in effect for this case. If needed, any amounts that may be over or under collected in 2018 will be returned to or collected from customers when the 2019 PTS Rider is computed.

Q: Does this conclude your testimony?

A: Yes it does.

BEFORE THE CORPORATION COMMISSION
OF THE STATE OF KANSAS

In the Matter of the Application of Kansas)
City Power & Light Company to Make)
Certain Changes in Its Charge for Electric) Docket No. 18-KCPE-____-RTS
Service)

AFFIDAVIT OF RONALD A. KLOTE

STATE OF MISSOURI)
) ss
COUNTY OF JACKSON)

Ronald A. Klote, being first duly sworn on his oath, states:

1. My name is Ronald A. Klote. I work in Kansas City, Missouri, and I am employed by Kansas City Power & Light Company as Director – Regulatory Affairs.

2. Attached hereto and made a part hereof for all purposes is my Direct Testimony on behalf of Kansas City Power & Light Company consisting of fifty (50) pages, having been prepared in written form for introduction into evidence in the above-captioned docket.

3. I have knowledge of the matters set forth therein. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded, including any attachments thereto, are true and accurate to the best of my knowledge, information and belief.

____
Ronald A. Klote

Subscribed and sworn before me this 1st day of May 2018.

____
Notary Public

My commission expires: 4/26/2021

ANTHONY R WESTENKIRCHNER
Commission # 17279952
My Commission Expires April 26, 2021

Kansas City Power & Light Company
2018 RATE CASE - DIRECT
Kansas Jurisdiction
TY 9/30/17; K&M 6/30/18

Revenue Requirement

Line No.	Description	7.3835% Return
	A	B
1	Net Orig Cost of Rate Base (Sch 2)	$ 2,329,018,289
2	Rate of Return	7.3835%
3	Net Operating Income Requirement	$ 171,963,065
4	Net Income Available (Sch 9)	147,755,483
5	Additional NOIBT Needed	24,207,583
6	Additional Current Tax Required	8,741,358
7	Gross Revenue Requirement	$ 32,948,941

Exhibit RAK-1
Page 1 of 1

Kansas City Power & Light Company
2018 RATE CASE - DIRECT
Kansas Jurisdiction
TY 9/30/17; K&M 6/30/18

Rate Base

Line No.	Description	Amount	Witness	Adj. No.
	A	B	C	D
1	Total Plant :			
2	Total Plant in Service - Schedule 3	4,586,347,518	Klote	RB-20
3	Subtract from Total Plant:			
4	Depreciation Reserve - Schedule 6	1,764,056,647	Klote	RB-30
5	Net (Plant in Service)	2,822,290,871		
6	Add to Net Plant:			
7	Cash Working Capital - Schedule 8	(38,547,174)	Klote	Model
8	Materials and Supplies - Schedule 12	58,514,223	Nunn	RB-72
9	Prepayments - Schedule 12	6,064,209	Nunn	RB-50
10	Fuel Inventory - Oil - Schedule 12	3,758,641	Tucker	RB-74
11	Fuel Inventory - Coal - Schedule 12	23,803,076	Tucker	RB-74
12	Fuel Inventory - Additives - Schedule 12	436,338	Tucker	RB-74
13	Fuel Inventory - Nuclear - Schedule 12	24,125,328	Nunn	RB-75
14	Regulatory Asset - Iatan 1 and Com-KS	2,948,807	Nunn	RB-25
15	Regulatory Asset - La Cygne Environ-KS	2,631,856	Nunn	RB-27
16	CWIP	81,485,621	Klote	RB-21
17	Subtract from Net Plant:			
18	Cust Advances for Construction-KS	2,109,759	Nunn	RB-71
19	Customer Deposits-KS	1,808,988	Nunn	RB-70
20	Deferred Income Taxes - Schedule 13	630,337,674	Klote	RB-125
21	Def Gain on SO2 Emissions Allowances-KS	24,216,283	Nunn	RB-55
22	Def Gain (Loss) Emissions Allow-Allocated	20,801	Nunn	RB-55
23	Total Rate Base	2,329,018,289		

Exhibit RAK-2
Page 1 of 1

Kansas City Power & Light Company
2018 RATE CASE - DIRECT
Kansas Jurisdiction
TY 9/30/17; K&M 6/30/18

Income Statement

Line No.	Description	Total Company	Adjustment	Adjusted Total Comany	Adjusted Jurisdictional
	A	B	C	D	F
1	Operating Revenue	1,875,647,402	(45,341,844)	1,830,305,558	763,181,408
2	Operating & Maintenance Expenses:				
3	Production	578,443,165	6,282,108	584,725,273	266,503,668
4	Transmission	88,331,518	(64,761,786)	23,569,732	10,321,267
5	Distribution	54,847,952	314,570	55,162,522	24,464,592
6	Customer Accounting	19,657,039	11,783,780	31,440,819	13,435,205
7	Customer Services	47,148,468	513,446	47,661,914	863,818
8	Sales	528,411	(1,211)	527,200	249,867
9	A & G Expenses	169,457,839	(26,196,100)	143,261,739	66,822,298
10	Total O & M Expenses	958,414,392	(72,065,194)	886,349,198	382,660,716
11	Depreciation Expense	241,455,312	39,384,594	280,839,906	130,439,716
12	Amortization Expense	22,382,158	7,883,119	30,265,277	21,798,762
13	Taxes other than Income Tax	180,815,367	3,164,405	183,979,772	52,432,608
14	Net Operating Income before Tax	472,580,173	(23,708,768)	448,871,405	175,849,606
15	Income Taxes Current	69,211,672	15,103,075	84,314,747	31,705,059
16	Income Taxes Deferred	52,303,590	(57,651,883)	(5,348,293)	(3,107,666)
17	Investment Tax Credit	(962,914)	(124,738)	(1,087,652)	(503,270)
18	Total Taxes	120,552,348	(42,673,546)	77,878,802	28,094,123
19	Total Net Operating Income	352,027,825	18,964,778	370,992,603	147,755,483

Exhibit RAK-3

Kansas City Power & Light Company
2018 RATE CASE - DIRECT
Kansas Jurisdiction
TY 9/30/17; K&M 6/30/18

Summary of Adjustments

Line No.	Adj No.	Description	Witness	Increase (Decrease)			
	A	B		D	E	F	G
				Adjust to 6-30-18 - Update Date			
				Total Adjustments	Allocated Adjs	100% MO & Whsl Adjs (2)	100% KS Adjs
				Incr (Decr)	Incr (Decr)	Incr (Decr)	Incr (Decr)
1	**JURISDICTIONAL COST OF SERVICE**						
2	**OPERATING REVENUE**						
3	R-20	Normalize KS Retail revenues (KS only)	Bass / Miller / Nunn	(29,481,934)			(29,481,934)
4	R-21a	Adjust KS forfeited discounts LPC for R-20 (KS Only)	Nunn	25,213			25,213
5	R-21b	Adjust KS forfeited discounts LPC - ASK (KS only)	Nunn	71,304			71,304
6	R-49	CNN Revenue	Nunn	128,376	128,376		
7	R-82	Transmission Delivery Charge Adjustment	Klote	(16,084,803)	(16,084,803)		
8				(45,341,844)	(15,956,427)	0	(29,385,417)
9	**OPERATING EXPENSES**						
10	CS-4	Reflect KCREC test year bad debt expense in KCP&L's COS	Nunn	7,463,092		5,462,528	2,000,564
11	CS-9	Reflect KCREC test year bank commitment fees in KCP&L's COS	Nunn	1,981,200	1,981,200		
12	CS-10	Reflect test year interest on customer deposits in COS	Nunn	192,124		179,346	12,778
13	CS-11	Reverse prior period and non-recurring test year amounts.	Nunn	(4,107,664)	(4,107,664)		
14	CS-20a	Normalize bad debt expense related to test year revenue	Nunn	184,170			184,170
15	CS-20b	Normalize bad debt expense related to jurisdictional "Ask" (KS only)	Nunn	97,550			97,550
16	CS-23	Remove ECA Under Collection	Nunn	2,856,971			2,856,971
17	CS-26	ECA costs	n/a	0	0		
18	CS-27	Wolf Creek Water Contract	Klote	771,494	771,494		
19	CS-35	Eliminate Wolf Creek Mid-Cycle Outage	Klote	0	0		
20	CS-36	Annualize Wolf Creek refueling outage amortization	Klote	(428,995)	378,270	(807,265)	
21	CS-37	Adjust Nuclear decommissioning expense	Klote	0			
22	CS-39	IT Software Maintenance	Klote	610,529	610,529		
23	CS-40	Transmission Maintenance	Nunn	0	0		
24	CS-41	Distribution Maintenance	Nunn	0	0		

Kansas City Power & Light Company
2018 RATE CASE - DIRECT
Kansas Jurisdiction
TY 9/30/17; K&M 6/30/18

Summary of Adjustments

Line No.	Adj No.	Description	Witness	Increase (Decrease)			
	A	B		D	E	F	G
				Adjust to 6-30-18 - Update Date			
				Total Adjustments	Allocated Adjs	100% MO & Whsl Adjs (2)	100% KS Adjs
				Incr (Decr)	Incr (Decr)	Incr (Decr)	Incr (Decr)
25	CS-42	Generation Maintenance	Nunn	0	0		
26	CS-43	Wolf Creek Maintenance	Nunn	0	0		
27	CS-49	Miscellaneous O&M	Nunn	359,992	359,992		
28	CS-50	Annualize salary and wage expense for changes in staffing levels and base pay rates	Klote	3,496,847	3,467,493	15,457	13,897
29	CS-51	Normalize incentive compensation costs	Klote	(1,693,078)	(1,693,078)		
30	CS-52	Normalize 401(k) costs	Klote	(151,259)	(151,259)		
31	CS-55	Severance / ORVS	Nunn	(843,995)			(843,995)
32	CS-60	Annualize other benefit costs	Klote	154,768	154,768		
33	CS-61	Annualize OPEB expense	Klote	(2,596,696)	(2,596,696)		
34	CS-65	Annualize Pension expense (includes SERP)	Klote	(2,203,060)	(2,203,060)		
35	CS-70	Annualize Insurance premiums	Klote	387,223	387,223		
36	CS-71	Normalize injuries and damages expense	Nunn	(11,211,892)	(11,211,892)		
37	CS-76	Annualize interest on customer deposits	Nunn	33,915		17,387	16,528
38	CS-77	Annualize Customer Accounts expense for credit card payment costs	Nunn	138,472	138,472		
39	CS-78	Annualize KCREC bank fees related to sale of receivables	Nunn	938,234	938,234		
40	CS-80	Amortize KS Rate Case expenses	Nunn	119,696			119,696
41	CS-82	Transmission Delivery Charge Adjustment	Klote	(70,050,803)	(70,034,555)	0	(16,248)
42	CS-85	Annualize regulatory assessments	Nunn	253,315	77,100	257,169	(80,954)
43	CS-88	CIPS/Cyber Security O&M	Klote	3,671,539	3,671,539		
44	CS-89	Meter Replacement O&M	Nunn	598,073	598,073		
45	CS-90	Advertising	Nunn	(36,260)	(36,260)		
46	CS-92	Adjust dues, donations and contributions	Nunn	38,390	38,390		
47	CS-95	Merger Effects	Klote	1,372,150			1,372,150
48	CS-96	Amortize Merger transition costs (KS only)	Nunn	(111,111)			(111,111)
49	CS-99	Flood Reimbursement Amortization	Nunn	155,380	155,380		
50	CS-101	Amortize Talent Assessment severance and outplacement regulatory asset	Nunn	(411,640)			(411,640)
51	CS-102	Employee Augmentation	Nunn	(26,418)			(26,418)
52	CS-103	EE Amortization	Nunn	173,685			173,685

Kansas City Power & Light Company
2018 RATE CASE - DIRECT
Kansas Jurisdiction
TY 9/30/17; K&M 6/30/18

Summary of Adjustments

Line No.	Adj No.	Description	Witness	Increase (Decrease)			
	A	B		D	E	F	G
				Adjust to 6-30-18 - Update Date			
				Total Adjustments	Allocated Adjs	100% MO & Whsl Adjs (2)	100% KS Adjs
				Incr (Decr)	Incr (Decr)	Incr (Decr)	Incr (Decr)
53	CS-107	Transource Account Review Amortization	Nunn	21,453			21,453
54	CS-110	Flood AAO Amortization	Nunn	0			0
55	CS-115	Amortize Legal fee reimbursement	Nunn	14,458			14,458
56	CS-117	Common-use Billings	Klote	(7,414,333)	(7,414,333)		
57	CS-120	Annualize depr exp based on jurisdictional depr rates applied to jurisdictional plant-in-service at indicated period - unit trains & transportation equipment	Klote	1,957,813	1,957,813		
58				(73,244,671)	(83,762,827)	5,124,622	5,393,534
59	**Depreciation Expense**						
60	CS-120	Annualize depreciation expense based on jurisdictional depreciation rates applied to jurisdictional plant-in-service at indicated period	Klote	39,384,594	39,384,594		
61				39,384,594	39,384,594	0	0
62	**Amortization Expense**						
63	CS-111	Amortization Iatan 1 & Cmn Reg Asset	Nunn	0			0
64	CS-113	Amortization of La Cygne Reg Asset - Depr Deferral	Nunn	0			0
65	CS-118	Amortize Meter Replacement Unrecovered Reserve	Nunn	0			0
66	CS-121	Annualize plant amortization expense based on jurisdictional amortization rates applied to unamortized jurisdictional plant-in-service at indicated period	Klote	9,709,293	9,709,293		
67	CS-122	Amortize General Plant Unrecovered Reserve	Klote	0			0
68	CS-130	Amortize Customer Migration	Nunn	95,563			95,563
69	CS-131	Amortize La Cygne BUD Plant Reg Liability	Nunn	(992,933)			(992,933)
70	CS-132	Amortize La Cygne BUD Deferred Depreciation	Nunn	(5,833)			(5,833)
71	CS-133	Amortize Wolf Creek BUD Plant Reg Liability	Nunn	(41,675)			(41,675)
72				8,764,415	9,709,293	0	(944,878)
73	**Taxes Other than Income**						
74	CS-53	Annualize FICA payroll tax expense	Klote	746,229	746,229		
75	CS-126	Adjust property tax expense	Klote	2,716,357	2,716,357		
76				3,462,586	3,462,586	0	0
77	**Income Tax Expense**						

Kansas City Power & Light Company
2018 RATE CASE - DIRECT
Kansas Jurisdiction
TY 9/30/17; K&M 6/30/18

Summary of Adjustments

Line No.	Adj No.	Description	Witness	Increase (Decrease)			
	A	B		D	E	F	G
				Adjust to 6-30-18 - Update Date			
				Total Adjustments	Allocated Adjs	100% MO & Whsl Adjs (2)	100% KS Adjs
				Incr (Decr)	Incr (Decr)	Incr (Decr)	Incr (Decr)
78	CS-125	Reflect adjustments to Schedule 9, Allocation of Current and Deferred Income Taxes	Klote	(42,673,546)	(43,027,984)	354,438	
79				(42,673,546)	(43,027,984)	354,438	0
80		**Total Electric Oper. Expenses**		(64,306,622)	(74,234,338)	5,479,060	4,448,656
81		**Net Electric Operating Income**		18,964,778	58,277,911	(5,479,060)	(33,834,073)

(1) All amounts are total company; if an adjustment is applicable to only KS or MO it is so indicated
(2) These adjustments affect Missouri and Wholesale jurisdictions only.

Kansas City Power & Light Company
2018 RATE CASE - DIRECT
Kansas Jurisdiction
TY 9/30/17; K&M 6/30/18

Cash Working Capital

Line No.	Account Description	Jurisdictional Test Year Expenses	Revenue Lag	Expense Lead	Net (Lead)/Lag (C) - (D)	Factor (Col E/365)	CWC Req (B) X (F)	
	A	B	C	D	E	F	G	
1	**Operations & Maintenance Expense**							
2	Gross Payroll excl Wolf Creek and Accrued Vac	53,587,377	28.57	14.44	14.13	0.0387	2,074,492	
3	Accrued Vacation	5,859,549	28.57	344.83	(316.26)	(0.8665)	(5,077,098)	
4	Wolf Creek Payroll	18,059,304	28.57	13.81	14.76	0.0404	730,289	
5	Nuclear Oper & Mtce, less fuel and payroll	19,553,559	28.57	13.81	14.76	0.0404	790,714	
6	Coal, Freight, Additives & Handling (non-labor)	91,393,877	0.00	0.00	0.00	0.0000	0	(a)
7	Purchased Gas	3,612,723	0.00	0.00	0.00	0.0000	0	(a)
8	Purchased Oil, excl Wolf Creek	1,609,376	0.00	0.00	0.00	0.0000	0	(a)
9	Nuclear Fuel	13,455,196	0.00	0.00	0.00	0.0000	0	(a)
10	Purchased Power	63,030,987	0.00	0.00	0.00	0.0000	0	(a)
11	Pension Expense	22,153,184	28.57	51.74	(23.17)	(0.0635)	(1,406,272)	
12	OPEBs	(298,316)	28.57	178.44	(149.87)	(0.4106)	122,489	
13	Cash Vouchers	90,643,901	28.57	39.15	(10.58)	(0.0290)	(2,627,431)	
14	Total Operation & Maintenance Expense	382,660,716					(5,392,818)	
15	**Taxes other than Income Taxes**							
16	FICA Taxes - Employer's	5,872,632	28.57	14.42	14.15	0.0388	227,665	
17	City Franchise Taxes	24,216,955	28.57	47.67	(19.10)	(0.0523)	(1,267,243)	
18	Ad Valorem / Property Taxes	46,558,678	28.57	200.42	(171.85)	(0.4708)	(21,920,846)	
19	Sales Taxes	33,663,114	28.57	24.24	4.33	0.0119	399,346	
20	Use Taxes	178,077	28.57	73.65	(45.08)	(0.1235)	(21,994)	
21	Total Taxes other than Income Taxes	110,489,455					(22,583,072)	
22	**Income Taxes**							
23	Current Income Taxes-Federal	22,773,569	28.57	45.63	(17.06)	(0.0467)	(1,064,430)	
24	Current Income Taxes-State	8,931,490	28.57	45.63	(17.06)	(0.0467)	(417,455)	
25	Total Income Taxes	31,705,059					(1,481,886)	
26	Misc Revenues incl Transmission for Others	(4,185,959)	28.57	36.88	(8.31)	(0.0228)	95,302	
27	Bulk Power Sales	(50,552,593)	0.00	0.00	0.00	0.0000	0	(a)
28	Interest Expense	57,820,208	28.57	86.55	(57.98)	(0.1588)	(9,184,700)	
29	**Total Cash Working Capital Requirement**	527,936,885					**(38,547,174)**	

(a) ECA components were given a 0 day lag, consistent with prior cases

Exhibit RAK-5
Page 1 of 1

Kansas City Power & Light Company
2018 RATE CASE - DIRECT
TY 9/30/17; K&M 6/30/18

Allocation Factors

Line No.	Jurisdiction Factors	Kansas	MO & Wholesale	Total
	A	B	C	D
1	**Jurisdiction Factors**			
2	Missouri Jurisdictional	0.0000%	100.0000%	100.0000%
3	Kansas Jurisdictional	100.0000%	0.0000%	100.0000%
4	Non Jurisdictional/Wholesale	0.0000%	100.0000%	100.0000%
5	D1 - Demand (Capacity) Factor	47.0659%	52.9341%	100.0000%
6	E1 - Energy Factor with Losses (E1)	43.5895%	56.4105%	100.0000%
7	UE1 - Unused Energy Factor	49.5844%	50.4156%	100.0000%
8	C1 - Customer - Elec (Retail only) (C1)	47.3951%	52.6049%	100.0000%
9	**Blended Factors (See Calculation Below)**			
10	Sal & Wg - Salaries & Wages w/o A&G	46.4069%	53.5931%	100.0000%
11	PTD - Prod/Trsm/Dist Plant (excl Gen)	46.2712%	53.7288%	100.0000%
12	Dist Plt - Weighted Situs Basis	44.3024%	55.6976%	100.0000%
13	Total Plant without Wolf Creek	46.1235%	53.8765%	100.0000%
14	Wolf Creek Plant	47.0659%	52.9341%	100.0000%
15	**Situs Basis Plant used for Dist Depr Reserve**			
16	360 - Dist Land	49.6091%	50.3909%	100.0000%
17	360 - Dist Land Rights	41.6676%	58.3324%	100.0000%
18	361 - Dist Structures & Improvements	43.2654%	56.7346%	100.0000%
19	362 - Distr Station Equipment	37.8780%	62.1220%	100.0000%
20	362 - Distr Station Equip-Communication	44.1679%	55.8321%	100.0000%
21	363 - Distr Energy Storage Equipment	0.0000%	100.0000%	100.0000%
22	364 - Dist Poles, Towers & Fixtures	45.2245%	54.7755%	100.0000%
23	365 - Dist Overhead Conductor	43.3827%	56.6173%	100.0000%
24	366 - Dist Underground Circuits	42.0307%	57.9693%	100.0000%
25	367 - Dist Underground Conduct & Devices	47.2175%	52.7825%	100.0000%
26	368 - Dist Line Transformers	43.2615%	56.7385%	100.0000%
27	369 - Dist Services	48.3424%	51.6576%	100.0000%
28	370 - Dist Meters	47.8273%	52.1727%	100.0000%
29	370 - Dist AMI Meters	45.5216%	54.4784%	100.0000%
30	371 - Dist Customer Premise Installations	31.4016%	68.5984%	100.0000%
31	371 - Dist Electric Vehicle Charging Stations	47.4444%	52.5556%	100.0000%
32	373 - Dist Street Lights & Traffic Signals	52.6596%	47.3404%	100.0000%

Exhibit RAK-6
Page 1 of 1

Kansas City Power & Light Company
Description of Allocators

OVERVIEW

KCPL does not have separate operating systems for its Kansas, Missouri and firm wholesale jurisdictions. It operates a single production and transmission system that is used to provide service to retail customers in Kansas and Missouri as well as the full-requirements firm wholesale customers.

The method of allocation is critical first to ensure that the rates charged to each jurisdiction of customers reflect the full cost of serving those customers but not the cost of serving customers in other jurisdictions. Secondly, the method of allocation must allow the Company the opportunity to recover fully its prudent costs of serving those customers. If the sum of the allocation factors allowed in each jurisdiction is less than 100%, then the Company is unable to recover its prudent cost of service and return on rate base.

The allocators that were utilized can be classified as “input” allocators or “calculated” allocators. The input allocators are based on the weather-normalized demand, energy, and customer information. The calculated allocators are, at their root, based on the Demand, Energy, and Customer allocators. The calculated allocators are, however, calculated within the Revenue Requirement Model. They are often calculated as combinations of amounts that have previously been allocated using one or more of the input allocators.

DESCRIPTION OF INPUT ALLOCATORS

The Demand allocator is a 12-month weather normalized average of the coincident peak demands for the Missouri and Kansas retail jurisdictional customers and the firm wholesale FERC jurisdictional customers.

The Energy allocator is based on the total weather normalized kilowatt-hour usage by the Kansas and Missouri retail customers and the firm wholesale jurisdiction.

The Customer allocator is based on the average number of customers in the Kansas, Missouri, and the firm wholesale jurisdiction.

APPLICATION OF ALLOCATORS
NET ELECTRIC OPERATING INCOME

Revenues

Retail revenues are the revenues received from retail customers in Kansas and Missouri. Retail revenues are not allocated; rather, they are recorded by jurisdiction.

Miscellaneous revenues include forfeited discounts, miscellaneous services, rent from electric property, transmission service for others, and other electric revenues. These miscellaneous revenues are subdivided and, where possible, assigned directly to the jurisdiction where they are recorded. The miscellaneous revenues that are not directly assignable to a jurisdiction are grouped by functional categories and allocated on a basis consistent with that functional category.

Non-firm off-system sales margins are allocated based on an Unused Energy allocator.

Non-firm off-system cost of sales and firm bulk sales revenue are allocated based on the Energy allocator.

Sales for resale revenue is revenue from the full-requirements firm wholesale customers under FERC jurisdiction. This revenue is assigned totally to the FERC jurisdiction.

Fuel & Purchased Power Costs

Fuel & Purchased Power costs are primarily allocated based on the Energy allocator. The exception is that the amortization of SO2 Allowances are assigned directly to the applicable jurisdiction.

Non-Fuel Operations and Maintenance Costs

Production O&M costs are allocated consistent with the allocation of production plant.

Transmission O&M costs associated with company owned transmission plant are allocated consistent with the allocation of transmission plant. Transmission Operation Load expense, Transmission of electricity by others and costs associated with participation in SPP are allocated based upon the Energy allocator.

Distribution O&M costs are allocated consistent with the allocation of distribution plant.

Customer accounts expenses are primarily allocated using the Customer allocator. The exception is that the uncollectible accounts expense and interest on Customer Deposits are assigned directly to the applicable jurisdiction.

Customer services and information expenses are primarily allocated using the Customer allocator. The exception is that the MEEIA expense as well as the amortization of Customer Programs are assigned directly to the applicable jurisdiction.

Sales expenses are primarily allocated using the Customer allocator.

Exhibit RAK-7

A&G expenses are allocated using a number of methods depending on the cause of the cost. Salaries, employee benefits, and injuries and damages expenses are allocated based on the allocated sum of the labor portion of the production, transmission, distribution, customer accounts, customer services and information, and sales expenses described previously. Regulatory expenses are assigned directly to the applicable jurisdiction, with the exception of the FERC regulatory expense, which is allocated based on the Energy allocator. Amortization of other jurisdictional costs deferred as a result of prior regulatory orders are assigned directly to the applicable jurisdiction. Property insurance and General plant maintenance are allocated based on the composite allocation of production, distribution and transmission plant. Fleet expense is allocated based on the allocation of distribution plant. General advertising expense is allocated using the Customer allocator. The remaining A&G expenses are allocated using the Energy allocator.

Depreciation and Amortization Expenses

Depreciation expense is allocated based on the allocation of the corresponding plant. Amortization expense is allocated based on the composite allocation of production, transmission and distribution plant, with the exception of amortizations resulting from a prior regulatory order. These are assigned directly to the applicable jurisdiction.

Taxes

Non-Wolf Creek property tax is allocated based on Total Plant without Nuclear Plant and Wolf Creek property tax is allocated based on Nuclear plant only. Payroll tax is allocated based on the allocated sum of the labor portion of the production, transmission, distribution, customer accounts, customer services and information, and sales expenses. Other miscellaneous taxes are allocated based on the composite allocation of production, transmission and distribution plant.

Currently payable income tax is not allocated. Instead, currently payable income tax is calculated in the Revenue Requirement Model using the statutory tax rates for the appropriate jurisdiction and applying those rates to jurisdictional taxable income calculated in the Revenue Requirement Model. Deferred tax expense related to depreciation is calculated using the statutory federal and state tax rates for the appropriate jurisdiction and applying a composite tax rate to the jurisdictional difference between tax return depreciation and book depreciation reflected in the Revenue Requirement Model. Other deferred income tax expenses are allocated based on the composite allocation of production, transmission and distribution plant, with the exception of amortizations resulting from a prior regulatory order. These are assigned directly to the applicable jurisdiction.

RATE BASE

Plant-in-Service and Reserve for Depreciation and Amortization

The Demand allocator is used to allocate production plant. The exception is for plant items that have been afforded different jurisdictional accounting treatment through past commission orders. Examples include the Iatan 1 and Iatan 2 plant disallowances. These items are assigned directly to the applicable jurisdiction.

Transmission plant is allocated using the Demand allocator.

Distribution plant is assigned based on physical location.

General plant is allocated based on the composite allocation of production, transmission, and distribution plant.

Intangible plant consisting primarily of capitalized software is allocated based on the allocation factor considered most appropriate for the function of the software. For example, the customer information system is allocated based on the Customer allocation factor, whereas transmission-related software is allocated consistent with the allocation of Transmission plant.

The reserves for accumulated depreciation and amortization are allocated based on the allocation of the plant with which they are associated. The exception is for reserve items that have been afforded different jurisdictional accounting treatment through past commission orders. Examples include Additional Credit Ratio Amortizations which were assigned to specific reserve plant accounts in each jurisdiction differently and therefore are assigned directly to the applicable jurisdiction. In addition, Kansas unrecovered reserve amounts are allocated directly to Kansas.

Working Capital

Cash working capital ("CWC") is not allocated. Instead, the CWC amounts are calculated in the Revenue Requirement Model by taking the net CWC factors and applying these factors to allocated jurisdictional amounts in the Revenue Requirement Model. Fuel inventory is allocated using the Energy allocator. Materials and supplies ("M&S") and prepayments are grouped by function and allocated based on allocations appropriate for the function of the M&S and prepayments.

Regulatory assets and Regulatory Liabilities

Regulatory assets and regulatory liabilities are assigned directly to the applicable jurisdiction. There is one exception, S02 Emission Allowances for EPA auction proceeds, which are allocated based on the Energy Allocator.

Accumulated Reserve for Deferred Taxes

Plant related reserve is primarily allocated based on the allocation of plant with which it is associated. Non-Plant related reserve not directly assignable to a jurisdiction are grouped by functional categories and allocated on a basis consistent with that functional category. Deferred tax reserve amounts that are associated with regulatory assets and liabilities are assigned directly to the applicable jurisdiction.

Customer Advances for Construction and Customer Deposits

Customer advances for construction and customer deposits are assigned directly to the applicable jurisdiction.

Kansas City Power & Light Company
2018 RATE CASE - DIRECT
Kansas Jurisdiction
TY 9/30/17; K&M 6/30/18

Income Tax - Schedule 11

Line No.	Line Description	Total Company Balance *	Juris Factor #	Juris Allocator *	Tax Rate	(Jurisdictional) Adjusted with 7.384% Return
	A				B	C
1	Net Income Before Taxes (Sch 9)	448,871,405				175,849,606
2	***Add to Net Income Before Taxes:***					
3	Depreciation Exp	280,839,906				130,439,716
4	Plant Amortization Exp	43,414,113				20,088,233
5	Amortiz of Unrecovered Reserve - KS	2,777,263	100% KS	100.0000%		2,777,263
6	Book Nuclear Fuel Amortization	30,725,326				13,393,016
7	Transp & Unit Train Depr-Clearing (a)	4,777,669				2,234,347
8	50% Meals & Entertainment	585,681	Sal&Wg	46.4069%		271,797
9	**Total**	363,119,957				169,204,372
10	***Subtract from Net Income Before Taxes:***					
11	Interest Expense	129,313,161				57,820,208
12	IRS Tax Return Depreciation	269,555,020	PTD	46.2712%		124,726,356
13	IRS Tax Return Plant Amortization	43,732,738	PTD	46.2712%		20,235,665
14	IRS Tax Return Nuclear Amortization	22,659,583	E1	43.5895%		9,877,199
15	Cost of Removal Incurred on Pre-81 Property	9,593,542	PTD	46.2712%		4,439,047
16	Cost of Removal Provided for Pre-81 Property	(1,532,713)	PTD	46.2712%		(709,205)
17	Employee 401k ESOP Deduction	2,310,000	Sal&Wg	46.4069%		1,072,000
18	IRC Section 199 Domestic Production Activities	0	D1	47.0659%		0
19	**Total**	475,631,331				217,461,271
20	**Net Taxable Income**	336,360,032				127,592,708
21	**Provision for Federal Income Tax:**					
22	Net Taxable Income	336,360,032				127,592,708
23	Deduct State Income Tax @ 100%	23,545,202			7.00%	8,931,490
24	Deduct City Income Tax	0				0
25	Federal Taxable Income	312,814,830				118,661,218
26	Federal Tax Before Tax Credits	65,691,114			21.00%	24,918,856
27	Less Tax Credits:					
28	Wind	(3,970,080)	E1	43.5895%		(1,730,538)
29	Research and Development	(875,000)	E1	43.5895%		(381,408)
30	Fuels Tax Credit	(76,489)	E1	43.5895%		(33,341)
31	**Total Federal Tax**	60,769,545				22,773,569
32	**Provision for State Income Tax:**					
33	Net Taxable Income	336,360,032				127,592,708
34	Deduct Federal Income Tax @ 0%	0				0
35	Deduct City Income Tax	0				0
36	State Jurisdictional Taxable Income	336,360,032				127,592,708
37	**Total State Tax**	23,545,202			7.00%	8,931,490
38	**Provision for City Income Tax:**					
39	Net Taxable Income	336,360,032				127,592,708
40	**Total City Tax**	0			0.00%	0
41	**Effective Tax rate before Tax Cr and Earnings Tax**	26.53%				26.53%
42	**Summary of Provision for Income Tax:**					
43	Federal Income Tax	60,769,545				22,773,569
44	State Income Tax	23,545,202				8,931,490
45	City Income Tax	0				0
46	**Total Provision for Income Tax**	84,314,747				31,705,059
47	**Deferred Income Taxes:**					
48	Deferred Income Taxes - Excess IRS Tax over Book D&A	(3,224,704)	See Computation Below			(1,961,053)
49	Amortization of Deferred ITC	(1,087,652)	PTD	46.2712%		(503,270)
50	Amort of Excess Deferred Income Taxes	(2,478,027)	PTD	46.2712%		(1,146,613)
51	Amortization of Cost of Removal-ER-2007-0291	354,438	100% MO	0.0000%		0
52	**Total Deferred Income Tax Expense**	(6,435,945)				(3,610,936)
53	**Total Income Tax**	77,878,802				28,094,123
54	(a) Percent of vehicle depr clearing to O&M				41.7950%	

Interest Expense Proof:

Total Rate Base (Sch. 2)	2,329,018,289
X Wtd Cost of Debt	2.483%
Interest Exp @ 12/31/07	57,820,208
Less: Interest Expense from Line 7	57,820,208
Difference	0

* As Needed

<u>**Computation of Line 48 Above:**</u>

Deferred Income Taxes - Excess IRS Tax over Book D&A:

55	IRS Tax Return Depreciation	269,555,020	124,726,356
56	Less: Book Depreciation	283,617,169	133,216,979
57	Excess IRS Tax Depr over Book Depreciation	(14,062,149)	(8,490,624)
58	IRS Tax Return Plant Amortization	43,732,738	20,235,665

Kansas City Power & Light Company
2018 RATE CASE - DIRECT
Kansas Jurisdiction
TY 9/30/17; K&M 6/30/18

Income Tax - Schedule 11

Line No.	Line Description	Total Company Balance *	Juris Factor #	Juris Allocator *	Tax Rate	(Jurisdictional) Adjusted with 7.384% Return
59	Less: Book Amortization	43,414,113	PTD	46.2712%		20,088,233
60	Excess IRS Tax Amort over Book Amortization	318,625				147,432
61	IRS Tax Return Nuclear Amortization	22,659,583				9,877,199
62	Less: Book Nuclear Amortization	30,725,326	E1	43.5895%		13,393,016
63	Excess IRS Tax Nuclear Amort over Book Nuclear Amort	(8,065,743)				(3,515,817)
64	Total Timing Differences	(21,809,266)				(11,859,009)
65	AFUDC Equity	9,220,127	PTD	46.2712%		4,266,264
66	ITC Coal Basis Adjustment	421,212	PTD	46.2712%		194,900
67	Miscellaneous Flow Through	12,994	PTD	46.2712%		6,012
68	Total Timing Differences after Flow Through	(12,154,933)				(7,391,833)
69	Effective Tax rate	26.53%				26.53%
70	**Deferred Income Taxes - Excess IRS Tax over Tax SL**	(3,224,704)				(1,961,053)

Exhibit RAK-8
2 of 2

The Costs of Retirement and Dismantlement:

Decommissioning KCP&L's Generating Units

ENGINEERING & TECHNICAL SERVICES

Exhibit RAK-9
1 of 375

The Costs of Retirement and Dismantlement:

Decommissioning KCP&L's Generating Units

ENGINEERING & TECHNICAL SERVICES

TABLE OF CONTENTS

TABLE OF CONTENTS

CERTIFICATION

CERTIFICATION

I hereby certify that this document was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Missouri.

CHRISTOPHER
ROBERT
ROGERS
NUMBER
E-21087

Christopher Robert Rogers
June 28, 2016

Christopher Robert Rogers, P.E.
State of Missouri P.E. No. E-21087

SECTION 1

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

1.1 INTRODUCTION

Kansas City Power & Light Company (KCP&L) retained Sega, Inc. (Sega) to provide an opinion of probable costs for retirement and dismantlement of its electric generating units with the exception of the Wolf Creek Nuclear Generating Facility which has been covered under a separate study. This report updates the cost results presented in Sega's October 2014 study (Sega Project No. 14-0162) for decommissioning these facilities.

Decommissioning is comprised of two principal phases: ***retirement*** and ***dismantlement***. ***Retirement*** is the shutdown or closure and removal from service of a generating unit or facility, and includes disconnection, de-energization, cleanout, and securing of the units to render them safe. ***Retirement*** triggers unavoidable costs for compliance with the mandatory provisions of the various plants' permits and with the specific requirements of State and Federal regulations for the closure of ash landfills, the removal and remediation of fuel-oil tanks, and the reclamation of river water intakes.

KCP&L is not required to dismantle its plants upon retirement, and therefore, it is not known when, or even if, dismantlement costs will be incurred. Often a unit may not be dismantled until sometime after it is retired, particularly if there are other operational generating units on the same site. ***Dismantlement*** is the orderly demolition of the unit in a controlled and safe manner so as to preserve the scrap value of reclaimed materials while appropriately protecting the workers and the environment. Scrap values are considered separately from dismantlement costs because scrap values have proven volatile over time. Scrap values in this report were developed from current average index prices, and were netted out against dismantlement costs to produce net terminal costs for each unit. All costs are provided in current day, 2016 dollars.

1.2 DESCRIPTION OF FACILITIES

The KCP&L generating facilities are located on eight sites and include 15 simple-cycle combustion turbines, one combined-cycle plant, two wind generation units, and eight steam electric generating units. The major attributes of each unit are provided in *Figure 1.1* and further described below.

Plant Name	Unit No.	Current Net SPP Accredited Capability, MW	First Year In Service	Fuel / Type
Montrose	1	170	1958	Coal / Steam
	2	164	1960	
	3	176	1964	
Hawthorn	5	564	1969 / 2001	Coal / Steam
La Cygne	1	736	1973	Coal / Steam
	2	662	1977	Coal / Steam
Iatan	1	713	1980	Coal / Steam
	2	882	2010	Coal / Steam
Northeast	11	52	1972	Distillate-Fired Combustion Turbines
	12	41		
	13	46	1975	
	14	49		
	15	53	1976	
	16	53		
	17	53	1977	
	18	52		
Hawthorn	7	78	2000	Natural Gas-Fired Gas Turbines
	8	79	2000	
Hawthorn	6	235	1997	Natural Gas-Fired Gas Turbine
	9		2000	HRSG & Turbine in Combined Cycle
West Gardner	1	80	2003	Natural Gas-Fired Gas Turbines
	2	79		
	3	77		
	4	78		
Osawatomie	1	76	2003	Natural Gas-Fired Gas Turbine
Spearville	1	100.5	2006	Wind
	2	48	2010	

Figure 1.1 - KCP&L Electric Generating Units

1.2.1 Facility Descriptions

Montrose Generating Station is a three-unit pulverized coal-fired electric generating station located in rural Henry County, near the town of Montrose, Missouri. Each Montrose unit has an electrostatic precipitator. This report includes actual reported costs for retirement of Unit 1 and opinion of probable costs for Units 2 and 3.

Hawthorn Generating Station is located in eastern Kansas City within Jackson County, Missouri and is comprised of several different types of units. Unit 5 is a pulverized coal-fired steam electric plant with a selective catalytic reduction (SCR) system, baghouse, and dry scrubber. Unit 6 is a natural gas-fired combustion turbine generator that can be operated alone in simple cycle through its bypass stack or in combined cycle in conjunction with Unit 9, a heat recovery steam generator (HRSG) with a condensing steam turbine generator that was originally part of Unit 4. Units 1 through 3 and the remainder of Unit 4 were coal and natural gas-fired steam electric generators that were retired in place awaiting dismantlement. Units 7 and 8 are simple-cycle, natural gas-fired combustion turbine generator sets.

La Cygne Generating Station is comprised of two coal-fired steam electric units in rural Linn County near the town of La Cygne, Kansas. Unit 1 is a super-critical, coal-fired cyclone boiler steam electric plant with an SCR. Unit 2 is a pulverized coal-fired steam electric plant with an SCR. Both units have a baghouse and wet scrubber.

Iatan Generating Station is located in rural Platte County, near the town of Weston, Missouri. Unit 1 is a pulverized coal-fired, sub-critical steam electric plant with an SCR, baghouse, and wet scrubber. Unit 2 is a pulverized coal-fired, super-critical steam electric plant with an SCR, baghouse, and wet scrubber.

Northeast Generating Station is an eight-unit, distillate oil-fired combustion turbine peaking plant located near downtown Kansas City, in Jackson County, Missouri.

West Gardner Generating Station is a four-unit, natural gas-fired combustion turbine peaking plant in suburban Johnson County, near the town of Gardner, Kansas.

Osawatomie Generating Station is a single-unit, natural gas-fired combustion peaking plant located in rural Miami County, between the towns of Osawatomie and Paola, Kansas.

Spearville Generating Station is a wind generation plant located in rural Ford County near Spearville, Kansas. Unit 1 has 67 wind turbines. Unit 2 has 32 wind turbines.

1.3 APPROACH

As part of the 2012 report, Sega met with representatives of KCP&L to gather information about the generating units and visited each of the plant sites. Discussions were held with certain plant staff, further documentation was obtained, and a walkdown of each unit was conducted. Sega utilized Microsoft® Project (MS Project), Version 2010 software with resource loading to develop and compile an opinion of probable costs and schedule for the retirement of each unit. Costs were developed based on KCP&L current labor rates and those of its present maintenance contractors. Site-specific retirement costs were developed using a bottom-up approach for each task.

For the 2016 report, the methodology remains the same; however, costs and tasks were updated using MS Project, Version 2013 software with revised loaded resources using client data or inflation adjusted costs. Asset retirement obligation (ARO) activities, union rates, single bulk activities (i.e., stack capping), and miscellaneous individual line items were included in the updated opinion of probable costs where actual costs were not available.

For the 2012 study, the basis and limits for retiring or dismantling each unit were defined while visiting the plant sites. For instance, it was assumed that the switchyard and/or substation (as applicable) for each generator would remain in service following either retirement or dismantlement. In general, plant roads, fencing, and site grading were presumed to remain undisturbed unless otherwise specifically required to be removed. Closure of ash landfills, and the removal and remediation of river water intakes and fuel oil storage tanks were included in the retirement phase as required by applicable permits. This approach remains unchanged from the 2012 original report.

Because specific quantity information was available for Iatan Unit 1 and La Cygne Unit 2, the dismantlement costs of these two units were developed from the ground up. It was assumed that common facilities at each plant site, such as coal unloading, storage and handling systems, water treatment systems, ash handling systems, and office buildings, would remain in service until the last unit is retired. For multiple-unit sites, retirement and dismantlement costs were developed separately for the common plant facilities. In the case of Hawthorn, the common facilities associated with the coal-fired unit, Hawthorn 5, will be retired with that unit. The remaining units at the Hawthorn site are gas-fired and do not require many of the common site facilities for operation.

Spearville will be dismantled per the Spearville Wind Project Decommissioning Agreement between KCP&L and Ford County, Kansas. This agreement states that the dismantlement of each wind turbine shall include the removal of the turbine and tower, removal of the tower foundation to a depth at least 4 feet below grade, and removal of the interconnection transmission poles and lines. The dismantlement of the wind turbines shall commence within 12 months after each unit is retired.

The estimates of probable cost for “stack removal” and “final site grading and drainage” for the various sites were not developed using MS Project software. The “stack removal” costs for the various stacks were based on the actual costs to dismantle the La Cygne Units 1 and 2 stack. This cost was scaled to estimate the demolition for the other stacks involved in this study. The “final site grading and drainage” estimate of probable cost was developed by Sega but was not developed in an MS Project schedule. Both of these activities are represented in the MS Project schedule in Appendix A for the applicable units as a onetime cost/use in the resource allocation section of the file; therefore, they appear as a one-day activity in the schedule with the estimated costs as a one-time expense.

1.4 RESULTS

The opinion of the probable costs for retirement and dismantlement developed by Sega for each of KCP&L's units and the common facilities at each plant site are provided in *Figure 1.2*. All costs shown are in 2016 dollars. The costs are provided for the full ownership of these generating facilities. Fractional shares of ownership and jurisdictional allocations have not been taken into account in these costs. Ongoing expenses for the sites such as security, routine inspections, groundwater monitoring, etc., which would continue as long as the Company continues to own the sites, are included in the decommissioning costs. Retirement costs are separately provided for each unit and for related common plant facilities. The costs of dismantlement and scrap values are provided for each unit and for common plant, as well as the final net terminal costs.

As shown in *Figure 1.2*, there is a significant difference between the costs of retiring and the costs of dismantling a power plant. In Sega's opinion, the probable cost to dismantle all of KCP&L's units is approximately $319 million. Some materials could be sold for scrap, thereby recovering approximately $38 million and bringing the estimated net terminal value for dismantling all of KCP&L's plants to $281 million, based upon the current averaged scrap indices.

However, were KCP&L to retire its generating units in place without dismantlement, Sega believes the cost would be approximately $236 million. As explained more fully in Section 2 - Retirement, the bulk of these retirement costs are tied to activities that must be completed upon retirement of the unit or whenever the unit ceases operations, as required by regulation, permits, or agreements. KCP&L accounts for most of these costs in AROs.

Name	Unit No.				Dismantlement		
		Unit Retirement	Activities Required by Permit Agreement (4) or Regulation (2)	Total Retirement	Dismantlement	Scrap Value (3)	Net Terminal Cost
Montrose	1	$2,040,668	$5,699,874	$7,740,542	$11,092,556	$1,985,000	$9,107,556
	2	$535,095	$5,699,874	$6,234,969	$10,855,969	$1,943,000	$8,912,969
	3	$535,095	$5,699,874	$6,234,969	$11,325,826	$2,027,000	$9,298,826
	Common	$717,823	$6,642,773	$7,360,596	$11,361,236	$714,600	$10,646,636
Hawthorn	5	$1,021,157	$12,445,589	$13,466,746	$22,571,517	$4,076,000	$18,495,517
	Common	$360,857	$7,840,251	$8,201,108	$10,411,094	$489,120	$9,921,974
La Cygne	1	$1,117,492	$2,674,758	$3,792,249	$37,028,117	$4,778,000	$32,250,117
	2	$1,064,401	$2,674,758	$3,739,158	$39,375,338	$4,584,000	$34,791,338
	Common	$959,466	$88,288,826	$89,248,293	$17,654,670	$1,123,440	$16,531,230
Iatan	1	$1,104,700	$395,036	$1,499,736	$25,805,172	$4,660,000	$21,145,172
	2	$1,099,956		$1,099,956	$29,497,067	$5,327,000	$24,170,067
	Common	$645,328	$40,896,768	$41,542,095	$26,054,914	$1,198,000	$24,856,914
Northeast	11 12 13 14 15 16 17 18 Common	$555,987	$553,553	$1,109,540	$11,042,180	$356,000	$10,686,180
Hawthorn	7 8	$368,777	$0	$368,777	$7,896,768	$89,000	$7,807,768
West Gardner	1 2 3 4	$429,179	$0	$429,179	$12,793,564	$178,000	$12,615,564
Osawatomie	1	$293,506	$0	$293,506	$6,137,219	$44,500	$6,092,719
Hawthorn	6 9	$431,914	$679,931	$1,111,846	$10,317,668	$1,150,000	$9,167,668
Spearville(4)	1	$16,274,266	$12,532,822	$28,807,088	$0	$2,359,000	($2,359,000)
	2	$8,238,655	$5,396,894	$13,635,549	$0	$1,127,000	($1,127,000)
		$37,794,323	**$198,121,580**	**$235,915,903**	**$301,220,874**	**$38,208,660**	**$263,012,214**

(1) All values in 2016 U.S. dollars.

(2) Activities required by permits and/or regulations that are to occur upon ceasing operations, including ash landfill closures, and river water intake.

(3) Current scrap values per averaged indices.

(4) The Spearville Land Lease requires the wind turbines be dismantled within 12 months of retirement.

Figure 1.2 - Probable Costs of Decommissioning KCP&L Electric Generating Units (1)

1.5 REVISION SUMMARY

This document is a stand-alone report; however, the cost values contained in this report have been updated and revised based from previous work versions. The major revisions are described as follows.

1.5.1 Coal Combustion Residue / Effluent Limitation Guidelines Regulatory Changes

The United Sates Environmental Protection Agency (EPA) implemented new rules regulating the disposal of coal combustion residue (CCR) in the fall of 2015. Among other things, the final CCR rules established new requirements applicable to CCR landfills, CCR surface impoundments, and all lateral expansions of CCR units. These requirements, which were intended to reduce the risks of catastrophic structural failures and to protect groundwater quality, pertain to operation, closure, and post-closure of all CCR facilities at coal-fired generating units.

The existing KCP&L ARO accounts for tracking funding for closure of CCR landfills and surface impoundments that were required to be implemented upon retirement of their coal units under existing permits and regulations were used in Sega' s previous reports. In order to capture the costs of the significantly increased requirements in the 2015 CCR rules, KCP&L commissioned studies to determine the impacts and estimate the costs of implementing the new CCR rules on each unit. These studies (performed by others) became the basis for KCP&L's revised ash pond/impoundment AROs for each of the coal-fired units. This report incorporated KCP&L's revised CCR AROs in the retirement category of costs for activities required by permit, agreement or regulation, as previously shown in *Figure 1.2.*

1.5.2 Asbestos Remediation Costs

In prior studies, asbestos abatement was not included for any unit or facility. Asbestos abatement activities were being implemented at affected sites throughout the operating life of the units in conjunction with major maintenance activities. However, KCP&L previously set up AROs for asbestos removal at the Montrose, Hawthorn Unit 5, and La Cygne plants to more accurately capture the actual costs KCP&L expects to incur at retirement. While asbestos remediation is not strictly required at the time of retirement by permit, contract or regulation, KCP&L is ultimately responsible for remediation of all such hazardous materials at all of its facilities. If not handled at retirement, asbestos could be exposed or released while the facilities set idle awaiting dismantlement. This could cause ongoing issues and increase the maintenance costs for non-producing assets. KCP&L is unavoidably responsible for asbestos remediation prior to dismantlement in any event. Thus, the AROs for asbestos abatement were added into the retirement category of costs for activities required by permit, agreement or regulation, as previously shown in *Figure 1.2*.

1.5.3 Current Dismantlement Activities

As a result of the La Cygne Environmental Retrofit projects, several components are currently being dismantled. Therefore, Sega utilized the fully burdened KCP&L costs for dismantlement of these components to more accurately capture the overall dismantlement costs for these units. In Sega's prior decommissioning reports the construction quantities, which were known for La Cygne Unit 2, were used for development of dismantlement costs for that unit and became the basis for scaling the costs of other similar units. To the extent that portions of the dismantlement cost of La Cygne Unit 2 are now known, those costs were utilized to adjust the total dismantlement costs. The known ongoing dismantlement costs were for the following components:

1. La Cygne Unit 1:
    a. Wet Scrubber Building.
    b. Induced Draft (ID) Fans and Drives.
    c. Limestone Ball Mill Facility.

    d. Stack.

2. La Cygne Unit 2:
    a. Electrostatic Precipitator.
    b. Stack.

1.5.4 Montrose Unit 1 Retirement

Montrose Unit 1 was retired on April 16, 2016. In previous decommissioning studies, Sega developed opinions of the probable of retirement. One component of retirement is a planning study that is performed three to six months prior to retirement. Specific retirement activities are adjusted as a result of the planning study because greater detail is known and the configuration and operating plans of the remaining units and common facilities are known at that point. The retirement plan is currently being implemented on Unit 1 while Units 2 and 3 remain in operation. Sega utilized the actual cost of the planning study and other ongoing retirement activities for Montrose Unit 1 in this report and accordingly reduced the Owner's Contingency allowance from 25 percent to 5 percent.

1.5.5 Other Adjustments

Base calculations used in prior studies, other than those described above were updated for the changes in escalation from 2014 through 2016. ARO values were adjusted using the basis for each previously set by KCP&L. Finally, scrap prices were adjusted to reflect the currently reduced values of 2016 average indices.

SECTION 2

RETIREMENT

RETIREMENT

2.1 INTRODUCTION

Sega developed an opinion of probable costs to retire the KCP&L facilities previously listed in *Figure 1.1* and further described in Appendix A. The opinion of probable costs is a buildup of estimated costs to perform the retirement activities to leave each facility in a safe state. A resource-loaded MS Project schedule was developed for the retirement of each facility where actual costs were not available. Each schedule includes the activity, duration of the activity, resources required for each activity, and the probable cost of each activity. The results for each facility are provided in Appendix A of this report.

The opinion of probable costs for the retirement of each coal-fired generating facility is broken down into the retirement of each unit, plus the retirement of the common facilities. With the exception of Hawthorn, the common facilities will be retired when the last unit is retired at a site. In the case of Hawthorn, the common facilities associated with the coal-fired unit, Hawthorn 5, will be retired with that unit. The remaining units at the Hawthorn site are gas-fired and do not require many of the common site facilities for operation.

2.2 OPINION OF PROBABLE COSTS BASIS

Retirement activities will be performed by KCP&L bargaining unit personnel and managed by KCP&L. Man-hour costs for both management and bargaining unit personnel were provided by KCP&L. At the direction of KCP&L, the direct man-hour rate was multiplied by 1.4 to account for benefits and overhead loadings.

The estimates of probable cost to retire the combustion turbines are based on retiring all of the combustion turbines at a given site, not on an individual combustion turbine retirement basis.

A 5-percent "Owner Internal Costs" is included in the opinion of probable cost. This line item is included to cover the costs of various internal KCP&L departments that will charge to the project during the implementation of the retirement activities.

A 25-percent "Owner Contingency" is included in the opinion of probable cost. This level of contingency is consistent with Association for the Advancement of Cost Engineering (AACE-International) contingency level guidelines based on the engineering progress completed at the point when the cost estimate was developed. For Montrose Unit 1, the Owner Contingency is 5 percent based on actual costs for the retirement activities.

2.3 RETIREMENT ACTIVITIES

Prior to starting the actual retirement activities, a retirement plan will be developed. This plan will address any laws, ordinances, regulations, and standards dictating how ash, slag, scrubber by-products, and any other waste stream is stored and/or removed from the plant site. An environmental assessment will be performed to develop a plan to address these issues and to assure that permits required to complete the retirement activities are in place. The retirement plan will also address plant safety during the time interval between plant retirement and eventual dismantlement. This plan should include the requirements for periodic inspections to assess the condition and integrity of the plant structures so that contractors can safely demolish the plant when so required. The costs to perform these activities are estimated in the "Pre-Retirement Activities" line item of each facility's opinion of probable cost.

The following activities and conditions are required to leave a generating facility (unit, common facilities, or entire plant, as may be applicable) in a safe state and are included in each facility's opinion of probable cost:

3. All equipment, tanks, vessels, containers, drums, headers, exchangers, and sumps will be drained and vented. Fuel oil, lubricating oil, liquid propane, bulk hydrogen, Halon, liquid ammonia, water treatment chemicals, lab chemicals, cleaning solutions, and Freon will be handled per plant procedures and plan permitting requirements. Man-ways, hand-holes, vents, and drains will be opened to ensure drainage. Drains will remain open.

4. The electrical sources will be isolated from the facility. The exact details of this scope of work will be determined during the pre-retirement activities phase. At a minimum, all electrical buses will be disconnected at the source. The medium- and low-voltage switchgear will be racked out by fully withdrawing the circuit breakers. Fuses will be removed, and circuit breakers and disconnect switches will be left in the open position. Motors will be disconnected at the source and motor lube oil will be drained (as applicable).

5. Fuel yard equipment will be cleaned and vacuumed to reduce or eliminate the hazards of fugitive coal dust.

6. To the maximum extent possible, all drains will be emptied and vented. Low-point drains will remain open.

7. Fuel gas piping and city/rural water piping will be cut and capped at the property line.

8. Chimney Federal Aviation Agency (FAA) required lighting will be kept in service.

9. Buildings will be "secured". The determination of the detailed activities required to leave a building in a secure state is included in the pre-retirement activities and will include isolating all power sources, draining potable water lines, draining and venting sewage lines, securing doors and windows, capping any means of egress for vermin, removing hazardous materials, and moving any relevant plant documentation to alternate off-site storage sites.

10. Fuel oil and waste oil will be drained and removed.

11. Boiler chemicals will be drained and removed.

12. Boilers and HRSGs will be drained. The water and steam side will be vented. The gas side will be vacuumed to remove ash and slag. Drum doors and boiler doors will be left open. Bottom ash systems will be drained, cleaned, and vented.

13. Ductwork will be vacuumed and left opened.

14. Condensate and feedwater piping will be drained and vented.

15. Feedwater heaters will be drained and vented.

16. Deaerator and deaerator storage tanks will be drained and vented.

17. The turbine and condenser will be drained and vented. Turbine lube oil will be removed.

18. The generator will be electrically and mechanically isolated. The generator and exciter cooling water systems will be drained and vented. Hydrogen gas tanks and the generator hydrogen systems will be vented.
19. Compressed air systems will be drained and vented. Desiccant will be removed from the compressed air dryer systems.
20. Circulating water systems and turbine cooling water systems will be drained and vented. Circulating water chemical feeds will be drained and vented.
21. Baghouses will be opened, cleaned, and vented. Filter bags and cages will be removed.
22. Wet Flue Gas Desulfurization (FGD) systems will be drained, opened, cleaned, and vented.
23. Dry FGD systems will be drained, opened, cleaned, and vented.
24. Re-agent preparation facilities will be drained, opened, cleaned, and vented.
25. SCRs will be opened, cleaned, and vented. Catalyst will be removed. Ammonia storage tanks will be emptied and vented.
26. The battery systems will have the battery electrolytes and battery cells removed and disposed.
27. Sewage treatment facilities will be drained, cleaned, and vented.
28. Oily drain tanks will be opened and pumped out.
29. CO_2 systems used for fire protection will be drained, opened, and vented.
30. Any other activities required by law, regulation, or permit for a specific unit, common facility, or plant site will be performed.

Once the site retirement activities are complete, several months of post-retirement activities will commence. These activities include determining the disposition of site documentation, assuring permits are in correct condition, developing plans to monitor the retired facility, accounting and environmental activities, and re-assigning personnel as required.

2.4 ASSET RETIREMENT OBLIGATION ACTIVITIES

AROs are a means that KCP&L utilizes to track the costs of activities that are required to be performed when one of its generating units ceases operation and is removed from service. These are activities that are required to be performed upon retirement according to permits, statutes, agreements, and regulations. For certain activities, such as ash landfill closures, KCP&L is required to periodically report estimated cost updates to state environmental agencies (Kansas Department of Health and Environment and Missouri Department of Natural Resources). These agencies require KCP&L to periodically demonstrate the ability to fund these closure activities. This is because the costs for ash landfill closures and post-closure activities are significant. In fact, landfill closure costs and post-closure activities exceed the costs of all other retirement activities for the respective units at the Montrose, La Cygne, and Iatan Generating Stations.

Other activities, such as the removal of river water intakes, are stated requirements in the standard form permits issued by the United States Army Corp of Engineers. Also included in AROs are amounts for the abatement and removal of fuel oil storage tanks of the plants located in Missouri (Montrose, Northeast, and Iatan Generating Stations). Since the Kansas fuel oil tank permits do not specifically require their removal upon ending operation, the costs for their removal are in the demolition (La Cygne Generating Station).

Asbestos abatement activities in AROs for the La Cygne, Montrose, and Hawthorn Generating Stations are included in the general ARO costs and as separate line items from the retirement and decommissioning costs. Asbestos abatement activities are ongoing at each of these sites during the life of the units, and will continue to be performed after retirement, but before dismantlement.

In addition, Sega included amounts for closure and removal of the sanitary waste lagoons at the Montrose and La Cygne Generating Stations, since these activities are required by Kansas and Missouri regulations when operations cease. However, the probable costs for these closures are below KCP&L's threshold for maintaining an ARO.

Wherever KCP&L already had estimates and a basis for valuing the costs of such ARO closure activities, Sega reviewed and utilized these estimates, adjusting to 2016 present-day dollars. Where there was no prior estimate available, Sega developed an opinion of probable costs for their closure. Each of these costs is provided in Appendix A.

Appendix D is a table showing the source of the requirement that dictates each ARO Activity.

SECTION 3

DISMANTLEMENT

DISMANTLEMENT

3.1 INTRODUCTION

Sega developed an opinion of probable costs to dismantle the KCP&L facilities that are listed in Appendix A. The opinion of probable costs is a buildup of estimated costs to perform the dismantlement activities to remove equipment and building superstructures down to grade-level foundations. Below-grade foundations, piping, and duct banks will be abandoned in place. A resource-loaded MS Project schedule was developed for the dismantlement of the facilities. Each schedule includes the activity, duration of the activity, resource required for each activity, and the probable cost of each activity. The results for each of the facilities are provided in Appendix A.

The opinion of probable costs for the dismantlement of each coal-fired generating facility is broken down into the dismantlement of each unit, plus the dismantlement of the common facilities. The common facilities will be dismantled when the last unit at the site is dismantled.

The estimate of probable cost to dismantle the combustion turbines are based on dismantling all of the combustion turbines at the site, not on an individual combustion turbine dismantlement basis.

The estimate of probable costs to dismantle the wind generation facility is based on dismantling all of the wind turbines at the site, not on an individual wind turbine dismantlement basis.

3.2 OPINION OF PROBABLE COSTS BASIS

The project will be managed by KCP&L staff. KCP&L will hire an Owner's Engineer to assist with environmental issues and the technical dismantlement details. KCP&L will hire a Demolition General Contractor (DGC) to perform the complete dismantlement of each unit.

The opinion of probable costs is presented as the straight netting of the DGC's firm price cost, minus the current scrap value of the equipment and materials.

At the initiation of dismantlement, this study assumes that the unit or common facility has been previously decommissioned as detailed in Section 2 - Retirement.

A resource-loaded MS Project dismantlement schedule and opinion of probable costs were developed for Spearville (both units), Northeast (all eight units), Hawthorn 7 and 8 (both units combined), West Gardner (all four units), Osawatomie (one unit), Hawthorn 6 and 9 (both units combined), Iatan Unit 1, La Cygne Unit 2, and the Common facilities for each of these plant sites. The dismantlement schedules for Iatan Unit 1 and La Cygne Unit 2 were developed based on the actual quantities and materials documented in the final construction reports for each unit. The costs for these units were used to derive the dismantlement costs for Montrose Units 1, 2, and 3, Iatan Unit 2, Hawthorn Unit 5, and La Cygne Unit 1 using the AACE International Capacity Factor Method.

A 5-percent "Owner Internal Cost" is included in the opinion of probable cost. This line item is included to cover the costs of various internal KCP&L departments that will charge to the project during the implementation of the dismantlement activities.

A 25-percent "Owner Contingency" is included in the opinion of probable cost. This level of contingency is consistent with the AACE International contingency level based on the engineering progress completed at the point when the cost estimate is developed.

3.3 DISMANTLEMENT ACTIVITIES

The dismantlement of a facility is divided into pre-dismantlement activities, dismantlement activities, and project closure activities.

3.3.1 Pre-Dismantlement Activities

Pre-dismantlement activities consist of the detailed pre-planning of the dismantlement process. This pre-planning includes establishing the KCP&L project management team;

hiring an Owner's Engineer; developing a detailed dismantlement scope of work, including how to address any environmental issues; developing a level 1 project schedule; and contracting with a DGC.

The KCP&L project management team will be responsible for the project execution and will consist of a full-time project manager, two full-time engineers, a full-time project administrative assistant, and a part-time procurement specialist. This team will have the authority to manage the dismantlement of the plant.

The Owner's Engineer will assist KCP&L with the technical aspects of executing the project. The Owner's Engineer will help establish the boundaries of demolition, provide environmental consulting, and develop the technical specifications for the DGC contract request for proposal. The Owner's Engineer will provide 1-1/2 full-time equivalent field engineers during the demolition phase of the project. The Owner's Engineer will also provide detailed design for equipment that requires modifications to keep other units or common facilities in operation during demolition and after the unit is dismantled.

The KCP&L project management team and the Owner's Engineer will review all existing permits to assure that any relevant existing permit requirements are met during demolition. This team will also put into place any additional required permits for demolition (outside of the normal permits that are the responsibility of the DGC).

Prior to dismantlement activities, a detailed site characterization study will be performed. This study involves a series of site investigations to determine potential subsurface environmental issues at the site, a description of the hydrological and hydrogeological conditions on the site, and a determination of potential waste streams generated during the demolition work. Based on the outcome of the site characterization study, reclamation, and remediation plans that address the environmental issues and site conditions will be developed. The site characterization study and the development of the remediation plans can take up to six months to complete. The site characterization study will be performed by the Owner's Engineer.

The KCP&L project management team will identify the boundaries of dismantlement and the location of system and equipment isolation points between the unit to be demolished, common facilities, and units to remain.

The KCP&L project management team will be responsible for bidding and contracting with a qualified DGC.

Prior to the DGC mobilizing on site, the KCP&L project management team will confirm that the unit to be dismantled is ready to be turned over to the DGC.

3.3.2 Dismantlement Activities for a Coal-Fired Unit

The demolition contractor will be structured into several crews that will bring equipment and materials to the ground. A separate dedicated crew will be responsible for classifying the scrap by type and removing the scrap from the site.

The coal-fired units will be demolished in a phased and sequential manner to assure worker safety and to minimize any interferences with surrounding equipment. Please refer to the man-power loaded schedule and graphs in Appendix A for the details of each demolition phase.

3.3.2.1 *Phase 1 Demolition - Boiler and Turbine Equipment Removal*

Mechanical and electrical equipment and material inside the boiler and turbine building footprints will be removed. The goal of this phase is to remove the majority of the equipment in the boiler and turbine buildings leaving only the boiler, turbine, building, and support steel.

In this phase of the project, the switchyard is disconnected from the generating facility.

3.3.2.2 *Phase 2 Demolition - Boiler and Turbine Removal*

The boiler equipment will be removed at the start of this phase. Then, the boiler furnace and backpass will be removed from the bottom up (boilers are hung from the top of the boiler structure) and the structural steel is removed from the top down. Once the structural steel and all equipment are removed, the boiler equipment foundations will be demolished to existing grade.

In parallel with the above activities, the turbine, condenser neck heat exchangers, condenser, and miscellaneous turbine equipment will be removed. The turbine building and turbine pedestal is then demolished to grade.

3.3.2.3 *Phase 3 Demolition - Precipitator and AQCS Dismantlement*

If the unit has a precipitator, the precipitator will be removed similar to the process for removing the boiler. The precipitator internals will be removed from the bottom up and the precipitator structural steel will be removed from the top down. The precipitator foundation will be removed down to grade.

If the unit has a wet or dry scrubber and/or a baghouse, the dismantlement will start at the stack and work back towards the boiler to avoid dismantlement activities interferences.

3.3.2.4 *Phase 4 Demolition - Yard Demolition*

This phase removes equipment and materials external to the boiler and turbine areas. Underground piping, conduit, and duct banks will be abandoned in place with the exception of the circulating water pipe. The concrete reinforced circulating water pipes will be excavated, collapsed by crushing, and backfilled. Electrical man-holes will be collapsed by crushing and backfilled. Special care will be taken to assure that any materials left in the ground will not adversely impact site drainage.

3.3.2.5 *Phase 5 - Final Site Grading and Drainage*

Final grading and drainage includes a minimum amount of grading to assure that the site drainage facilities remain in place and includes final seeding of the site.

3.3.3 Dismantlement Activities for a Combustion Turbine Site

The demolition contractor will be structured into several crews that will bring equipment and materials to the ground. A separate dedicated crew will be responsible for classifying the scrap by type and removing the scrap from the site.

The combustion turbines, auxiliary equipment, and buildings will be demolished in a phased and sequential manner to assure worker safety and to minimize any interferences with surrounding equipment. Please refer to the man-power loaded schedule and graphs in Appendix A for the details of each demolition phase.

Final grading and drainage includes a minimum amount of grading to assure that the site drainage facilities remain in place and includes final seeding of the site.

3.3.4 Dismantlement Activities for Common Facilities

The demolition contractor will be structured into several crews that will bring equipment and materials to the ground. A separate dedicated crew will be responsible for classifying the scrap by type and removing the scrap from the site.

The common facilities dismantlement activities consist primarily of the removal of chimneys, fuel yard equipment, removal of site-specific common equipment, and the removal of facility buildings. The phasing of the common dismantlement processes are site specific and will be determined during the pre-dismantlement activity phase of the project.

Final grading and drainage includes a minimum amount of grading to assure that the site drainage facilities remain in place and includes final seeding of the site.

3.3.5 Dismantlement Activities for Wind Generation Plants

Each wind turbine will be brought down to the ground. The scrap structural steel, generators, and gearboxes will be loaded onto trucks and transported to the appropriate recycling facility. The turbine blades are fabricated from polyester thermoset glass reinforced plastic which is currently not a recyclable material and will have to be landfilled. The turbine blades will be cut into pieces on site, loaded onto 53-foot trailers, and transported to the appropriate landfill. The underground collection cables will be removed and the cable will be recycled. The foundation support columns will be removed down to the foundation bases. The plant roads will be removed by removing the geo-fabric and gravel.

3.4 PROJECT CLOSURE ACTIVITIES

This phase of the project confirms that the remediation and reclamation of the site has been successfully complete and that all required "record" documentation needed by KCP&L is complete and on file.

3.5 SCRAP METAL VALUES

Scrap metal weights were developed for Iatan Unit 1 based on the actual quantities and materials documented in the final construction reports. These scrap metal weights were applied to the other coal-fired units using the AACE International Capacity Factor Method.

Scrap metal weights for the combustion turbines were based on combustion turbine weights and generator weights for similar-sized combustion turbines and generators from previous Sega projects.

Scrap metal weights for the wind turbines were based on actual quantities and materials documented in the shipping bill of lading found in the original plant construction documentation.

Please see Appendix B for the opinion of current average scrap values for each unit.

SECTION 4

APPENDICES

APPENDIX A

OPINIONS OF COSTS BY UNITS

MONTROSE GENERATING STATION

MONTROSE GENERATING STATION

The Montrose Generating Station consists of three coal-fired power plants.

Montrose Unit 1 has an SPP-accredited unit rating of 170 MW and was placed in service in 1958. Unit 1 has a sub-critical Combustion Engineering boiler and a General Electric turbine. Lake water is used for condenser cooling. Unit 1 has an electrostatic precipitator for particulate removal.

Montrose Unit 2 has an SPP-accredited unit rating of 164 MW and was placed in service in 1960. Unit 2 has a sub-critical Combustion Engineering boiler and a General Electric turbine. Lake water is used for condenser cooling. Unit 2 has an electrostatic precipitator for particulate removal.

Montrose Unit 3 has an SPP-accredited unit rating of 176 MW and was placed in service in 1964. Unit 3 has a sub-critical Combustion Engineering boiler and a Westinghouse turbine. Lake water is used for condenser cooling. Unit 3 has an electrostatic precipitator for particulate removal.

The Montrose fuel yard has a rotary car dumper to unload unit trains of coal. Coal is stored in a common fuel yard. Fuel is reclaimed from the common fuel yard via a reclaim pit. Coal is transferred from the common conveyor system to dedicated unit conveyors (located near the final coal transfer points for each unit).

All three Montrose units have a fuel oil igniter system. The units are supplied with fuel oil from a common fuel oil unloading and storage facility.

All three units beneficially use coal combustion products off site. Coal combustion products that are not beneficially used off site are disposed of in the on-site solid waste landfill.

The following are the major systems and equipment that were included in the retirement and dismantlement of each unit and the major systems and equipment that were considered common (additional details are listed in the attached retirement and dismantlement schedules included in this Appendix).

It should be noted that Unit 1 at Montrose Generating Station includes KCP&L's actual retirement costs. The costs for retirement were directly supplied by the Owner and were incorporated into the study analysis. These costs were not developed by Sega using the MS Project rate sheet and resource loaded schedule as shown in other cases.

MONTROSE UNIT 1

1. Boiler and boiler auxiliaries.
2. Turbine, heat balance equipment, and turbine auxiliaries.
3. Electrostatic precipitator.
4. Circulating water intake structure.
5. Dedicated Unit 1 fuel handling equipment.
6. Dedicated Unit 1 fuel oil equipment.

MONTROSE UNIT 2

1. Boiler and boiler auxiliaries.
2. Turbine, heat balance equipment, and turbine auxiliaries.
3. Electrostatic precipitator.
4. Circulating water intake structure.
5. Dedicated Unit 2 fuel handling equipment.
6. Dedicated Unit 2 fuel oil equipment.

MONTROSE UNIT 3

1. Boiler and boiler auxiliaries.
2. Turbine, heat balance equipment, and turbine auxiliaries.
3. Electrostatic precipitator.
4. Circulating water intake structure and piping.
5. Dedicated Unit 3 fuel handling equipment.
6. Dedicated Unit 3 fuel oil equipment.

COMMON

1. Administration building.
2. Fuel yard office building.
3. Training building.
4. Warehouses.
5. Maintenance shops.
6. Water treatment.
7. Miscellaneous small buildings and enclosures
8. Common fuel handling equipment.
9. Fuel oil storage and unloading.
10. Fire water systems.
11. Stacks (three).
12. Landfill.

UNIT 1

Exhibit RAK-9

Montrose 1 Retirement

Owner Costs				
Pre-Retirement Activities		$120,000		
Retirement Activities		$1,704,382		
Post-Retirement Activities		$26,564		
Owner Direct Total			$1,850,946	
Owner Internal Costs	5.00%		$92,547	
Owner Contingency:	5.00%		$97,175	
Montrose 1 Retirement Cost:				$2,040,668

Activities Required by Permit or Regulation

Asbestos Abatement	$5,699,874	
Activities Required by Permit or Regulation		$5,699,874

Montrose 1 Dismantlement

Owner Costs				
Pre-Dismantlement Activities		$478,260		
Overhead During Dismantlement		$868,081		
Post-Dismantlement Activities		$30,097		
Owner Costs Total			$1,376,438	
Demolition General Contractor (DGC) Costs				
Site Management		$419,630		
Equipment Rental		$707,233		
Consumables		$705,579		
Scrap Crew(s)		$689,061		
Dismantlement*		$3,391,803		
DGC Insurance	2.00%	$118,266		
Contingency/Profit	15.00%	$904,736		
Performance Bond	2.00%	$138,726		
Contractor Costs Total:			$7,075,034	
Total:				$8,451,471
Owner Internal Costs:	5.00%			$422,574
Owner Contingency:	25.00%			$2,218,511
Montrose Unit 1 Dismantlement Opinion of Probable Cost:				$11,092,556

UNIT 2

Montrose 2 Retirement

Owner Costs				
Pre-Retirement Activities		$106,968		
Retirement Activities		$272,542		
Post-Retirement Activities		$28,182		
Owner Direct Total			$407,692	
Owner Internal Costs	5.00%		$20,385	
Owner Contingency:	25.00%		$107,019	
Montrose 2 Retirement Opinion of Probable Cost:				$535,095

Activities Required by Permit or Regulation

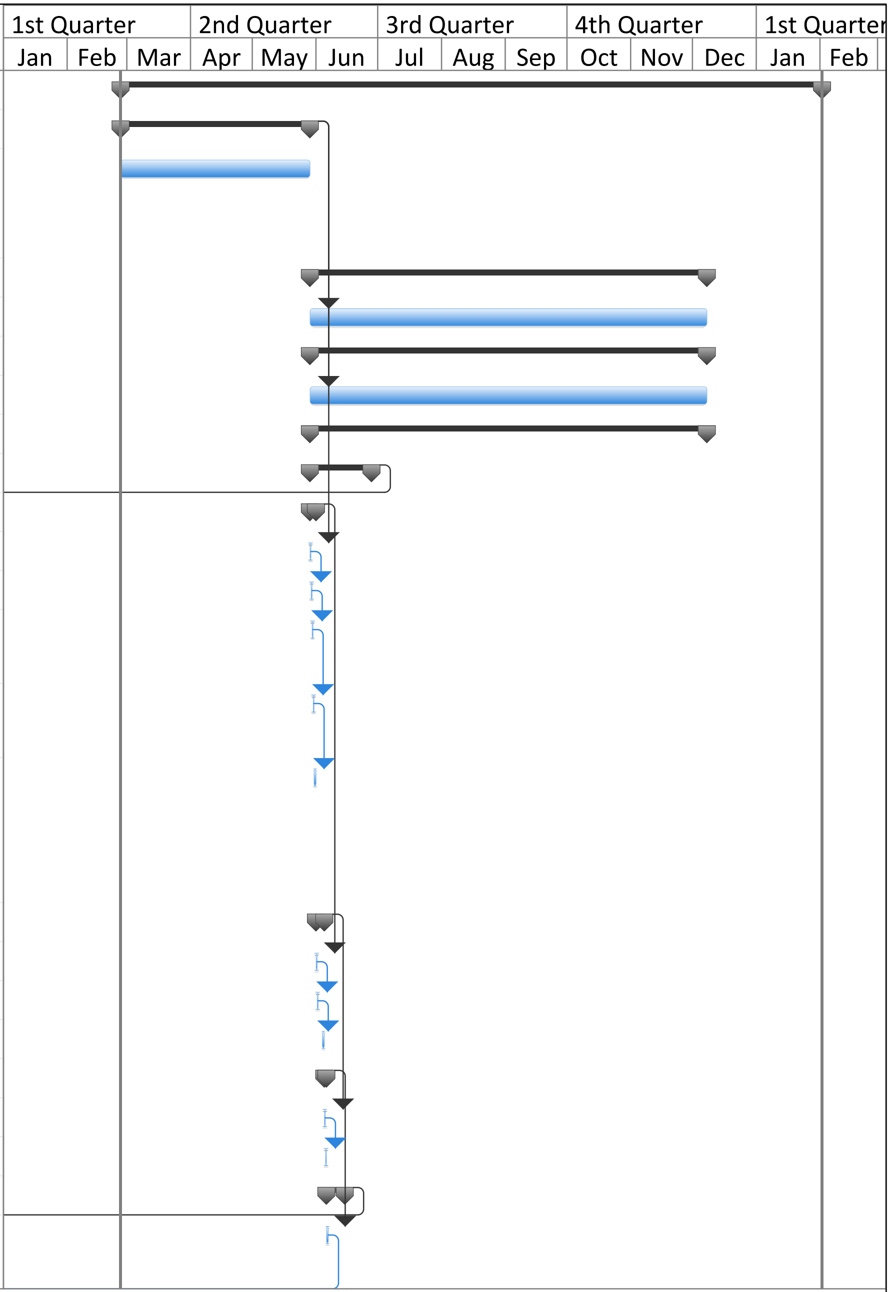
Asbestos Abatement	$5,699,874	
Activities Required by Permit or Regulation		$5,699,874

ID	Task Name	Remaining
1	**Montrose 2 Retirement**	**$407,691.60**
2	**Pre-Engineering**	**$106,967.52**
3	Permit review and engineering analysis, establish isolation points, and confirm fuel yard inventory has been reduced to zero tons.	$106,967.52
4	**KCL&L Overhead Costs**	**$91,361.92**
5	KCP&L Retirement Manager	$91,361.92
6	**Equipment Rentals**	**$30,624.48**
7	Vacuum truck	$30,624.48
8	**Retirement**	**$150,555.28**
9	**Electrical**	**$20,553.92**
10	**Medium and Low Voltage Draw out Switchgear**	**$2,903.52**
11	De-energize all buses at the source.	$483.92
12	Open all circuit breakers.	$483.92
13	Rack all circuit breakers into the fully withdrawn, disconnected position.	$483.92
14	Verify that the closing/tripping springs are discharged.	$483.92
15	De-energize control power and auxiliary power circuits of each circuit breaker at the source and by opening control power circuit breakers or removing fuses in each breaker cubicle.	$967.84
16	**Motor Control Centers**	**$1,935.68**
17	De-energize all buses at the source.	$483.92
18	Open all circuit breakers and disconnect switches.	$483.92
19	Remove all fuses in control circuits.	$967.84
20	**Low-voltage Switchboards and Panelboards**	**$967.84**
21	De-energize all buses at the source.	$483.92
22	Open all circuit breakers and disconnect switches.	$483.92
23	**Oil-Filled Power Transformers**	**$6,072.32**
24	De-energize all transformer primaries and verify that the secondary is de-energized.	$967.84
25	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	$967.84
26	Drain and dispose of oil.	$2,867.52
27	Clean up and dispose of oil on surface areas around the transformers on in containment pits.	$1,269.12
28	**Dry-type Power Transformers**	**$1,935.68**
29	De-energize all transformer primaries and verify that the secondary is de-energized.	$967.84
30	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	$967.84
31	**Motors**	**$6,738.88**
32	De-energize all primary power at the source.	$1,935.68
33	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	$1,935.68
34	Drain lube oil system (if applicable) and dispose of oil.	$2,867.52
35	**Coal Handling**	**$30,905.36**
36	Empty all transfer hoppers.	$1,853.84

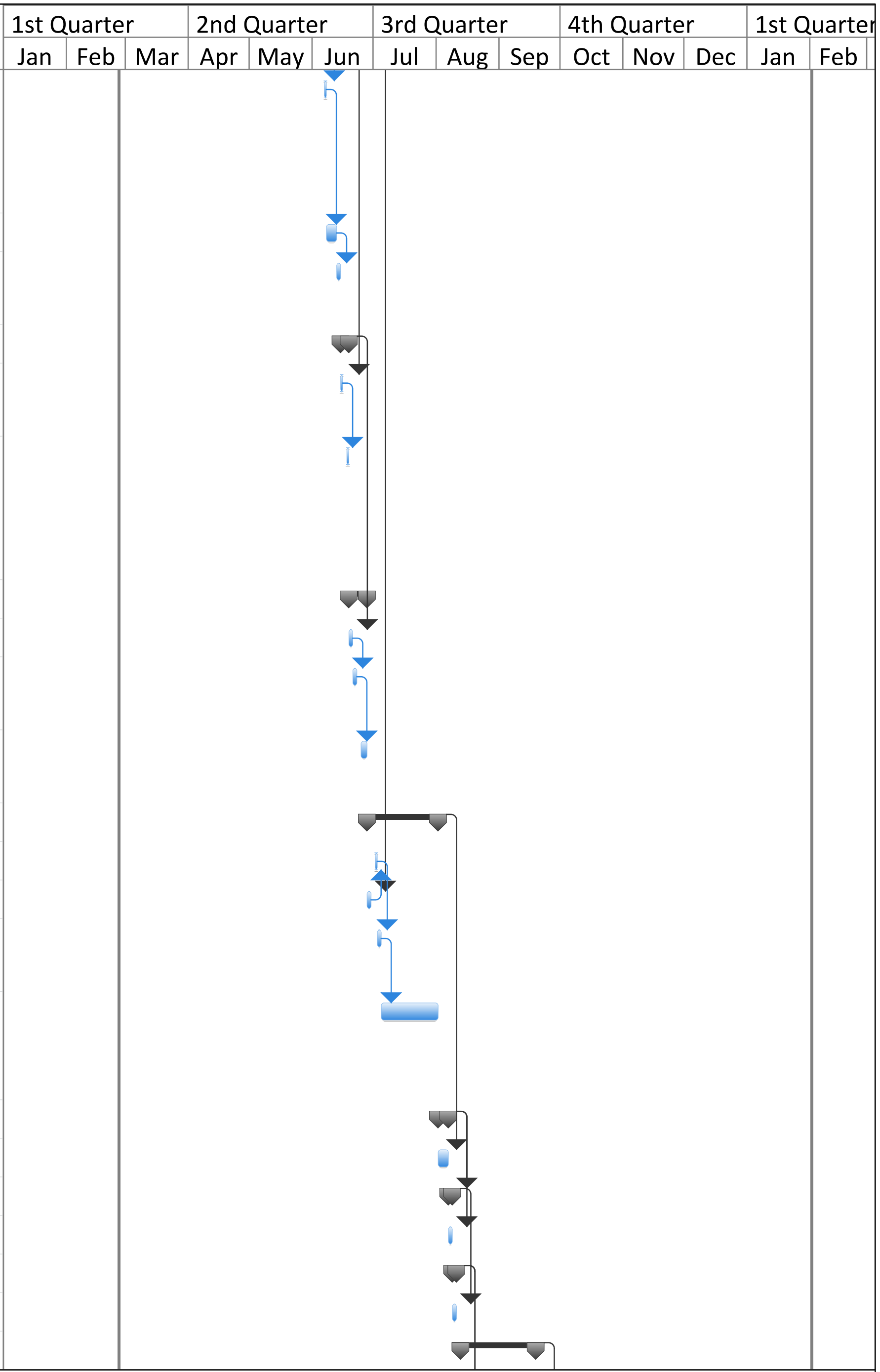
ID	Task Name	Remaining
37	Burn out coal silos.	$1,834.56
38	Confirm all fuel lines, conveyors and trippers are clear of fuel.	$1,834.56
39	Perform cleaning of the coal handling equipment to assure that all coal and coal dust has been removed from site.	$25,382.40
40	**Fuel Oil and Igniter System**	**$2,751.84**
41	Drain fuel oil system	$2,751.84
42	**Waste Oil System**	**$1,834.56**
43	Drain all waste oil systems	$1,834.56
44	**Boiler Chemical Feed**	**$1,834.56**
45	Drain all chemical feed tanks.	$1,834.56
46	**Boiler**	**$30,927.60**
47	Open boiler doors.	$955.84
48	Gas side - perform cleaning of the boiler and bottom ash system.	$25,382.40
49	Drain boiler, drum, downcomers and headers.	$917.28
50	Open drum doors.	$955.84
51	Drain and clean the submerged flight conveyor system.	$2,716.24
52	**Stack and Ductwork**	**$13,647.04**
53	Open ductwork doors.	$955.84
54	Perform cleaning of the ductwork.	$12,691.20
55	**Condensate and Feedwater Piping**	**$1,834.56**
56	Drain water from the system.	$917.28
57	Leave open vents and drains.	$917.28
58	**Feedwater heaters**	**$2,751.84**
59	Drain feedwater heaters	$917.28
60	Leave open vents and drains.	$1,834.56
61	**Deaerator and Deaerator Storage Tank**	**$1,834.56**
62	Drain Deaerator and Storage	$917.28
63	Leave open vents and drains.	$917.28
64	**Precipitator**	**$15,358.64**
65	Multiple cleaning cycles for collection plates.	$2,751.84
66	Clear hoppers of all ash	$3,103.68
67	Disconnect tranformers.	$2,160.96
68	Mechanically secure all compartment dampers and hopper outlet valves in open position.	$955.84
69	Disconnect ash transport piping and washdown baghouse hoppers and interior of casing.	$1,571.12
70	Install bird screens across hopper ash outlet and ash line flanges.	$955.84
71	Padlock or tack weld all hopper doors shut. (note: if ash hopper doors are indoors, they could be removed and the opening covered with bird screens.)	$955.84
72	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	$2,903.52
73	**Turbine(s) and Condenser**	**$5,715.76**
74	Drain hotwell and leave doors open.	$936.56
75	Open main turbine doors.	$955.84
76	Open bfp turbine doors.	$955.84
77	Remove lube oil.	$2,867.52

ID	Task Name	Remaining
78	**Generator**	**$6,618.48**
79	Verify that generator circuit breaker is open and racked out or that high-voltage disconnect switch on substation side of GSU transformer is locked in the open position.	$483.92
80	Verify that generator field breaker or contactor (if applicable) is open.	$483.92
81	De-energize power supplies to generator excitation system at the source.	$483.92
82	De-energize AC and DC power supplies to generator and exciter space heaters, cooling equipment, controls, lighting, etc. at the source and open circuit breakers or remove fuses at the generator and exciter.	$483.92
83	Drain generator and exciter cooling water systems (if applicable).	$936.56
84	Disconnect and remove hydrogen gas tanks and purge generator hydrogen system.	$1,834.56
85	Disconnect and remove fire protection system gas/foam tanks and purge fire protection system.	$1,911.68
86	**Circulation Water and Turbine Cooling Water System**	**$3,707.68**
87	Drain.	$1,834.56
88	Open water box doors.	$955.84
89	Drain any circulating water chemical feed tanks.	$917.28
90	**Compressed Air System**	**$917.28**
91	Open vents and drains.	$917.28
92	**Auxiliary Steam System**	**$1,834.56**
93	Drain water from system.	$917.28
94	Remove aux boiler chemicals.	$917.28
95	**Auxiliary Cooling Water System**	**$917.28**
96	Drain water from system.	$917.28
97	**Condenser Air Extraction**	**$917.28**
98	Drain water from system.	$917.28
99	**Building Heating System**	**$917.28**
100	Drain water from system.	$917.28
101	**Battery System**	**$4,775.20**
102	De-energize all battery chargers from the source.	$483.92
103	Open all AC and DC circuit breakers and/or fused switches on battery chargers and disconnect cables from batteries.	$483.92
104	Remove and dispose of battery electrolyte.	$1,903.68
105	Remove and dispose of battery cells.	$1,269.12
106	Clean up and dispose of electrolyte on surface areas around batteries.	$634.56
107	**Post Retirement Activities**	**$28,182.40**
108	Post Retirement Activities	$28,182.40

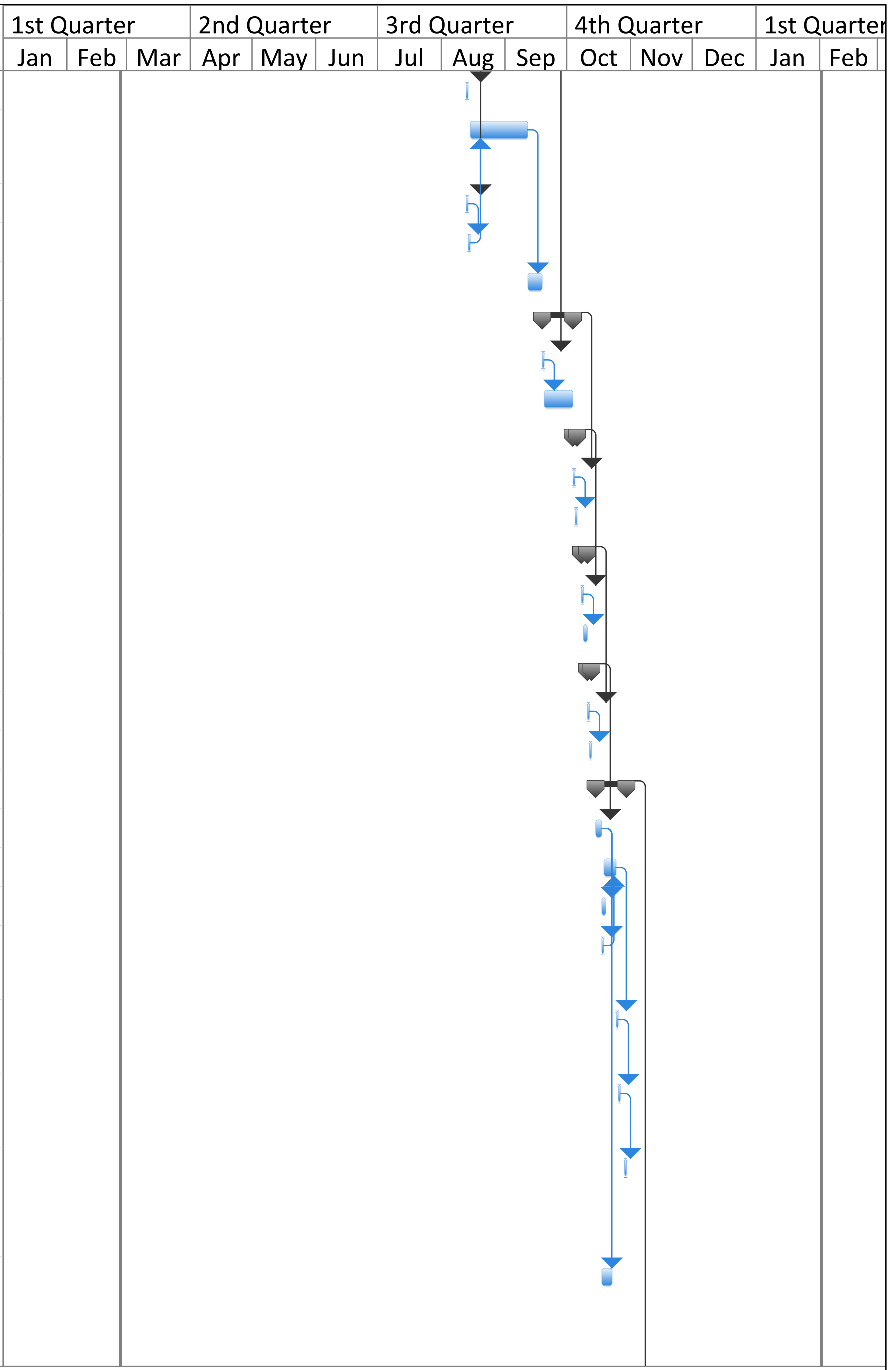
ID	Task Name	Duration
1	**Montrose 2 Retirement**	**245 days**
2	**Pre-Engineering**	**66 days**
3	Permit review and engineering analysis, establish isolation points, and confirm fuel yard inventory has been reduced to zero tons.	66 days
4	**KCL&L Overhead Costs**	**139 days**
5	KCP&L Retirement Manager	139 days
6	**Equipment Rentals**	**139 days**
7	Vacuum truck	139 days
8	**Retirement**	**139 days**
9	**Electrical**	**22 days**
10	**Medium and Low Voltage Draw out Switchgear**	**3 days**
11	De-energize all buses at the source.	0.5 days
12	Open all circuit breakers.	0.5 days
13	Rack all circuit breakers into the fully withdrawn, disconnected position.	0.5 days
14	Verify that the closing/tripping springs are discharged.	0.5 days
15	De-energize control power and auxiliary power circuits of each circuit breaker at the source and by opening control power circuit breakers or removing fuses in each breaker cubicle.	1 day
16	**Motor Control Centers**	**2 days**
17	De-energize all buses at the source.	0.5 days
18	Open all circuit breakers and disconnect switches.	0.5 days
19	Remove all fuses in control circuits.	1 day
20	**Low-voltage Switchboards and Panelboards**	**1 day**
21	De-energize all buses at the source.	0.5 days
22	Open all circuit breakers and disconnect switches.	0.5 days
23	**Oil-Filled Power Transformers**	**7 days**
24	De-energize all transformer primaries and verify that the secondary is de-energized.	1 day



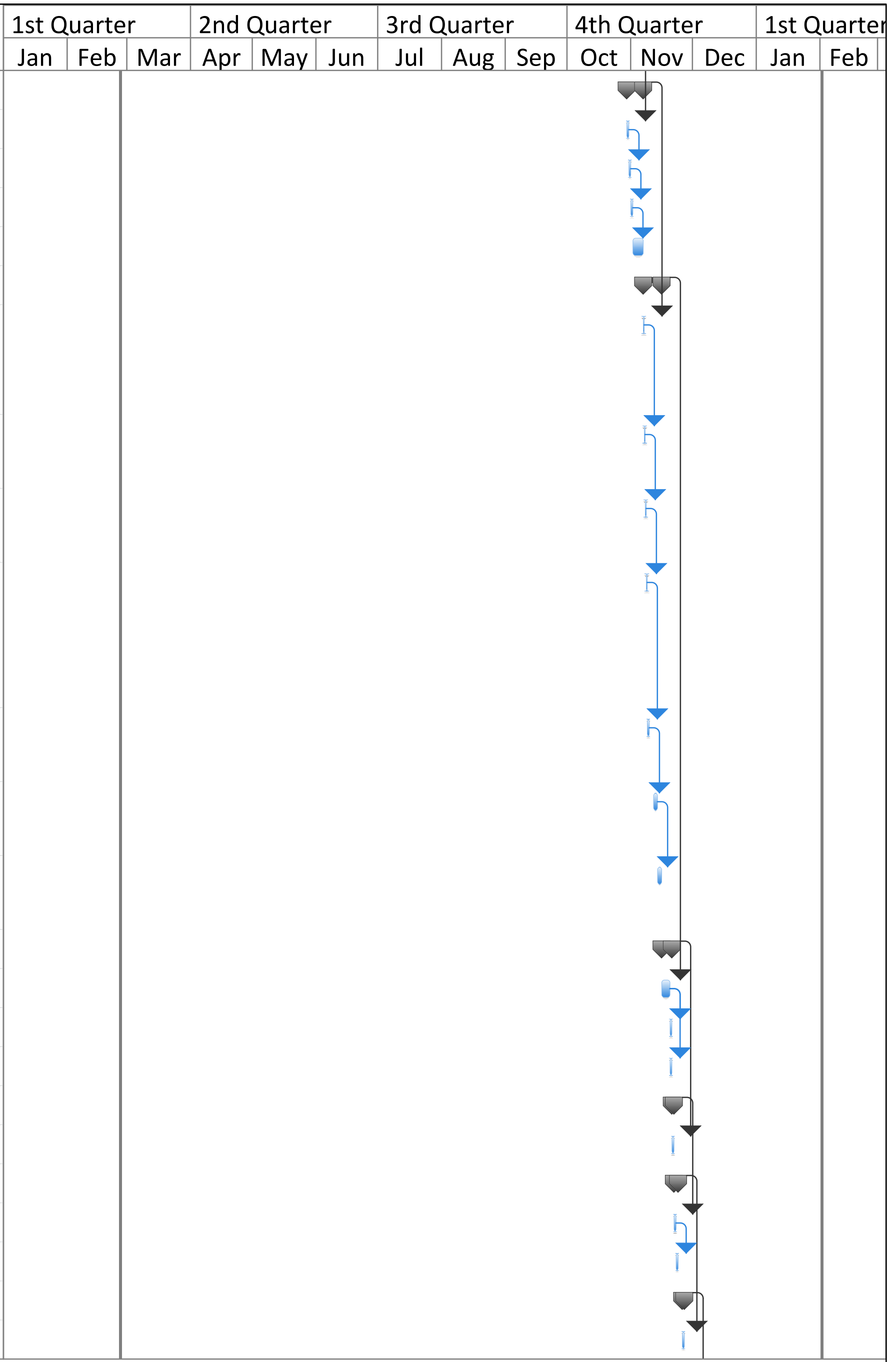
ID	Task Name	Duration
25	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	1 day
26	Drain and dispose of oil.	3 days
27	Clean up and dispose of oil on surface areas around the transformers on in containment pits.	2 days
28	**Dry-type Power Transformers**	**2 days**
29	De-energize all transformer primaries and verify that the secondary is de-energized.	1 day
30	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	1 day
31	**Motors**	**7 days**
32	De-energize all primary power at the source.	2 days
33	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	2 days
34	Drain lube oil system (if applicable) and dispose of oil.	3 days
35	**Coal Handling**	**25 days**
36	Empty all transfer hoppers.	1 day
37	Burn out coal silos.	2 days
38	Confirm all fuel lines, conveyors and trippers are clear of fuel.	2 days
39	Perform cleaning of the coal handling equipment to assure that all coal and coal dust has been removed from site.	20 days
40	**Fuel Oil and Igniter System**	**3 days**
41	Drain fuel oil system	3 days
42	**Waste Oil System**	**2 days**
43	Drain all waste oil systems	2 days
44	**Boiler Chemical Feed**	**2 days**
45	Drain all chemical feed tanks.	2 days
46	**Boiler**	**27 days**



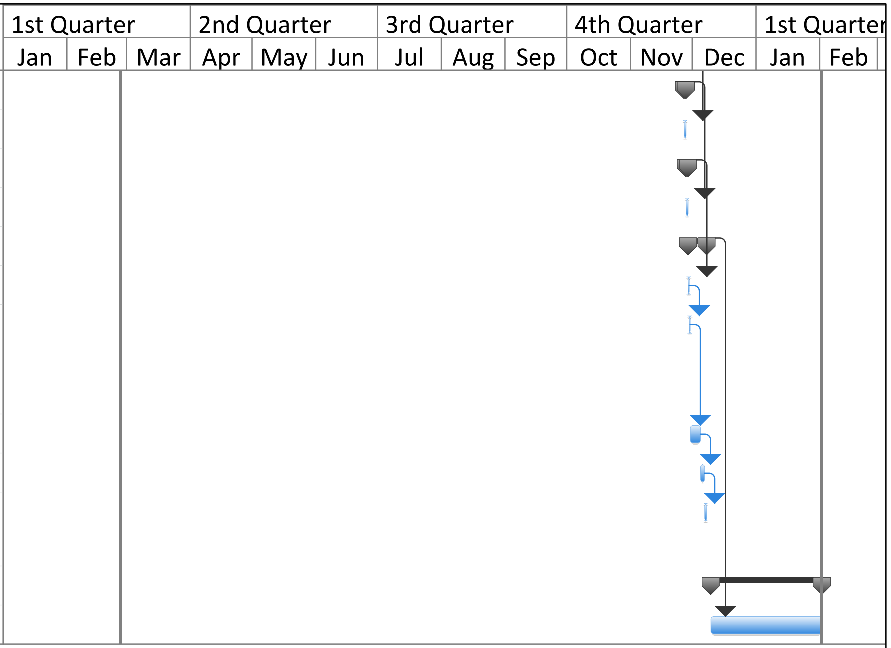
ID	Task Name	Duration
47	Open boiler doors.	1 day
48	Gas side - perform cleaning of the boiler and bottom ash system.	20 days
49	Drain boiler, drum, downcomers and headers.	1 day
50	Open drum doors.	1 day
51	Drain and clean the submerged flight conveyor system.	5 days
52	**Stack and Ductwork**	**11 days**
53	Open ductwork doors.	1 day
54	Perform cleaning of the ductwork.	10 days
55	**Condensate and Feedwater Piping**	**2 days**
56	Drain water from the system.	1 day
57	Leave open vents and drains.	1 day
58	**Feedwater heaters**	**3 days**
59	Drain feedwater heaters	1 day
60	Leave open vents and drains.	2 days
61	**Deaerator and Deaerator Storage Tank**	**2 days**
62	Drain Deaerator and Storage	1 day
63	Leave open vents and drains.	1 day
64	**Precipitator**	**11 days**
65	Multiple cleaning cycles for collection plates.	3 days
66	Clear hoppers of all ash	4 days
67	Disconnect tranformers.	2 days
68	Mechanically secure all compartment dampers and hopper outlet valves in open position.	1 day
69	Disconnect ash transport piping and washdown baghouse hoppers and interior of casing.	1 day
70	Install bird screens across hopper ash outlet and ash line flanges.	1 day
71	Padlock or tack weld all hopper doors shut. (note: if ash hopper doors are indoors, they could be removed and the opening covered with bird screens.)	1 day
72	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain ir service.	3 days



ID	Task Name	Duration
73	**Turbine(s) and Condenser**	**6 days**
74	Drain hotwell and leave doors open.	1 day
75	Open main turbine doors.	1 day
76	Open bfp turbine doors.	1 day
77	Remove lube oil.	3 days
78	**Generator**	**7 days**
79	Verify that generator circuit breaker is open and racked out or that high-voltage disconnect switch on substation side of GSU transformer is locked in the open position.	0.5 days
80	Verify that generator field breaker or contactor (if applicable) is open.	0.5 days
81	De-energize power supplies to generator excitation system at the source.	0.5 days
82	De-energize AC and DC power supplies to generator and exciter space heaters, cooling equipment, controls, lighting, etc. at the source and open circuit breakers or remove fuses at the generator and exciter.	0.5 days
83	Drain generator and exciter cooling water systems (if applicable).	1 day
84	Disconnect and remove hydrogen gas tanks and purge generator hydrogen system.	2 days
85	Disconnect and remove fire protection system gas/foam tanks and purge fire protection system.	2 days
86	**Circulation Water and Turbine Cooling Water System**	**3 days**
87	Drain.	2 days
88	Open water box doors.	1 day
89	Drain any circulating water chemical feed tanks.	1 day
90	**Compressed Air System**	**1 day**
91	Open vents and drains.	1 day
92	**Auxiliary Steam System**	**2 days**
93	Drain water from system.	1 day
94	Remove aux boiler chemicals.	1 day
95	**Auxiliary Cooling Water System**	**1 day**
96	Drain water from system.	1 day



ID	Task Name	Duration
97	**Condenser Air Extraction**	**1 day**
98	Drain water from system.	1 day
99	**Building Heating System**	**1 day**
100	Drain water from system.	1 day
101	**Battery System**	**7 days**
102	De-energize all battery chargers from the source.	0.5 days
103	Open all AC and DC circuit breakers and/or fused switches on battery chargers and disconnect cables from batteries.	0.5 days
104	Remove and dispose of battery electrolyte.	3 days
105	Remove and dispose of battery cells.	2 days
106	Clean up and dispose of electrolyte on surface areas around batteries.	1 day
107	**Post Retirement Activities**	**40 days**
108	Post Retirement Activities	40 days



Montrose 2 Dismantlement

Owner Costs				
Pre-Dismantlement Activities		$468,059		
Overhead During Dismantlement		$849,566		
Post-Dismantlement Activities		$29,455		
Owner Costs Total			$1,347,081	
Demolition General Contractor (DGC) Costs				
Site Management		$410,680		
Equipment Rental		$692,148		
Consumables		$690,530		
Scrap Crew(s)		$674,364		
Dismantlement*		$3,319,461		
DGC Insurance	2.00%	$115,744		
Contingency/Profit	15.00%	$885,439		
Performance Bond	2.00%	$135,767		
Contractor Costs Total:			$6,924,134	
Total:				$8,271,215
Owner Internal Costs:	5.00%			$413,561
Owner Contingency:	25.00%			$2,171,194
Montrose Unit 2 Dismantlement Opinion of Probable Cost:				$10,855,969

UNIT 3

Montrose 3 Retirement

Owner Costs				
Pre-Retirement Activities		$106,968		
Retirement Activities		$272,542		
Post-Retirement Activities		$28,182		
Owner Direct Total			$407,692	
Owner Internal Costs	5.00%		$20,385	
Owner Contingency:	25.00%		$107,019	
Montrose 3 Retirement Opinion of Probable Cost:				$535,095
<ins>Activities Required by Permit or Regulation</ins>				
Asbestos Abatement			$5,699,874	
Activities Required by Permit or Regulation				$5,699,874

ID	Task Name	Remaining
1	**Montrose 3 Retirement**	**$407,691.60**
2	**Pre-Engineering**	**$106,967.52**
3	Permit review and engineering analysis, establish isolation points, and confirm fuel yard inventory has been reduced to zero tons.	$106,967.52
4	**KCL&L Overhead Costs**	**$91,361.92**
5	KCP&L Retirement Manager	$91,361.92
6	**Equipment Rentals**	**$30,624.48**
7	Vacuum truck	$30,624.48
8	**Retirement**	**$150,555.28**
9	**Electrical**	**$20,553.92**
10	**Medium and Low Voltage Draw out Switchgear**	**$2,903.52**
11	De-energize all buses at the source.	$483.92
12	Open all circuit breakers.	$483.92
13	Rack all circuit breakers into the fully withdrawn, disconnected position.	$483.92
14	Verify that the closing/tripping springs are discharged.	$483.92
15	De-energize control power and auxiliary power circuits of each circuit breaker at the source and by opening control power circuit breakers or removing fuses in each breaker cubicle.	$967.84
16	**Motor Control Centers**	**$1,935.68**
17	De-energize all buses at the source.	$483.92
18	Open all circuit breakers and disconnect switches.	$483.92
19	Remove all fuses in control circuits.	$967.84
20	**Low-voltage Switchboards and Panelboards**	**$967.84**
21	De-energize all buses at the source.	$483.92
22	Open all circuit breakers and disconnect switches.	$483.92
23	**Oil-Filled Power Transformers**	**$6,072.32**
24	De-energize all transformer primaries and verify that the secondary is de-energized.	$967.84
25	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	$967.84
26	Drain and dispose of oil.	$2,867.52
27	Clean up and dispose of oil on surface areas around the transformers on in containment pits.	$1,269.12
28	**Dry-type Power Transformers**	**$1,935.68**
29	De-energize all transformer primaries and verify that the secondary is de-energized.	$967.84
30	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	$967.84
31	**Motors**	**$6,738.88**
32	De-energize all primary power at the source.	$1,935.68
33	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	$1,935.68
34	Drain lube oil system (if applicable) and dispose of oil.	$2,867.52
35	**Coal Handling**	**$30,905.36**
36	Empty all transfer hoppers.	$1,853.84

ID	Task Name	Remaining
37	Burn out coal silos.	$1,834.56
38	Confirm all fuel lines, conveyors and trippers are clear of fuel.	$1,834.56
39	Perform cleaning of the coal handling equipment to assure that all coal and coal dust has been removed from site.	$25,382.40
40	**Fuel Oil and Igniter System**	**$2,751.84**
41	Drain fuel oil system	$2,751.84
42	**Waste Oil System**	**$1,834.56**
43	Drain all waste oil systems	$1,834.56
44	**Boiler Chemical Feed**	**$1,834.56**
45	Drain all chemical feed tanks.	$1,834.56
46	**Boiler**	**$30,927.60**
47	Open boiler doors.	$955.84
48	Gas side - perform cleaning of the boiler and bottom ash system.	$25,382.40
49	Drain boiler, drum, downcomers and headers.	$917.28
50	Open drum doors.	$955.84
51	Drain and clean the submerged flight conveyor system.	$2,716.24
52	**Stack and Ductwork**	**$13,647.04**
53	Open ductwork doors.	$955.84
54	Perform cleaning of the ductwork.	$12,691.20
55	**Condensate and Feedwater Piping**	**$1,834.56**
56	Drain water from the system.	$917.28
57	Leave open vents and drains.	$917.28
58	**Feedwater heaters**	**$2,751.84**
59	Drain feedwater heaters	$917.28
60	Leave open vents and drains.	$1,834.56
61	**Deaerator and Deaerator Storage Tank**	**$1,834.56**
62	Drain Deaerator and Storage	$917.28
63	Leave open vents and drains.	$917.28
64	**Precipitator**	**$15,358.64**
65	Multiple cleaning cycles for collection plates.	$2,751.84
66	Clear hoppers of all ash	$3,103.68
67	Disconnect tranformers.	$2,160.96
68	Mechanically secure all compartment dampers and hopper outlet valves in open position.	$955.84
69	Disconnect ash transport piping and washdown baghouse hoppers and interior of casing.	$1,571.12
70	Install bird screens across hopper ash outlet and ash line flanges.	$955.84
71	Padlock or tack weld all hopper doors shut. (note: if ash hopper doors are indoors, they could be removed and the opening covered with bird screens.)	$955.84
72	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	$2,903.52
73	**Turbine(s) and Condenser**	**$5,715.76**
74	Drain hotwell and leave doors open.	$936.56
75	Open main turbine doors.	$955.84
76	Open bfp turbine doors.	$955.84
77	Remove lube oil.	$2,867.52

Exhibit RAK-9

ID	Task Name	Remaining
78	**Generator**	**$6,618.48**
79	Verify that generator circuit breaker is open and racked out or that high-voltage disconnect switch on substation side of GSU transformer is locked in the open position.	$483.92
80	Verify that generator field breaker or contactor (if applicable) is open.	$483.92
81	De-energize power supplies to generator excitation system at the source.	$483.92
82	De-energize AC and DC power supplies to generator and exciter space heaters, cooling equipment, controls, lighting, etc. at the source and open circuit breakers or remove fuses at the generator and exciter.	$483.92
83	Drain generator and exciter cooling water systems (if applicable).	$936.56
84	Disconnect and remove hydrogen gas tanks and purge generator hydrogen system.	$1,834.56
85	Disconnect and remove fire protection system gas/foam tanks and purge fire protection system.	$1,911.68
86	**Circulation Water and Turbine Cooling Water System**	**$3,707.68**
87	Drain.	$1,834.56
88	Open water box doors.	$955.84
89	Drain any circulating water chemical feed tanks.	$917.28
90	**Compressed Air System**	**$917.28**
91	Open vents and drains.	$917.28
92	**Auxiliary Steam System**	**$1,834.56**
93	Drain water from system.	$917.28
94	Remove aux boiler chemicals.	$917.28
95	**Auxiliary Cooling Water System**	**$917.28**
96	Drain water from system.	$917.28
97	**Condenser Air Extraction**	**$917.28**
98	Drain water from system.	$917.28
99	**Building Heating System**	**$917.28**
100	Drain water from system.	$917.28
101	**Battery System**	**$4,775.20**
102	De-energize all battery chargers from the source.	$483.92
103	Open all AC and DC circuit breakers and/or fused switches on battery chargers and disconnect cables from batteries.	$483.92
104	Remove and dispose of battery electrolyte.	$1,903.68
105	Remove and dispose of battery cells.	$1,269.12
106	Clean up and dispose of electrolyte on surface areas around batteries.	$634.56
107	**Post Retirement Activities**	**$28,182.40**
108	Post Retirement Activities	$28,182.40

Exhibit RAK-9

ID	Task Name	Duration
1	**Montrose 3 Retirement**	**245 days**
2	**Pre-Engineering**	**66 days**
3	Permit review and engineering analysis, establish isolation points, and confirm fuel yard inventory has been reduced to zero tons.	66 days
4	**KCL&L Overhead Costs**	**139 days**
5	KCP&L Retirement Manager	139 days
6	**Equipment Rentals**	**139 days**
7	Vacuum truck	139 days
8	**Retirement**	**139 days**
9	**Electrical**	**22 days**
10	**Medium and Low Voltage Draw out Switchgear**	**3 days**
11	De-energize all buses at the source.	0.5 days
12	Open all circuit breakers.	0.5 days
13	Rack all circuit breakers into the fully withdrawn, disconnected position.	0.5 days
14	Verify that the closing/tripping springs are discharged.	0.5 days
15	De-energize control power and auxiliary power circuits of each circuit breaker at the source and by opening control power circuit breakers or removing fuses in each breaker cubicle.	1 day
16	**Motor Control Centers**	**2 days**
17	De-energize all buses at the source.	0.5 days
18	Open all circuit breakers and disconnect switches.	0.5 days
19	Remove all fuses in control circuits.	1 day
20	**Low-voltage Switchboards and Panelboards**	**1 day**
21	De-energize all buses at the source.	0.5 days
22	Open all circuit breakers and disconnect switches.	0.5 days
23	**Oil-Filled Power Transformers**	**7 days**
24	De-energize all transformer primaries and verify that the secondary is de-energized.	1 day

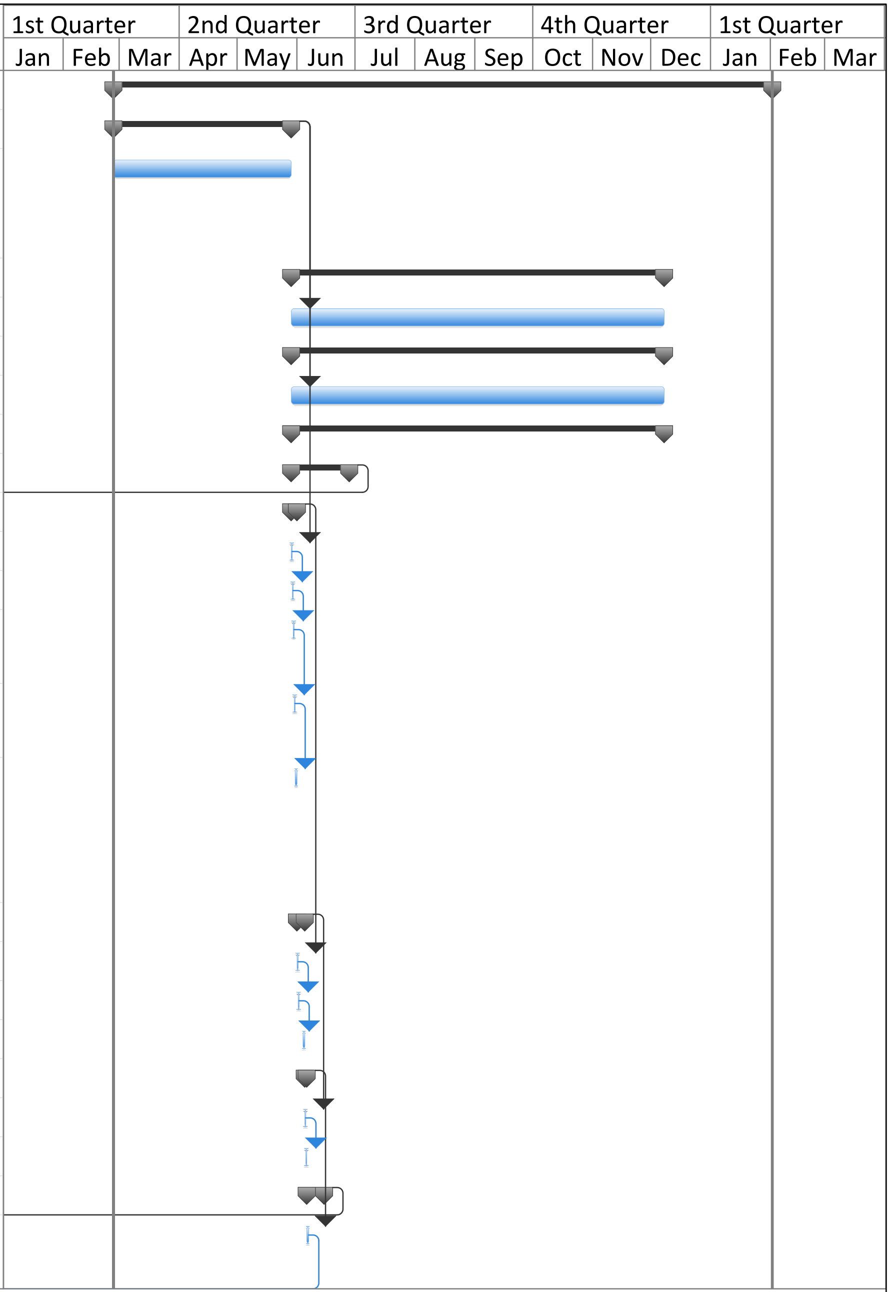
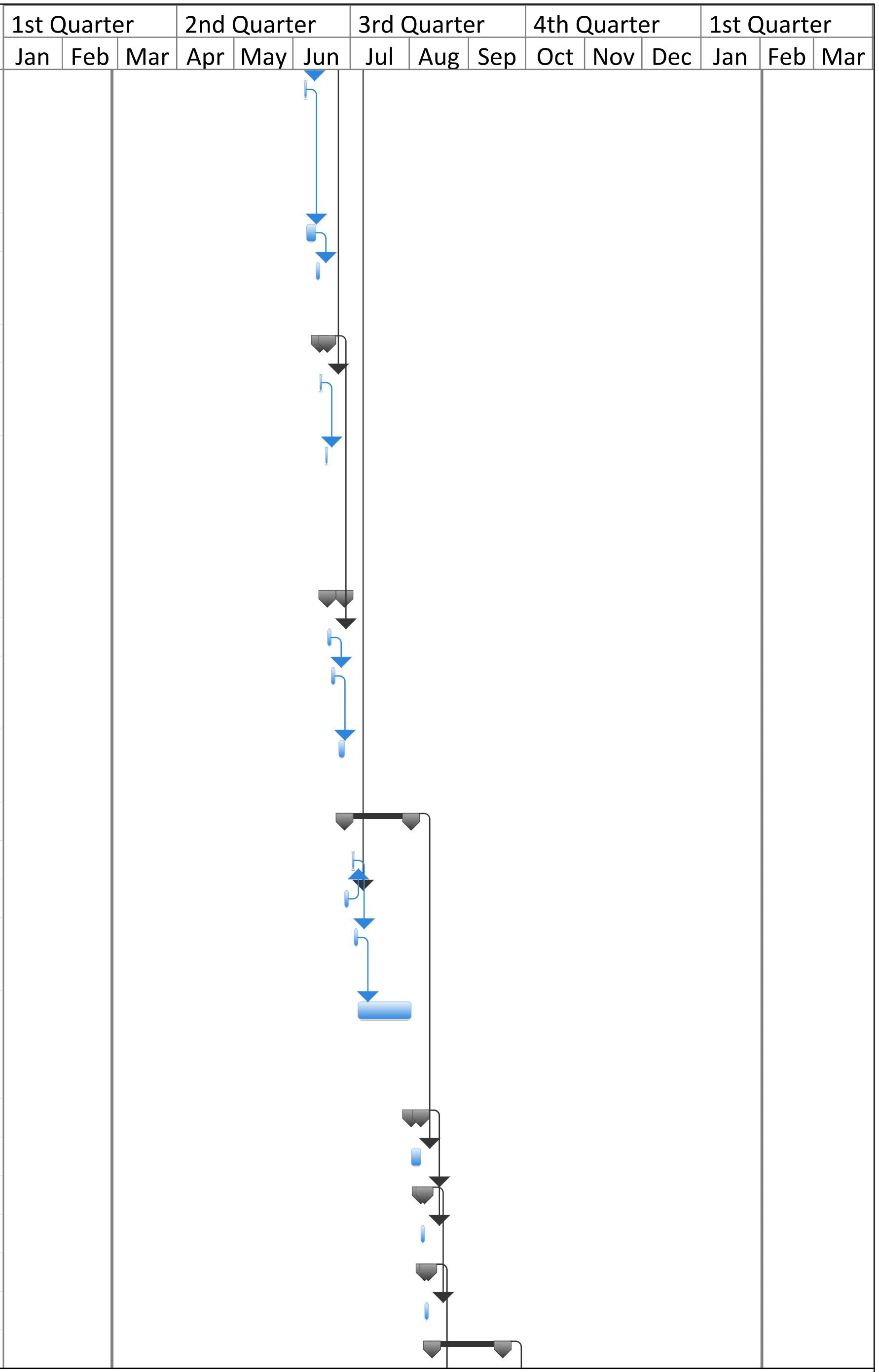
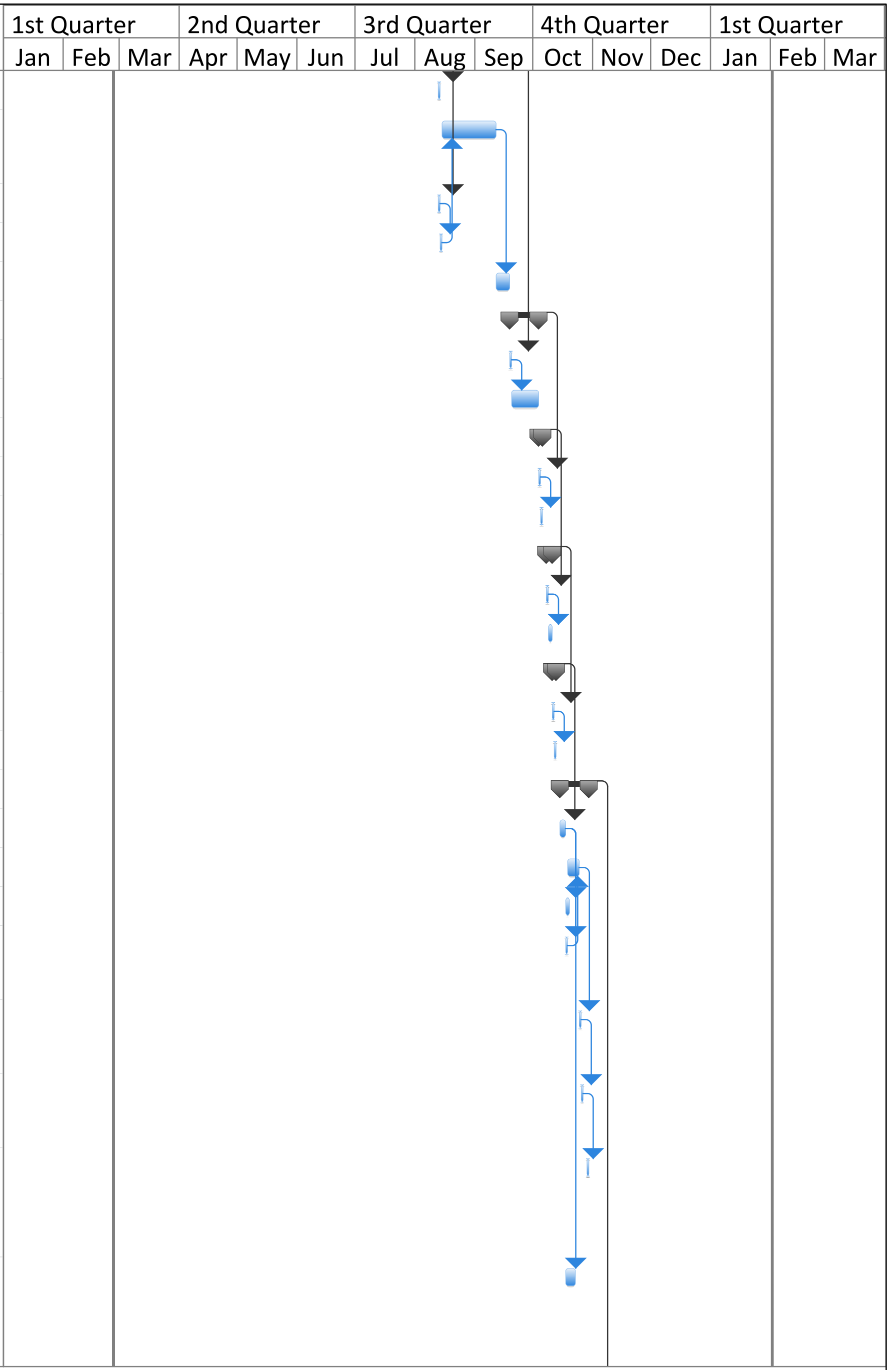


Exhibit RAK-9

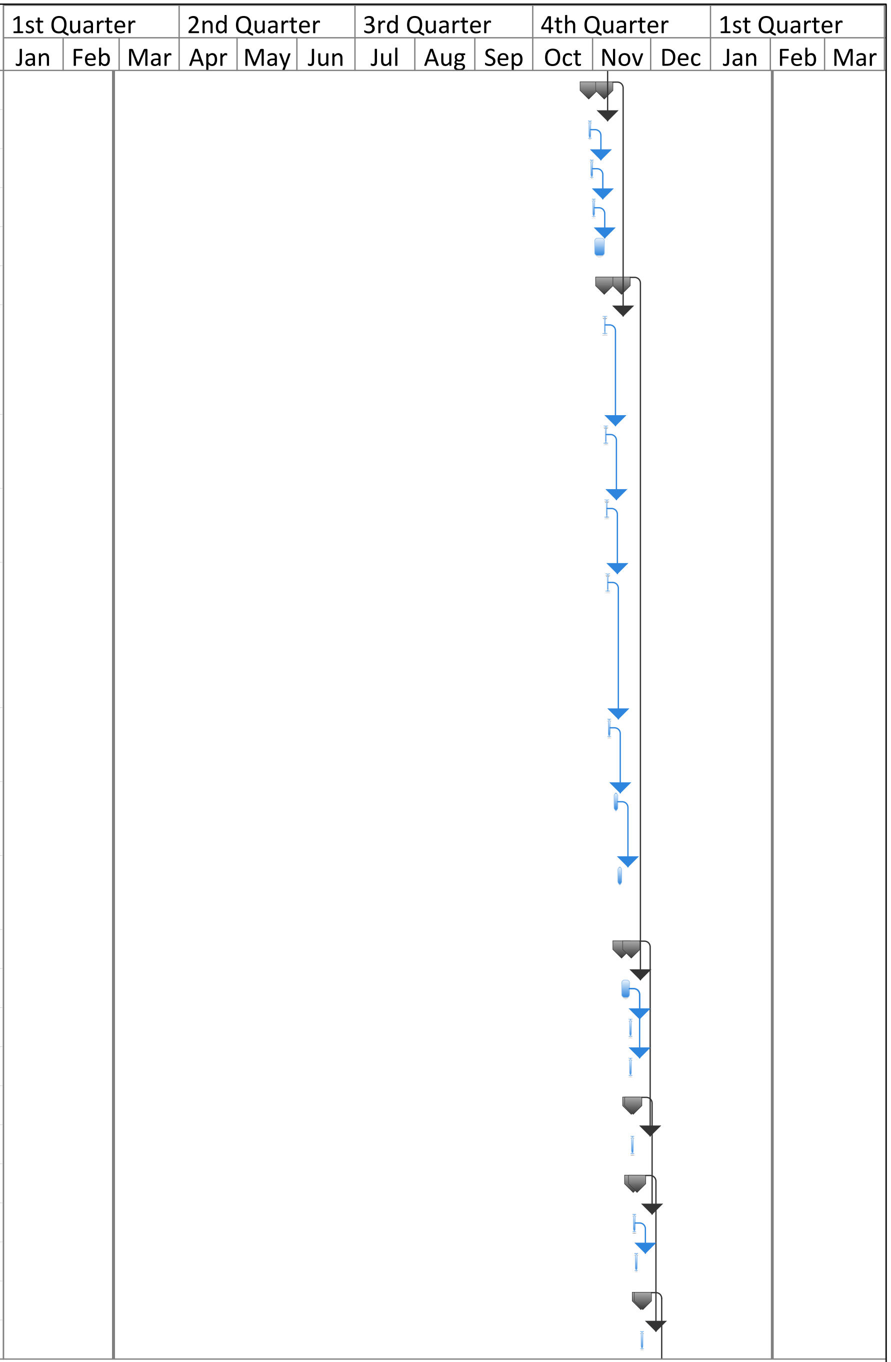
ID	Task Name	Duration
25	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	1 day
26	Drain and dispose of oil.	3 days
27	Clean up and dispose of oil on surface areas around the transformers on in containment pits.	2 days
28	**Dry-type Power Transformers**	**2 days**
29	De-energize all transformer primaries and verify that the secondary is de-energized.	1 day
30	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	1 day
31	**Motors**	**7 days**
32	De-energize all primary power at the source.	2 days
33	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	2 days
34	Drain lube oil system (if applicable) and dispose of oil.	3 days
35	**Coal Handling**	**25 days**
36	Empty all transfer hoppers.	1 day
37	Burn out coal silos.	2 days
38	Confirm all fuel lines, conveyors and trippers are clear of fuel.	2 days
39	Perform cleaning of the coal handling equipment to assure that all coal and coal dust has been removed from site.	20 days
40	**Fuel Oil and Igniter System**	**3 days**
41	Drain fuel oil system	3 days
42	**Waste Oil System**	**2 days**
43	Drain all waste oil systems	2 days
44	**Boiler Chemical Feed**	**2 days**
45	Drain all chemical feed tanks.	2 days
46	**Boiler**	**27 days**



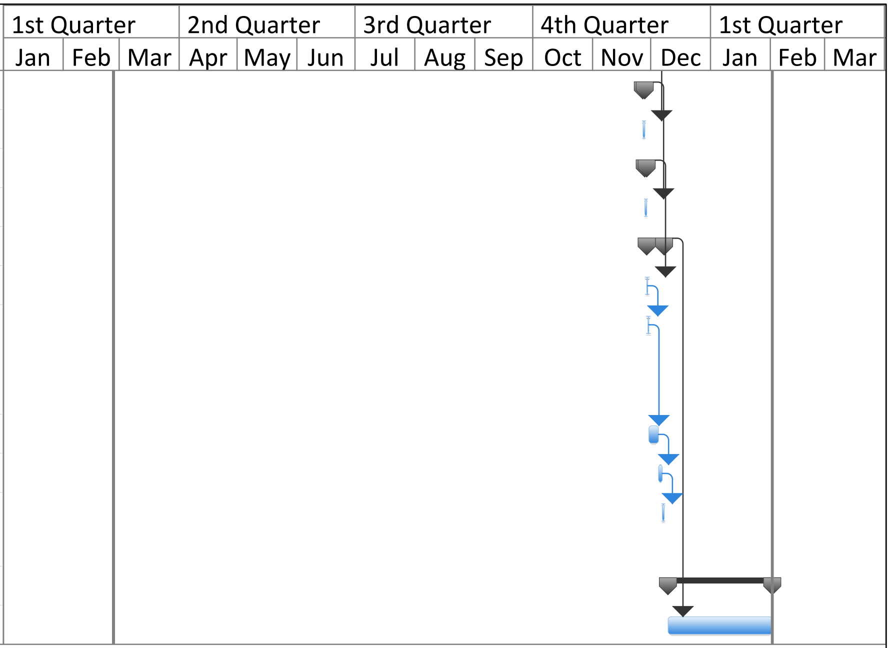
ID	Task Name	Duration
47	Open boiler doors.	1 day
48	Gas side - perform cleaning of the boiler and bottom ash system.	20 days
49	Drain boiler, drum, downcomers and headers.	1 day
50	Open drum doors.	1 day
51	Drain and clean the submerged flight conveyor system.	5 days
52	**Stack and Ductwork**	**11 days**
53	Open ductwork doors.	1 day
54	Perform cleaning of the ductwork.	10 days
55	**Condensate and Feedwater Piping**	**2 days**
56	Drain water from the system.	1 day
57	Leave open vents and drains.	1 day
58	**Feedwater heaters**	**3 days**
59	Drain feedwater heaters	1 day
60	Leave open vents and drains.	2 days
61	**Deaerator and Deaerator Storage Tank**	**2 days**
62	Drain Deaerator and Storage	1 day
63	Leave open vents and drains.	1 day
64	**Precipitator**	**11 days**
65	Multiple cleaning cycles for collection plates.	3 days
66	Clear hoppers of all ash	4 days
67	Disconnect tranformers.	2 days
68	Mechanically secure all compartment dampers and hopper outlet valves in open position.	1 day
69	Disconnect ash transport piping and washdown baghouse hoppers and interior of casing.	1 day
70	Install bird screens across hopper ash outlet and ash line flanges.	1 day
71	Padlock or tack weld all hopper doors shut. (note: if ash hopper doors are indoors, they could be removed and the opening covered with bird screens.)	1 day
72	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain ir service.	3 days



ID	Task Name	Duration
73	**Turbine(s) and Condenser**	**6 days**
74	Drain hotwell and leave doors open.	1 day
75	Open main turbine doors.	1 day
76	Open bfp turbine doors.	1 day
77	Remove lube oil.	3 days
78	**Generator**	**7 days**
79	Verify that generator circuit breaker is open and racked out or that high-voltage disconnect switch on substation side of GSU transformer is locked in the open position.	0.5 days
80	Verify that generator field breaker or contactor (if applicable) is open.	0.5 days
81	De-energize power supplies to generator excitation system at the source.	0.5 days
82	De-energize AC and DC power supplies to generator and exciter space heaters, cooling equipment, controls, lighting, etc. at the source and open circuit breakers or remove fuses at the generator and exciter.	0.5 days
83	Drain generator and exciter cooling water systems (if applicable).	1 day
84	Disconnect and remove hydrogen gas tanks and purge generator hydrogen system.	2 days
85	Disconnect and remove fire protection system gas/foam tanks and purge fire protection system.	2 days
86	**Circulation Water and Turbine Cooling Water System**	**3 days**
87	Drain.	2 days
88	Open water box doors.	1 day
89	Drain any circulating water chemical feed tanks.	1 day
90	**Compressed Air System**	**1 day**
91	Open vents and drains.	1 day
92	**Auxiliary Steam System**	**2 days**
93	Drain water from system.	1 day
94	Remove aux boiler chemicals.	1 day
95	**Auxiliary Cooling Water System**	**1 day**
96	Drain water from system.	1 day



ID	Task Name	Duration
97	**Condenser Air Extraction**	**1 day**
98	Drain water from system.	1 day
99	**Building Heating System**	**1 day**
100	Drain water from system.	1 day
101	**Battery System**	**7 days**
102	De-energize all battery chargers from the source.	0.5 days
103	Open all AC and DC circuit breakers and/or fused switches on battery chargers and disconnect cables from batteries.	0.5 days
104	Remove and dispose of battery electrolyte.	3 days
105	Remove and dispose of battery cells.	2 days
106	Clean up and dispose of electrolyte on surface areas around batteries.	1 day
107	**Post Retirement Activities**	**40 days**
108	Post Retirement Activities	40 days



Montrose 3 Dismantlement

Owner Costs				
Pre-Dismantlement Activities		$488,317		
Overhead During Dismantlement		$886,336		
Post-Dismantlement Activities		$30,730		
Owner Costs Total			$1,405,384	
Demolition General Contractor (DGC) Costs				
Site Management		$428,454		
Equipment Rental		$722,105		
Consumables		$720,417		
Scrap Crew(s)		$703,552		
Dismantlement*		$3,463,130		
DGC Insurance	2.00%	$120,753		
Contingency/Profit	15.00%	$923,762		
Performance Bond	2.00%	$141,643		
Contractor Costs Total:			$7,223,817	
Total:				$8,629,201
Owner Internal Costs:	5.00%			$431,460
Owner Contingency:	25.00%			$2,265,165
Montrose Unit 3 Dismantlement Opinion of Probable Cost:				$11,325,826

COMMON

Montrose Common Retirement

Owner Costs				
Pre-Retirement Activities		$54,474		
Retirement Activities		$476,006		
Post-Retirement Activities		$16,432		
Owner Direct Total			$546,913	
Owner Internal Costs	5.00%		$27,346	
Owner Contingency:	25.00%		$143,565	
Montrose Common Retirement Opinion of Probable Cost:				$717,823

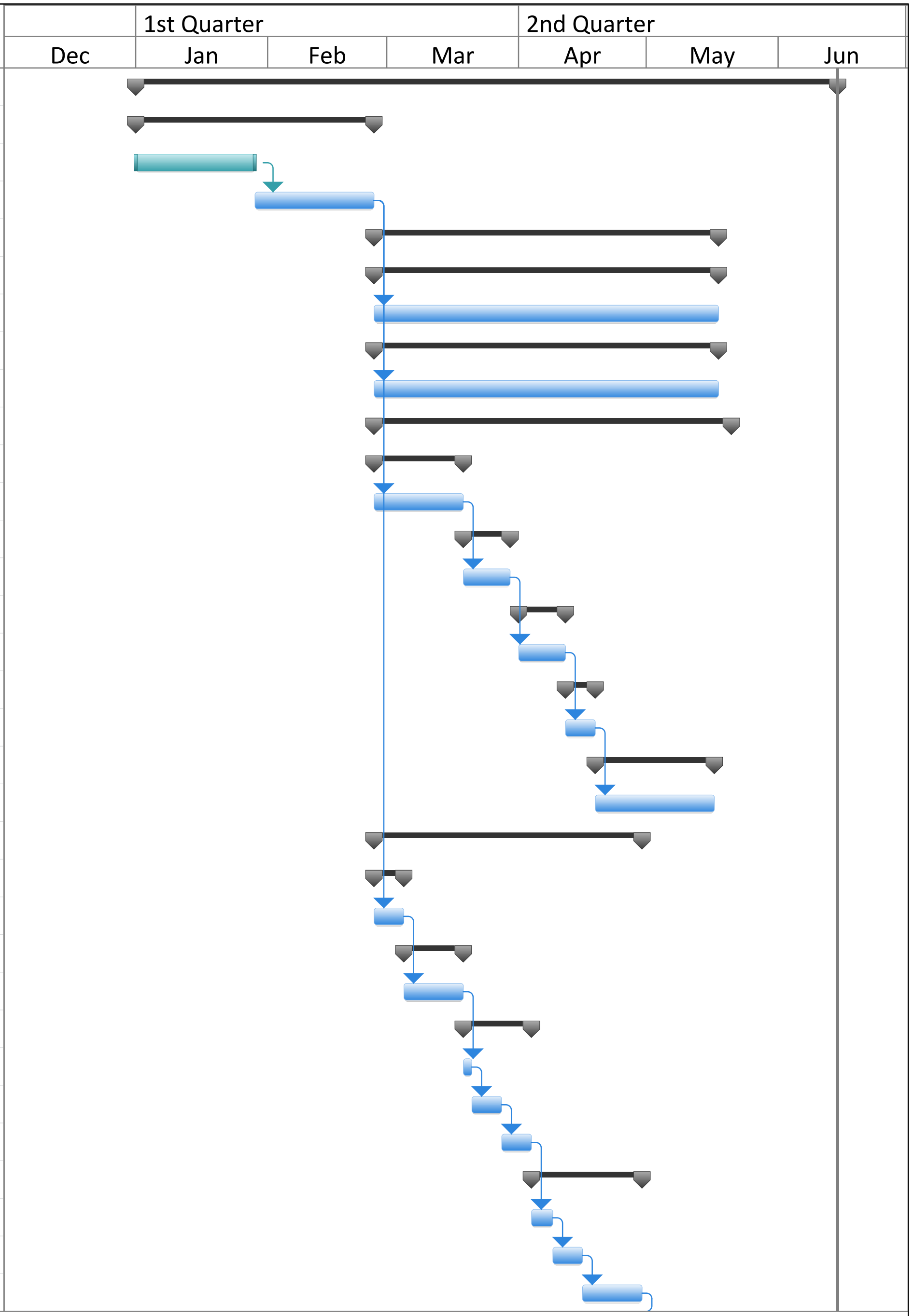
Activities Required by Permit or Regulation

Asbestos Abatement	$1,899,958	
Fuel Oil Tank Removal	$264,743	
Landfill Closure	$2,329,000	
Landfill Post Closure	$1,874,330	
Ash Pond(s)	$274,742	
Activities Required by Permit or Regulation		$6,642,773

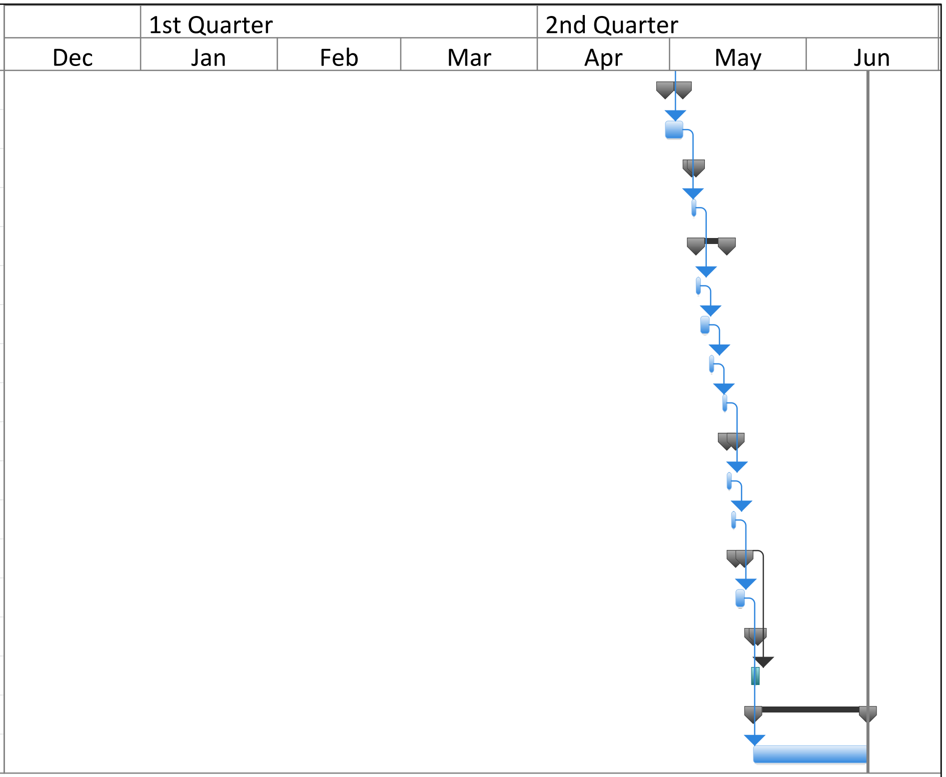
ID	Task Name	Remaining
1	**Montrose Common Retirement**	**$546,885.20**
2	**Pre-Retirement Activities**	**$54,456.00**
3	Permitting Review	$27,228.00
4	Develop Detailed Retirement Plan	$27,228.00
5	**Overheads**	**$105,298.48**
6	**Common Retirement Overheads**	**$92,299.60**
7	Added Overhead Staff for Common Retirement	$92,299.60
8	**Common Retirment Equipment Rental**	**$12,998.88**
9	Common Removal Equipment Rental	$12,998.88
10	**Retirement Activities**	**$370,707.52**
11	**Administration Building**	**$25,700.80**
12	Secure Administration Building	$25,700.80
13	**Fuel Yard Office Building**	**$15,420.48**
14	Secure Fuel Yard Office Building	$15,420.48
15	**Training Building**	**$15,420.48**
16	Secure Training Building	$15,420.48
17	**Warehouse(s)**	**$11,688.80**
18	Secure Unit Warehouse(s)	$11,688.80
19	**Maintenance Shop**	**$46,755.20**
20	Secure Maintenance Shop	$46,755.20
21	**Fuel Yard**	**$101,153.60**
22	**Crusher Tower**	**$27,771.20**
23	Clean Crusher Tower	$9,172.80
24	**Conveyors**	**$18,345.60**
25	Clean Conveyor 10,42,43,44, 51	$18,345.60
26	**Car Dumper**	**$22,014.72**
27	Empty Car Dumper Hoppers	$3,669.12
28	Clean Car Dumper	$9,172.80
29	Secure Dumper Building	$9,172.80
30	**Reclaim**	**$33,022.08**
31	Clean Unit 1 Reclaim	$5,503.68
32	Secure Unit 1 Reclaim Building	$9,172.80
33	Clean Stock Out Conveyor Reclaim	$18,345.60
34	**Sewage Treatment**	**$6,420.96**
35	Clean Sewage Treatment and Transfer Points	$6,420.96
36	**Fuel Oil Storage and Unloading**	**$917.28**
37	Remove Fuel Oil from Fuel Oil Storage and Vent	$917.28
38	**Water Treatment**	**$7,338.24**
39	Drain All Tanks and Vessels	$1,834.56
40	Remove Membranes, Resin and Sand from Filters	$3,669.12
41	Remove Chemicals	$917.28
42	Open and Vent Vessels	$917.28
43	**Compressed Air**	**$1,834.56**
44	Vent Compressed Air	$917.28
45	Vent Compressed Air Vessels	$917.28
46	**Yard Fire Water Systems**	**$2,771.12**

ID	Task Name	Remaining
47	Drain Yard Fire Water System	$2,771.12
48	**Wastewater Lagoons**	**$135,286.00**
49	Removal of Lagoons	$135,286.00
50	**Post Retirement Closure Activities**	**$16,423.20**
51	Post Retirement Closure Activities	$16,423.20

ID	Task Name	Duration
1	**Montrose Common Retirement**	**119 days**
2	**Pre-Retirement Activities**	**40 days**
3	Permitting Review	20 days
4	Develop Detailed Retirement Plan	20 days
5	**Overheads**	**59 days**
6	**Common Retirement Overheads**	**59 days**
7	Added Overhead Staff for Common Retirement	59 days
8	**Common Retirment Equipment Rental**	**59 days**
9	Common Removal Equipment Rental	59 days
10	**Retirement Activities**	**60 days**
11	**Administration Building**	**15 days**
12	Secure Administration Building	15 days
13	**Fuel Yard Office Building**	**9 days**
14	Secure Fuel Yard Office Building	9 days
15	**Training Building**	**9 days**
16	Secure Training Building	9 days
17	**Warehouse(s)**	**5 days**
18	Secure Unit Warehouse(s)	5 days
19	**Maintenance Shop**	**20 days**
20	Secure Maintenance Shop	20 days
21	**Fuel Yard**	**45 days**
22	**Crusher Tower**	**5 days**
23	Clean Crusher Tower	5 days
24	**Conveyors**	**10 days**
25	Clean Conveyor 10,42,43,44, 51	10 days
26	**Car Dumper**	**12 days**
27	Empty Car Dumper Hoppers	2 days
28	Clean Car Dumper	5 days
29	Secure Dumper Building	5 days
30	**Reclaim**	**18 days**
31	Clean Unit 1 Reclaim	3 days
32	Secure Unit 1 Reclaim Building	5 days
33	Clean Stock Out Conveyor Reclaim	10 days



ID	Task Name	Duration
34	**Sewage Treatment**	**4 days**
35	Clean Sewage Treatment and Transfer Points	4 days
36	**Fuel Oil Storage and Unloading**	**1 day**
37	Remove Fuel Oil from Fuel Oil Storage and Vent	1 day
38	**Water Treatment**	**5 days**
39	Drain All Tanks and Vessels	1 day
40	Remove Membranes, Resin and Sand from Filters	2 days
41	Remove Chemicals	1 day
42	Open and Vent Vessels	1 day
43	**Compressed Air**	**2 days**
44	Vent Compressed Air	1 day
45	Vent Compressed Air Vessels	1 day
46	**Yard Fire Water Systems**	**2 days**
47	Drain Yard Fire Water System	2 days
48	**Wastewater Lagoons**	**1 day**
49	Removal of Lagoons	1 day
50	**Post Retirement Closure Activities**	**20 days**
51	Post Retirement Closure Activities	20 days

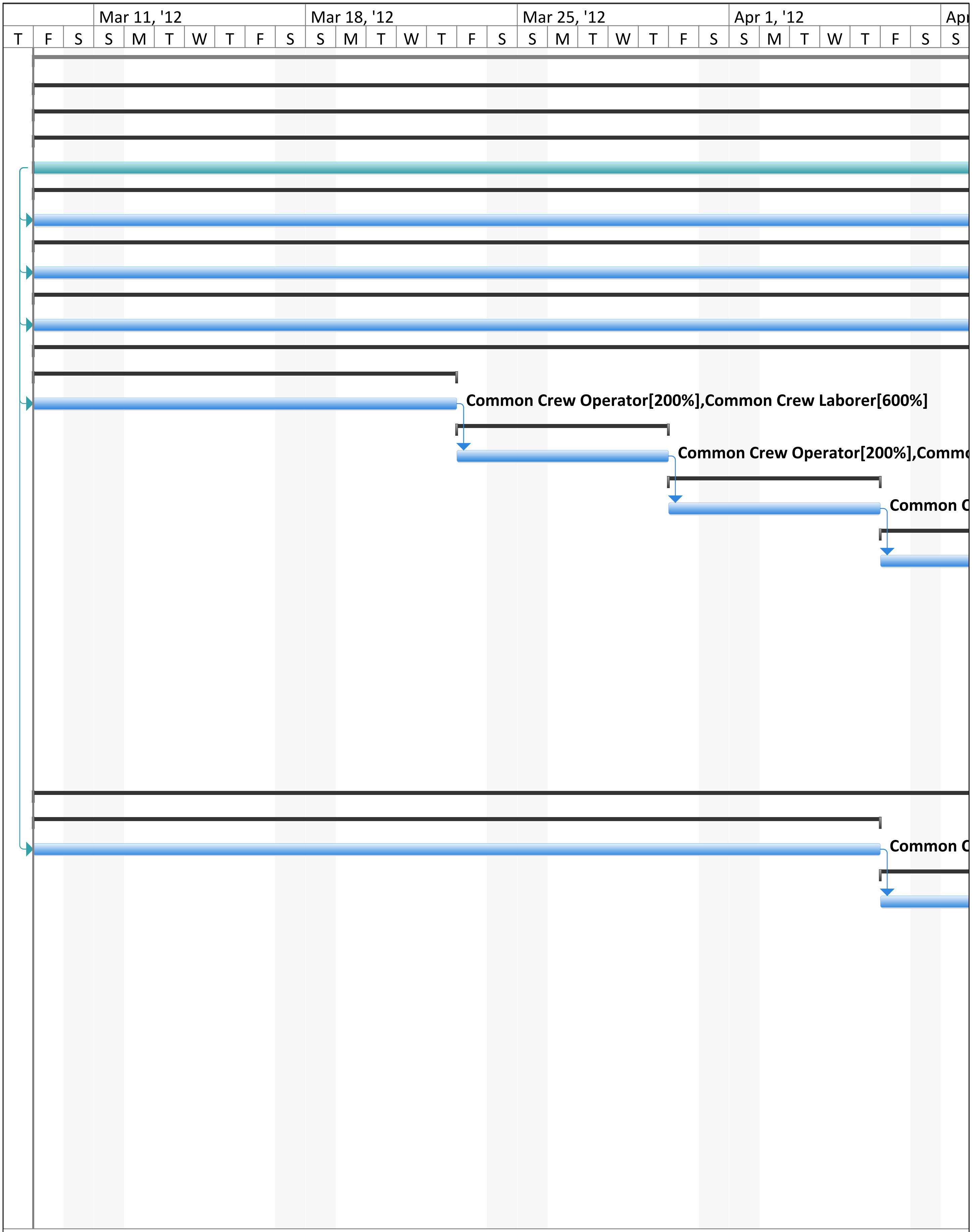


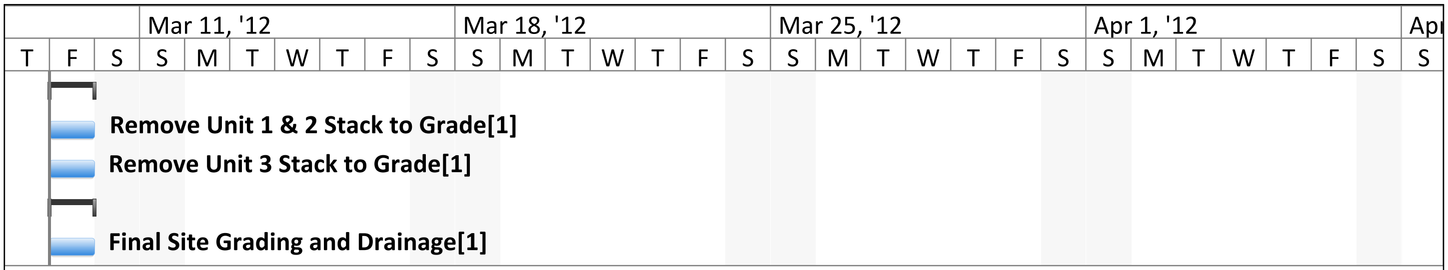
Montrose Common Dismantlement

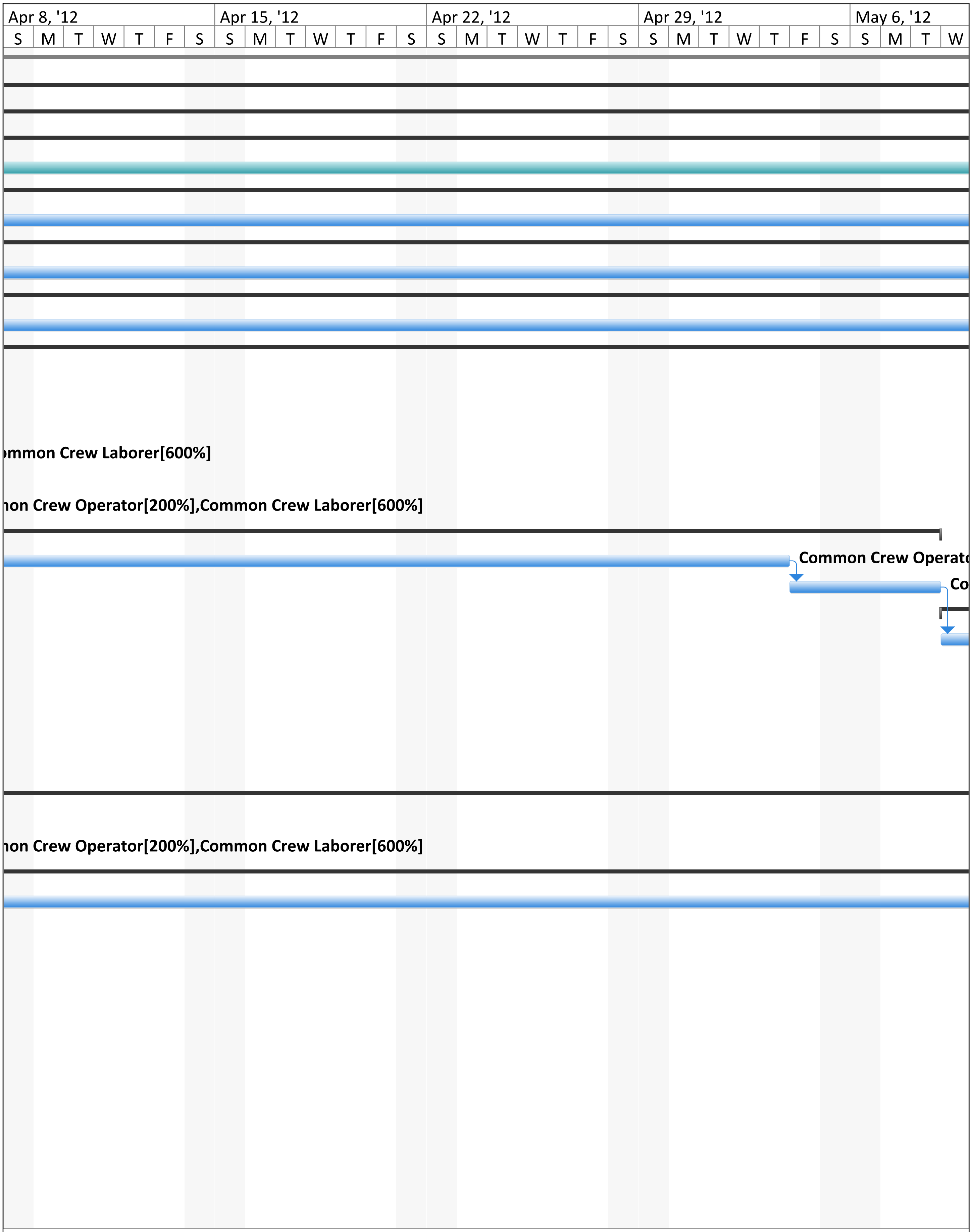
Owner Additional Costs				
Pre-Dismantlement Activities		$0		
Overhead During Dismantlement		$0		
Owner Costs Total			$0	
Demolition General Contractor (DGC) Costs				
Additional Site Management		$46,650		
Equipment Rental		$723,933		
Consumables		$225,120		
Scrap Crew(s)		$329,385		
Dismantlement		$5,909,737		
DGC Insurance	2.00%	$144,697		
Contingency/Profit	15.00%	$1,106,928		
Performance Bond	2.00%	$169,729		
Contractor Costs Total:			$8,656,180	
Total:				$8,656,180
Owner Internal Costs:	5.00%			$432,809
Owner Contingency:	25.00%			$2,272,247
Montrose Common Dismantlement Opinion of Probable Cost:				$11,361,236

ID	Task Name	Remaining	W
0	**Montrose Common Dismantlement**	**$6,680,320.19**	
1	**Montrose Common Dismantlement**	**$6,680,320.19**	
2	**Overheads**	**$770,583.36**	
3	**Common Removal Overheads**	**$46,650.24**	
4	Added Overhead Staff for Common Removals	$46,650.24	
5	**Common Removal Equipment Rental**	**$169,427.52**	
6	Common Removal Equipment Rental	$169,427.52	
7	**Scrap Crew**	**$329,385.44**	
8	Crew(s) to Handle Scrap Material	$329,385.44	
9	**Demolition Contractor Consummables**	**$225,120.16**	
10	Consummables	$225,120.16	
11	**Dismantlement Activities**	**$5,909,736.83**	
12	**Administration Building**	**$37,009.60**	
13	Remove Administration Building	$37,009.60	
14	**Fuel Yard Office Building**	**$18,504.80**	
15	Remove Fuel Yard Office Building	$18,504.80	
16	**Training Building**	**$18,504.80**	
17	Remove Training Building	$18,504.80	
18	**Parking Lots and Plant Roads**	**$85,122.08**	
19	Plant Roads and Parking Areas	$74,019.20	
20	Guard Shack	$11,102.88	
21	**Warehouse(s)**	**$18,504.80**	
22	Remove Warehouse	$18,504.80	
23	**Maintenance Shop**	**$23,984.80**	
24	Remove Maintenance Shop	$23,984.80	
25	**Water Treatment**	**$40,710.56**	
26	Remove Water Treatment Equipment	$18,504.80	
27	Remove Water Treatment Building	$22,205.76	
28	**Fuel Yard**	**$403,404.64**	
29	**Crusher Tower**	**$148,038.40**	
30	Remove Crusher Building and Equipment	$74,019.20	
31	**Conveyors**	**$92,524.00**	
32	Remove Conveyor 10, 42, 43, 44, and 51	$92,524.00	
33	**Car Dumper**	**$96,224.96**	
34	Remove Underground Equipment	$14,803.84	
35	Remove Above Ground Equipment	$37,009.60	
36	Remove Building	$25,906.72	
37	Backfill Dumper Structure	$18,504.80	
38	**Reclaim**	**$66,617.28**	
39	Remove Underground Equipment	$18,504.80	
40	Remove Above Ground Equipment	$18,504.80	
41	Remove Building	$14,803.84	
42	Backfill Structure	$14,803.84	
43	**Yard Fire Water Systems**	**$37,009.60**	
44	Remove Hydrants and Fire Water System Piping Down to 3' Below Grade	$37,009.60	

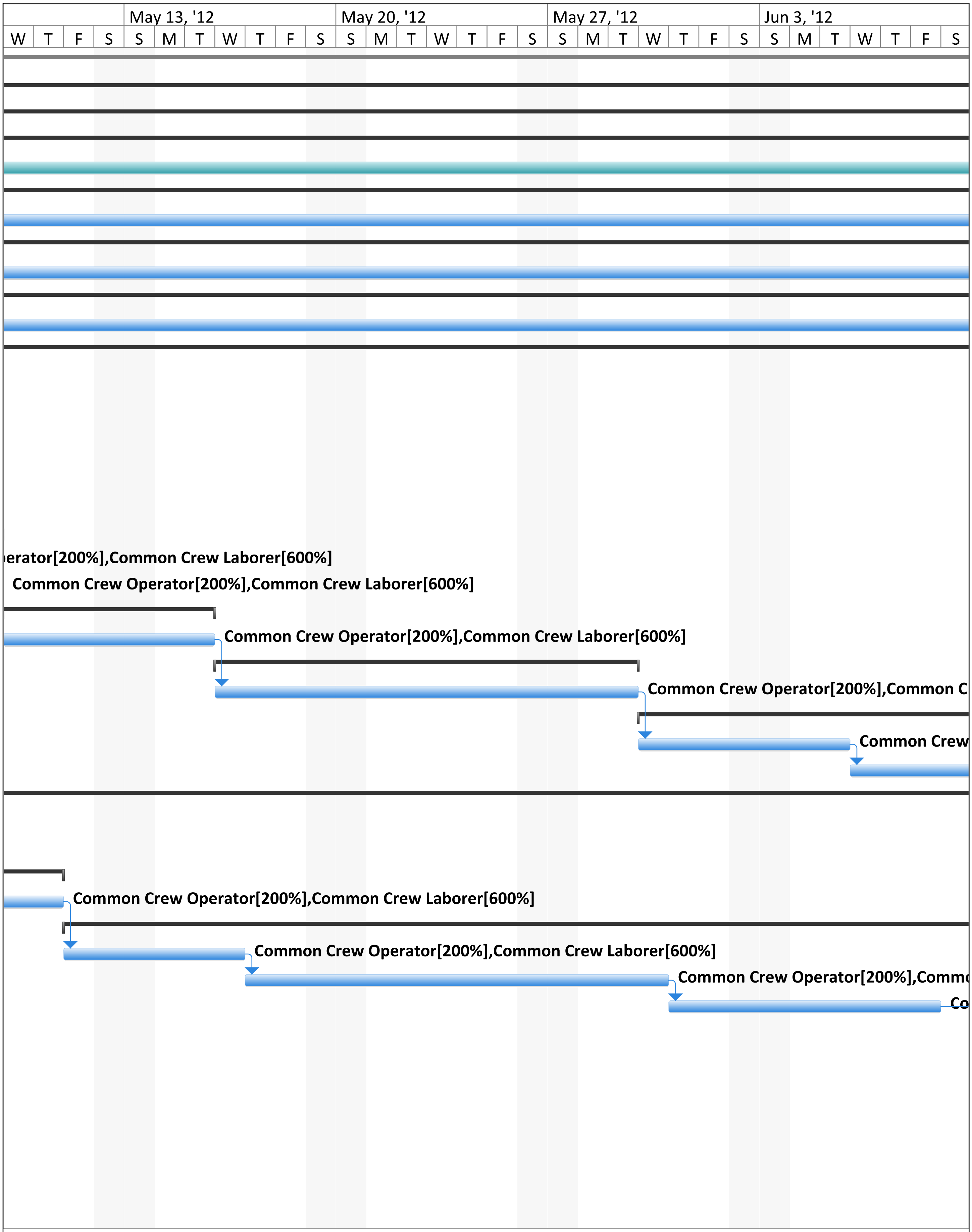
ID	Task Name	Remaining	W
45	**Stacks**	**$4,731,233.84**	
46	Remove Unit 1 and Unit 2 Stack to Grade	$2,814,765.08	
47	Remove Unit 3 Stack to Grade	$1,916,468.76	
48	**Final Site Grading and Drainage**	**$495,747.31**	
49	Final Site Grading and Drainage	$495,747.31	


Mar 11, '12
Mar 18, '12
Mar 25, '12
Apr 1, '12
Apr
T F S S M T W T F S S M T W T F S S M T W T F S S M T W T F S S
Common Crew Operator[200%],Common Crew Laborer[600%]
Common Crew Operator[200%],Comm
Common C
Common C


Mar 11, '12
Mar 18, '12
Mar 25, '12
Apr 1, '12
Apr
T F S S M T W T F S S M T W T F S S M T W T F S S M T W T F S S
Remove Unit 1 & 2 Stack to Grade[1]
Remove Unit 3 Stack to Grade[1]
Final Site Grading and Drainage[1]


Apr 8, '12
Apr 15, '12
Apr 22, '12
Apr 29, '12
May 6, '12
S M T W T F S S M T W T F S S M T W T F S S M T W T F S S M T W
mmon Crew Laborer[600%]
non Crew Operator[200%],Common Crew Laborer[600%]
Common Crew Operat
Co
non Crew Operator[200%],Common Crew Laborer[600%]

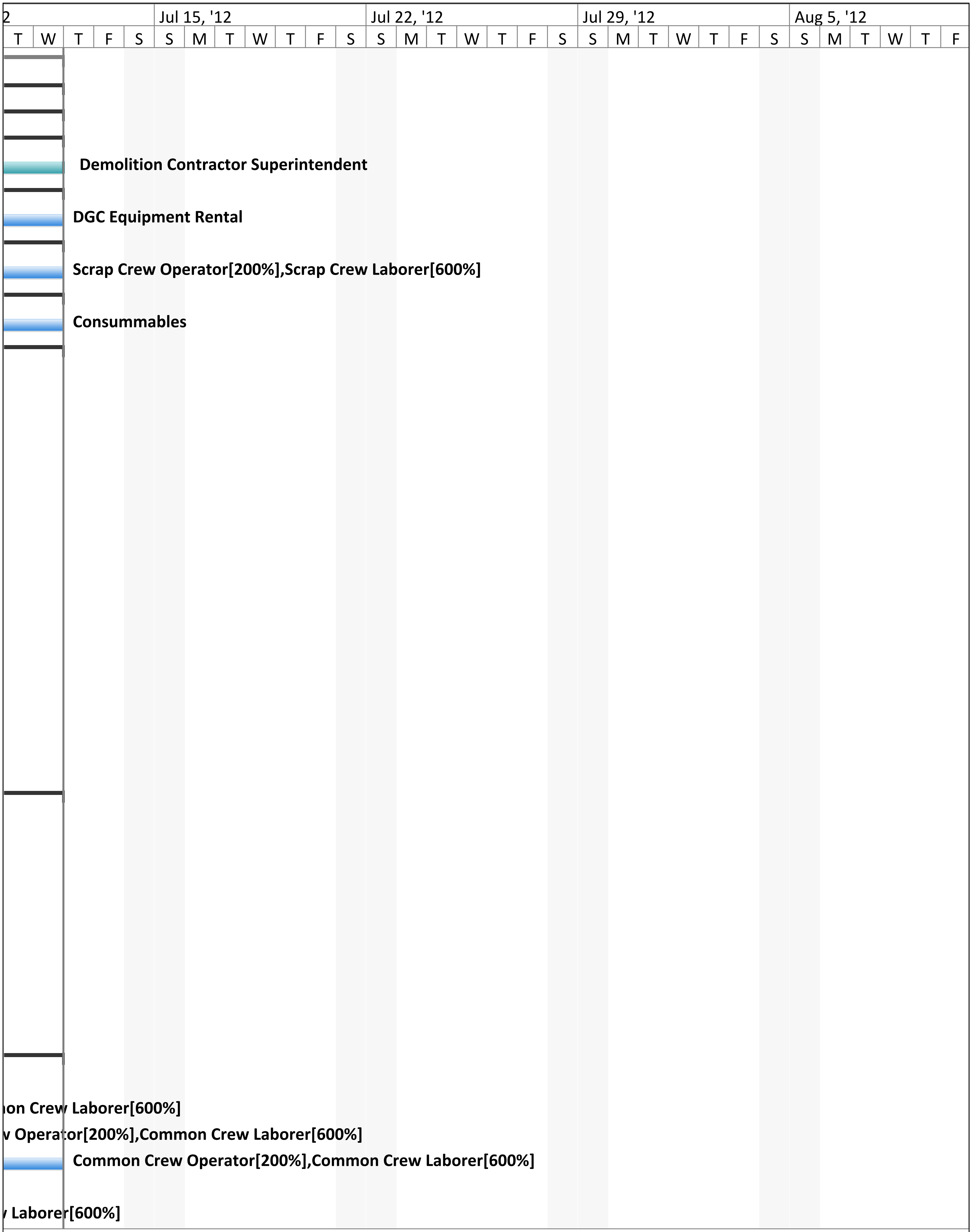
Apr 8, '12							Apr 15, '12							Apr 22, '12							Apr 29, '12							May 6, '12			
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W


May 13, '12
May 20, '12
May 27, '12
Jun 3, '12
W T F S S M T W T F S S M T W T F S S M T W T F S S M T W T F S
erator[200%],Common Crew Laborer[600%]
Common Crew Operator[200%],Common Crew Laborer[600%]
Common Crew Operator[200%],Common Crew Laborer[600%]
Common Crew Operator[200%],Common C
Common Crew
Common Crew Operator[200%],Common Crew Laborer[600%]
Common Crew Operator[200%],Common Crew Laborer[600%]
Common Crew Operator[200%],Comm
Co

				May 13, '12							May 20, '12							May 27, '12							Jun 3, '12						
W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S

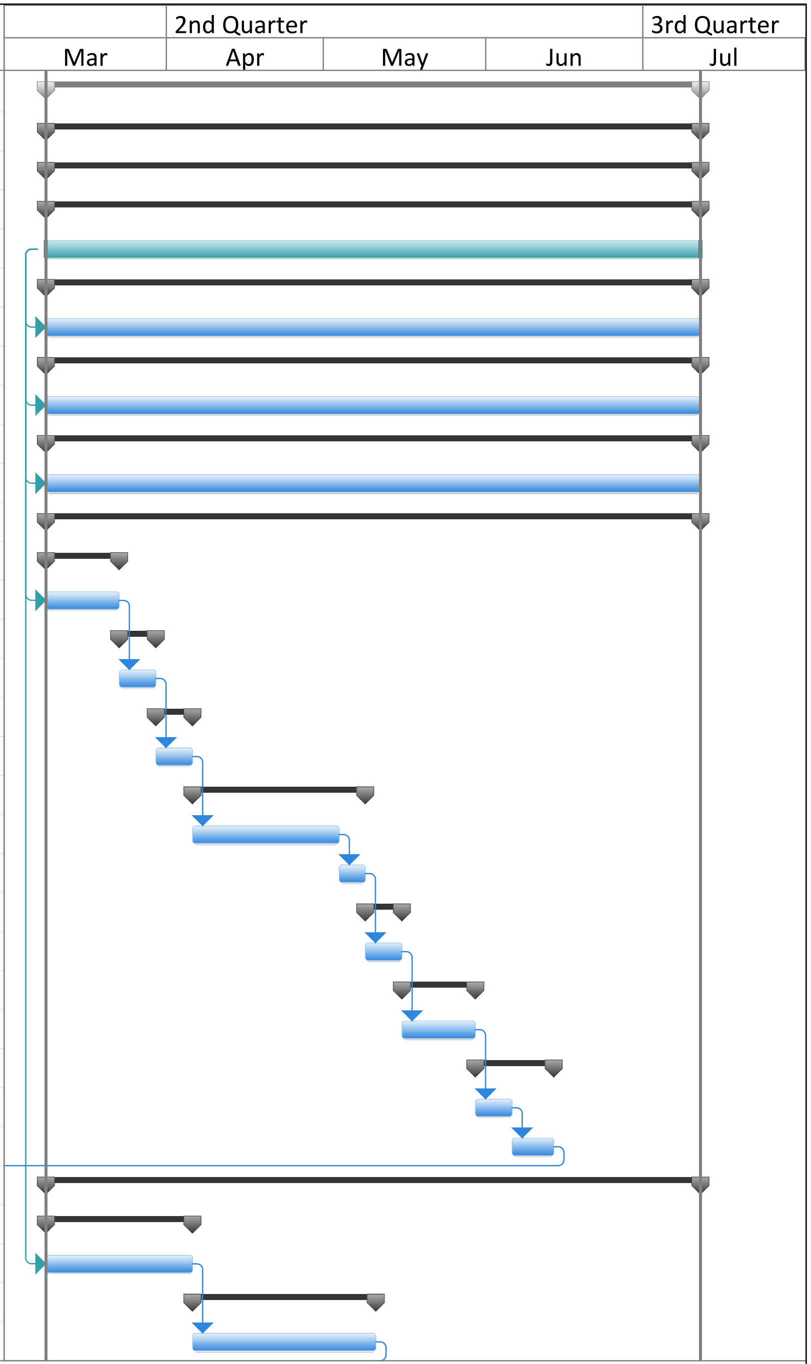

Jun 10, '12
Jun 17, '12
Jun 24, '12
Jul 1, '12
Jul 8, '12
S S M T W T F S S M T W T F S S M T W T F S S M T W T F S S M T
on Crew Laborer[300%]
Crew Operator[200%],Common Crew Laborer[600%]
Common Crew Operator[200%],Common Crew Laborer[600%]
mmon Crew Laborer[600%]
Common Crew Operator[200%],Common Crew Laborer[600%]
Common Crew Operator[200%],Common Crew Laborer[600%]
Common Crew Operator[200%],Common Crew Laborer[600%]
Common Crew Operator[200%],Common C
Common Crew Ope
Common Crew Operator[200%],Common Crew Labo

	Jun 10, '12							Jun 17, '12							Jun 24, '12							Jul 1, '12							Jul 8, '12		
S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T

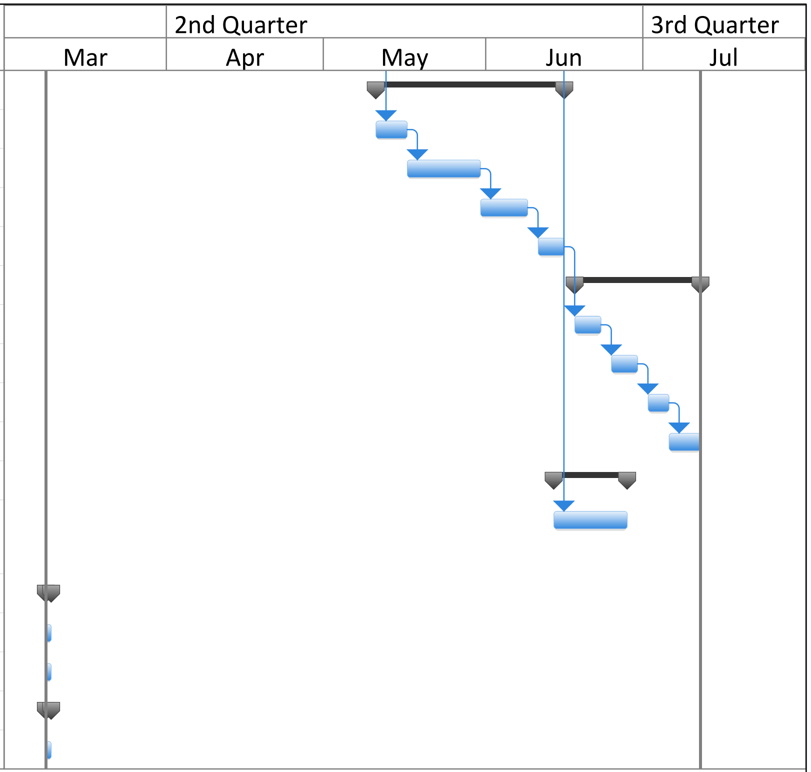

2
Jul 15, '12
Jul 22, '12
Jul 29, '12
Aug 5, '12
T W T F S S M T W T F S S M T W T F S S M T W T F S S M T W T F
Demolition Contractor Superintendent
DGC Equipment Rental
Scrap Crew Operator[200%],Scrap Crew Laborer[600%]
Consummables
on Crew Laborer[600%]
v Operator[200%],Common Crew Laborer[600%]
Common Crew Operator[200%],Common Crew Laborer[600%]
Laborer[600%]

2					Jul 15, '12							Jul 22, '12							Jul 29, '12							Aug 5, '12					
T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F

ID	Task Name	Duration
0	**Montrose Common Dismantlement**	**89 days**
1	**Montrose Common Dismantlement**	**89 days**
2	**Overheads**	**89 days**
3	**Common Removal Overheads**	**89 days**
4	Added Overhead Staff for Common Removals	89 days
5	**Common Removal Equipment Rental**	**89 days**
6	Common Removal Equipment Rental	89 days
7	**Scrap Crew**	**89 days**
8	Crew(s) to Handle Scrap Material	89 days
9	**Demolition Contractor Consummables**	**89 days**
10	Consummables	89 days
11	**Dismantlement Activities**	**89 days**
12	**Administration Building**	**10 days**
13	Remove Administration Building	10 days
14	**Fuel Yard Office Building**	**5 days**
15	Remove Fuel Yard Office Building	5 days
16	**Training Building**	**5 days**
17	Remove Training Building	5 days
18	**Parking Lots and Plant Roads**	**23 days**
19	Plant Roads and Parking Areas	20 days
20	Guard Shack	3 days
21	**Warehouse(s)**	**5 days**
22	Remove Warehouse	5 days
23	**Maintenance Shop**	**10 days**
24	Remove Maintenance Shop	10 days
25	**Water Treatment**	**11 days**
26	Remove Water Treatment Equipment	5 days
27	Remove Water Treatment Building	6 days
28	**Fuel Yard**	**89 days**
29	**Crusher Tower**	**20 days**
30	Remove Crusher Building and Equipment	20 days
31	**Conveyors**	**25 days**
32	Remove Conveyor 10, 42, 43, 44, and 51	25 days



ID	Task Name	Duration
33	**Car Dumper**	**26 days**
34	Remove Underground Equipment	4 days
35	Remove Above Ground Equipment	10 days
36	Remove Building	7 days
37	Backfill Dumper Structure	5 days
38	**Reclaim**	**18 days**
39	Remove Underground Equipment	5 days
40	Remove Above Ground Equipment	5 days
41	Remove Building	4 days
42	Backfill Structure	4 days
43	**Yard Fire Water Systems**	**10 days**
44	Remove Hydrants and Fire Water System Piping Down to 3' Below Grade	10 days
45	**Stacks**	**1 day**
46	Remove Unit 1 and Unit 2 Stack to Grade	1 day
47	Remove Unit 3 Stack to Grade	1 day
48	**Final Site Grading and Drainage**	**1 day**
49	Final Site Grading and Drainage	1 day



HAWTHORN GENERATING STATION
UNIT 5 AND COMMON

HAWTHORN GENERATING STATION UNIT 5 AND COMMON

The Hawthorn Generating Station consists of one coal-fired power plant (Hawthorn Unit 5), two simple-cycle combustion turbines (Hawthorn Units 7 and 8), and a one-on-one combined-cycle plant (Hawthorn Units 6 and 9).

Note: This section of the report covers Hawthorn Unit 5 and the Hawthorn Common facilities.

Hawthorn Unit 5 has an SPP-accredited unit rating of 564 MW and was placed in service in 2001. Unit 5 has a sub-critical Babcock & Wilcox boiler and a General Electric turbine. Unit 5 has an SCR, dry scrubber with a dedicated reagent preparation system, and baghouse. River water is used for condenser cooling.

The Hawthorn fuel yard has a rotary car dumper to unload unit trains of coal. The coal is unloaded to the ground. Coal is transferred to Hawthorn Unit 5 via a reclaim pit and a series of conveyors.

Hawthorn Unit 5 has a fuel gas igniter system. The gas is supplied by a regional natural gas supplier via underground pipelines.

Hawthorn Unit 5 beneficially uses the majority of their coal combustion products off site. Coal combustion products that are not beneficially used off site are disposed in an off-site landfill.

The following are the major systems and equipment that were included in the retirement and dismantlement of each unit and the major systems and equipment that were considered common (additional details are listed in the attached retirement and dismantlement schedules included in this Appendix).

HAWTHORN UNIT 5

1. Boiler, SCR, and boiler auxiliaries.
2. Turbine, heat balance equipment, and turbine auxiliaries.
3. Baghouse, dry scrubber, and dry scrubber auxiliaries.
4. Fuel handling equipment.

COMMON

1. Administration building.
2. Fuel yard office building.
3. Training building.
4. Warehouses.
5. Maintenance shops.
6. Water treatment.
7. Fire water systems.
8. Hawthorn Units 1 and 2 intake structure and circulating water piping.
9. Hawthorn Unit 5 intake structure and circulating water piping.
10. Hawthorn Unit 5 stack.

UNIT 5

Hawthorn 5 Retirement

Owner Costs				
Pre-Retirement Activities		$106,968		
Retirement Activities		$642,874		
Post-Retirement Activities		$28,182		
Owner Direct Total			$778,024	
Owner Internal Costs	5.00%		$38,901	
Owner Contingency:	25.00%		$204,231	
Hawthorn 5 Retirement Opinion of Probable Cost:				$1,021,157

<u>Activities Required by Permit or Regulation</u>

Hawthorn Asbestos Removal	$11,173,839	
Hawthorn 5 Intake Equip, Intake Structures, Levee piping Removal	$1,271,750	
Activities Required by Permit or Regulation		$12,445,589

ID	Task Name	Cost
1	**Hawthorn 5 Retirement**	**$778,024.32**
2	**Pre-Engineering**	**$106,967.52**
3	Permit review and engineering analysis, establish isolation points, and confirm fuel yard inventory has been reduced to zero tons.	$106,967.52
4	**KCL&L Overhead Costs**	**$111,080.32**
5	KCP&L Retirement Manager	$111,080.32
6	**Equipment Rentals**	**$37,234.08**
7	Vacuum truck	$37,234.08
8	**Retirement**	**$494,560.00**
9	**Electrical**	**$16,718.56**
10	**Medium and Low Voltage Draw out Switchgear**	**$2,903.52**
11	De-energize all buses at the source.	$483.92
12	Open all circuit breakers.	$483.92
13	Rack all circuit breakers into the fully withdrawn, disconnected position.	$483.92
14	Verify that the closing/tripping springs are discharged.	$483.92
15	De-energize control power and auxiliary power circuits of each circuit breaker at the source and by opening control power circuit breakers or removing fuses in each breaker cubicle.	$967.84
16	**Motor Control Centers**	**$1,935.68**
17	De-energize all buses at the source.	$483.92
18	Open all circuit breakers and disconnect switches.	$483.92
19	Remove all fuses in control circuits.	$967.84
20	**Low-voltage Switchboards and Panelboards**	**$967.84**
21	De-energize all buses at the source.	$483.92
22	Open all circuit breakers and disconnect switches.	$483.92
23	**Oil-Filled Power Transformers**	**$4,638.56**
24	De-energize all transformer primaries and verify that the secondary is de-energize	$967.84
25	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	$967.84
26	Drain and dispose of oil.	$1,433.76
27	Clean up and dispose of oil on surface areas around transformers and in containment pits.	$1,269.12
28	**Dry-type Power Transformers**	**$1,935.68**

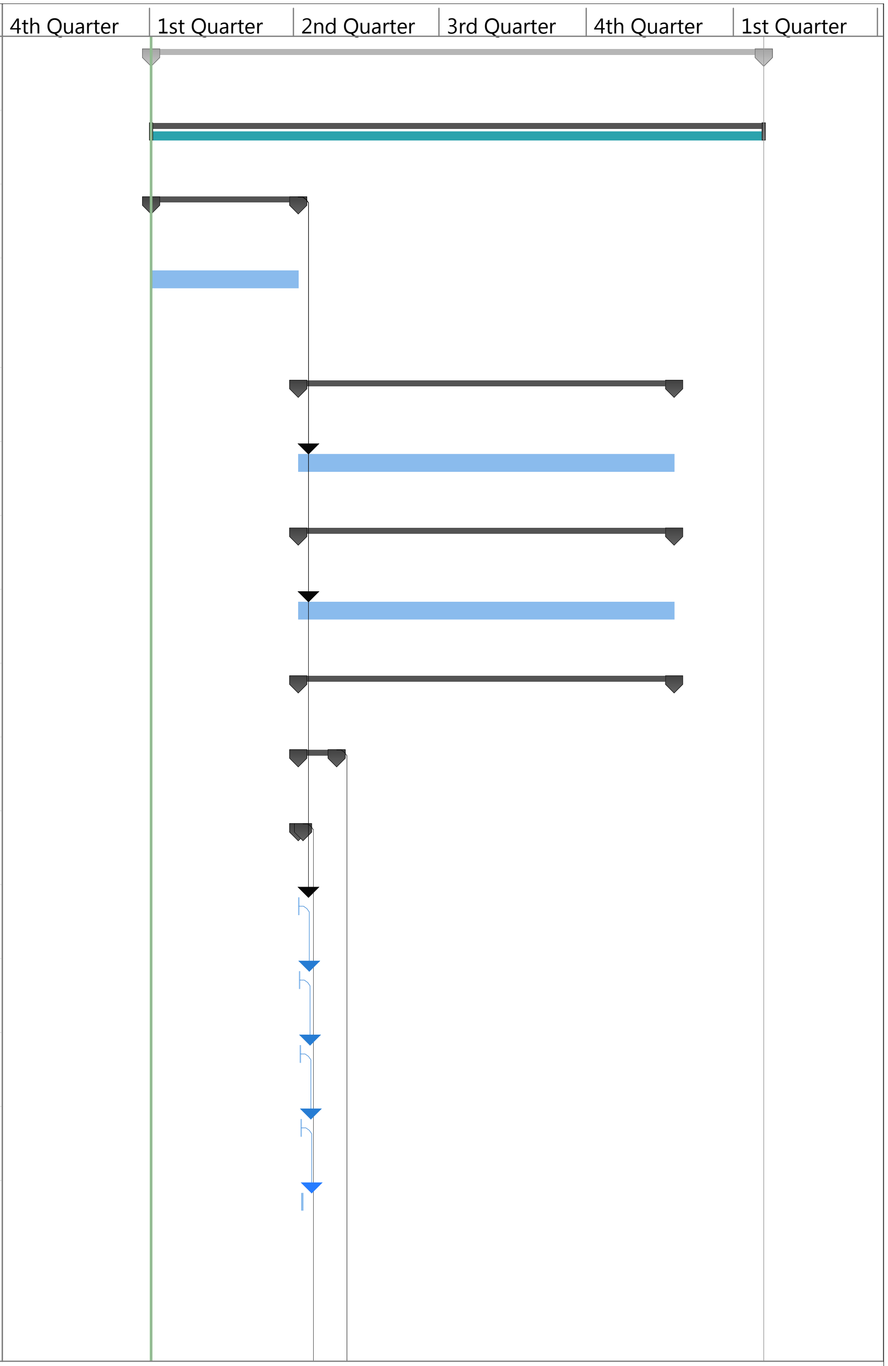
ID	Task Name	Cost
29	De-energize all transformer primaries and verify that the secondary is de-energizec	$967.84
30	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	$967.84
31	**Motors**	**$4,337.28**
32	De-energize all primary power at the source.	$967.84
33	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	$1,935.68
34	Drain lube oil system (if applicable) and dispose of oil.	$1,433.76
35	**Coal Handling**	**$30,905.36**
36	Empty all transfer hoppers.	$1,853.84
37	Burn out coal silos.	$1,834.56
38	Confirm all fuel lines, conveyors and trippers are clear of fuel.	$1,834.56
39	Perform cleaning of the coal handling equipment to assure that all coal and coal dust has been removed from site.	$25,382.40
40	**Gas and Igniter System**	**$1,911.68**
41	Isolate fuel gas system in gas yard and vent gas piping	$1,911.68
42	**Waste Oil System**	**$1,834.56**
43	Drain all waste oil systems	$1,834.56
44	**Boiler Chemical Feed**	**$1,834.56**
45	Drain all chemical feed tanks.	$1,834.56
46	**Boiler**	**$30,927.60**
47	Open boiler doors.	$955.84
48	Gas side - perform cleaning of the boiler and bottom ash system.	$25,382.40
49	Drain boiler, drum, downcomers and headers.	$917.28
50	Open drum doors.	$955.84
51	Drain and clean the submerged flight conveyor system.	$2,716.24
52	**Stack and Ductwork**	**$328,527.12**
53	Open ductwork doors.	$955.84
54	Perform extensive cleaning of the ductwork.	$12,691.20
55	Place cap over stack opening to keep moisture out.	$314,880.08
56	**Condensate and Feedwater Piping**	**$1,834.56**
57	Drain water from the system.	$917.28
58	Leave open vents and drains.	$917.28

ID	Task Name	Cost
59	**Feedwater heaters**	**$2,751.84**
60	Drain feedwater heaters	$917.28
61	Leave open vents and drains.	$1,834.56
62	**Deaerator and Deaerator Storage Tank**	**$1,834.56**
63	Drain Deaerator and Storage	$917.28
64	Leave open vents and drains.	$917.28
65	**Baghouse**	**$18,919.84**
66	Multiple cleaning cycles for filter bags.	$2,751.84
67	Open all vent and drain lines on bag cleaning air and control air lines. Leave in open position or remove vent valves.	$917.28
68	Remove all filter bags and cages.	$955.84
69	Clear hoppers of all ash	$3,103.68
70	Mechanically secure all compartment dampers and hopper outlet valves in open position.	$955.84
71	Disconnect ash transport piping and washdown baghouse hoppers and interior of casing.	$1,571.12
72	Install bird screens across hopper ash outlet and ash line flanges.	$955.84
73	Padlock or tack weld all hopper doors shut. (note: if ash hopper doors are indoors, they could be removed and the opening covered with bird screens.)	$955.84
74	If walk-in plenum, padlock or tack weld all outlet plenum doors and compartment ventilation dampers shut.	$955.84
75	If top-door plenum, close and secure top doors and remove/disable door lift hoist.	$1,873.12
76	If top-door plenum, establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in penthouse enclosure.	$1,020.08
77	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	$2,903.52
78	**Spray Dryer Absorber FGD**	**$5,328.64**
79	Clear SDA of all accumulated solids	$4,372.80
80	Padlock or tack weld SDA module access doors closed.	$955.84
81	**Lime Slurry Preparation System**	**$11,783.20**
82	Remove lime from day bins.	$2,186.40
83	Removed cartridges/bags from bin vent filters	$775.92
84	Padlock or tack weld all bin access doors shut. (note: if doors are indoors, they could be removed and the opening covered with bird screens.)	$955.84

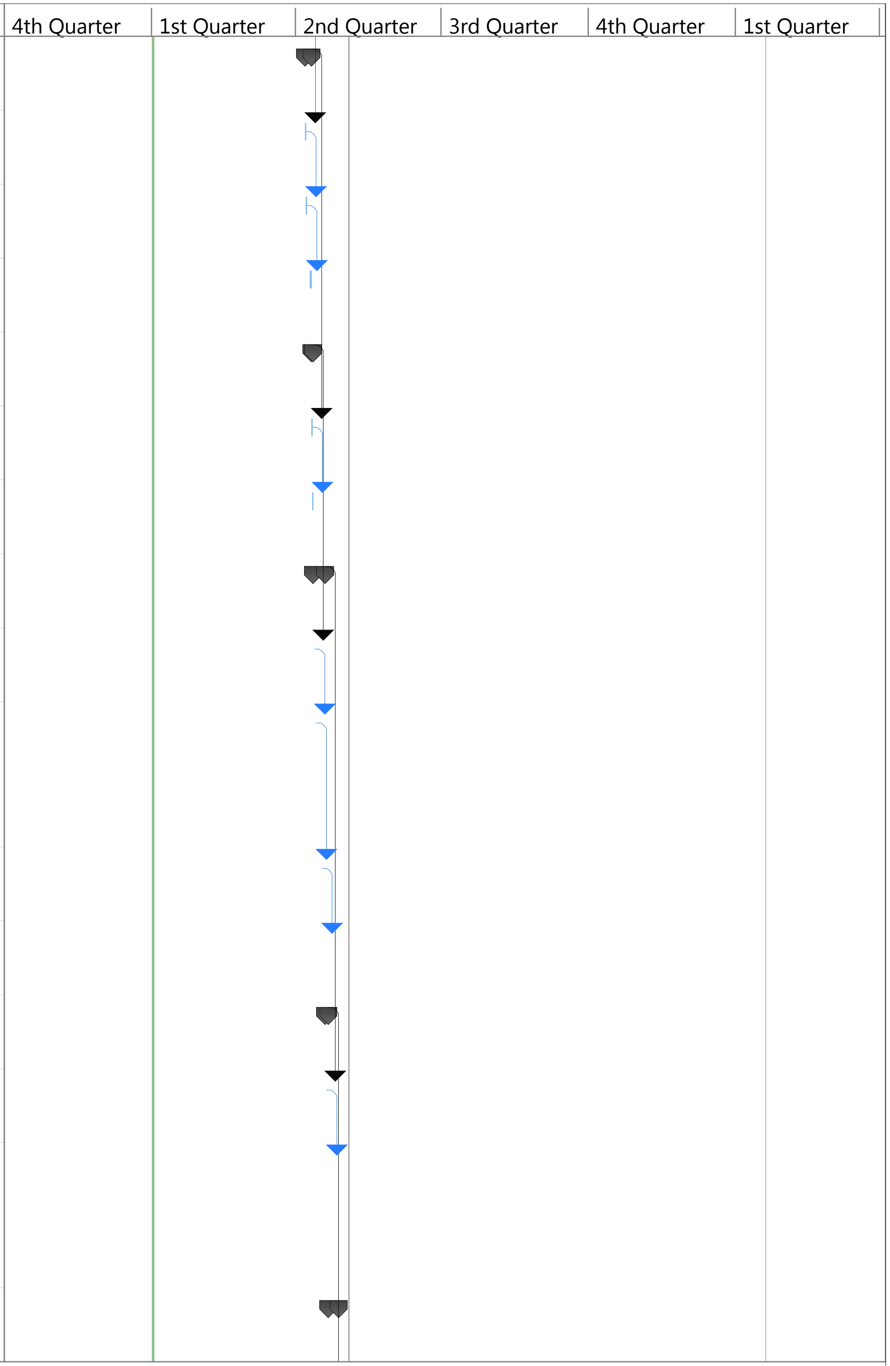
ID	Task Name	Cost
85	Remove bin discharge isolation valve and install bird screen.	$955.84
86	Thoroughly wash and drain slakers.	$1,234.56
87	Remove balls from any ball mills from ball mill slakers.	$795.20
88	Padlock or tack weld slaker access doors closed.	$955.84
89	Establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in building.	$1,020.08
90	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	$2,903.52
91	**SCR**	**$11,098.96**
92	Vacuum fly ash from catalyst.	$2,538.24
93	Remove catalyst of salvage or disposal.	$3,180.80
94	Padlock or tack weld access doors shut.	$955.84
95	Remove ammonia from storage tank for resale.	$775.92
96	Wash out and drain storage tank and supply piping.	$775.92
97	Vent storage tank and all piping. Leave vent and drain valves open or remove. Install bird screens.	$936.56
98	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	$1,935.68
99	**Turbine(s) and Condenser**	**$5,715.76**
100	Drain hotwell and leave doors open.	$936.56
101	Open main turbine doors.	$955.84
102	Open bfp turbine doors.	$955.84
103	Remove lube oil.	$2,867.52
104	**Generator**	**$6,618.48**
105	Verify that generator circuit breaker is open and racked out or that high-voltage disconnect switch on substation side of GSU transformer is locked in the open position.	$483.92
106	Verify that generator field breaker or contactor (if applicable) is open.	$483.92
107	De-energize power supplies to generator excitation system at the source.	$483.92
108	De-energize AC and DC power supplies to generator and exciter space heaters, cooling equipment, controls, lighting, etc. at the source and open circuit breakers or remove fuses at the generator and exciter.	$483.92
109	Drain generator and exciter cooling water systems (if applicable).	$936.56
110	Disconnect and remove hydrogen gas tanks and purge generator hydrogen system.	$1,834.56

ID	Task Name	Cost
111	Disconnect and remove fire protection system gas/foam tanks and purge fire protection system.	$1,911.68
112	**Circulation Water and Turbine Cooling Water System**	**$3,707.68**
113	Drain.	$1,834.56
114	Open water box doors.	$955.84
115	Drain any circulating water chemical feed tanks.	$917.28
116	**Compressed Air System**	**$2,945.44**
117	Open vents and drains.	$917.28
118	Remove desiccant from desiccant dryers.	$2,028.16
119	**Auxiliary Steam System**	**$1,834.56**
120	Drain water from system.	$917.28
121	Remove aux boiler chemicals.	$917.28
122	**Auxiliary Cooling Water System**	**$917.28**
123	Drain water from system.	$917.28
124	**Condenser Air Extraction and Waterbox Priming System**	**$917.28**
125	Drain water from system.	$917.28
126	**Building Heating System**	**$917.28**
127	Drain water from system.	$917.28
128	**Battery System**	**$4,775.20**
129	De-energize all battery chargers from the source.	$483.92
130	Open all AC and DC circuit breakers and/or fused switches on battery chargers and disconnect cables from batteries.	$483.92
131	Remove and dispose of battery electrolyte.	$1,903.68
132	Remove and dispose of battery cells.	$1,269.12
133	Clean up and dispose of electrolyte on surface areas around batteries.	$634.56
134	**Post Retirement Activities**	**$28,182.40**
135	Post Retirement Activities	$28,182.40

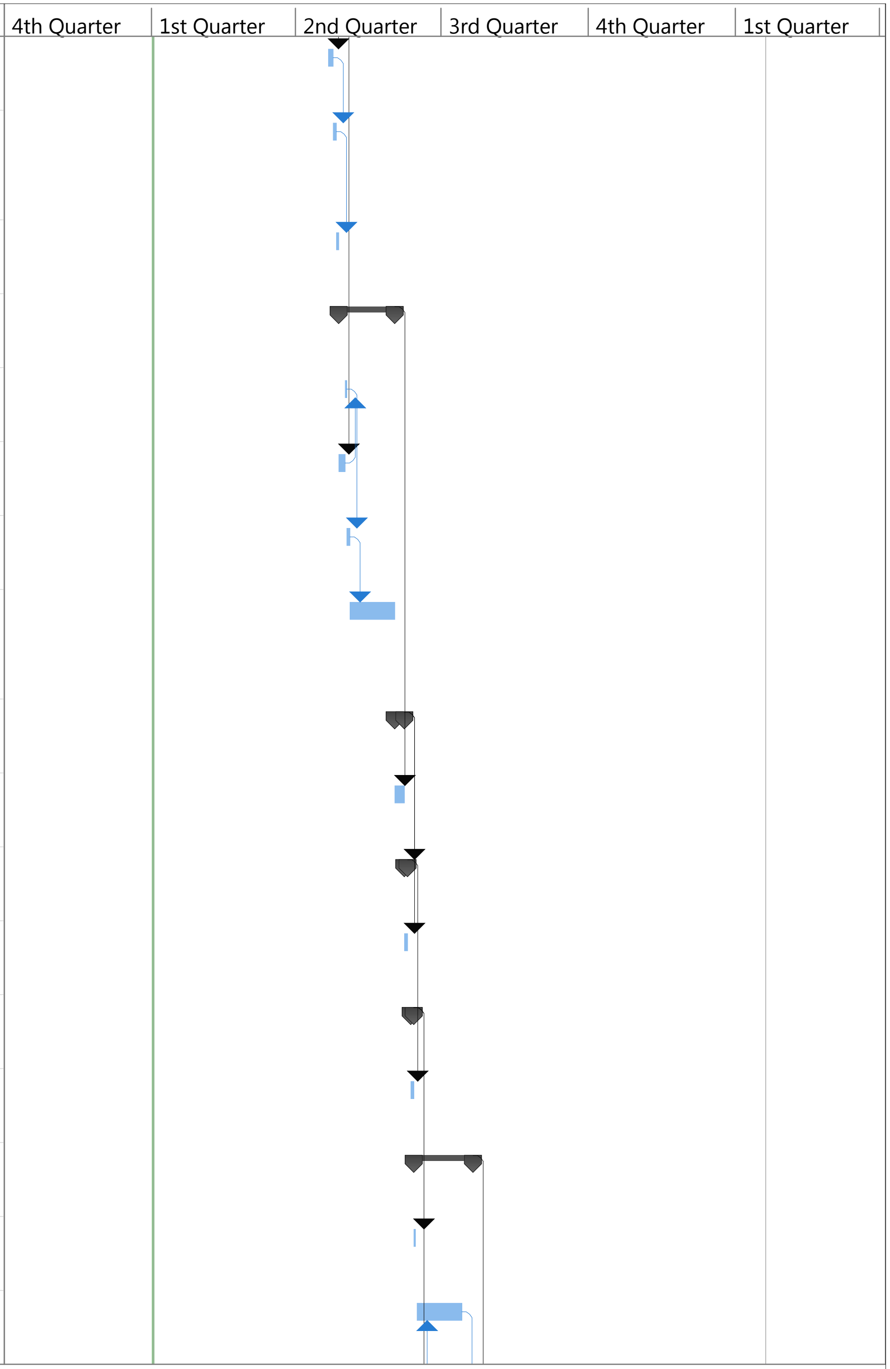
ID	Task Name	Duration
0	**Hawthorne 5**	**275 days**
1	**Hawthorn 5 Retirement**	**275 days**
2	**Pre-Engineering**	**66 days**
3	Permit review and engineering analysis, establish isolation points, and confirm fuel yard inventory has been reduced to zero tons.	66 days
4	**KCL&L Overhead Costs**	**169 days**
5	KCP&L Retirement Manager	169 days
6	**Equipment Rentals**	**169 days**
7	Vacuum truck	169 days
8	**Retirement**	**169 days**
9	**Electrical**	**18 days**
10	**Medium and Low Voltage Draw out Switchgear**	**3 days**
11	De-energize all buses at the source.	0.5 days
12	Open all circuit breakers.	0.5 days
13	Rack all circuit breakers into the fully withdrawn, disconnected position.	0.5 days
14	Verify that the closing/tripping springs are discharged.	0.5 days
15	De-energize control power and auxiliary power circuits of each circuit breaker at the source and by opening control power circuit breakers or removing fuses in each breaker cubicle.	1 day



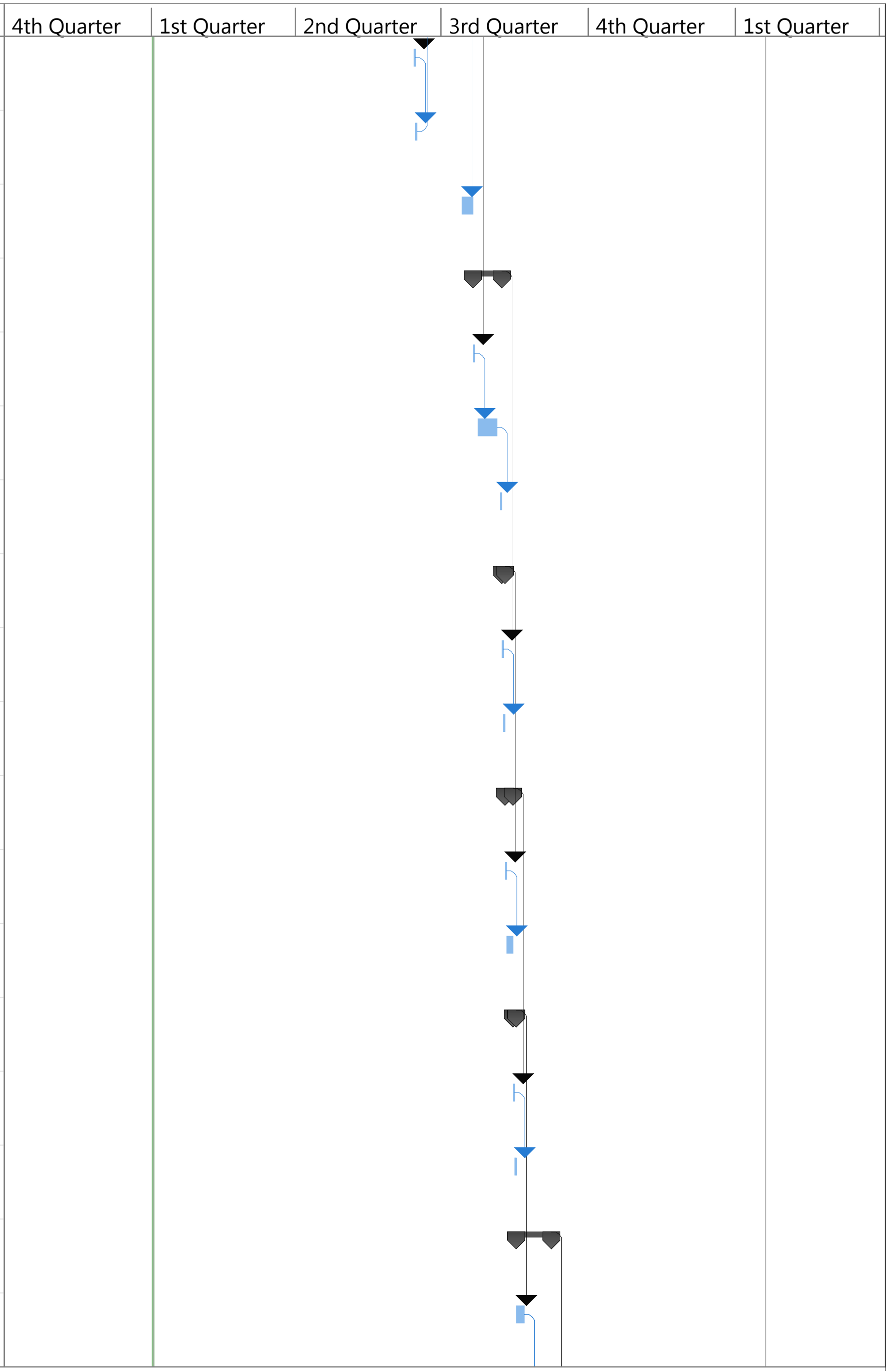
ID	Task Name	Duration
16	**Motor Control Centers**	**2 days**
17	De-energize all buses at the source.	0.5 days
18	Open all circuit breakers and disconnect switches.	0.5 days
19	Remove all fuses in control circuits.	1 day
20	**Low-voltage Switchboards and Panelboards**	**1 day**
21	De-energize all buses at the source.	0.5 days
22	Open all circuit breakers and disconnect switches.	0.5 days
23	**Oil-Filled Power Transformers**	**5.5 days**
24	De-energize all transformer primaries and verify that the secondary is de-energized.	1 day
25	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	1 day
26	Drain and dispose of oil.	1.5 days
27	Clean up and dispose of oil on surface areas around transformers and in containment pits.	2 days
28	**Dry-type Power Transformers**	**2 days**
29	De-energize all transformer primaries and verify that the secondary is de-energized.	1 day
30	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	1 day
31	**Motors**	**4.5 days**



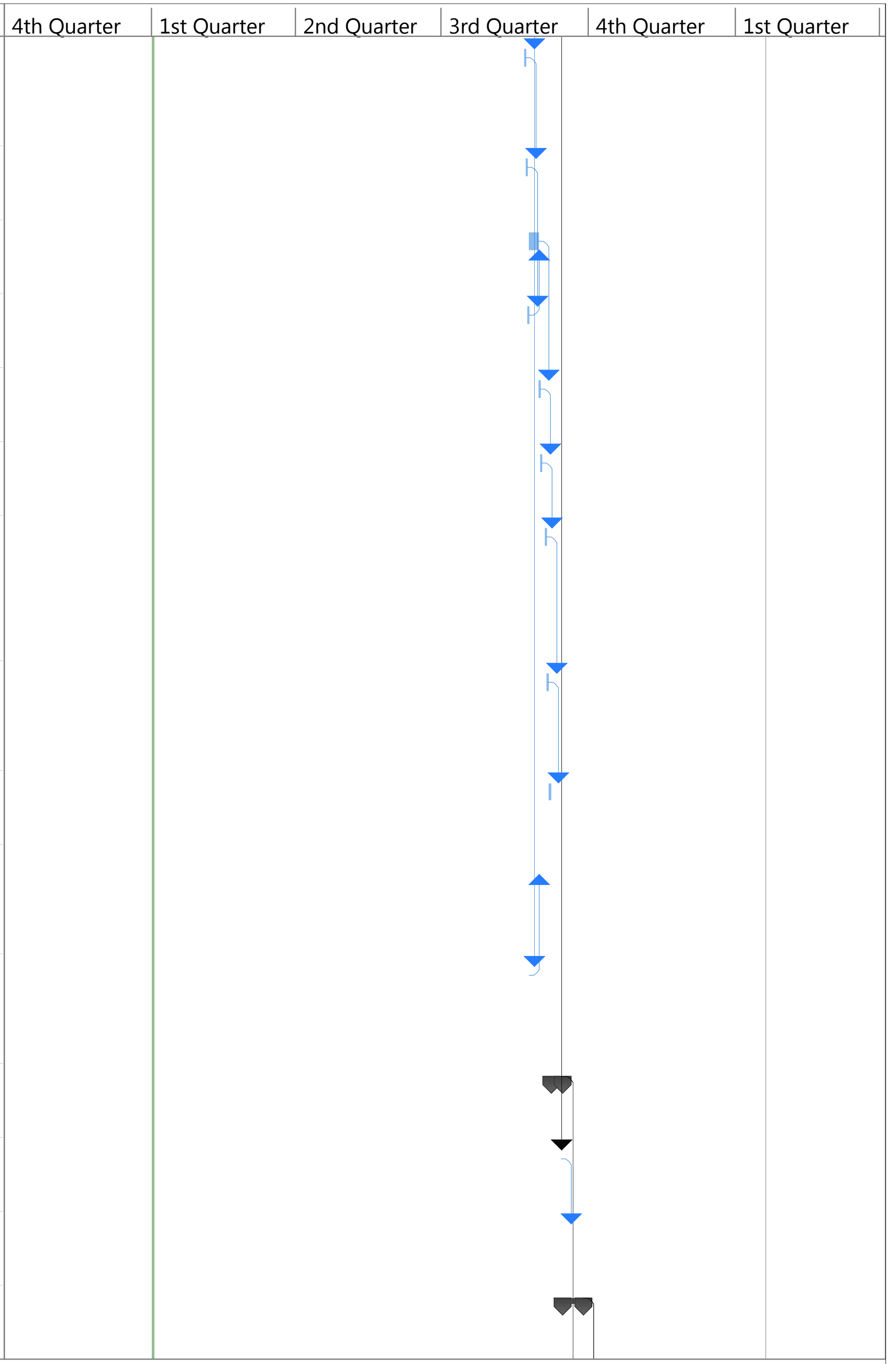
ID	Task Name	Duration
32	De-energize all primary power at the source.	1 day
33	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	2 days
34	Drain lube oil system (if applicable) and dispose of oil.	1.5 days
35	**Coal Handling**	**25 days**
36	Empty all transfer hoppers.	1 day
37	Burn out coal silos.	2 days
38	Confirm all fuel lines, conveyors and trippers are clear of fuel.	2 days
39	Perform cleaning of the coal handling equipment to assure that all coal and coal dust has been removed from site.	20 days
40	**Gas and Igniter System**	**4 days**
41	Isolate fuel gas system in gas yard and vent gas piping	3 days
42	**Waste Oil System**	**2 days**
43	Drain all waste oil systems	2 days
44	**Boiler Chemical Feed**	**2 days**
45	Drain all chemical feed tanks.	2 days
46	**Boiler**	**27 days**
47	Open boiler doors.	1 day
48	Gas side - perform cleaning of the boiler and bottom ash system.	20 days



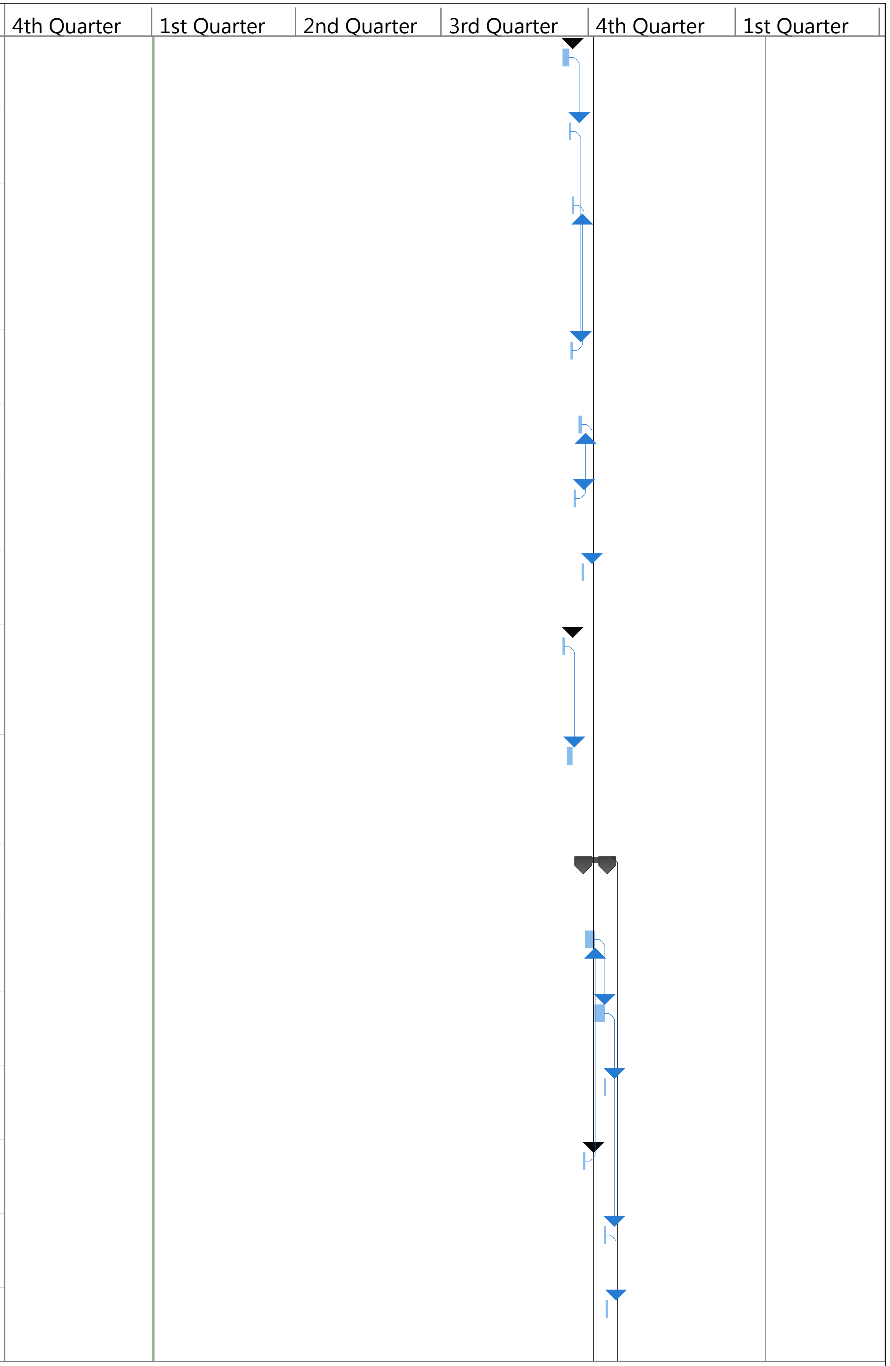
ID	Task Name	Duration
49	Drain boiler, drum, downcomers and headers.	1 day
50	Open drum doors.	1 day
51	Drain and clean the submerged flight conveyor system.	5 days
52	**Stack and Ductwork**	**12 days**
53	Open ductwork doors.	1 day
54	Perform extensive cleaning of the ductwork.	10 days
55	Place cap over stack opening to keep moisture out.	1 day
56	**Condensate and Feedwater Piping**	**2 days**
57	Drain water from the system.	1 day
58	Leave open vents and drains.	1 day
59	**Feedwater heaters**	**3 days**
60	Drain feedwater heaters	1 day
61	Leave open vents and drains.	2 days
62	**Deaerator and Deaerator Storage Tank**	**2 days**
63	Drain Deaerator and Storage	1 day
64	Leave open vents and drains.	1 day
65	**Baghouse**	**16 days**
66	Multiple cleaning cycles for filter bags.	3 days



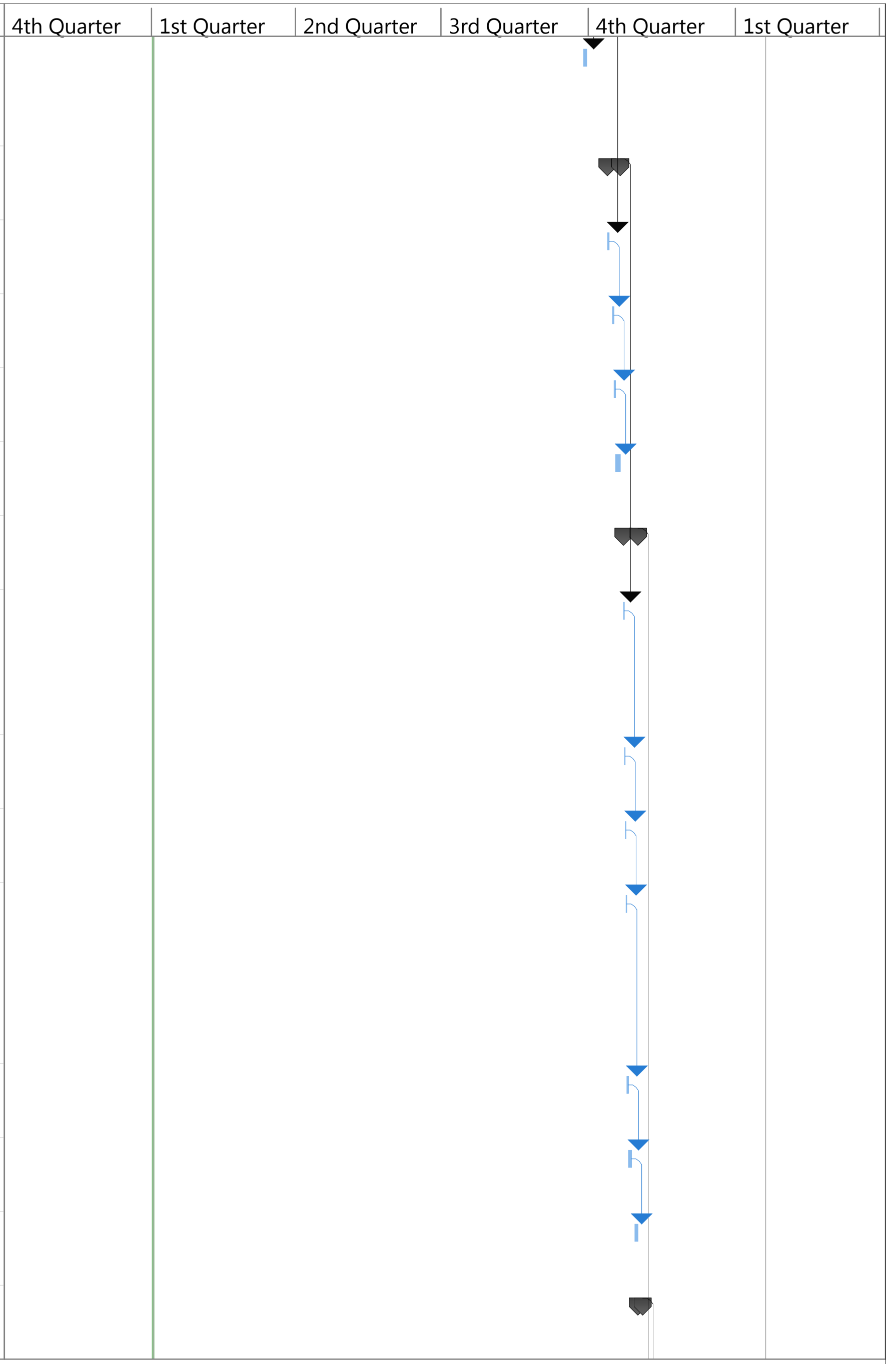
ID	Task Name	Duration
67	Open all vent and drain lines on bag cleaning air and control air lines. Leave in open position or remove vent valves.	1 day
68	Remove all filter bags and cages.	1 day
69	Clear hoppers of all ash	4 days
70	Mechanically secure all compartment dampers and hopper outlet valves in open position.	1 day
71	Disconnect ash transport piping and washdown baghouse hoppers and interior of casing.	1 day
72	Install bird screens across hopper ash outlet and ash line flanges.	1 day
73	Padlock or tack weld all hopper doors shut. (note: if ash hopper doors are indoors, they could be removed and the opening covered with bird screens.)	1 day
74	If walk-in plenum, padlock or tack weld all outlet plenum doors and compartment ventilation dampers shut.	1 day
75	If top-door plenum, close and secure top doors and remove/disable door lift hoist.	2 days
76	If top-door plenum, establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in penthouse enclosure.	1 day
77	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	3 days
78	**Spray Dryer Absorber FGD**	**5 days**
79	Clear SDA of all accumulated solids	4 days
80	Padlock or tack weld SDA module access doors closed.	1 day
81	**Lime Slurry Preparation System**	**9 days**



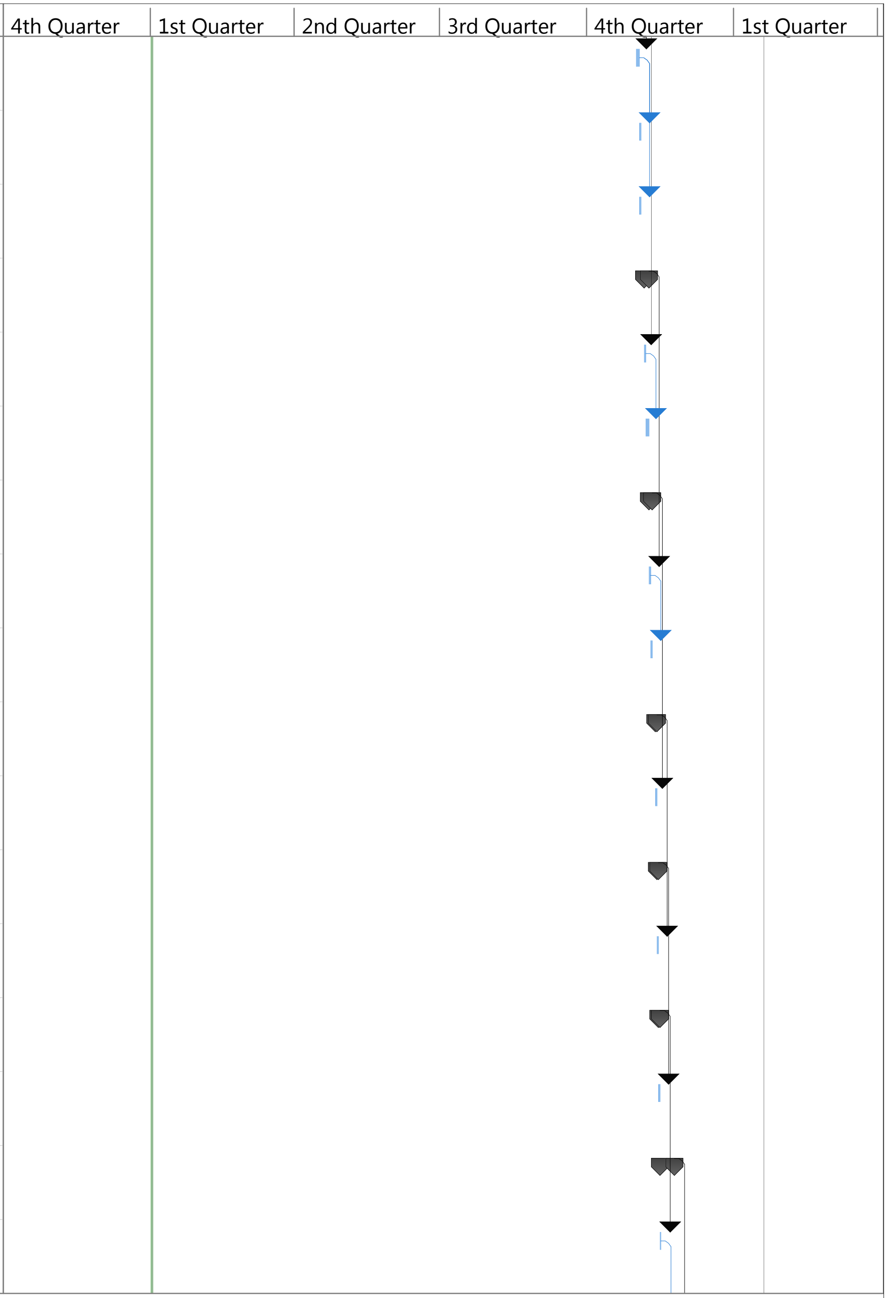
ID	Task Name	Duration
82	Remove lime from day bins.	2 days
83	Removed cartridges/bags from bin vent filters	1 day
84	Padlock or tack weld all bin access doors shut. (note: if doors are indoors, they could be removed and the opening covered with bird screens.)	1 day
85	Remove bin discharge isolation valve and install bird screen.	1 day
86	Thoroughly wash and drain slakers.	2 days
87	Remove balls from any ball mills from ball mill slakers.	1 day
88	Padlock or tack weld slaker access doors closed.	1 day
89	Establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in building.	1 day
90	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	3 days
91	**SCR**	**11 days**
92	Vacuum fly ash from catalyst.	4 days
93	Remove catalyst of salvage or disposal.	4 days
94	Padlock or tack weld access doors shut.	1 day
95	Remove ammonia from storage tank for resale.	1 day
96	Wash out and drain storage tank and supply piping.	1 day
97	Vent storage tank and all piping. Leave vent and drain valves open or remove. Install bird screens.	1 day



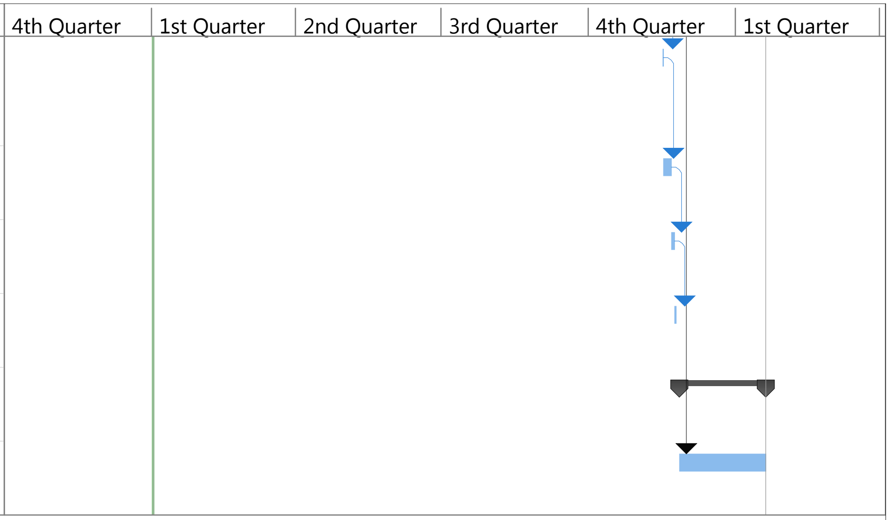
ID	Task Name	Duration
98	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	2 days
99	**Turbine(s) and Condenser**	**6 days**
100	Drain hotwell and leave doors open.	1 day
101	Open main turbine doors.	1 day
102	Open bfp turbine doors.	1 day
103	Remove lube oil.	3 days
104	**Generator**	**7 days**
105	Verify that generator circuit breaker is open and racked out or that high-voltage disconnect switch on substation side of GSU transformer is locked in the open position.	0.5 days
106	Verify that generator field breaker or contactor (if applicable) is open.	0.5 days
107	De-energize power supplies to generator excitation system at the source.	0.5 days
108	De-energize AC and DC power supplies to generator and exciter space heaters, cooling equipment, controls, lighting, etc. at the source and open circuit breakers or remove fuses at the generator and exciter.	0.5 days
109	Drain generator and exciter cooling water systems (if applicable).	1 day
110	Disconnect and remove hydrogen gas tanks and purge generator hydrogen system.	2 days
111	Disconnect and remove fire protection system gas/foam tanks and purge fire protection system.	2 days
112	**Circulation Water and Turbine Cooling Water System**	**3 days**



ID	Task Name	Duration
113	Drain.	2 days
114	Open water box doors.	1 day
115	Drain any circulating water chemical feed tanks.	1 day
116	**Compressed Air System**	**3 days**
117	Open vents and drains.	1 day
118	Remove desiccant from desiccant dryers.	2 days
119	**Auxiliary Steam System**	**2 days**
120	Drain water from system.	1 day
121	Remove aux boiler chemicals.	1 day
122	**Auxiliary Cooling Water System**	**1 day**
123	Drain water from system.	1 day
124	**Condenser Air Extraction and Waterbox Priming System**	**1 day**
125	Drain water from system.	1 day
126	**Building Heating System**	**1 day**
127	Drain water from system.	1 day
128	**Battery System**	**7 days**
129	De-energize all battery chargers from the source.	0.5 days



ID	Task Name	Duration
130	Open all AC and DC circuit breakers and/or fused switches on battery chargers and disconnect cables from batteries.	0.5 days
131	Remove and dispose of battery electrolyte.	3 days
132	Remove and dispose of battery cells.	2 days
133	Clean up and dispose of electrolyte on surface areas around batteries.	1 day
134	**Post Retirement Activities**	**40 days**
135	Post Retirement Activities	40 days



Hawthorn 5 Dismantlement

Owner Additional Costs				
Pre-Dismantlement Activities		$966,146		
Overhead During Dismantlement		$1,753,636		
Post-Dismantlement Activities		$60,800		
Owner Costs Total			$2,780,582	
Demolition General Contractor (DGC) Costs				
Additional Site Management		$1,164,253		
Equipment Rental		$1,994,845		
Consumables		$2,177,603		
Scrap Crew(s)		$1,942,315		
Dismantlement*		$4,770,500		
DGC Insurance	2.00%	$240,990		
Contingency/Profit	15.00%	$1,843,576		
Performance Bond	2.00%	$282,681.65		
Contractor Costs Total:			$14,416,764	
Total:				$17,197,346
Owner Internal Costs:	5.00%			$859,867
Owner Contingency:	25.00%			$4,514,303
Hawthorn Unit 5 Dismantlement Opinion of Probable Cost:				$22,571,517

COMMON

Hawthorn Common Retirement

Owner Costs				
Pre-Retirement Activities		$27,822		
Retirement Activities		$213,081		
Post-Retirement Activities		$34,035		
Owner Direct Total			$274,938	
Owner Internal Costs	5.00%		$13,747	
Owner Contingency:	25.00%		$72,171	
Hawthorn Common Retirement Opinion of Probable Cost:				$360,857

<u>Activities Required by Permit or Regulation</u>

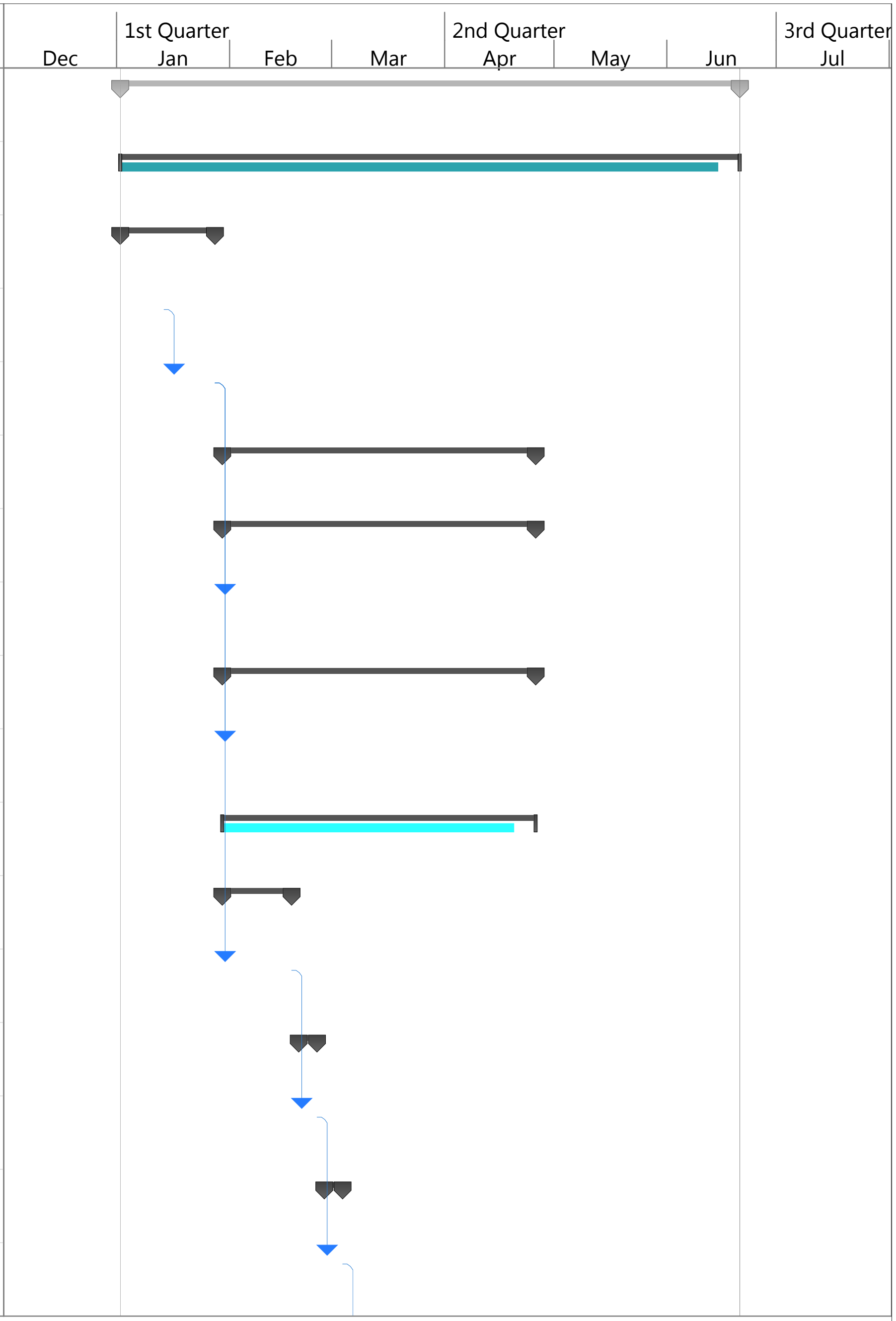
Hawthorn Ash Pond(s)	$7,840,251	
Activities Required by Permit or Regulation:		$7,840,251

Hawthorn Common Retirement

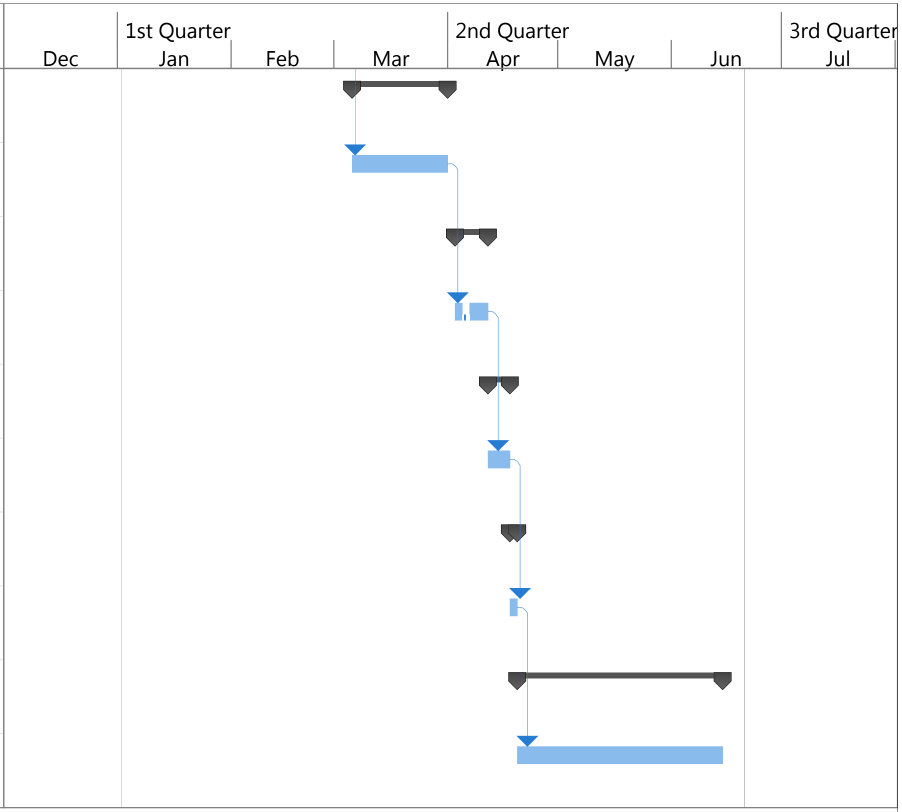
ID	Task Name	Cost
0	**Hawthorn Common Retirement**	**$274,938.32**
1	**Hawthorn Common Retirement**	**$274,938.32**
2	**Pre-Retirement Activities**	**$27,822.40**
3	Permitting Review	$13,911.20
4	Develop Detailed Retirement Plan	$13,911.20
5	**Overheads**	**$110,652.64**
6	**Common Retirement Overheads**	**$96,992.80**
7	Added Overhead Staff for Common Retirement	$96,992.80
8	**Common Retirment Equipment Rental**	**$13,659.84**
9	Common Removal Equipment Rental	$13,659.84
10	**Retirement Activities**	**$102,428.08**
11	**Administration Building**	**$25,700.80**
12	Secure Administration Building	$25,700.80
13	**Training Building**	**$9,815.68**
14	Secure Training Building	$9,815.68
15	**Warehouse(s)**	**$11,688.80**
16	Secure Unit Warehouse(s)	$11,688.80
17	**Maintenance Shops**	**$46,755.20**
18	Secure Maintenance Shops	$46,755.20
19	**Sewage Treatment**	**$5,696.48**
20	Isolate and Cap Sewage Lines	$5,696.48
21	**City Water**	**$0.00**
22	Isolate and Cap City Water Lines	$0.00
23	**Yard Fire Water Systems**	**$2,771.12**
24	Drain Yard Fire Water System	$2,771.12
25	**Post Retirement Closure Activities**	**$34,035.20**
26	Post Retirement Closure Activities	$34,035.20

Exhibit RAK-9

ID	Task Name	Duration
0	**Hawthorn Common Retirement**	**122 days**
1	**Hawthorn Common Retirement**	**122 days**
2	**Pre-Retirement Activities**	**20 days**
3	Permitting Review	10 days
4	Develop Detailed Retirement Plan	10 days
5	**Overheads**	**62 days**
6	**Common Retirement Overheads**	**62 days**
7	Added Overhead Staff for Common Retirement	62 days
8	**Common Retirment Equipment Rental**	**62 days**
9	Common Removal Equipment Rental	62 days
10	**Retirement Activities**	**62 days**
11	**Administration Building**	**15 days**
12	Secure Administration Building	15 days
13	**Training Building**	**5 days**
14	Secure Training Building	5 days
15	**Warehouse(s)**	**5 days**
16	Secure Unit Warehouse(s)	5 days



ID	Task Name	Duration
17	**Maintenance Shops**	**20 days**
18	Secure Maintenance Shops	20 days
19	**Sewage Treatment**	**7 days**
20	Isolate and Cap Sewage Lines	5 days
21	**City Water**	**4 days**
22	Isolate and Cap City Water Lines	4 days
23	**Yard Fire Water Systems**	**2 days**
24	Drain Yard Fire Water System	2 days
25	**Post Retirement Closure Activities**	**40 days**
26	Post Retirement Closure Activities	40 days



Hawthorn Common Dismantlement

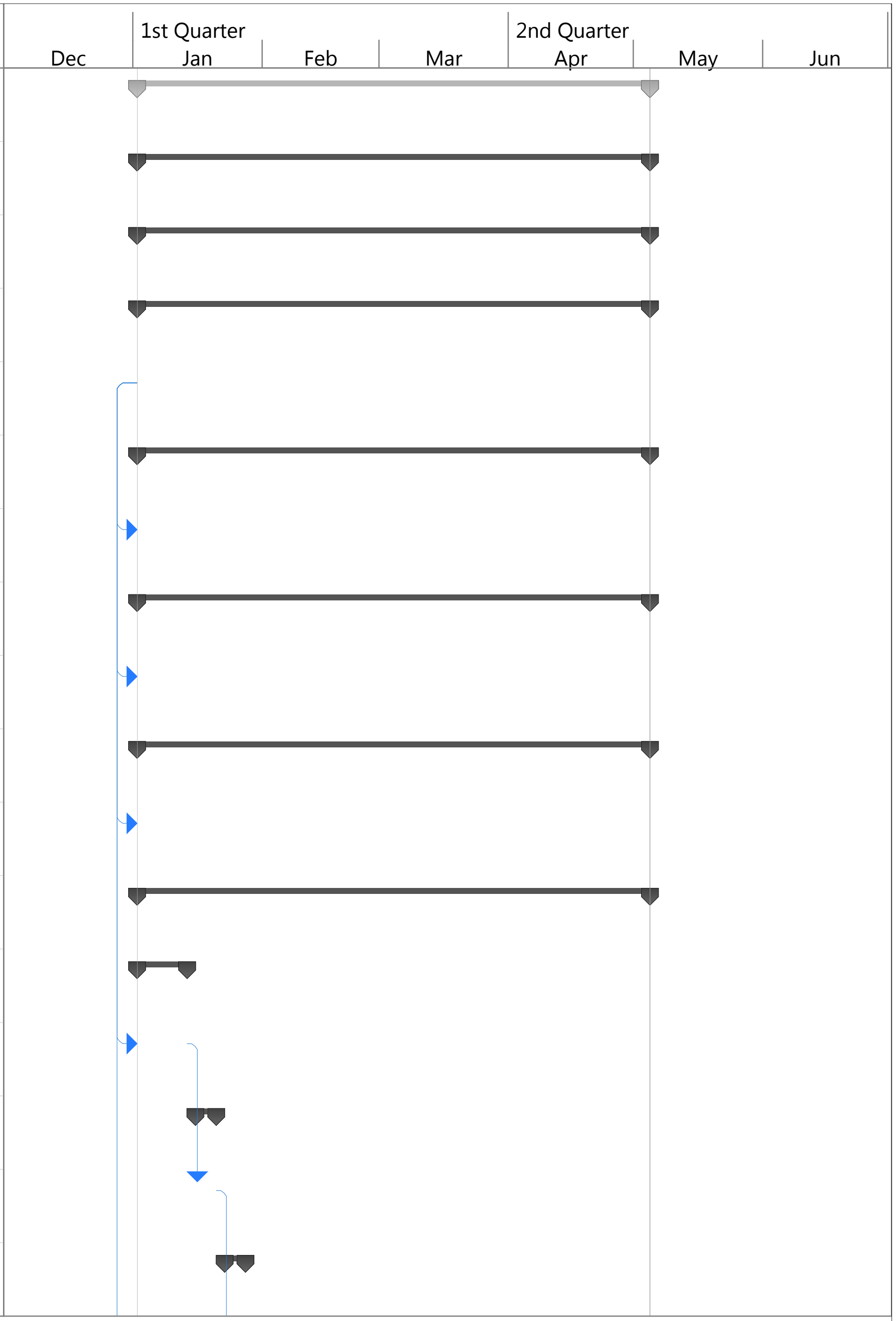
Owner Additional Costs				
Pre-Dismantlement Activities		$0		
Overhead During Dismantlement		$0		
Owner Costs Total			$0	
Demolition General Contractor (DGC) Costs				
Additional Site Management		$46,650		
Equipment Rental		$169,428		
Consumables		$225,120		
Scrap Crew(s)		$329,385		
Dismantlement		$5,859,193		
DGC Insurance	2.00%	$132,596		
Contingency/Profit	15.00%	$1,014,356		
Performance Bond	2.00%	$155,535		
Contractor Costs Total:			$7,932,262	
Total:				$7,932,262
Owner Internal Costs:	5.00%			$396,613
Owner Contingency:	25.00%			$2,082,219
Hawthorn Common Dismantlement Opinion of Probable Cost:				$10,411,094

Hawthorn Common Dismantlement

ID	Task Name	Cost
0	**Hawthorn Common Dismantlement**	**$6,629,775.99**
1	**Hawthorn Common Dismantlement**	**$6,629,775.99**
2	**Overheads**	**$770,583.36**
3	**Common Removal Overheads**	**$46,650.24**
4	Added Overhead Staff for Common Removals	$46,650.24
5	**Common Removal Equipment Rental**	**$169,427.52**
6	Common Removal Equipment Rental	$169,427.52
7	**Scrap Crew**	**$329,385.44**
8	Crew(s) to Handle Scrap Material	$329,385.44
9	**Demolition Contractor Consummables**	**$225,120.16**
10	Consummables	$225,120.16
11	**Dismantlement Activities**	**$5,859,192.63**
12	**Administration Building**	**$37,009.60**
13	Remove Administration Building	$37,009.60
14	**Fuel Yard Office Building**	**$18,504.80**
15	Remove Fuel Yard Office Building	$18,504.80
16	**Training Building**	**$18,504.80**
17	Remove Training Building	$18,504.80
18	**Parking Lots and Plant Roads**	**$85,122.08**
19	Plant Roads and Parking Areas	$74,019.20
20	Guard Shack	$11,102.88
21	**Warehouse(s)**	**$18,504.80**
22	Remove Warehouse	$18,504.80
23	**Maintenance Shop**	**$23,984.80**
24	Remove Maintenance Shop	$23,984.80
25	**Water Treatment**	**$40,710.56**
26	Remove Water Treatment Equipment	$18,504.80
27	Remove Water Treatment Building	$22,205.76
28	**Fuel Yard**	**$403,404.64**
29	**Crusher Tower**	**$148,038.40**
30	Remove Crusher Building and Equipment	$74,019.20
31	**Conveyors**	**$92,524.00**
32	Remove Conveyor 10, 42, 43, 44, and 51	$92,524.00
33	**Car Dumper**	**$96,224.96**
34	Remove Underground Equipment	$14,803.84
35	Remove Above Ground Equipment	$37,009.60
36	Remove Building	$25,906.72
37	Backfill Dumper Structure	$18,504.80
38	**Reclaim**	**$66,617.28**
39	Remove Underground Equipment	$18,504.80
40	Remove Above Ground Equipment	$18,504.80
41	Remove Building	$14,803.84
42	Backfill Structure	$14,803.84
43	**Yard Fire Water Systems**	**$37,009.60**
44	Remove Hydrants and Fire Water System Piping Down to 3' Below Grade	$37,009.60
45	**Stacks**	**$3,854,444.13**
46	Remove Hawthorn 5 Stack to Grade	$3,854,444.13
47	**Final Site Grading and Drainage**	**$1,321,992.82**
48	Final Site Grading and Drainage	$1,321,992.82

Exhibit RAK-9

ID	Task Name	Duration
0	**Hawthorn Common Dismantlement**	**89 days**
1	**Hawthorn Common Dismantlement**	**89 days**
2	**Overheads**	**89 days**
3	**Common Removal Overheads**	**89 days**
4	Added Overhead Staff for Common Removals	89 days
5	**Common Removal Equipment Rental**	**89 days**
6	Common Removal Equipment Rental	89 days
7	**Scrap Crew**	**89 days**
8	Crew(s) to Handle Scrap Material	89 days
9	**Demolition Contractor Consummables**	**89 days**
10	Consummables	89 days
11	**Dismantlement Activities**	**89 days**
12	**Administration Building**	**10 days**
13	Remove Administration Building	10 days
14	**Fuel Yard Office Building**	**5 days**
15	Remove Fuel Yard Office Building	5 days
16	**Training Building**	**5 days**



ID	Task Name	Duration
17	Remove Training Building	5 days
18	**Parking Lots and Plant Roads**	**23 days**
19	Plant Roads and Parking Areas	20 days
20	Guard Shack	3 days
21	**Warehouse(s)**	**5 days**
22	Remove Warehouse	5 days
23	**Maintenance Shop**	**10 days**
24	Remove Maintenance Shop	10 days
25	**Water Treatment**	**11 days**
26	Remove Water Treatment Equipment	5 days
27	Remove Water Treatment Building	6 days
28	**Fuel Yard**	**89 days**
29	**Crusher Tower**	**20 days**
30	Remove Crusher Building and Equipment	20 days
31	**Conveyors**	**25 days**
32	Remove Conveyor 10, 42, 43, 44, and 51	25 days
33	**Car Dumper**	**26 days**

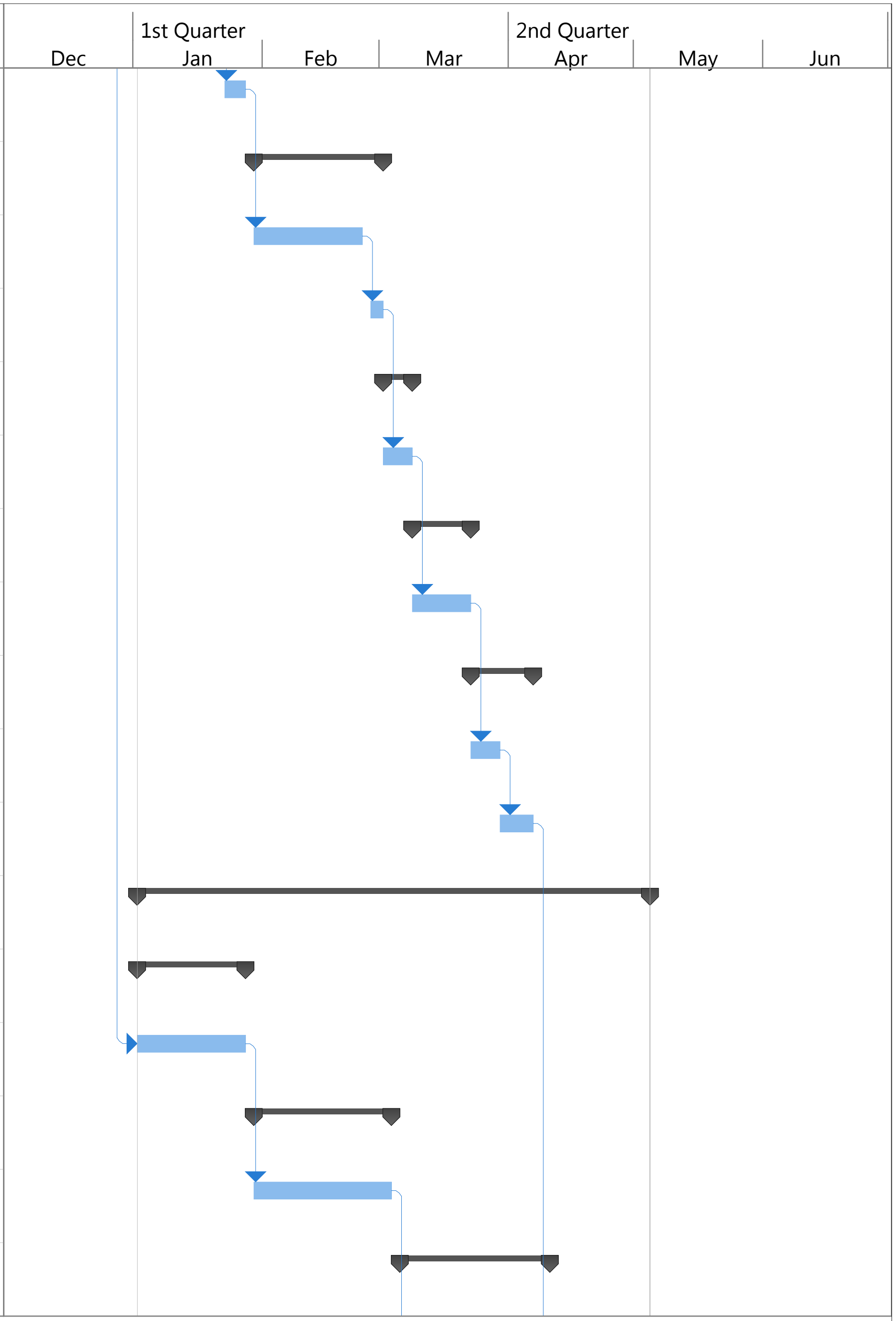
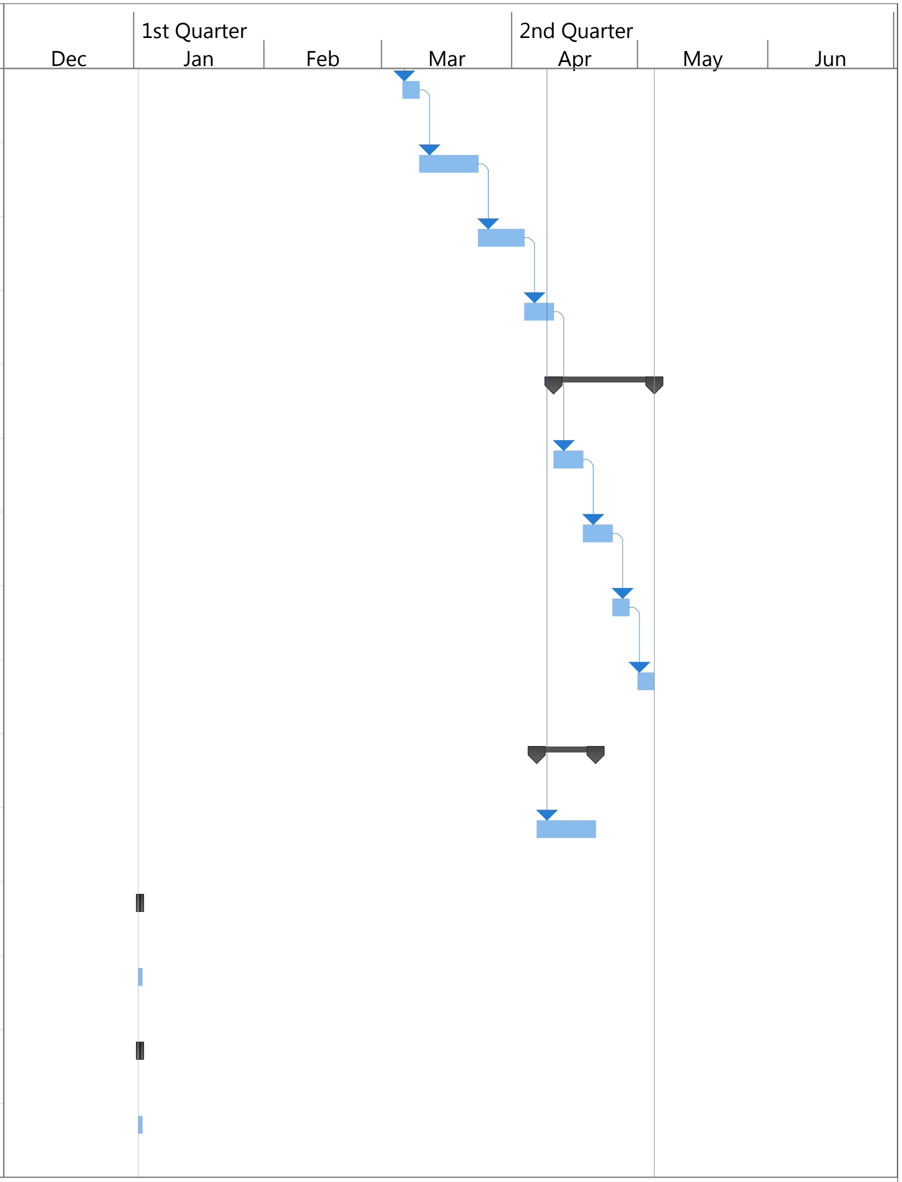


Exhibit RAK-9

ID	Task Name	Duration
34	Remove Underground Equipment	4 days
35	Remove Above Ground Equipment	10 days
36	Remove Building	7 days
37	Backfill Dumper Structure	5 days
38	**Reclaim**	**18 days**
39	Remove Underground Equipment	5 days
40	Remove Above Ground Equipment	5 days
41	Remove Building	4 days
42	Backfill Structure	4 days
43	**Yard Fire Water Systems**	**10 days**
44	Remove Hydrants and Fire Water System Piping Down to 3' Below Grade	10 days
45	**Stacks**	**1 day**
46	Remove Hawthorn 5 Stack to Grade	1 day
47	**Final Site Grading and Drainage**	**1 day**
48	Final Site Grading and Drainage	1 day



LA CYGNE GENERATING STATION

LA CYGNE GENERATING STATION

The La Cygne Generating Station consists of two coal-fired power plants.

La Cygne Unit 1 has an SPP-accredited rating of 735 MW and was placed in service in 1973. Unit 1 has a super-critical Babcock & Wilcox boiler and a Westinghouse turbine. Lake water is used for condenser cooling. La Cygne Unit 1 was originally commissioned with an eight-module wet scrubber with a dedicated limestone slurry preparation facility and a dedicated stack. In 2006, La Cygne Unit 1 was retrofitted with an SCR. In 2015, a baghouse, wet scrubber, and new dual flue chimney will be commissioned. The retirement and dismantlement of this new equipment is included in this study. The original stack and limestone slurry equipment, ID fans, and outlet flues are currently being removed. These costs are included in this study. The original scrubber building and equipment inside the building will be removed. The retirement and dismantlement of this equipment is included in this study.

La Cygne Unit 2 has an SPP-accredited unit rating of 686 MW and was placed in service in 1977. Unit 2 has a sub-critical Babcock & Wilcox boiler and a General Electric turbine. Lake water is used for condenser cooling. La Cygne Unit 2 was originally commissioned with a dedicated chimney and an electrostatic precipitator for flue gas particulate removal. In 2014, La Cygne Unit 2 was retrofitted with an SCR, baghouse, wet scrubber, and a new dual flue chimney. Current plans are to abandon the electrostatic precipitator in place. The dismantlement of the electrostatic precipitator is included in this study. The original chimney will be dismantled in 2015. This cost is not included in this study.

Both La Cygne Units 1 and 2 have a fuel oil igniter system. Both units are supplied with fuel oil from a common fuel oil unloading and storage facility.

Both Units 1 and 2 have a wet scrubber that utilizes a common reagent preparation and gypsum handling facility. This facility includes a limestone unloading and storage area, a limestone slurry preparation system, a gypsum preparation system, and a gypsum stack-out storage system.

Both Units 1 and 2 beneficially use coal combustion products off site. Coal combustion products that are not beneficially used off site are disposed of in the on-site landfill.

The following are the major systems and equipment that were included in the retirement and dismantlement of each unit and the major systems and equipment that were considered common (additional details are listed in the attached retirement and dismantlement schedules included in this Appendix).

LA CYGNE UNIT 1

1. Boiler, SCR, and boiler auxiliaries.
2. Turbine, heat balance equipment, and turbine auxiliaries.
3. Wet scrubber and baghouse.
4. Dedicated Unit 1 fuel handling equipment.
5. Dedicated Unit 1 fuel oil equipment.
6. Original eight-module wet scrubber building.

LA CYGNE UNIT 2

1. Boiler and boiler auxiliaries.
2. Turbine, heat balance equipment, and turbine auxiliaries.
3. Wet scrubber and baghouse original precipitator.
4. Dedicated Unit 2 fuel handling equipment.
5. Dedicated Unit 2 fuel oil equipment.

COMMON

1. Administration building.
2. Fuel yard office building.
3. Training building.
4. Warehouses.
5. Maintenance shops.
6. Welding shop.
7. Insulators shop.
8. Auxiliary boilers.
9. Circulating water intake structure and circulating water piping.
10. Common fuel handling equipment.
11. Sewage treatment and wastewater lagoon.
12. Fuel oil storage and unloading.
13. Fire water systems.
14. Dual fuel stack.
15. Reagent preparation and gypsum handling facility.
16. Landfill.

UNIT 1

La Cygne 1 Retirement

Owner Costs				
Pre-Retirement Activities		$106,968		
Retirement Activities		$716,272		
Post-Retirement Activities		$28,182		
Owner Direct Total			$851,422	
Owner Internal Costs	5.00%		$42,571	
Owner Contingency:	25.00%		$223,498	
La Cygne 1 Retirement Opinion of Probable Cost:				$1,117,492
<u>Activities Required by Permit or Regulation</u>				
La Cygne Station Asbestos Removal			$2,674,758	
Activities Required by Permit or Regulation:				$2,674,758

La Cygne 1

ID	Task Name	Cost
0	**La Cygne 1**	**$851,422.21**
1	**La Cygne 1 Retirement**	**$851,422.21**
2	**Pre-Engineering**	**$106,967.52**
3	Permit review and engineering analysis, establish isolation points, and confirm fı	$0.00
4	**KCL&L Overhead Costs**	**$130,798.72**
5	KCP&L Retirement Manager	$130,798.72
6	**Equipment Rentals**	**$43,843.68**
7	Vacuum truck	$43,843.68
8	**Retirement**	**$541,629.89**
9	**Electrical**	**$20,553.92**
10	**Medium and Low Voltage Draw out Switchgear**	**$2,903.52**
11	De-energize all buses at the source.	$483.92
12	Open all circuit breakers.	$483.92
13	Rack all circuit breakers into the fully withdrawn, disconnected position.	$483.92
14	Verify that the closing/tripping springs are discharged.	$483.92
15	De-energize control power and auxiliary power circuits of each circuit breal	$967.84
16	**Motor Control Centers**	**$1,935.68**
17	De-energize all buses at the source.	$483.92
18	Open all circuit breakers and disconnect switches.	$483.92
19	Remove all fuses in control circuits.	$967.84
20	**Low-voltage Switchboards and Panelboards**	**$967.84**
21	De-energize all buses at the source.	$483.92
22	Open all circuit breakers and disconnect switches.	$483.92
23	**Oil-Filled Power Transformers**	**$6,072.32**
24	De-energize all transformer primaries and verify that the secondary is de-eı	$967.84
25	De-energize all low-voltage AC or DC power sources for space heaters, cool	$967.84
26	Drain and dispose of oil.	$2,867.52
27	Clean up and dispose of oil on surface areas around the transformers on in	$1,269.12
28	**Dry-type Power Transformers**	**$1,935.68**
29	De-energize all transformer primaries and verify that the secondary is de-eı	$967.84
30	De-energize all low-voltage AC or DC power sources for space heaters, cool	$967.84
31	**Motors**	**$6,738.88**
32	De-energize all primary power at the source.	$1,935.68
33	De-energize all low-voltage power sources for space heaters or other auxili	$1,935.68
34	Drain lube oil system (if applicable) and dispose of oil.	$2,867.52
35	**Coal Handling**	**$29,070.80**
36	Empty all transfer hoppers.	$1,853.84
37	Confirm all fuel lines and conveyors.	$1,834.56
38	Perform cleaning of the coal handling equipment to assure that all coal and c	$25,382.40
39	**Fuel Oil and Igniter System**	**$2,751.84**
40	Drain fuel oil system	$2,751.84
41	**Boiler Chemical Feed**	**$1,834.56**
42	Drain all chemical feed tanks.	$1,834.56
43	**Condensate Polisher**	**$4,976.80**
44	Drain water from system.	$917.28
45	Drain acid and caustic tanks.	$1,834.56
46	Open tanks and vessels.	$955.84
47	Remove resin.	$1,269.12
48	**Boiler**	**$30,927.60**

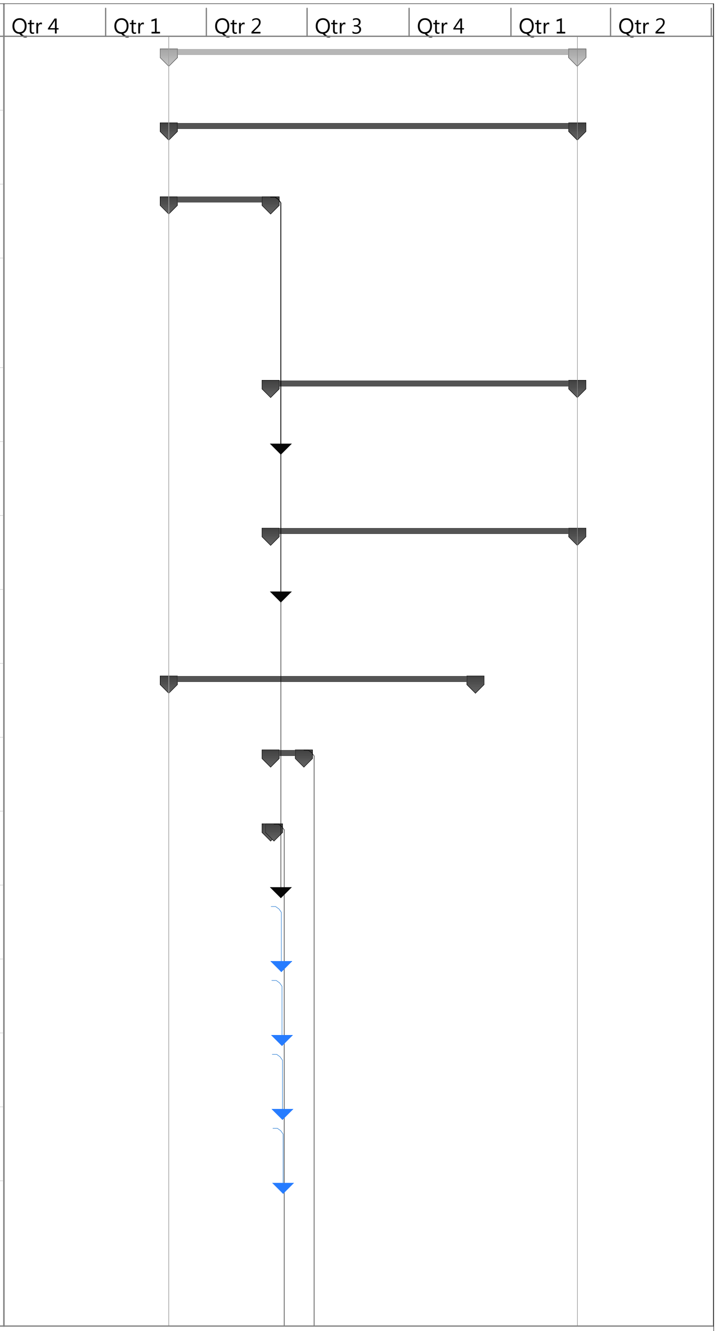
La Cygne 1

ID	Task Name	Cost
49	Open boiler doors.	$955.84
50	Gas side - perform cleaning of the boiler and bottom ash system.	$25,382.40
51	Drain boiler, drum, downcomers and headers.	$917.28
52	Open drum doors.	$955.84
53	Drain and clean the submerged flight conveyor system.	$2,716.24
54	**Ductwork**	**$344,145.25**
55	Open ductwork doors.	$955.84
56	Perform extensive cleaning of the ductwork.	$12,691.20
57	Install Flue Cap on L1 Stack Flue	$330,498.21
58	**Condensate and Feedwater Piping**	**$1,834.56**
59	Drain water from the system.	$917.28
60	Leave open vents and drains.	$917.28
61	**Feedwater heaters**	**$2,751.84**
62	Drain feedwater heaters	$917.28
63	Leave open vents and drains.	$1,834.56
64	**Deaerator and Deaerator Storage Tank**	**$1,834.56**
65	Drain Deaerator and Storage	$917.28
66	Leave open vents and drains.	$917.28
67	**Baghouse**	**$18,919.84**
68	Multiple cleaning cycles for filter bags.	$2,751.84
69	Open all vent and drain lines on bag cleaning air and control air lines. Leave in	$917.28
70	Remove all filter bags and cages.	$955.84
71	Clear hoppers of all ash	$3,103.68
72	Mechanically secure all compartment dampers and hopper outlet valves in op	$955.84
73	Disconnect ash transport piping and washdown baghouse hoppers and interic	$1,571.12
74	Install bird screens across hopper ash outlet and ash line flanges.	$955.84
75	Padlock or tack weld all hopper doors shut. (note: if ash hopper doors are ind	$955.84
76	If walk-in plenum, padlock or tack weld all outlet plenum doors and compartn	$955.84
77	If top-door plenum, close and secure top doors and remove/disable door lift	$1,873.12
78	If top-door plenum, establish natural ventilation or maintain HVAC fan to prov	$1,020.08
79	Pull electrical supply breakers on all electrical equipment except lighting and	$2,903.52
80	**Wet FGD system**	**$26,222.88**
81	Multiple mist eliminator wash cycles. Remove ME's from absorber.	$2,331.76
82	Drain and flush all slurry and reclaim water pumps and piping. Leave vent and	$1,873.12
83	Drain and wash out the reaction tank, reagent storage tank, recycle water tan	$5,183.28
84	Leave all tank drain valves open or remove. Install bird screens across opening	$1,911.68
85	Drain all makeup and mist eliminator water pumps and piping. Leave vent and	$2,828.96
86	Mechanically secure all flue gas isolation dampers in open position or remove	$1,911.68
87	Remove solids from all inlet and outlet ductwork as necessary	$2,538.24
88	Open all vent station air and control air lines. Leave in open position or remo	$1,873.12
89	Padlock or tack weld all access doors to modules and ductwork shut.	$1,911.68
90	Remove access doors to open-top tanks.	$955.84
91	Pull electrical supply breakers on all electrical equipment except lighting and	$2,903.52
92	**FGD Reagent Preparation-Limestone wet Scrubber**	**$11,270.00**
93	Remove limestone from day bins.	$1,551.84
94	Removed cartridges/bags from bin vent filters	$1,551.84
95	Padlock or tack weld all bin access doors shut. (note: if doors are indoors, the	$955.84
96	Remove bin discharge isolation valve and install bird screen.	$477.92
97	Thoroughly wash and drain mills	$1,551.84

ID	Task Name	Cost
98	Remove balls from any ball mills	$1,269.12
99	Padlock or tack weld mill access doors closed.	$955.84
100	Establish natural ventilation or maintain HVAC fan to provide minimum air ch	$1,020.08
101	Pull electrical supply breakers on all electrical equipment except lighting and	$1,935.68
102	**FGD Byproduct Dewatering - Hydrocyclones and Vacuum Filters**	**$8,032.96**
103	Wash vacuum filter belt and remove all accumulated solids	$2,538.24
104	Wash out vacuum receiver, remove pressure relief valve and access door. Inst	$1,571.12
105	Establish natural ventilation or maintain HVAC fan to provide minimum air ch	$1,020.08
106	Pull electrical supply breakers on all electrical equipment except lighting and	$2,903.52
107	**SCR**	**$11,098.96**
108	Vacuum fly ash from catalyst.	$2,538.24
109	Remove catalyst of salvage or disposal.	$3,180.80
110	Padlock or tack weld access doors shut.	$955.84
111	Remove ammonia from storage tank for resale.	$775.92
112	Wash out and drain storage tank and supply piping.	$775.92
113	Vent storage tank and all piping. Leave vent and drain valves open or remove.	$936.56
114	Pull electrical supply breakers on all electrical equipment except lighting and	$1,935.68
115	**Turbine(s) and Condenser**	**$5,715.76**
116	Drain hotwell and leave doors open.	$936.56
117	Open main turbine doors.	$955.84
118	Open bfp turbine doors.	$955.84
119	Remove lube oil.	$2,867.52
120	**Generator**	**$6,618.48**
121	Verify that generator circuit breaker is open and racked out or that high-volta	$483.92
122	Verify that generator field breaker or contactor (if applicable) is open.	$483.92
123	De-energize power supplies to generator excitation system at the source.	$483.92
124	De-energize AC and DC power supplies to generator and exciter space heater	$483.92
125	Drain generator and exciter cooling water systems (if applicable).	$936.56
126	Disconnect and remove hydrogen gas tanks and purge generator hydrogen sy	$1,834.56
127	Disconnect and remove fire protection system gas/foam tanks and purge fire	$1,911.68
128	**Circulation Water and Turbine Cooling Water System**	**$3,707.68**
129	Drain.	$1,834.56
130	Open water box doors.	$955.84
131	Drain any circulating water chemical feed tanks.	$917.28
132	**Compressed Air System**	**$917.28**
133	Open vents and drains.	$917.28
134	**Auxiliary Steam System**	**$917.28**
135	Drain water from system.	$917.28
136	**Auxiliary Cooling Water System**	**$917.28**
137	Drain water from system.	$917.28
138	**Condenser Air Extraction and Waterbox Priming System**	**$917.28**
139	Drain water from system.	$917.28
140	**Building Heating System**	**$917.28**
141	Drain water from system.	$917.28
142	**Battery System**	**$4,775.20**
143	De-energize all battery chargers from the source.	$483.92
144	Open all AC and DC circuit breakers and/or fused switches on battery charger	$483.92
145	Remove and dispose of battery electrolyte.	$1,903.68
146	Remove and dispose of battery cells.	$1,269.12

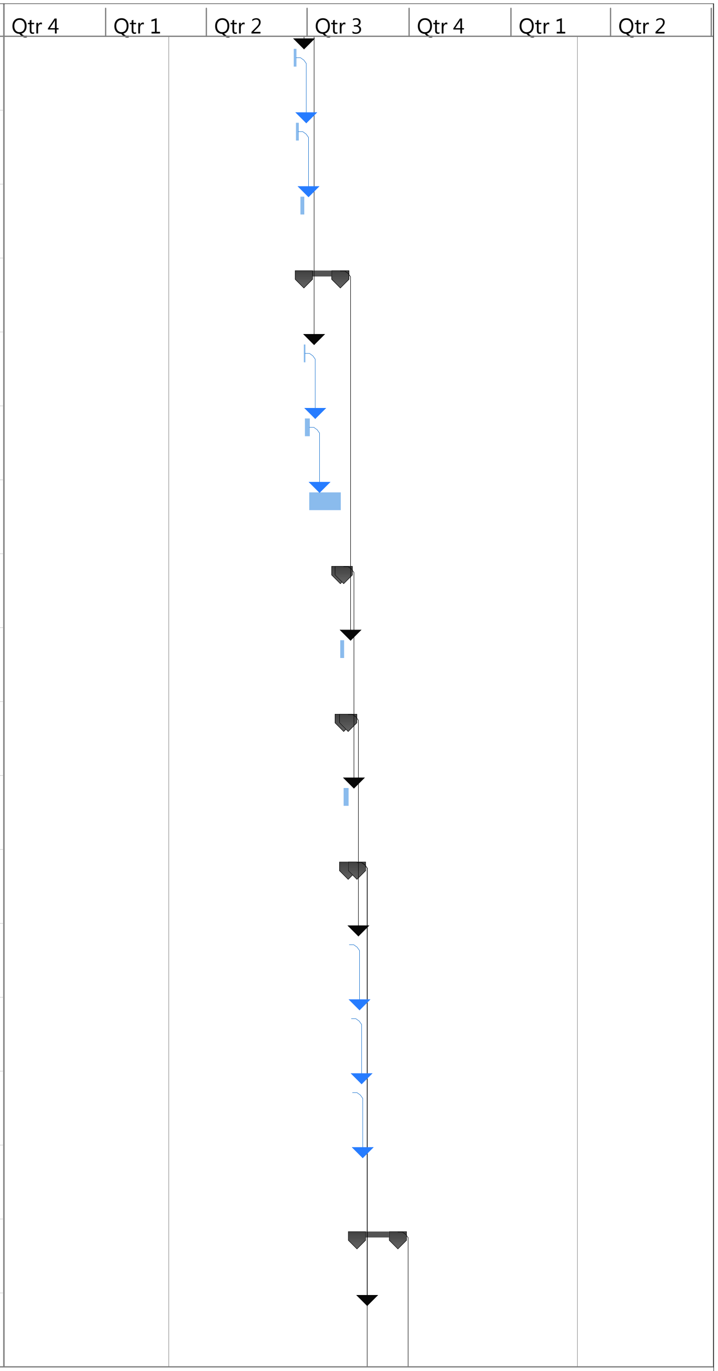
ID	Task Name	Cost
147	Clean up and dispose of electrolyte on surface areas around batteries.	$634.56
148	**Post Retirement Activities**	**$28,182.40**
149	Post Retirement Activities	$28,182.40

ID	Task Name	Duration
0	**La Cygne 1**	**265 days**
1	**La Cygne 1 Retirement**	**265 days**
2	**Pre-Engineering**	**66 days**
3	Permit review and engineering analysis, establish isolation points, and confirm fuel yard inventory has been reduced to zero tons.	66 days
4	**KCL&L Overhead Costs**	**199 days**
5	KCP&L Retirement Manager	199 days
6	**Equipment Rentals**	**199 days**
7	Vacuum truck	199 days
8	**Retirement**	**199 days**
9	**Electrical**	**22 days**
10	**Medium and Low Voltage Draw out Switchgear**	**3 days**
11	De-energize all buses at the source.	0.5 days
12	Open all circuit breakers.	0.5 days
13	Rack all circuit breakers into the fully withdrawn, disconnected position.	0.5 days
14	Verify that the closing/tripping springs are discharged.	0.5 days
15	De-energize control power and auxiliary power circuits of each circuit breaker at the source and by opening control power circuit breakers or removing fuses in each breaker cubicle.	1 day

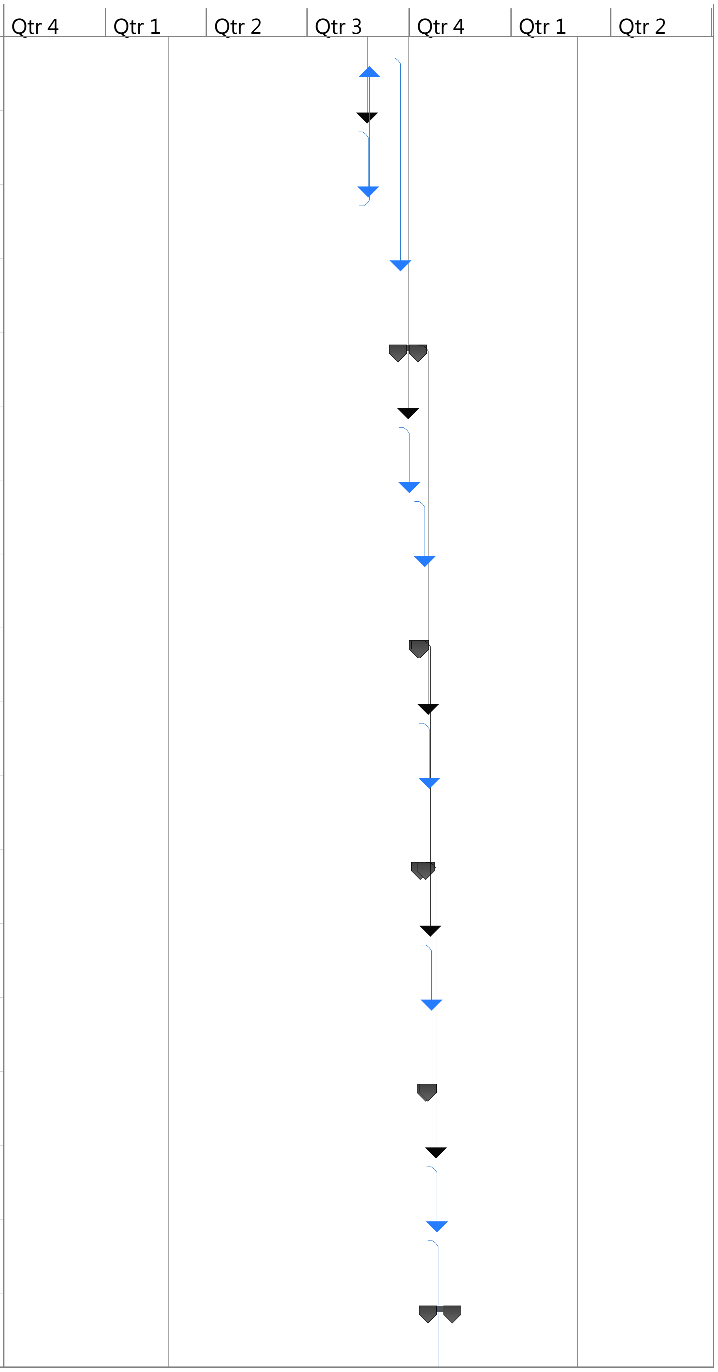


ID	Task Name	Duration
16	**Motor Control Centers**	**2 days**
17	De-energize all buses at the source.	0.5 days
18	Open all circuit breakers and disconnect switches.	0.5 days
19	Remove all fuses in control circuits.	1 day
20	**Low-voltage Switchboards and Panelboards**	**1 day**
21	De-energize all buses at the source.	0.5 days
22	Open all circuit breakers and disconnect switches.	0.5 days
23	**Oil-Filled Power Transformers**	**7 days**
24	De-energize all transformer primaries and verify that the secondary is de-energized.	1 day
25	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	1 day
26	Drain and dispose of oil.	3 days
27	Clean up and dispose of oil on surface areas around the transformers on in containment pits.	2 days
28	**Dry-type Power Transformers**	**2 days**
29	De-energize all transformer primaries and verify that the secondary is de-energized.	1 day
30	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	1 day
31	**Motors**	**7 days**

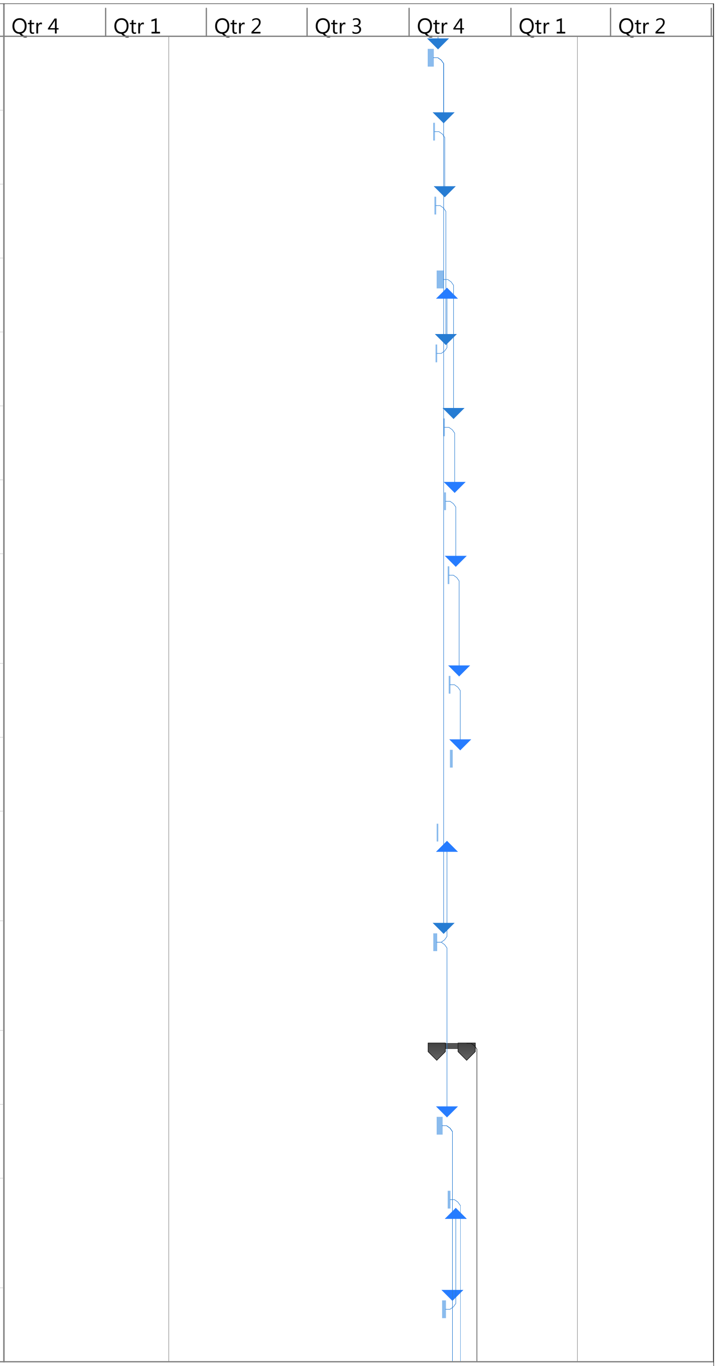
ID	Task Name	Duration
32	De-energize all primary power at the source.	2 days
33	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	2 days
34	Drain lube oil system (if applicable) and dispose of oil.	3 days
35	**Coal Handling**	**23 days**
36	Empty all transfer hoppers.	1 day
37	Confirm all fuel lines and conveyors.	2 days
38	Perform cleaning of the coal handling equipment to assure that all coal and coal dust has been removed from site.	20 days
39	**Fuel Oil and Igniter System**	**3 days**
40	Drain fuel oil system	3 days
41	**Boiler Chemical Feed**	**2 days**
42	Drain all chemical feed tanks.	2 days
43	**Condensate Polisher**	**6 days**
44	Drain water from system.	1 day
45	Drain acid and caustic tanks.	2 days
46	Open tanks and vessels.	1 day
47	Remove resin.	2 days
48	**Boiler**	**27 days**
49	Open boiler doors.	1 day



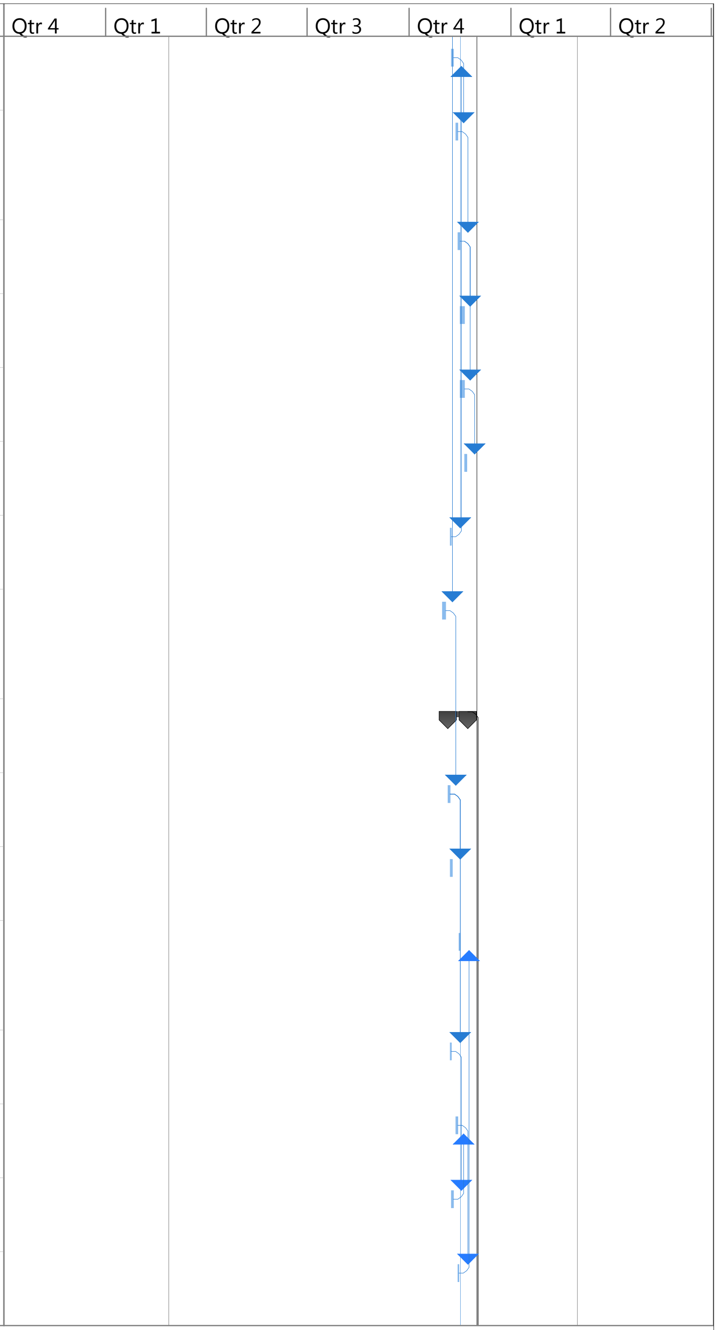
ID	Task Name	Duration
50	Gas side - perform cleaning of the boiler and bottom ash system.	20 days
51	Drain boiler, drum, downcomers and headers.	1 day
52	Open drum doors.	1 day
53	Drain and clean the submerged flight conveyor system.	5 days
54	**Ductwork**	**12 days**
55	Open ductwork doors.	1 day
56	Perform extensive cleaning of the ductwork.	10 days
57	Install Flue Cap on L1 Stack Flue	1 day
58	**Condensate and Feedwater Piping**	**2 days**
59	Drain water from the system.	1 day
60	Leave open vents and drains.	1 day
61	**Feedwater heaters**	**3 days**
62	Drain feedwater heaters	1 day
63	Leave open vents and drains.	2 days
64	**Deaerator and Deaerator Storage Tank**	**2 days**
65	Drain Deaerator and Storage	1 day
66	Leave open vents and drains.	1 day
67	**Baghouse**	**16 days**



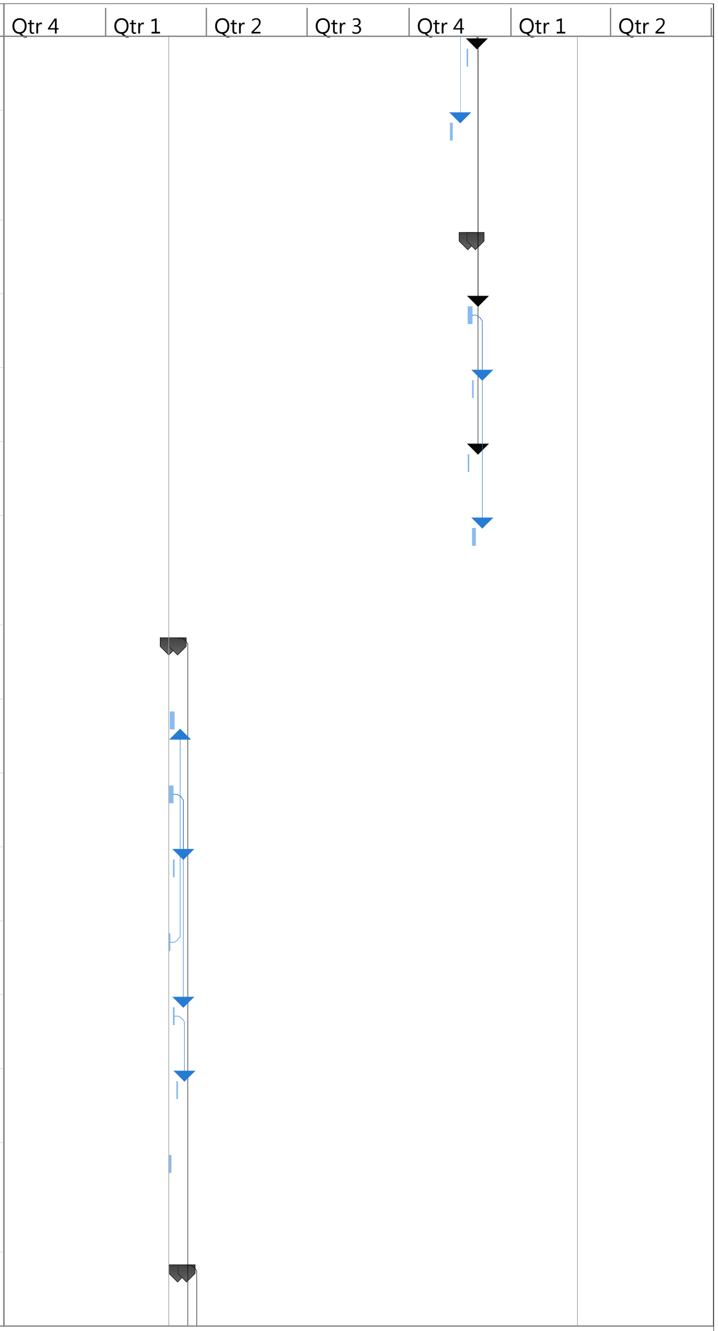
ID	Task Name	Duration
68	Multiple cleaning cycles for filter bags.	3 days
69	Open all vent and drain lines on bag cleaning air and control air lines. Leave in open position or remove vent valves.	1 day
70	Remove all filter bags and cages.	1 day
71	Clear hoppers of all ash	4 days
72	Mechanically secure all compartment dampers and hopper outlet valves in open position.	1 day
73	Disconnect ash transport piping and washdown baghouse hoppers and interior of casing.	1 day
74	Install bird screens across hopper ash outlet and ash line flanges.	1 day
75	Padlock or tack weld all hopper doors shut. (note: if ash hopper doors are indoors, they could be removed and the opening covered with bird screens.)	1 day
76	If walk-in plenum, padlock or tack weld all outlet plenum doors and compartment ventilation dampers shut.	1 day
77	If top-door plenum, close and secure top doors and remove/disable door lift hoist.	2 days
78	If top-door plenum, establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in penthouse enclosure.	1 day
79	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	3 days
80	**Wet FGD system**	**19 days**
81	Multiple mist eliminator wash cycles. Remove ME's from absorber.	3 days
82	Drain and flush all slurry and reclaim water pumps and piping. Leave vent and drain valves open or remove. Install bird screens across drain openings.	2 days
83	Drain and wash out the reaction tank, reagent storage tank, recycle water tank, absorber blowdown tank, etc.	3 days



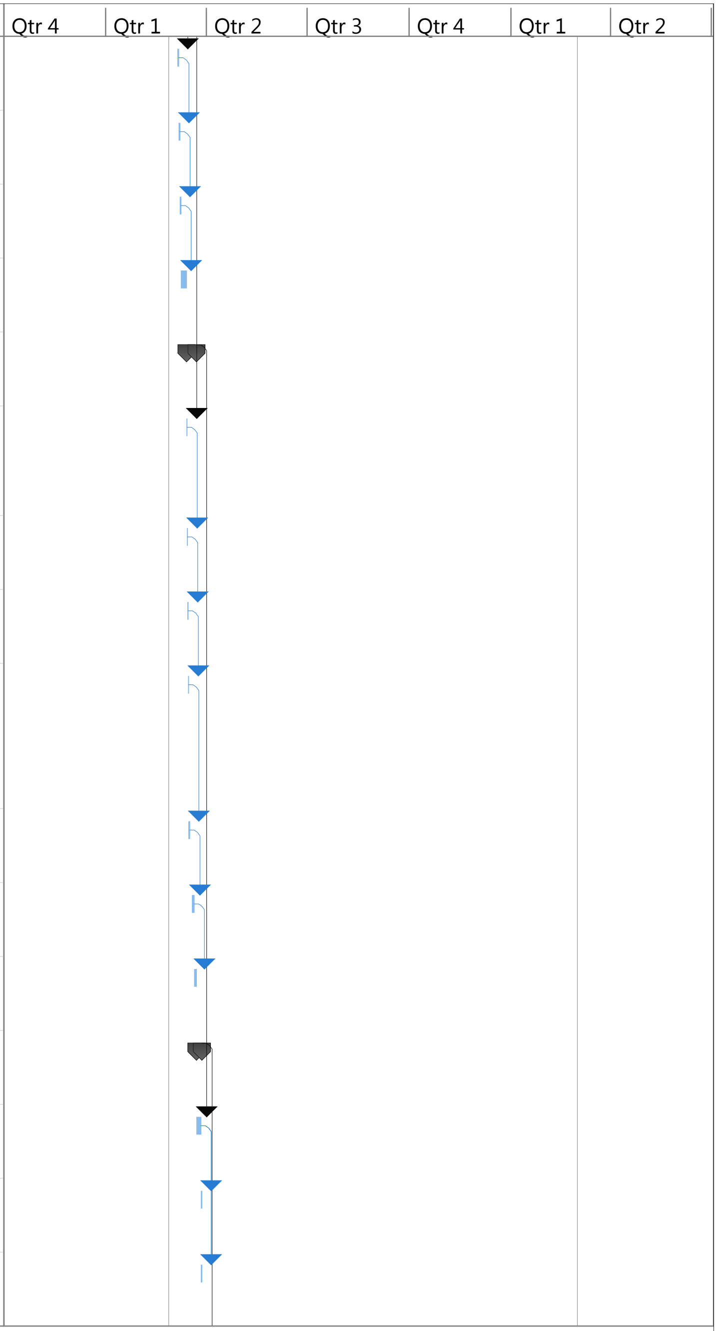
ID	Task Name	Duration
84	Leave all tank drain valves open or remove. Install bird screens across openings.	2 days
85	Drain all makeup and mist eliminator water pumps and piping. Leave vent and drain valves open or remove. Install bird screens across drain openings.	2 days
86	Mechanically secure all flue gas isolation dampers in open position or remove damper blades.	2 days
87	Remove solids from all inlet and outlet ductwork as necessary	2 days
88	Open all vent station air and control air lines. Leave in open position or remove vent valves	2 days
89	Padlock or tack weld all access doors to modules and ductwork shut.	2 days
90	Remove access doors to open-top tanks.	1 day
91	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	3 days
92	**FGD Reagent Preparation-Limestone wet Scrubber**	**14 days**
93	Remove limestone from day bins.	2 days
94	Removed cartridges/bags from bin vent filters	2 days
95	Padlock or tack weld all bin access doors shut. (note: if doors are indoors, they could be removed and the opening covered with bird screens.)	1 day
96	Remove bin discharge isolation valve and install bird screen.	1 day
97	Thoroughly wash and drain mills	2 days
98	Remove balls from any ball mills	2 days
99	Padlock or tack weld mill access doors closed.	1 day



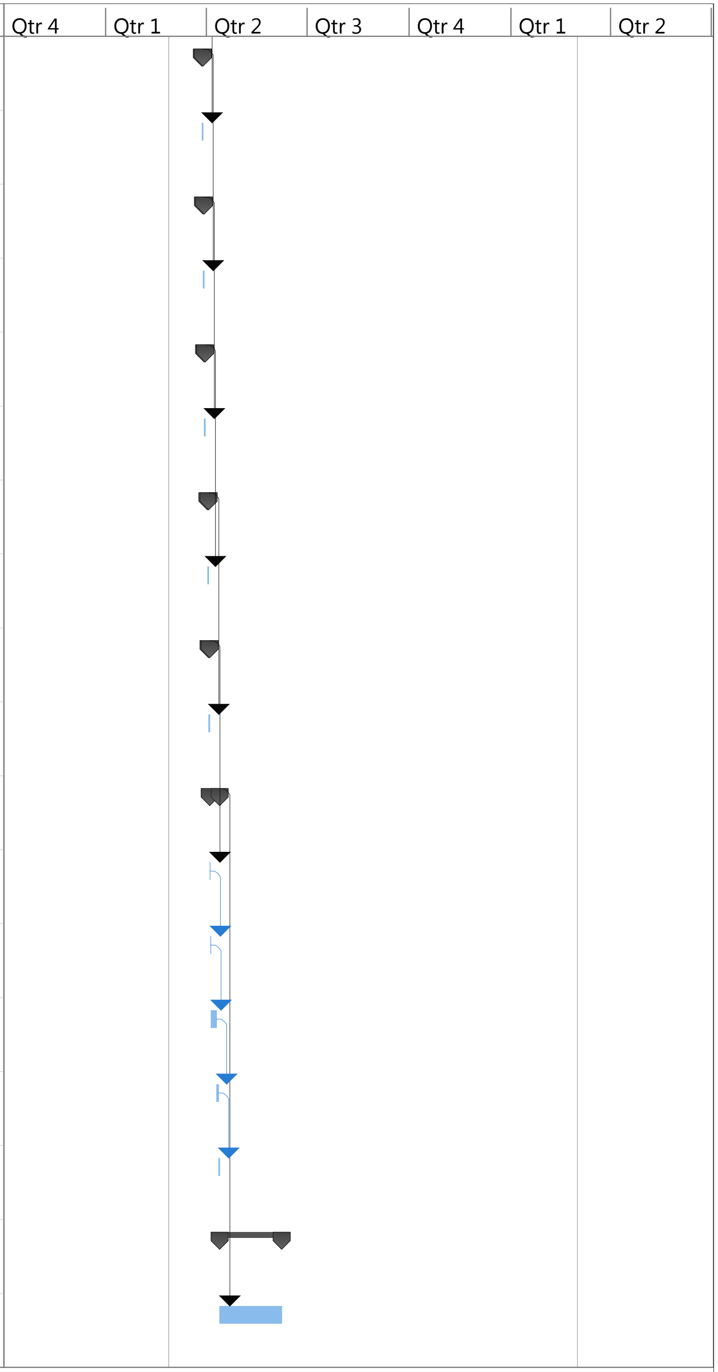
ID	Task Name	Duration
100	Establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in building.	1 day
101	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	2 days
102	**FGD Byproduct Dewatering - Hydrocyclones and Vacuum Filters**	**5 days**
103	Wash vacuum filter belt and remove all accumulated solids	2 days
104	Wash out vacuum receiver, remove pressure relief valve and access door. Install bird screens.	1 day
105	Establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in building.	1 day
106	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	3 days
107	**SCR**	**6 days**
108	Vacuum fly ash from catalyst.	4 days
109	Remove catalyst of salvage or disposal.	4 days
110	Padlock or tack weld access doors shut.	1 day
111	Remove ammonia from storage tank for resale.	1 day
112	Wash out and drain storage tank and supply piping.	1 day
113	Vent storage tank and all piping. Leave vent and drain valves open or remove. Install bird screens.	1 day
114	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	2 days
115	**Turbine(s) and Condenser**	**6 days**



ID	Task Name	Duration
116	Drain hotwell and leave doors open.	1 day
117	Open main turbine doors.	1 day
118	Open bfp turbine doors.	1 day
119	Remove lube oil.	3 days
120	**Generator**	**7 days**
121	Verify that generator circuit breaker is open and racked out or that high-voltage disconnect switch on substation side of GSU transformer is locked in the open position.	0.5 days
122	Verify that generator field breaker or contactor (if applicable) is open.	0.5 days
123	De-energize power supplies to generator excitation system at the source.	0.5 days
124	De-energize AC and DC power supplies to generator and exciter space heaters, cooling equipment, controls, lighting, etc. at the source and open circuit breakers or remove fuses at the generator and exciter.	0.5 days
125	Drain generator and exciter cooling water systems (if applicable).	1 day
126	Disconnect and remove hydrogen gas tanks and purge generator hydrogen system.	2 days
127	Disconnect and remove fire protection system gas/foam tanks and purge fire protection system.	2 days
128	**Circulation Water and Turbine Cooling Water System**	**3 days**
129	Drain.	2 days
130	Open water box doors.	1 day
131	Drain any circulating water chemical feed tanks.	1 day



ID	Task Name	Duration
132	**Compressed Air System**	**1 day**
133	Open vents and drains.	1 day
134	**Auxiliary Steam System**	**1 day**
135	Drain water from system.	1 day
136	**Auxiliary Cooling Water System**	**1 day**
137	Drain water from system.	1 day
138	**Condenser Air Extraction and Waterbox Priming System**	**1 day**
139	Drain water from system.	1 day
140	**Building Heating System**	**1 day**
141	Drain water from system.	1 day
142	**Battery System**	**7 days**
143	De-energize all battery chargers from the source.	0.5 days
144	Open all AC and DC circuit breakers and/or fused switches on battery chargers and disconnect cables from batteries.	0.5 days
145	Remove and dispose of battery electrolyte.	3 days
146	Remove and dispose of battery cells.	2 days
147	Clean up and dispose of electrolyte on surface areas around batteries.	1 day
148	**Post Retirement Activities**	**40 days**
149	Post Retirement Activities	40 days



La Cygne 1 Dismantlement

Owner Additional Costs				
Pre-Dismantlement Activities		$1,132,525		
Overhead During Dismantlement		$2,055,627		
Post-Dismantlement Activities		$71,270		
Owner Costs Total			$3,259,423	
Demolition General Contractor (DGC) Costs				
Site Management		$1,370,880		
Equipment Rental		$2,349,343		
Consumables		$2,567,178		
Scrap Crew(s)		$2,287,460		
Dismantlement*		$12,280,391		
DGC Insurance	2.00%	$417,105		
Contingency/Profit	15.00%	$3,190,854		
Performance Bond	2.00%	$489,264.23		
Contractor Costs Total:			$24,952,476	
Total:				$28,211,898
Owner Internal Costs:	5.00%			$1,410,595
Owner Contingency:	25.00%			$7,405,623
La Cygne Unit 1 Dismantlement Opinion of Probable Cost:				$37,028,117

UNIT 2

La Cygne 2 Retirement

Owner Costs				
Pre-Retirement Activities		$106,968		
Retirement Activities		$675,822		
Post-Retirement Activities		$28,182		
Owner Direct Total			$810,972	
Owner Internal Costs	5.00%		$40,549	
Owner Contingency:	25.00%		$212,880	
La Cygne 2 Retirement Opinion of Probable Cost:				$1,064,401

<u>Activities Required by Permit or Regulation</u>

La Cygne Station Asbestos Removal	$2,674,758	
Activities Required by Permit or Regulation:		$2,674,758

ID	Task Name	Cost
0	**La Cygne 2 Retirement**	**$810,972.05**
1	**LaCygne 2 Retirement**	**$810,972.05**
2	**Pre-Engineering**	**$106,967.52**
3	Permit review and engineering analysis, establish isolation points, and confirm fuel yard inventory has been reduced to zero tons.	$0.00
4	**KCL&L Overhead Costs**	**$109,108.48**
5	KCP&L Retirement Manager	$109,108.48
6	**Equipment Rentals**	**$36,573.12**
7	Vacuum truck	$36,573.12
8	**Retirement**	**$530,140.53**
9	**Electrical**	**$20,553.92**
10	**Medium and Low Voltage Draw out Switchgear**	**$2,903.52**
11	De-energize all buses at the source.	$483.92
12	Open all circuit breakers.	$483.92
13	Rack all circuit breakers into the fully withdrawn, disconnected position.	$483.92
14	Verify that the closing/tripping springs are discharged.	$483.92
15	De-energize control power and auxiliary power circuits of each circuit breaker at the source and by opening control power circuit breakers or removing fuses in each breaker cubicle.	$967.84
16	**Motor Control Centers**	**$1,935.68**
17	De-energize all buses at the source.	$483.92
18	Open all circuit breakers and disconnect switches.	$483.92
19	Remove all fuses in control circuits.	$967.84
20	**Low-voltage Switchboards and Panelboards**	**$967.84**
21	De-energize all buses at the source.	$483.92
22	Open all circuit breakers and disconnect switches.	$483.92
23	**Oil-Filled Power Transformers**	**$6,072.32**
24	De-energize all transformer primaries and verify that the secondary is de-energized.	$967.84
25	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	$967.84
26	Drain and dispose of oil.	$2,867.52
27	Clean up and dispose of oil on surface areas around the transformers on in containment pits.	$1,269.12
28	**Dry-type Power Transformers**	**$1,935.68**
29	De-energize all transformer primaries and verify that the secondary is de-energized.	$967.84
30	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	$967.84
31	**Motors**	**$6,738.88**
32	De-energize all primary power at the source.	$1,935.68

La Cygne 2 Retirement

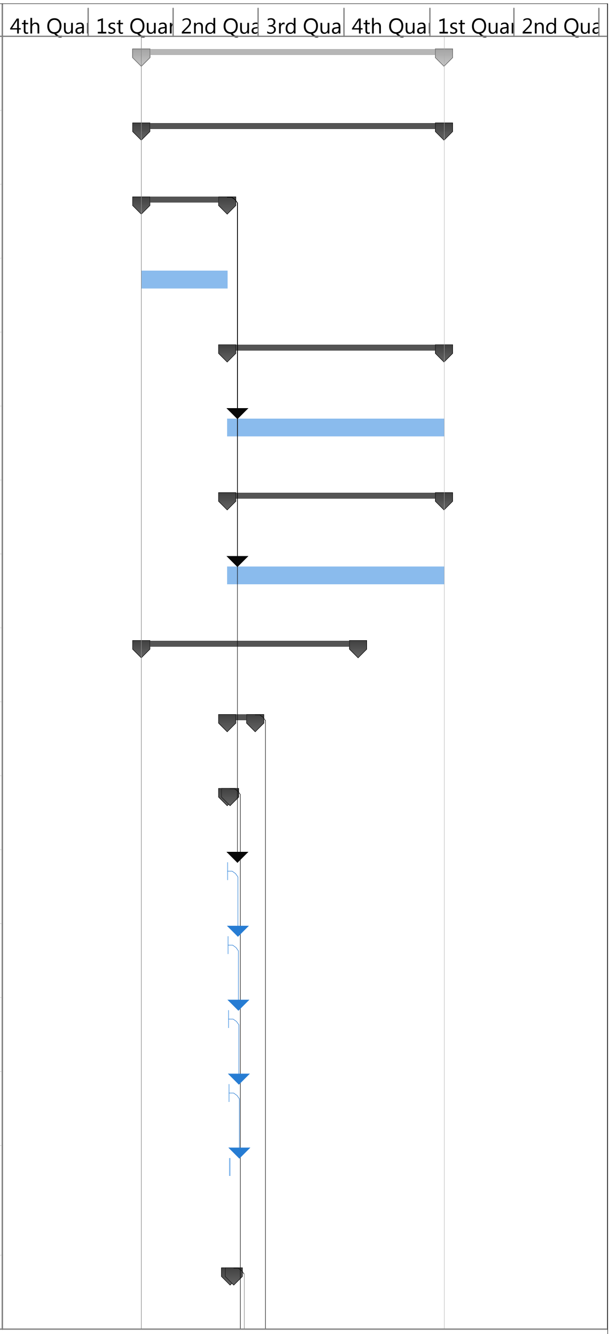
ID	Task Name	Cost
33	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	$1,935.68
34	Drain lube oil system (if applicable) and dispose of oil.	$2,867.52
35	**Coal Handling**	**$30,905.36**
36	Empty all transfer hoppers.	$1,853.84
37	Burn out coal silos.	$1,834.56
38	Confirm all fuel lines, conveyors and trippers are clear of fuel.	$1,834.56
39	Perform cleaning of the coal handling equipment to assure that all coal and coal dust has been removed from site.	$25,382.40
40	**Fuel Oil and Igniter System**	**$2,751.84**
41	Drain fuel oil system	$2,751.84
42	**Waste Oil System**	**$1,834.56**
43	Drain all waste oil systems	$1,834.56
44	**Boiler Chemical Feed**	**$1,834.56**
45	Drain all chemical feed tanks.	$1,834.56
46	**Boiler**	**$30,927.60**
47	Open boiler doors.	$955.84
48	Gas side - perform cleaning of the boiler and bottom ash system.	$25,382.40
49	Drain boiler, drum, downcomers and headers.	$917.28
50	Open drum doors.	$955.84
51	Drain and clean the submerged flight conveyor system.	$2,716.24
52	**Stack and Ductwork**	**$344,145.25**
53	Open ductwork doors.	$955.84
54	Perform extensive cleaning of the ductwork.	$12,691.20
55	Install Flue Cap on L2 Flue	$330,498.21
56	**Condensate and Feedwater Piping**	**$1,834.56**
57	Drain water from the system.	$917.28
58	Leave open vents and drains.	$917.28
59	**Feedwater heaters**	**$2,751.84**
60	Drain feedwater heaters	$917.28
61	Leave open vents and drains.	$1,834.56
62	**Deaerator and Deaerator Storage Tank**	**$1,834.56**
63	Drain Deaerator and Storage	$917.28
64	Leave open vents and drains.	$917.28
65	**Baghouse**	**$18,919.84**
66	Multiple cleaning cycles for filter bags.	$2,751.84
67	Open all vent and drain lines on bag cleaning air and control air lines. Leave in open position or remove vent valves.	$917.28
68	Remove all filter bags and cages.	$955.84
69	Clear hoppers of all ash	$3,103.68
70	Mechanically secure all compartment dampers and hopper outlet valves in open position.	$955.84
71	Disconnect ash transport piping and washdown baghouse hoppers and interior of casing.	$1,571.12

ID	Task Name	Cost
72	Install bird screens across hopper ash outlet and ash line flanges.	$955.84
73	Padlock or tack weld all hopper doors shut. (note: if ash hopper doors are indoors, they could be removed and the opening covered with bird screens.)	$955.84
74	If walk-in plenum, padlock or tack weld all outlet plenum doors and compartment ventilation dampers shut.	$955.84
75	If top-door plenum, close and secure top doors and remove/disable door lift hoist.	$1,873.12
76	If top-door plenum, establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in penthouse enclosure.	$1,020.08
77	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	$2,903.52
78	**Wet FGD system**	**$26,222.88**
79	Multiple mist eliminator wash cycles. Remove ME's from absorber.	$2,331.76
80	Drain and flush all slurry and reclaim water pumps and piping. Leave vent and drain valves open or remove. Install bird screens across drain openings.	$1,873.12
81	Drain and wash out the reaction tank, reagent storage tank, recycle water tank, absorber blowdown tank, etc.	$5,183.28
82	Leave all tank drain valves open or remove. Install bird screens across openings.	$1,911.68
83	Drain all makeup and mist eliminator water pumps and piping. Leave vent and drain valves open or remove. Install bird screens across drain openings.	$2,828.96
84	Mechanically secure all flue gas isolation dampers in open position or remove damper blades.	$1,911.68
85	Remove solids from all inlet and outlet ductwork as necessary	$2,538.24
86	Open all vent station air and control air lines. Leave in open position or remove vent valves	$1,873.12
87	Padlock or tack weld all access doors to modules and ductwork shut.	$1,911.68
88	Remove access doors to open-top tanks.	$955.84
89	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	$2,903.52
90	**FGD Reagent Preparation-Limestone wet Scrubber**	**$11,270.00**
91	Remove limestone from day bins.	$1,551.84
92	Removed cartridges/bags from bin vent filters	$1,551.84
93	Padlock or tack weld all bin access doors shut. (note: if doors are indoors, they could be removed and the opening covered with bird screens.)	$955.84
94	Remove bin discharge isolation valve and install bird screen.	$477.92

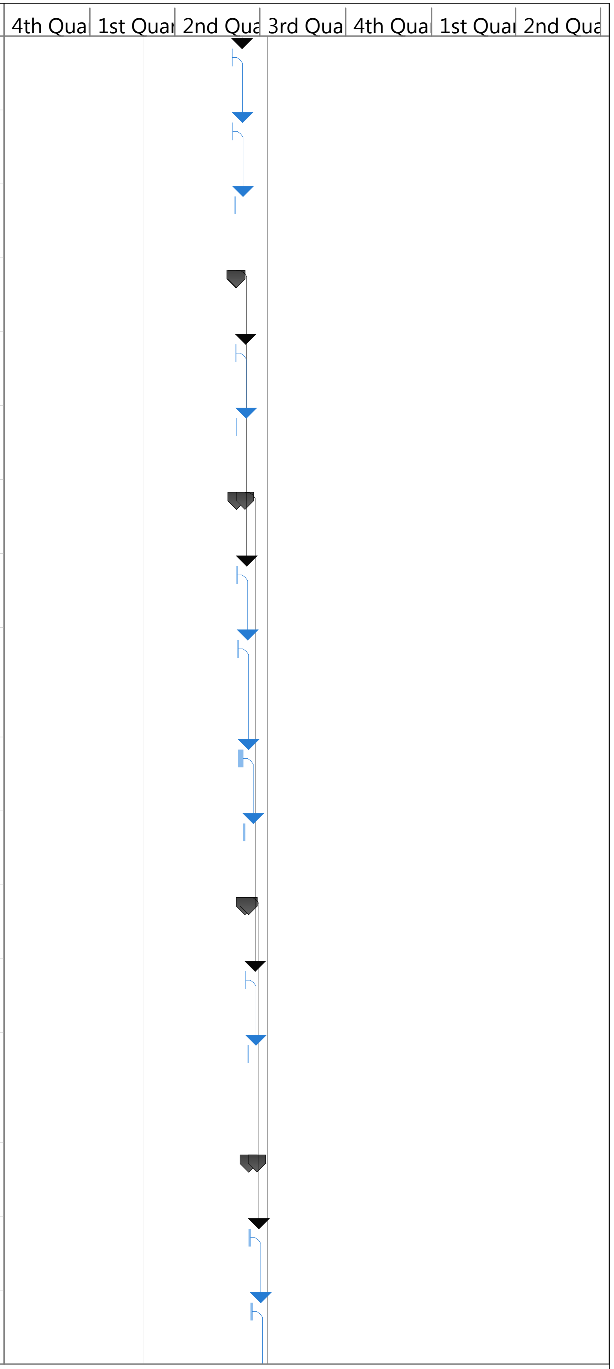
ID	Task Name	Cost
95	Thoroughly wash and drain mills	$1,551.84
96	Remove balls from any ball mills	$1,269.12
97	Padlock or tack weld mill access doors closed.	$955.84
98	Establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in building.	$1,020.08
99	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	$1,935.68
100	**FGD Byproduct Dewatering - Hydrocyclones and Vacuum Filters**	**$8,032.96**
101	Wash vacuum filter belt and remove all accumulated solids	$2,538.24
102	Wash out vacuum receiver, remove pressure relief valve and access door. Install bird screens.	$1,571.12
103	Establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in building.	$1,020.08
104	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	$2,903.52
105	**Turbine(s) and Condenser**	**$5,715.76**
106	Drain hotwell and leave doors open.	$936.56
107	Open main turbine doors.	$955.84
108	Open bfp turbine doors.	$955.84
109	Remove lube oil.	$2,867.52
110	**Generator**	**$6,618.48**
111	Verify that generator circuit breaker is open and racked out or that high-voltage disconnect switch on substation side of GSU transformer is locked in the open position.	$483.92
112	Verify that generator field breaker or contactor (if applicable) is open.	$483.92
113	De-energize power supplies to generator excitation system at the source.	$483.92
114	De-energize AC and DC power supplies to generator and exciter space heaters, cooling equipment, controls, lighting, etc. at the source and open circuit breakers or remove fuses at the generator and exciter.	$483.92
115	Drain generator and exciter cooling water systems (if applicable).	$936.56
116	Disconnect and remove hydrogen gas tanks and purge generator hydrogen system.	$1,834.56
117	Disconnect and remove fire protection system gas/foam tanks and purge fire protection system.	$1,911.68
118	**Circulation Water and Turbine Cooling Water System**	**$3,707.68**
119	Drain.	$1,834.56
120	Open water box doors.	$955.84
121	Drain any circulating water chemical feed tanks.	$917.28
122	**Compressed Air System**	**$917.28**
123	Open vents and drains.	$917.28

ID	Task Name	Cost
124	**Auxiliary Steam System**	**$1,834.56**
125	Drain water from system.	$917.28
126	Remove aux boiler chemicals.	$917.28
127	**Auxiliary Cooling Water System**	**$917.28**
128	Drain water from system.	$917.28
129	**Condenser Air Extraction and Waterbox Priming System**	**$917.28**
130	Drain water from system.	$917.28
131	**Building Heating System**	**$917.28**
132	Drain water from system.	$917.28
133	**Battery System**	**$4,775.20**
134	De-energize all battery chargers from the source.	$483.92
135	Open all AC and DC circuit breakers and/or fused switches on battery chargers and disconnect cables from batteries.	$483.92
136	Remove and dispose of battery electrolyte.	$1,903.68
137	Remove and dispose of battery cells.	$1,269.12
138	Clean up and dispose of electrolyte on surface areas around batteries.	$634.56
139	**Post Retirement Activities**	**$28,182.40**
140	Post Retirement Activities	$28,182.40

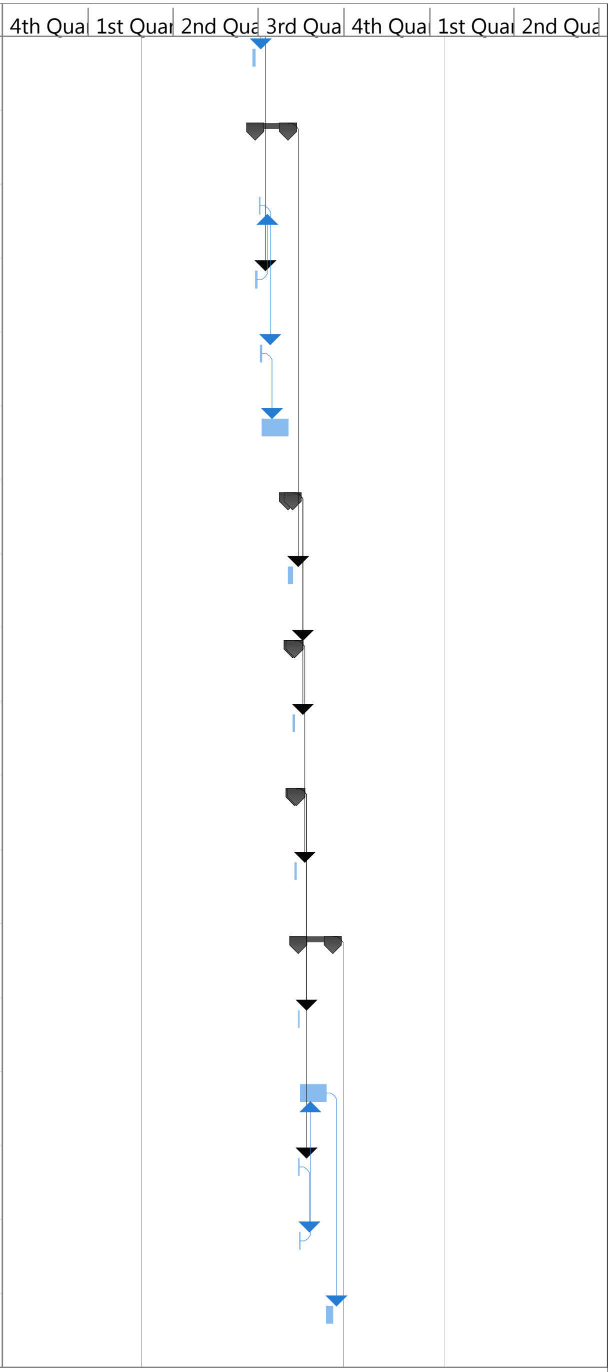
ID	Task Name	Duration
0	**La Cygne 2 Retirement**	**232 days**
1	**LaCygne 2 Retirement**	**232 days**
2	**Pre-Engineering**	**66 days**
3	Permit review and engineering analysis, establish isolation points, and confirm fuel yard inventory has been reduced to zero tons.	66 days
4	**KCL&L Overhead Costs**	**166 days**
5	KCP&L Retirement Manager	166 days
6	**Equipment Rentals**	**166 days**
7	Vacuum truck	166 days
8	**Retirement**	**166 days**
9	**Electrical**	**22 days**
10	**Medium and Low Voltage Draw out Switchgear**	**3 days**
11	De-energize all buses at the source.	0.5 days
12	Open all circuit breakers.	0.5 days
13	Rack all circuit breakers into the fully withdrawn, disconnected position.	0.5 days
14	Verify that the closing/tripping springs are discharged.	0.5 days
15	De-energize control power and auxiliary power circuits of each circuit breaker at the source and by opening control power circuit breakers or removing fuses in each breaker cubicle.	1 day
16	**Motor Control Centers**	**2 days**



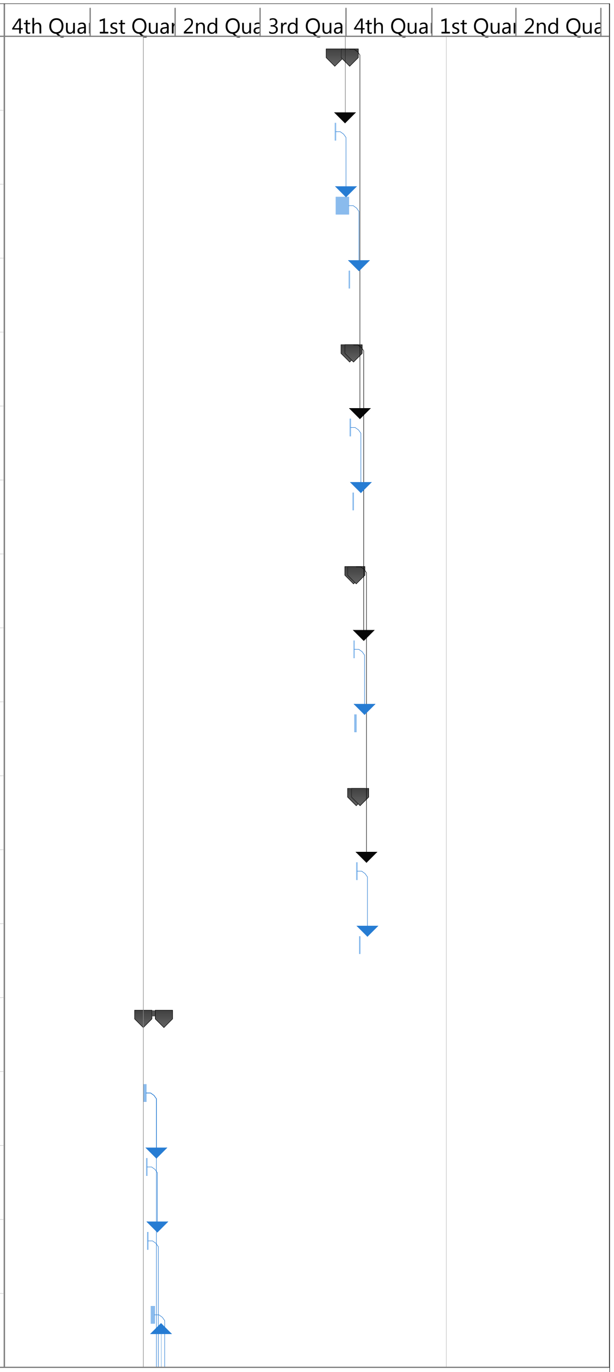
ID	Task Name	Duration
17	De-energize all buses at the source.	0.5 days
18	Open all circuit breakers and disconnect switches.	0.5 days
19	Remove all fuses in control circuits.	1 day
20	**Low-voltage Switchboards and Panelboards**	**1 day**
21	De-energize all buses at the source.	0.5 days
22	Open all circuit breakers and disconnect switches.	0.5 days
23	**Oil-Filled Power Transformers**	**7 days**
24	De-energize all transformer primaries and verify that the secondary is de-energized.	1 day
25	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	1 day
26	Drain and dispose of oil.	3 days
27	Clean up and dispose of oil on surface areas around the transformers on in containment pits.	2 days
28	**Dry-type Power Transformers**	**2 days**
29	De-energize all transformer primaries and verify that the secondary is de-energized.	1 day
30	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	1 day
31	**Motors**	**7 days**
32	De-energize all primary power at the source.	2 days
33	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	2 days



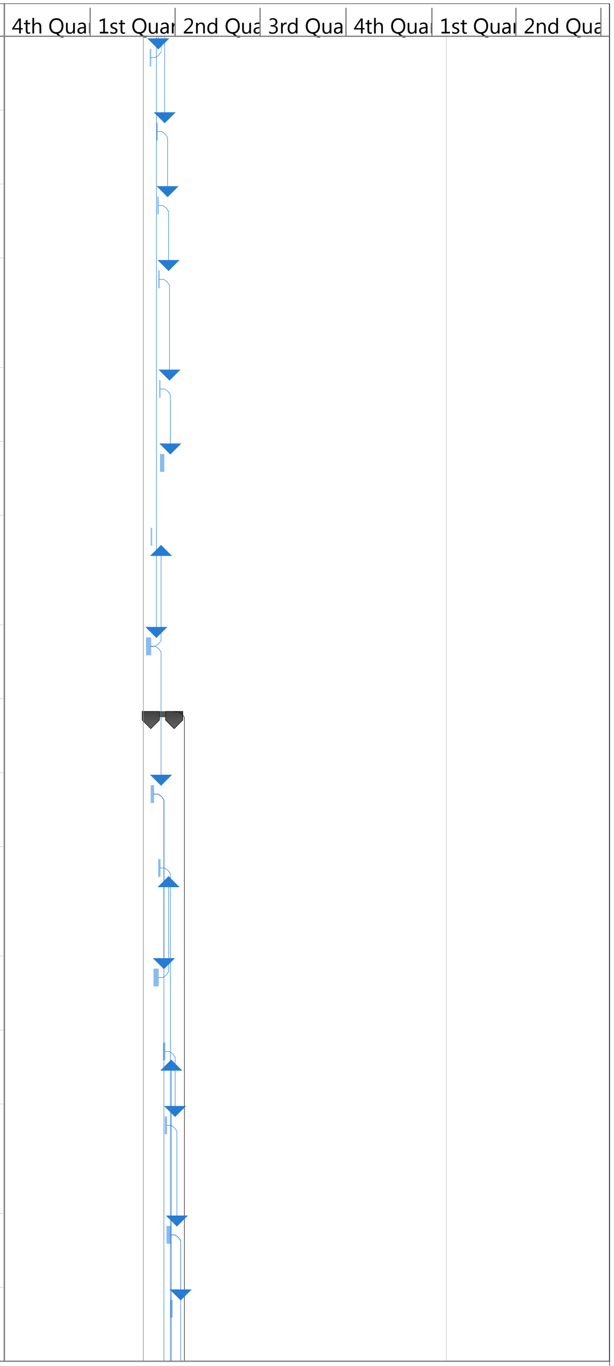
ID	Task Name	Duration
34	Drain lube oil system (if applicable) and dispose of oil.	3 days
35	**Coal Handling**	**25 days**
36	Empty all transfer hoppers.	1 day
37	Burn out coal silos.	2 days
38	Confirm all fuel lines, conveyors and trippers are clear of fuel.	2 days
39	Perform cleaning of the coal handling equipment to assure that all coal and coal dust has been removed from site.	20 days
40	**Fuel Oil and Igniter System**	**3 days**
41	Drain fuel oil system	3 days
42	**Waste Oil System**	**2 days**
43	Drain all waste oil systems	2 days
44	**Boiler Chemical Feed**	**2 days**
45	Drain all chemical feed tanks.	2 days
46	**Boiler**	**27 days**
47	Open boiler doors.	1 day
48	Gas side - perform cleaning of the boiler and bottom ash system.	20 days
49	Drain boiler, drum, downcomers and headers.	1 day
50	Open drum doors.	1 day
51	Drain and clean the submerged flight conveyor system.	5 days



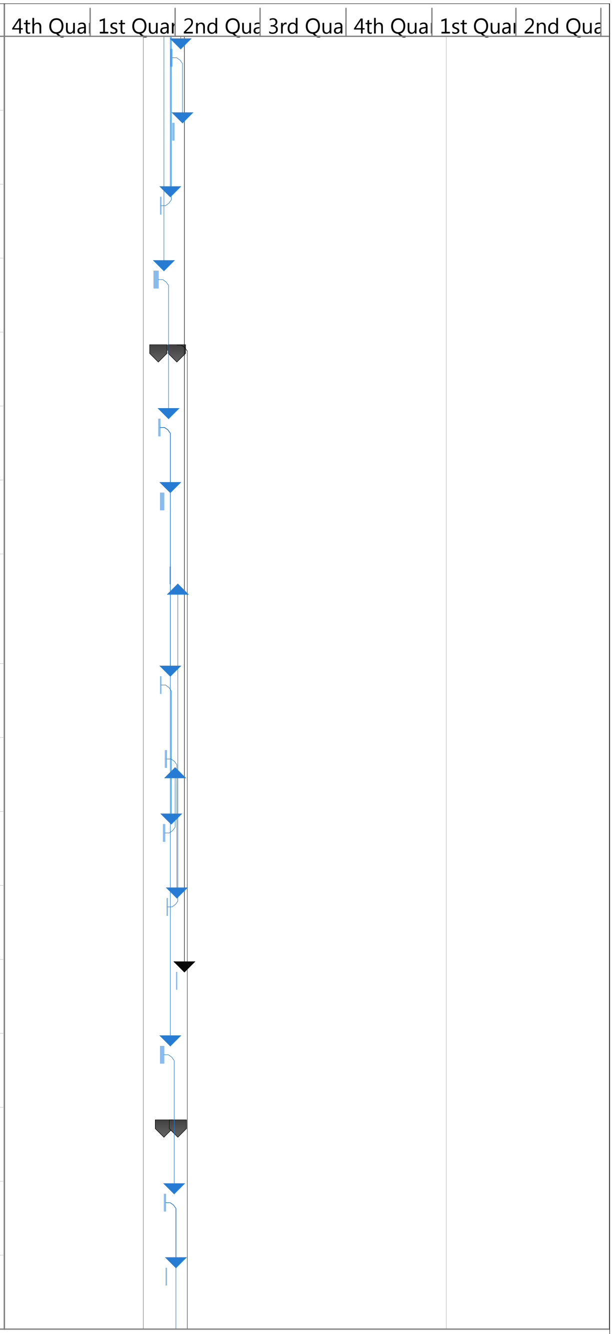
ID	Task Name	Duration
52	**Stack and Ductwork**	**12 days**
53	Open ductwork doors.	1 day
54	Perform extensive cleaning of the ductwork.	10 days
55	Install Flue Cap on L2 Flue	1 day
56	**Condensate and Feedwater Piping**	**2 days**
57	Drain water from the system.	1 day
58	Leave open vents and drains.	1 day
59	**Feedwater heaters**	**3 days**
60	Drain feedwater heaters	1 day
61	Leave open vents and drains.	2 days
62	**Deaerator and Deaerator Storage Tank**	**2 days**
63	Drain Deaerator and Storage	1 day
64	Leave open vents and drains.	1 day
65	**Baghouse**	**16 days**
66	Multiple cleaning cycles for filter bags.	3 days
67	Open all vent and drain lines on bag cleaning air and control air lines. Leave in open position or remove vent valves.	1 day
68	Remove all filter bags and cages.	1 day
69	Clear hoppers of all ash	4 days



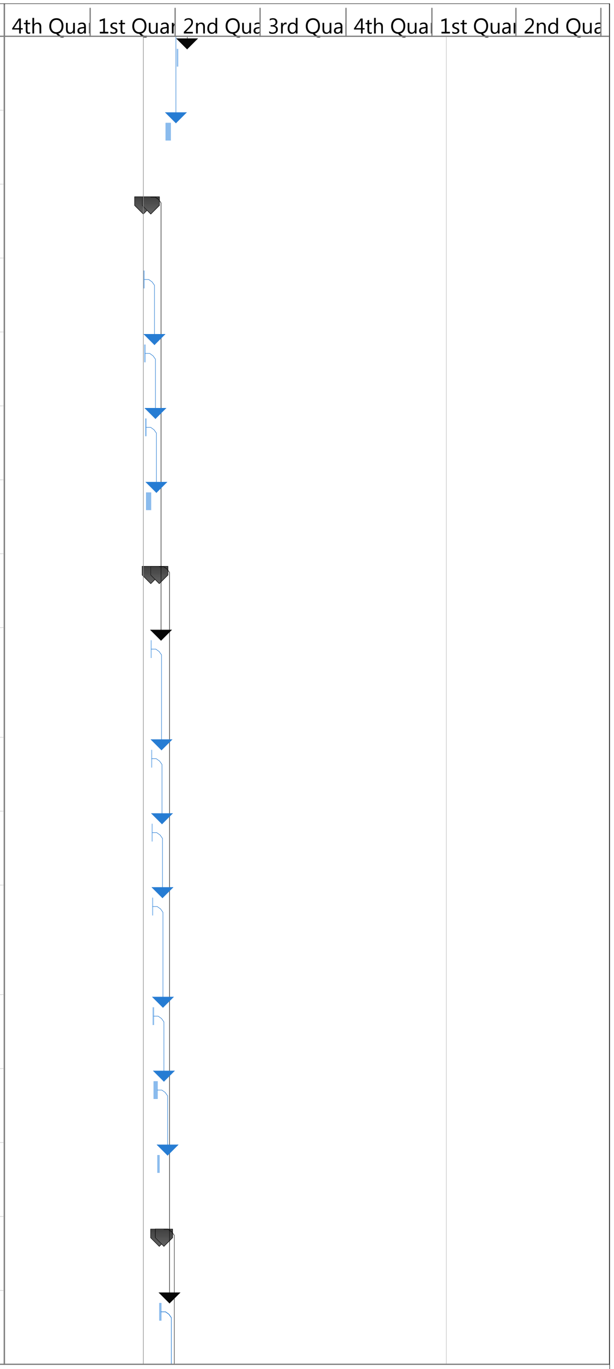
ID	Task Name	Duration
70	Mechanically secure all compartment dampers and hopper outlet valves in open position.	1 day
71	Disconnect ash transport piping and washdown baghouse hoppers and interior of casing.	1 day
72	Install bird screens across hopper ash outlet and ash line flanges.	1 day
73	Padlock or tack weld all hopper doors shut. (note: if ash hopper doors are indoors, they could be removed and the opening covered with bird screens.)	1 day
74	If walk-in plenum, padlock or tack weld all outlet plenum doors and compartment ventilation dampers shut.	1 day
75	If top-door plenum, close and secure top doors and remove/disable door lift hoist.	2 days
76	If top-door plenum, establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in penthouse enclosure.	1 day
77	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	3 days
78	**Wet FGD system**	**19 days**
79	Multiple mist eliminator wash cycles. Remove ME's from absorber.	3 days
80	Drain and flush all slurry and reclaim water pumps and piping. Leave vent and drain valves open or remove. Install bird screens across drain openings.	2 days
81	Drain and wash out the reaction tank, reagent storage tank, recycle water tank, absorber blowdown tank, etc.	3 days
82	Leave all tank drain valves open or remove. Install bird screens across openings.	2 days
83	Drain all makeup and mist eliminator water pumps and piping. Leave vent and drain valves open or remove. Install bird screens across drain openings.	2 days
84	Mechanically secure all flue gas isolation dampers in open position or remove damper blades.	2 days
85	Remove solids from all inlet and outlet ductwork as necessary	2 days



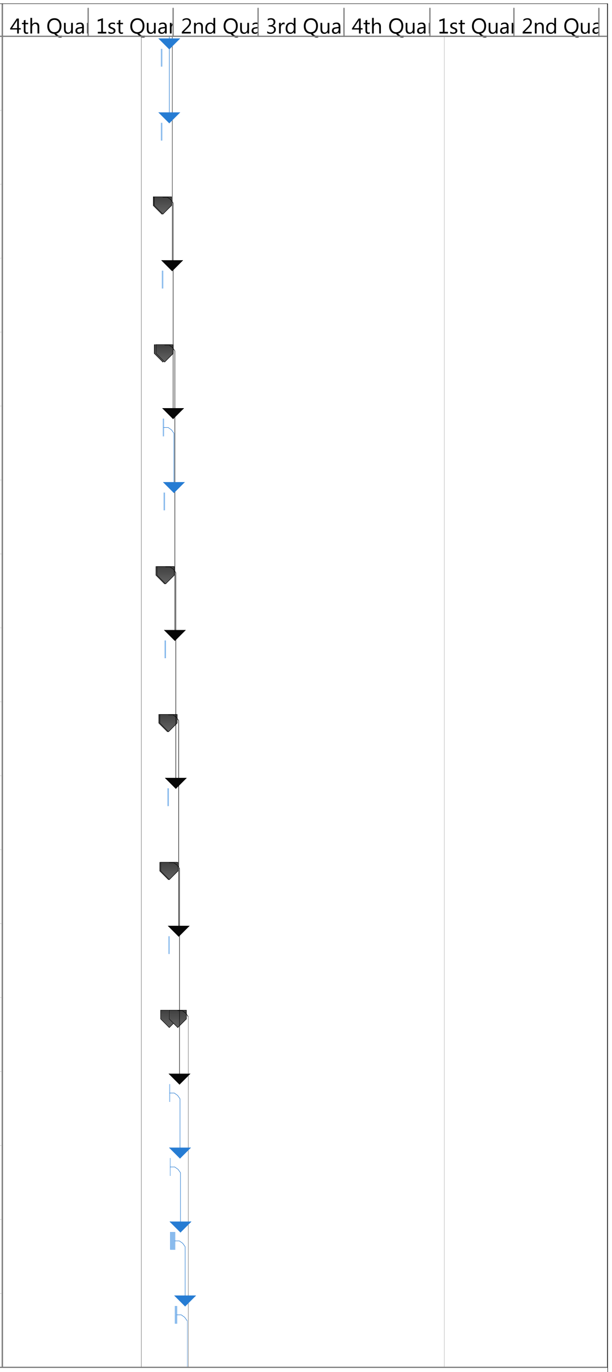
ID	Task Name	Duration
86	Open all vent station air and control air lines. Leave in open position or remove vent valves	2 days
87	Padlock or tack weld all access doors to modules and ductwork shut.	2 days
88	Remove access doors to open-top tanks.	1 day
89	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	3 days
90	**FGD Reagent Preparation-Limestone wet Scrubber**	**14 days**
91	Remove limestone from day bins.	2 days
92	Removed cartridges/bags from bin vent filters	2 days
93	Padlock or tack weld all bin access doors shut. (note: if doors are indoors, they could be removed and the opening covered with bird screens.)	1 day
94	Remove bin discharge isolation valve and install bird screen.	1 day
95	Thoroughly wash and drain mills	2 days
96	Remove balls from any ball mills	2 days
97	Padlock or tack weld mill access doors closed.	1 day
98	Establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in building.	1 day
99	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	2 days
100	**FGD Byproduct Dewatering - Hydrocyclones and Vacuum Filters**	**11 days**
101	Wash vacuum filter belt and remove all accumulated solids	2 days
102	Wash out vacuum receiver, remove pressure relief valve and access door. Install bird screens.	1 day



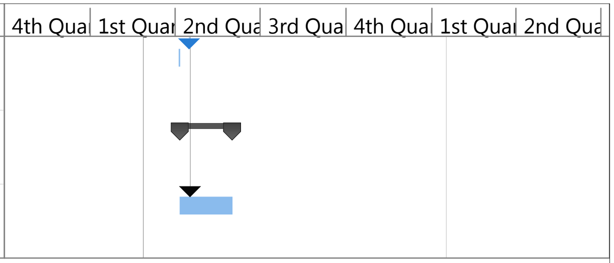
ID	Task Name	Duration
103	Establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in building.	1 day
104	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	3 days
105	**Turbine(s) and Condenser**	**6 days**
106	Drain hotwell and leave doors open.	1 day
107	Open main turbine doors.	1 day
108	Open bfp turbine doors.	1 day
109	Remove lube oil.	3 days
110	**Generator**	**7 days**
111	Verify that generator circuit breaker is open and racked out or that high-voltage disconnect switch on substation side of GSU transformer is locked in the open position.	0.5 days
112	Verify that generator field breaker or contactor (if applicable) is open.	0.5 days
113	De-energize power supplies to generator excitation system at the source.	0.5 days
114	De-energize AC and DC power supplies to generator and exciter space heaters, cooling equipment, controls, lighting, etc. at the source and open circuit breakers or remove fuses at the generator and exciter.	0.5 days
115	Drain generator and exciter cooling water systems (if applicable).	1 day
116	Disconnect and remove hydrogen gas tanks and purge generator hydrogen system.	2 days
117	Disconnect and remove fire protection system gas/foam tanks and purge fire protection system.	2 days
118	**Circulation Water and Turbine Cooling Water System**	**3 days**
119	Drain.	2 days



ID	Task Name	Duration
120	Open water box doors.	1 day
121	Drain any circulating water chemical feed tanks.	1 day
122	**Compressed Air System**	**1 day**
123	Open vents and drains.	1 day
124	**Auxiliary Steam System**	**2 days**
125	Drain water from system.	1 day
126	Remove aux boiler chemicals.	1 day
127	**Auxiliary Cooling Water System**	**1 day**
128	Drain water from system.	1 day
129	**Condenser Air Extraction and Waterbox Priming System**	**1 day**
130	Drain water from system.	1 day
131	**Building Heating System**	**1 day**
132	Drain water from system.	1 day
133	**Battery System**	**7 days**
134	De-energize all battery chargers from the source.	0.5 days
135	Open all AC and DC circuit breakers and/or fused switches on battery chargers and disconnect cables from batteries.	0.5 days
136	Remove and dispose of battery electrolyte.	3 days
137	Remove and dispose of battery cells.	2 days



ID	Task Name	Duration
138	Clean up and dispose of electrolyte on surface areas around batteries.	1 day
139	**Post Retirement Activities**	**40 days**
140	Post Retirement Activities	40 days



La Cygne 2 Dismantlement

Owner Costs				
Pre-Dismantlement Activities		$1,104,559		
Overhead During Dismantlement		$2,004,866		
Post-Dismantlement Activities		$69,510		
Owner Costs Total			$3,178,936	
Demolition General Contractor (DGC) Costs				
Site Management		$1,336,369		
Equipment Rental		$2,943,884		
Consumables		$2,937,002		
Scrap Crew(s)		$2,229,828		
Dismantlement		$12,970,149		
DGC Insurance	2.00%	$448,345		
Contingency/Profit	15.00%	$3,429,837		
Performance Bond	2.00%	$525,908		
Contractor Costs Total:			$26,821,322	
Total:				$30,000,257
Owner Internal Costs:	5.00%			$1,500,013
Owner Contingency:	25.00%			$7,875,068
La Cygne Unit 2 Dismantlement Opinion of Probable Cost:				$39,375,338

La Cygne Unit 2 Dismantlement

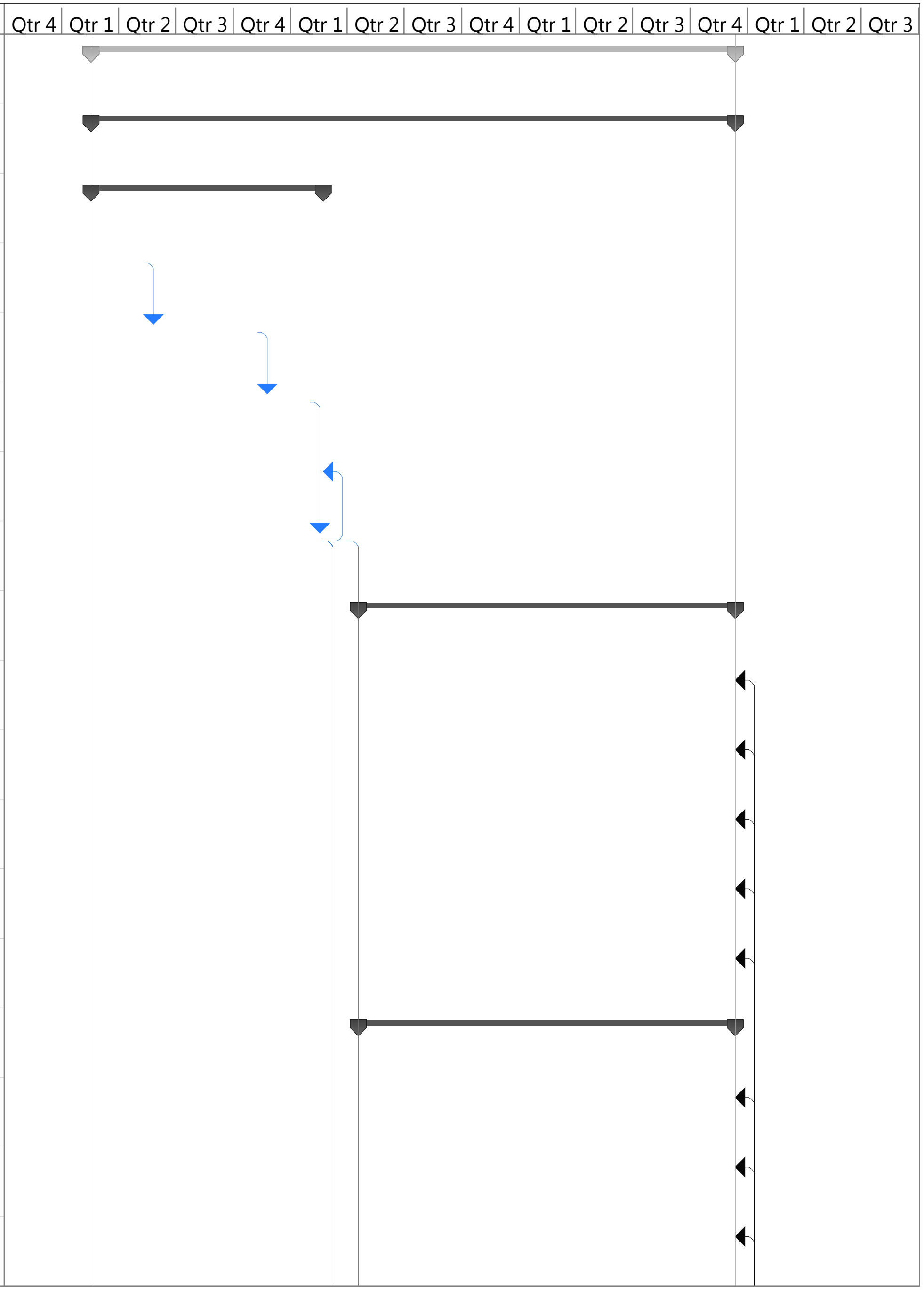
ID	Task Name	Cost
0	**La Cygne Unit 2 Dismantlement**	**$20,835,940.37**
1	**La Cygne Unit 2 Dismantlement**	**$20,766,429.97**
2	**Pre-Dismantlement Activities**	**$1,104,558.96**
3	Detailed Planning & Hire Owner's Engineer	$110,802.72
4	Detailed Site Characterization Study	$783,536.00
5	Hire Demolition General Contractor	$198,647.04
6	KCP&L Prepares Unit for Dismantlement	$11,573.20
7	Demolition Contractor Mobilizes on Site	$0.00
8	**KCP&L Overhead during Dismantlement**	**$2,004,866.33**
9	KCP&L Project Manager	$282,630.38
10	KCP&L Administrative Support	$104,541.59
11	KCP&L Engineer	$464,606.36
12	Owners Engineer Project Manager	$141,728.00
13	Owners Engineer - Engineer	$1,011,360.00
14	**Demoliton Contractor Overhead during Dismantlement**	**$969,151.12**
15	Demolition Contractor Project Manager	$274,202.38
16	Demolition Contractor Safety Manager	$244,171.18
17	Demolition Contractor Superintendent	$450,777.57
18	**Demolition Contractor Equipment Rental Costs**	**$1,633,380.67**
19	Equipment Rental	$1,633,380.67
20	**Demolition Contractor Consummables**	**$1,629,562.40**
21	Consummables	$1,629,562.40
22	**Scrap Crew(s)**	**$1,591,412.80**
23	Crew to Handle Scrap Material(s)	$1,591,412.80
24	**Dismantlement Directs**	**$11,833,497.68**
25	**Phase 1 Demolition**	**$1,065,881.92**
26	**Phase 1 Electrical Demolition**	**$439,040.24**
27	Electrical Demolition of Phase 1 Equipment	$439,040.24
28	**Condensate System**	**$109,178.32**
29	Condensate Pumps	$3,700.96
30	Condensate Transfer Pumps	$1,850.48
31	Cycle Make-Up Pump	$1,850.48
32	Steam Packing Exhauster and Blower	$3,700.96
33	Low Pressure Heaters (except the condenser neck heat exchangers)	$55,514.40
34	Deaerator	$14,803.84
35	Deaerator Storage Tank	$9,252.40
36	Condensate Piping	$18,504.80
37	**Boiler Feed System**	**$70,061.52**
38	Boiler Feed Pump Turbine and Exhaust	$14,547.12
39	Boiler Feed Pump	$18,504.80
40	High Pressure Heaters	$37,009.60
41	**Critical Piping**	**$83,271.60**
42	Main Steam Piping	$27,757.20
43	Cold Reheat Piping	$27,757.20
44	Hot Reheat Piping	$27,757.20
45	**Extraction Steam System**	**$18,504.80**
46	Piping	$18,504.80
47	**Heater Drips**	**$14,803.84**
48	Piping	$14,803.84

ID	Task Name	Cost
49	**Auxiliary Steam**	**$16,654.32**
50	Auxiliary Steam Piping	$16,654.32
51	**Circulating Water (plant side)**	**$9,252.40**
52	Waterboxes	$9,252.40
53	**Bearing Cooling Water**	**$31,458.16**
54	Bearing Cooling Water Pumps	$3,700.96
55	Bearing Cooling Water Heat Exchanger	$9,252.40
56	Bearing Cooling Water Piping	$18,504.80
57	**Auxiliary Cooling Water**	**$29,607.68**
58	Auxiliary Cooling Water Heat Exchanger	$5,551.44
59	Auxiliary Cooling Water Pumps	$5,551.44
60	Auxiliary Cooling Water Piping	$18,504.80
61	**Service Water**	**$9,252.40**
62	Service Water Piping	$9,252.40
63	**Fuel Oil System (plant side)**	**$42,561.04**
64	Igniter Fuel Oil Pumps	$5,551.44
65	Igniter Fuel Oil and Atomizing Air Piping	$9,252.40
66	Igniters	$27,757.20
67	**Waste Oil System**	**$12,953.36**
68	Waste Oil Tank	$3,700.96
69	Waste Oil Transfer Pump	$3,700.96
70	Waste Oil Piping	$5,551.44
71	**Air Preheat System**	**$10,576.08**
72	Air Preheat Pumps	$3,700.96
73	Air Preheat Piping	$6,875.12
74	**Condenser Air Extraction System**	**$11,102.88**
75	Vacuum Pumps	$7,401.92
76	Extraction Piping	$3,700.96
77	**Turbine Seals and Drains**	**$12,953.36**
78	Piping	$12,953.36
79	**Turbine Lube Oil System**	**$21,038.32**
80	Turbine Lube Oil Tank	$11,785.92
81	Turbine Lube Oil Pumps	$7,401.92
82	Turbine Oil Mist Eliminator	$1,850.48
83	**Generator Auxiliary Systems**	**$33,308.64**
84	Hydrogen Cooler Skid and Piping	$9,252.40
85	Stator Cooling Water Skid and Piping	$9,252.40
86	Isophase Bus Duct	$7,401.92
87	Exciter Heat Exchanger	$3,700.96
88	EHC Coolers	$3,700.96
89	**Chemical Feed Systems**	**$19,942.32**
90	Tanks	$8,839.44
91	Pumps	$5,551.44
92	Piping	$5,551.44
93	**Sampling Systems**	**$6,647.44**
94	Field Mounted Heat Exchangers	$3,700.96
95	Piping	$2,946.48
96	**Building Heating Systems**	**$13,750.24**
97	Steam Unit Heaters	$9,821.60

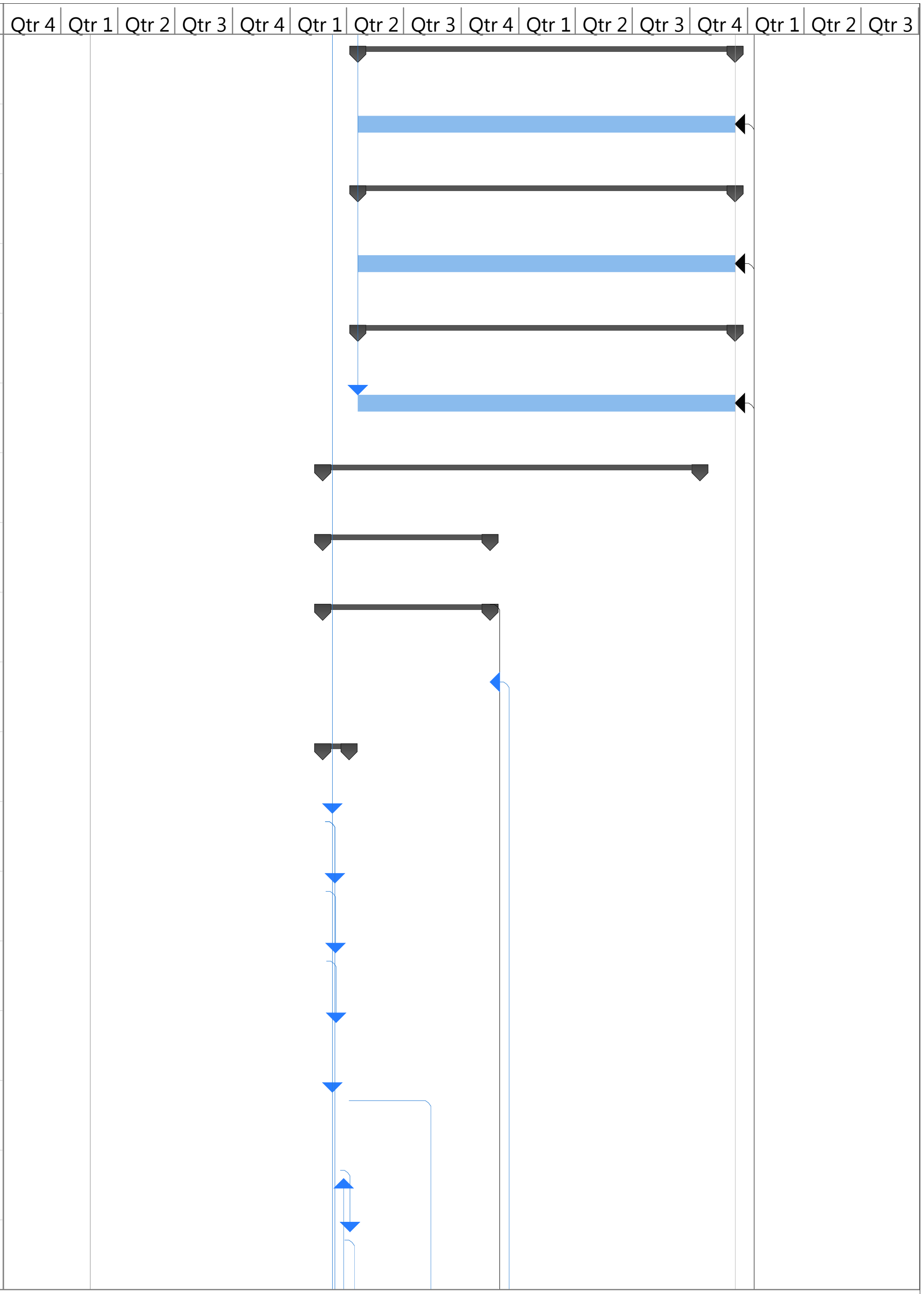
ID	Task Name	Cost
98	Steam Piping	$3,928.64
99	**Compressed Air System**	**$27,757.20**
100	Air Compressors	$7,401.92
101	Air Drying Equipment	$5,551.44
102	Air Reciever Tanks	$5,551.44
103	Compressed Air Piping	$9,252.40
104	**Miscellaneous Equipment**	**$22,205.76**
105	Miscellaneous Equipment (including Fire Protection)	$22,205.76
106	**Phase 2 Demolition**	**$6,531,394.96**
107	**Precipitator**	**$3,638,750.00**
108	Remove Precipitator	$3,638,750.00
109	**Boiler Equipment**	**$734,495.36**
110	Fans	$65,336.00
111	Pulverizers	$74,019.20
112	Bottom Ash	$16,995.84
113	Air Heater	$207,253.76
114	Steam Drum	$92,524.00
115	Coal Bunkers	$74,019.20
116	Coal Feeders	$48,112.48
117	Soot Blowers	$52,608.00
118	Ductwork	$103,626.88
119	**Boiler Removal**	**$414,507.52**
120	Furnace	$236,861.44
121	Back Pass	$177,646.08
122	**Boiler Steel Framing**	**$747,593.92**
123	Hanger Girders at Top	$111,028.80
124	All Other Framing	$347,890.24
125	Bracing and Girts	$170,244.16
126	Columns	$118,430.72
127	**Boiler Foundations**	**$133,234.56**
128	Equipment Foundation Demolition to Grade	$133,234.56
129	**Remove Turbine**	**$862,813.60**
130	Remove HP Turbine	$27,188.00
131	Remove IP Turbine	$27,188.00
132	Remove LP Turbine	$27,188.00
133	Remove Generator	$54,376.00
134	Remove Condenser Neck Heat Exchanger	$27,188.00
135	Remove Condenser	$27,188.00
136	Remove Misc. Auxiliary Turbine Equipment	$40,782.00
137	**Turbine Pedestal Demolition to Grade**	**$277,317.60**
138	Top Slab and Beams	$108,752.00
139	Columns	$168,565.60
140	**Remove Turbine Building**	**$354,398.00**
141	Siding and Rooding	$112,340.00
142	All Framing Elevations	$163,128.00
143	Bracing and Girts	$54,376.00
144	Columns	$24,554.00
145	**Phase 3 Demolition**	**$236,220.80**
146	**Yard Demolition**	**$236,220.80**

ID	Task Name	Cost
147	Remove Circulating Water Pumps, Screens and Intake Auxiliaries	$18,504.80
148	**Remove Ash Handling Equipment and Piping**	**$46,262.00**
149	Remove Fly Ash Storage Silo 2A	$18,504.80
150	Remove Dewatering Bin 2A and 2B	$9,252.40
151	Remove Piping and Misc. Equipment	$18,504.80
152	**Remove Fuel Yard Equipment**	**$83,271.60**
153	Remove Crushers 2A, 2B and Surge Bin	$27,757.20
154	Remove Conveyor 206	$18,504.80
155	Remove Conveyor 207	$18,504.80
156	Remove Conveyor 2A	$18,504.80
157	Remove Laydown Equipment and Warehoused Equipment	$18,504.80
158	Remove Unit 2 Condensate Storage Tank and Pump	$4,910.80
159	Remove Unit 2 Make-Up Water Storage Tank	$9,252.40
160	Remove Unit 2 Water Pre-Treatment Equipment and Building	$55,514.40
161	**Stack Demolition**	**$4,000,000.00**
162	Stack Demolition	$4,000,000.00
163	**Project Close-Out**	**$69,510.40**
164	Project Close-Out Activities	$69,510.40

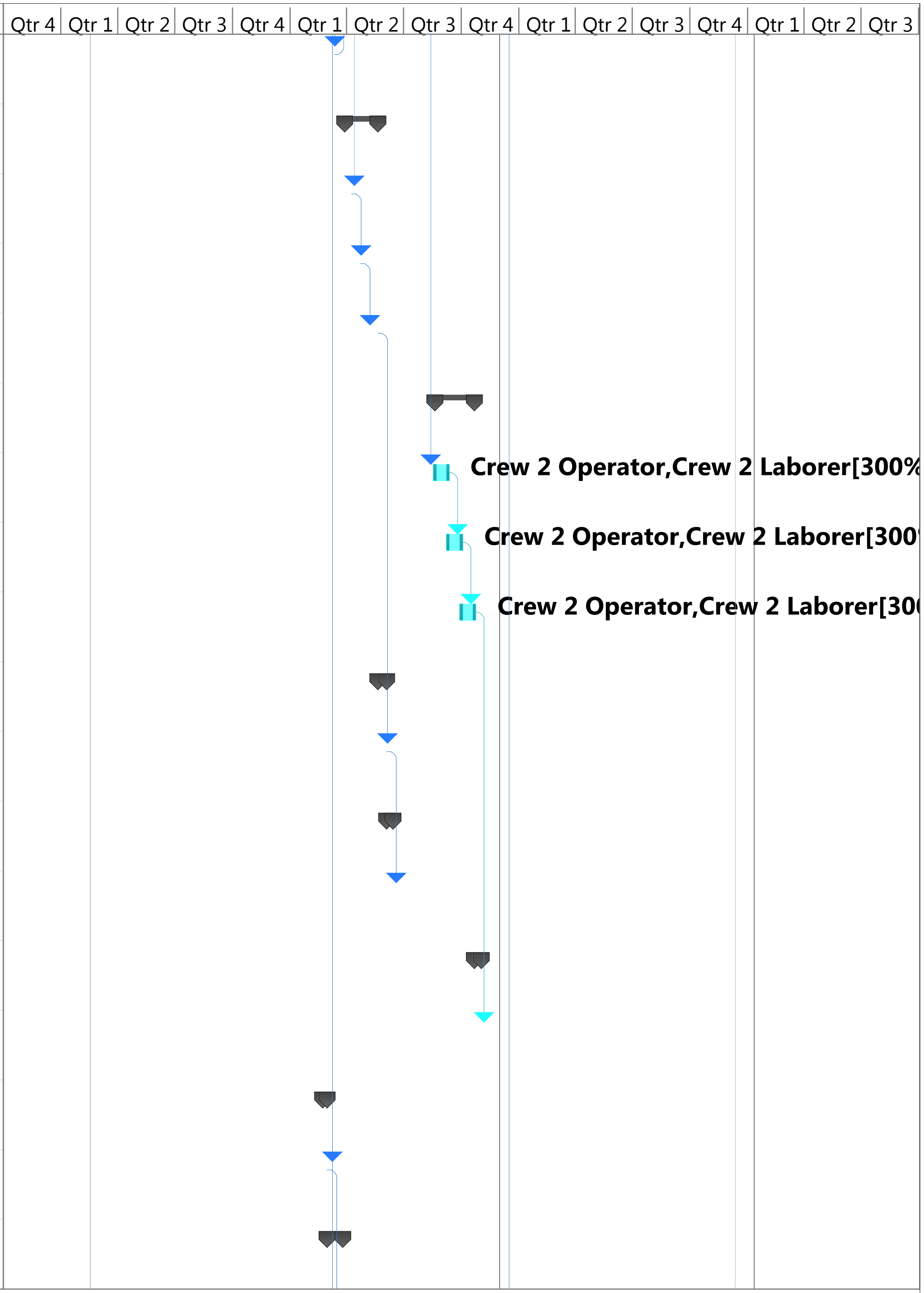
ID	Task Name	Duration
0	**La Cygne Unit 2 Dismantlement**	**735 days**
1	**La Cygne Unit 2 Dismantlement**	**735 days**
2	**Pre-Dismantlement Activities**	**265 days**
3	Detailed Planning & Hire Owner's Engineer	3 mons
4	Detailed Site Characterization Study	130 days
5	Hire Demolition General Contractor	3 mons
6	KCP&L Prepares Unit for Dismantlement	2 wks
7	Demolition Contractor Mobilizes on Site	5 days
8	**KCP&L Overhead during Dismantlement**	**430 days**
9	KCP&L Project Manager	430 days
10	KCP&L Administrative Support	430 days
11	KCP&L Engineer	430 days
12	Owners Engineer Project Manager	430 days
13	Owners Engineer - Engineer	430 days
14	**Demoliton Contractor Overhead during Dismantlement**	**430 days**
15	Demolition Contractor Project Manager	430 days
16	Demolition Contractor Safety Manager	430 days
17	Demolition Contractor Superintendent	430 days



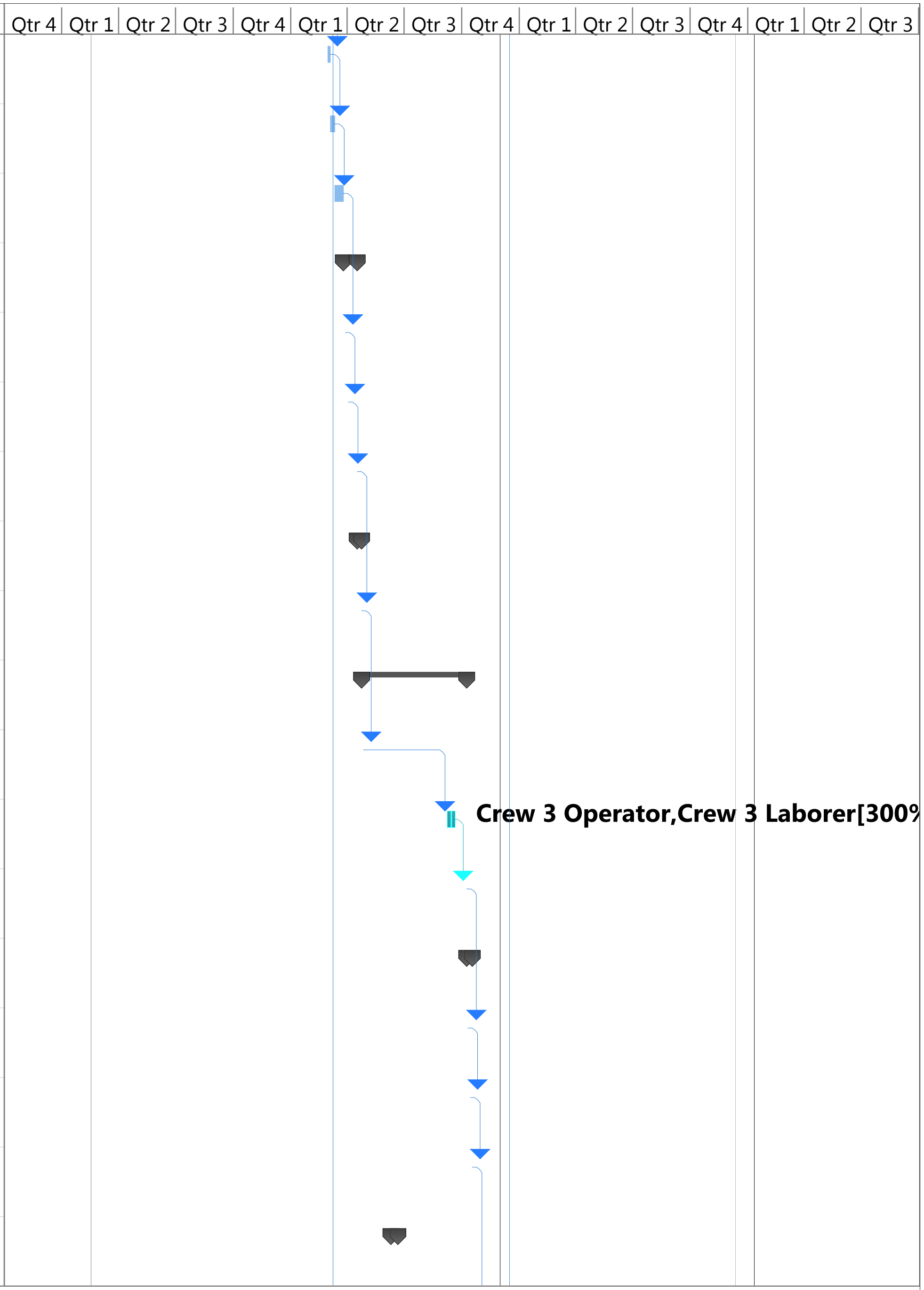
ID	Task Name	Duration
18	**Demolition Contractor Equipment Rental Costs**	**430 days**
19	Equipment Rental	430 days
20	**Demolition Contractor Consummables**	**430 days**
21	Consummables	430 days
22	**Scrap Crew(s)**	**430 days**
23	Crew to Handle Scrap Material(s)	430 days
24	**Dismantlement Directs**	**430 days**
25	**Phase 1 Demolition**	**191 days**
26	**Phase 1 Electrical Demolition**	**191 days**
27	Electrical Demolition of Phase 1 Equipment	191 days
28	**Condensate System**	**30 days**
29	Condensate Pumps	2 days
30	Condensate Transfer Pumps	1 day
31	Cycle Make-Up Pump	1 day
32	Steam Packing Exhauster and Blower	2 days
33	Low Pressure Heaters (except the condenser neck heat exchangers)	30 days
34	Deaerator	8 days
35	Deaerator Storage Tank	5 days



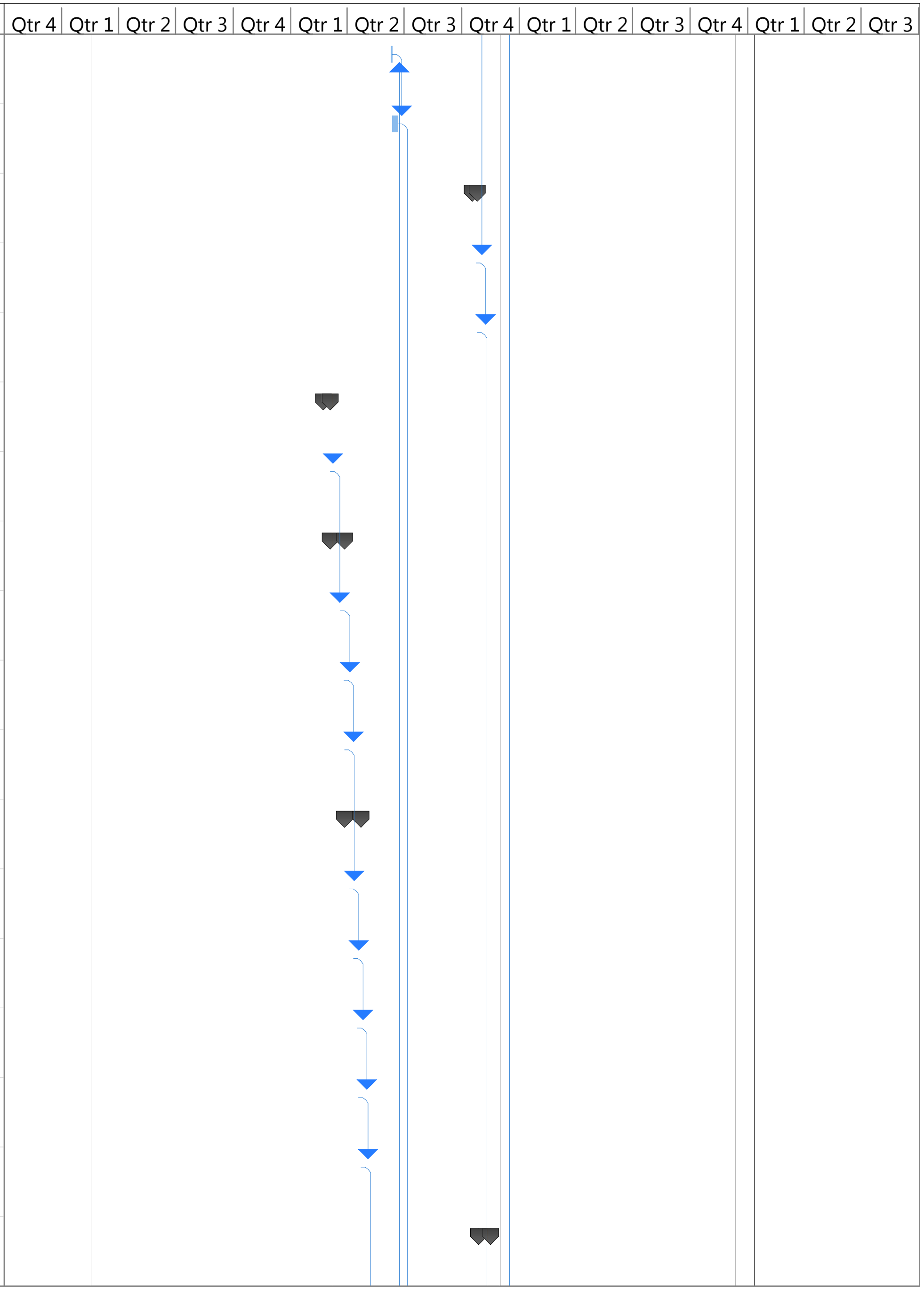
ID	Task Name	Duration
36	Condensate Piping	10 days
37	**Boiler Feed System**	**37 days**
38	Boiler Feed Pump Turbine and Exhaust	7 days
39	Boiler Feed Pump	10 days
40	High Pressure Heaters	20 days
41	**Critical Piping**	**45 days**
42	Main Steam Piping	15 days
43	Cold Reheat Piping	15 days
44	Hot Reheat Piping	15 days
45	**Extraction Steam System**	**10 days**
46	Piping	10 days
47	**Heater Drips**	**8 days**
48	Piping	8 days
49	**Auxiliary Steam**	**9 days**
50	Auxiliary Steam Piping	9 days
51	**Circulating Water (plant side)**	**5 days**
52	Waterboxes	5 days
53	**Bearing Cooling Water**	**17 days**



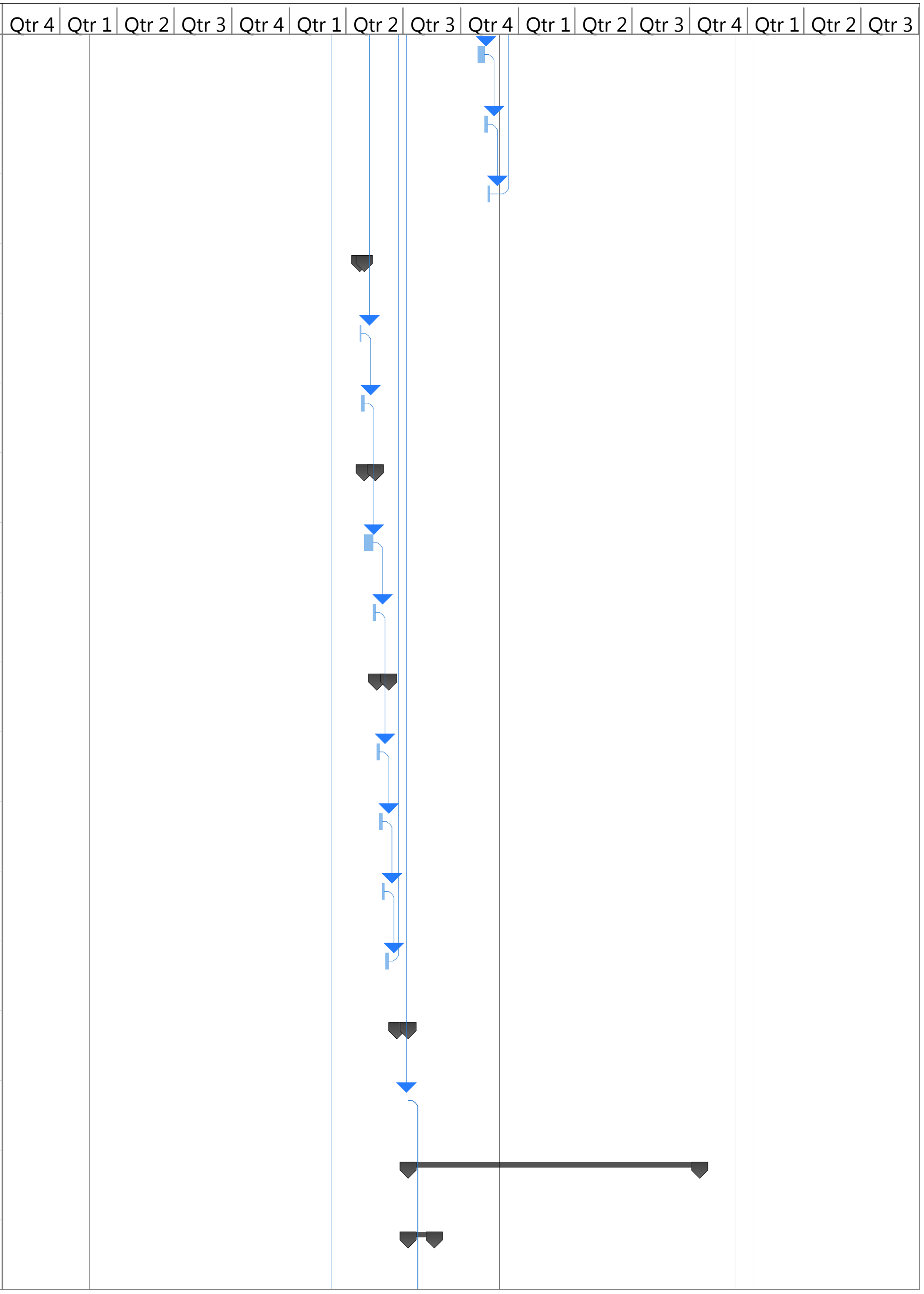
ID	Task Name	Duration
54	Bearing Cooling Water Pumps	2 days
55	Bearing Cooling Water Heat Exchanger	5 days
56	Bearing Cooling Water Piping	10 days
57	**Auxiliary Cooling Water**	**16 days**
58	Auxiliary Cooling Water Heat Exchanger	3 days
59	Auxiliary Cooling Water Pumps	3 days
60	Auxiliary Cooling Water Piping	10 days
61	**Service Water**	**5 days**
62	Service Water Piping	5 days
63	**Fuel Oil System (plant side)**	**120 days**
64	Igniter Fuel Oil Pumps	3 days
65	Igniter Fuel Oil and Atomizing Air Piping	5 days
66	Igniters	15 days
67	**Waste Oil System**	**7 days**
68	Waste Oil Tank	2 days
69	Waste Oil Transfer Pump	2 days
70	Waste Oil Piping	3 days
71	**Air Preheat System**	**9 days**



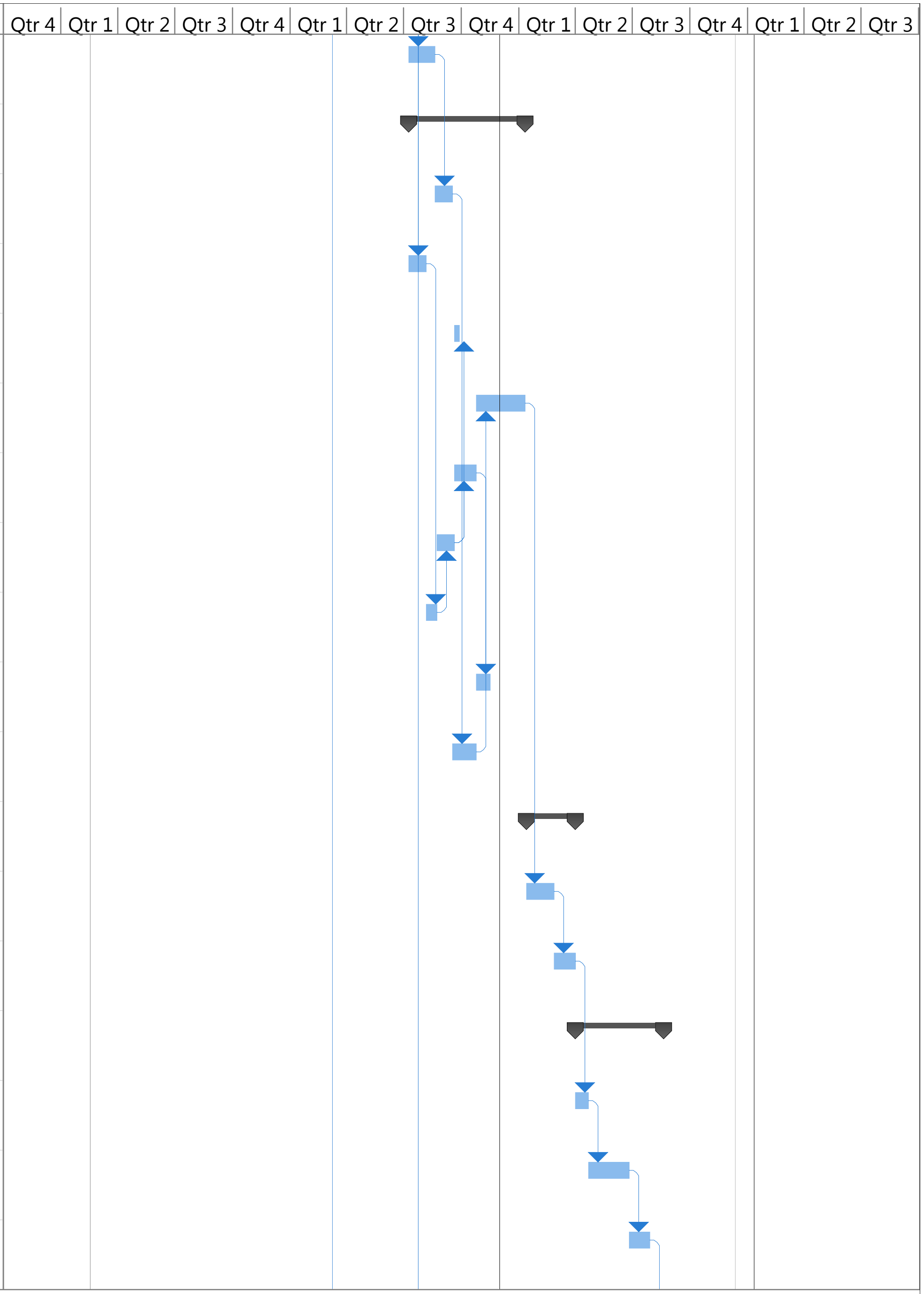
ID	Task Name	Duration
72	Air Preheat Pumps	2 days
73	Air Preheat Piping	7 days
74	**Condenser Air Extraction System**	**6 days**
75	Vacuum Pumps	4 days
76	Extraction Piping	2 days
77	**Turbine Seals and Drains**	**7 days**
78	Piping	7 days
79	**Turbine Lube Oil System**	**17 days**
80	Turbine Lube Oil Tank	12 days
81	Turbine Lube Oil Pumps	4 days
82	Turbine Oil Mist Eliminator	1 day
83	**Generator Auxiliary Systems**	**18 days**
84	Hydrogen Cooler Skid and Piping	5 days
85	Stator Cooling Water Skid and Piping	5 days
86	Isophase Bus Duct	4 days
87	Exciter Heat Exchanger	2 days
88	EHC Coolers	2 days
89	**Chemical Feed Systems**	**15 days**



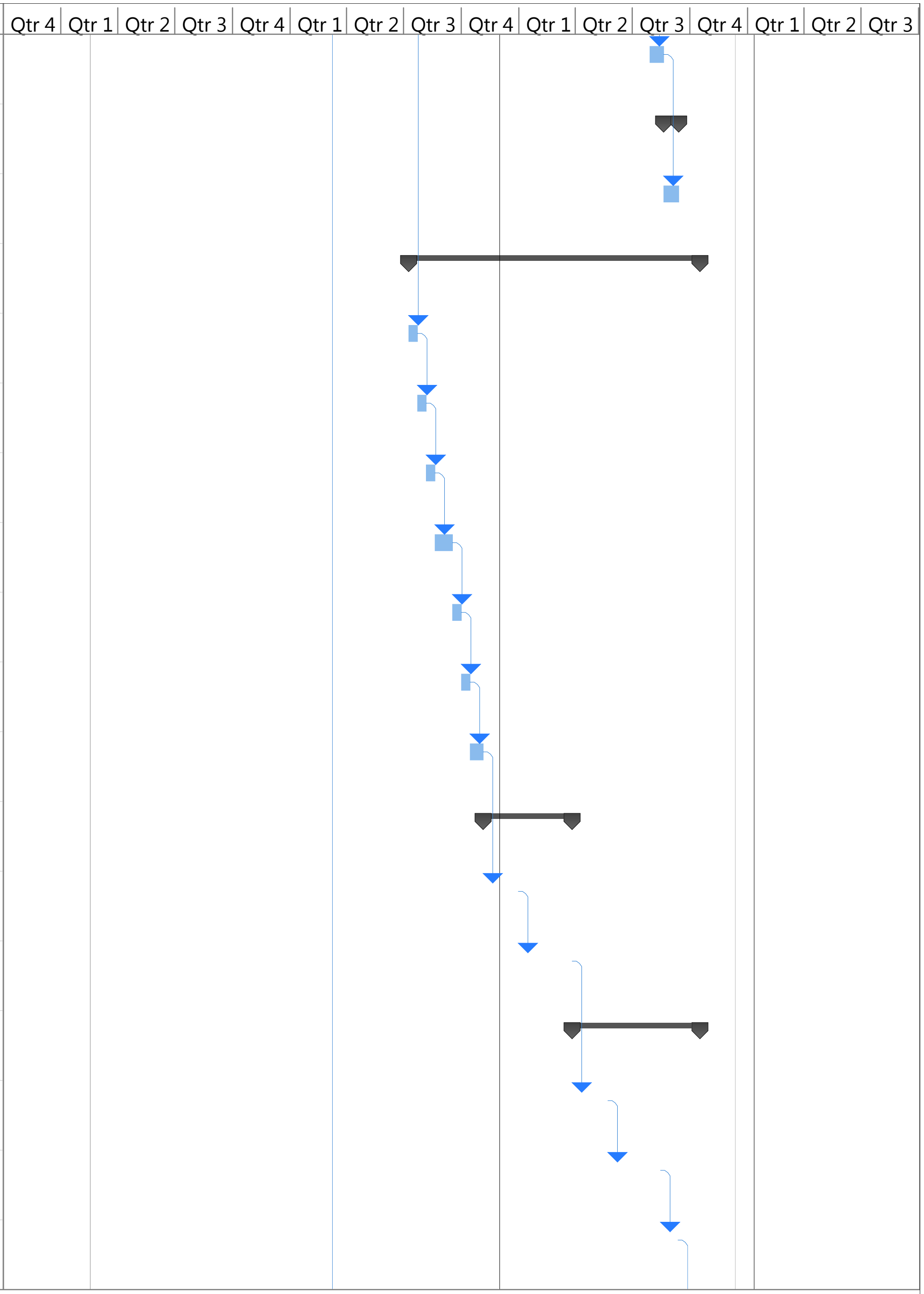
ID	Task Name	Duration
90	Tanks	9 days
91	Pumps	3 days
92	Piping	3 days
93	**Sampling Systems**	**5 days**
94	Field Mounted Heat Exchangers	2 days
95	Piping	3 days
96	**Building Heating Systems**	**14 days**
97	Steam Unit Heaters	10 days
98	Steam Piping	4 days
99	**Compressed Air System**	**15 days**
100	Air Compressors	4 days
101	Air Drying Equipment	3 days
102	Air Reciever Tanks	3 days
103	Compressed Air Piping	5 days
104	**Miscellaneous Equipment**	**12 days**
105	Miscellaneous Equipment (including Fire Protection)	12 days
106	**Phase 2 Demolition**	**333 days**
107	**Precipitator**	**30 days**



ID	Task Name	Duration
108	Remove Precipitator	30 days
109	**Boiler Equipment**	**134 days**
110	Fans	20 days
111	Pulverizers	20 days
112	Bottom Ash	6 days
113	Air Heater	56 days
114	Steam Drum	25 days
115	Coal Bunkers	20 days
116	Coal Feeders	13 days
117	Soot Blowers	16 days
118	Ductwork	28 days
119	**Boiler Removal**	**56 days**
120	Furnace	32 days
121	Back Pass	24 days
122	**Boiler Steel Framing**	**101 days**
123	Hanger Girders at Top	15 days
124	All Other Framing	47 days
125	Bracing and Girts	23 days

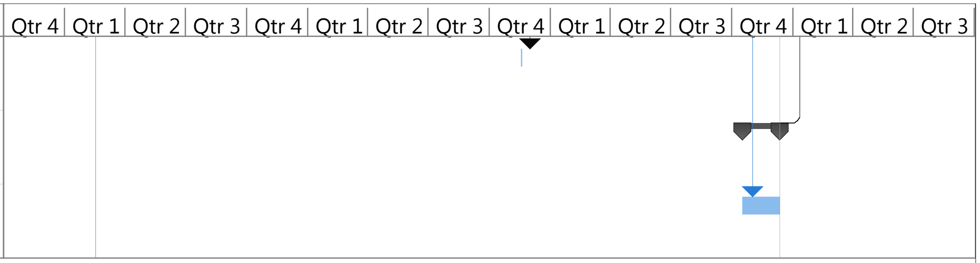


ID	Task Name	Duration
126	Columns	16 days
127	**Boiler Foundations**	**18 days**
128	Equipment Foundation Demolition to Grade	18 days
129	**Remove Turbine**	**333 days**
130	Remove HP Turbine	10 days
131	Remove IP Turbine	10 days
132	Remove LP Turbine	10 days
133	Remove Generator	20 days
134	Remove Condenser Neck Heat Exchanger	10 days
135	Remove Condenser	10 days
136	Remove Misc. Auxiliary Turbine Equipment	15 days
137	**Turbine Pedestal Demolition to Grade**	**102 days**
138	Top Slab and Beams	40 days
139	Columns	62 days
140	**Remove Turbine Building**	**146 days**
141	Siding and Rooding	41 days
142	All Framing Elevations	60 days
143	Bracing and Girts	20 days



ID	Task Name	Duration
144	Columns	25 days
145	**Phase 3 Demolition**	**130 days**
146	**Yard Demolition**	**130 days**
147	Remove Circulating Water Pumps, Screens and Intake Auxiliaries	10 days
148	**Remove Ash Handling Equipment and Piping**	**25 days**
149	Remove Fly Ash Storage Silo 2A	10 days
150	Remove Dewatering Bin 2A and 2B	5 days
151	Remove Piping and Misc. Equipment	10 days
152	**Remove Fuel Yard Equipment**	**45 days**
153	Remove Crushers 2A, 2B and Surge Bin	15 days
154	Remove Conveyor 206	10 days
155	Remove Conveyor 207	10 days
156	Remove Conveyor 2A	10 days
157	Remove Laydown Equipment and Warehoused Equipment	10 days
158	Remove Unit 2 Condensate Storage Tank and Pump	5 days
159	Remove Unit 2 Make-Up Water Storage Tank	5 days
160	Remove Unit 2 Water Pre-Treatment Equipment and Building	30 days
161	**Stack Demolition**	**1 day**

ID	Task Name	Duration
162	Stack Demolition	1 day
163	**Project Close-Out**	**40 days**
164	Project Close-Out Activities	40 days

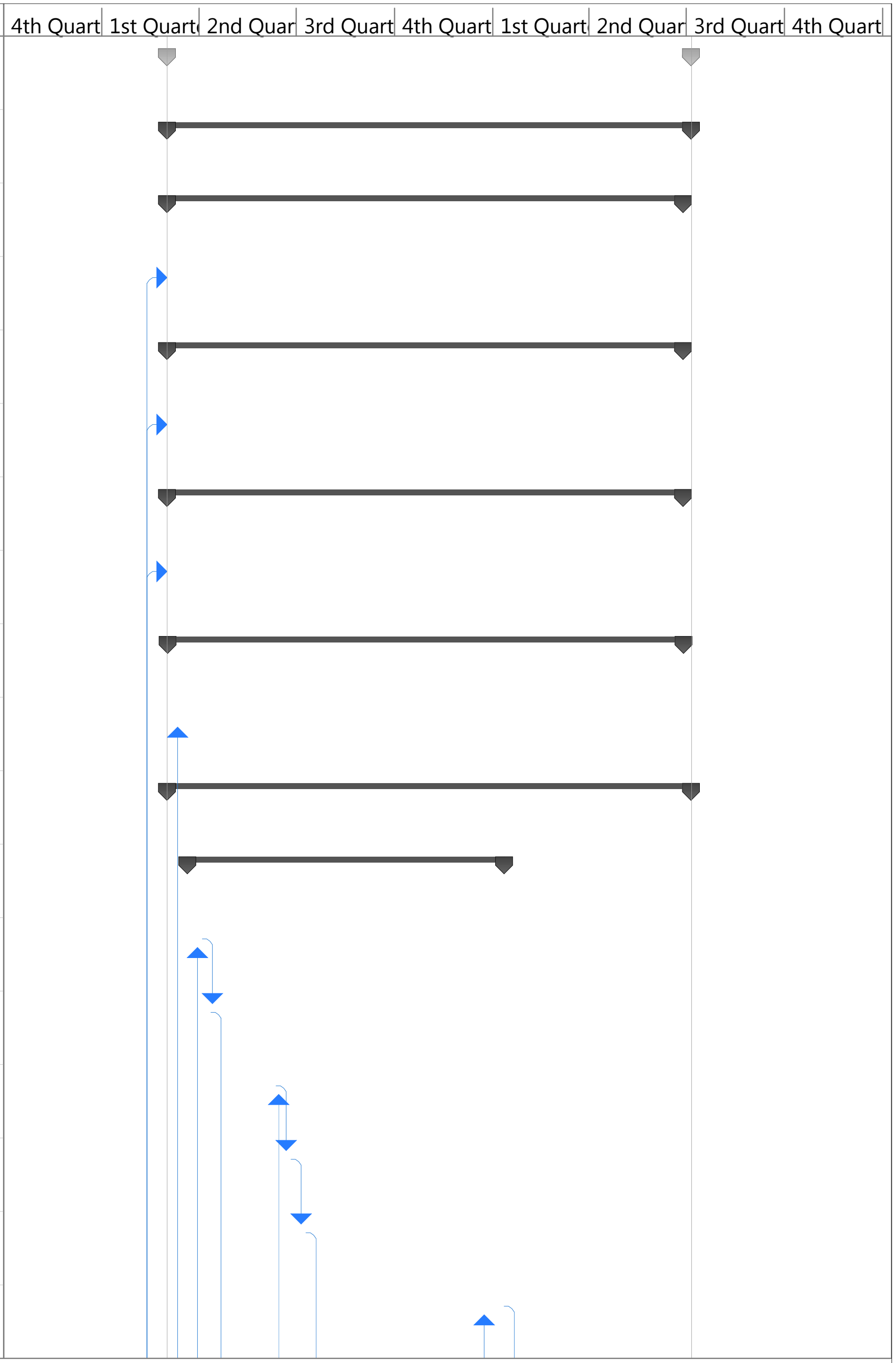


ID	Task Name	Cost
0	**La Cygne Unit 2 AQCS Dismantlement**	**$4,760,227.56**
1	**La Cygne Unit 2 AQCS Dismantlement**	**$4,760,227.56**
2	**Common Removal Overheads**	**$367,218.00**
3	Added Overhead Staff for Common Removals	$367,218.00
4	**Scrap Crew**	**$638,415.60**
5	Crew(s) to Handle Scrap Material	$638,415.60
6	**Demolition Contractor Consummables**	**$1,307,439.60**
7	Consummables	$1,307,439.60
8	**Demolition Contractor Equipment Rental Costs**	**$1,310,503.20**
9	Equipment Rental	$1,310,503.20
10	**Dismantlement**	**$1,136,651.16**
11	**Initial Structural**	**$134,621.84**
12	Remove SCR box & ductwork lagging & insulation	$18,504.80
13	Remove SCR expansion joints	$11,102.88
14	Remove ductwork lagging & insulation	$8,220.00
15	Remove ductwork expansion joints	$18,504.80
16	Remove ductwork access platforms & ladders	$18,504.80
17	Remove FF lagging, insulation, wall panel, & roof panels	$37,009.60
18	Remove ID fan lagging & insulation	$7,401.92
19	Removal all HVAC equipment located on FGD Bldg roof	$5,551.44
20	Remove FGD Bldg lagging, insulation, wall panel, & roof	$9,821.60
21	**General Electric**	**$239,058.56**
22	Remove Unit 2 Air Quality Control Equipment Transformer	$6,895.92
23	Remove breakers serving all FF equipment	$1,149.32
24	Remove breakers serving all FGD equipment	$2,298.64
25	Remove breakers serving all ID fan equipment	$1,149.32
26	Remove breakers serving all SCR equipment	$1,149.32
27	Remove breakers serving all comp air equipment	$1,149.32
28	Remove all ductwork primary instrumentation, controls & assoc'd cables, and	$11,493.20
29	Remove all FGD primary instrumentation, controls & assoc'd cables, and cond	$34,479.60
30	Remove all FF primary instrumentation, controls & assoc'd cables, and condui	$22,986.40
31	Remove SCR primary instrumentation, controls, & assoc'd cable & conduit	$11,493.20
32	Remove NH3 supply primary instrumentation, controls, & assoc'd cable & con	$11,493.20
33	Remove wiring and conduit serving FGD equipment, HVAC, lighting and conve	$45,972.80
34	Remove wiring and conduit serving FF equipment, HVAC, lighting and conveni	$22,986.40
35	Remove wiring and conduit serving the ID fans and assoc'd equipment	$27,583.68
36	Remove wiring & conduit serving SCR vaporization & injection equipment	$6,895.92
37	Remove wiring & conduit serving compressed air equipment	$6,895.92
38	Remove electrial control cabinets & switchgear	$22,986.40
39	**FGD System**	**$281,065.32**
40	Remove ductwork between FGD module and chimney	$8,220.00
41	Remove support steel and access platforms between FGD and chimney	$5,551.44
42	Remove all mechanical equipment, pumps, and motors and tanks in FGD Bldg	$37,009.60
43	Remove oxi air blowers	$925.24
44	Remove all FGD piping & valves other than recirc piping	$27,757.20
45	Remove ox air lines	$5,551.44
46	Remove FGD MEs panels	$9,864.00
47	Remove FGD outlet duct and top cone	$5,551.44
48	Remove FGD internal wash ME piping and ME supports	$5,551.44

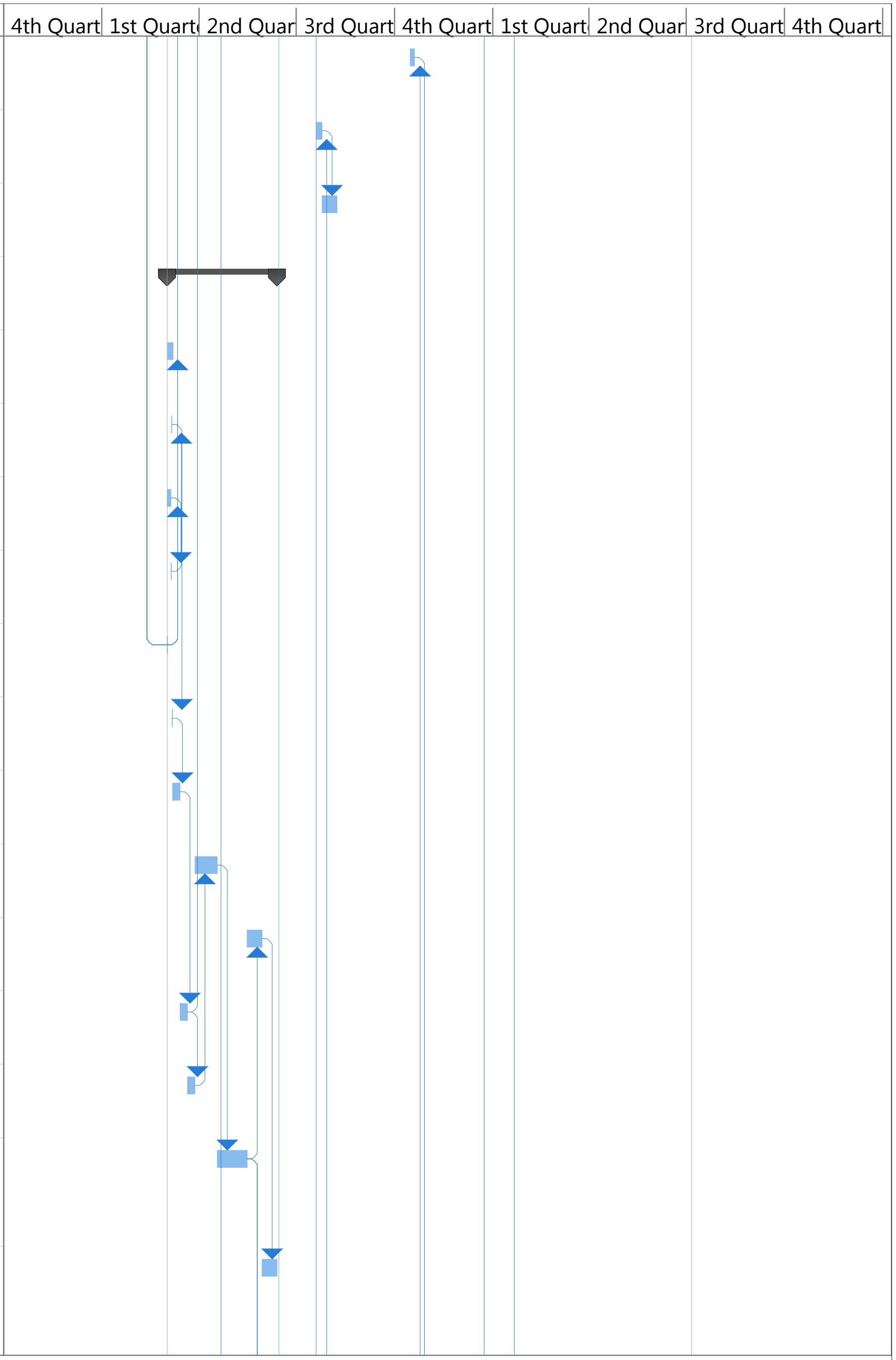
ID	Task Name	Cost
49	Remove FGD internal spray header piping	$9,252.40
50	Remove FGD support steel, access provisions, stair tower, and recirc piping fr	$37,009.60
51	Remove FGD module walls	$74,019.20
52	Remove FGD inlet duct	$5,551.44
53	Remove FGD reaction tank walls and floor	$18,504.80
54	Remove FGD Bldg trench floor grating	$3,700.96
55	Remove Unit 2 Sorbent Injection System Silo	$7,401.92
56	Remove Unit 2 Sorbent Injection Equipment and Injection Blower Building	$9,252.40
57	Remove Unit 2 Mercury Reduction System Silo	$10,390.80
58	**ID Fans**	**$81,421.12**
59	Remove ductwork between ID fan outlets and FGD module	$12,953.36
60	Remove support steel and access platforms between ID fan outlets and FGD n	$5,551.44
61	Remove ductwork between FF outlet and ID fan inlets	$12,953.36
62	Remove support steel between FF outlet and ID fan inlets	$5,551.44
63	Removed ID fan isolation dampers	$14,803.84
64	Removed ID fan drive motor	$7,401.92
65	Remove ID fan seal air system	$7,401.92
66	Remove fan casing & rotor	$14,803.84
67	**Fabric Filters**	**$324,614.64**
68	Remove ductwork between air heater and FF	$9,252.40
69	Remove ductwork structural steel between AH and FF	$5,551.44
70	Remove FF penthouse hoists and trolleys	$7,401.92
71	Remove FF hopper heaters, HVAC, lighting and convenience outlets	$22,986.40
72	Remove FF ash handling piping	$27,757.20
73	Remove compress air blower, dryers, and receivers, piping & valves	$18,504.80
74	Remove FF penthouse roof panels supporting steel	$18,504.80
75	Remove FF compartment roof hatches	$5,551.44
76	Remove FF compartment pulse air piping	$5,551.44
77	Remove FF compartment pulse air and compressed air supply piping	$11,102.88
78	Remove FF outlet poppet damper operators	$12,953.36
79	Remove FF bags & cages	$25,906.72
80	Remove FF bag support sheets	$25,906.72
81	Remove remaining FF roof	$7,401.92
82	Remove FF outlet dampers	$7,401.92
83	Remove ductwork between air heater and FF	$9,252.40
84	Remove FF wall panels to hopper level	$51,813.44
85	Remove ductwork structural steel between AH and FF	$5,551.44
86	Remove FF stair tower(s)	$18,504.80
87	Remove FF inlet dampers	$7,401.92
88	Remove FF hoppers	$12,953.36
89	Remove FF support steel	$7,401.92
90	**SCR and Ammonia Supply**	**$75,869.68**
91	Vacuum SCR catalyst	$3,700.96
92	Remove SCR catalyst	$16,654.32
93	Remove ammonia injection grid	$3,700.96
94	Remove NH3 piping between storage & injection	$3,700.96
95	Remove air horn air receiver & supply piping	$3,700.96
96	Remove SCR guillotine dampers	$7,401.92
97	Remove SCr muliti-louver dampers	$3,700.96

ID	Task Name	Cost
98	Remove SCR box, internal supports, & assoc'd ductwork	$27,757.20
99	Remove NH3 piping between storage & vaporizors	$5,551.44

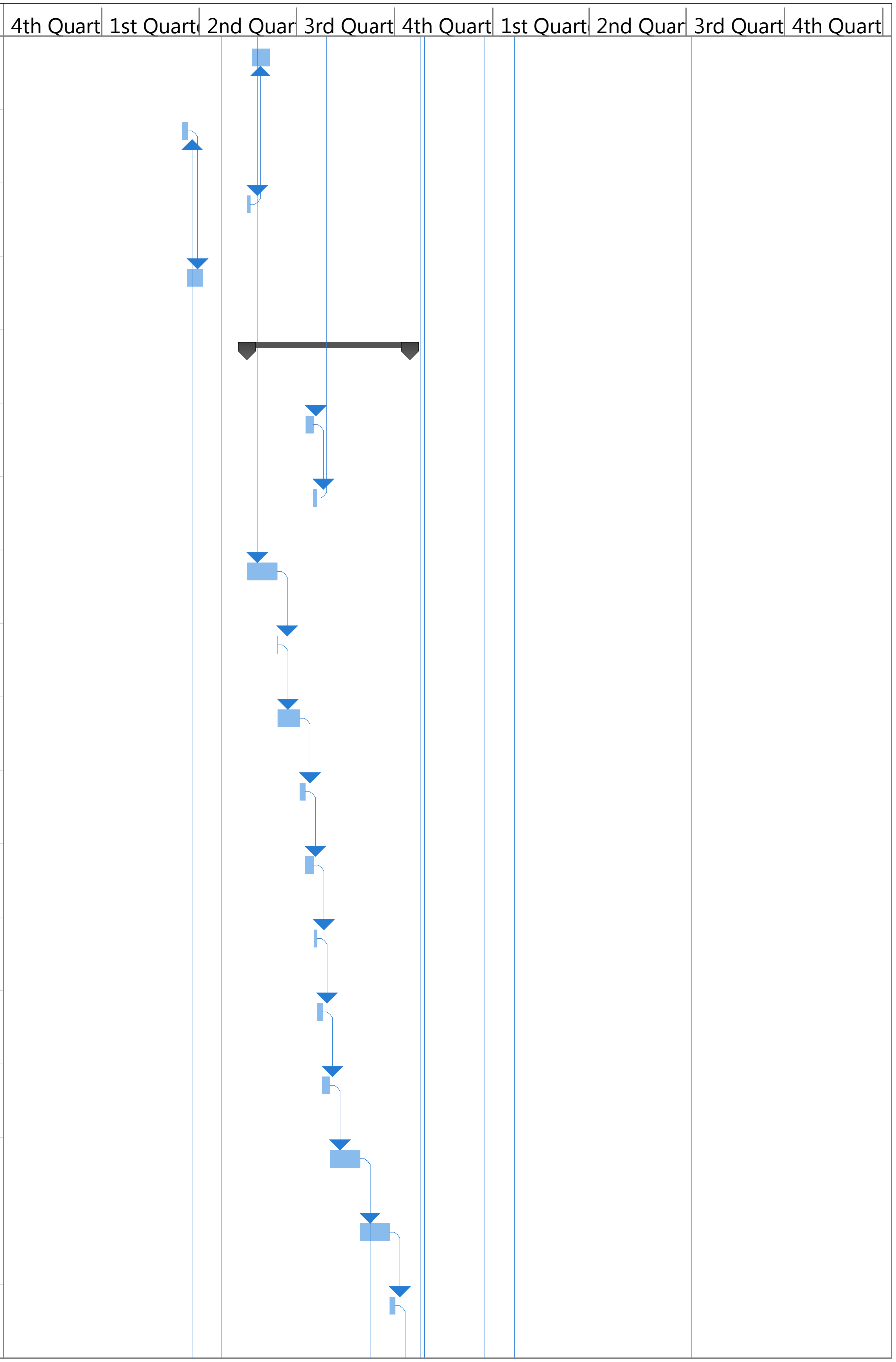
ID	Task Name	Duration
0	**La Cygne Unit 2 AQCS Dismantlement**	**350.5 days**
1	**La Cygne Unit 2 AQCS Dismantlement**	**350.5 days**
2	**Common Removal Overheads**	**345 days**
3	Added Overhead Staff for Common Removals	345 days
4	**Scrap Crew**	**345 days**
5	Crew(s) to Handle Scrap Material	345 days
6	**Demolition Contractor Consummables**	**345 days**
7	Consummables	345 days
8	**Demolition Contractor Equipment Rental Costs**	**345 days**
9	Equipment Rental	345 days
10	**Dismantlement**	**350.5 days**
11	**Initial Structural**	**212.5 days**
12	Remove SCR box & ductwork lagging & insulation	10 days
13	Remove SCR expansion joints	6 days
14	Remove ductwork lagging & insulation	5 days
15	Remove ductwork expansion joints	10 days
16	Remove ductwork access platforms & ladders	10 days
17	Remove FF lagging, insulation, wall panel, & roof panels	20 days



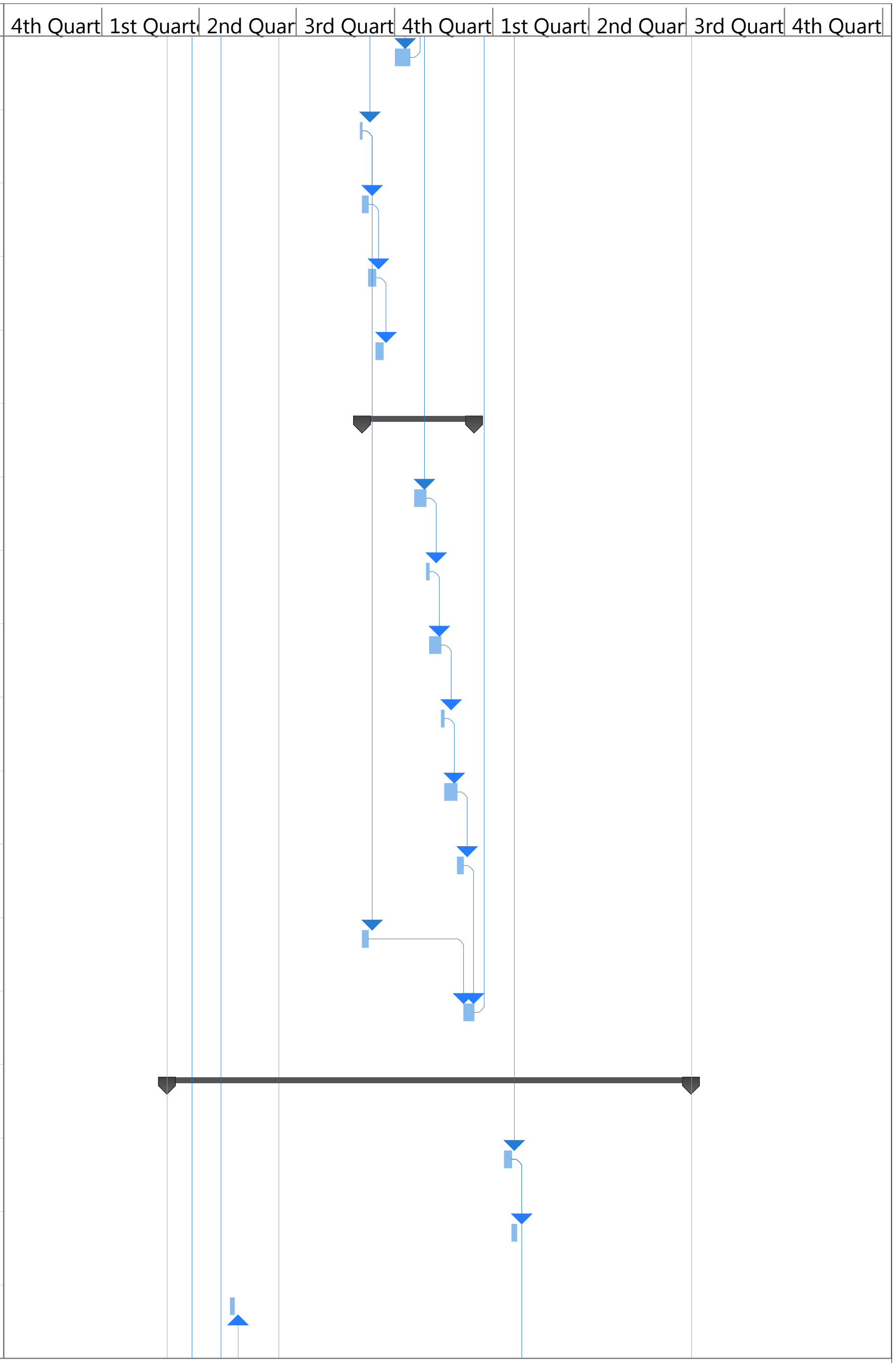
ID	Task Name	Duration
18	Remove ID fan lagging & insulation	4 days
19	Removal all HVAC equipment located on FGD Bldg roof	3 days
20	Remove FGD Bldg lagging, insulation, wall panel, & roof	10 days
21	**General Electric**	**73 days**
22	Remove Unit 2 Air Quality Control Equipment Transformer	3 days
23	Remove breakers serving all FF equipment	0.5 days
24	Remove breakers serving all FGD equipment	1 day
25	Remove breakers serving all ID fan equipment	0.5 days
26	Remove breakers serving all SCR equipment	0.5 days
27	Remove breakers serving all comp air equipment	0.5 days
28	Remove all ductwork primary instrumentation, controls & assoc'd cables, and conduit	5 days
29	Remove all FGD primary instrumentation, controls & assoc'd cables, and conduit	15 days
30	Remove all FF primary instrumentation, controls & assoc'd cables, and conduit	10 days
31	Remove SCR primary instrumentation, controls, & assoc'd cable & conduit	5 days
32	Remove NH3 supply primary instrumentation, controls, & assoc'd cable & conduit	5 days
33	Remove wiring and conduit serving FGD equipment, HVAC, lighting and convenience outlets	20 days
34	Remove wiring and conduit serving FF equipment, HVAC, lighting and convenience outlets	10 days



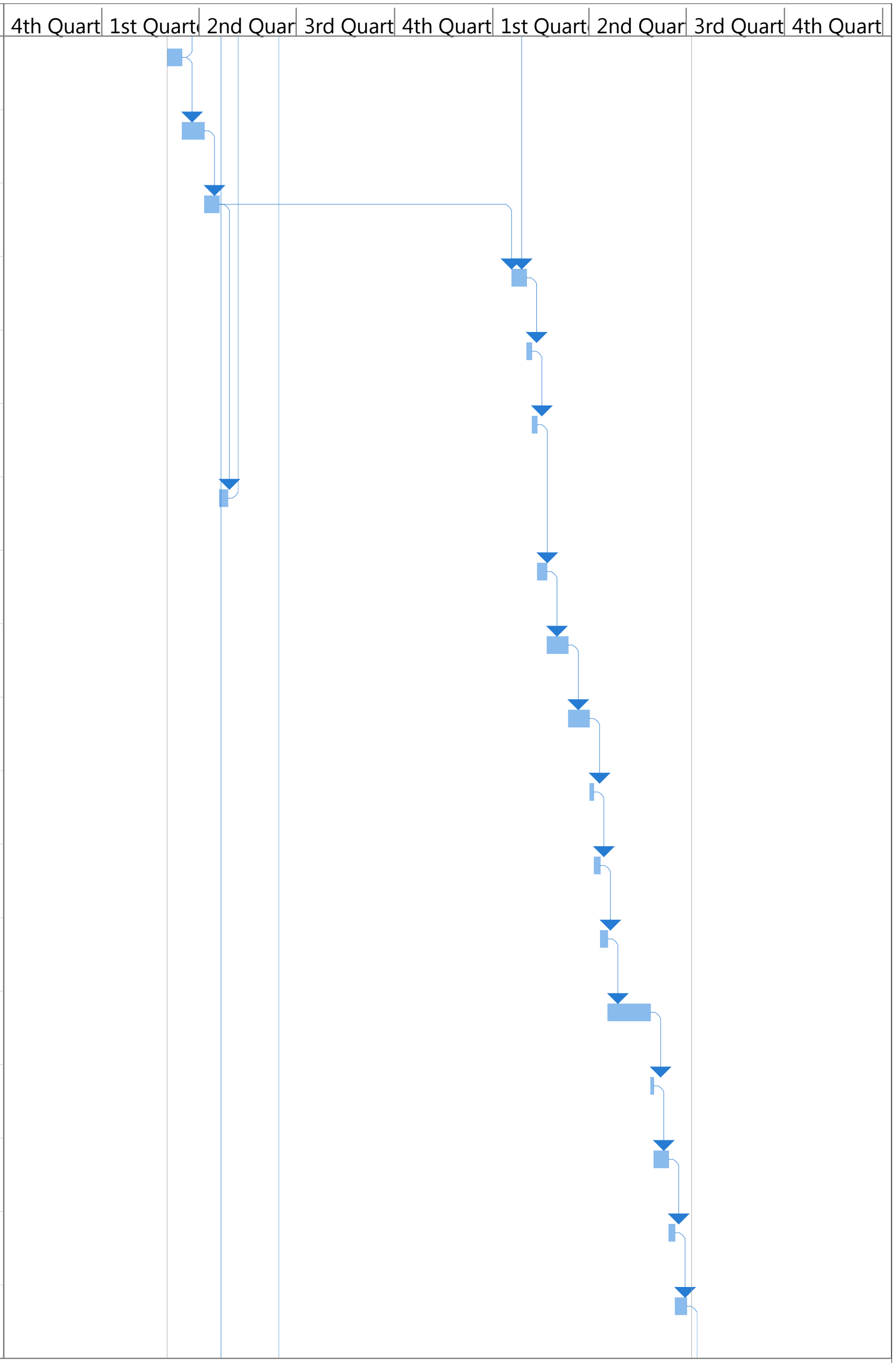
ID	Task Name	Duration
35	Remove wiring and conduit serving the ID fans and assoc'd equipment	12 days
36	Remove wiring & conduit serving SCR vaporization & injection equipment	3 days
37	Remove wiring & conduit serving compressed air equipment	3 days
38	Remove electrial control cabinets & switchgear	10 days
39	**FGD System**	**108.5 days**
40	Remove ductwork between FGD module and chimney	5 days
41	Remove support steel and access platforms between FGD and chimney	3 days
42	Remove all mechanical equipment, pumps, and motors and tanks in FGD Bldg	20 days
43	Remove oxi air blowers	0.5 days
44	Remove all FGD piping & valves other than recirc piping	15 days
45	Remove ox air lines	3 days
46	Remove FGD MEs panels	6 days
47	Remove FGD outlet duct and top cone	3 days
48	Remove FGD internal wash ME piping and ME supports	3 days
49	Remove FGD internal spray header piping	5 days
50	Remove FGD support steel, access provisions, stair tower, and recirc piping from top down	20 days
51	Remove FGD module walls	20 days
52	Remove FGD inlet duct	3 days



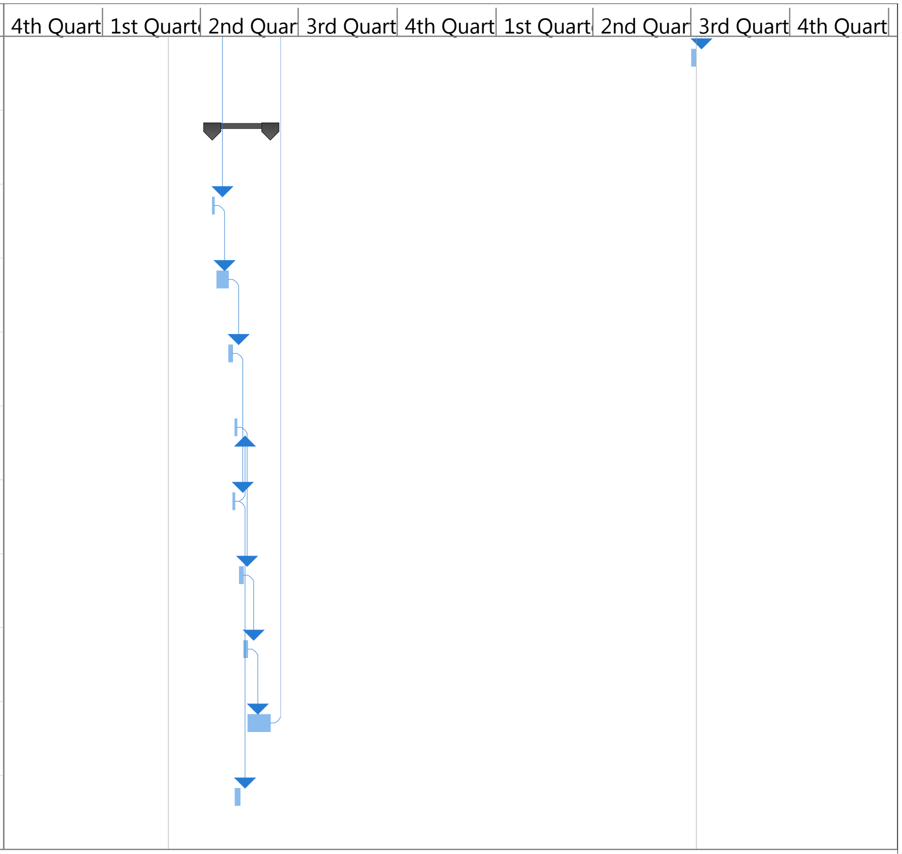
ID	Task Name	Duration
53	Remove FGD reaction tank walls and floor	10 days
54	Remove FGD Bldg trench floor grating	2 days
55	Remove Unit 2 Sorbent Injection System Silo	4 days
56	Remove Unit 2 Sorbent Injection Equipment and Injection Blower Building	5 days
57	Remove Unit 2 Mercury Reduction System Silo	5 days
58	**ID Fans**	**75 days**
59	Remove ductwork between ID fan outlets and FGD module	7 days
60	Remove support steel and access platforms between ID fan outlets and FGD module	3 days
61	Remove ductwork between FF outlet and ID fan inlets	7 days
62	Remove support steel between FF outlet and ID fan inlets	3 days
63	Removed ID fan isolation dampers	8 days
64	Removed ID fan drive motor	4 days
65	Remove ID fan seal air system	4 days
66	Remove fan casing & rotor	8 days
67	**Fabric Filters**	**350.5 days**
68	Remove ductwork between air heater and FF	5 days
69	Remove ductwork structural steel between AH and FF	3 days
70	Remove FF penthouse hoists and trolleys	4 days



ID	Task Name	Duration
71	Remove FF hopper heaters, HVAC, lighting and convenience outlets	10 days
72	Remove FF ash handling piping	15 days
73	Remove compress air blower, dryers, and receivers, piping & valves	10 days
74	Remove FF penthouse roof panels supporting steel	10 days
75	Remove FF compartment roof hatches	3 days
76	Remove FF compartment pulse air piping	3 days
77	Remove FF compartment pulse air and compressed air supply piping	6 days
78	Remove FF outlet poppet damper operators	7 days
79	Remove FF bags & cages	14 days
80	Remove FF bag support sheets	14 days
81	Remove remaining FF roof	4 days
82	Remove FF outlet dampers	4 days
83	Remove ductwork between air heater and FF	5 days
84	Remove FF wall panels to hopper level	28 days
85	Remove ductwork structural steel between AH and FF	3 days
86	Remove FF stair tower(s)	10 days
87	Remove FF inlet dampers	4 days
88	Remove FF hoppers	7 days



ID	Task Name	Duration
89	Remove FF support steel	4 days
90	**SCR and Ammonia Supply**	**38 days**
91	Vacuum SCR catalyst	2 days
92	Remove SCR catalyst	9 days
93	Remove ammonia injection grid	2 days
94	Remove NH3 piping between storage & injection	2 days
95	Remove air horn air receiver & supply piping	2 days
96	Remove SCR guillotine dampers	4 days
97	Remove SCr muliti-louver dampers	2 days
98	Remove SCR box, internal supports, & assoc'd ductwork	15 days
99	Remove NH3 piping between storage & vaporizors	3 days



COMMON

La Cygne Common Retirement

Owner Costs				
Pre-Retirement Activities		$55,645		
Retirement Activities		$647,555		
Post-Retirement Activities		$27,822		
Owner Direct Total			$731,022	
Owner Internal Costs	5.00%		$36,551	
Owner Contingency:	25.00%		$191,893	
La Cygne Common Retirement Opinion of Probable Cost:				$959,466

Activities Required by Permit or Regulation

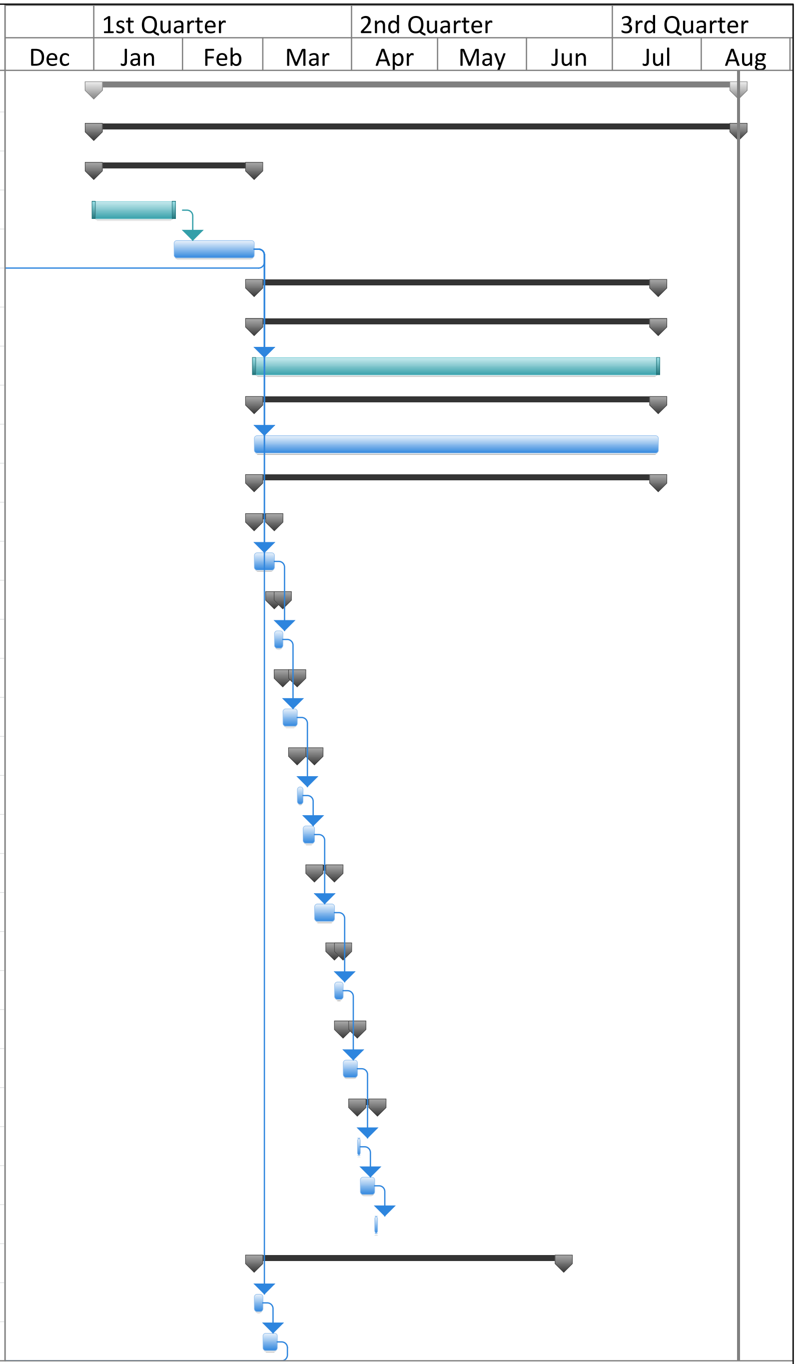
La Cygne Landfill - Closure	$9,954,062	
La Cygne Landfill - Post Closure	$6,162,607	
La Cygne Ash Pond(s)- Closure	$61,277,411	
La Cygne Ash Pond(s) - Post Closure	$10,300,356	
La Cygne Station Asbestos Removal	$594,391	
Activities Required by Permit or Regulation:		$88,288,826

ID	Task Name	Remaining
0	**La Cygne Common Retirement**	**$731,022.03**
1	**La Cygne Common Retirement**	**$731,022.03**
2	**Pre-Retirement Activities**	**$55,644.80**
3	Permitting Review	$27,822.40
4	Develop Detailed Retirement Plan	$27,822.40
5	**Overheads**	**$180,256.71**
6	**Retirement Overheads**	**$158,004.39**
7	Added Overhead Staff for Common Retirement	$158,004.39
8	**Common Removal Equipment Rental**	**$22,252.32**
9	Common Removal Equipment Rental	$22,252.32
10	**Retirement Activities**	**$467,298.12**
11	**Administration Building**	**$10,275.20**
12	Secure Administration Building	$10,275.20
13	**Fuel Yard Office Building**	**$6,165.12**
14	Secure Fuel Yard Office Building	$6,165.12
15	**Training Building**	**$6,165.12**
16	Secure Training Building	$6,165.12
17	**Warehouse(s)**	**$8,220.16**
18	Secure Unit 1 Warehouse	$4,110.08
19	Secure Unit 2 Warehouse	$4,110.08
20	**Welding Shop**	**$12,694.80**
21	Secure Welding Shop	$12,694.80
22	**Maintenance Shop**	**$6,165.12**
23	Secure Maintenance Shop	$6,165.12
24	**Insulators Shop**	**$6,165.12**
25	Secure Insulators Shop	$6,165.12
26	**Auxiliary Boilers and Building**	**$4,586.40**
27	Remove Aux. Boiler Chemicals	$917.28
28	Drain Auxiliary Boilers	$2,751.84
29	Open and Vent Auxiliary Boilers	$917.28
30	**Fuel Yard**	**$122,579.04**
31	Empty and Clean Silo 2a	$3,314.16
32	Empty and Clean Silo E	$3,314.16
33	Empty and Clean Silo F	$3,314.16
34	Empty Transfer Hoppers and Clean Transfer Tower 201	$4,231.44
35	Clean Truck Reclaim	$4,231.44
36	**Car Dumper**	**$9,873.36**
37	Empty Car Dumper Hoppers	$1,410.48
38	Clean Car Dumper	$4,231.44
39	Secure Dumper Building	$4,231.44
40	**Stacker/Reclaimer**	**$21,410.00**
41	Clean and Secure the Stacker/Reclaimer	$7,052.40
42	**Unit 1 Reclaim**	**$5,641.92**
43	Clean Unit 1 Reclaim	$2,820.96
44	Secure the Unit 1 Reclaim Building	$2,820.96

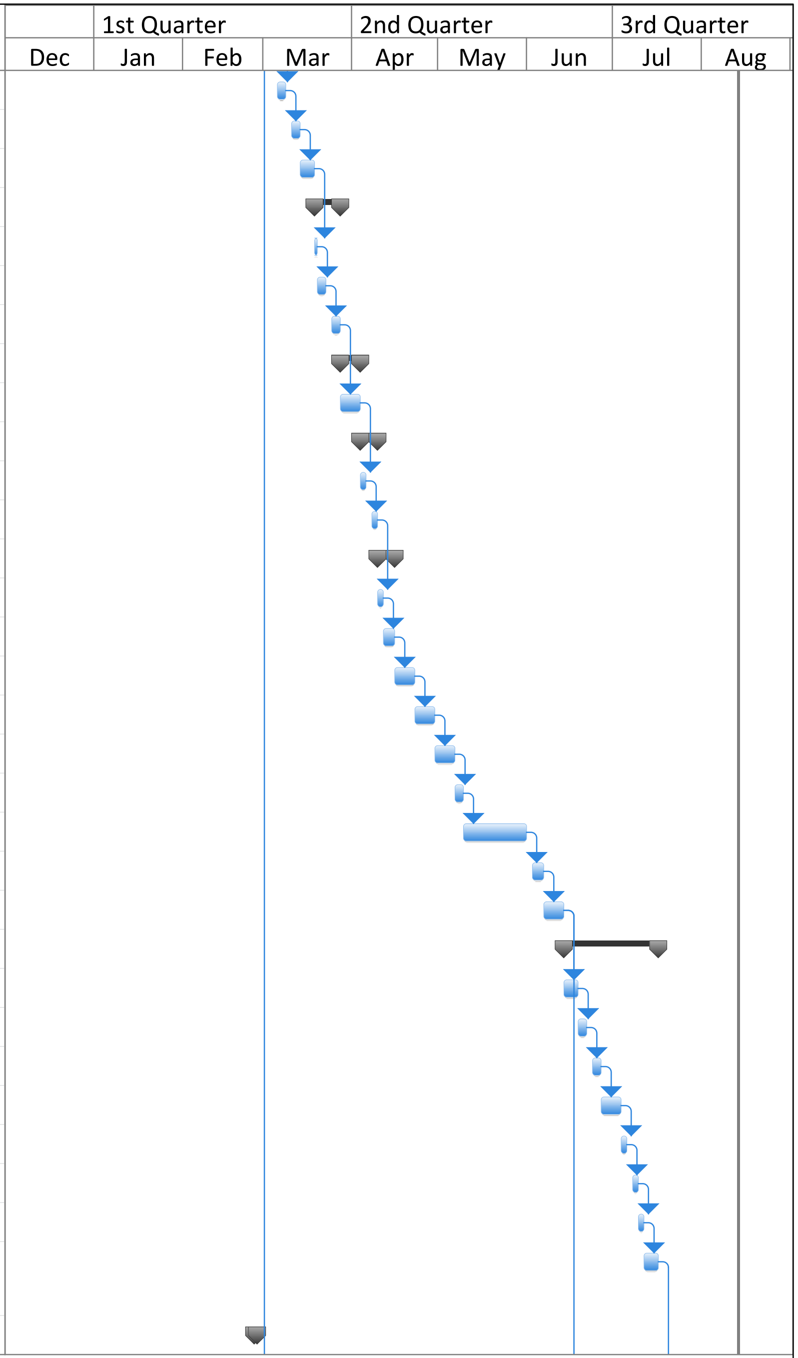
ID	Task Name	Remaining
45	**Unit 2 Reclaim**	**$5,641.92**
46	Clean Unit 2 Reclaim	$2,820.96
47	Secure the Unit 2 Reclaim Building	$2,820.96
48	Clean and Secure Transfer Tower 201	$7,052.40
49	Clean and Secure Transfer Tower 3	$7,052.40
50	Clean and Secure Primary Crusher Building	$7,052.40
51	Clean and Secure Old Truck Unloader	$4,231.44
52	Clean Conveyors - 300, 302, 301, 203, 202, 201, 3, 204	$22,567.68
53	Remove Bags and Clean Dust Collectors	$6,597.76
54	Clean and Secure Miscellaneous Fuel Yard Equipment	$7,052.40
55	**Reagent Prep and Gypsum Handling**	**$32,794.96**
56	Clean and Secure Limestone Unloading Facility	$4,231.44
57	Clean and Secure Limestone Storage Facility	$4,231.44
58	Clean Limestone Conveyor	$4,307.28
59	Clean and Secure Limestone Prep Building	$7,178.80
60	Clean Gypsum Stackout Conveyor	$2,871.52
61	Clean and Secure PCM-1	$2,871.52
62	Clean and Secure PCM-2	$2,871.52
63	Clean and Secure the Vacuum Pump and Air Compressor Building	$4,231.44
64	**Lake Intake Structure and Intake Chemical Feed System**	**$917.28**
65	Remove Chemicals	$917.28
66	**Underground Circulating Water Piping**	**$4,185.60**
67	Drain the Underground Circulating Water Piping	$4,185.60
68	**Sewage Treatment**	**$4,724.64**
69	Clean the Sewage Treatment Tanks and Transfer Points	$4,724.64
70	**Fuel Oil Storage and Unloading**	**$1,834.56**
71	Remove Fuel from the Fuel Oil Storage Tank(s) and Vent	$917.28
72	Drain Fuel Oil Pipe and Vent	$917.28
73	**Wastewater Lagoon**	**$239,825.00**
74	Wastewater Lagoon Removal	$239,825.00
75	**Post Retirement Closure Activities**	**$27,822.40**
76	Post Retirement Closure Activities	$27,822.40

Exhibit RAK-9

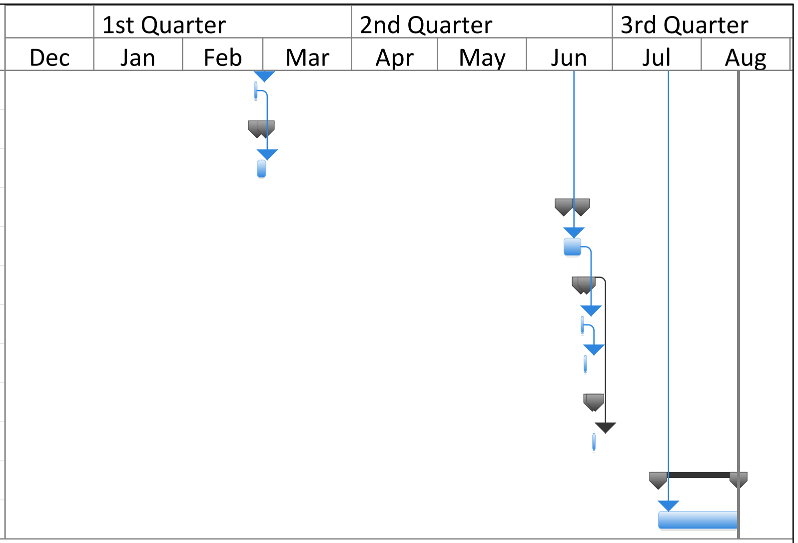
ID	Task Name	Duration
0	**La Cygne Common Retirement**	**161 days**
1	**La Cygne Common Retirement**	**161 days**
2	**Pre-Retirement Activities**	**40 days**
3	Permitting Review	20 days
4	Develop Detailed Retirement Plan	20 days
5	**Overheads**	**101 days**
6	**Retirement Overheads**	**101 days**
7	Added Overhead Staff for Common Retirement	101 days
8	**Common Removal Equipment Rental**	**101 days**
9	Common Removal Equipment Rental	101 days
10	**Retirement Activities**	**101 days**
11	**Administration Building**	**5 days**
12	Secure Administration Building	5 days
13	**Fuel Yard Office Building**	**3 days**
14	Secure Fuel Yard Office Building	3 days
15	**Training Building**	**3 days**
16	Secure Training Building	3 days
17	**Warehouse(s)**	**4 days**
18	Secure Unit 1 Warehouse	2 days
19	Secure Unit 2 Warehouse	2 days
20	**Welding Shop**	**5 days**
21	Secure Welding Shop	5 days
22	**Maintenance Shop**	**3 days**
23	Secure Maintenance Shop	3 days
24	**Insulators Shop**	**3 days**
25	Secure Insulators Shop	3 days
26	**Auxiliary Boilers and Building**	**5 days**
27	Remove Aux. Boiler Chemicals	1 day
28	Drain Auxiliary Boilers	3 days
29	Open and Vent Auxiliary Boilers	1 day
30	**Fuel Yard**	**78 days**
31	Empty and Clean Silo 2a	3 days
32	Empty and Clean Silo E	3 days



ID	Task Name	Duration
33	Empty and Clean Silo F	3 days
34	Empty Transfer Hoppers and Clean Transfer Tower 201	3 days
35	Clean Truck Reclaim	3 days
36	**Car Dumper**	**7 days**
37	Empty Car Dumper Hoppers	1 day
38	Clean Car Dumper	3 days
39	Secure Dumper Building	3 days
40	**Stacker/Reclaimer**	**5 days**
41	Clean and Secure the Stacker/Reclaimer	5 days
42	**Unit 1 Reclaim**	**4 days**
43	Clean Unit 1 Reclaim	2 days
44	Secure the Unit 1 Reclaim Building	2 days
45	**Unit 2 Reclaim**	**4 days**
46	Clean Unit 2 Reclaim	2 days
47	Secure the Unit 2 Reclaim Building	2 days
48	Clean and Secure Transfer Tower 201	5 days
49	Clean and Secure Transfer Tower 3	5 days
50	Clean and Secure Primary Crusher Building	5 days
51	Clean and Secure Old Truck Unloader	3 days
52	Clean Conveyors - 300, 302, 301, 203, 202, 201, 3, 204	16 days
53	Remove Bags and Clean Dust Collectors	4 days
54	Clean and Secure Miscellaneous Fuel Yard Equipment	5 days
55	**Reagent Prep and Gypsum Handling**	**23 days**
56	Clean and Secure Limestone Unloading Facility	3 days
57	Clean and Secure Limestone Storage Facility	3 days
58	Clean Limestone Conveyor	3 days
59	Clean and Secure Limestone Prep Building	5 days
60	Clean Gypsum Stackout Conveyor	2 days
61	Clean and Secure PCM-1	2 days
62	Clean and Secure PCM-2	2 days
63	Clean and Secure the Vacuum Pump and Air Compressor Building	3 days
64	**Lake Intake Structure and Intake Chemical Feed System**	**1 day**



ID	Task Name	Duration
65	Remove Chemicals	1 day
66	**Underground Circulating Water Piping**	**3 days**
67	Drain the Underground Circulating Water Piping	3 days
68	**Sewage Treatment**	**4 days**
69	Clean the Sewage Treatment Tanks and Transfer Points	4 days
70	**Fuel Oil Storage and Unloading**	**2 days**
71	Remove Fuel from the Fuel Oil Storage Tank(s) and Vent	1 day
72	Drain Fuel Oil Pipe and Vent	1 day
73	**Wastewater Lagoon**	**1 day**
74	Wastewater Lagoon Removal	1 day
75	**Post Retirement Closure Activities**	**20 days**
76	Post Retirement Closure Activities	20 days



La Cygne Common Dismantlement

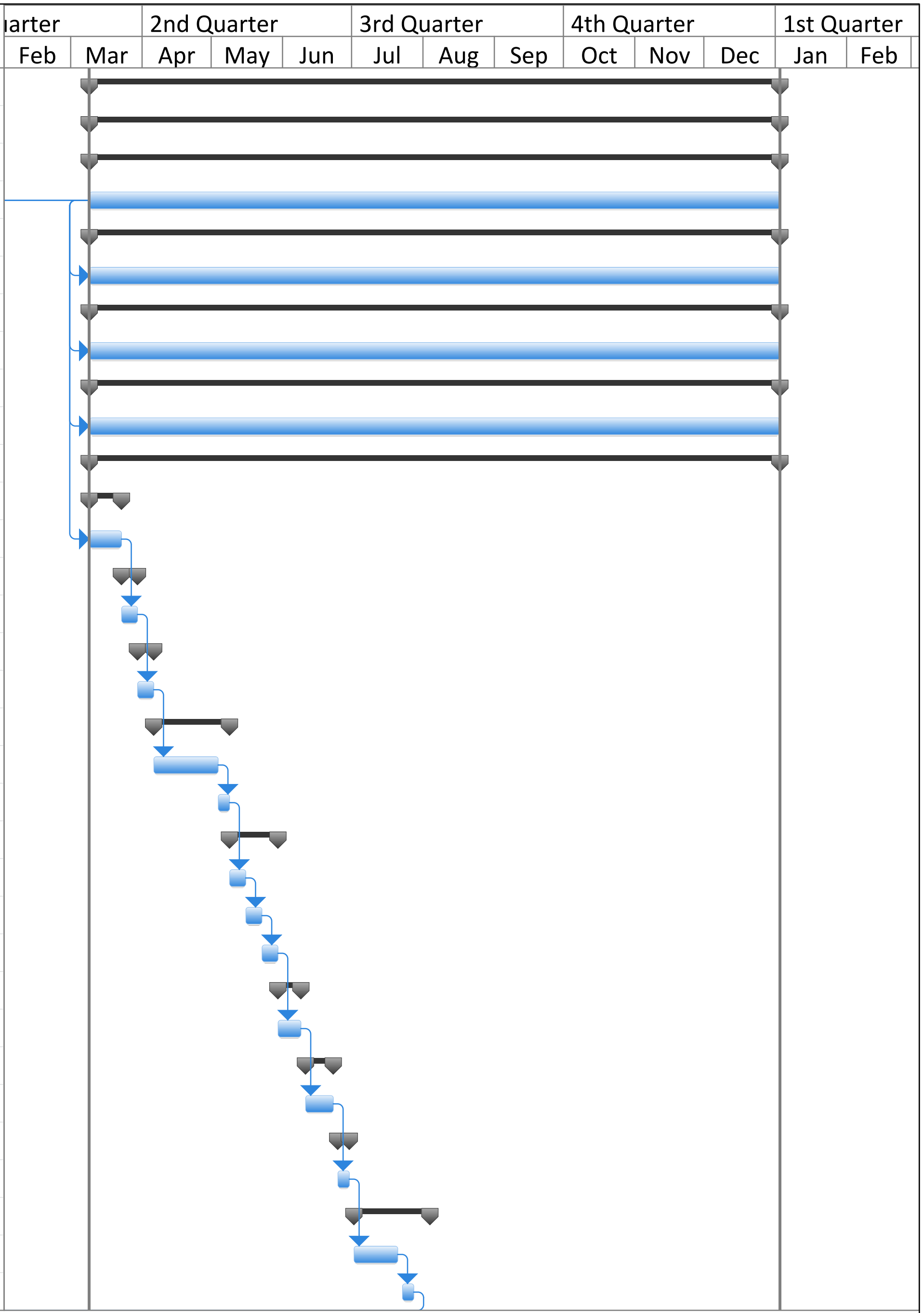
Owner Additional Costs				
Pre-Dismantlement Activities		$0		
Overhead During Dismantlement		$0		
Owner Costs Total			$0	
Demolition General Contractor (DGC) Costs				
Additional Site Management		$112,170		
Equipment Rental		$541,300		
Consumables		$810,992		
Scrap Crew(s)		$792,005		
Dismantlement		$8,986,012		
			$11,242,480	
DGC Insurance	2.00%	$224,850		
Contingency/Profit	15.00%	$1,720,099		
Performance Bond	2.00%	$263,749		
Contractor Costs Total:			$13,451,177	
Total:				$13,451,177
Owner Internal Costs:	5.00%			$672,559
Owner Contingency:	25.00%			$3,530,934
La Cygne Common Dismantlement Opinion of Probable Cost:				$17,654,670

ID	Task Name	Remaining	W
1	**La Cygne Common Dismantlement**	**$12,513,245.27**	
2	**Overheads**	**$2,256,467.36**	
3	**Common Removal Overheads**	**$112,170.24**	
4	Added Overhead Staff for Common Removals	$112,170.24	
5	**Common Removal Equipment Rental**	**$541,300.16**	
6	Common Removal Equipment Rental	$541,300.16	
7	**Demolition Contractor Consummables**	**$810,991.52**	
8	Consummables	$810,991.52	
9	**Scrap Crew**	**$792,005.44**	
10	Crew(s) to Handle Scrap Material	$792,005.44	
11	**Dismantlement Activities**	**$8,986,012.31**	
12	**Administration Building**	**$37,009.60**	
13	Remove Administration Building	$37,009.60	
14	**Fuel Yard Office Building**	**$18,504.80**	
15	Remove Fuel Yard Office Building	$18,504.80	
16	**Training Building**	**$18,504.80**	
17	Remove Training Building	$18,504.80	
18	**Parking Lots and Plant Roads**	**$85,122.08**	
19	Plant Roads and Parking Areas	$74,019.20	
20	Guard Shack	$11,102.88	
21	**Warehouse(s)**	**$55,514.40**	
22	Remove Unit 1 Warehouse	$18,504.80	
23	Remove Unit 2 Warehouse	$18,504.80	
24	Remove 20,000 S.F. Warehouse	$18,504.80	
25	**Welding Shop**	**$29,607.68**	
26	Remove Welding Shop	$29,607.68	
27	**Maintenance Shop**	**$23,984.80**	
28	Remove Maintenance Shop	$23,984.80	
29	**Insulators Shop**	**$18,504.80**	
30	Remove Insulators Shop	$18,504.80	
31	**Auxiliary Boilers and Building**	**$92,524.00**	
32	Remove Auxiliary Boilers	$55,514.40	
33	Remove Building	$18,504.80	
34	Remove Piping and Tressell	$18,504.80	
35	**Fuel Yard**	**$792,005.44**	
36	Remove Silo 2A	$3,700.96	
37	Remove Silo E	$3,700.96	
38	Remove Silo F	$3,700.96	
39	Remove Transfer Tower 201	$37,009.60	
40	Remove Truck Reclaim	$18,504.80	
41	**Remove Car Dumper**	**$92,524.00**	
42	Remove Underground Equipment	$18,504.80	
43	Remove Above Ground Equipment	$37,009.60	
44	Remove Building	$18,504.80	
45	Backfill Dumper Structure	$18,504.80	
46	Remove Stacker/Reclaimer	$37,009.60	

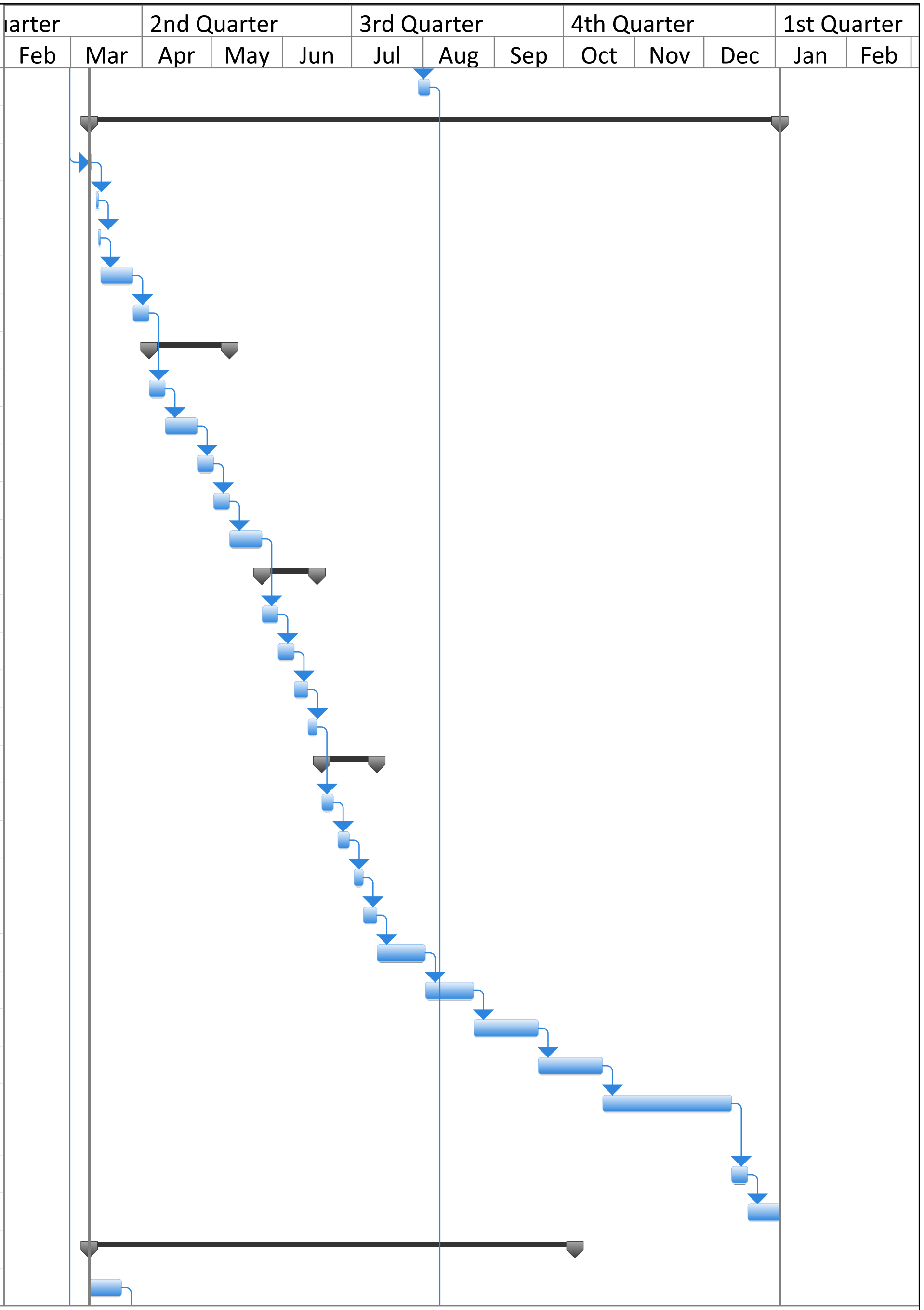
ID	Task Name	Remaining	W
47	**Remove Unit 1 Reclaim**	**$66,617.28**	
48	Remove Underground Equipment	$18,504.80	
49	Remove Above Ground Equipment	$18,504.80	
50	Remove Building	$14,803.84	
51	Backfill Structure	$14,803.84	
52	**Remove Unit 2 Reclaim**	**$66,617.28**	
53	Remove Underground Equipment	$18,504.80	
54	Remove Above Ground Equipment	$18,504.80	
55	Remove Building	$14,803.84	
56	Backfill Structure	$14,803.84	
57	Remove Transfer Tower 201	$55,514.40	
58	Remove Transfer Tower 3	$55,514.40	
59	Remove Primary Crusher Building	$74,019.20	
60	Remove Old Truck Unloader	$74,019.20	
61	Remove Conveyors - 300, 302, 301, 203, 202, 201, 3, 204	$148,038.40	
62	Remove Dust Collectors	$18,504.80	
63	Remove Miscellaneous Fuel Yard Equipment	$37,009.60	
64	**AQCS Common**	**$413,928.16**	
65	Remove Limestone Unloading Facility	$37,009.60	
66	Remove Limestone Storage Facility	$18,504.80	
67	Remove Limestone Conveyor	$18,504.80	
68	Remove Limestone Prep Building	$148,038.40	
69	Remove Gypsum Stackout Conveyor	$18,504.80	
70	Remove PCM-1	$7,401.92	
71	Remove PCM-2	$7,401.92	
72	Remove the Vacuum Pump and Air Compressor Building	$74,019.20	
73	Remove Gypsum Dewatering Building	$10,298.16	
74	Remove Service Water Tanks	$5,914.16	
75	Remove Emergency Limestone Conveyor Tunnel	$3,722.16	
76	Remove Limestone Slurry Tanks	$9,202.16	
77	Remove AQCS Electrical Enclosure	$2,284.64	
78	Remove FlyAsh Equipment Building	$10,298.16	
79	Remove Limestone and Gypsum Handling Conveyors	$11,394.16	
80	Remove Reclaim Water Tanks	$5,914.16	
81	Remove Remaining Absorber Equipment Building	$7,010.16	
82	Remove Miscellaneous Equipment	$18,504.80	
83	**Lake Intake Structure and Intake Chemical Feed System**	**$118,430.72**	
84	Remove Chemical Feed System and Misc. Equipment	$7,401.92	
85	Remove Concrete Intake Structure	$74,019.20	
86	Complete Intake Grading and Drainage	$37,009.60	
87	**Underground Circulating Water Piping**	**$55,514.40**	
88	Excavate Underground Circulating Water Piping	$18,504.80	
89	Collapse Underground Circulating Water Piping	$11,102.88	
90	Backfill and Compact Over Circulating Water Piping	$25,906.72	
91	**Sewage Treatment**	**$22,205.76**	
92	Remove Sewage Treatment Pumps and Miscellaneous Equipment	$7,401.92	

ID	Task Name	Remaining	
			W
93	Remove Sewage Treatment Concrete Structures	$14,803.84	
94	**Yard Fire Water Systems**	**$37,009.60**	
95	Remove Hydrants and Fire Water System Piping Down to 3' Below Grade	$37,009.60	
96	**Common Stack**	**$7,167,641.27**	
97	Remove Common Stack to Grade	$7,167,641.27	
98	**Final Site Grading and Drainage**	**$1,270,765.60**	
99	Final Site Grading and Drainage	$1,270,765.60	

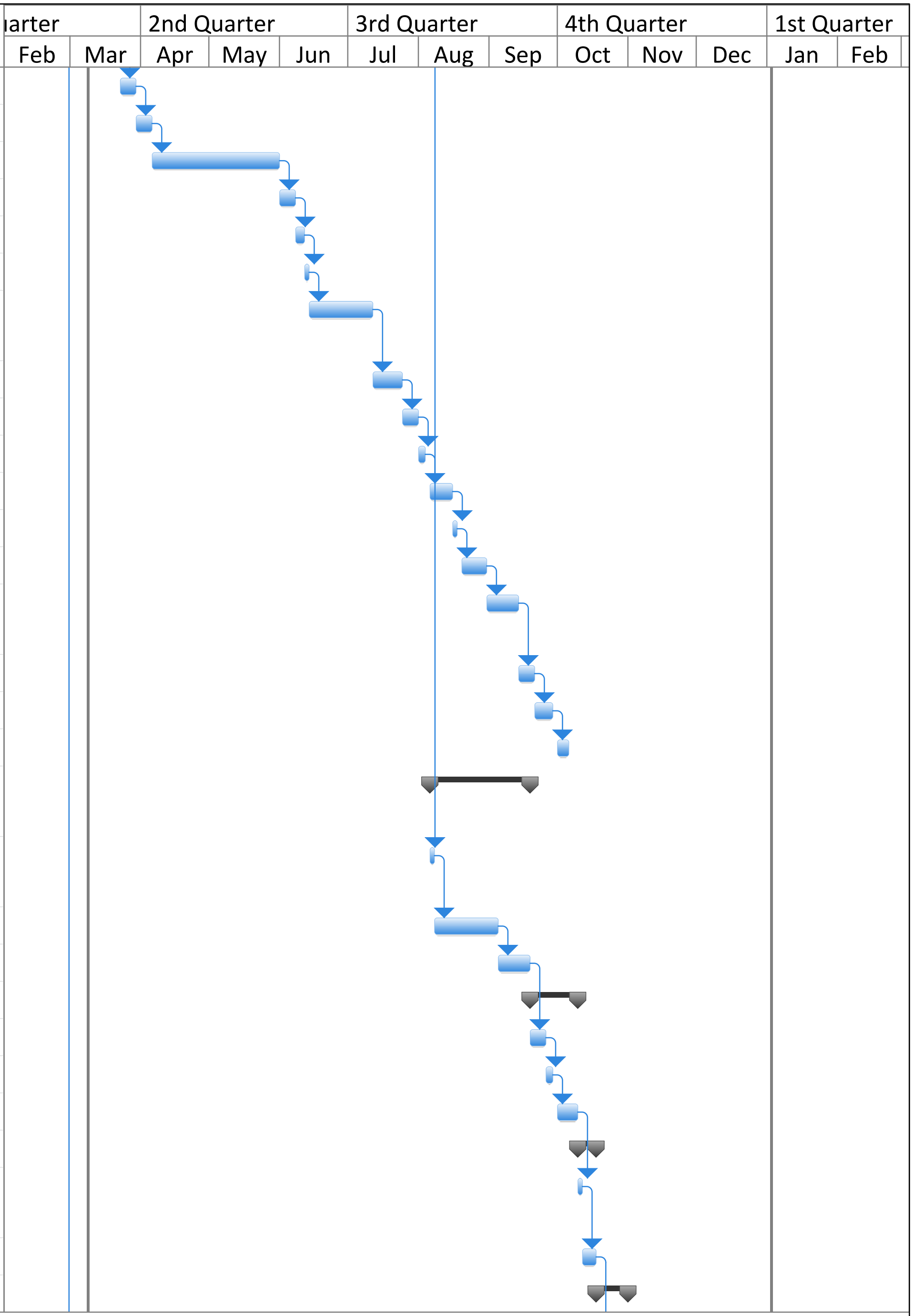
ID	Task Name	Duration
1	**La Cygne Common Dismantlement**	**214 days**
2	**Overheads**	**214 days**
3	**Common Removal Overheads**	**214 days**
4	Added Overhead Staff for Common Removals	214 days
5	**Common Removal Equipment Rental**	**214 days**
6	Common Removal Equipment Rental	214 days
7	**Demolition Contractor Consummables**	**214 days**
8	Consummables	214 days
9	**Scrap Crew**	**214 days**
10	Crew(s) to Handle Scrap Material	214 days
11	**Dismantlement Activities**	**214 days**
12	**Administration Building**	**10 days**
13	Remove Administration Building	10 days
14	**Fuel Yard Office Building**	**5 days**
15	Remove Fuel Yard Office Building	5 days
16	**Training Building**	**5 days**
17	Remove Training Building	5 days
18	**Parking Lots and Plant Roads**	**23 days**
19	Plant Roads and Parking Areas	20 days
20	Guard Shack	3 days
21	**Warehouse(s)**	**15 days**
22	Remove Unit 1 Warehouse	5 days
23	Remove Unit 2 Warehouse	5 days
24	Remove 20,000 S.F. Warehouse	5 days
25	**Welding Shop**	**8 days**
26	Remove Welding Shop	8 days
27	**Maintenance Shop**	**10 days**
28	Remove Maintenance Shop	10 days
29	**Insulators Shop**	**5 days**
30	Remove Insulators Shop	5 days
31	**Auxiliary Boilers and Building**	**25 days**
32	Remove Auxiliary Boilers	15 days
33	Remove Building	5 days



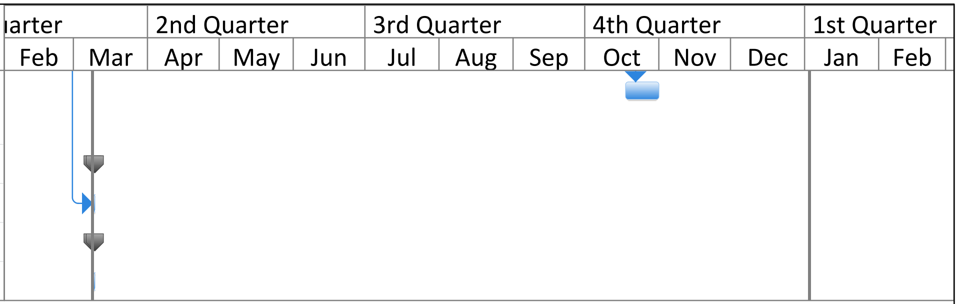
ID	Task Name	Duration
34	Remove Piping and Tressell	5 days
35	**Fuel Yard**	**214 days**
36	Remove Silo 2A	1 day
37	Remove Silo E	1 day
38	Remove Silo F	1 day
39	Remove Transfer Tower 201	10 days
40	Remove Truck Reclaim	5 days
41	**Remove Car Dumper**	**25 days**
42	Remove Underground Equipment	5 days
43	Remove Above Ground Equipment	10 days
44	Remove Building	5 days
45	Backfill Dumper Structure	5 days
46	Remove Stacker/Reclaimer	10 days
47	**Remove Unit 1 Reclaim**	**18 days**
48	Remove Underground Equipment	5 days
49	Remove Above Ground Equipment	5 days
50	Remove Building	4 days
51	Backfill Structure	4 days
52	**Remove Unit 2 Reclaim**	**18 days**
53	Remove Underground Equipment	5 days
54	Remove Above Ground Equipment	5 days
55	Remove Building	4 days
56	Backfill Structure	4 days
57	Remove Transfer Tower 201	15 days
58	Remove Transfer Tower 3	15 days
59	Remove Primary Crusher Building	20 days
60	Remove Old Truck Unloader	20 days
61	Remove Conveyors - 300, 302, 301, 203, 202, 201, 3, 204	40 days
62	Remove Dust Collectors	5 days
63	Remove Miscellaneous Fuel Yard Equipment	10 days
64	**AQCS Common**	**151 days**
65	Remove Limestone Unloading Facility	10 days



ID	Task Name	Duration
66	Remove Limestone Storage Facility	5 days
67	Remove Limestone Conveyor	5 days
68	Remove Limestone Prep Building	40 days
69	Remove Gypsum Stackout Conveyor	5 days
70	Remove PCM-1	2 days
71	Remove PCM-2	2 days
72	Remove the Vacuum Pump and Air Compressor Building	20 days
73	Remove Gypsum Dewatering Building	9 days
74	Remove Service Water Tanks	5 days
75	Remove Emergency Limestone Conveyor Tunnel	3 days
76	Remove Limestone Slurry Tanks	8 days
77	Remove AQCS Electrical Enclosure	2 days
78	Remove FlyAsh Equipment Building	9 days
79	Remove Limestone and Gypsum Handling Conveyors	10 days
80	Remove Reclaim Water Tanks	5 days
81	Remove Remaining Absorber Equipment Building	6 days
82	Remove Miscellaneous Equipment	5 days
83	**Lake Intake Structure and Intake Chemical Feed System**	**32 days**
84	Remove Chemical Feed System and Misc. Equipment	2 days
85	Remove Concrete Intake Structure	20 days
86	Complete Intake Grading and Drainage	10 days
87	**Underground Circulating Water Piping**	**15 days**
88	Excavate Underground Circulating Water Piping	5 days
89	Collapse Underground Circulating Water Piping	3 days
90	Backfill and Compact Over Circulating Water Piping	7 days
91	**Sewage Treatment**	**6 days**
92	Remove Sewage Treatment Pumps and Miscellaneous Equipment	2 days
93	Remove Sewage Treatment Concrete Structures	4 days
94	**Yard Fire Water Systems**	**10 days**



ID	Task Name	Duration
95	Remove Hydrants and Fire Water System Piping Down to 3' Below Grade	10 days
96	**Common Stack**	**1 day**
97	Remove Common Stack to Grade	1 day
98	**Final Site Grading and Drainage**	**1 day**
99	Final Site Grading and Drainage	1 day



IATAN GENERATING STATION

IATAN GENERATING STATION

The Iatan Generating Station consists of two coal-fired power plants.

Iatan Unit 1 has an SPP-accredited unit rating of 705 MW and was placed in service in 1980. Unit 1 has a sub-critical Babcock & Wilcox boiler and a General Electric turbine. Missouri River water is used for condenser cooling. Iatan Unit 1 was originally commissioned with a dedicated chimney and an electrostatic precipitator for flue gas particulate removal. In 2009, Iatan Unit 1 was retrofitted with an SCR, baghouse, and wet scrubber. The original electrostatic precipitator and stack were abandoned in place and the flue gas was redirected to a common Iatan Units 1 and 2 chimney with a dedicated Unit 1 flue.

Iatan Unit 2 has an SPP-accredited unit rated of 881 MW and was placed in service in 2010. Unit 2 has a super-critical Alstom boiler and a Toshiba turbine. A cooling tower is used for condenser cooling with well water for cooling tower makeup. Iatan Unit 2 has an SCR, baghouse, and wet scrubber. The flue gas is discharged through a common Iatan Units 1 and 2 chimney with a dedicated Unit 2 flue.

The Iatan fuel yard has a rotary car dumper to unload unit trains of coal. The coal is stored in a common fuel yard. Fuel is reclaimed from the common fuel yard via a stacker reclaimer or a series of reclaim pits and transferred to Units 1 and 2 through a common conveyor system. Coal is transferred from the common conveyor system to dedicated unit conveyors (located near the final coal transfer points for each unit).

Both Iatan Units 1 and 2 have a fuel oil igniter system. Both units are supplied with fuel oil from a common fuel oil unloading and storage facility.

Both Units 1 and 2 have a wet scrubber that utilizes a common reagent preparation and gypsum handling facility. This facility includes a limestone unloading and storage area, a limestone slurry preparation system, a gypsum preparation system, and a gypsum stack-out and storage system.

Both Units 1 and 2 beneficially use coal combustion products off site. Coal combustion products that are not beneficially used off site are disposed of in the on-site landfill.

The following are the major systems and equipment that were included in the retirement and dismantlement of each unit and the major systems and equipment that were considered common (additional details are listed in the attached retirement and dismantlement schedules included in this Appendix).

IATAN UNIT 1

1. Boiler, SCR, and boiler auxiliaries.
2. Turbine, heat balance equipment, and turbine auxiliaries.
3. Precipitator (currently retired in place).
4. Baghouse and wet scrubber.
5. Waste oil system.
6. Dedicated Unit 1 fuel handling equipment.
7. Dedicated Unit 1 fuel oil equipment.
8. Circulating water intake structure, circulating water piping, and circulating water equipment.

IATAN UNIT 2

1. Boiler, SCR, and boiler auxiliaries.
2. Turbine, heat balance equipment, and turbine auxiliaries.
3. Baghouse and wet scrubber.
4. Dedicated Unit 2 fuel handling equipment.
5. Dedicated Unit 2 fuel oil equipment.
6. Cooling tower and wells.

COMMON

1. Administration building.
2. Fuel yard office building.
3. Training building.
4. Warehouses.
5. Maintenance shops.
6. Common fuel handling equipment.
7. Sewage treatment.
8. Fuel oil storage and unloading.
9. Fire water systems.
10. Reagent preparation and gypsum handling.
11. Unit 1 stack (currently retired in place).
12. Units 1 and 2 common stack.
13. Landfill.
14. Clarifiers, clarifier storage tanks, and zero-liquid discharge equipment and auxiliaries.

UNIT 1

Iatan 1 Retirement

Owner Costs				
Pre-Retirement Activities		$106,968		
Retirement Activities		$706,527		
Post-Retirement Activities		$28,182		
Owner Direct Total			$841,677	
Owner Internal Costs	5.00%		$42,084	
Owner Contingency:	25.00%		$220,940	
Iatan 1 Retirement Opinion of Probable Cost:				$1,104,700

<u>Activities Required by Permit or Regulation</u>

Iatan 1 Intake Removal	$395,036	
Activities Required by Permit or Regulation:		$395,036

Iatan 1 Retirement

ID	Task Name	Cost
0	**Iatan 1 Retirement**	**$841,676.55**
1	**Iatan 1 Retirement**	**$841,676.55**
2	**Pre-Engineering**	**$106,967.52**
3	Permit review and engineering analysis, establish isolation points, and confirm fuel yard inventory has been reduced to zero tons.	$0.00
4	**KCL&L Overhead Costs**	**$122,254.08**
5	KCP&L Retirement Manager	$122,254.08
6	**Equipment Rentals**	**$41,004.90**
7	Vacuum truck	$41,004.90
8	**Retirement**	**$543,267.65**
9	**Electrical**	**$20,553.92**
10	**Medium and Low Voltage Draw out Switchgear**	**$2,903.52**
11	De-energize all buses at the source.	$483.92
12	Open all circuit breakers.	$483.92
13	Rack all circuit breakers into the fully withdrawn, disconnected position.	$483.92
14	Verify that the closing/tripping springs are discharged.	$483.92
15	De-energize control power and auxiliary power circuits of each circuit breaker at the source and by opening control power circuit breakers or removing fuses in each breaker cubicle.	$967.84
16	**Motor Control Centers**	**$1,935.68**
17	De-energize all buses at the source.	$483.92
18	Open all circuit breakers and disconnect switches.	$483.92
19	Remove all fuses in control circuits.	$967.84
20	**Low-voltage Switchboards and Panelboards**	**$967.84**
21	De-energize all buses at the source.	$483.92
22	Open all circuit breakers and disconnect switches.	$483.92
23	**Oil-Filled Power Transformers**	**$6,072.32**
24	De-energize all transformer primaries and verify that the secondary is de-energized.	$967.84
25	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	$967.84
26	Drain and dispose of oil.	$2,867.52
27	Clean up and dispose of oil on surface areas around the transformers on in containment pits.	$1,269.12
28	**Dry-type Power Transformers**	**$1,935.68**
29	De-energize all transformer primaries and verify that the secondary is de-energized.	$967.84
30	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	$967.84
31	**Motors**	**$6,738.88**
32	De-energize all primary power at the source.	$1,935.68

ID	Task Name	Cost
33	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	$1,935.68
34	Drian lube oil system (if applicable) and dispoe of oil.	$2,867.52
35	**Coal Handling**	**$30,905.36**
36	Empty all transfer hoppers.	$1,853.84
37	Burn out coal silos.	$1,834.56
38	Confirm all fuel lines, conveyors and trippers are clear of fuel.	$1,834.56
39	Perform cleaning of the coal handling equipment to assure that all coal and coal dust has been removed from site.	$25,382.40
40	**Fuel Oil and Igniter System**	**$2,751.84**
41	Drain fuel oil system	$2,751.84
42	**Waste Oil System**	**$1,834.56**
43	Drain all waste oil systems	$1,834.56
44	**Boiler Chemical Feed**	**$1,834.56**
45	Drain all chemical feed tanks.	$1,834.56
46	**Boiler**	**$30,927.60**
47	Open boiler doors.	$955.84
48	Gas side - perform cleaning of the boiler and bottom ash system.	$25,382.40
49	Drain boiler, drum, downcomers and headers.	$917.28
50	Open drum doors.	$955.84
51	Drain and clean the submerged flight conveyor system.	$2,716.24
52	**Stack and Ductwork**	**$344,145.25**
53	Open ductwork doors.	$955.84
54	Perform extensive cleaning of the ductwork.	$12,691.20
55	Place cap over stack opening to keep moisture out.	$330,498.21
56	**Condensate and Feedwater Piping**	**$1,834.56**
57	Drain water from the system.	$917.28
58	Leave open vents and drains.	$917.28
59	**Feedwater heaters**	**$2,751.84**
60	Drain feedwater heaters	$917.28
61	Leave open vents and drains.	$1,834.56
62	**Deaerator and Deaerator Storage Tank**	**$1,834.56**
63	Drain Deaerator and Storage	$917.28
64	Leave open vents and drains.	$917.28
65	**Baghouse**	**$18,919.84**
66	Multiple cleaning cycles for filter bags.	$2,751.84
67	Open all vent and drain lines on bag cleaning air and control air lines. Leave in open position or remove vent valves.	$917.28
68	Remove all filter bags and cages.	$955.84
69	Clear hoppers of all ash	$3,103.68
70	Mechanically secure all compartment dampers and hopper outlet valves in open position.	$955.84
71	Disconnect ash transport piping and washdown baghouse hoppers and interior of casing.	$1,571.12

ID	Task Name	Cost
72	Install bird screens across hopper ash outlet and ash line flanges.	$955.84
73	Padlock or tack weld all hopper doors shut. (note: if ash hopper doors are indoors, they could be removed and the opening covered with bird screens.)	$955.84
74	If walk-in plenum, padlock or tack weld all outlet plenum doors and compartment ventilation dampers shut.	$955.84
75	If top-door plenum, close and secure top doors and remove/disable door lift hoist.	$1,873.12
76	If top-door plenum, establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in penthouse enclosure.	$1,020.08
77	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	$2,903.52
78	**Wet FGD system**	**$26,222.88**
79	Multiple mist eliminator wash cycles. Remove ME's from absorber.	$2,331.76
80	Drain and flush all slurry and reclaim water pumps and piping. Leave vent and drain valves open or remove. Install bird screens across drain openings.	$1,873.12
81	Drain and wash out the reaction tank, reagent storage tank, recycle water tank, absorber blowdown tank, etc.	$5,183.28
82	Leave all tank drain valves open or remove. Install bird screens across openings.	$1,911.68
83	Drain all makeup and mist eliminator water pumps and piping. Leave vent and drain valves open or remove. Install bird screens across drain openings.	$2,828.96
84	Mechanically secure all flue gas isolation dampers in open position or remove damper blades.	$1,911.68
85	Remove solids from all inlet and outlet ductwork as necessary	$2,538.24
86	Open all vent station air and control air lines. Leave in open position or remove vent valves	$1,873.12
87	Padlock or tack weld all access doors to modules and ductwork shut.	$1,911.68
88	Remove access doors to open-top tanks.	$955.84
89	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	$2,903.52
90	**FGD Reagent Preparation-Limestone wet Scrubber**	**$11,270.00**
91	Remove limestone from day bins.	$1,551.84
92	Removed cartridges/bags from bin vent filters	$1,551.84
93	Padlock or tack weld all bin access doors shut. (note: if doors are indoors, they could be removed and the opening covered with bird screens.)	$955.84
94	Remove bin discharge isolation valve and install bird screen.	$477.92
95	Thoroughly wash and drain mills	$1,551.84

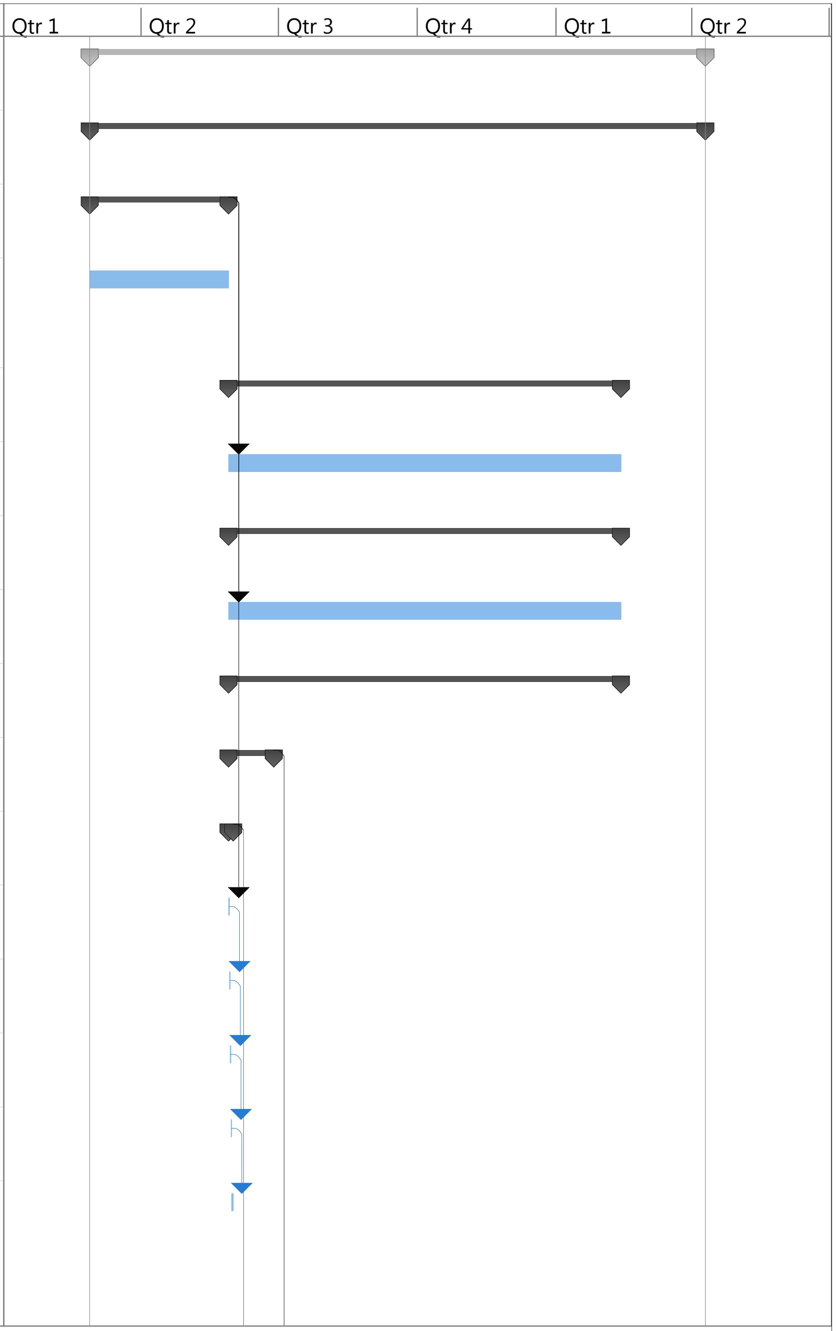
Exhibit RAK-9
198 of 375

ID	Task Name	Cost
96	Remove balls from any ball mills	$1,269.12
97	Padlock or tack weld mill access doors closed.	$955.84
98	Establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in building.	$1,020.08
99	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	$1,935.68
100	**FGD Byproduct Dewatering - Hydrocyclones and Vacuum Filters**	**$8,032.96**
101	Wash vacuum filter belt and remove all accumulated solids	$2,538.24
102	Wash out vacuum receiver, remove pressure relief valve and access door. Install bird screens.	$1,571.12
103	Establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in building.	$1,020.08
104	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	$2,903.52
105	**SCR**	**$11,098.96**
106	Vacuum fly ash from catalyst.	$2,538.24
107	Remove catalyst of salvage or disposal.	$3,180.80
108	Padlock or tack weld access doors shut.	$955.84
109	Remove ammonia from storage tank for resale.	$775.92
110	Wash out and drain storage tank and supply piping.	$775.92
111	Vent storage tank and all piping. Leave vent and drain valves open or remove. Install bird screens.	$936.56
112	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	$1,935.68
113	**Turbine(s) and Condenser**	**$5,715.76**
114	Drain hotwell and leave doors open.	$936.56
115	Open main turbine doors.	$955.84
116	Open bfp turbine doors.	$955.84
117	Remove lube oil.	$2,867.52
118	**Generator**	**$6,618.48**
119	Verify that generator circuit breaker is open and racked out or that high-voltage disconnect switch on substation side of GSU transformer is locked in the open position.	$483.92
120	Verify that generator field breaker or contactor (if applicable) is open.	$483.92
121	De-energize power supplies to generator excitation system at the source.	$483.92
122	De-energize AC and DC power supplies to generator and exciter space heaters, cooling equipment, controls, lighting, etc. at the source and open circuit breakers or remove fuses at the generator and exciter.	$483.92
123	Drain generator and exciter cooling water systems (if applicable).	$936.56

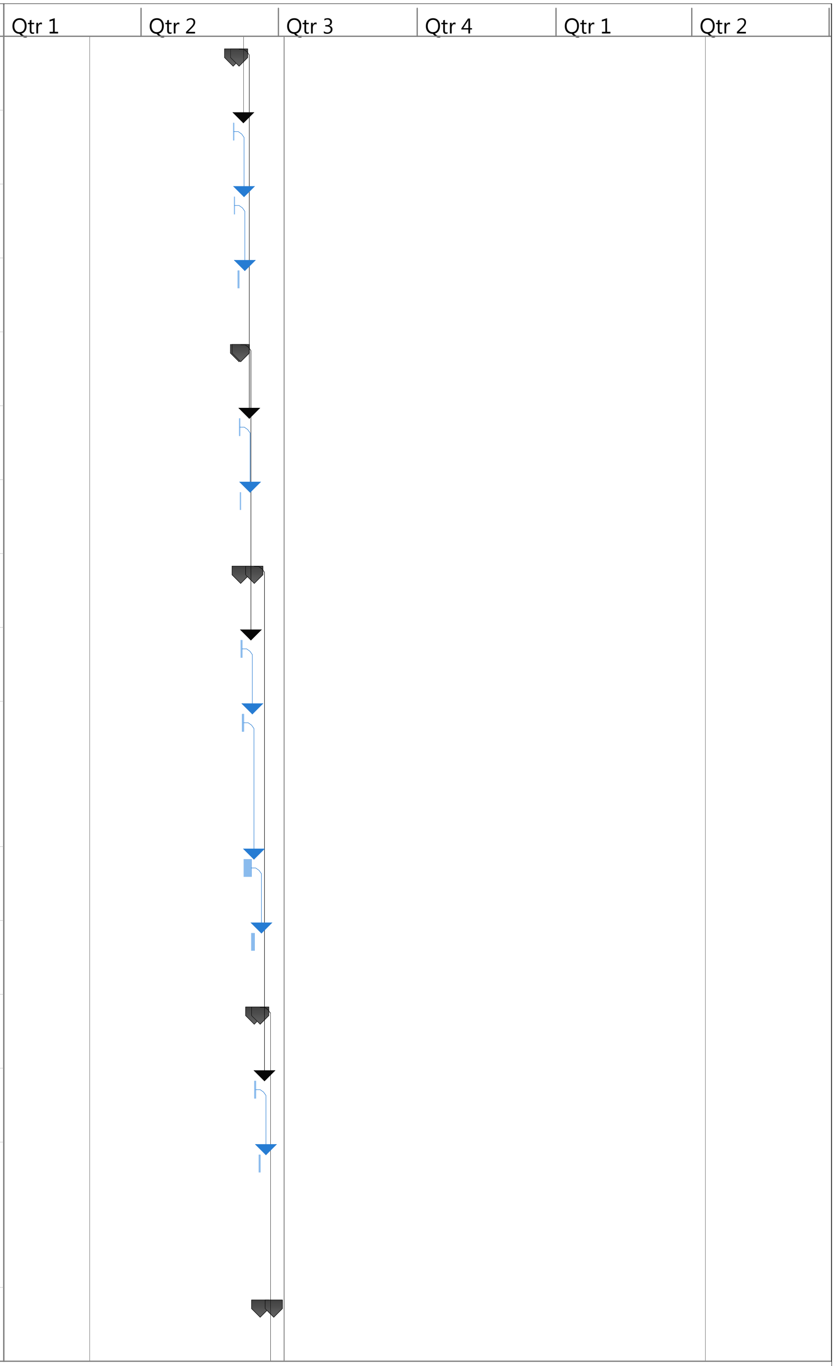
ID	Task Name	Cost
124	Disconnect and remove hydrogen gas tanks and purge generator hydrogen system.	$1,834.56
125	Disconnect and remove fire protection system gas/foam tanks and purge fire protection system.	$1,911.68
126	**Circulation Water and Turbine Cooling Water System**	**$3,707.68**
127	Drain.	$1,834.56
128	Open water box doors.	$955.84
129	Drain any circulating water chemical feed tanks.	$917.28
130	**Compressed Air System**	**$2,945.44**
131	Open vents and drains.	$917.28
132	Remove desiccant from desiccant dryers.	$2,028.16
133	**Auxiliary Steam System**	**$1,834.56**
134	Drain water from system.	$917.28
135	Remove aux boiler chemicals.	$917.28
136	**Auxiliary Cooling Water System**	**$917.28**
137	Drain water from system.	$917.28
138	**Condenser Air Extraction and Waterbox Priming System**	**$917.28**
139	Drain water from system.	$917.28
140	**Building Heating System**	**$917.28**
141	Drain water from system.	$917.28
142	**Battery System**	**$4,775.20**
143	De-energize all battery chargers from the source.	$483.92
144	Open all AC and DC circuit breakers and/or fused switches on battery chargers and disconnect cables from batteries.	$483.92
145	Remove and dispose of battery electrolyte.	$1,903.68
146	Remove and dispose of battery cells.	$1,269.12
147	Clean up and dispose of electrolyte on surface areas around batteries.	$634.56
148	**Post Retirement Activities**	**$28,182.40**
149	Post Retirement Activities	$28,182.40

Exhibit RAK-9
200 of 375

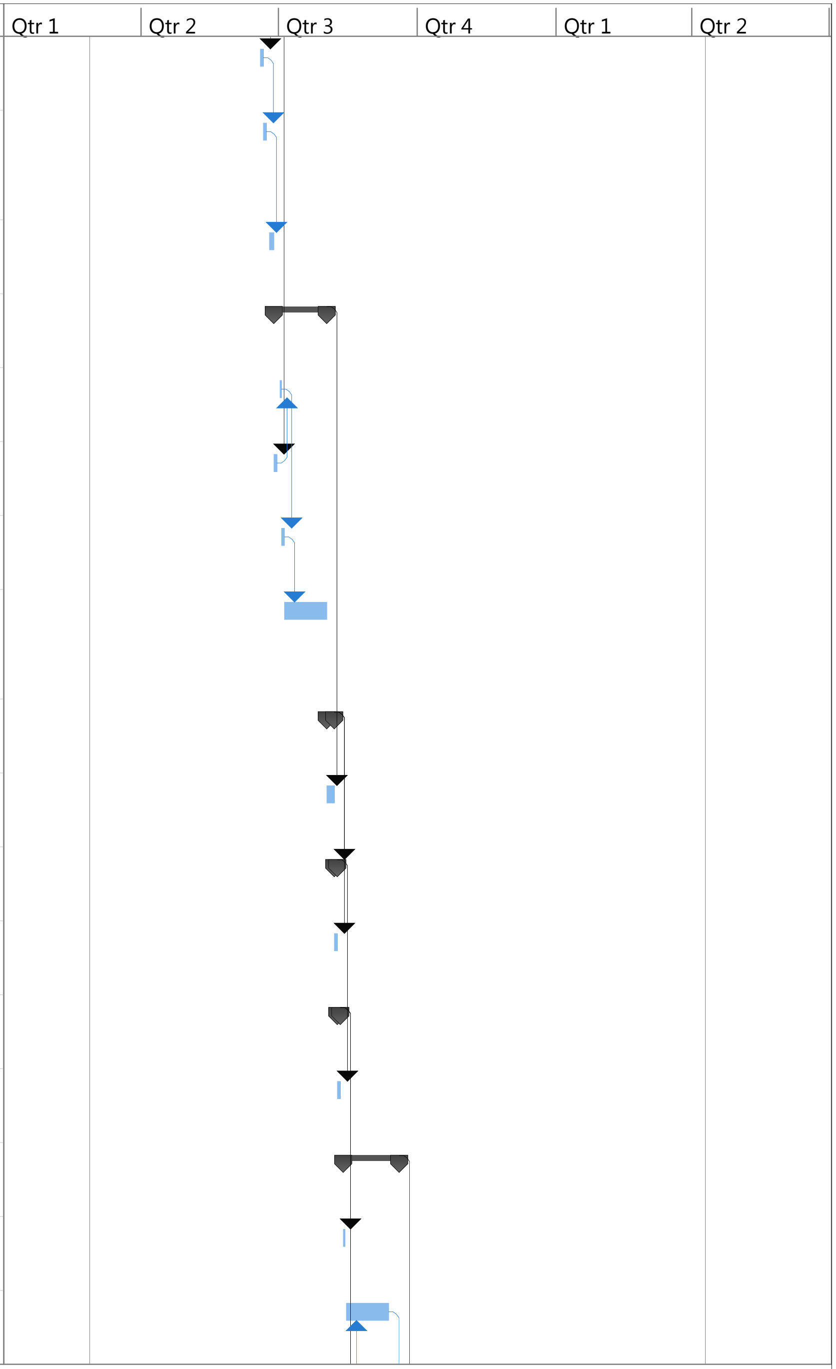
ID	Task Name	Duration
0	**Iatan 1 Retirement**	**292 days**
1	**Iatan 1 Retirement**	**292 days**
2	**Pre-Engineering**	**66 days**
3	Permit review and engineering analysis, establish isolation points, and confirm fuel yard inventory has been reduced to zero tons.	66 days
4	**KCL&L Overhead Costs**	**186 days**
5	KCP&L Retirement Manager	186 days
6	**Equipment Rentals**	**186 days**
7	Vacuum truck	186 days
8	**Retirement**	**186 days**
9	**Electrical**	**22 days**
10	**Medium and Low Voltage Draw out Switchgear**	**3 days**
11	De-energize all buses at the source.	0.5 days
12	Open all circuit breakers.	0.5 days
13	Rack all circuit breakers into the fully withdrawn, disconnected position.	0.5 days
14	Verify that the closing/tripping springs are discharged.	0.5 days
15	De-energize control power and auxiliary power circuits of each circuit breaker at the source and by opening control power circuit breakers or removing fuses in each breaker cubicle.	1 day



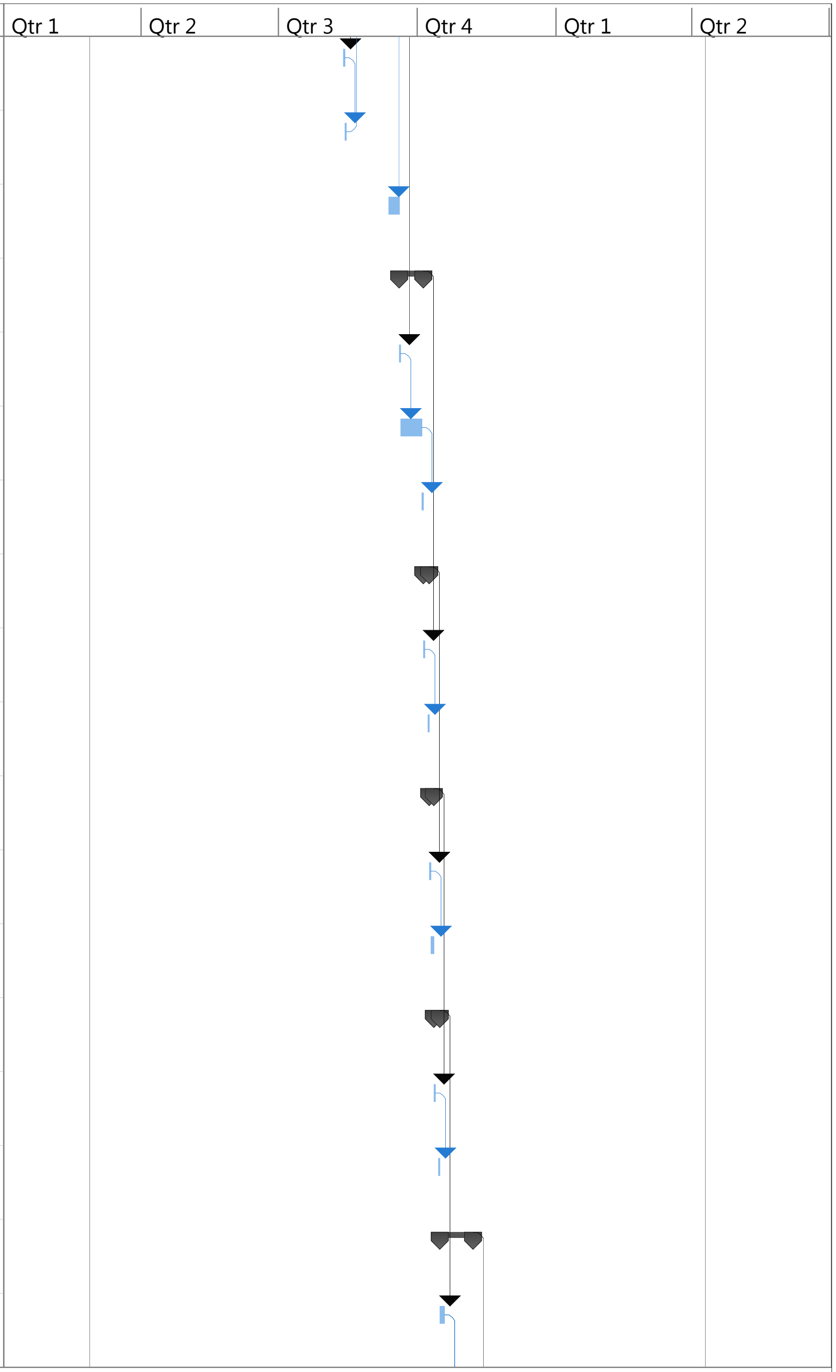
ID	Task Name	Duration
16	**Motor Control Centers**	**2 days**
17	De-energize all buses at the source.	0.5 days
18	Open all circuit breakers and disconnect switches.	0.5 days
19	Remove all fuses in control circuits.	1 day
20	**Low-voltage Switchboards and Panelboards**	**1 day**
21	De-energize all buses at the source.	0.5 days
22	Open all circuit breakers and disconnect switches.	0.5 days
23	**Oil-Filled Power Transformers**	**7 days**
24	De-energize all transformer primaries and verify that the secondary is de-energized.	1 day
25	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	1 day
26	Drain and dispose of oil.	3 days
27	Clean up and dispose of oil on surface areas around the transformers on in containment pits.	2 days
28	**Dry-type Power Transformers**	**2 days**
29	De-energize all transformer primaries and verify that the secondary is de-energized.	1 day
30	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	1 day
31	**Motors**	**7 days**



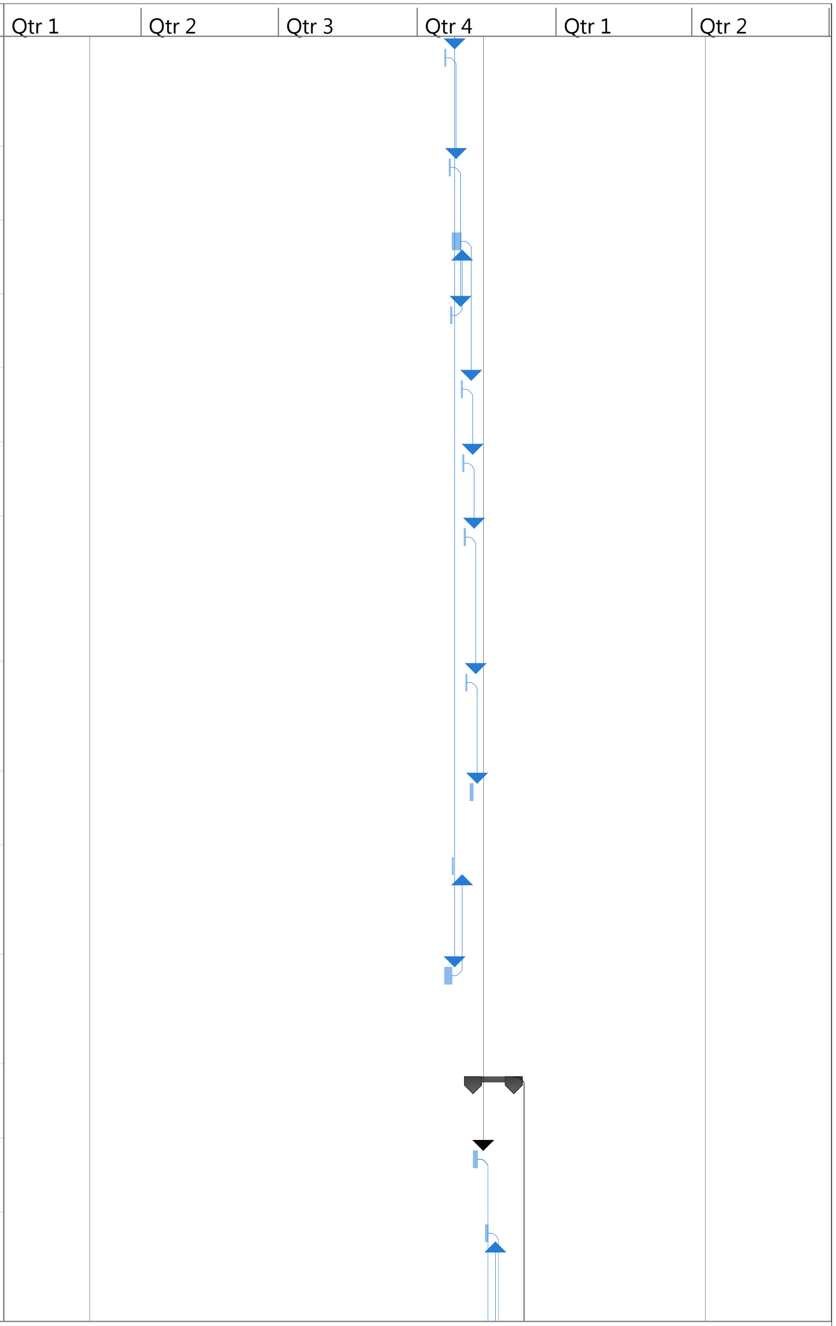
ID	Task Name	Duration
32	De-energize all primary power at the source.	2 days
33	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	2 days
34	Drian lube oil system (if applicable) and dispoe of oil.	3 days
35	**Coal Handling**	**25 days**
36	Empty all transfer hoppers.	1 day
37	Burn out coal silos.	2 days
38	Confirm all fuel lines, conveyors and trippers are clear of fuel.	2 days
39	Perform cleaning of the coal handling equipment to assure that all coal and coal dust has been removed from site.	20 days
40	**Fuel Oil and Igniter System**	**3 days**
41	Drain fuel oil system	3 days
42	**Waste Oil System**	**2 days**
43	Drain all waste oil systems	2 days
44	**Boiler Chemical Feed**	**2 days**
45	Drain all chemical feed tanks.	2 days
46	**Boiler**	**27 days**
47	Open boiler doors.	1 day
48	Gas side - perform cleaning of the boiler and bottom ash system.	20 days



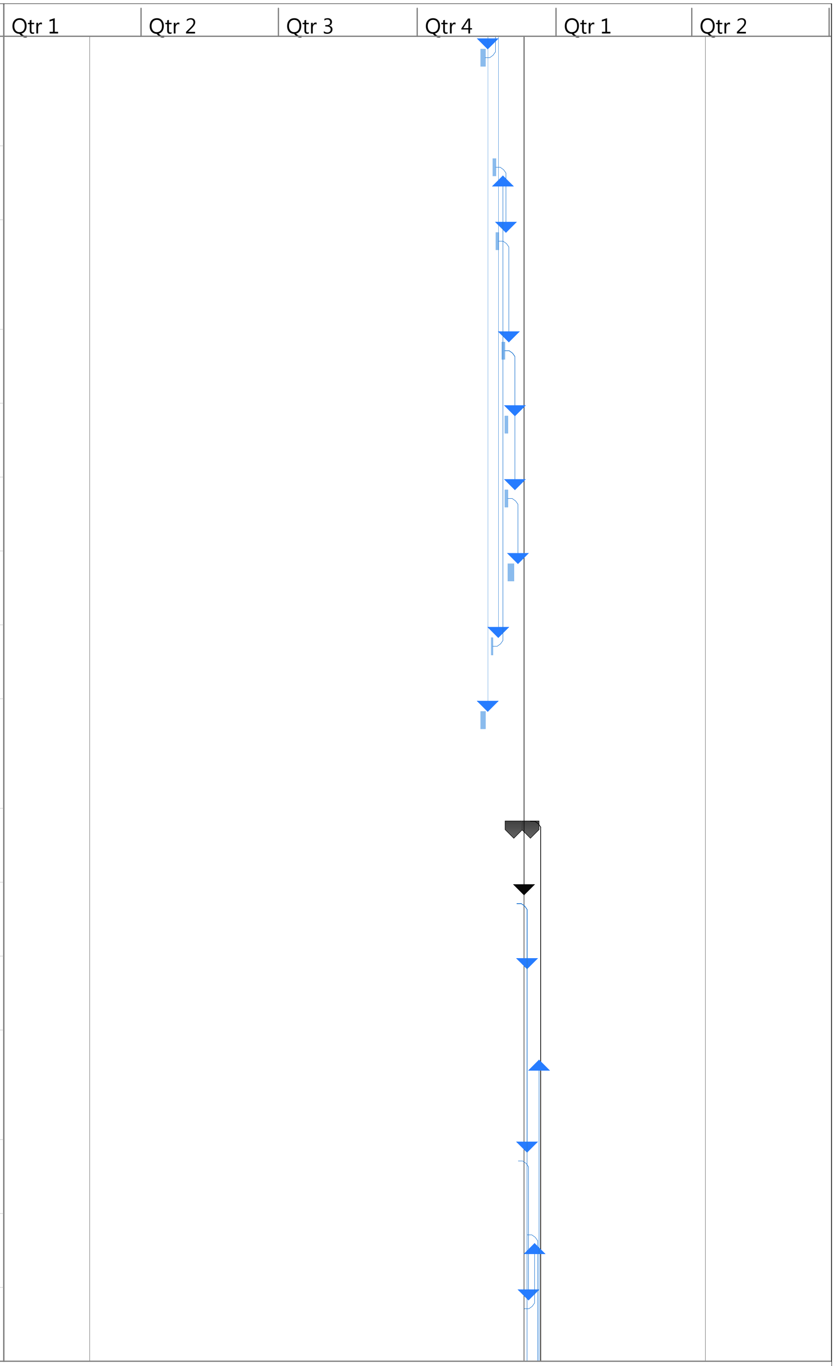
ID	Task Name	Duration
49	Drain boiler, drum, downcomers and headers.	1 day
50	Open drum doors.	1 day
51	Drain and clean the submerged flight conveyor system.	5 days
52	**Stack and Ductwork**	**12 days**
53	Open ductwork doors.	1 day
54	Perform extensive cleaning of the ductwork.	10 days
55	Place cap over stack opening to keep moisture out.	1 day
56	**Condensate and Feedwater Piping**	**2 days**
57	Drain water from the system.	1 day
58	Leave open vents and drains.	1 day
59	**Feedwater heaters**	**3 days**
60	Drain feedwater heaters	1 day
61	Leave open vents and drains.	2 days
62	**Deaerator and Deaerator Storage Tank**	**2 days**
63	Drain Deaerator and Storage	1 day
64	Leave open vents and drains.	1 day
65	**Baghouse**	**16 days**
66	Multiple cleaning cycles for filter bags.	3 days



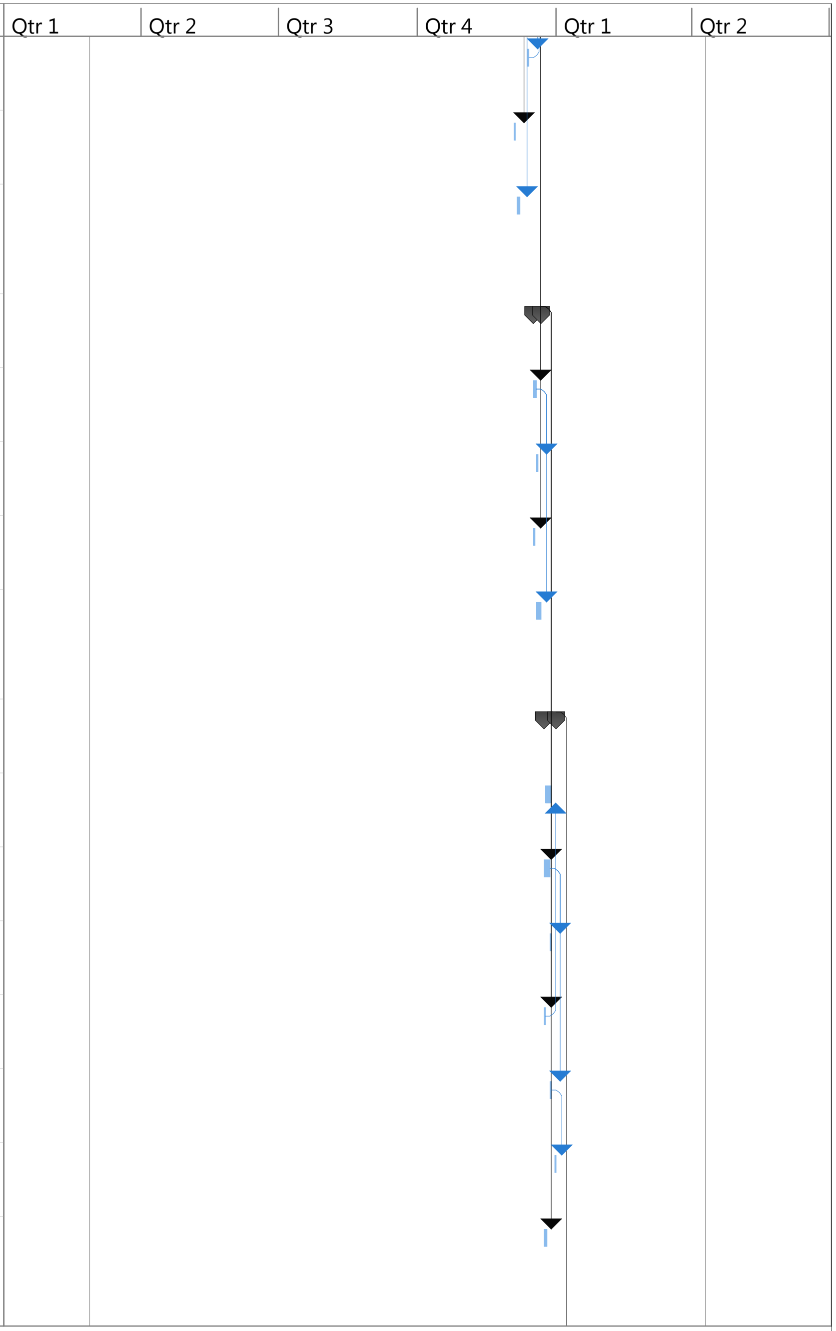
ID	Task Name	Duration
67	Open all vent and drain lines on bag cleaning air and control air lines. Leave in open position or remove vent valves.	1 day
68	Remove all filter bags and cages.	1 day
69	Clear hoppers of all ash	4 days
70	Mechanically secure all compartment dampers and hopper outlet valves in open position.	1 day
71	Disconnect ash transport piping and washdown baghouse hoppers and interior of casing.	1 day
72	Install bird screens across hopper ash outlet and ash line flanges.	1 day
73	Padlock or tack weld all hopper doors shut. (note: if ash hopper doors are indoors, they could be removed and the opening covered with bird screens.)	1 day
74	If walk-in plenum, padlock or tack weld all outlet plenum doors and compartment ventilation dampers shut.	1 day
75	If top-door plenum, close and secure top doors and remove/disable door lift hoist.	2 days
76	If top-door plenum, establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in penthouse enclosure.	1 day
77	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	3 days
78	**Wet FGD system**	**19 days**
79	Multiple mist eliminator wash cycles. Remove ME's from absorber.	3 days
80	Drain and flush all slurry and reclaim water pumps and piping. Leave vent and drain valves open or remove. Install bird screens across drain openings.	2 days



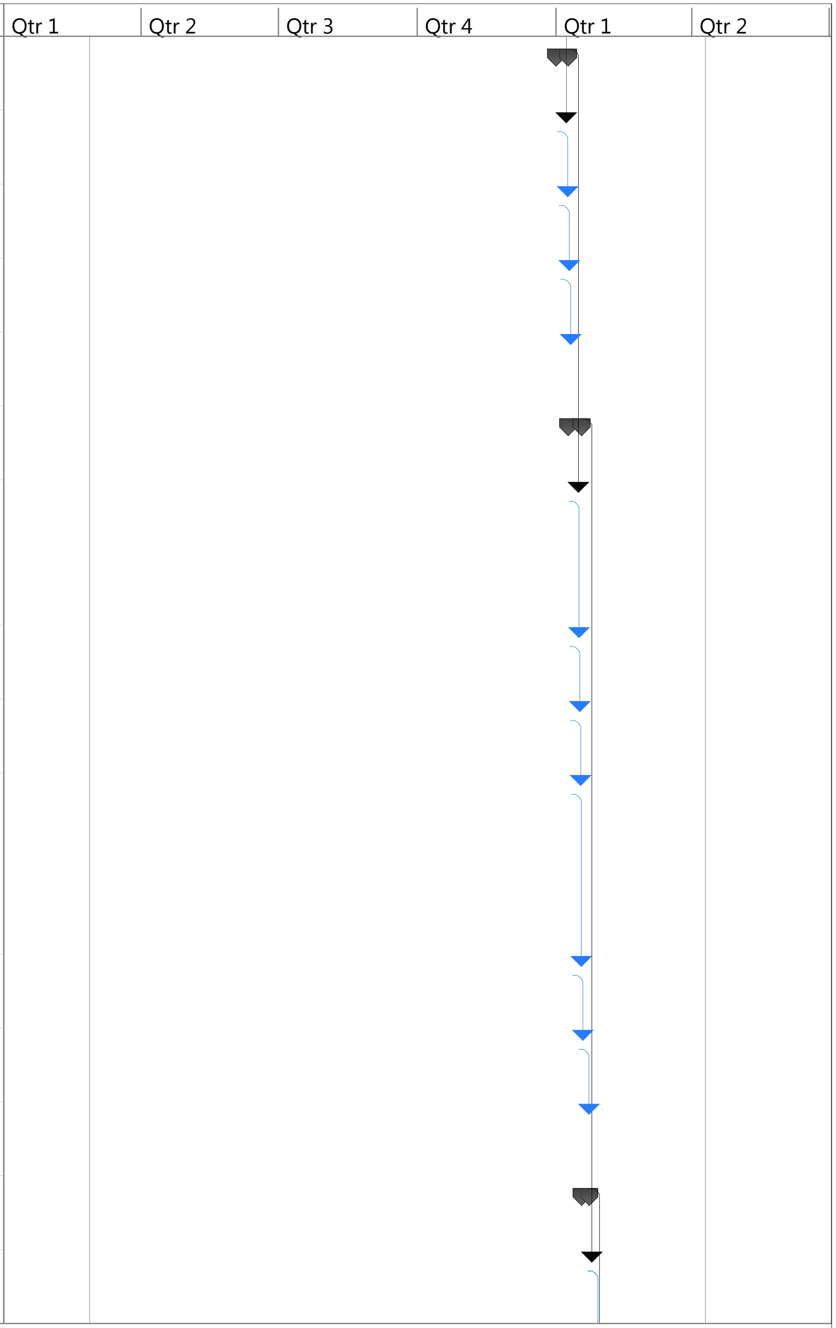
ID	Task Name	Duration
81	Drain and wash out the reaction tank, reagent storage tank, recycle water tank, absorber blowdown tank, etc.	3 days
82	Leave all tank drain valves open or remove. Install bird screens across openings.	2 days
83	Drain all makeup and mist eliminator water pumps and piping. Leave vent and drain valves open or remove. Install bird screens across drain openings.	2 days
84	Mechanically secure all flue gas isolation dampers in open position or remove damper blades.	2 days
85	Remove solids from all inlet and outlet ductwork as necessary	2 days
86	Open all vent station air and control air lines. Leave in open position or remove vent valves	2 days
87	Padlock or tack weld all access doors to modules and ductwork shut.	2 days
88	Remove access doors to open-top tanks.	1 day
89	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	3 days
90	**FGD Reagent Preparation-Limestone wet Scrubber**	**9 days**
91	Remove limestone from day bins.	2 days
92	Removed cartridges/bags from bin vent filters	2 days
93	Padlock or tack weld all bin access doors shut. (note: if doors are indoors, they could be removed and the opening covered with bird screens.)	1 day
94	Remove bin discharge isolation valve and install bird screen.	1 day
95	Thoroughly wash and drain mills	2 days
96	Remove balls from any ball mills	2 days



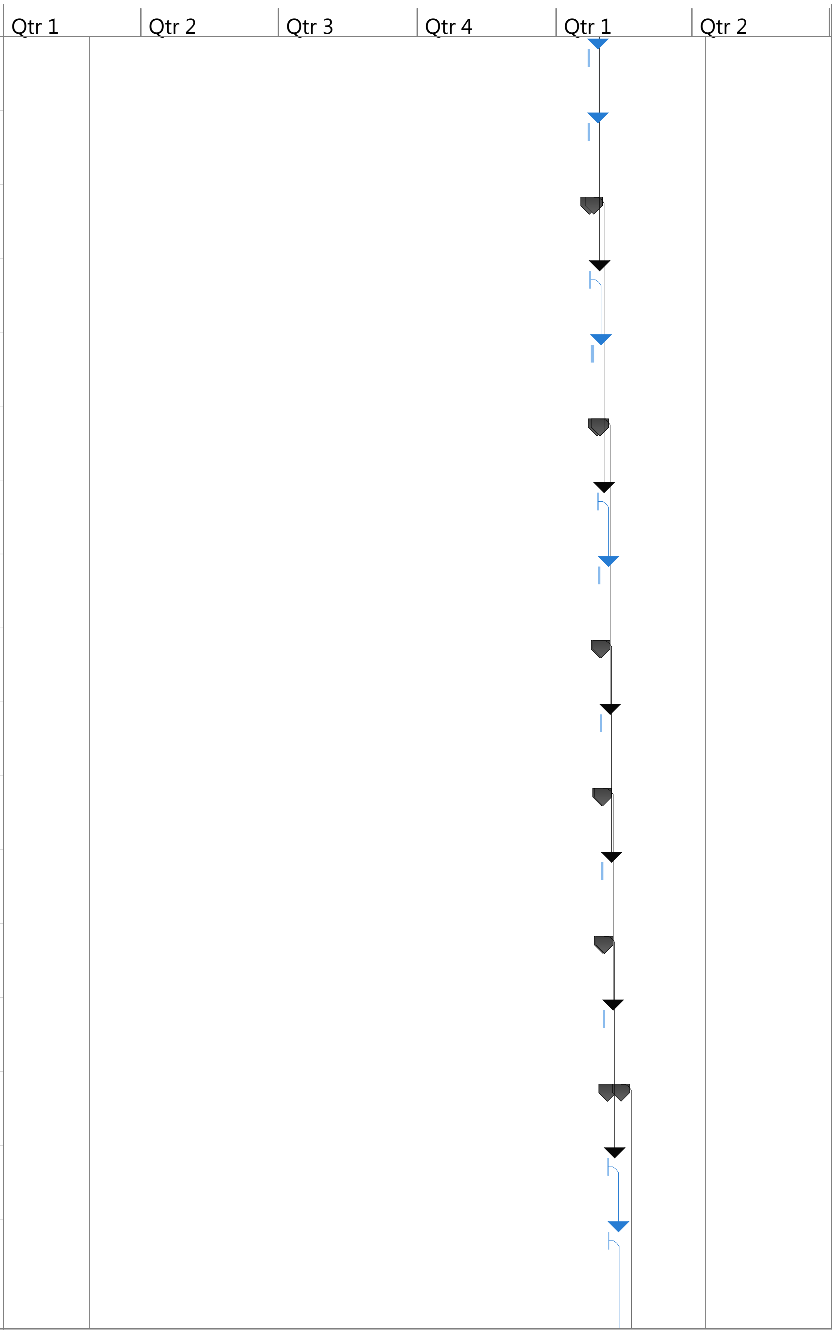
ID	Task Name	Duration
97	Padlock or tack weld mill access doors closed.	1 day
98	Establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in building.	1 day
99	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	2 days
100	**FGD Byproduct Dewatering - Hydrocyclones and Vacuum Filters**	**5 days**
101	Wash vacuum filter belt and remove all accumulated solids	2 days
102	Wash out vacuum receiver, remove pressure relief valve and access door. Install bird screens.	1 day
103	Establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in building.	1 day
104	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	3 days
105	**SCR**	**6 days**
106	Vacuum fly ash from catalyst.	4 days
107	Remove catalyst of salvage or disposal.	4 days
108	Padlock or tack weld access doors shut.	1 day
109	Remove ammonia from storage tank for resale.	1 day
110	Wash out and drain storage tank and supply piping.	1 day
111	Vent storage tank and all piping. Leave vent and drain valves open or remove. Install bird screens.	1 day
112	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	2 days



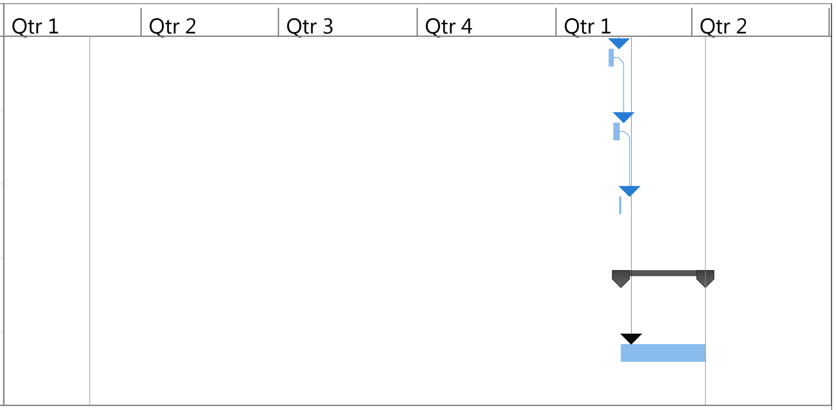
ID	Task Name	Duration
113	**Turbine(s) and Condenser**	**6 days**
114	Drain hotwell and leave doors open.	1 day
115	Open main turbine doors.	1 day
116	Open bfp turbine doors.	1 day
117	Remove lube oil.	3 days
118	**Generator**	**7 days**
119	Verify that generator circuit breaker is open and racked out or that high-voltage disconnect switch on substation side of GSU transformer is locked in the open position.	0.5 days
120	Verify that generator field breaker or contactor (if applicable) is open.	0.5 days
121	De-energize power supplies to generator excitation system at the source.	0.5 days
122	De-energize AC and DC power supplies to generator and exciter space heaters, cooling equipment, controls, lighting, etc. at the source and open circuit breakers or remove fuses at the generator and exciter.	0.5 days
123	Drain generator and exciter cooling water systems (if applicable).	1 day
124	Disconnect and remove hydrogen gas tanks and purge generator hydrogen system.	2 days
125	Disconnect and remove fire protection system gas/foam tanks and purge fire protection system.	2 days
126	**Circulation Water and Turbine Cooling Water System**	**3 days**
127	Drain.	2 days



ID	Task Name	Duration
128	Open water box doors.	1 day
129	Drain any circulating water chemical feed tanks.	1 day
130	**Compressed Air System**	**3 days**
131	Open vents and drains.	1 day
132	Remove desiccant from desiccant dryers.	2 days
133	**Auxiliary Steam System**	**2 days**
134	Drain water from system.	1 day
135	Remove aux boiler chemicals.	1 day
136	**Auxiliary Cooling Water System**	**1 day**
137	Drain water from system.	1 day
138	**Condenser Air Extraction and Waterbox Priming System**	**1 day**
139	Drain water from system.	1 day
140	**Building Heating System**	**1 day**
141	Drain water from system.	1 day
142	**Battery System**	**7 days**
143	De-energize all battery chargers from the source.	0.5 days
144	Open all AC and DC circuit breakers and/or fused switches on battery chargers and disconnect cables from batteries.	0.5 days



ID	Task Name	Duration
145	Remove and dispose of battery electrolyte.	3 days
146	Remove and dispose of battery cells.	2 days
147	Clean up and dispose of electrolyte on surface areas around batteries.	1 day
148	**Post Retirement Activities**	**40 days**
149	Post Retirement Activities	40 days



Iatan 1 Dismantlement

Owner Costs				
Pre-Dismantlement Activities		$1,104,559		
Overhead During Dismantlement		$2,004,866		
Post-Dismantlement Activities		$69,510		
Owner Costs Total			$3,178,936	
Demolition General Contractor (DGC) Costs				
Site Management		$1,331,047		
Equipment Rental		$2,280,632		
Consumables		$2,489,572		
Scrap Crew(s)		$2,220,576		
Dismantlement		$5,453,934		
DGC Insurance	2.00%	$275,515		
Contingency/Profit	15.00%	$2,107,691		
Performance Bond	2.00%	$323,179.36		
Contractor Costs Total:			$16,482,148	
Total:				$19,661,083
Owner Internal Costs:	5.00%			$983,054
Owner Contingency:	25.00%			$5,161,034
Iatan Unit 1 Dismantlement Opinion of Probable Cost:				$25,805,172

12-0027 Iatan Demolition

ID	Task Name	Cost
1	**Iatan Unit 1 Dismantlement**	**$13,372,345.33**
2	**Pre-Demolition Activities**	**$1,104,558.96**
3	Detailed Planning & Hire Owner's Engineer	$110,802.72
4	Detailed Site Characterization Study	$783,536.00
5	Hire Demolition General Contractor	$198,647.04
6	KCP&L Prepares Unit for Dismantlement	$11,573.20
7	Demolition Contractor Mobilizes on Site	$0.00
8	**KCP&L Overhead during Dismantlement**	**$2,004,866.33**
9	KCP&L Project Manager	$282,630.38
10	KCP&L Administrative Support	$104,541.59
11	KCP&L Engineer	$464,606.36
12	Owners Engineer Project Manager	$141,728.00
13	Owners Engineer - Engineer	$1,011,360.00
14	**Demoliton Contractor Overhead during Dismantlement**	**$969,151.12**
15	Demolition Contractor Project Manager	$274,202.38
16	Demolition Contractor Safety Manager	$244,171.18
17	Demolition Contractor Superintendent	$450,777.57
18	**Demolition Contractor Equipment Rental Costs**	**$1,633,380.67**
19	Equipment Rental	$1,633,380.67
20	**Demolition Contractor Consummables**	**$1,629,562.40**
21	Consummables	$1,629,562.40
22	**Scrap Crew**	**$1,591,412.80**
23	Crew to Handle Scrap Material(s)	$1,591,412.80
24	**Dismantlement**	**$4,369,902.64**
25	**Phase 1 Demolition**	**$1,075,134.32**
26	**Phase 1 Electrical Demolition**	**$439,040.24**
27	Electrical Demolition of Phase 1 Equipment	$439,040.24
28	**Condensate System**	**$109,178.32**
29	Condensate Pumps	$3,700.96
30	Condensate Transfer Pumps	$1,850.48
31	Cycle Make-Up Pump	$1,850.48
32	Steam Packing Exhauster and Blower	$3,700.96
33	Low Pressure Heaters (except the condenser neck heat exchangers)	$55,514.40
34	Deaerator	$14,803.84
35	Deaerator Storage Tank	$9,252.40
36	Condensate Piping	$18,504.80
37	**Boiler Feed System**	**$70,061.52**
38	Boiler Feed Pump Turbine and Exhaust	$14,547.12
39	Boiler Feed Pump	$18,504.80
40	High Pressure Heaters	$37,009.60
41	**Critical Piping**	**$83,271.60**
42	Main Steam Piping	$27,757.20
43	Cold Reheat Piping	$27,757.20
44	Hot Reheat Piping	$27,757.20
45	**Extraction Steam System**	**$18,504.80**
46	Piping	$18,504.80
47	**Heater Drips**	**$14,803.84**
48	Piping	$14,803.84
49	**Auxiliary Steam**	**$25,906.72**

ID	Task Name	Cost
50	Auxiliary Boilers and Auxiliary Skids	$9,252.40
51	Auxiliary Steam Piping	$16,654.32
52	**Circulating Water (plant side)**	**$9,252.40**
53	Waterboxes	$9,252.40
54	**Bearing Cooling Water**	**$31,458.16**
55	Bearing Cooling Water Pumps	$3,700.96
56	Bearing Cooling Water Heat Exchanger	$9,252.40
57	Bearing Cooling Water Piping	$18,504.80
58	**Auxiliary Cooling Water**	**$29,607.68**
59	Auxiliary Cooling Water Heat Exchanger	$5,551.44
60	Auxiliary Cooling Water Pumps	$5,551.44
61	Auxiliary Cooling Water Piping	$18,504.80
62	**Service Water**	**$9,252.40**
63	Service Water Piping	$9,252.40
64	**Fuel Oil System (plant side)**	**$42,561.04**
65	Igniter Fuel Oil Pumps	$5,551.44
66	Igniter Fuel Oil and Atomizing Air Piping	$9,252.40
67	Igniters	$27,757.20
68	**Waste Oil System**	**$12,953.36**
69	Waste Oil Tank	$3,700.96
70	Waste Oil Transfer Pump	$3,700.96
71	Waste Oil Piping	$5,551.44
72	**Air Preheat System**	**$10,576.08**
73	Air Preheat Pumps	$3,700.96
74	Air Preheat Piping	$6,875.12
75	**Condenser Air Extraction System**	**$11,102.88**
76	Vacuum Pumps	$7,401.92
77	Extraction Piping	$3,700.96
78	**Turbine Seals and Drains**	**$12,953.36**
79	Piping	$12,953.36
80	**Turbine Lube Oil System**	**$21,038.32**
81	Turbine Lube Oil Tank	$11,785.92
82	Turbine Lube Oil Pumps	$7,401.92
83	Turbine Oil Mist Eliminator	$1,850.48
84	**Generator Auxiliary Systems**	**$33,308.64**
85	Hydrogen Cooler Skid and Piping	$9,252.40
86	Stator Cooling Water Skid and Piping	$9,252.40
87	Isophase Bus Duct	$7,401.92
88	Exciter Heat Exchanger	$3,700.96
89	EHC Coolers	$3,700.96
90	**Chemical Feed Systems**	**$19,942.32**
91	Tanks	$8,839.44
92	Pumps	$5,551.44
93	Piping	$5,551.44
94	**Sampling Systems**	**$6,647.44**
95	Field Mounted Heat Exchangers	$3,700.96
96	Piping	$2,946.48
97	**Building Heating Systems**	**$13,750.24**
98	Steam Unit Heaters	$9,821.60

ID	Task Name	Cost
99	Steam Piping	$3,928.64
100	**Compressed Air System**	**$27,757.20**
101	Air Compressors	$7,401.92
102	Air Drying Equipment	$5,551.44
103	Air Reciever Tanks	$5,551.44
104	Compressed Air Piping	$9,252.40
105	**Miscellaneous Equipment**	**$22,205.76**
106	Miscellaneous Equipment (including Fire Protection)	$22,205.76
107	**Phase 2 Demolition**	**$3,025,879.52**
108	**Precipitator**	**$111,028.80**
109	Remove Precipitator	$111,028.80
110	**Boiler Equipment**	**$756,701.12**
111	Fans	$65,336.00
112	Pulverizers	$74,019.20
113	Bottom Ash	$16,995.84
114	Air Heater	$207,253.76
115	Steam Drum	$92,524.00
116	Coal Bunkers	$74,019.20
117	Coal Feeders	$48,112.48
118	Soot Blowers	$52,608.00
119	Ductwork	$103,626.88
120	Miscellaneous Other	$22,205.76
121	**Boiler Removal**	**$414,507.52**
122	Furnace	$236,861.44
123	Back Pass	$177,646.08
124	**Boiler Steel Framing**	**$747,593.92**
125	Hanger Girders at Top	$111,028.80
126	All Other Framing	$347,890.24
127	Bracing and Girts	$170,244.16
128	Columns	$118,430.72
129	**Boiler Foundations**	**$133,234.56**
130	Equipment Foundation Demolition to Grade	$133,234.56
131	**Remove Turbine**	**$862,813.60**
132	Remove HP Turbine	$27,188.00
133	Remove IP Turbine	$27,188.00
134	Remove LP Turbine	$27,188.00
135	Remove Generator	$54,376.00
136	Remove Condenser Neck Heat Exchanger	$27,188.00
137	Remove Condenser	$27,188.00
138	Remove Misc. Auxiliary Turbine Equipment	$40,782.00
139	**Turbine Pedestal Demolition to Grade**	**$277,317.60**
140	Top Slab and Beams	$108,752.00
141	Columns	$168,565.60
142	**Remove Turbine Building**	**$354,398.00**
143	Siding and Rooding	$112,340.00
144	All Framing Elevations	$163,128.00
145	Bracing and Girts	$54,376.00
146	Columns	$24,554.00
147	**Phase 3 Yard Demolition**	**$268,888.80**

ID	Task Name	Cost
148	**Circulating Water Pipe (yard)**	**$74,019.20**
149	Excavate Circulating Water Pipe	$18,504.80
150	Collapse Circulating Water Pipe	$37,009.60
151	Backfill Circulating Water Pipe	$18,504.80
152	**Remove Ash Handling Equipment and Piping**	**$37,009.60**
153	Remove Fly-Ash Silo and Scale	$27,757.20
154	Remove Ash Piping and Misc. Equipment	$9,252.40
155	Remove Laydown Equipment and Warehoused Equipment	$74,019.20
156	Remove Unit 1 Condensate Storage Tank and Pump	$9,821.60
157	Remove Unit 1 Make-Up Water Storage Tank	$18,504.80
158	Remove Unit 1 Water Treatment Equipment and Building	$55,514.40
159	**Post Dismantlement Activities**	**$69,510.40**
160	Post Dismantlement Activities	$69,510.40

ID	Task Name	Duration
1	**Iatan Unit 1 Dismantlement**	
2	**Pre-Demolition Activities**	**265 days**
3	Detailed Planning & Hire Owner's Engineer	3 mons
4	Detailed Site Characterization Study	130 days
5	Hire Demolition General Contractor	3 mons
6	KCP&L Prepares Unit for Dismantlement	2 wks
7	Demolition Contractor Mobilizes on Site	5 days
8	**KCP&L Overhead during Dismantlement**	**430 days**
9	KCP&L Project Manager	430 days
10	KCP&L Administrative Support	430 days
11	KCP&L Engineer	430 days
12	Owners Engineer Project Manager	430 days
13	Owners Engineer - Engineer	430 days
14	**Demoliton Contractor Overhead during Dismantlement**	**430 days**
15	Demolition Contractor Project Manager	430 days
16	Demolition Contractor Safety Manager	430 days
17	Demolition Contractor Superintendent	430 days

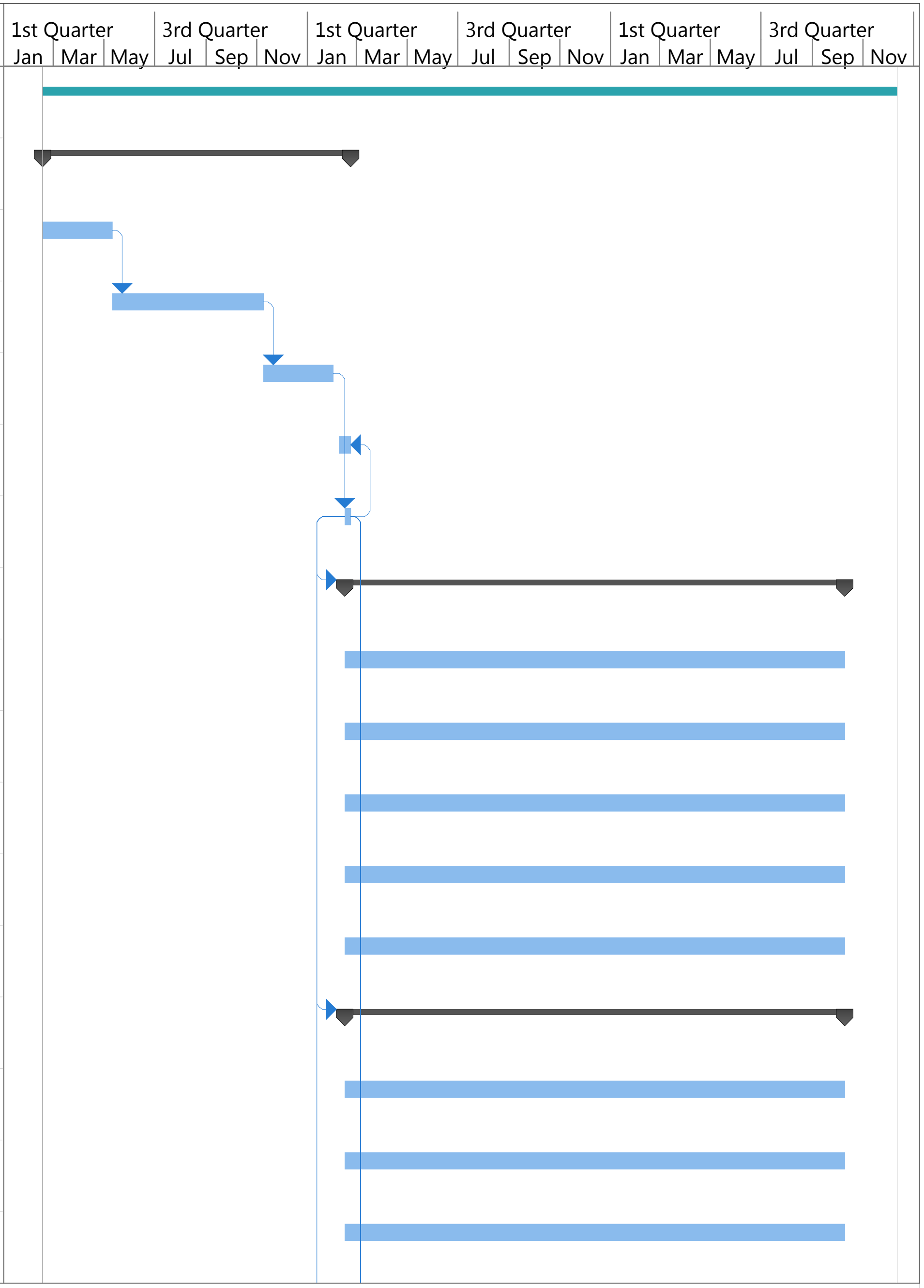
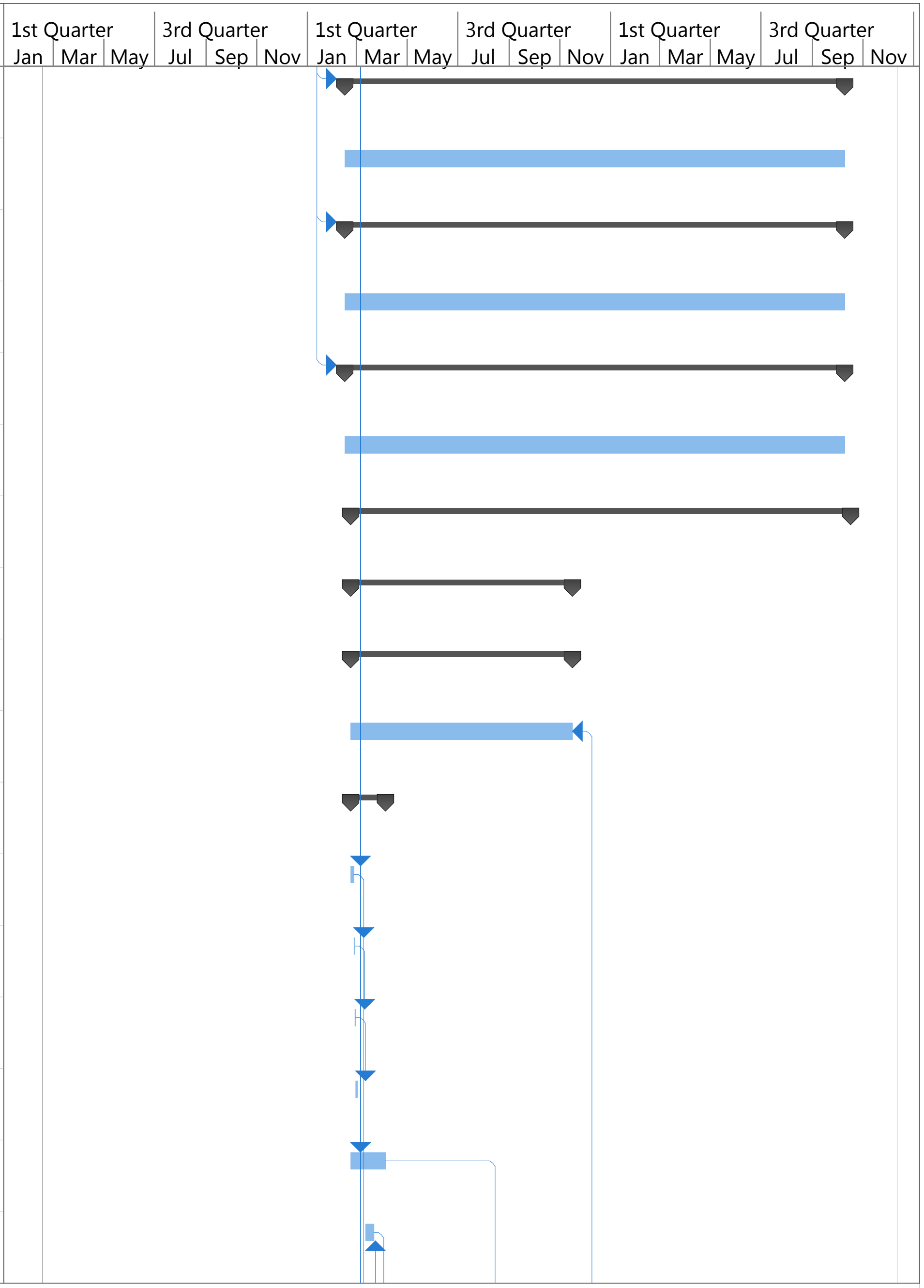
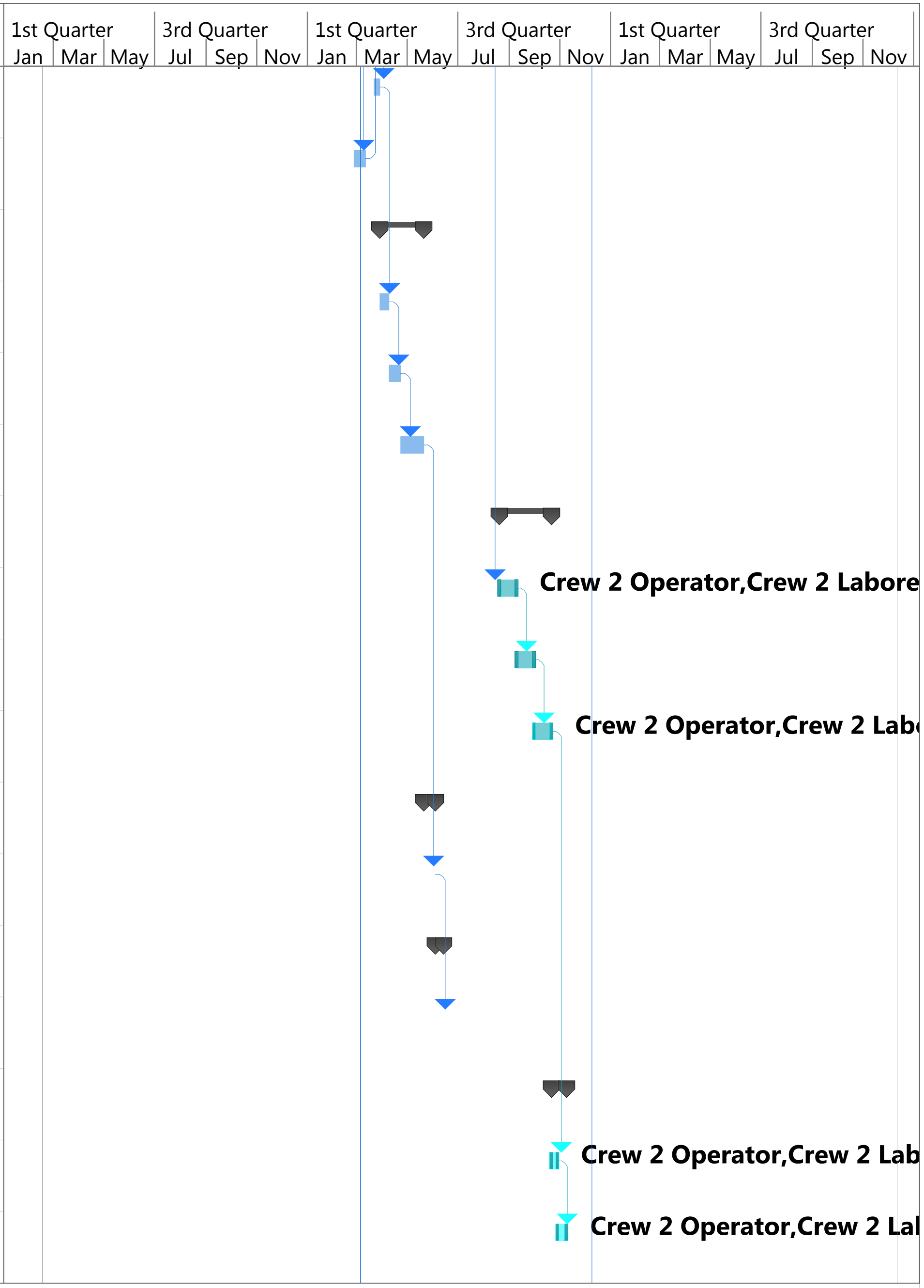


Exhibit RAK-9

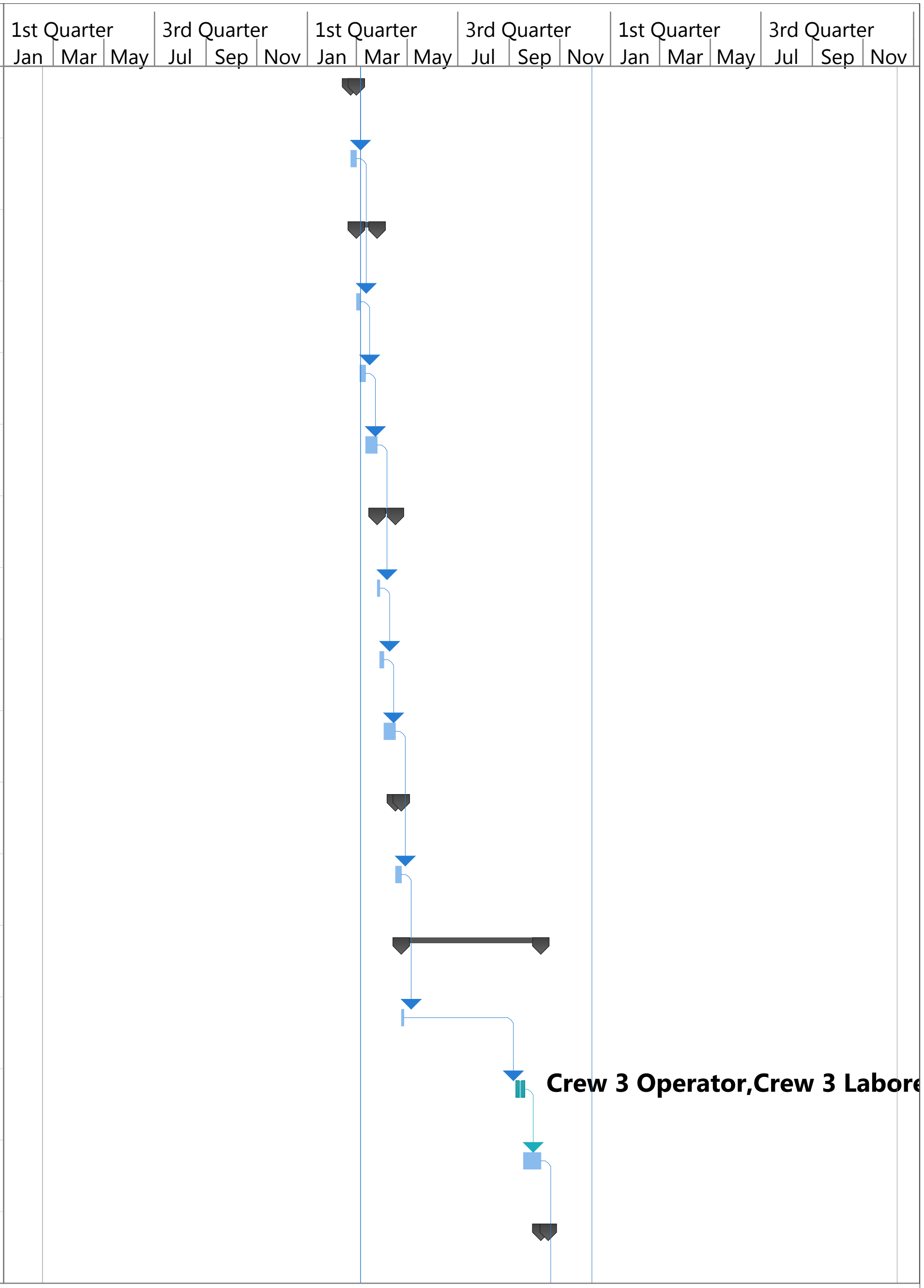
ID	Task Name	Duration
18	**Demolition Contractor Equipment Rental Costs**	**430 days**
19	Equipment Rental	430 days
20	**Demolition Contractor Consummables**	**430 days**
21	Consummables	430 days
22	**Scrap Crew**	**430 days**
23	Crew to Handle Scrap Material(s)	430 days
24	**Dismantlement**	**430 days?**
25	**Phase 1 Demolition**	**191 days?**
26	**Phase 1 Electrical Demolition**	**191 days**
27	Electrical Demolition of Phase 1 Equipment	191 days
28	**Condensate System**	**30 days**
29	Condensate Pumps	2 days
30	Condensate Transfer Pumps	1 day
31	Cycle Make-Up Pump	1 day
32	Steam Packing Exhauster and Blower	2 days
33	Low Pressure Heaters (except the condenser neck heat exchangers)	30 days
34	Deaerator	8 days



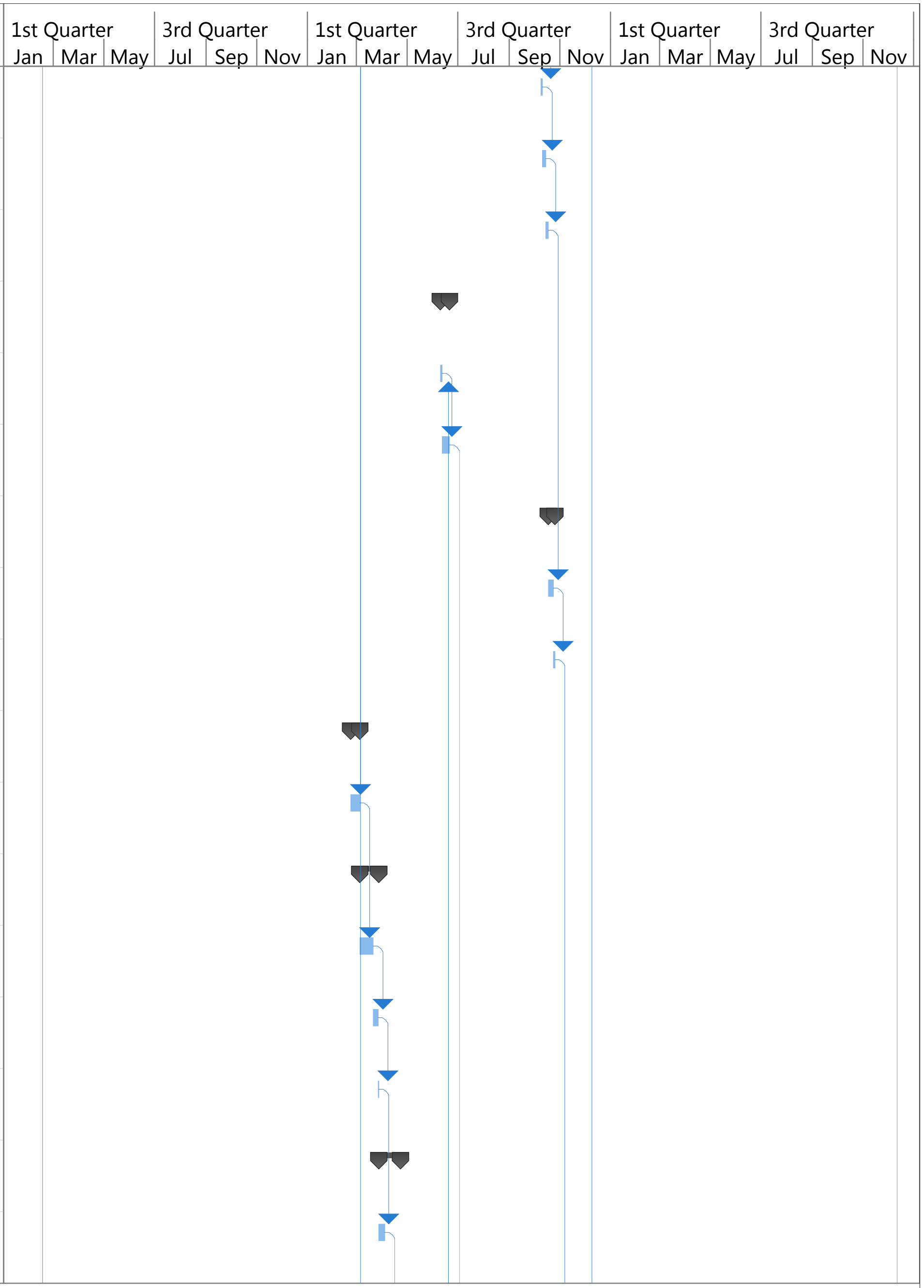
ID	Task Name	Duration
35	Deaerator Storage Tank	5 days
36	Condensate Piping	10 days
37	**Boiler Feed System**	**37 days**
38	Boiler Feed Pump Turbine and Exhaust	7 days
39	Boiler Feed Pump	10 days
40	High Pressure Heaters	20 days
41	**Critical Piping**	**45 days**
42	Main Steam Piping	15 days
43	Cold Reheat Piping	15 days
44	Hot Reheat Piping	15 days
45	**Extraction Steam System**	**10 days**
46	Piping	10 days
47	**Heater Drips**	**8 days**
48	Piping	8 days
49	**Auxiliary Steam**	**14 days**
50	Auxiliary Boilers and Auxiliary Skids	5 days
51	Auxiliary Steam Piping	9 days



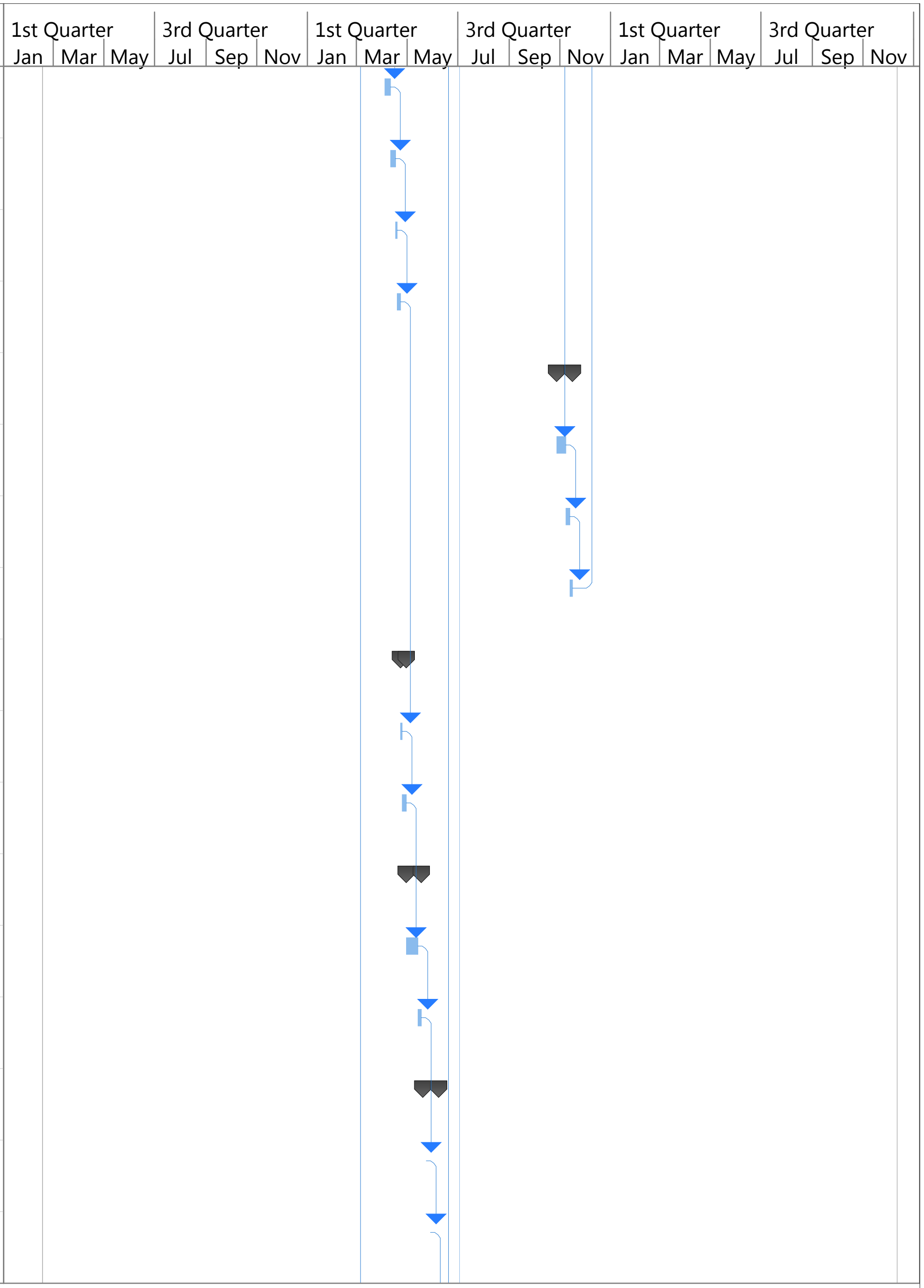
ID	Task Name	Duration
52	**Circulating Water (plant side)**	**5 days**
53	Waterboxes	5 days
54	**Bearing Cooling Water**	**17 days**
55	Bearing Cooling Water Pumps	2 days
56	Bearing Cooling Water Heat Exchanger	5 days
57	Bearing Cooling Water Piping	10 days
58	**Auxiliary Cooling Water**	**16 days**
59	Auxiliary Cooling Water Heat Exchanger	3 days
60	Auxiliary Cooling Water Pumps	3 days
61	Auxiliary Cooling Water Piping	10 days
62	**Service Water**	**5 days**
63	Service Water Piping	5 days
64	**Fuel Oil System (plant side)**	**120 days**
65	Igniter Fuel Oil Pumps	3 days
66	Igniter Fuel Oil and Atomizing Air Piping	5 days
67	Igniters	15 days
68	**Waste Oil System**	**7 days**



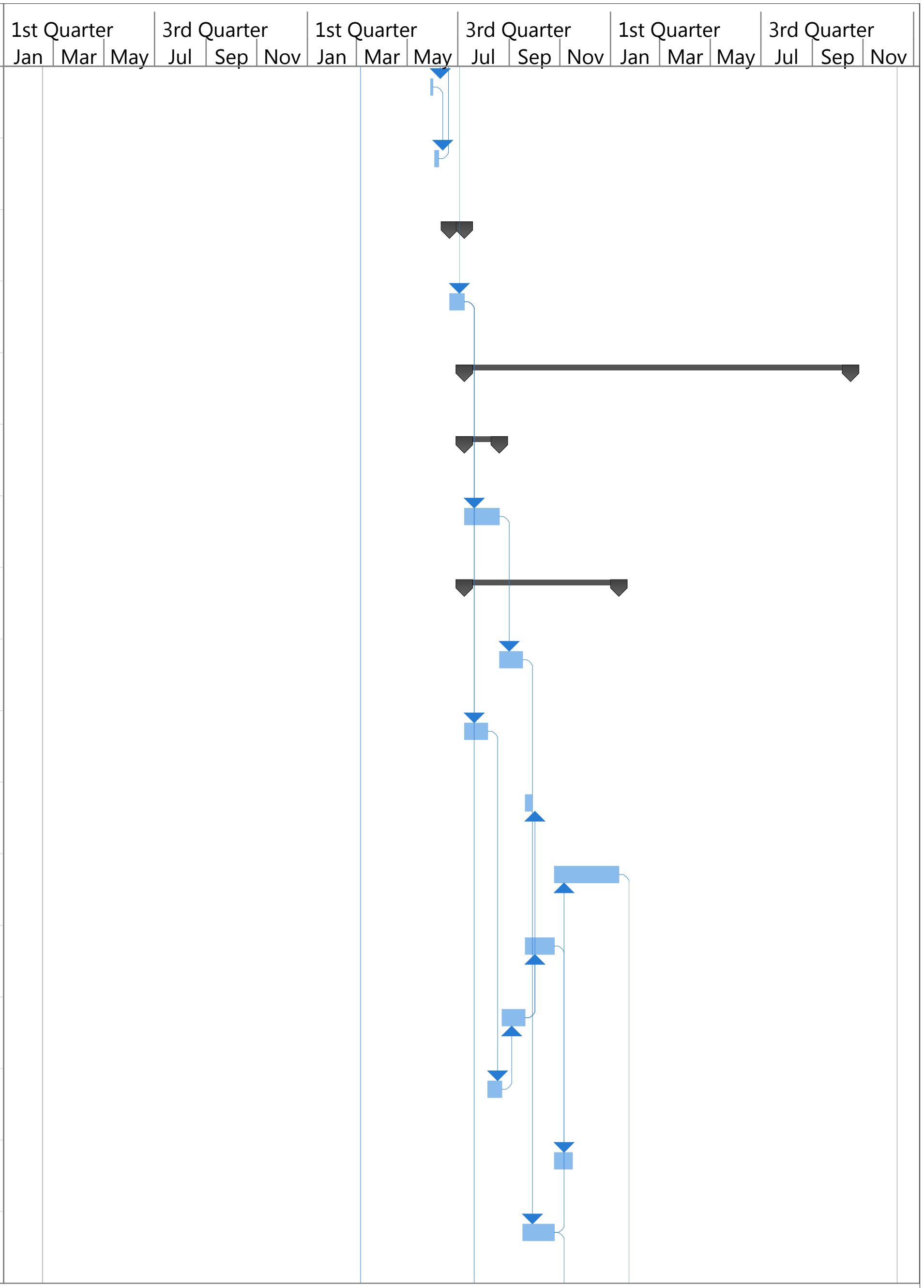
ID	Task Name	Duration
69	Waste Oil Tank	2 days
70	Waste Oil Transfer Pump	2 days
71	Waste Oil Piping	3 days
72	**Air Preheat System**	**9 days**
73	Air Preheat Pumps	2 days
74	Air Preheat Piping	7 days
75	**Condenser Air Extraction System**	**6 days**
76	Vacuum Pumps	4 days
77	Extraction Piping	2 days
78	**Turbine Seals and Drains**	**7 days**
79	Piping	7 days
80	**Turbine Lube Oil System**	**17 days?**
81	Turbine Lube Oil Tank	12 days
82	Turbine Lube Oil Pumps	4 days
83	Turbine Oil Mist Eliminator	1 day?
84	**Generator Auxiliary Systems**	**18 days**
85	Hydrogen Cooler Skid and Piping	5 days



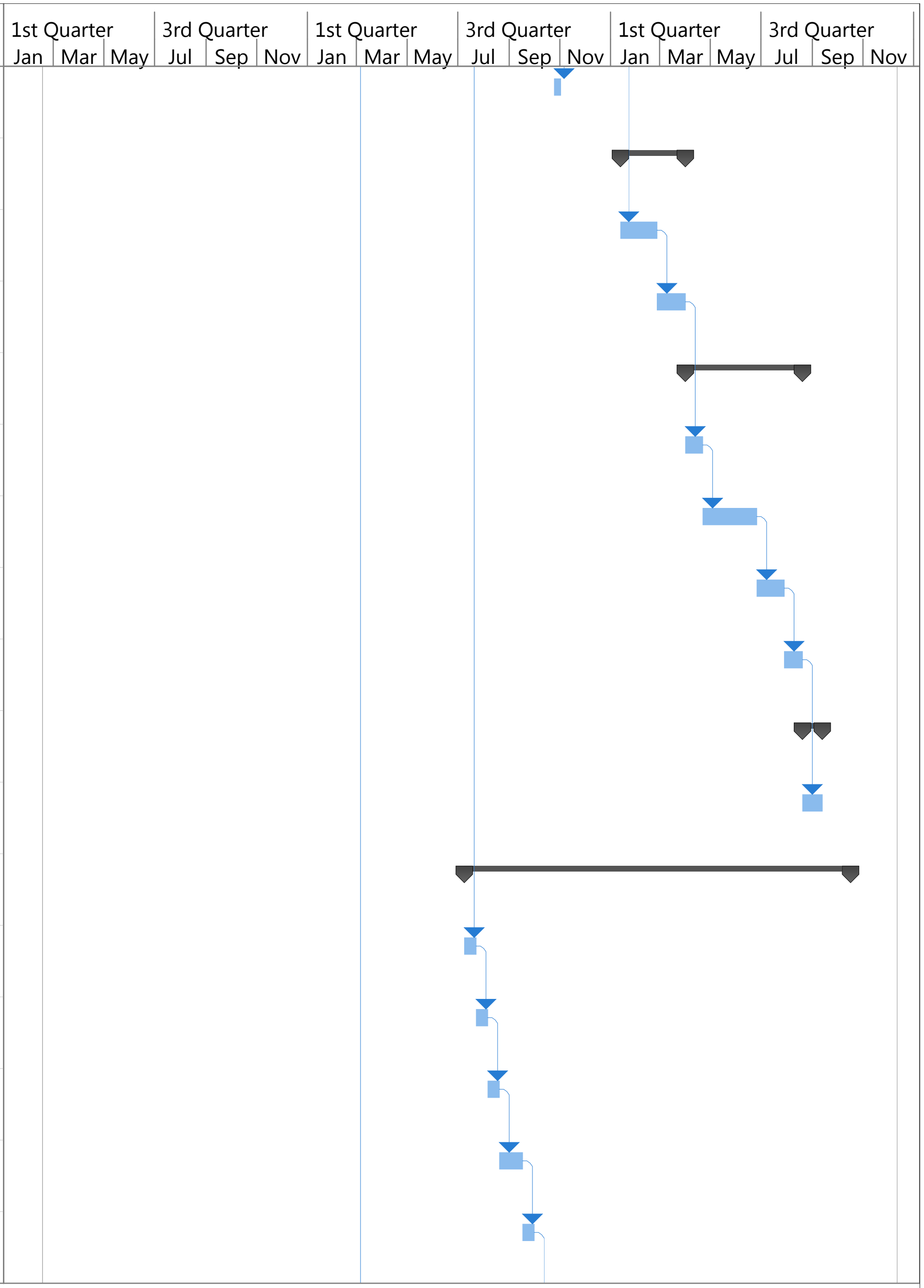
ID	Task Name	Duration
86	Stator Cooling Water Skid and Piping	5 days
87	Isophase Bus Duct	4 days
88	Exciter Heat Exchanger	2 days
89	EHC Coolers	2 days
90	**Chemical Feed Systems**	**15 days**
91	Tanks	9 days
92	Pumps	3 days
93	Piping	3 days
94	**Sampling Systems**	**5 days**
95	Field Mounted Heat Exchangers	2 days
96	Piping	3 days
97	**Building Heating Systems**	**14 days**
98	Steam Unit Heaters	10 days
99	Steam Piping	4 days
100	**Compressed Air System**	**15 days**
101	Air Compressors	4 days
102	Air Drying Equipment	3 days



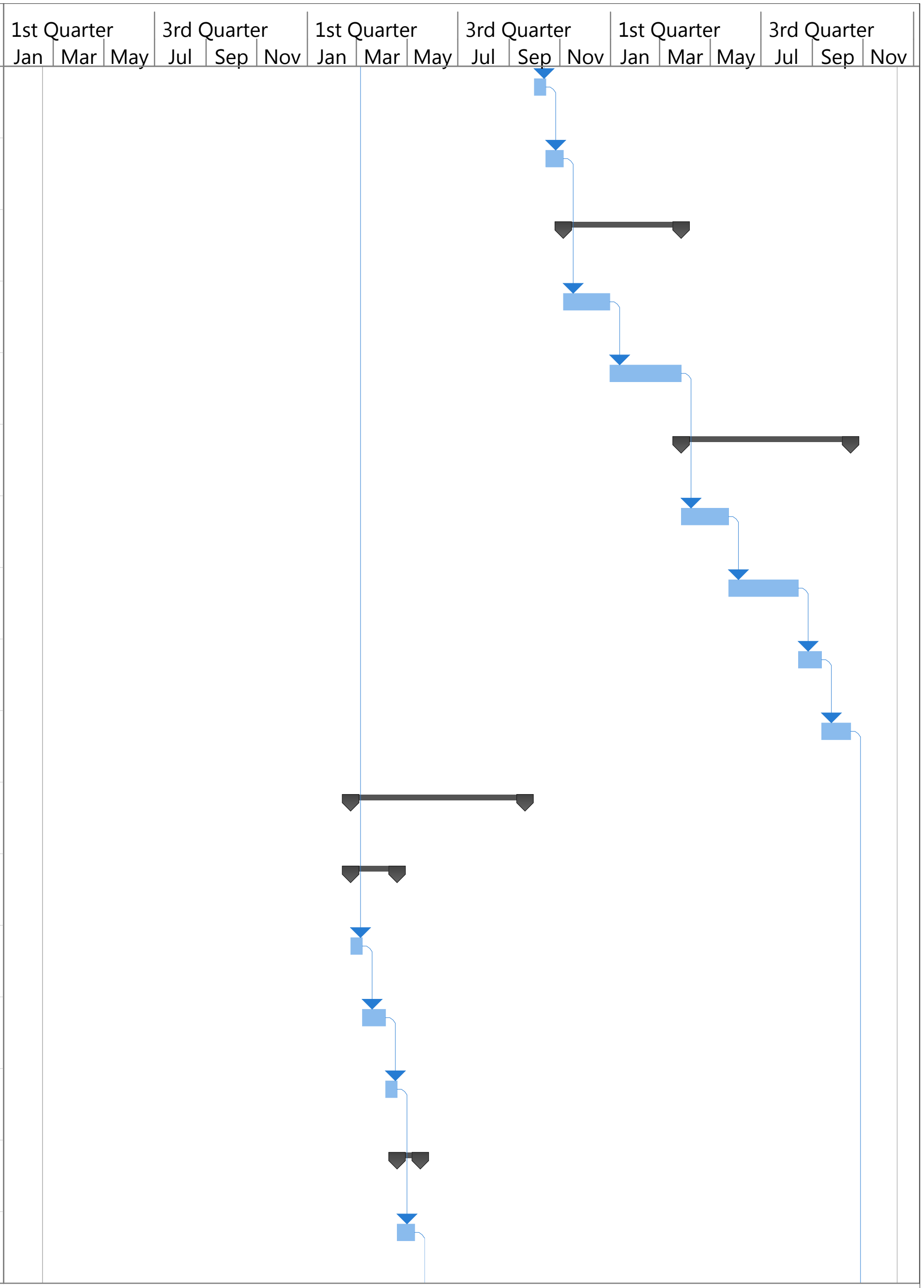
ID	Task Name	Duration
103	Air Reciever Tanks	3 days
104	Compressed Air Piping	5 days
105	**Miscellaneous Equipment**	**12 days**
106	Miscellaneous Equipment (including Fire Protection)	12 days
107	**Phase 2 Demolition**	**333 days**
108	**Precipitator**	**30 days**
109	Remove Precipitator	30 days
110	**Boiler Equipment**	**134 days**
111	Fans	20 days
112	Pulverizers	20 days
113	Bottom Ash	6 days
114	Air Heater	56 days
115	Steam Drum	25 days
116	Coal Bunkers	20 days
117	Coal Feeders	13 days
118	Soot Blowers	16 days
119	Ductwork	28 days



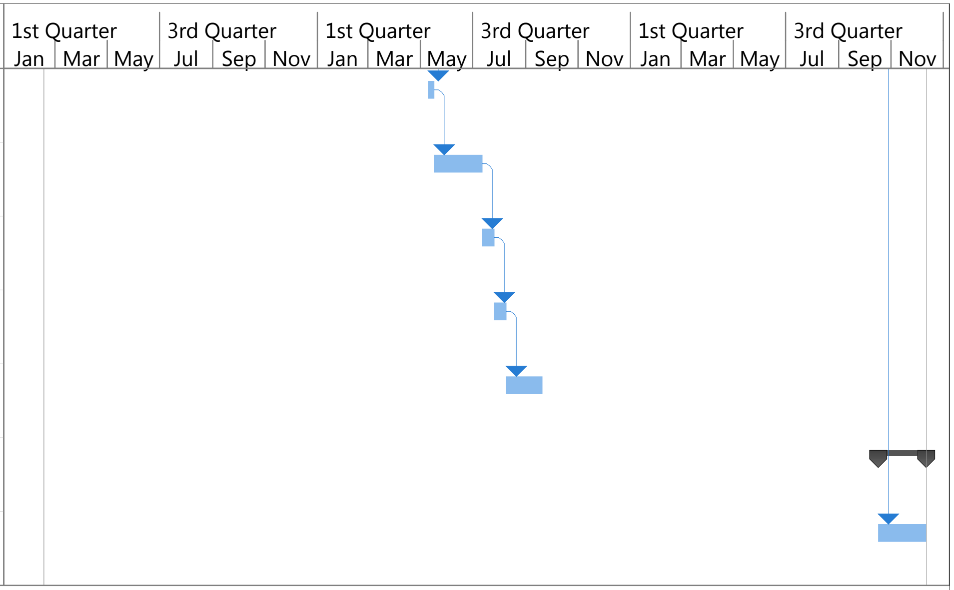
ID	Task Name	Duration
120	Miscellaneous Other	6 days
121	**Boiler Removal**	**56 days**
122	Furnace	32 days
123	Back Pass	24 days
124	**Boiler Steel Framing**	**101 days**
125	Hanger Girders at Top	15 days
126	All Other Framing	47 days
127	Bracing and Girts	23 days
128	Columns	16 days
129	**Boiler Foundations**	**18 days**
130	Equipment Foundation Demolition to Grade	18 days
131	**Remove Turbine**	**333 days**
132	Remove HP Turbine	10 days
133	Remove IP Turbine	10 days
134	Remove LP Turbine	10 days
135	Remove Generator	20 days
136	Remove Condenser Neck Heat Exchanger	10 days



ID	Task Name	Duration
137	Remove Condenser	10 days
138	Remove Misc. Auxiliary Turbine Equipment	15 days
139	**Turbine Pedestal Demolition to Grade**	**102 days**
140	Top Slab and Beams	40 days
141	Columns	62 days
142	**Remove Turbine Building**	**146 days**
143	Siding and Rooding	41 days
144	All Framing Elevations	60 days
145	Bracing and Girts	20 days
146	Columns	25 days
147	**Phase 3 Yard Demolition**	**150 days**
148	**Circulating Water Pipe (yard)**	**40 days**
149	Excavate Circulating Water Pipe	10 days
150	Collapse Circulating Water Pipe	20 days
151	Backfill Circulating Water Pipe	10 days
152	**Remove Ash Handling Equipment and Piping**	**20 days**
153	Remove Fly-Ash Silo and Scale	15 days



ID	Task Name	Duration
154	Remove Ash Piping and Misc. Equipment	5 days
155	Remove Laydown Equipment and Warehoused Equipment	40 days
156	Remove Unit 1 Condensate Storage Tank and Pump	10 days
157	Remove Unit 1 Make-Up Water Storage Tank	10 days
158	Remove Unit 1 Water Treatment Equipment and Building	30 days
159	**Post Dismantlement Activities**	**40 days**
160	Post Dismantlement Activities	40 days



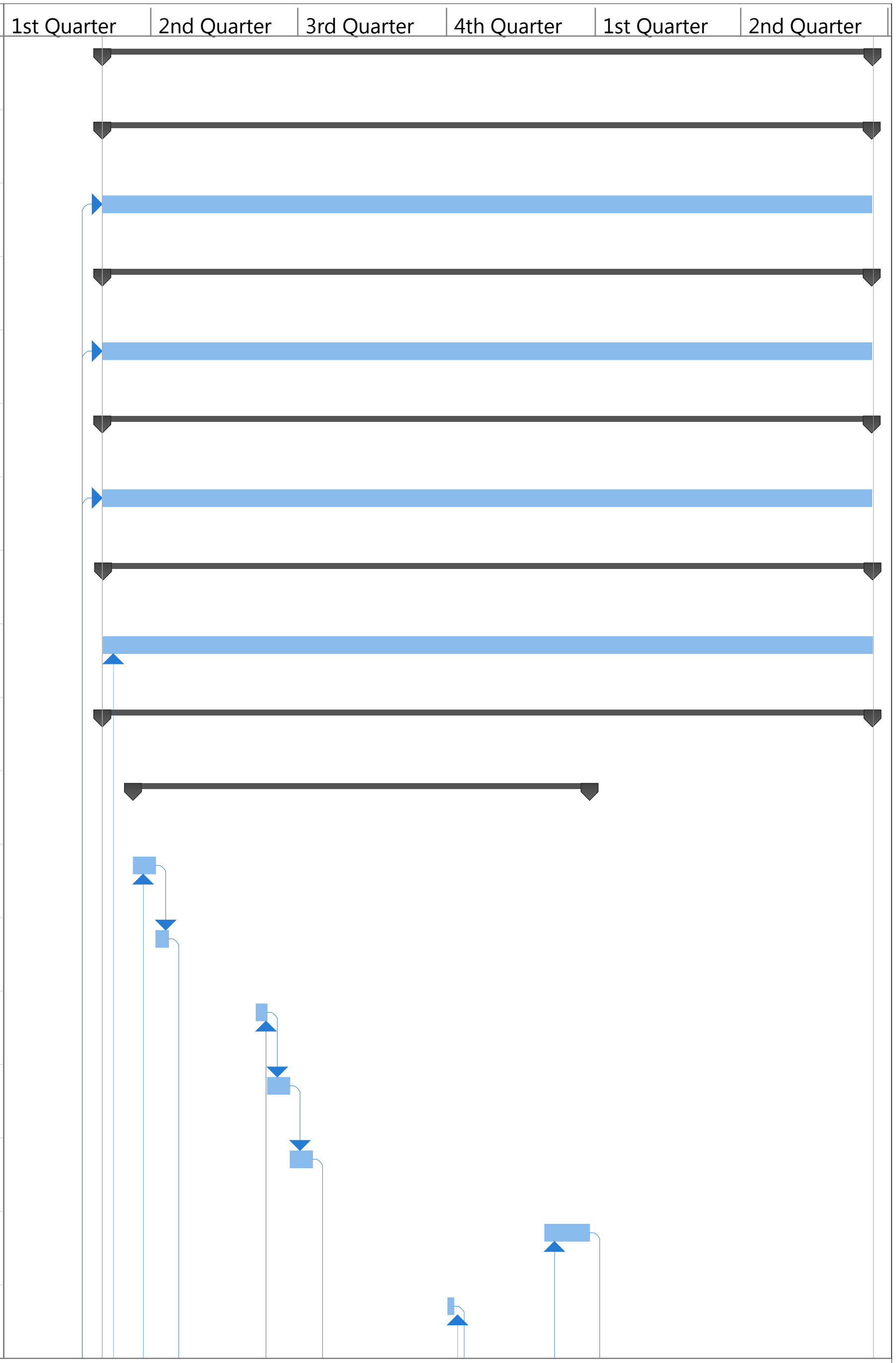
Iatan AQCS

ID	Task Name	Cost
1	**Iatan Unit 1 AQCS Dismantlement**	**$3,582,351.80**
2	**Common Removal Overheads**	**$361,896.00**
3	Added Overhead Staff for Common Removals	$361,896.00
4	**Scrap Crew**	**$629,163.20**
5	Crew(s) to Handle Scrap Material	$629,163.20
6	**Demolition Contractor Consummables**	**$860,009.60**
7	Consummables	$860,009.60
8	**Demolition Contractor Equipment Rental Costs**	**$647,251.20**
9	Equipment Rental	$647,251.20
10	**Dismantlement**	**$1,084,031.80**
11	**Initial Structural**	**$134,621.84**
12	Remove SCR box & ductwork lagging & insulation	$18,504.80
13	Remove SCR expansion joints	$11,102.88
14	Remove ductwork lagging & insulation	$8,220.00
15	Remove ductwork expansion joints	$18,504.80
16	Remove ductwork access platforms & ladders	$18,504.80
17	Remove FF lagging, insulation, wall panel, & roof panels	$37,009.60
18	Remove ID fan lagging & insulation	$7,401.92
19	Removal all HVAC equipment located on FGD Bldg roof	$5,551.44
20	Remove FGD Bldg lagging, insulation, wall panel, & roof	$9,821.60
21	**General Electric**	**$259,746.32**
22	Remove breakers serving all FF equipment	$1,149.32
23	Remove breakers serving all FGD equipment	$2,298.64
24	Remove breakers serving all ID fan equipment	$1,149.32
25	Remove breakers serving all SCR equipment	$1,149.32
26	Remove breakers serving all comp air equipment	$1,149.32
27	Remove all ductwork primary instrumentation, controls & assoc'd cables, and cc	$11,493.20
28	Remove all FGD primary instrumentation, controls & assoc'd cables, and conduit	$34,479.60
29	Remove all FF primary instrumentation, controls & assoc'd cables, and conduit	$22,986.40
30	Remove SCR primary instrumentation, controls, & assoc'd cable & conduit	$11,493.20
31	Remove NH3 supply primary instrumentation, controls, & assoc'd cable & condu	$11,493.20
32	Remove wiring and conduit serving FGD equipment, HVAC, lighting and convenie	$45,972.80
33	Remove wiring and conduit serving FF equipment, HVAC, lighting and convenien	$22,986.40
34	Remove wiring and conduit serving the ID fans and assoc'd equipment	$27,583.68
35	Remove wiring & conduit serving SCR vaporization & injection equipment	$6,895.92
36	Remove wiring & conduit serving compressed air equipment	$6,895.92
37	Remove wiring & conduit serving comp air equipment	$4,597.28
38	Remove electrial control cabinets & switchgear	$22,986.40
39	Demolish electrical control room	$22,986.40
40	**FGD System**	**$207,758.20**
41	Remove ductwork between FGD module and chimney	$8,220.00
42	Remove support steel and access platforms between FGD and chimney	$5,551.44
43	Remove FGD elevator	$9,252.40
44	Remove all mechanical equipment, pumps, and motors and tanks in FGD Bldg	$37,009.60
45	Remove oxi air blowers	$925.24
46	Remove all FGD piping & valves other than recirc piping	$27,757.20
47	Remove ox air lines	$5,551.44
48	Remove FGD MEs panels	$9,864.00
49	Remove FGD outlet duct and top cone	$5,551.44

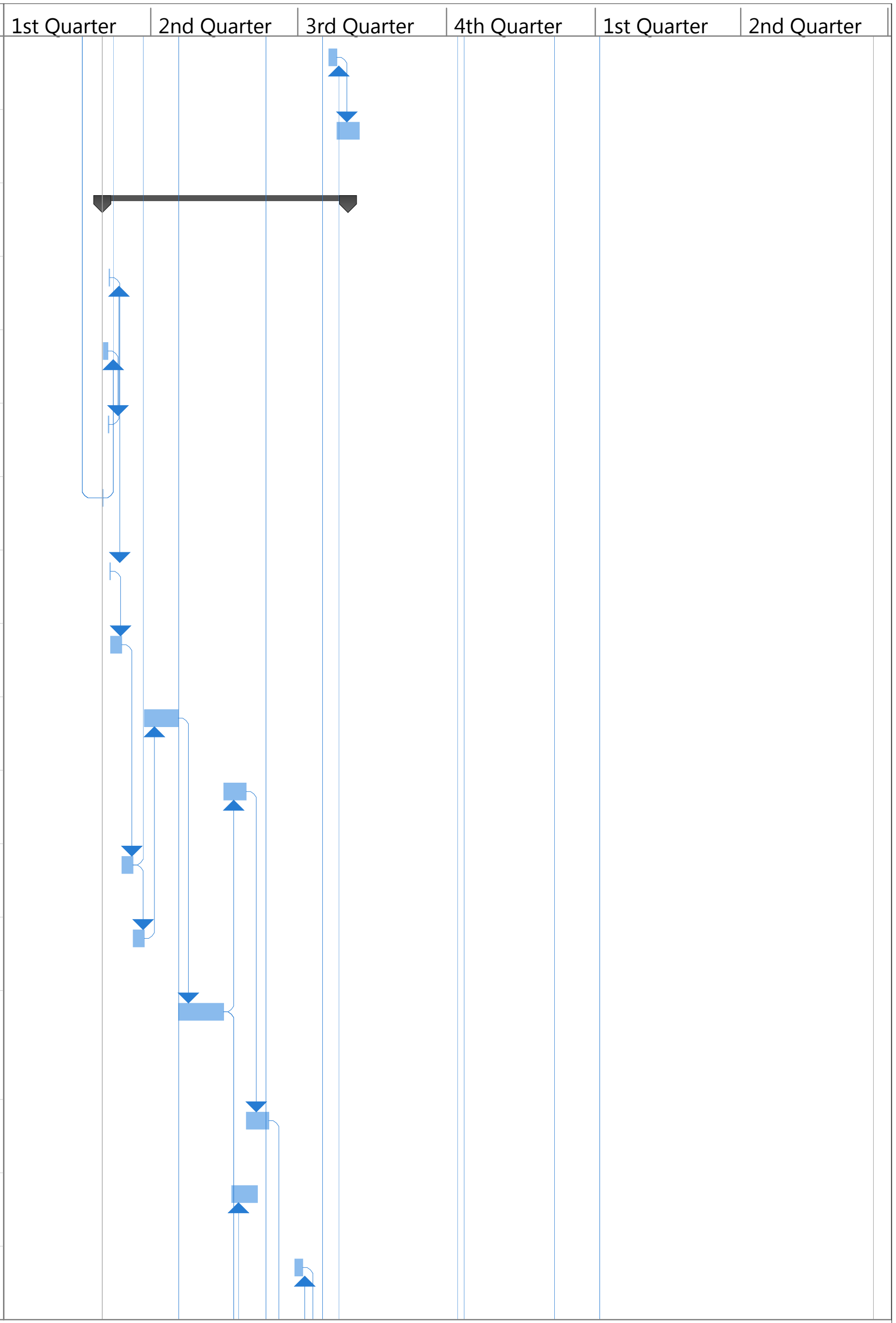
ID	Task Name	Cost
50	Remove FGD internal wash ME piping and ME supports	$5,551.44
51	Remove FGD internal spray header piping	$9,252.40
52	Remove FGD support steel, access provisions, stair tower, and recirc piping from	$37,009.60
53	Remove FGD module walls	$18,504.80
54	Remove FGD inlet duct	$5,551.44
55	Remove FGD reaction tank walls and floor	$18,504.80
56	Remove FGD Bldg trench floor grating	$3,700.96
57	**ID Fans**	**$81,421.12**
58	Remove ductwork between ID fan outlets and FGD module	$12,953.36
59	Remove support steel and access platforms between ID fan outlets and FGD mo	$5,551.44
60	Remove ductwork between FF outlet and ID fan inlets	$12,953.36
61	Remove support steel between FF outlet and ID fan inlets	$5,551.44
62	Removed ID fan isolation dampers	$14,803.84
63	Removed ID fan drive motor	$7,401.92
64	Remove ID fan seal air system	$7,401.92
65	Remove fan casing & rotor	$14,803.84
66	**Fabric Filters**	**$324,614.64**
67	Remove ductwork between air heater and FF	$9,252.40
68	Remove ductwork structural steel between AH and FF	$5,551.44
69	Remove FF penthouse hoists and trolleys	$7,401.92
70	Remove FF hopper heaters, HVAC, lighting and convenience outlets	$22,986.40
71	Remove FF ash handling piping	$27,757.20
72	Remove compress air blower, dryers, and receivers, piping & valves	$18,504.80
73	Remove FF penthouse roof panels supporting steel	$18,504.80
74	Remove FF compartment roof hatches	$5,551.44
75	Remove FF compartment pulse air piping	$5,551.44
76	Remove FF compartment pulse air and compressed air supply piping	$11,102.88
77	Remove FF outlet poppet damper operators	$12,953.36
78	Remove FF bags & cages	$25,906.72
79	Remove FF bag support sheets	$25,906.72
80	Remove remaining FF roof	$7,401.92
81	Remove FF outlet dampers	$7,401.92
82	Remove ductwork between air heater and FF	$9,252.40
83	Remove FF wall panels to hopper level	$51,813.44
84	Remove ductwork structural steel between AH and FF	$5,551.44
85	Remove FF stair tower(s)	$18,504.80
86	Remove FF inlet dampers	$7,401.92
87	Remove FF hoppers	$12,953.36
88	Remove FF support steel	$7,401.92
89	**SCR and Ammonia Supply**	**$75,869.68**
90	Vacuum SCR catalyst	$3,700.96
91	Remove SCR catalyst	$16,654.32
92	Remove ammonia injection grid	$3,700.96
93	Remove NH3 piping between storage & injection	$3,700.96
94	Remove air horn air receiver & supply piping	$3,700.96
95	Remove SCR guillotine dampers	$7,401.92
96	Remove SCr muliti-louver dampers	$3,700.96
97	Remove SCR box, internal supports, & assoc'd ductwork	$27,757.20
98	Remove NH3 piping between storage & vaporizors	$5,551.44

ID	Task Name	Cost
99	**Site Preperation Work**	**$0.00**
100	<New Task>	$0.00

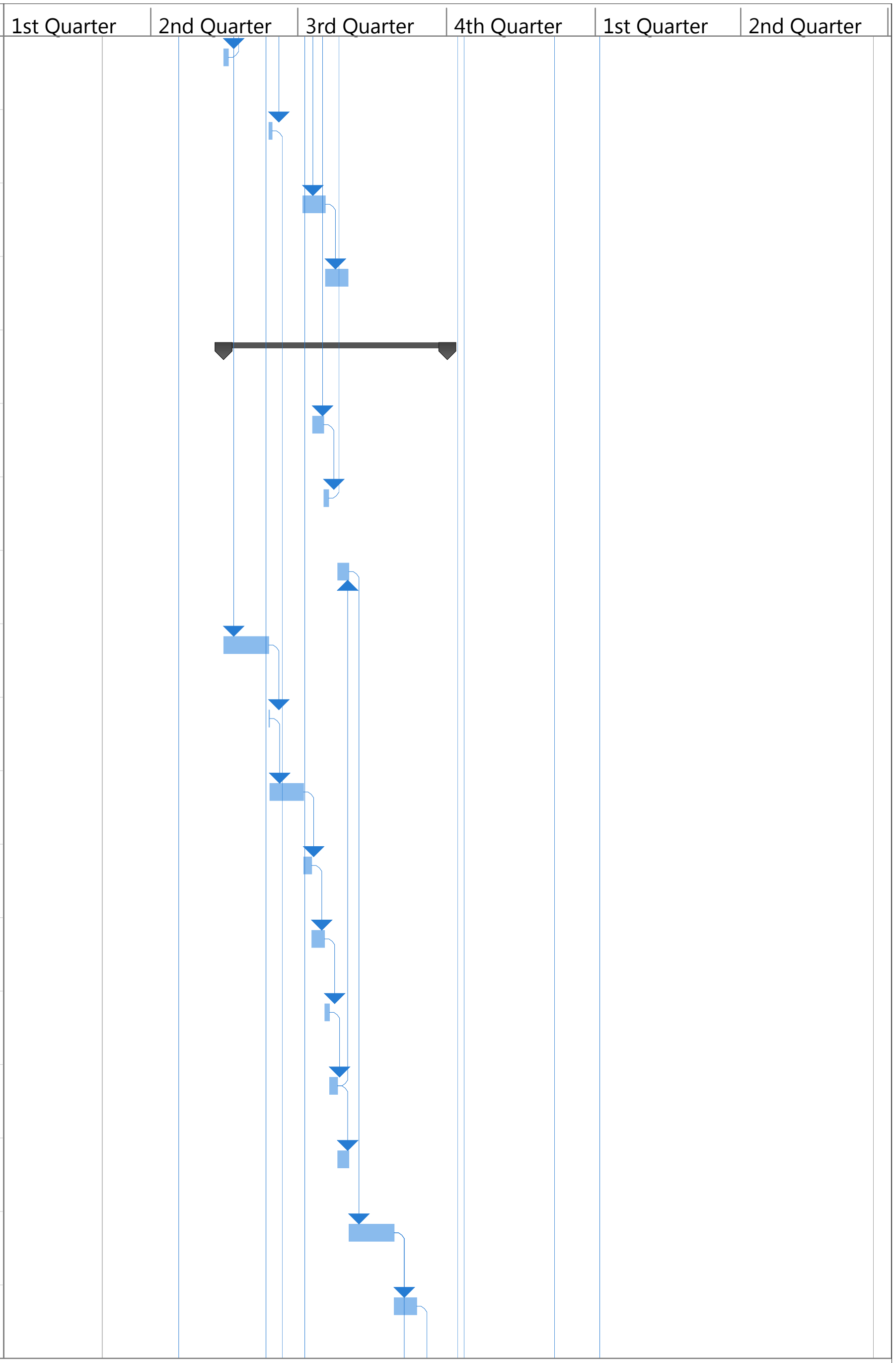
ID	Task Name	Duration
1	**Iatan Unit 1 AQCS Dismantlement**	**340.5 days**
2	**Common Removal Overheads**	**340 days**
3	Added Overhead Staff for Common Removals	340 days
4	**Scrap Crew**	**340 days**
5	Crew(s) to Handle Scrap Material	340 days
6	**Demolition Contractor Consummables**	**340 days**
7	Consummables	340 days
8	**Demolition Contractor Equipment Rental Costs**	**340 days**
9	Equipment Rental	340 days
10	**Dismantlement**	**340.5 days**
11	**Initial Structural**	**202.5 days**
12	Remove SCR box & ductwork lagging & insulation	10 days
13	Remove SCR expansion joints	6 days
14	Remove ductwork lagging & insulation	5 days
15	Remove ductwork expansion joints	10 days
16	Remove ductwork access platforms & ladders	10 days
17	Remove FF lagging, insulation, wall panel, & roof panels	20 days
18	Remove ID fan lagging & insulation	4 days



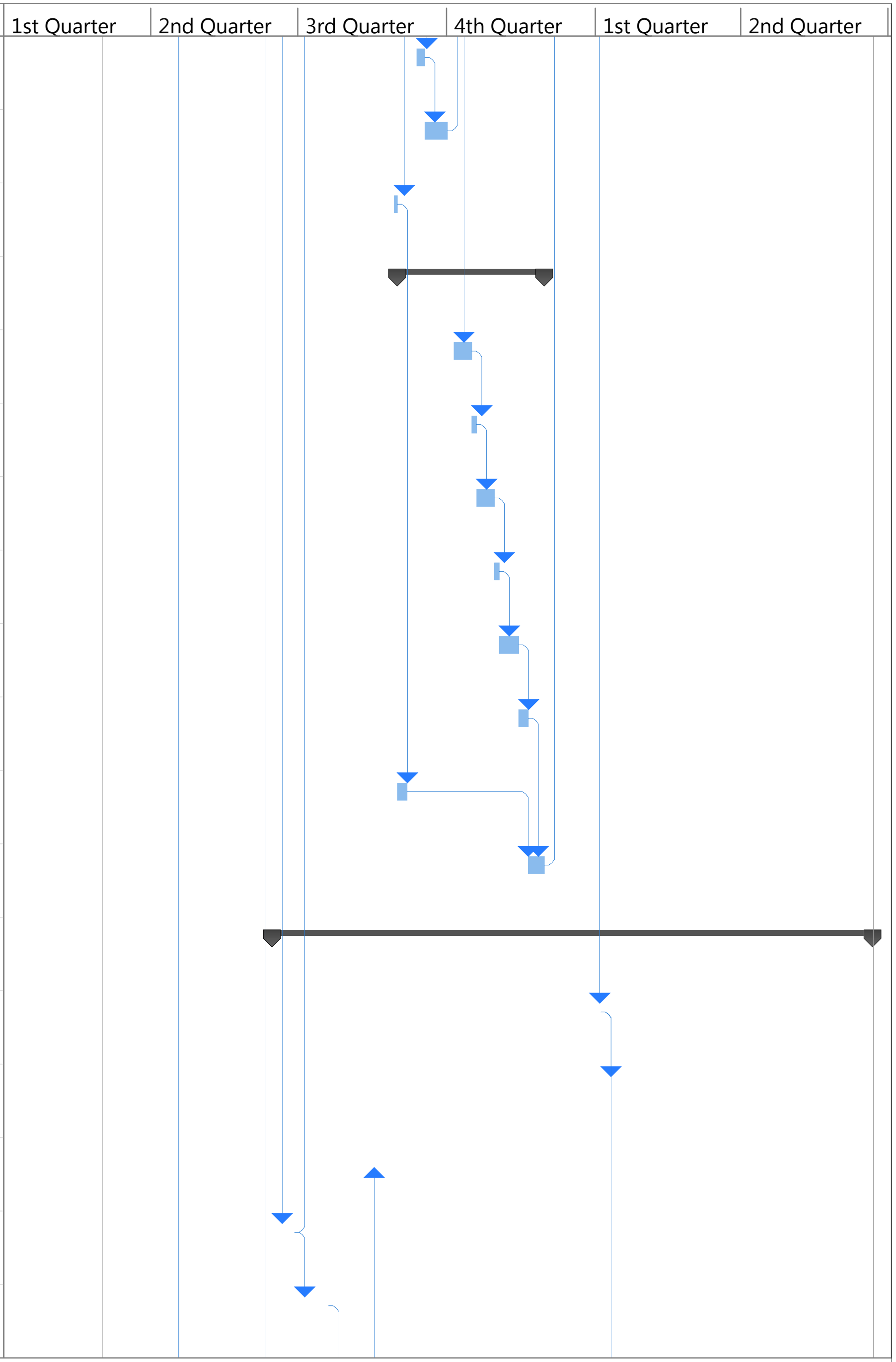
ID	Task Name	Duration
19	Removal all HVAC equipment located on FGD Bldg roof	3 days
20	Remove FGD Bldg lagging, insulation, wall panel, & roof	10 days
21	**General Electric**	**108 days**
22	Remove breakers serving all FF equipment	0.5 days
23	Remove breakers serving all FGD equipment	1 day
24	Remove breakers serving all ID fan equipment	0.5 days
25	Remove breakers serving all SCR equipment	0.5 days
26	Remove breakers serving all comp air equipment	0.5 days
27	Remove all ductwork primary instrumentation, controls & assoc'd cables, and conduit	5 days
28	Remove all FGD primary instrumentation, controls & assoc'd cables, and conduit	15 days
29	Remove all FF primary instrumentation, controls & assoc'd cables, and conduit	10 days
30	Remove SCR primary instrumentation, controls, & assoc'd cable & conduit	5 days
31	Remove NH3 supply primary instrumentation, controls, & assoc'd cable & conduit	5 days
32	Remove wiring and conduit serving FGD equipment, HVAC, lighting and convenience outlets	20 days
33	Remove wiring and conduit serving FF equipment, HVAC, lighting and convenience outlets	10 days
34	Remove wiring and conduit serving the ID fans and assoc'd equipment	12 days
35	Remove wiring & conduit serving SCR vaporization & injection equipment	3 days



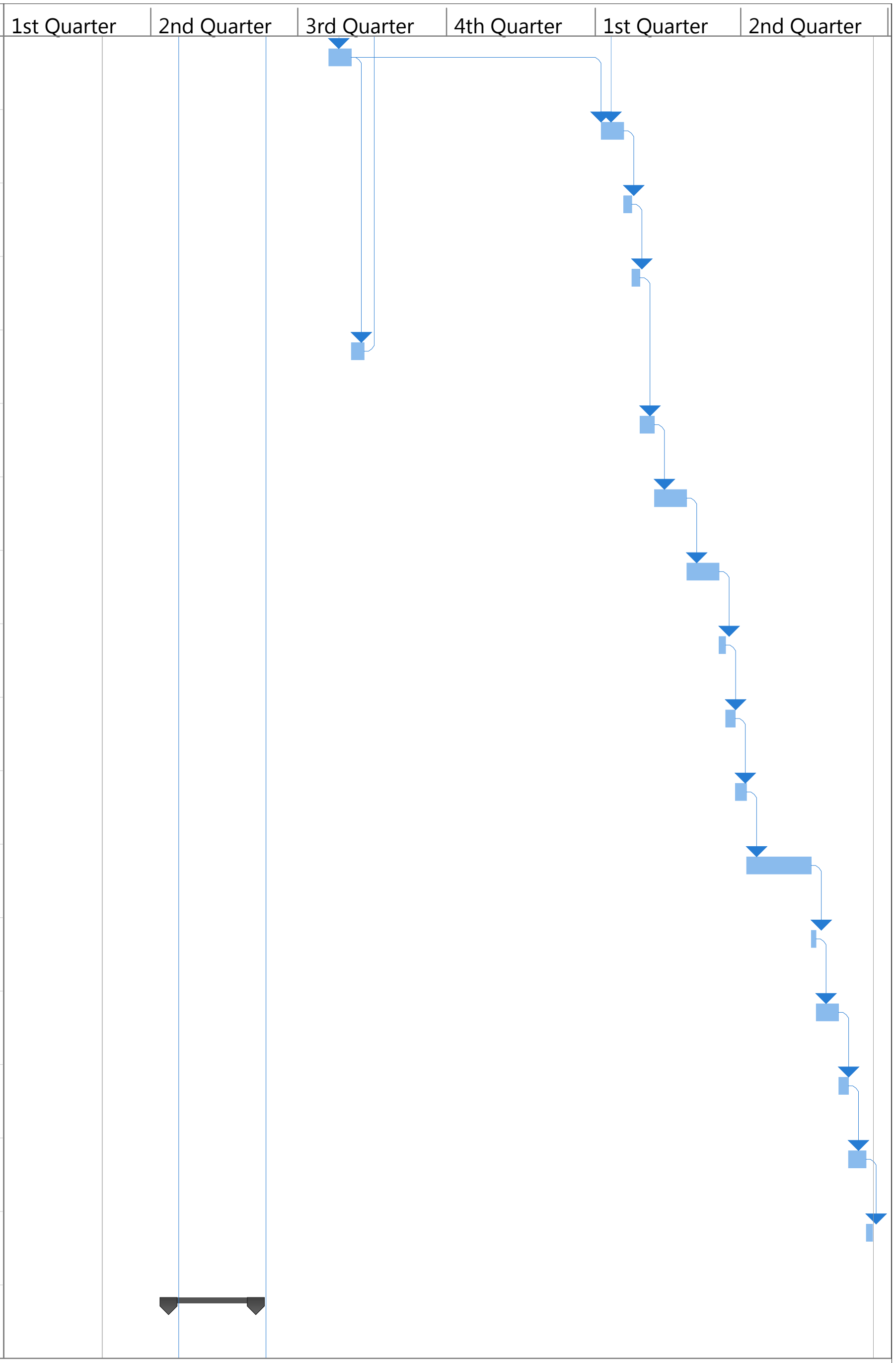
ID	Task Name	Duration
36	Remove wiring & conduit serving compressed air equipment	3 days
37	Remove wiring & conduit serving comp air equipment	2 days
38	Remove electrial control cabinets & switchgear	10 days
39	Demolish electrical control room	10 days
40	**FGD System**	**98.5 days**
41	Remove ductwork between FGD module and chimney	5 days
42	Remove support steel and access platforms between FGD and chimney	3 days
43	Remove FGD elevator	5 days
44	Remove all mechanical equipment, pumps, and motors and tanks in FGD Bldg	20 days
45	Remove oxi air blowers	0.5 days
46	Remove all FGD piping & valves other than recirc piping	15 days
47	Remove ox air lines	3 days
48	Remove FGD MEs panels	6 days
49	Remove FGD outlet duct and top cone	3 days
50	Remove FGD internal wash ME piping and ME supports	3 days
51	Remove FGD internal spray header piping	5 days
52	Remove FGD support steel, access provisions, stair tower, and recirc piping from top down	20 days
53	Remove FGD module walls	10 days



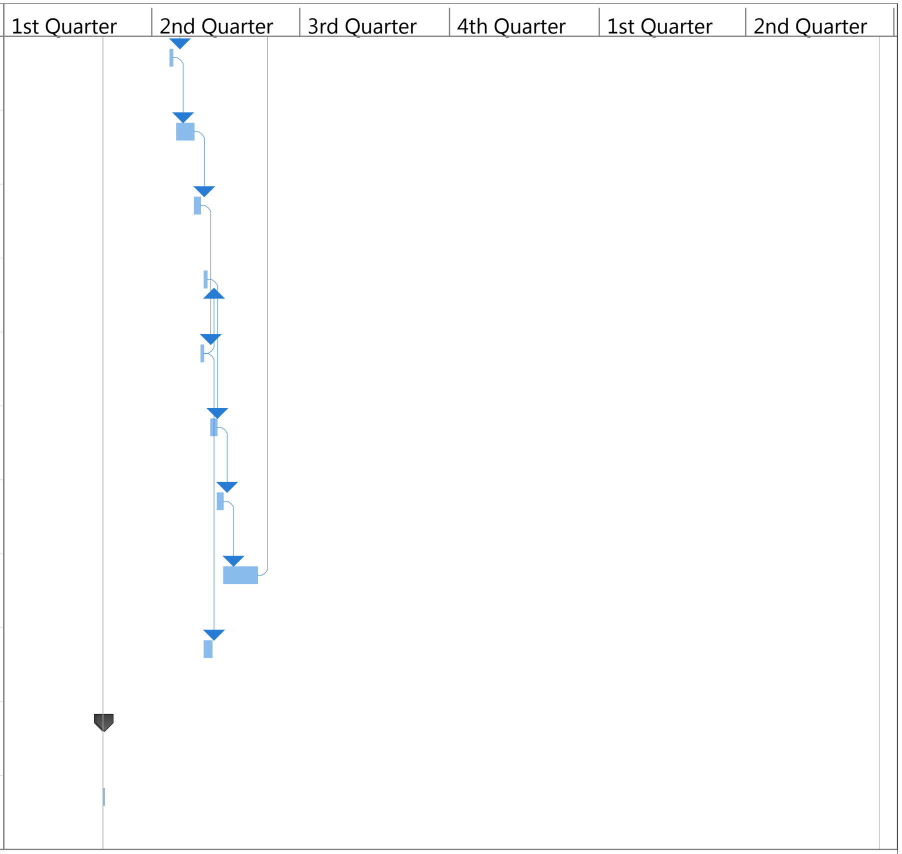
ID	Task Name	Duration
54	Remove FGD inlet duct	3 days
55	Remove FGD reaction tank walls and floor	10 days
56	Remove FGD Bldg trench floor grating	2 days
57	**ID Fans**	**65 days**
58	Remove ductwork between ID fan outlets and FGD module	7 days
59	Remove support steel and access platforms between ID fan outlets and FGD module	3 days
60	Remove ductwork between FF outlet and ID fan inlets	7 days
61	Remove support steel between FF outlet and ID fan inlets	3 days
62	Removed ID fan isolation dampers	8 days
63	Removed ID fan drive motor	4 days
64	Remove ID fan seal air system	4 days
65	Remove fan casing & rotor	8 days
66	**Fabric Filters**	**265.5 days**
67	Remove ductwork between air heater and FF	5 days
68	Remove ductwork structural steel between AH and FF	3 days
69	Remove FF penthouse hoists and trolleys	4 days
70	Remove FF hopper heaters, HVAC, lighting and convenience outlets	10 days
71	Remove FF ash handling piping	15 days



ID	Task Name	Duration
72	Remove compress air blower, dryers, and receivers, piping & valves	10 days
73	Remove FF penthouse roof panels supporting steel	10 days
74	Remove FF compartment roof hatches	3 days
75	Remove FF compartment pulse air piping	3 days
76	Remove FF compartment pulse air and compressed air supply piping	6 days
77	Remove FF outlet poppet damper operators	7 days
78	Remove FF bags & cages	14 days
79	Remove FF bag support sheets	14 days
80	Remove remaining FF roof	4 days
81	Remove FF outlet dampers	4 days
82	Remove ductwork between air heater and FF	5 days
83	Remove FF wall panels to hopper level	28 days
84	Remove ductwork structural steel between AH and FF	3 days
85	Remove FF stair tower(s)	10 days
86	Remove FF inlet dampers	4 days
87	Remove FF hoppers	7 days
88	Remove FF support steel	4 days
89	**SCR and Ammonia Supply**	**38 days**



ID	Task Name	Duration
90	Vacuum SCR catalyst	2 days
91	Remove SCR catalyst	9 days
92	Remove ammonia injection grid	2 days
93	Remove NH3 piping between storage & injection	2 days
94	Remove air horn air receiver & supply piping	2 days
95	Remove SCR guillotine dampers	4 days
96	Remove SCr muliti-louver dampers	2 days
97	Remove SCR box, internal supports, & assoc'd ductwork	15 days
98	Remove NH3 piping between storage & vaporizors	3 days
99	**Site Preperation Work**	**1 day**
100	<New Task>	1 day



UNIT 2

Iatan 2 Retirement

Owner Costs				
Pre-Retirement Activities		$106,968		
Retirement Activities		$702,911		
Post-Retirement Activities		$28,182		
Owner Direct Total			$838,061	
Owner Internal Costs	5.00%		$41,903	
Owner Contingency:	25.00%		$219,991	
Iatan 2 Retirement Opinion of Probable Cost:				$1,099,956

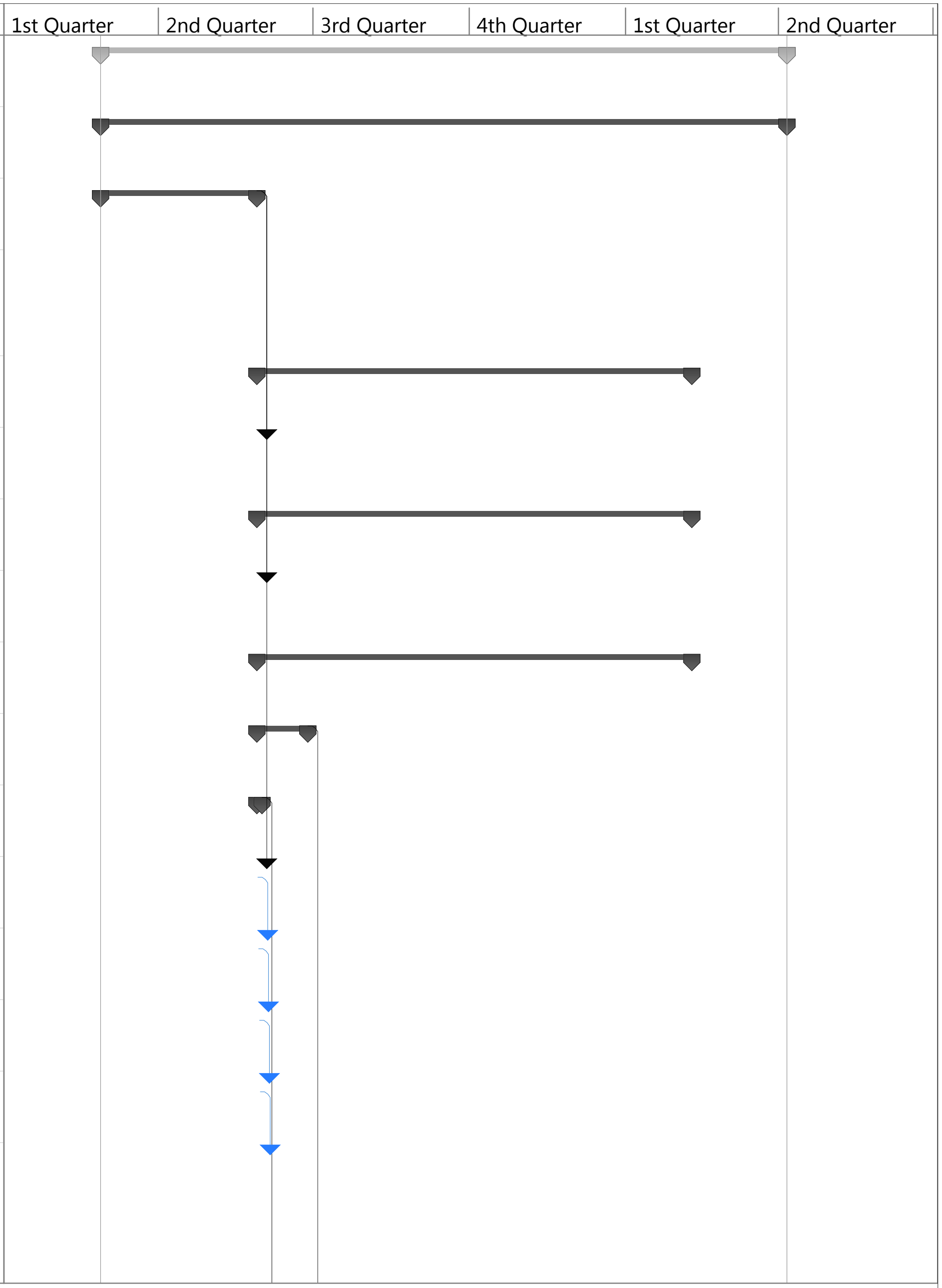
ID	Task Name	Cost
0	**Iatan 2 Retirement**	**$838,061.41**
1	**Iatan 2 Retirement**	**$838,061.41**
2	**Pre-Engineering**	**$106,967.52**
3	Permit review and engineering analysis, establish isolation points, and confirm f	$0.00
4	**KCL&L Overhead Costs**	**$120,939.52**
5	KCP&L Retirement Manager	$120,939.52
6	**Equipment Rentals**	**$40,538.88**
7	Vacuum truck	$40,538.88
8	**Retirement**	**$541,433.09**
9	**Electrical**	**$20,553.92**
10	**Medium and Low Voltage Draw out Switchgear**	**$2,903.52**
11	De-energize all buses at the source.	$483.92
12	Open all circuit breakers.	$483.92
13	Rack all circuit breakers into the fully withdrawn, disconnected position.	$483.92
14	Verify that the closing/tripping springs are discharged.	$483.92
15	De-energize control power and auxiliary power circuits of each circuit breal	$967.84
16	**Motor Control Centers**	**$1,935.68**
17	De-energize all buses at the source.	$483.92
18	Open all circuit breakers and disconnect switches.	$483.92
19	Remove all fuses in control circuits.	$967.84
20	**Low-voltage Switchboards and Panelboards**	**$967.84**
21	De-energize all buses at the source.	$483.92
22	Open all circuit breakers and disconnect switches.	$483.92
23	**Oil-Filled Power Transformers**	**$6,072.32**
24	De-energize all transformer primaries and verify that the secondary is de-e	$967.84
25	De-energize all low-voltage AC or DC power sources for space heaters, cool	$967.84
26	Drain and dispose of oil.	$2,867.52
27	Clean up and dispose of oil on surface areas around the transformers on in	$1,269.12
28	**Dry-type Power Transformers**	**$1,935.68**
29	De-energize all transformer primaries and verify that the secondary is de-e	$967.84
30	De-energize all low-voltage AC or DC power sources for space heaters, cool	$967.84
31	**Motors**	**$6,738.88**
32	De-energize all primary power at the source.	$1,935.68
33	De-energize all low-voltage power sources for space heaters or other auxili	$1,935.68
34	Drain lube oil system (if applicable) and dispose of oil.	$2,867.52
35	**Coal Handling**	**$30,905.36**
36	Empty all transfer hoppers.	$1,853.84
37	Burn out coal silos.	$1,834.56
38	Confirm all fuel lines, conveyors and trippers are clear of fuel.	$1,834.56
39	Perform cleaning of the coal handling equipment to assure that all coal and c	$25,382.40
40	**Fuel Oil and Igniter System**	**$2,751.84**
41	Drain fuel oil system	$2,751.84
42	**Boiler Chemical Feed**	**$1,834.56**
43	Drain all chemical feed tanks.	$1,834.56
44	**Boiler**	**$30,927.60**
45	Open boiler doors.	$955.84
46	Gas side - perform cleaning of the boiler and bottom ash system.	$25,382.40
47	Drain boiler, drum, downcomers and headers.	$917.28
48	Open drum doors.	$955.84

ID	Task Name	Cost
49	Drain and clean the submerged flight conveyor system.	$2,716.24
50	**Stack and Ductwork**	**$344,145.25**
51	Open ductwork doors.	$955.84
52	Perform extensive cleaning of the ductwork.	$12,691.20
53	Place cap over stack opening to keep moisture out.	$330,498.21
54	**Condensate and Feedwater Piping**	**$1,834.56**
55	Drain water from the system.	$917.28
56	Leave open vents and drains.	$917.28
57	**Feedwater heaters**	**$2,751.84**
58	Drain feedwater heaters	$917.28
59	Leave open vents and drains.	$1,834.56
60	**Deaerator and Deaerator Storage Tank**	**$1,834.56**
61	Drain Deaerator and Storage	$917.28
62	Leave open vents and drains.	$917.28
63	**Baghouse**	**$18,919.84**
64	Multiple cleaning cycles for filter bags.	$2,751.84
65	Open all vent and drain lines on bag cleaning air and control air lines. Leave in	$917.28
66	Remove all filter bags and cages.	$955.84
67	Clear hoppers of all ash	$3,103.68
68	Mechanically secure all compartment dampers and hopper outlet valves in op	$955.84
69	Disconnect ash transport piping and washdown baghouse hoppers and interio	$1,571.12
70	Install bird screens across hopper ash outlet and ash line flanges.	$955.84
71	Padlock or tack weld all hopper doors shut. (note: if ash hopper doors are ind	$955.84
72	If walk-in plenum, padlock or tack weld all outlet plenum doors and compartm	$955.84
73	If top-door plenum, close and secure top doors and remove/disable door lift h	$1,873.12
74	If top-door plenum, establish natural ventilation or maintain HVAC fan to prov	$1,020.08
75	Pull electrical supply breakers on all electrical equipment except lighting and H	$2,903.52
76	**Wet FGD system**	**$26,222.88**
77	Multiple mist eliminator wash cycles. Remove ME's from absorber.	$2,331.76
78	Drain and flush all slurry and reclaim water pumps and piping. Leave vent and	$1,873.12
79	Drain and wash out the reaction tank, reagent storage tank, recycle water tan	$5,183.28
80	Leave all tank drain valves open or remove. Install bird screens across opening	$1,911.68
81	Drain all makeup and mist eliminator water pumps and piping. Leave vent and	$2,828.96
82	Mechanically secure all flue gas isolation dampers in open position or remove	$1,911.68
83	Remove solids from all inlet and outlet ductwork as necessary	$2,538.24
84	Open all vent station air and control air lines. Leave in open position or remo	$1,873.12
85	Padlock or tack weld all access doors to modules and ductwork shut.	$1,911.68
86	Remove access doors to open-top tanks.	$955.84
87	Pull electrical supply breakers on all electrical equipment except lighting and H	$2,903.52
88	**FGD Reagent Preparation-Limestone wet Scrubber**	**$11,270.00**
89	Remove limestone from day bins.	$1,551.84
90	Removed cartridges/bags from bin vent filters	$1,551.84
91	Padlock or tack weld all bin access doors shut. (note: if doors are indoors, the	$955.84
92	Remove bin discharge isolation valve and install bird screen.	$477.92
93	Thoroughly wash and drain mills	$1,551.84
94	Remove balls from any ball mills	$1,269.12
95	Padlock or tack weld mill access doors closed.	$955.84
96	Establish natural ventilation or maintain HVAC fan to provide minimum air ch	$1,020.08
97	Pull electrical supply breakers on all electrical equipment except lighting and H	$1,935.68

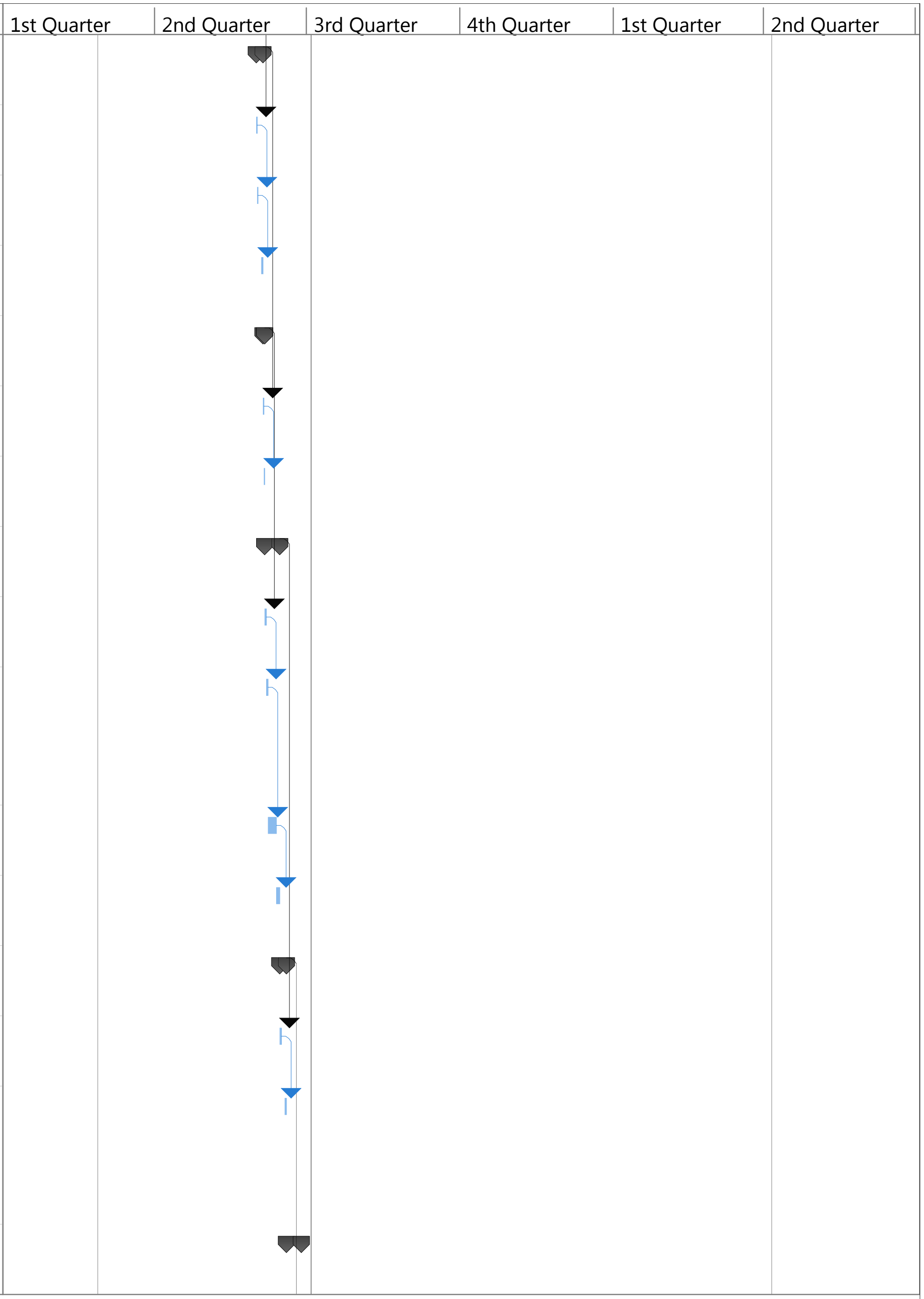
ID	Task Name	Cost
98	**FGD Byproduct Dewatering - Hydrocyclones and Vacuum Filters**	**$8,032.96**
99	Wash vacuum filter belt and remove all accumulated solids	$2,538.24
100	Wash out vacuum receiver, remove pressure relief valve and access door. Inst	$1,571.12
101	Establish natural ventilation or maintain HVAC fan to provide minimum air ch	$1,020.08
102	Pull electrical supply breakers on all electrical equipment except lighting and	$2,903.52
103	**SCR**	**$11,098.96**
104	Vacuum fly ash from catalyst.	$2,538.24
105	Remove catalyst of salvage or disposal.	$3,180.80
106	Padlock or tack weld access doors shut.	$955.84
107	Remove ammonia from storage tank for resale.	$775.92
108	Wash out and drain storage tank and supply piping.	$775.92
109	Vent storage tank and all piping. Leave vent and drain valves open or remove.	$936.56
110	Pull electrical supply breakers on all electrical equipment except lighting and	$1,935.68
111	**Turbine(s) and Condenser**	**$5,715.76**
112	Drain hotwell and leave doors open.	$936.56
113	Open main turbine doors.	$955.84
114	Open bfp turbine doors.	$955.84
115	Remove lube oil.	$2,867.52
116	**Generator**	**$6,618.48**
117	Verify that generator circuit breaker is open and racked out or that high-volta	$483.92
118	Verify that generator field breaker or contactor (if applicable) is open.	$483.92
119	De-energize power supplies to generator excitation system at the source.	$483.92
120	De-energize AC and DC power supplies to generator and exciter space heater	$483.92
121	Drain generator and exciter cooling water systems (if applicable).	$936.56
122	Disconnect and remove hydrogen gas tanks and purge generator hydrogen sy	$1,834.56
123	Disconnect and remove fire protection system gas/foam tanks and purge fire	$1,911.68
124	**Circulation Water and Turbine Cooling Water System**	**$3,707.68**
125	Drain.	$1,834.56
126	Open water box doors.	$955.84
127	Drain any circulating water chemical feed tanks.	$917.28
128	**Compressed Air System**	**$2,945.44**
129	Open vents and drains.	$917.28
130	Remove desiccant from desiccant dryers.	$2,028.16
131	**Auxiliary Steam System**	**$1,834.56**
132	Drain water from system.	$917.28
133	Remove aux boiler chemicals.	$917.28
134	**Auxiliary Cooling Water System**	**$917.28**
135	Drain water from system.	$917.28
136	**Condenser Air Extraction and Waterbox Priming System**	**$917.28**
137	Drain water from system.	$917.28
138	**Building Heating System**	**$917.28**
139	Drain water from system.	$917.28
140	**Battery System**	**$4,775.20**
141	De-energize all battery chargers from the source.	$483.92
142	Open all AC and DC circuit breakers and/or fused switches on battery charger	$483.92
143	Remove and dispose of battery electrolyte.	$1,903.68
144	Remove and dispose of battery cells.	$1,269.12
145	Clean up and dispose of electrolyte on surface areas around batteries.	$634.56
146	**Post Retirement Activities**	**$28,182.40**

ID	Task Name	Cost
147	Post Retirement Activities	$28,182.40

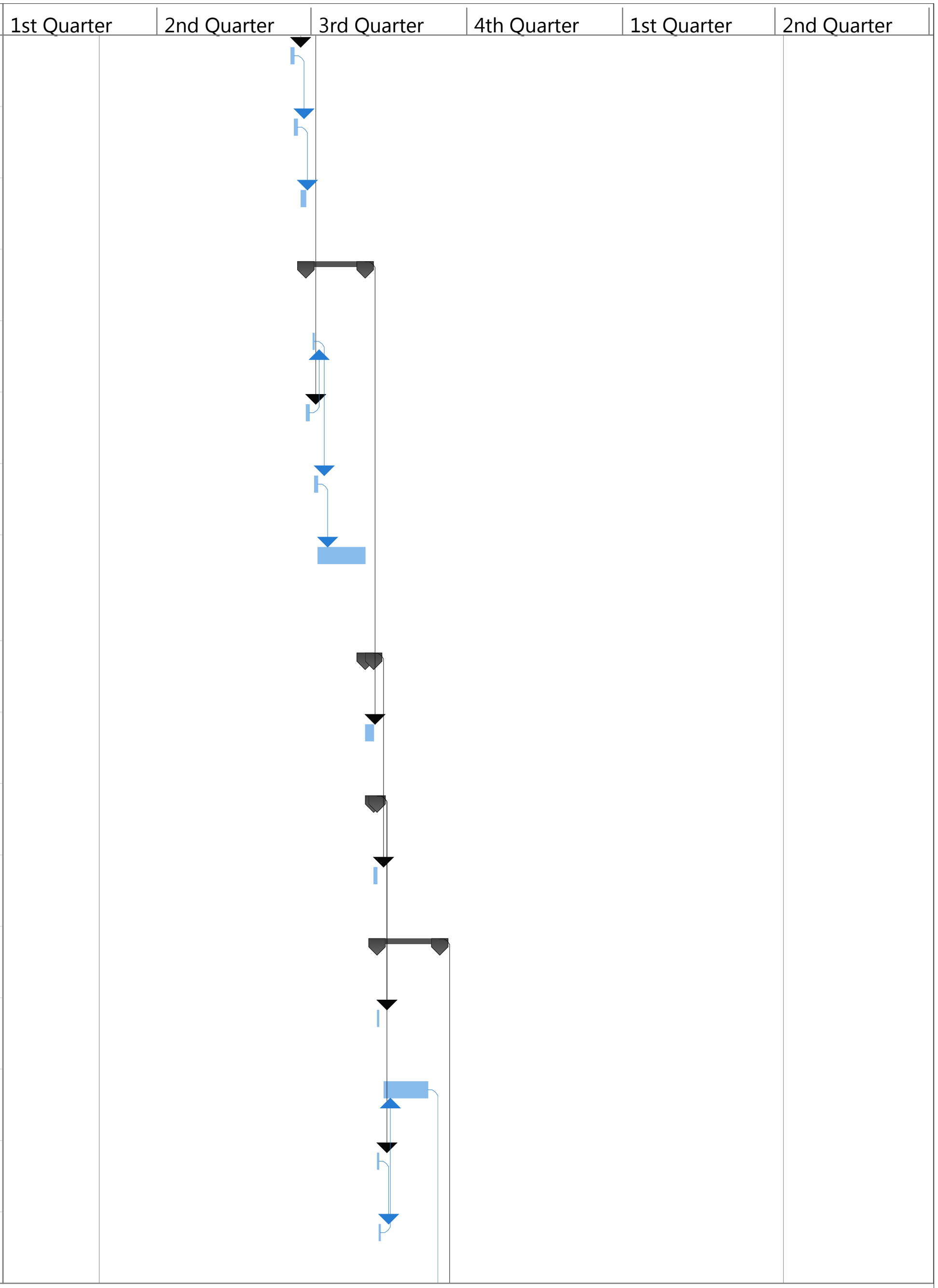
ID	Task Name
0	**Iatan 2 Retirement**
1	**Iatan 2 Retirement**
2	**Pre-Engineering**
3	Permit review and engineering analysis, establish isolation points, and confirm fuel yard inventory has been reduced to zero tons.
4	**KCL&L Overhead Costs**
5	KCP&L Retirement Manager
6	**Equipment Rentals**
7	Vacuum truck
8	**Retirement**
9	**Electrical**
10	**Medium and Low Voltage Draw out Switchgear**
11	De-energize all buses at the source.
12	Open all circuit breakers.
13	Rack all circuit breakers into the fully withdrawn, disconnected position.
14	Verify that the closing/tripping springs are discharged.
15	De-energize control power and auxiliary power circuits of each circuit breaker at the source and by opening control power circuit breakers or removing fuses in each breaker cubicle.



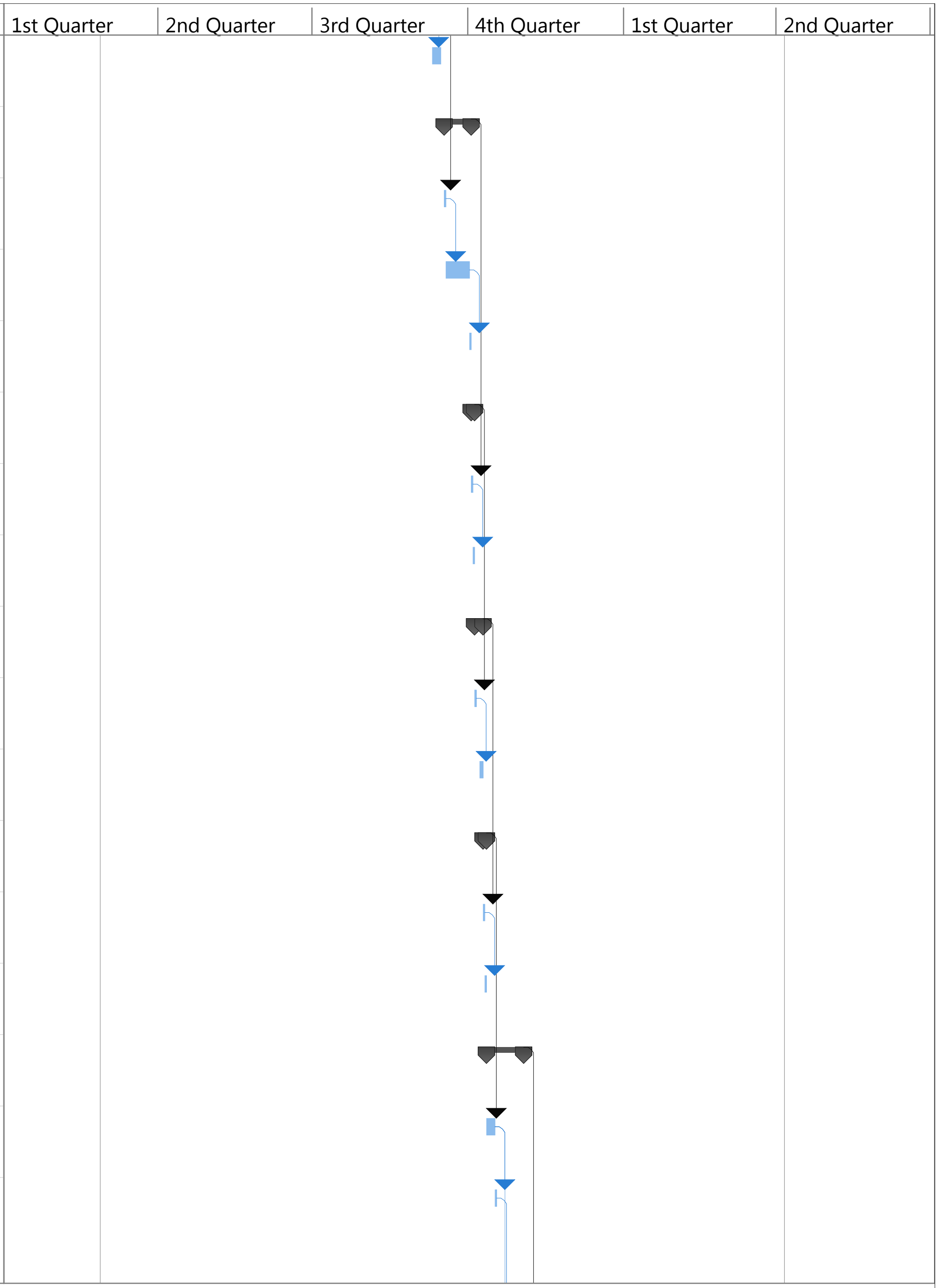
ID	Task Name
16	**Motor Control Centers**
17	De-energize all buses at the source.
18	Open all circuit breakers and disconnect switches.
19	Remove all fuses in control circuits.
20	**Low-voltage Switchboards and Panelboards**
21	De-energize all buses at the source.
22	Open all circuit breakers and disconnect switches.
23	**Oil-Filled Power Transformers**
24	De-energize all transformer primaries and verify that the secondary is de-energized.
25	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.
26	Drain and dispose of oil.
27	Clean up and dispose of oil on surface areas around the transformers on in containment pits.
28	**Dry-type Power Transformers**
29	De-energize all transformer primaries and verify that the secondary is de-energized.
30	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.
31	**Motors**



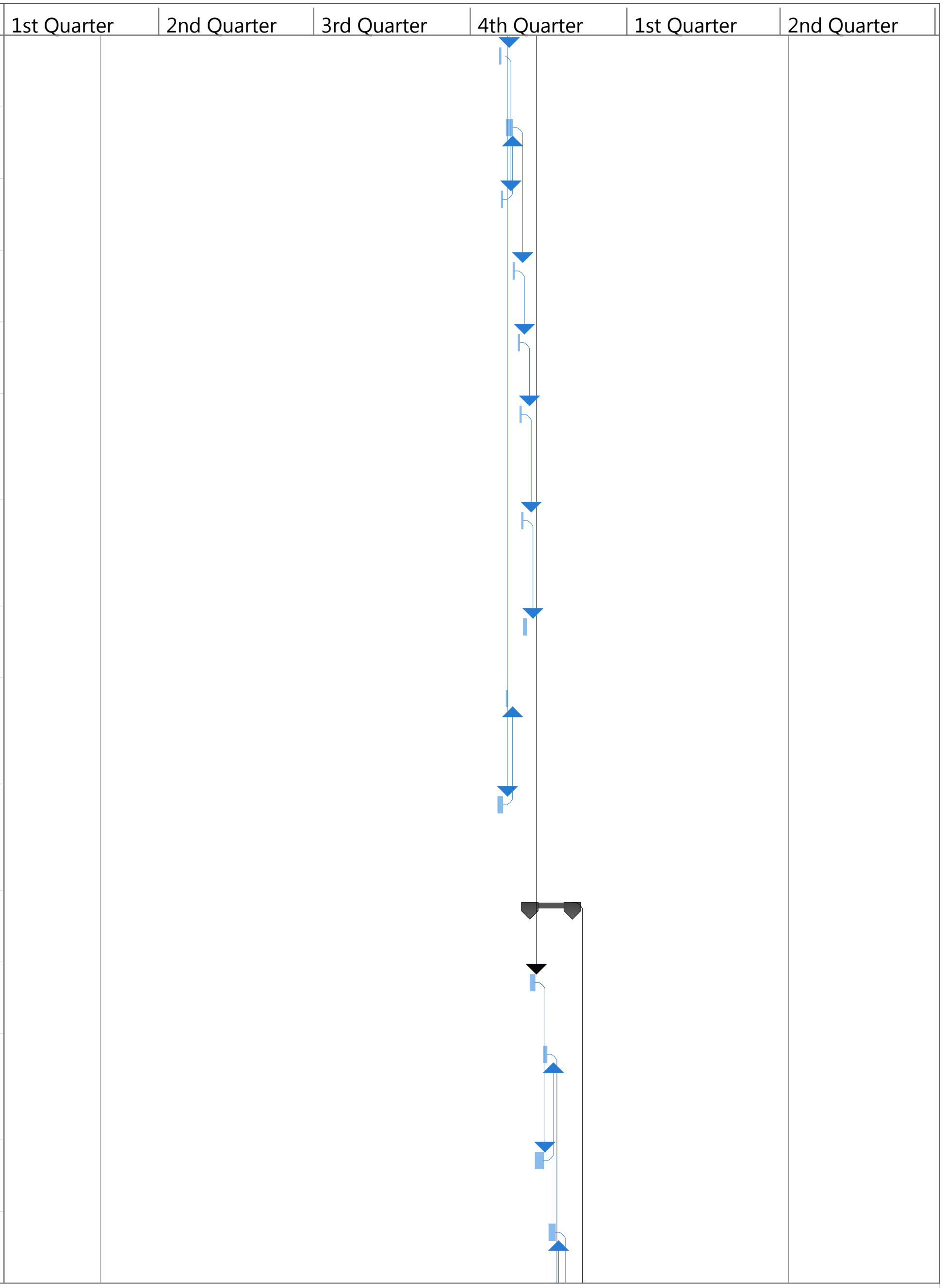
ID	Task Name
32	De-energize all primary power at the source.
33	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.
34	Drain lube oil system (if applicable) and dispose of oil.
35	**Coal Handling**
36	Empty all transfer hoppers.
37	Burn out coal silos.
38	Confirm all fuel lines, conveyors and trippers are clear of fuel.
39	Perform cleaning of the coal handling equipment to assure that all coal and coal dust has been removed from site.
40	**Fuel Oil and Igniter System**
41	Drain fuel oil system
42	**Boiler Chemical Feed**
43	Drain all chemical feed tanks.
44	**Boiler**
45	Open boiler doors.
46	Gas side - perform cleaning of the boiler and bottom ash system.
47	Drain boiler, drum, downcomers and headers.
48	Open drum doors.



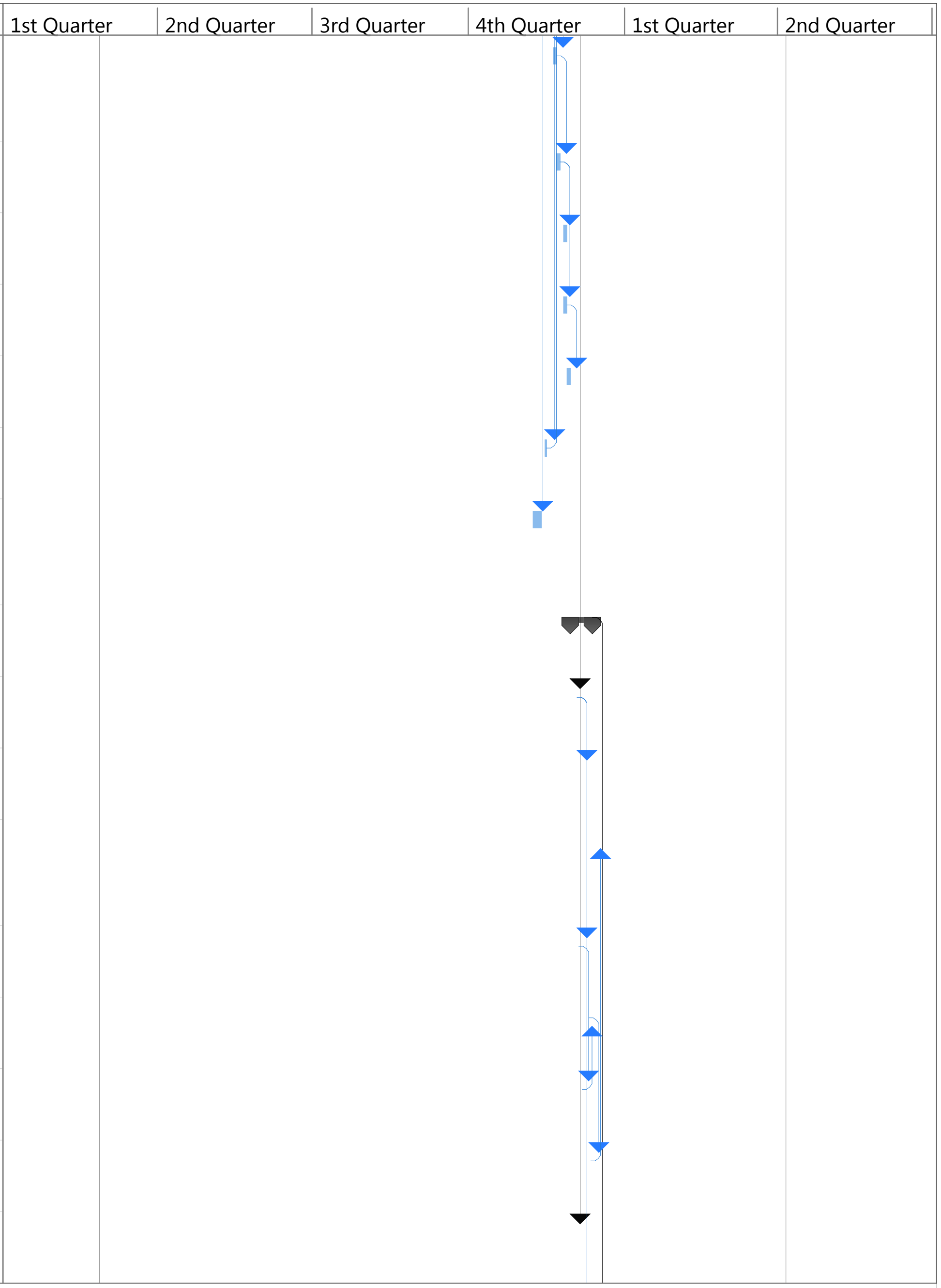
ID	Task Name
49	Drain and clean the submerged flight conveyor system.
50	**Stack and Ductwork**
51	Open ductwork doors.
52	Perform extensive cleaning of the ductwork.
53	Place cap over stack opening to keep moisture out.
54	**Condensate and Feedwater Piping**
55	Drain water from the system.
56	Leave open vents and drains.
57	**Feedwater heaters**
58	Drain feedwater heaters
59	Leave open vents and drains.
60	**Deaerator and Deaerator Storage Tank**
61	Drain Deaerator and Storage
62	Leave open vents and drains.
63	**Baghouse**
64	Multiple cleaning cycles for filter bags.
65	Open all vent and drain lines on bag cleaning air and control air lines. Leave in open position or remove vent valves.



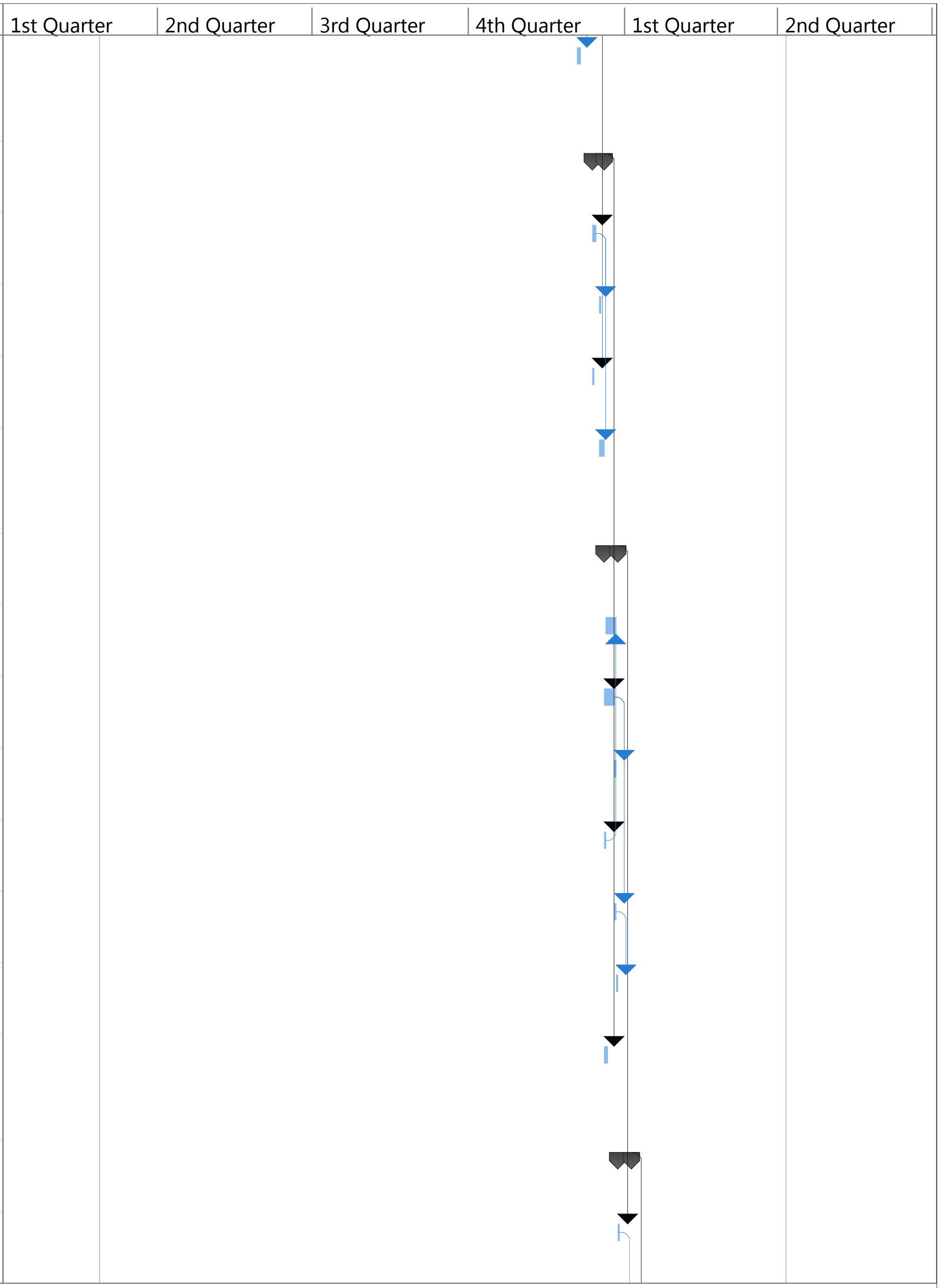
ID	Task Name
66	Remove all filter bags and cages.
67	Clear hoppers of all ash
68	Mechanically secure all compartment dampers and hopper outlet valves in open position.
69	Disconnect ash transport piping and washdown baghouse hoppers and interior of casing.
70	Install bird screens across hopper ash outlet and ash line flanges.
71	Padlock or tack weld all hopper doors shut. (note: if ash hopper doors are indoors, they could be removed and the opening covered with bird screens.)
72	If walk-in plenum, padlock or tack weld all outlet plenum doors and compartment ventilation dampers shut.
73	If top-door plenum, close and secure top doors and remove/disable door lift hoist.
74	If top-door plenum, establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in penthouse enclosure.
75	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.
76	**Wet FGD system**
77	Multiple mist eliminator wash cycles. Remove ME's from absorber.
78	Drain and flush all slurry and reclaim water pumps and piping. Leave vent and drain valves open or remove. Install bird screens across drain openings.
79	Drain and wash out the reaction tank, reagent storage tank, recycle water tank, absorber blowdown tank, etc.
80	Leave all tank drain valves open or remove. Install bird screens across openings.



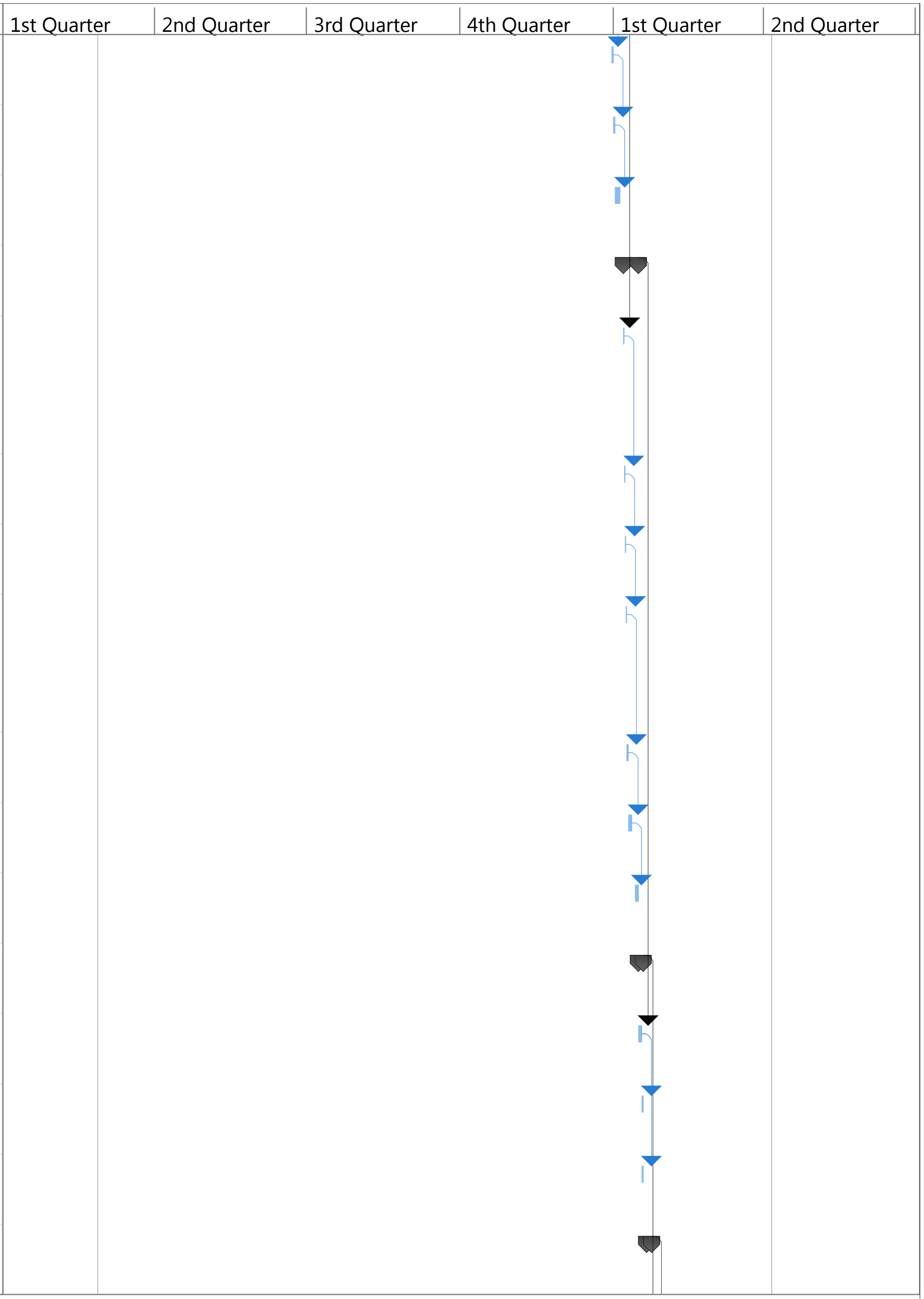
ID	Task Name
81	Drain all makeup and mist eliminator water pumps and piping. Leave vent and drain valves open or remove. Install bird screens across drain openings.
82	Mechanically secure all flue gas isolation dampers in open position or remove damper blades.
83	Remove solids from all inlet and outlet ductwork as necessary
84	Open all vent station air and control air lines. Leave in open position or remove vent valves
85	Padlock or tack weld all access doors to modules and ductwork shut.
86	Remove access doors to open-top tanks.
87	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.
88	**FGD Reagent Preparation-Limestone wet Scrubber**
89	Remove limestone from day bins.
90	Removed cartridges/bags from bin vent filters
91	Padlock or tack weld all bin access doors shut. (note: if doors are indoors, they could be removed and the opening covered with bird screens.)
92	Remove bin discharge isolation valve and install bird screen.
93	Thoroughly wash and drain mills
94	Remove balls from any ball mills
95	Padlock or tack weld mill access doors closed.
96	Establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in building.



ID	Task Name
97	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.
98	**FGD Byproduct Dewatering - Hydrocyclones and Vacuum Filters**
99	Wash vacuum filter belt and remove all accumulated solids
100	Wash out vacuum receiver, remove pressure relief valve and access door. Install bird screens.
101	Establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in building.
102	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.
103	**SCR**
104	Vacuum fly ash from catalyst.
105	Remove catalyst of salvage or disposal.
106	Padlock or tack weld access doors shut.
107	Remove ammonia from storage tank for resale.
108	Wash out and drain storage tank and supply piping.
109	Vent storage tank and all piping. Leave vent and drain valves open or remove. Install bird screens.
110	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.
111	**Turbine(s) and Condenser**
112	Drain hotwell and leave doors open.

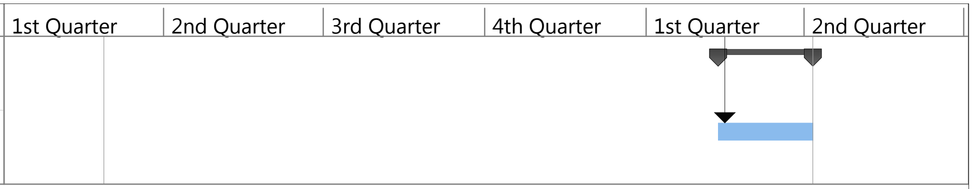


ID	Task Name
113	Open main turbine doors.
114	Open bfp turbine doors.
115	Remove lube oil.
116	**Generator**
117	Verify that generator circuit breaker is open and racked out or that high-voltage disconnect switch on substation side of GSU transformer is locked in the open position.
118	Verify that generator field breaker or contactor (if applicable) is open.
119	De-energize power supplies to generator excitation system at the source.
120	De-energize AC and DC power supplies to generator and exciter space heaters, cooling equipment, controls, lighting, etc. at the source and open circuit breakers or remove fuses at the generator and exciter.
121	Drain generator and exciter cooling water systems (if applicable).
122	Disconnect and remove hydrogen gas tanks and purge generator hydrogen system.
123	Disconnect and remove fire protection system gas/foam tanks and purge fire protection system.
124	**Circulation Water and Turbine Cooling Water System**
125	Drain.
126	Open water box doors.
127	Drain any circulating water chemical feed tanks.
128	**Compressed Air System**



ID	Task Name
129	Open vents and drains.
130	Remove desiccant from desiccant dryers.
131	**Auxiliary Steam System**
132	Drain water from system.
133	Remove aux boiler chemicals.
134	**Auxiliary Cooling Water System**
135	Drain water from system.
136	**Condenser Air Extraction and Waterbox Priming System**
137	Drain water from system.
138	**Building Heating System**
139	Drain water from system.
140	**Battery System**
141	De-energize all battery chargers from the source.
142	Open all AC and DC circuit breakers and/or fused switches on battery chargers and disconnect cables from batteries.
143	Remove and dispose of battery electrolyte.
144	Remove and dispose of battery cells.
145	Clean up and dispose of electrolyte on surface areas around batteries.

ID	Task Name
146	**Post Retirement Activities**
147	Post Retirement Activities



Iatan 2 Dismantlement

Owner Additional Costs				
Pre-Dismantlement Activities		$1,262,586		
Overhead During Dismantlement		$2,291,699		
Post-Dismantlement Activities		$79,455		
Owner Costs Total			$3,633,740	
Demolition General Contractor (DGC) Costs				
Additional Site Management		$1,521,477		
Equipment Rental		$2,606,917		
Consumables		$2,845,750		
Scrap Crew(s)		$2,538,269		
Dismantlement*		$6,234,218		
DGC Insurance	2.00%	$314,933		
Contingency/Profit	15.00%	$2,409,235		
Performance Bond	2.00%	$369,416.00		
Contractor Costs Total:			$18,840,216	
Total:				$22,473,955
Owner Internal Costs:	5.00%			$1,123,698
Owner Contingency:	25.00%			$5,899,413
Iatan Unit 2 Dismantlement Opinion of Probable Cost:				$29,497,067

COMMON

Iatan Common Retirement

Owner Costs				
Pre-Retirement Activities		$55,645		
Retirement Activities		$401,998		
Post-Retirement Activities		$34,035		
Owner Direct Total			$491,678	
Owner Internal Costs	5.00%		$24,584	
Owner Contingency:	25.00%		$129,066	
Iatan Common Retirement Opinion of Probable Cost:				$645,328

Activities Required by Permit or Regulation

Iatan Fuel Storage	$191,130	
Iatan Oil Storage	$53,766	
Iatan Landfill Retirement	$3,415,033	
Iatan Ash Pond(s)	$37,236,839	
Activities Required by Permit or Regulation		$40,896,768

Iatan Common Retirement

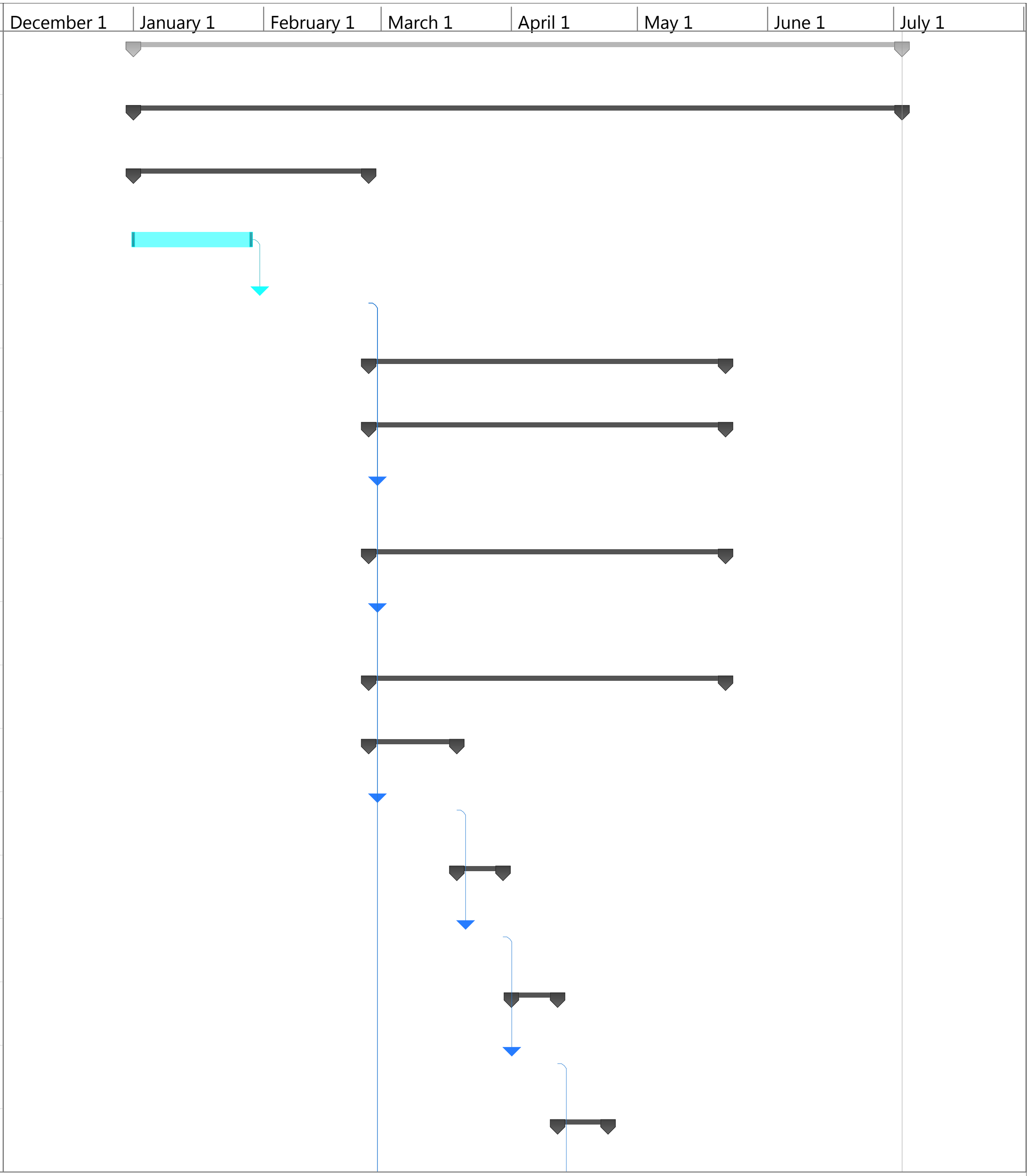
ID	Task Name	Cost
0	**Iatan Common Retirement**	**$491,678.16**
1	**Iatan Common Retirement**	**$491,678.16**
2	**Pre-Retirement Activities**	**$55,644.80**
3	Permitting Review	$27,822.40
4	Develop Detailed Retirement Plan	$27,822.40
5	**Overheads**	**$108,867.92**
6	**Common Retirement Overheads**	**$95,428.40**
7	Added Overhead Staff for Common Retirement	$95,428.40
8	**Common Retirment Equipment Rental**	**$13,439.52**
9	Common Removal Equipment Rental	$13,439.52
10	**Retirement Activities**	**$293,130.24**
11	**Administration Building**	**$19,040.40**
12	Secure Administration Building	$19,040.40
13	**Fuel Yard Office Building**	**$11,424.24**
14	Secure Fuel Yard Office Building	$11,424.24
15	**Training Building**	**$11,424.24**
16	Secure Training Building	$11,424.24
17	**Warehouse(s)**	**$11,726.24**
18	Secure Unit 1 Warehouse	$4,110.08
19	Secure Unit 2 Warehouse	$7,616.16
20	**Maintenance Shop**	**$28,562.40**
21	Secure Maintenance Shop	$28,562.40
22	**Fuel Yard**	**$146,594.00**
23	**Transfer Towers**	**$89,922.00**
24	Clean Transfer Tower 1	$4,231.44
25	Clean Transfer Tower 2	$4,231.44
26	Clean and Secure Crusher Building	$7,052.40
27	Clean Stockout Conveyor Reclaim Pit	$14,104.80
28	**Conveyors**	**$19,746.72**
29	Clean Conveyor 2A, 4, 5B 6A, 6B, 7A and 7B	$19,746.72
30	**Car Dumper**	**$9,873.36**
31	Empty Car Dumper Hoppers	$1,410.48
32	Clean Car Dumper	$4,231.44
33	Secure Dumper Building	$4,231.44
34	**Remove Stacker/Reclaimer**	**$21,410.00**
35	Clean and Secure Stacker/Reclaimer	$7,052.40
36	**Unit 1 Reclaim**	**$5,641.92**
37	Clean Unit 1 Reclaim	$2,820.96
38	Secure Unit 1 Reclaim Building	$2,820.96
39	**Sewage Treatment**	**$4,724.64**
40	Clean Sewage Treatment and Transfer Points	$4,724.64
41	**Fuel Oil Storage and Unloading**	**$917.28**
42	Remove Fuel Oil from Fuel Oil Storage and Vent	$917.28
43	**Yard Fire Water Systems**	**$917.28**
44	Drain Yard Fire Water System	$917.28
45	**Reagent Prep and Gypsum Handling**	**$32,794.96**
46	Clean and Secure Limestone Unloading Facility	$4,231.44
47	Clean and Secure Limestone Storage Facility	$4,231.44
48	Clean Limestone Conveyor	$4,307.28

Exhibit RAK-9

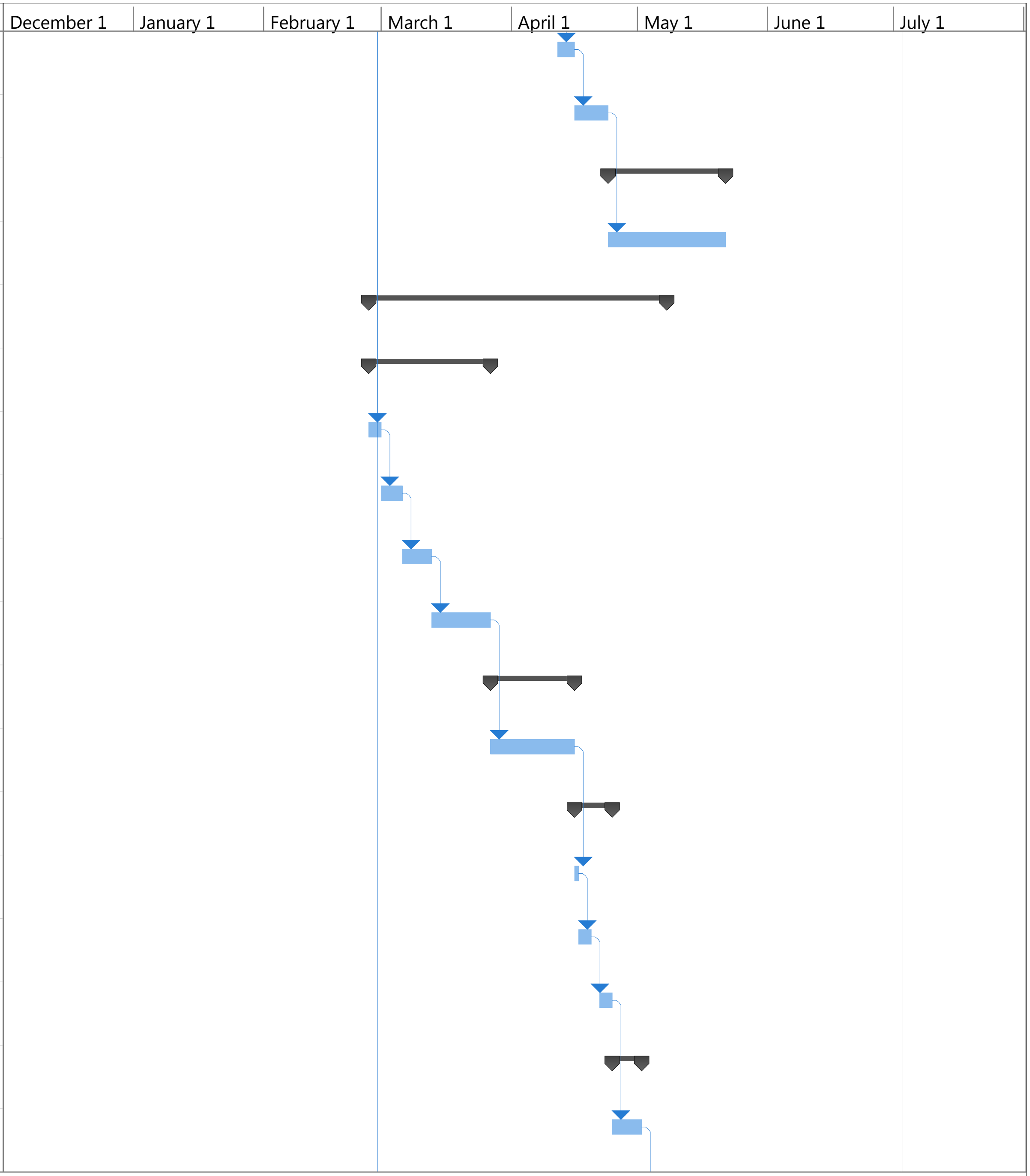
Iatan Common Retirement

ID	Task Name	Cost
49	Clean and Secure Limestone Prep Building	$7,178.80
50	Clean Gypsum Stackout Conveyor	$2,871.52
51	Clean and Secure PCM-1	$2,871.52
52	Clean and Secure PCM-2	$2,871.52
53	Clean and Secure the Vacuum Pump and Air Compressor Building	$4,231.44
54	**Water Pretreatment and ZLD**	**$25,004.56**
55	Drain and Clean Clarifiers	$4,231.44
56	Drain and Clean ZLD System	$8,462.88
57	Clean and Secure ZLD Building	$9,489.28
58	Drain and Vent Storage Tanks	$2,820.96
59	**Post Retirement Closure Activities**	**$34,035.20**
60	Post Retirement Closure Activities	$34,035.20

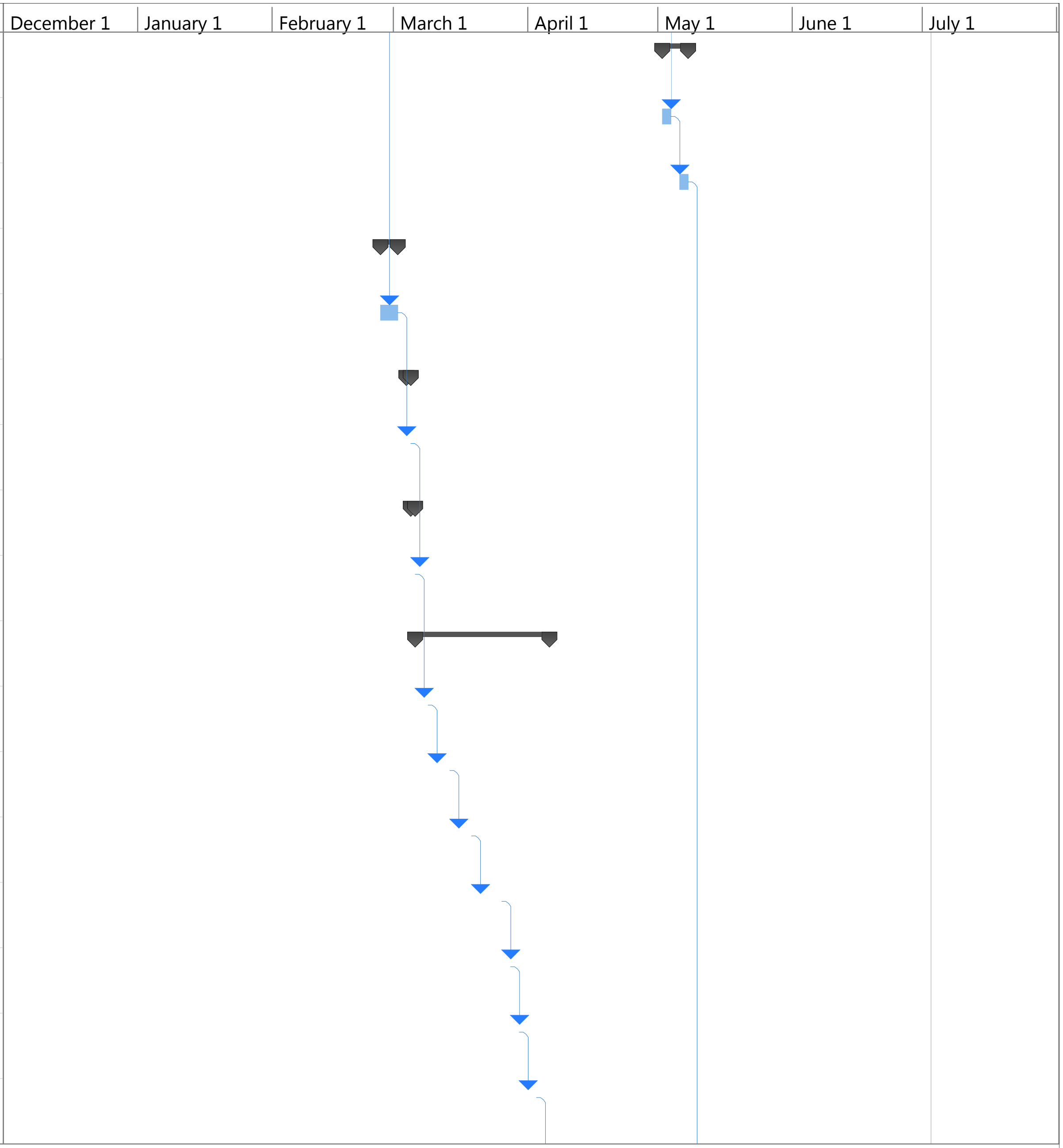
ID	Task Name	Duration
0	**Iatan Common Retirement**	**131 days**
1	**Iatan Common Retirement**	**131 days**
2	**Pre-Retirement Activities**	**40 days**
3	Permitting Review	20 days
4	Develop Detailed Retirement Plan	20 days
5	**Overheads**	**61 days**
6	**Common Retirement Overheads**	**61 days**
7	Added Overhead Staff for Common Retirement	61 days
8	**Common Retirment Equipment Rental**	**61 days**
9	Common Removal Equipment Rental	61 days
10	**Retirement Activities**	**61 days**
11	**Administration Building**	**15 days**
12	Secure Administration Building	15 days
13	**Fuel Yard Office Building**	**9 days**
14	Secure Fuel Yard Office Building	9 days
15	**Training Building**	**9 days**
16	Secure Training Building	9 days
17	**Warehouse(s)**	**8 days**



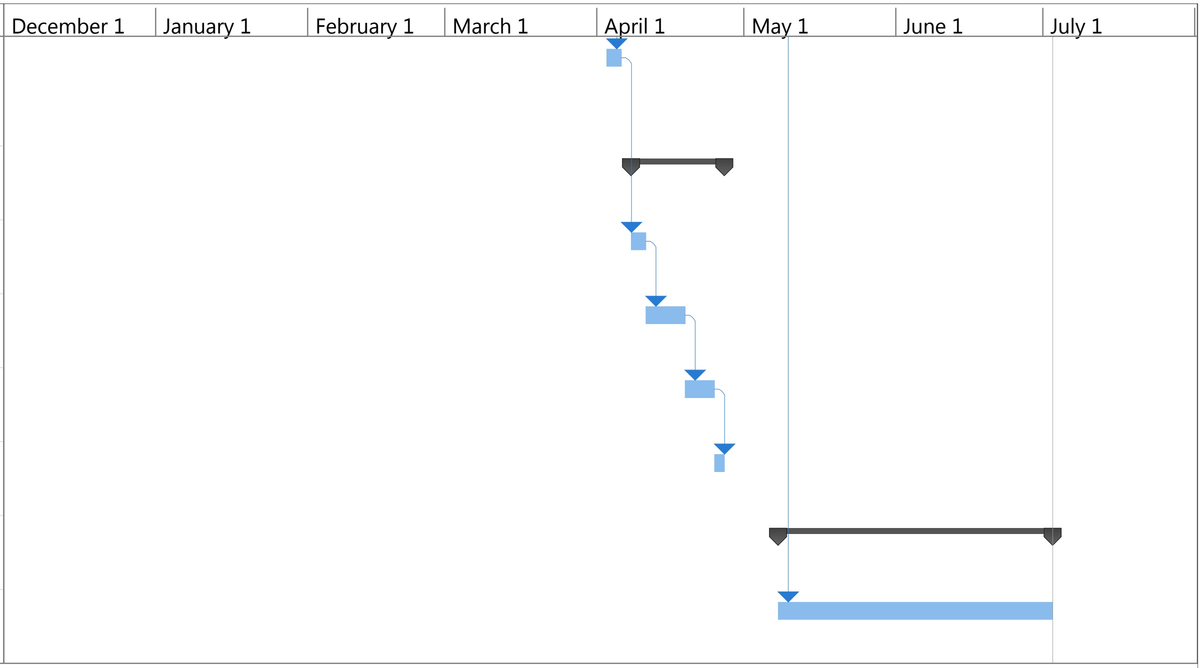
ID	Task Name	Duration
18	Secure Unit 1 Warehouse	2 days
19	Secure Unit 2 Warehouse	6 days
20	**Maintenance Shop**	**20 days**
21	Secure Maintenance Shop	20 days
22	**Fuel Yard**	**51 days**
23	**Transfer Towers**	**21 days**
24	Clean Transfer Tower 1	3 days
25	Clean Transfer Tower 2	3 days
26	Clean and Secure Crusher Building	5 days
27	Clean Stockout Conveyor Reclaim Pit	10 days
28	**Conveyors**	**14 days**
29	Clean Conveyor 2A, 4, 5B 6A, 6B, 7A and 7B	14 days
30	**Car Dumper**	**7 days**
31	Empty Car Dumper Hoppers	1 day
32	Clean Car Dumper	3 days
33	Secure Dumper Building	3 days
34	**Remove Stacker/Reclaimer**	**5 days**
35	Clean and Secure Stacker/Reclaimer	5 days



ID	Task Name	Duration
36	**Unit 1 Reclaim**	**4 days**
37	Clean Unit 1 Reclaim	2 days
38	Secure Unit 1 Reclaim Building	2 days
39	**Sewage Treatment**	**4 days**
40	Clean Sewage Treatment and Transfer Points	4 days
41	**Fuel Oil Storage and Unloading**	**1 day**
42	Remove Fuel Oil from Fuel Oil Storage and Vent	1 day
43	**Yard Fire Water Systems**	**1 day**
44	Drain Yard Fire Water System	1 day
45	**Reagent Prep and Gypsum Handling**	**23 days**
46	Clean and Secure Limestone Unloading Facility	3 days
47	Clean and Secure Limestone Storage Facility	3 days
48	Clean Limestone Conveyor	3 days
49	Clean and Secure Limestone Prep Building	5 days
50	Clean Gypsum Stackout Conveyor	2 days
51	Clean and Secure PCM-1	2 days
52	Clean and Secure PCM-2	2 days



ID	Task Name	Duration
53	Clean and Secure the Vacuum Pump and Air Compressor Building	3 days
54	**Water Pretreatment and ZLD**	**15 days**
55	Drain and Clean Clarifiers	3 days
56	Drain and Clean ZLD System	6 days
57	Clean and Secure ZLD Building	4 days
58	Drain and Vent Storage Tanks	2 days
59	**Post Retirement Closure Activities**	**40 days**
60	Post Retirement Closure Activities	40 days



Iatan Common Dismantlement

Owner Additional Costs				
Pre-Dismantlement Activities		$0		
Overhead During Dismantlement		$0		
Post-Dismantlement Activities				
Owner Costs Total			$0	
Demolition General Contractor (DGC) Costs				
Additional Site Management		$91,204		
Equipment Rental		$440,123		
Consumables		$659,404		
Scrap Crew(s)		$643,967		
Dismantlement		$14,757,051		
DGC Insurance	2.00%	$331,835		
Contingency/Profit	15.00%	$2,538,538		
Performance Bond	2.00%	$389,242.42		
Contractor Costs Total:			$19,851,363	
Total:				$19,851,363
Owner Internal Costs:	5.00%			$992,568
Owner Contingency:	25.00%			$5,210,983
Iatan Common Dismantlement Opinion of Probable Cost:				$26,054,914

Iatan Common

ID	Task Name	Cost
0	**Iatan Common**	**$16,591,748.40**
1	**Iatan Common Dismantlement**	**$16,591,748.40**
2	**Overheads**	**$1,834,697.84**
3	**Common Removal Overheads**	**$91,203.83**
4	Added Overhead Staff for Common Removals	$91,203.83
5	**Common Removal Equipment Rental**	**$440,122.56**
6	Common Removal Equipment Rental	$440,122.56
7	**Scrap Crew**	**$643,967.13**
8	Crew(s) to Handle Scrap Material	$643,967.13
9	**Demolition Contractor Consummables**	**$659,404.32**
10	Consummables	$659,404.32
11	**Dismantlement Activities**	**$14,757,050.56**
12	**Administration Building**	**$37,009.60**
13	Remove Administration Building	$37,009.60
14	**Fuel Yard Office Building**	**$18,504.80**
15	Remove Fuel Yard Office Building	$18,504.80
16	**Training Building**	**$18,504.80**
17	Remove Training Building	$18,504.80
18	**Parking Lots and Plant Roads**	**$85,122.08**
19	Plant Roads and Parking Areas	$74,019.20
20	Guard Shack	$11,102.88
21	**Warehouse(s)**	**$37,009.60**
22	Remove Unit 1 Warehouse	$18,504.80
23	Remove Unit 2 Warehouse	$18,504.80
24	**Maintenance Shop**	**$23,984.80**
25	Remove Maintenance Shop	$23,984.80
26	**Fuel Yard**	**$777,201.60**
27	**Remove Transfer Towers**	**$481,124.80**
28	Transfer Tower 1	$37,009.60
29	Transfer Tower 2	$37,009.60
30	Crusher Building	$74,019.20
31	Stockout Conveyor Reclaim Pit	$92,524.00
32	**Remove Conveyors**	**$129,533.60**
33	Conveyor 2A, 4, 5B 6A, 6B, 7A and 7B	$129,533.60
34	**Remove Car Dumper**	**$92,524.00**
35	Remove Underground Equipment	$18,504.80
36	Remove Above Ground Equipment	$37,009.60
37	Remove Building	$18,504.80
38	Backfill Dumper Structure	$18,504.80
39	**Remove Stacker/Reclaimer**	**$7,401.92**
40	Remove Stacker/Reclaimer	$3,700.96
41	**Remove Unit 1 Reclaim**	**$66,617.28**
42	Remove Underground Equipment	$18,504.80
43	Remove Above Ground Equipment	$18,504.80
44	Remove Building	$14,803.84
45	Backfill Structure	$14,803.84
46	**Sewage Treatment**	**$22,205.76**
47	Remove Sewage Treatment Pumps and Miscellaneous Equipment	$7,401.92
48	Remove Sewage Treatment Concrete Structures	$14,803.84

Iatan Common

ID	Task Name	Cost
49	**Yard Fire Water Systems**	**$37,009.60**
50	Remove Hydrants and Fire Water System Piping Down to 3' Below Grade	$37,009.60
51	**Water Pretreatment Clarifiers and ZLD**	**$125,832.64**
52	Remove Clarifier Vessels	$11,102.88
53	Remove Pump House	$18,504.80
54	Remove Clarifier Water Storage Tanks	$18,504.80
55	Remove Water Treatment Equipment	$11,102.88
56	Remove Water Treatment Building	$18,504.80
57	Remove ZLD Equipment	$11,102.88
58	Remove ZLD Building	$18,504.80
59	Remove Condensate Storage Tanks	$18,504.80
60	**Stacks**	**$11,574,284.01**
61	Remove Unit 1 Stack to Grade	$4,406,642.74
62	Remove Common Stack to Grade	$7,167,641.27
63	**Reagent Prep and Gypsum Handling**	**$347,890.24**
64	Remove Limestone Unloading Facility	$37,009.60
65	Remove Limestone Storage Facility	$18,504.80
66	Remove Limestone Conveyor	$18,504.80
67	Remove Limestone Prep Building	$148,038.40
68	Remove Gypsum Stackout Conveyor	$18,504.80
69	Remove PCM-1	$7,401.92
70	Remove PCM-2	$7,401.92
71	Remove the Vacuum Pump and Air Compressor Building	$74,019.20
72	Remove Miscellaneous Equipment	$18,504.80
73	**Final Site Grading and Drainage**	**$1,652,491.03**
74	Final Site Grading and Drainage	$1,652,491.03

ID	Task Name	Duration
0	**Iatan Common Dismantlement**	**208 days**
1	**Iatan Common Dismantlement**	**208 days**
2	**Overheads**	**174 days**
3	**Common Removal Overheads**	**174 days**
4	Added Overhead Staff for Common Removals	174 days
5	**Common Removal Equipment Rental**	**174 days**
6	Common Removal Equipment Rental	174 days
7	**Scrap Crew**	**174 days**
8	Crew(s) to Handle Scrap Material	174 days
9	**Demolition Contractor Consummables**	**174 days**
10	Consummables	174 days
11	**Dismantlement Activities**	**208 days**
12	**Administration Building**	**10 days**
13	Remove Administration Building	10 days
14	**Fuel Yard Office Building**	**5 days**
15	Remove Fuel Yard Office Building	5 days
16	**Training Building**	**5 days**
17	Remove Training Building	5 days
18	**Parking Lots and Plant Roads**	**23 days**
19	Plant Roads and Parking Areas	20 days
20	Guard Shack	3 days
21	**Warehouse(s)**	**10 days**
22	Remove Unit 1 Warehouse	5 days
23	Remove Unit 2 Warehouse	5 days
24	**Maintenance Shop**	**10 days**
25	Remove Maintenance Shop	10 days
26	**Fuel Yard**	**144 days**
27	**Remove Transfer Towers**	**65 days**
28	Transfer Tower 1	10 days
29	Transfer Tower 2	10 days
30	Crusher Building	20 days

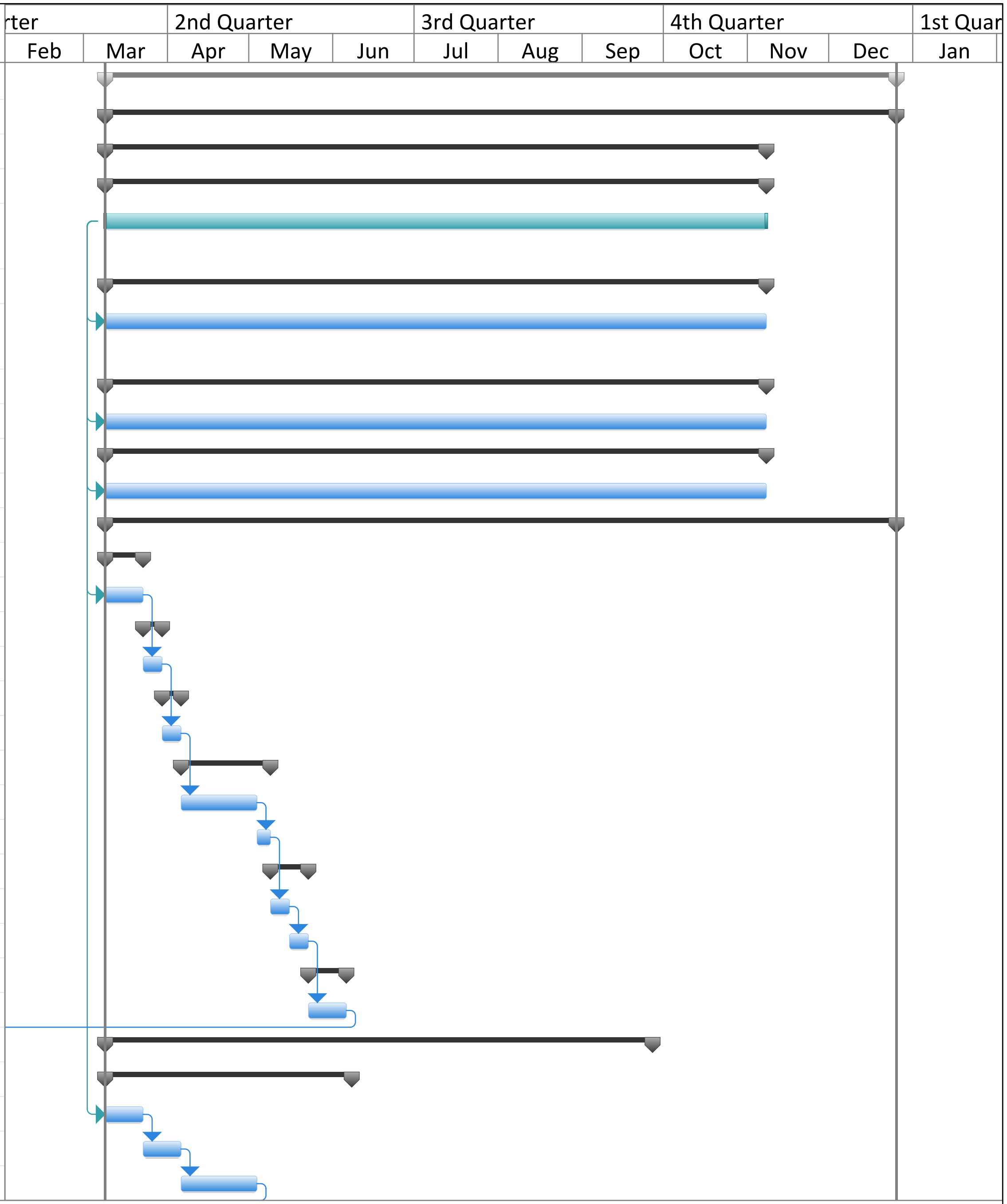
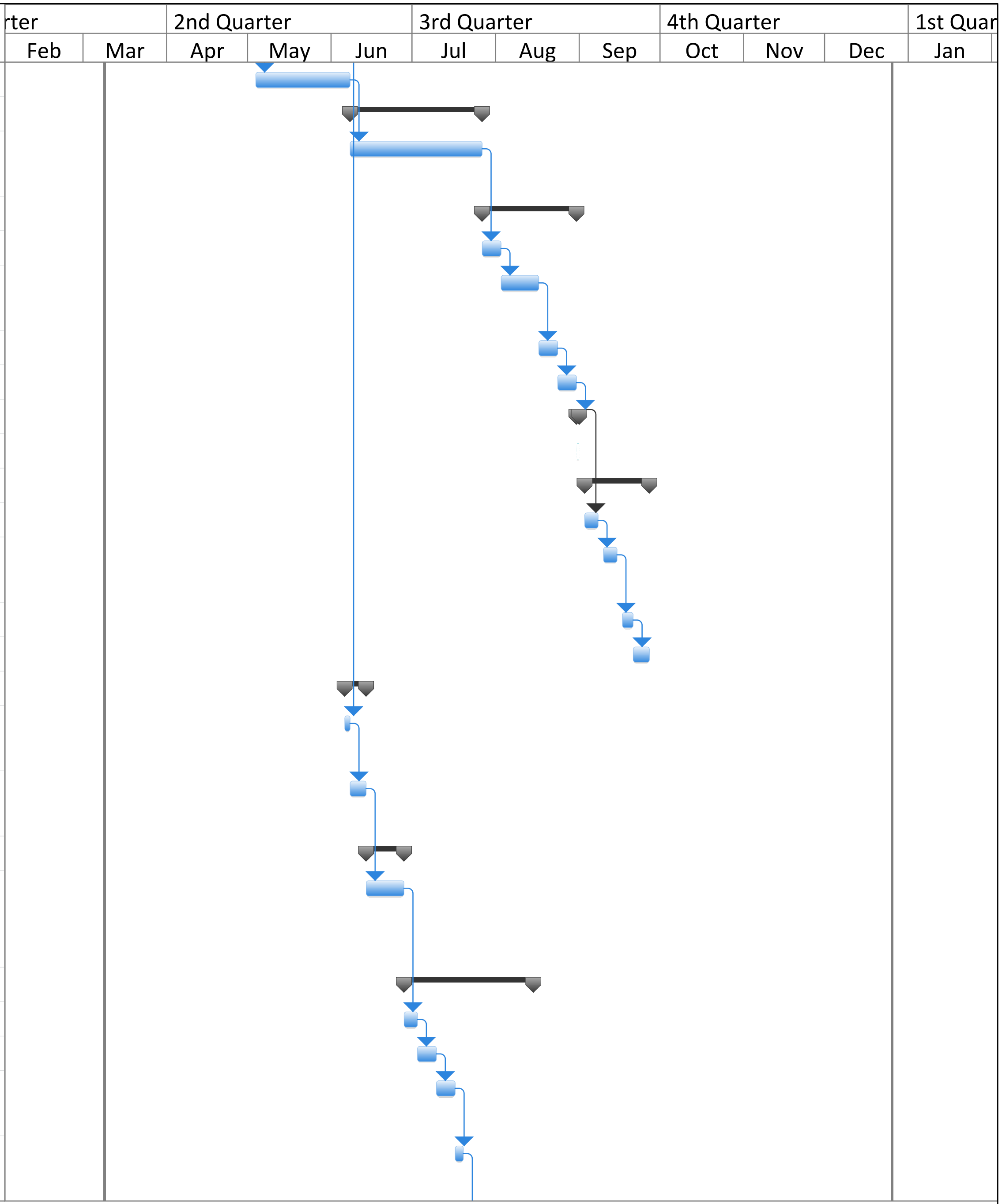
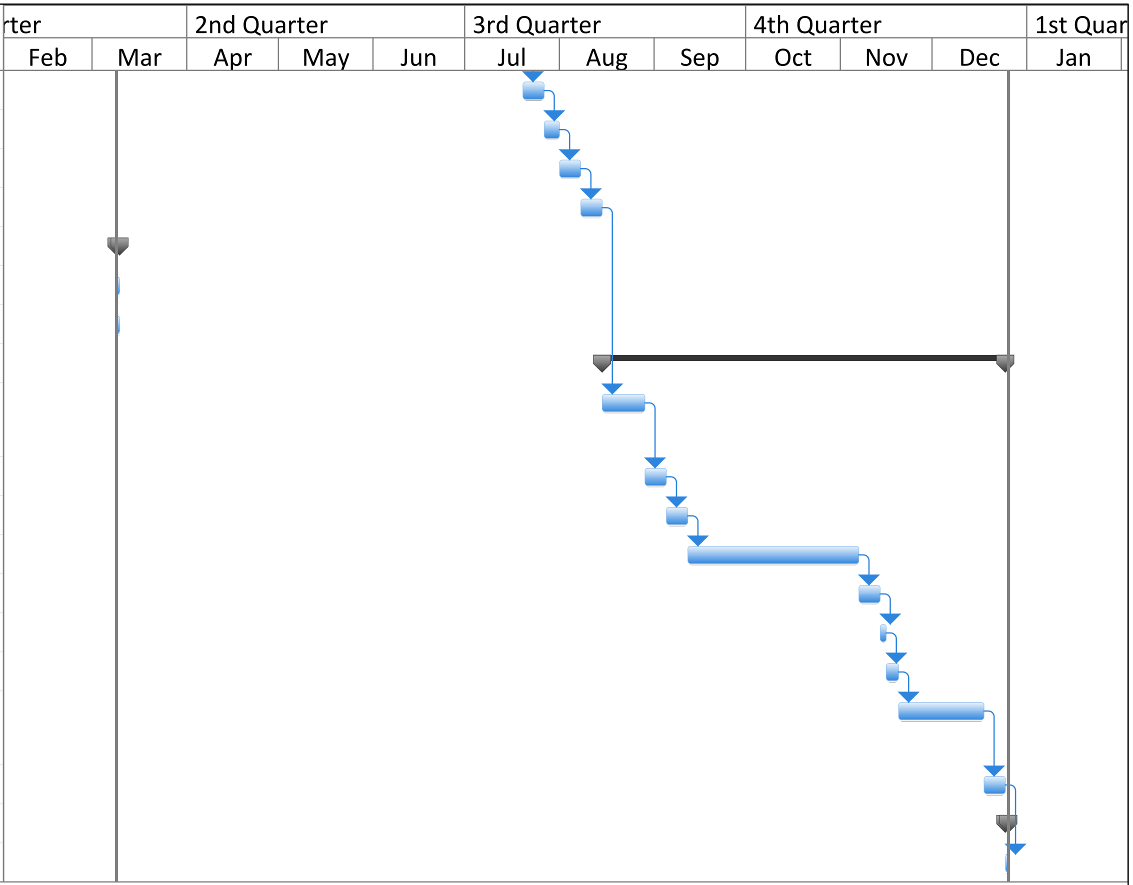


Exhibit RAK-9

ID	Task Name	Duration
31	Stockout Conveyor Reclaim Pit	25 days
32	**Remove Conveyors**	**35 days**
33	Conveyor 2A, 4, 5B 6A, 6B, 7A and 7B	35 days
34	**Remove Car Dumper**	**25 days**
35	Remove Underground Equipment	5 days
36	Remove Above Ground Equipment	10 days
37	Remove Building	5 days
38	Backfill Dumper Structure	5 days
39	**Remove Stacker/Reclaimer**	**1 day**
40	Remove Stacker/Reclaimer	1 day
41	**Remove Unit 1 Reclaim**	**18 days**
42	Remove Underground Equipment	5 days
43	Remove Above Ground Equipment	5 days
44	Remove Building	4 days
45	Backfill Structure	4 days
46	**Sewage Treatment**	**6 days**
47	Remove Sewage Treatment Pumps and Miscellaneous Equipment	2 days
48	Remove Sewage Treatment Concrete Structures	4 days
49	**Yard Fire Water Systems**	**10 days**
50	Remove Hydrants and Fire Water System Piping Down to 3' Below Grade	10 days
51	**Water Pretreatment Clarifiers and ZLD**	**34 days**
52	Remove Clarifier Vessels	3 days
53	Remove Pump House	5 days
54	Remove Clarifier Water Storage Tanks	5 days
55	Remove Water Treatment Equipment	3 days



ID	Task Name	Duration
56	Remove Water Treatment Building	5 days
57	Remove ZLD Equipment	3 days
58	Remove ZLD Building	5 days
59	Remove Condensate Storage Tanks	5 days
60	**Stacks**	**1 day**
61	Remove Unit 1 Stack to Grade	1 day
62	Remove Common Stack to Grade	1 day
63	**Reagent Prep and Gypsum Handling**	**94 days**
64	Remove Limestone Unloading Facility	10 days
65	Remove Limestone Storage Facility	5 days
66	Remove Limestone Conveyor	5 days
67	Remove Limestone Prep Building	40 days
68	Remove Gypsum Stackout Conveyor	5 days
69	Remove PCM-1	2 days
70	Remove PCM-2	2 days
71	Remove the Vacuum Pump and Air Compressor Building	20 days
72	Remove Miscellaneous Equipment	5 days
73	**Final Site Grading and Drainage**	**1 day**
74	Final Site Grading and Drainage	1 day



NORTHEAST GENERATING STATION

NORTHEAST GENERATING STATION

The Northeast Generating Station consists of eight fuel-oil-fired combustion turbine generator sets.

Together these combustion turbines have a total SPP-accredited unit rating of 408 MW. The units are designated Units 11 through 18, and were added to an existing steam electric generating plant site during the 1970s. Units 11 and 12 began service in 1972; Units 13 and 14 in 1975; Units 15 and 16 in 1976; and Units 17 and 18 in 1977. Each unit is comprised of a General Electric Model 7B combustion turbine and each pair of units is connected to a three-winding generator step-up transformer and is provided with auxiliary power through a common bus. Each combustion turbine employs standard annular combustor technology and burns only distillate or ultra-low sulfur fuel oil. Diesel starting means is provided and Northeast is a designated black-start facility.

The following are the major systems and equipment that were included in the retirement and dismantlement of each unit and the major systems and equipment that were considered common (additional details are listed in the attached retirement and dismantlement schedules included in this Appendix).

NORTHEAST UNITS 11 THROUGH 18

1. Combustion turbine generator sets and auxiliaries (eight).
2. Generator step-up and auxiliary transformers (four).
3. Exhaust stacks (eight).

COMMON

1. Service building.
2. Fuel oil unloading, storage, and forwarding equipment.
3. Service/Instrument air compressors.

Northeast Retirement

Owner Costs				
Pre-Retirement Activities		$46,506		
Retirement Activities		$329,203		
Post-Retirement Activities		$47,901		
Owner Direct total			$423,609	
Owner Internal Costs:	5.00%		$21,180	
Owner Contingency:	25.00%		$111,197	
Northeast Dismantlement Opinion of Probable Cost:				$555,987

<u>Activities Required by Permit or Regulation</u>

Northeast Fuel Oil Tank Removal	$553,553	
Activities Required by Permit or Regulation		$553,553

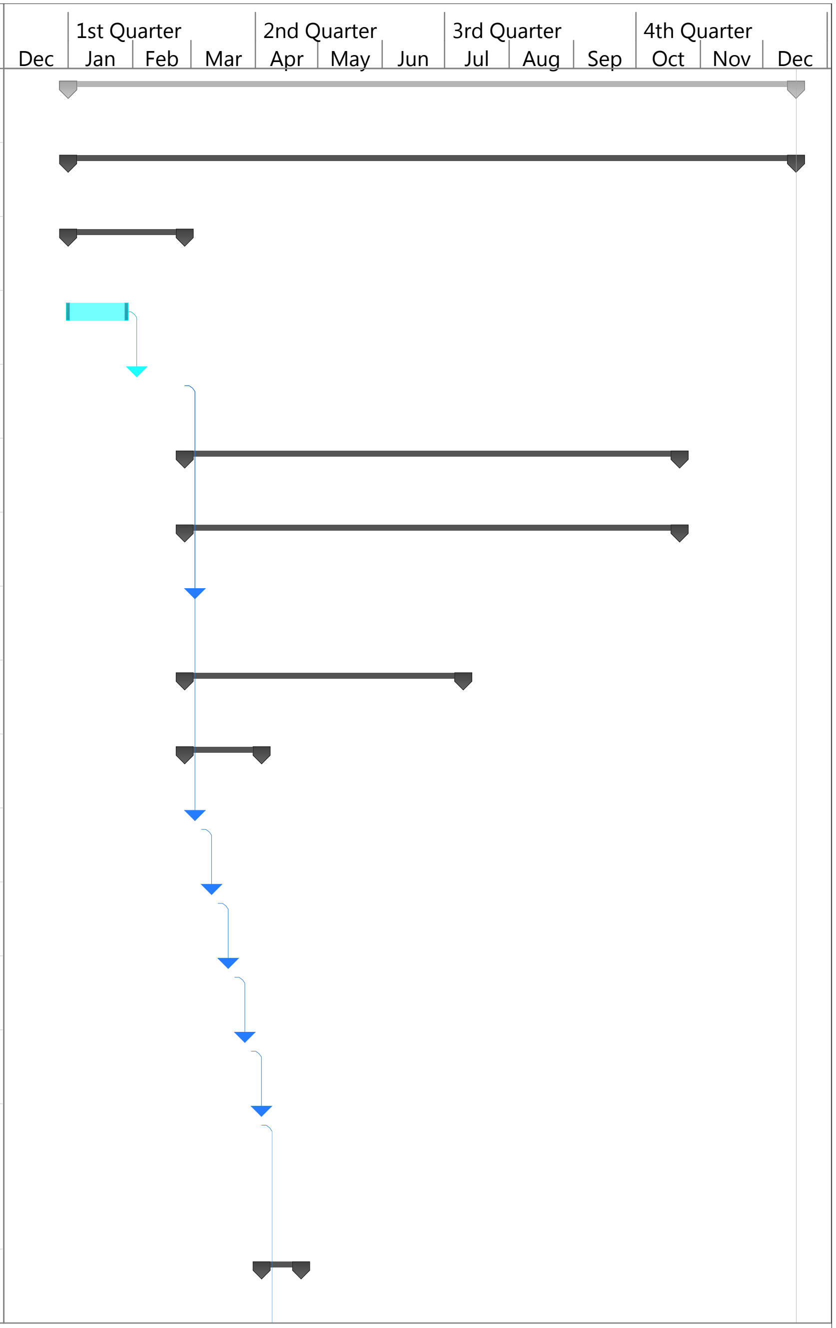
Northeast Retirement

ID	Task Name	Cost
0	**Northeast Retirement**	**$423,609.36**
1	**Northeast Retirement**	**$423,609.36**
2	**Pre-Retirement Activities**	**$46,505.60**
3	Permitting Review	$24,896.00
4	Develop Detailed Retirement Plan	$21,609.60
5	**Retirement Activities**	**$329,202.96**
6	**Project Management During Retirement**	**$144,649.60**
7	Project Management During Retirement	$144,649.60
8	**Electrical**	**$94,187.52**
9	**Medium and Low Voltage Drawout Switchgear**	**$26,490.24**
10	De-energize all buses at the source.	$5,886.72
11	Open all circuit breakers.	$5,886.72
12	Rack all circuit breakers into the fully withdrawn, disconnected position.	$5,886.72
13	Verify that the closing/tripping springs are discharged.	$5,886.72
14	De-energize control power and auxiliary power circuits of each circuit breaker at the source and by opening control power circuit breakers or removing fuses in each breaker cubicle.	$2,943.36
15	**Motor Control Centers**	**$12,754.56**
16	De-energize all buses at the source.	$2,943.36
17	Open all circuit breakers and disconnect switches.	$4,905.60
18	Remove all fuses in control circuits.	$4,905.60
19	**Low-voltage Switchboards and Panelboards**	**$11,773.44**
20	De-energize all buses at the source.	$5,886.72
21	Open all circuit breakers and disconnect switches.	$5,886.72
22	**Oil-Filled Power Transformers**	**$19,622.40**
23	De-energize all buses at the source.	$4,905.60
24	Open all circuit breakers and disconnect switches.	$4,905.60
25	De-energize all buses at the source.	$4,905.60
26	Open all circuit breakers and disconnect switches.	$4,905.60
27	**Dry-type Power Transformers**	**$8,830.08**
28	De-energize all transformer primaries and verify that the secondary is de-energized.	$4,905.60
29	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	$3,924.48
30	**Motors**	**$14,716.80**
31	De-energize all primary power at the source.	$4,905.60
32	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	$4,905.60
33	Drain lube oil system (if applicable) and dispose of oil.	$4,905.60
34	**Fuel Oil System**	**$6,151.36**
35	Isolate Fuel Oil System	$4,264.32
36	Drain and Vent Fuel Oil Piping	$1,887.04
37	**Lube Oil Cooling Water System**	**$10,378.72**

Northeast Retirement

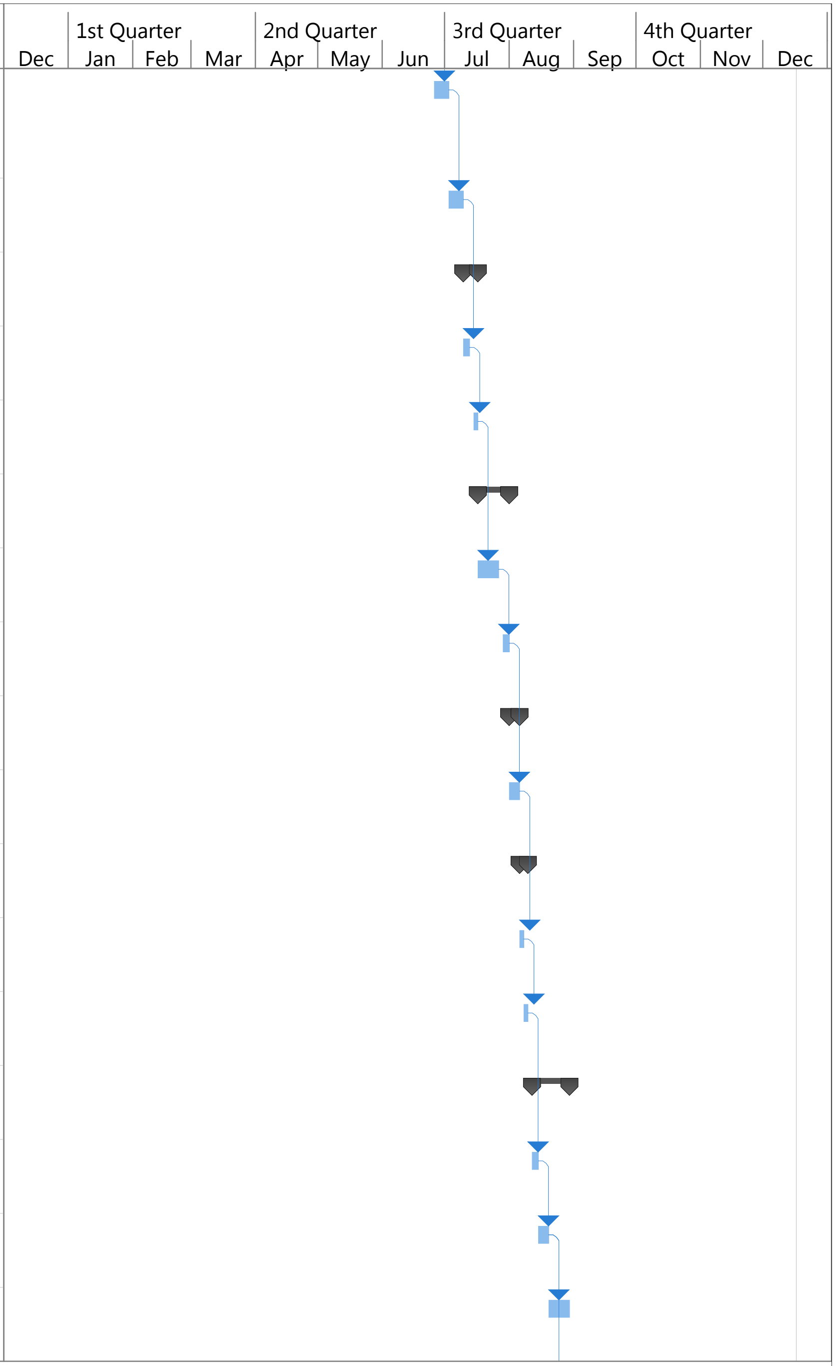
ID	Task Name	Cost
38	Open and Drain the Water Side of the Lube Oil Coolers	$7,548.16
39	Open and Vent the Coolers and Expansion Tank	$2,830.56
40	**Oily Drain Tank**	**$4,266.96**
41	Open and Pump Out the Oily Drain Tank	$4,266.96
42	**Compressed Air**	**$3,774.08**
43	Empty Dessiccant Air Dryers and Vent	$1,887.04
44	Open and Vent the Air Reciever	$1,887.04
45	**Miscelleaneous Piping**	**$16,039.84**
46	Open and Vent the Exhaust Frame Cooling Piping	$2,830.56
47	Open and Vent the Inlet Air Heating Piping	$2,830.56
48	Open & Vent the CT Air Process Piping	$7,548.16
49	Open and Vent the CT Air Processing Piping	$2,830.56
50	**Fire Protection Piping**	**$7,495.68**
51	Empty the CO2 Storage Tank	$5,608.64
52	Open and Vent the Fire Protection Piping	$1,887.04
53	**Lube Oil System**	**$32,354.64**
54	Empty and Remove from Site the Lubricating Oil	$21,032.40
55	Drain Lubricating Oil Piping	$9,435.20
56	Open and Vent Lubricating Oil Piping	$1,887.04
57	**Potable Water**	**$2,888.40**
58	Disconnect Potable Water at Property Boundary	$2,888.40
59	**Waste Water**	**$4,264.32**
60	Disconnect Waste Water at Property Boundary	$4,264.32
61	**Unleaded Gasoline Fueling Station**	**$2,751.84**
62	Drain the Unleaded Gasoline Fueling Station	$2,751.84
63	**Post Retirement Closure Activity**	**$47,900.80**
64	Post Retirement Closure Activity	$47,900.80

ID	Task Name	Duration
0	**Northeast Retirement**	**250 days**
1	**Northeast Retirement**	**250 days**
2	**Pre-Retirement Activities**	**40 days**
3	Permitting Review	20 days
4	Develop Detailed Retirement Plan	20 days
5	**Retirement Activities**	**170 days**
6	**Project Management During Retirement**	**170 days**
7	Project Management During Retirement	170 days
8	**Electrical**	**96 days**
9	**Medium and Low Voltage Drawout Switchgear**	**27 days**
10	De-energize all buses at the source.	6 days
11	Open all circuit breakers.	6 days
12	Rack all circuit breakers into the fully withdrawn, disconnected position.	6 days
13	Verify that the closing/tripping springs are discharged.	6 days
14	De-energize control power and auxiliary power circuits of each circuit breaker at the source and by opening control power circuit breakers or removing fuses in each breaker cubicle.	3 days
15	**Motor Control Centers**	**13 days**

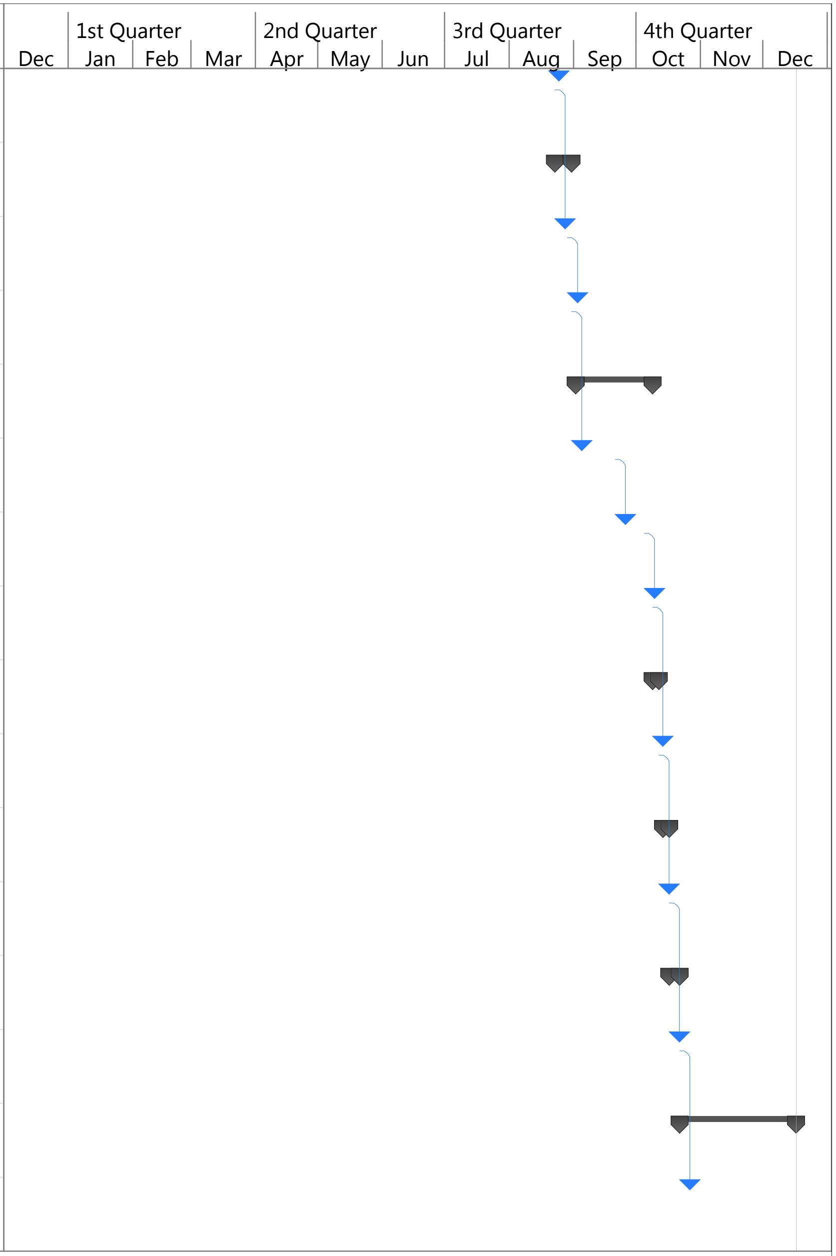


ID	Task Name	Duration
16	De-energize all buses at the source.	3 days
17	Open all circuit breakers and disconnect switches.	5 days
18	Remove all fuses in control circuits.	5 days
19	**Low-voltage Switchboards and Panelboards**	**12 days**
20	De-energize all buses at the source.	6 days
21	Open all circuit breakers and disconnect switches.	6 days
22	**Oil-Filled Power Transformers**	**20 days**
23	De-energize all buses at the source.	5 days
24	Open all circuit breakers and disconnect switches.	5 days
25	De-energize all buses at the source.	5 days
26	Open all circuit breakers and disconnect switches.	5 days
27	**Dry-type Power Transformers**	**9 days**
28	De-energize all transformer primaries and verify that the secondary is de-energized.	5 days
29	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	4 days
30	**Motors**	**15 days**
31	De-energize all primary power at the source.	5 days

ID	Task Name	Duration
32	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	5 days
33	Drain lube oil system (if applicable) and dispose of oil.	5 days
34	**Fuel Oil System**	**5 days**
35	Isolate Fuel Oil System	3 days
36	Drain and Vent Fuel Oil Piping	2 days
37	**Lube Oil Cooling Water System**	**11 days**
38	Open and Drain the Water Side of the Lube Oil Coolers	8 days
39	Open and Vent the Coolers and Expansion Tank	3 days
40	**Oily Drain Tank**	**3 days**
41	Open and Pump Out the Oily Drain Tank	3 days
42	**Compressed Air**	**4 days**
43	Empty Dessiccant Air Dryers and Vent	2 days
44	Open and Vent the Air Reciever	2 days
45	**Miscelleaneous Piping**	**14 days**
46	Open and Vent the Exhaust Frame Cooling Piping	3 days
47	Open and Vent the Inlet Air Heating Piping	3 days
48	Open & Vent the CT Air Process Piping	8 days



ID	Task Name	Duration
49	Open and Vent the CT Air Processing Piping	3 days
50	**Fire Protection Piping**	**6 days**
51	Empty the CO2 Storage Tank	4 days
52	Open and Vent the Fire Protection Piping	2 days
53	**Lube Oil System**	**27 days**
54	Empty and Remove from Site the Lubricating Oil	15 days
55	Drain Lubricating Oil Piping	10 days
56	Open and Vent Lubricating Oil Piping	2 days
57	**Potable Water**	**3 days**
58	Disconnect Potable Water at Property Boundary	3 days
59	**Waste Water**	**3 days**
60	Disconnect Waste Water at Property Boundary	3 days
61	**Unleaded Gasoline Fueling Station**	**3 days**
62	Drain the Unleaded Gasoline Fueling Station	3 days
63	**Post Retirement Closure Activity**	**40 days**
64	Post Retirement Closure Activity	40 days



Northeast Dismantlement

Owner Costs				
Pre-Dismantlement Activities		$1,104,559		
Overhead During Dismantlement		$1,538,618		
Post-Dismantlement Activities		$69,510		
Owner Costs Total			$2,712,688	
Demolition General Contractor (DGC) Costs				
Site Management		$743,767		
Equipment Rental		$1,253,525		
Consumables		$1,250,594		
Scrap Crew(s)		$324,113		
Dismantlement		$1,192,391		
DGC Insurance	2.00%	$95,288		
Contingency/Profit	15.00%	$728,952		
Performance Bond	2.00%	$111,773		
Contractor Costs Total:			$5,700,402	
Total:				$8,413,090
Owner Internal Costs:	5.00%			$420,654
Owner Contingency:	25.00%			$2,208,436
Northeast Dismantlement Opinion of Probable Cost:				$11,042,180

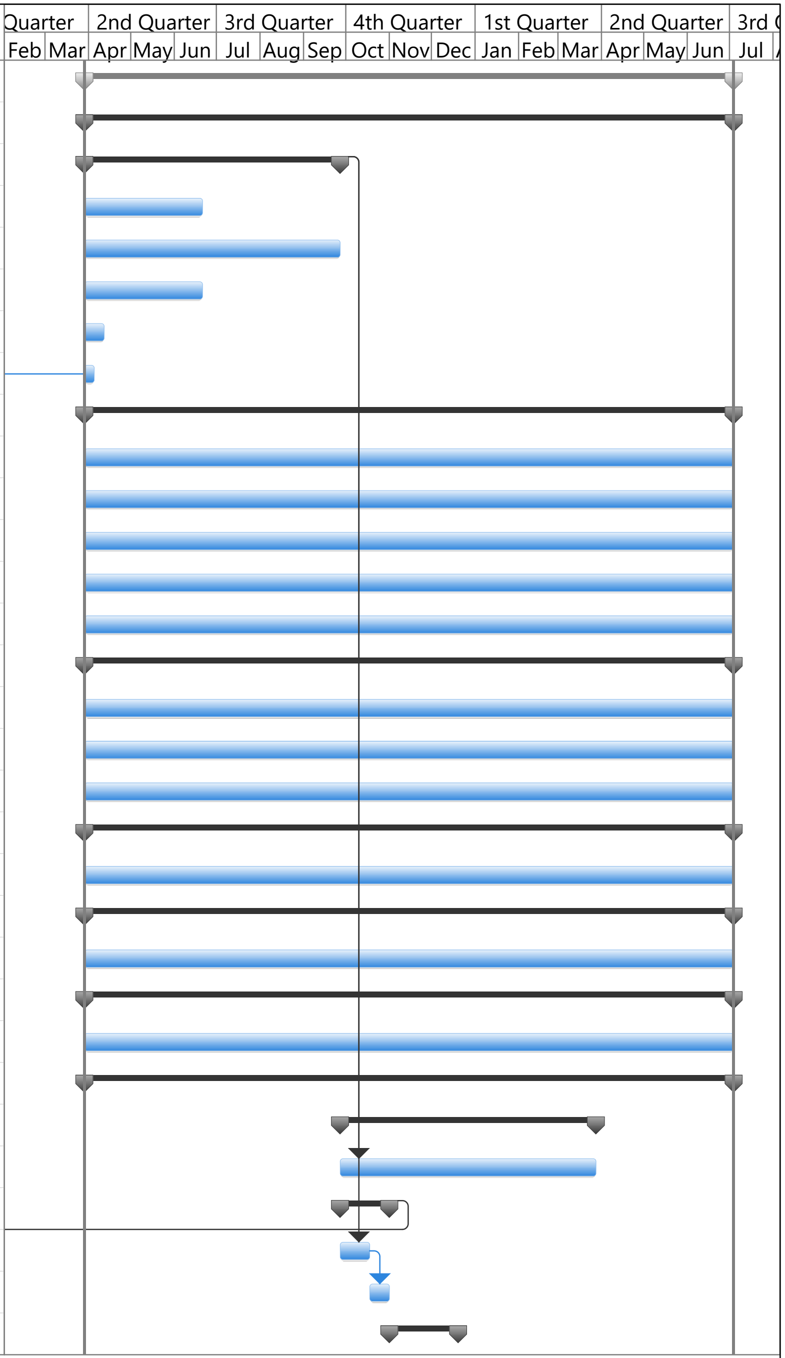
Northeast CT Dismantlement

ID	Task Name	Cost
0	**Northeast CT Dismantlement**	**$7,477,077.60**
1	**Northeast CT Dismantlement**	**$7,477,077.60**
2	**Pre-Demolition Activities**	**$1,104,558.96**
3	Detailed Planning & Hire Owner's Engineer	$110,802.72
4	Detailed Site Characterization Study	$783,536.00
5	Hire Demolition general Contractor	$198,647.04
6	KCP&L Prepares Unit for Dismantlement	$11,573.20
7	Demolition Contractor Mobilizes on Sit	$0.00
8	**KCP&L Overhead during Dismantlement**	**$1,538,618.40**
9	KCP&L Project Manager	$216,902.40
10	KCP&L Administrative Support	$80,229.60
11	KCP&L Engineer	$356,558.40
12	Owners Engineer Project Manager	$108,768.00
13	Owners Engineer - Engineer	$776,160.00
14	**Demolition Contractor Overhead during Dismantlement**	**$743,767.20**
15	Demolition Contractor Project Manager	$210,434.40
16	Demolition Contractor Safety Manager	$187,387.20
17	Demolition Contractor Superintendent	$345,945.60
18	**Demolition Contractor Equipment Rental Cost**	**$1,253,524.80**
19	Equipment Rental	$1,253,524.80
20	**Demolition Contractor Consumables**	**$1,250,594.40**
21	Consumables	$1,250,594.40
22	**Scrap Crews**	**$324,112.80**
23	Crew to Handle Scrap Material(s)	$324,112.80
24	**Dismantlement**	**$1,192,390.64**
25	**Electrical**	**$298,823.20**
26	Electrical Demolition of Equipment	$298,823.20
27	**Fuel Oil System**	**$27,158.96**
28	Remove Above Ground Fuel Oil Piping	$8,654.16
29	Fuel Skids	$18,504.80
30	**Lube Oil System**	**$64,766.80**
31	Lube Oil Piping	$27,757.20
32	Lube Oil Pumps	$18,504.80
33	Lube Oil Tanks	$18,504.80
34	**Fire Protection**	**$61,065.84**
35	Fire Protection Piping	$29,607.68
36	Firewater Tank	$16,654.32
37	CO2 Storage Tank	$14,803.84
38	**Miscellaneous Piping**	**$86,972.56**
39	Exhaust Frame Cooling Piping	$27,757.20
40	CT Air Processing Piping	$31,458.16
41	Inlet Air Heating Piping	$27,757.20
42	**Generator**	**$92,524.00**
43	Generator	$92,524.00
44	**Combustion Turbine**	**$262,768.16**
45	Inlet Heater	$18,504.80
46	Inlet duct	$31,458.16
47	Exhaust duct	$37,009.60
48	Combustion Turbine	$111,028.80

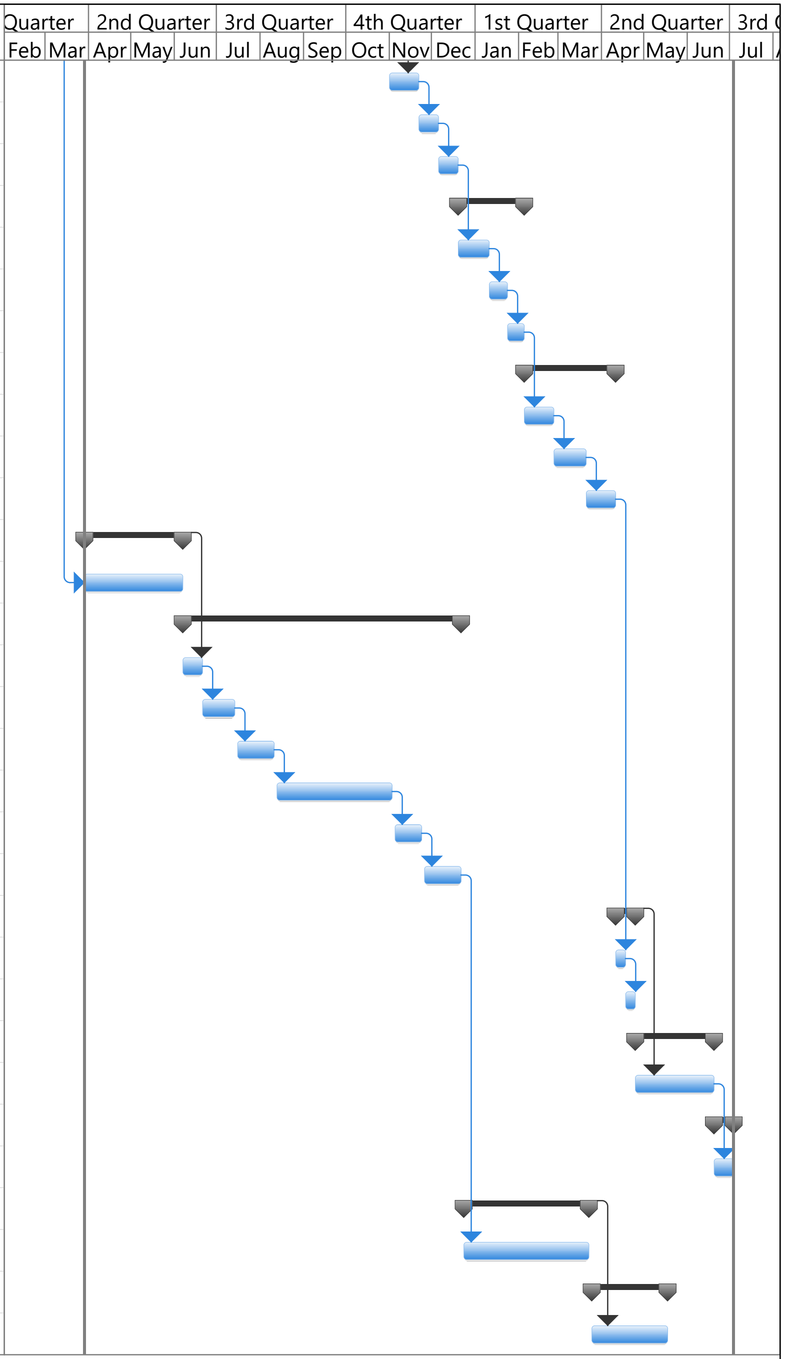
Northeast CT Dismantlement

ID	Task Name	Cost
49	Combustion Turbine Foundation	$27,757.20
50	Enclosure	$37,009.60
51	**CEMS**	**$18,504.80**
52	CEMS Building	$9,252.40
53	CEMS Building Foundation	$9,252.40
54	**Stack**	**$74,019.20**
55	Stacks	$74,019.20
56	**Site Buildings**	**$18,504.80**
57	Remove Site Buildings	$18,504.80
58	**Site Prep**	**$187,282.32**
59	Final Grading and Drainage	$187,282.32
60	**Post Dismantlement Activities**	**$69,510.40**
61	Post Dismantlement Activities	$69,510.40

ID	Task Name	Duration
0	**Northeast CT Dismantlement**	**330 days**
1	**Northeast CT Dismantlement**	**330 days**
2	**Pre-Demolition Activities**	**130 days**
3	Detailed Planning & Hire Owner's Engineer	3 mons
4	Detailed Site Characterization Study	130 days
5	Hire Demolition general Contractor	3 mons
6	KCP&L Prepares Unit for Dismantlement	2 wks
7	Demolition Contractor Mobilizes on Site	5 days
8	**KCP&L Overhead during Dismantlement**	**330 days**
9	KCP&L Project Manager	330 days
10	KCP&L Administrative Support	330 days
11	KCP&L Engineer	330 days
12	Owners Engineer Project Manager	330 days
13	Owners Engineer - Engineer	330 days
14	**Demolition Contractor Overhead during Dismantlement**	**330 days**
15	Demolition Contractor Project Manager	330 days
16	Demolition Contractor Safety Manager	330 days
17	Demolition Contractor Superintendent	330 days
18	**Demolition Contractor Equipment Rental Cost**	**330 days**
19	Equipment Rental	330 days
20	**Demolition Contractor Consumables**	**330 days**
21	Consumables	330 days
22	**Scrap Crews**	**330 days**
23	Crew to Handle Scrap Material(s)	330 days
24	**Dismantlement**	**330 days**
25	**Electrical**	**130 days**
26	Electrical Demolition of Equipment	130 days
27	**Fuel Oil System**	**25 days**
28	Remove Above Ground Fuel Oil Piping	15 days
29	Fuel Skids	10 days
30	**Lube Oil System**	**35 days**



ID	Task Name	Duration
31	Lube Oil Piping	15 days
32	Lube Oil Pumps	10 days
33	Lube Oil Tanks	10 days
34	**Fire Protection**	**33 days**
35	Fire Protection Piping	16 days
36	Firewater Tank	9 days
37	CO2 Storage Tank	8 days
38	**Miscellaneous Piping**	**47 days**
39	Exhaust Frame Cooling Piping	15 days
40	CT Air Processing Piping	17 days
41	Inlet Air Heating Piping	15 days
42	**Generator**	**50 days**
43	Generator	50 days
44	**Combustion Turbine**	**142 days**
45	Inlet Heater	10 days
46	Inlet duct	17 days
47	Exhaust duct	20 days
48	Combustion Turbine	60 days
49	Combustion Turbine Foundation	15 days
50	Enclosure	20 days
51	**CEMS**	**10 days**
52	CEMS Building	5 days
53	CEMS Building Foundation	5 days
54	**Stack**	**40 days**
55	Stacks	40 days
56	**Site Buildings**	**10 days**
57	Remove Site Buildings	10 days
58	**Site Prep**	**65 days**
59	Final Grading and Drainage	65 days
60	**Post Dismantlement Activities**	**40 days**
61	Post Dismantlement Activities	40 days



HAWTHORN GENERATING STATION
UNITS 7 AND 8

HAWTHORN GENERATING STATION UNITS 7 AND 8

Hawthorn Generating Station Units 7 and 8 are twin natural gas-fired combustion turbine generator sets that were added to the existing plant in 2000.

Each of these combustion turbines has an SPP-accredited unit rating of 77 MW and is comprised of a General Electric Model 7EA combustion turbine. The pair is interconnected to the grid through a single, three-winding generator step-up transformer arrangement. Each combustion turbine employs dry low NO_X burner technology and burns only natural gas fuel.

The following are the major systems and equipment that were included in the retirement and dismantlement of each unit and the major systems and equipment that were considered common (additional details are listed in the attached retirement and dismantlement schedules included in this Appendix).

HAWTHORN UNITS 7 AND 8

1. Combustion turbine generator sets and auxiliaries (two).
2. Generator step-up and auxiliary transformers (one).
3. Freestanding outdoor switchgear.
4. Exhaust stacks.

COMMON

1. Natural gas filtering skid.
2. Service/Instrument air compressors.

Hawthorn 7 & 8 Retirement

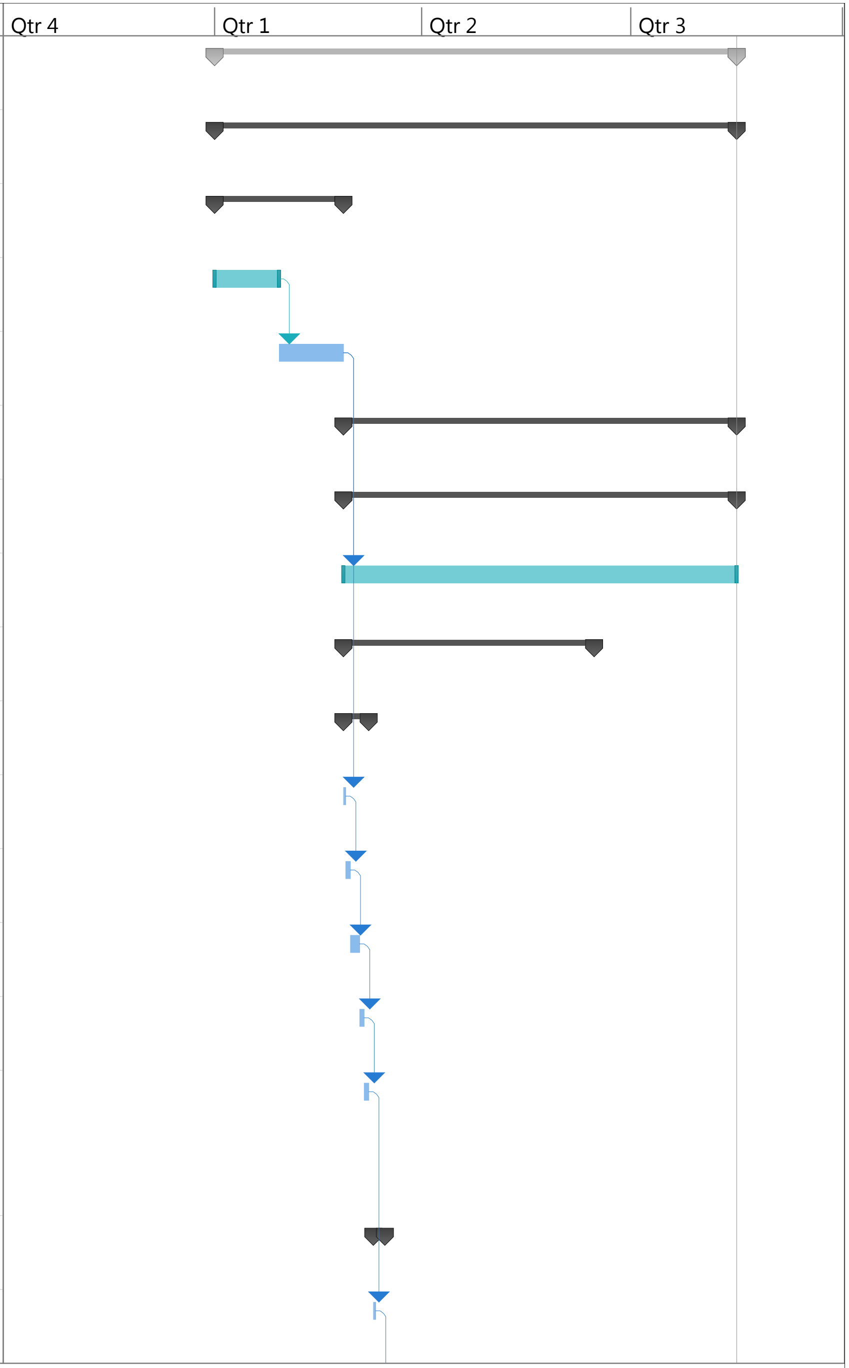
Owner Costs				
Pre-Retirement Activities		$46,506		
Retirement Activities		$186,567		
Post-Retirement Activities		$47,901		
Owner Direct Total			$280,973	
Owner Internal Costs	5.00%		$14,049	
Owner Contingency:	25.00%		$73,755	
Hawthorn 7 & 8 Retirement Opinion of Probable Cost:				$368,777

ID	Task Name	Cost
0	**Hawthorn 7 & 8**	**$280,973.12**
1	**Hawthorn 7&8 Retirement**	**$280,973.12**
2	**Pre-Retirement Activities**	**$46,505.60**
3	Permitting Review	$24,896.00
4	Develop Detailed Retirement Plan	$21,609.60
5	**Retirement Activities**	**$186,566.72**
6	**Project Management During Retirement**	**$104,658.24**
7	Project Management During Retirement	$104,658.24
8	**Electrical**	**$81,908.48**
9	**Medium and Low Voltage Drawout Switchgear**	**$8,830.08**
10	De-energize all buses at the source.	$981.12
11	Open all circuit breakers.	$1,962.24
12	Rack all circuit breakers into the fully withdrawn, disconnected position.	$1,962.24
13	Verify that the closing/tripping springs are discharged.	$1,962.24
14	De-energize control power and auxiliary power circuits of each circuit brea	$1,962.24
15	**Motor Control Centers**	**$4,905.60**
16	De-energize all buses at the source.	$981.12
17	Open all circuit breakers and disconnect switches.	$1,962.24
18	Remove all fuses in control circuits.	$1,962.24
19	**Low-voltage Switchboards and Panelboards**	**$2,943.36**
20	De-energize all buses at the source.	$981.12
21	Open all circuit breakers and disconnect switches.	$1,962.24
22	**Oil-Filled Power Transformers**	**$6,867.84**
23	De-energize all buses at the source.	$981.12
24	Open all circuit breakers and disconnect switches.	$1,962.24
25	De-energize all buses at the source.	$1,962.24
26	Open all circuit breakers and disconnect switches.	$1,962.24
27	**Dry-type Power Transformers**	**$3,924.48**
28	De-energize all transformer primaries and verify that the secondary is de-e	$1,962.24
29	De-energize all low-voltage AC or DC power sources for space heaters, coo	$1,962.24
30	**Motors**	**$6,867.84**
31	De-energize all primary power at the source.	$981.12
32	De-energize all low-voltage power sources for space heaters or other auxil	$1,962.24
33	Drain lube oil system (if applicable) and dispose of oil.	$3,924.48
34	**Fuel Gas System**	**$11,786.24**
35	Isolate Fuel Gas System	$4,264.32
36	Vent Fuel Gas Piping and Equipment	$2,751.84
37	Open and Vent Knock-Out Drum	$943.52
38	Drain, Open and Vent the Drain Tank	$943.52
39	Empty the Coalescing Filter	$1,939.52
40	Open and Vent Equipment on the CT Gas Valve Module	$943.52
41	**Lube Oil Cooling Water System**	**$3,774.08**
42	Open and Drain the Water Side of the Lube Oil Coolers	$2,830.56
43	Open and Vent the Coolers and Expansion Tank	$943.52
44	**Oily Drain Tank**	**$4,266.96**
45	Open and Pump Out the Oily Drain Tank	$4,266.96
46	**Wash Water Skid**	**$5,661.12**
47	Open and Drain the Detergent Tank	$1,887.04
48	Open and Drain the Demineralized Water Tank	$1,887.04

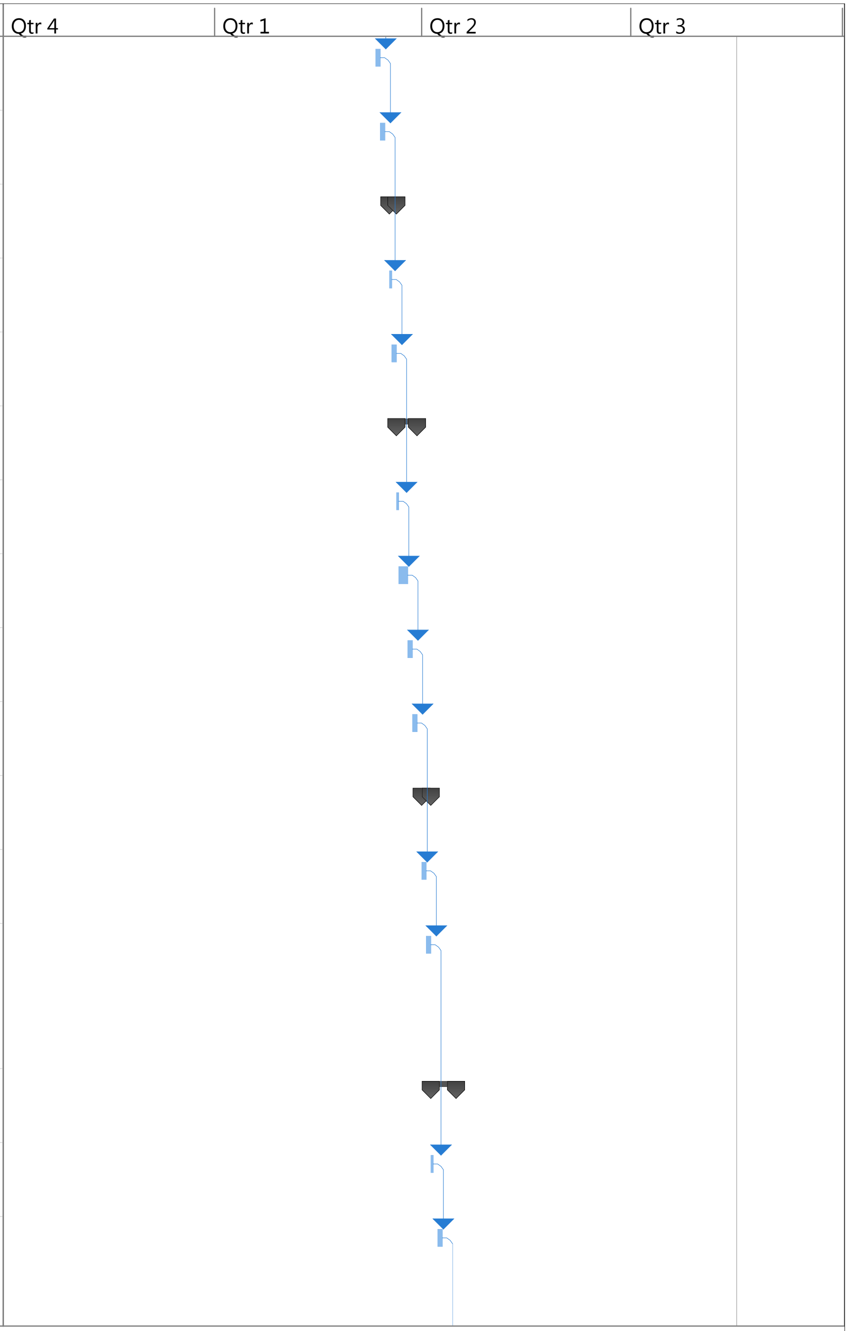
Hawthorn 7 & 8

ID	Task Name	Cost
49	Empty the Demineralized Water Tank	$1,887.04
50	**Compressed Air**	**$1,887.04**
51	Empty Dessiccant Air Dryers and Vent	$943.52
52	Open and Vent the Air Reciever	$943.52
53	**Miscelleaneous Piping**	**$5,661.12**
54	Open and Vent the Exhaust Frame Cooling Piping	$943.52
55	Open and Vent the CT Air Processing Piping	$1,887.04
56	Open and Vent the Inlet Air Heating Piping	$943.52
57	Open and Vent the CT Air Processing Piping	$1,887.04
58	**Fire Protection Piping**	**$3,747.84**
59	Empty the CO2 Storage Tank	$2,804.32
60	Open and Vent the Fire Protection Piping	$943.52
61	**Lube Oil System**	**$10,784.88**
62	Empty and Remove from Site the Lubricating Oil	$7,010.80
63	Drain Lubricating Oil Piping	$2,830.56
64	Open and Vent Lubricating Oil Piping	$943.52
65	**Post Retirement Closure Activity**	**$47,900.80**
66	Post Retirement Closure Activity	$47,900.80

ID	Task Name	Duration
0	**Hawthorn 7 & 8**	**163 days**
1	**Hawthorn 7&8 Retirement**	**163 days**
2	**Pre-Retirement Activities**	**40 days**
3	Permitting Review	20 days
4	Develop Detailed Retirement Plan	20 days
5	**Retirement Activities**	**123 days**
6	**Project Management During Retirement**	**123 days**
7	Project Management During Retirement	123 days
8	**Electrical**	**79 days**
9	**Medium and Low Voltage Drawout Switchgear**	**9 days**
10	De-energize all buses at the source.	1 day
11	Open all circuit breakers.	2 days
12	Rack all circuit breakers into the fully withdrawn, disconnected position.	2 days
13	Verify that the closing/tripping springs are discharged.	2 days
14	De-energize control power and auxiliary power circuits of each circuit breaker at the source and by opening control power circuit breakers or removing fuses in each breaker cubicle.	2 days
15	**Motor Control Centers**	**5 days**
16	De-energize all buses at the source.	1 day

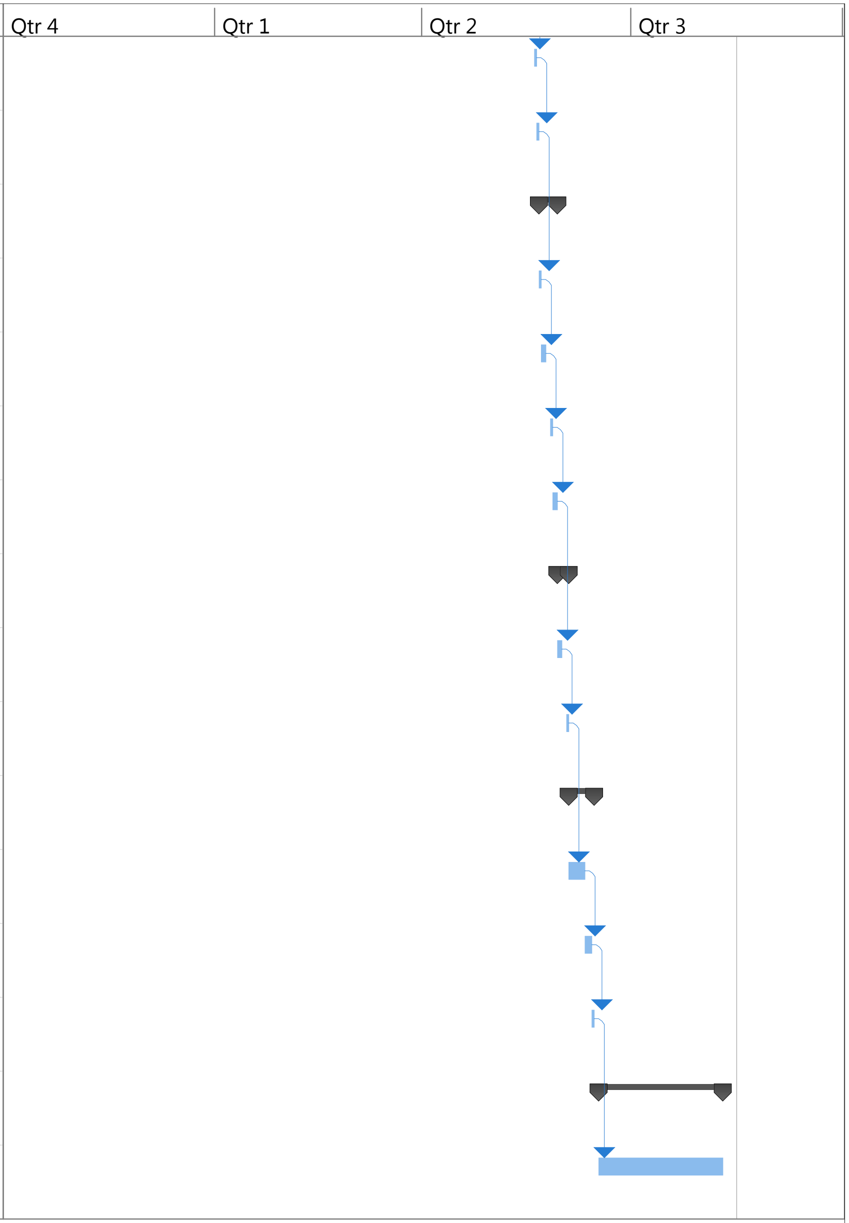


ID	Task Name	Duration
17	Open all circuit breakers and disconnect switches.	2 days
18	Remove all fuses in control circuits.	2 days
19	**Low-voltage Switchboards and Panelboards**	**3 days**
20	De-energize all buses at the source.	1 day
21	Open all circuit breakers and disconnect switches.	2 days
22	**Oil-Filled Power Transformers**	**7 days**
23	De-energize all buses at the source.	1 day
24	Open all circuit breakers and disconnect switches.	2 days
25	De-energize all buses at the source.	2 days
26	Open all circuit breakers and disconnect switches.	2 days
27	**Dry-type Power Transformers**	**4 days**
28	De-energize all transformer primaries and verify that the secondary is de-energized.	2 days
29	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	2 days
30	**Motors**	**7 days**
31	De-energize all primary power at the source.	1 day
32	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	2 days



ID	Task Name	Duration
33	Drain lube oil system (if applicable) and dispose of oil.	4 days
34	**Fuel Gas System**	**11 days**
35	Isolate Fuel Gas System	3 days
36	Vent Fuel Gas Piping and Equipment	3 days
37	Open and Vent Knock-Out Drum	1 day
38	Drain, Open and Vent the Drain Tank	1 day
39	Empty the Coalescing Filter	2 days
40	Open and Vent Equipment on the CT Gas Valve Module	1 day
41	**Lube Oil Cooling Water System**	**4 days**
42	Open and Drain the Water Side of the Lube Oil Coolers	3 days
43	Open and Vent the Coolers and Expansion Tank	1 day
44	**Oily Drain Tank**	**3 days**
45	Open and Pump Out the Oily Drain Tank	3 days
46	**Wash Water Skid**	**6 days**
47	Open and Drain the Detergent Tank	2 days
48	Open and Drain the Demineralized Water Tank	2 days
49	Empty the Demineralized Water Tank	2 days
50	**Compressed Air**	**2 days**

ID	Task Name	Duration
51	Empty Dessiccant Air Dryers and Vent	1 day
52	Open and Vent the Air Reciever	1 day
53	**Miscelleaneous Piping**	**6 days**
54	Open and Vent the Exhaust Frame Cooling Piping	1 day
55	Open and Vent the CT Air Processing Piping	2 days
56	Open and Vent the Inlet Air Heating Piping	1 day
57	Open and Vent the CT Air Processing Piping	2 days
58	**Fire Protection Piping**	**3 days**
59	Empty the CO2 Storage Tank	2 days
60	Open and Vent the Fire Protection Piping	1 day
61	**Lube Oil System**	**9 days**
62	Empty and Remove from Site the Lubricating Oil	5 days
63	Drain Lubricating Oil Piping	3 days
64	Open and Vent Lubricating Oil Piping	1 day
65	**Post Retirement Closure Activity**	**40 days**
66	Post Retirement Closure Activity	40 days



Hawthorn 7 & 8 Dismantlement

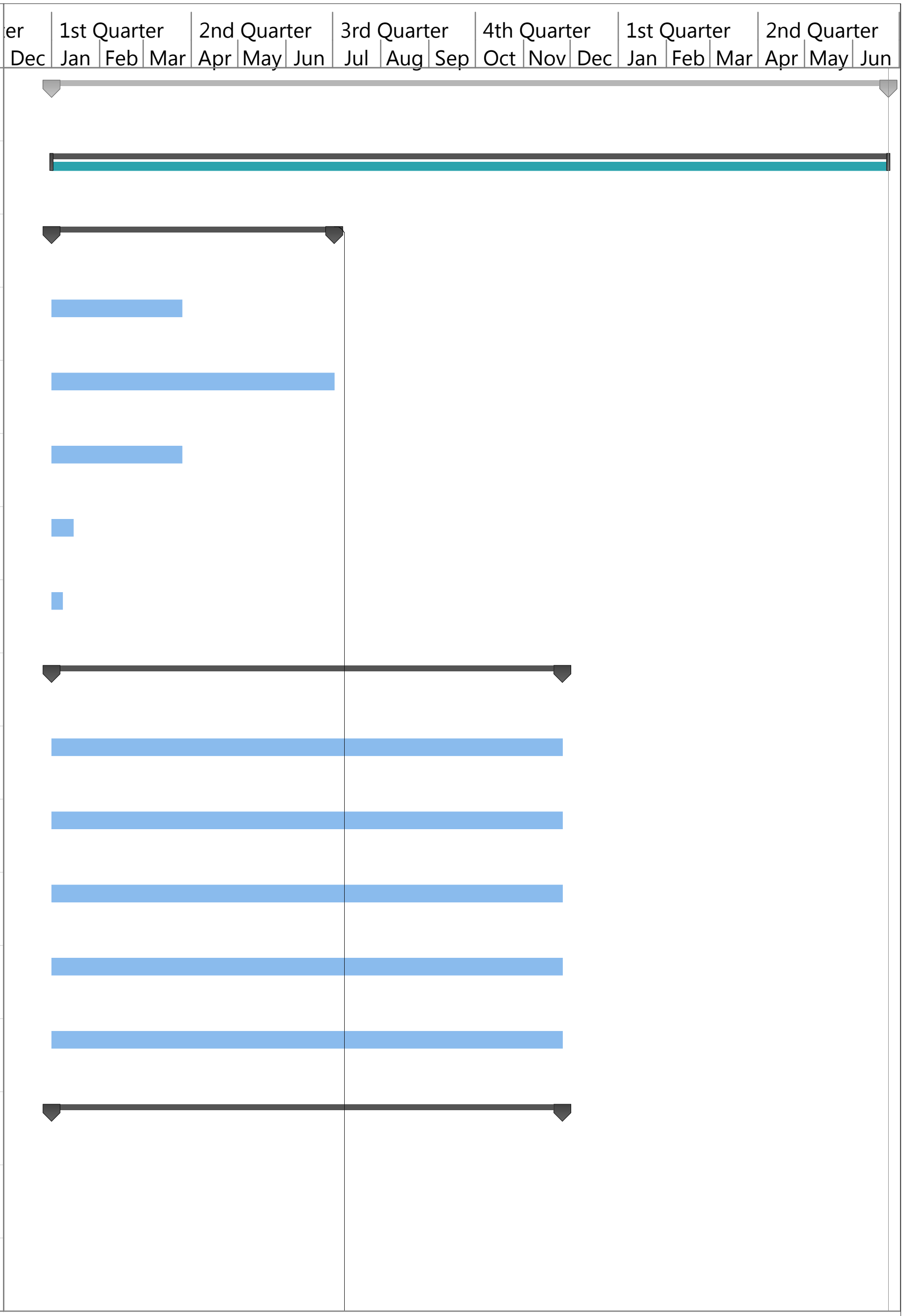
Owner Costs				
Pre-Dismantlement Activities		$1,104,559		
Overhead During Dismantlement		$1,095,683		
Post-Dismantlement Activities		$34,755		
Owner Costs Total			$2,234,997	
Demolition General Contractor (DGC) Costs				
Site Management		$529,652		
Equipment Rental		$892,662		
Consumables		$890,575		
Scrap Crew(s)		$230,808		
Dismantlement		$616,951		
DGC Insurance	2.00%	$63,213		
Contingency/Profit	15.00%	$483,579		
Performance Bond	2.00%	$74,149		
Contractor Costs Total:			$3,781,588	
Total:				$6,016,585
Owner Internal Costs:	5.00%			$300,829
Owner Contingency:	25.00%			$1,579,354
Hawthorn 7 & 8 Dismantlement Opinion of Probable Cost:				$7,896,768

ID	Task Name	Cost
0	**Hawthorn 7&8 Dismantlement**	**$5,395,644.53**
1	**Hawthorn 7&8 Dismantlement**	**$5,395,644.53**
2	**Pre-Demolition Activities**	**$1,104,558.96**
3	Detailed Planning & Hire Owner's Engineer	$110,802.72
4	Detailed Site Characterization Study	$783,536.00
5	Hire Demolition general Contractor	$198,647.04
6	KCP&L Prepares Unit for Dismantlement	$11,573.20
7	Demolition Contractor Mobilizes on Sit	$0.00
8	**KCP&L Overhead during Dismantlement**	**$1,095,682.85**
9	KCP&L Project Manager	$154,460.82
10	KCP&L Administrative Support	$57,133.21
11	KCP&L Engineer	$253,912.82
12	Owners Engineer Project Manager	$77,456.00
13	Owners Engineer - Engineer	$552,720.00
14	**Demolition Contractor Overhead during Dismantlement**	**$529,652.45**
15	Demolition Contractor Project Manager	$149,854.81
16	Demolition Contractor Safety Manager	$133,442.41
17	Demolition Contractor Superintendent	$246,355.22
18	**Demolition Contractor Equipment Rental Cost**	**$892,661.69**
19	Equipment Rental	$892,661.69
20	**Demolition Contractor Consumables**	**$890,574.89**
21	Consumables	$890,574.89
22	**Scrap Crews**	**$230,807.62**
23	Crew to Handle Scrap Material(s)	$230,807.62
24	**Dismantlement**	**$616,950.88**
25	**Electrical**	**$206,877.60**
26	Electrical Demolition of Equipment	$206,877.60
27	**Fuel Gas System**	**$15,921.04**
28	Remove all above grade fuel gas piping.	$4,818.16
29	Gas Filter Skid	$11,102.88
30	**Lube Oil System**	**$37,009.60**
31	Lube Oil Piping	$9,252.40
32	Lube Oil Pumps	$9,252.40
33	Lube Oil Tanks	$18,504.80
34	**Fire Protection**	**$40,710.56**
35	Fire Protection Piping	$18,504.80
36	Firewater Tank	$14,803.84
37	CO2 Storage Tank	$7,401.92
38	**Wash Water Skid**	**$14,803.84**
39	Detergent Tank	$7,401.92
40	Demineralized Water Tank	$7,401.92
41	**Miscellaneous Piping**	**$51,813.44**
42	Exhaust Frame Cooling Piping	$14,803.84
43	CT Air Processing Piping	$18,504.80
44	Inlet Air Heating Piping	$18,504.80
45	**Generator**	**$0.00**
46	Generator	$0.00
47	**Combustion Turbine**	**$175,795.60**
48	Inlet Heater	$14,803.84

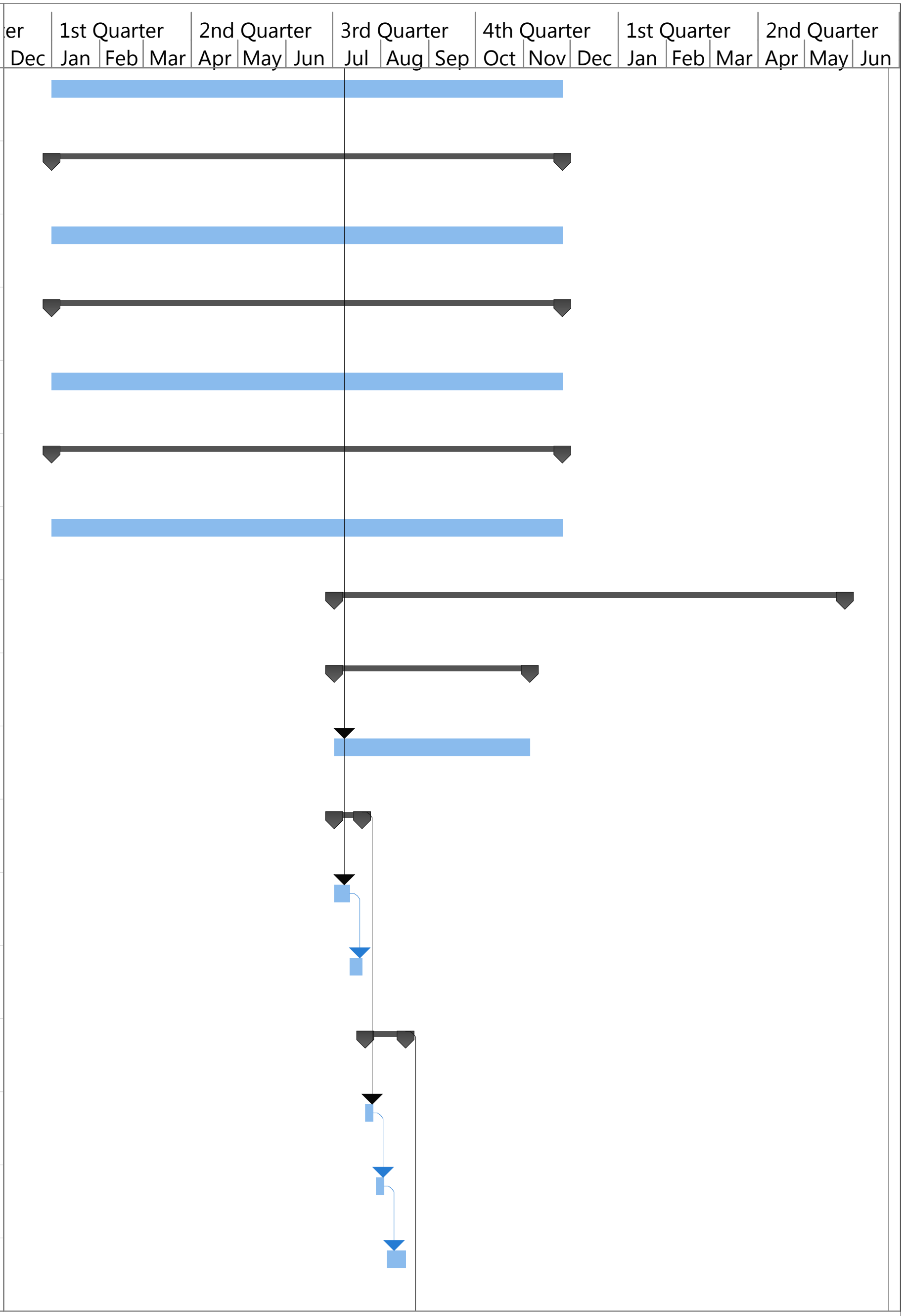
Hawthorn 7&8 Dismantlement

ID	Task Name	Cost
49	Inlet duct	$22,205.76
50	Exhaust duct	$27,757.20
51	Combustion Turbine	$57,364.88
52	Combustion Turbine Foundation	$24,056.24
53	Enclosure	$29,607.68
54	**CEMS**	**$25,906.72**
55	CEMS Building	$12,953.36
56	CEMS Building Foundation	$12,953.36
57	**Stack**	**$48,112.48**
58	Stack	$48,112.48
59	**Post Dismantlement Activities**	**$34,755.20**
60	Post Dismantlement Activities	$34,755.20

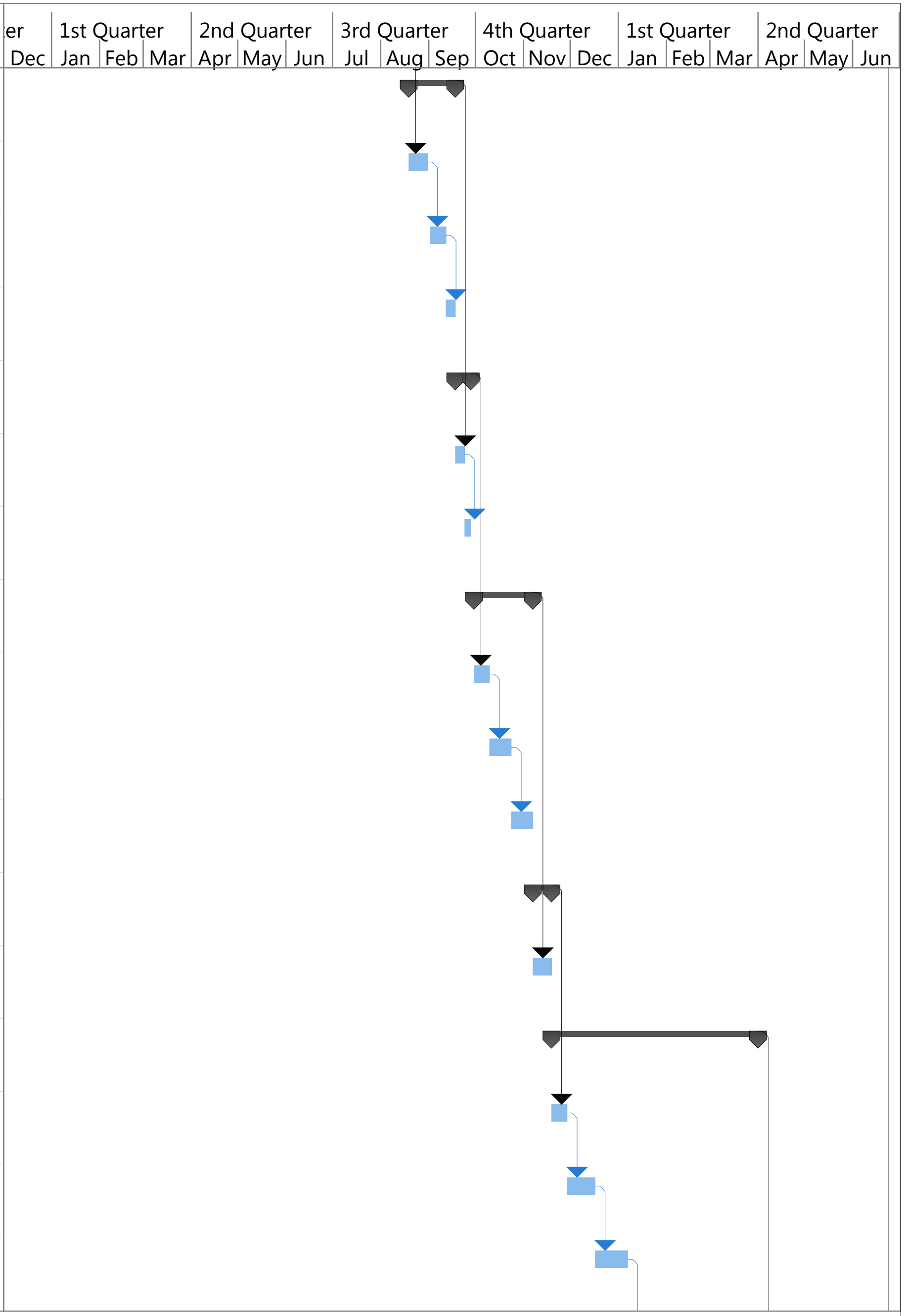
ID	Task Name	Duration
0	**Hawthorn 7&8 Dismantlement**	**385 days**
1	**Hawthorn 7&8 Dismantlement**	**385 days**
2	**Pre-Demolition Activities**	**130 days**
3	Detailed Planning & Hire Owner's Engineer	3 mons
4	Detailed Site Characterization Study	130 days
5	Hire Demolition general Contractor	3 mons
6	KCP&L Prepares Unit for Dismantlement	2 wks
7	Demolition Contractor Mobilizes on Sit	5 days
8	**KCP&L Overhead during Dismantlement**	**235 days**
9	KCP&L Project Manager	235 days
10	KCP&L Administrative Support	235 days
11	KCP&L Engineer	235 days
12	Owners Engineer Project Manager	235 days
13	Owners Engineer - Engineer	235 days
14	**Demolition Contractor Overhead during Dismantlement**	**235 days**
15	Demolition Contractor Project Manager	235 days
16	Demolition Contractor Safety Manager	235 days



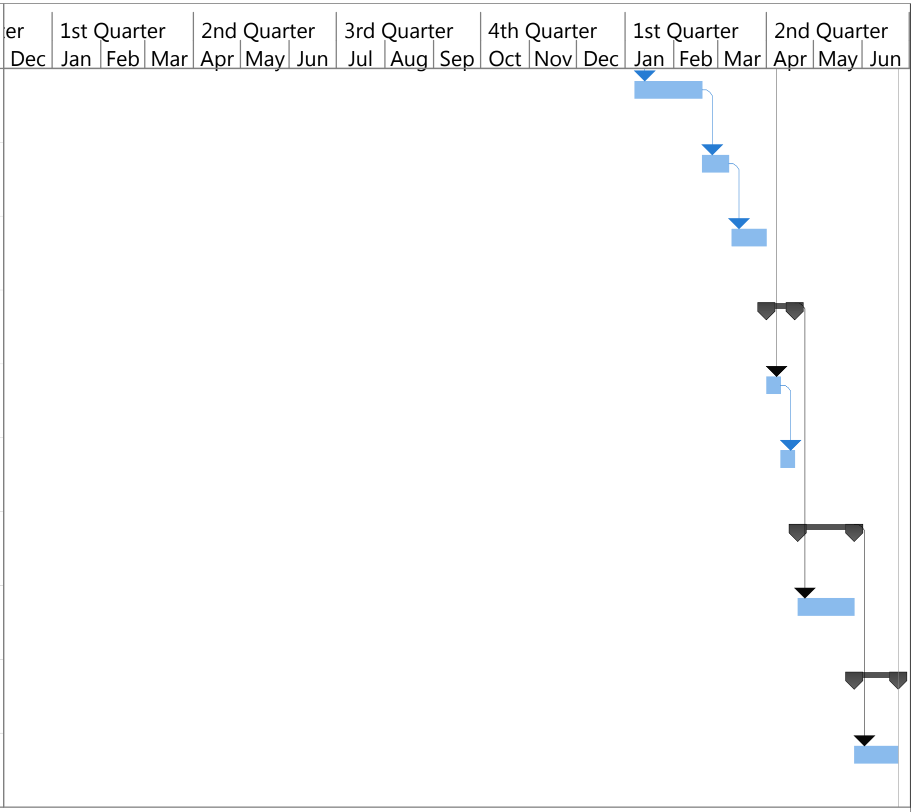
ID	Task Name	Duration
17	Demolition Contractor Superintendent	235 days
18	**Demolition Contractor Equipment Rental Cost**	**235 days**
19	Equipment Rental	235 days
20	**Demolition Contractor Consumables**	**235 days**
21	Consumables	235 days
22	**Scrap Crews**	**235 days**
23	Crew to Handle Scrap Material(s)	235 days
24	**Dismantlement**	**235 days**
25	**Electrical**	**90 days**
26	Electrical Demolition of Equipment	90 days
27	**Fuel Gas System**	**14 days**
28	Remove all above grade fuel gas piping.	8 days
29	Gas Filter Skid	6 days
30	**Lube Oil System**	**20 days**
31	Lube Oil Piping	5 days
32	Lube Oil Pumps	5 days
33	Lube Oil Tanks	10 days



ID	Task Name	Duration
34	**Fire Protection**	**22 days**
35	Fire Protection Piping	10 days
36	Firewater Tank	8 days
37	CO2 Storage Tank	4 days
38	**Wash Water Skid**	**8 days**
39	Detergent Tank	4 days
40	Demineralized Water Tank	4 days
41	**Miscellaneous Piping**	**28 days**
42	Exhaust Frame Cooling Piping	8 days
43	CT Air Processing Piping	10 days
44	Inlet Air Heating Piping	10 days
45	**Generator**	**8 days**
46	Generator	8 days
47	**Combustion Turbine**	**95 days**
48	Inlet Heater	8 days
49	Inlet duct	12 days
50	Exhaust duct	15 days



ID	Task Name	Duration
51	Combustion Turbine	31 days
52	Combustion Turbine Foundation	13 days
53	Enclosure	16 days
54	**CEMS**	**14 days**
55	CEMS Building	7 days
56	CEMS Building Foundation	7 days
57	**Stack**	**26 days**
58	Stack	26 days
59	**Post Dismantlement Activities**	**20 days**
60	Post Dismantlement Activities	20 days



WEST GARDNER GENERATING STATION

WEST GARDNER GENERATING STATION

The West Gardner Generating Station consists of four natural gas-fired combustion turbine generator sets.

These combustion turbines have a combined SPP-accredited unit rating of 310 MW. West Gardner was placed in service in 2003. Each unit is comprised of a General Electric Model 7EA CT, with a generator step-up transformer and auxiliary power transformer. Each combustion turbine employs dry low NO_X burner technology and burns only natural gas fuel.

The following are the major systems and equipment that were included in the retirement and dismantlement of each unit and the major systems and equipment that were considered common (additional details are listed in the attached retirement and dismantlement schedules included in this Appendix).

WEST GARDNER UNITS 1 THROUGH 4

1. Combustion turbine generator sets and auxiliaries.
2. Generator step-up and auxiliary transformers.
3. Freestanding outdoor switchgear.
4. Exhaust stacks.

COMMON

1. Service building.
2. Natural gas filtering skid.
3. Service/Instrument air compressors.

West Gardner Retirement

Owner Costs				
Pre-Retirement Activities		$46,506		
Retirement Activities		$232,587		
Post-Retirement Activities		$47,901		
Owner Direct Total			$326,993	
Owner Internal Costs:	5.00%		$16,350	
Owner Contingency:	25.00%		$85,836	
West Gardner Retirement Opinion of Probable Cost:				$429,179

West Gardner Retirement

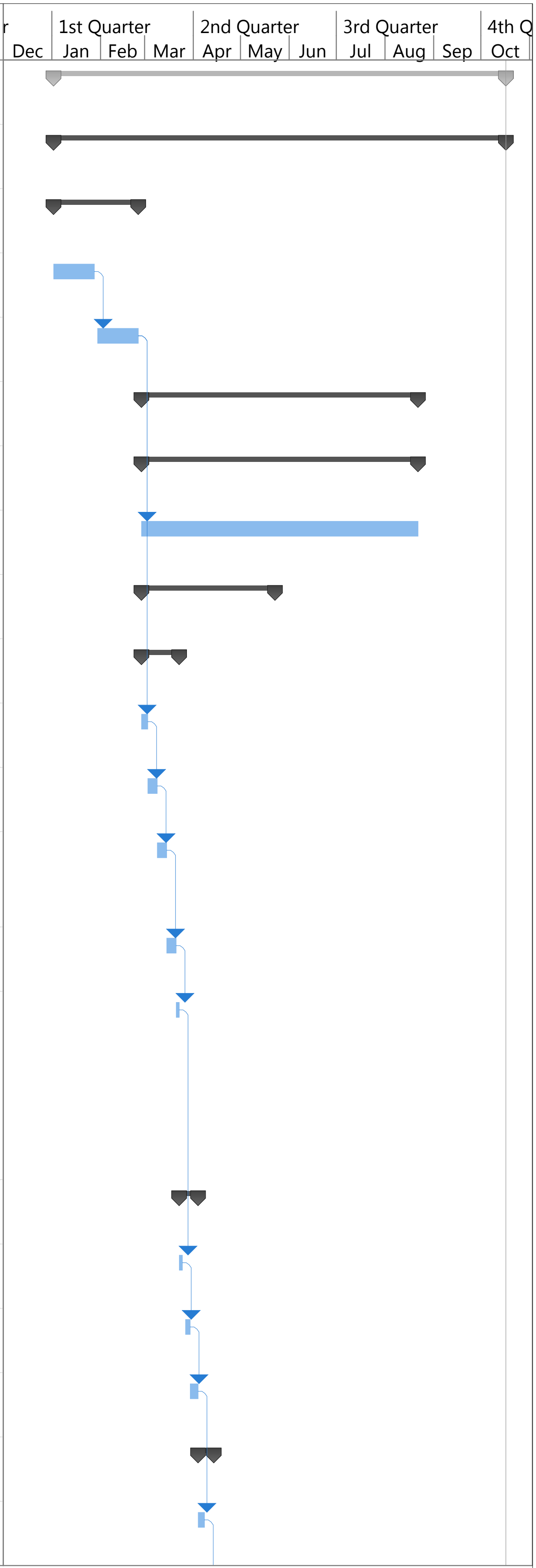
ID	Task Name	Cost
0	**West Gardner Retirement**	**$326,993.36**
1	**West Gardner Retirement**	**$326,993.36**
2	**Pre-Retirement Activities**	**$46,505.60**
3	Permitting Review	$24,896.00
4	Develop Detailed Retirement Plan	$21,609.60
5	**Retirement Activities**	**$232,586.96**
6	**Project Management During Retirement**	**$107,210.88**
7	Project Management During Retirement	$107,210.88
8	**Electrical**	**$59,848.32**
9	**Medium and Low Voltage Drawout Switchgear**	**$17,660.16**
10	De-energize all buses at the source.	$3,924.48
11	Open all circuit breakers.	$3,924.48
12	Rack all circuit breakers into the fully withdrawn, disconnected position.	$3,924.48
13	Verify that the closing/tripping springs are discharged.	$3,924.48
14	De-energize control power and auxiliary power circuits of each circuit breaker at the source and by opening control power circuit breakers or removing fuses in each breaker cubicle.	$1,962.24
15	**Motor Control Centers**	**$7,848.96**
16	De-energize all buses at the source.	$1,962.24
17	Open all circuit breakers and disconnect switches.	$2,943.36
18	Remove all fuses in control circuits.	$2,943.36
19	**Low-voltage Switchboards and Panelboards**	**$7,848.96**
20	De-energize all buses at the source.	$3,924.48
21	Open all circuit breakers and disconnect switches.	$3,924.48
22	**Oil-Filled Power Transformers**	**$11,773.44**
23	De-energize all buses at the source.	$2,943.36
24	Open all circuit breakers and disconnect switches.	$2,943.36
25	De-energize all buses at the source.	$2,943.36
26	Open all circuit breakers and disconnect switches.	$2,943.36
27	**Dry-type Power Transformers**	**$4,905.60**
28	De-energize all transformer primaries and verify that the secondary is de-energized.	$2,943.36

ID	Task Name	Cost
29	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	$1,962.24
30	**Motors**	**$9,811.20**
31	De-energize all primary power at the source.	$2,943.36
32	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	$2,943.36
33	Drain lube oil system (if applicable) and dispose of oil.	$3,924.48
34	**Fuel Gas System**	**$11,786.24**
35	Isolate Fuel Gas System	$4,264.32
36	Vent Fuel Gas Piping and Equipment	$2,751.84
37	Open and Vent Knock-Out Drum	$943.52
38	Drain, Open and Vent the Drain Tank	$943.52
39	Empty the Coalescing Filter	$1,939.52
40	Open and Vent Equipment on the CT Gas Valve Module	$943.52
41	**Lube Oil Cooling Water System**	**$8,491.68**
42	Open and Drain the Water Side of the Lube Oil Coolers	$5,661.12
43	Open and Vent the Coolers and Expansion Tank	$2,830.56
44	**Oily Drain Tank**	**$4,266.96**
45	Open and Pump Out the Oily Drain Tank	$4,266.96
46	**Wash Water Skid**	**$5,661.12**
47	Open and Drain the Detergent Tank	$1,887.04
48	Open and Drain the Demineralized Water Tank	$1,887.04
49	Empty the Demineralized Water Tank	$1,887.04
50	**Compressed Air**	**$3,774.08**
51	Empty Dessiccant Air Dryers and Vent	$1,887.04
52	Open and Vent the Air Reciever	$1,887.04
53	**Miscelleaneous Piping**	**$8,491.68**
54	Open and Vent the Exhaust Frame Cooling Piping	$2,830.56
55	Open and Vent the CT Air Processing Piping	$0.00
56	Open and Vent the Inlet Air Heating Piping	$2,830.56

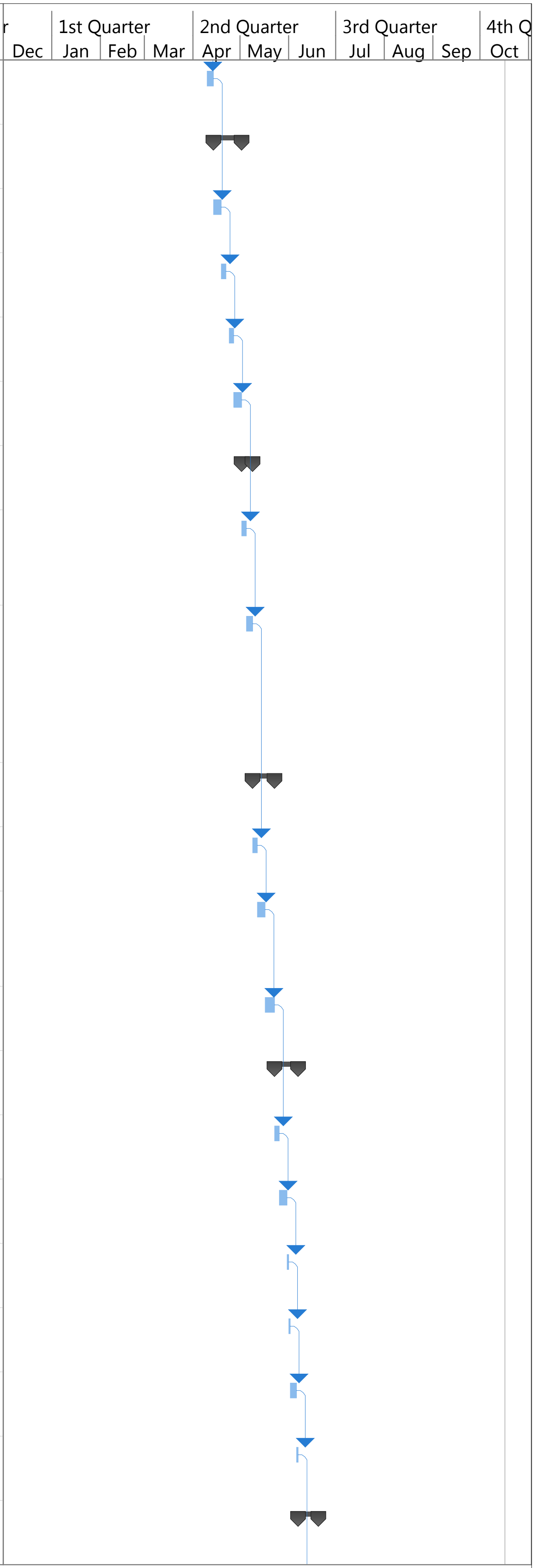
West Gardner Retirement

ID	Task Name	Cost
57	Open and Vent the CT Air Processing Piping	$2,830.56
58	**Fire Protection Piping**	**$7,495.68**
59	Empty the CO2 Storage Tank	$5,608.64
60	Open and Vent the Fire Protection Piping	$1,887.04
61	**Lube Oil System**	**$12,671.92**
62	Empty and Remove from Site the Lubricating Oil	$7,010.80
63	Drain Lubricating Oil Piping	$3,774.08
64	Open and Vent Lubricating Oil Piping	$1,887.04
65	**Potable Water**	**$2,888.40**
66	Disconnect Potable Water at Property Boundary	$2,888.40
67	**Post Retirement Closure Activity**	**$47,900.80**
68	Post Retirement Closure Activity	$47,900.80

ID	Task Name	Duration
0	**West Gardner Retirement**	**206 days**
1	**West Gardner Retirement**	**206 days**
2	**Pre-Retirement Activities**	**40 days**
3	Permitting Review	20 days
4	Develop Detailed Retirement Plan	20 days
5	**Retirement Activities**	**126 days**
6	**Project Management During Retirement**	**126 days**
7	Project Management During Retirement	126 days
8	**Electrical**	**61 days**
9	**Medium and Low Voltage Drawout Switchgear**	**18 days**
10	De-energize all buses at the source.	4 days
11	Open all circuit breakers.	4 days
12	Rack all circuit breakers into the fully withdrawn, disconnected position.	4 days
13	Verify that the closing/tripping springs are discharged.	4 days
14	De-energize control power and auxiliary power circuits of each circuit breaker at the source and by opening control power circuit breakers or removing fuses in each breaker cubicle.	2 days
15	**Motor Control Centers**	**8 days**
16	De-energize all buses at the source.	2 days
17	Open all circuit breakers and disconnect switches.	3 days
18	Remove all fuses in control circuits.	3 days
19	**Low-voltage Switchboards and Panelboards**	**8 days**
20	De-energize all buses at the source.	4 days

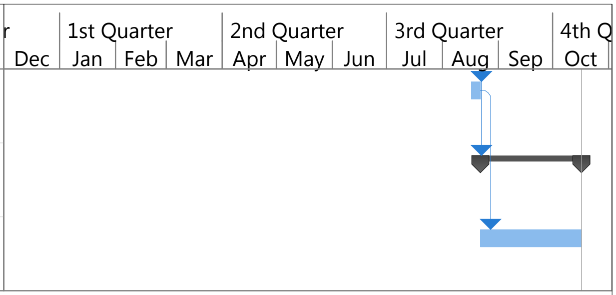


ID	Task Name	Duration
21	Open all circuit breakers and disconnect switches.	4 days
22	**Oil-Filled Power Transformers**	**12 days**
23	De-energize all buses at the source.	3 days
24	Open all circuit breakers and disconnect switches.	3 days
25	De-energize all buses at the source.	3 days
26	Open all circuit breakers and disconnect switches.	3 days
27	**Dry-type Power Transformers**	**5 days**
28	De-energize all transformer primaries and verify that the secondary is de-energized.	3 days
29	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	2 days
30	**Motors**	**10 days**
31	De-energize all primary power at the source.	3 days
32	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	3 days
33	Drain lube oil system (if applicable) and dispose of oil.	4 days
34	**Fuel Gas System**	**11 days**
35	Isolate Fuel Gas System	3 days
36	Vent Fuel Gas Piping and Equipment	3 days
37	Open and Vent Knock-Out Drum	1 day
38	Drain, Open and Vent the Drain Tank	1 day
39	Empty the Coalescing Filter	2 days
40	Open and Vent Equipment on the CT Gas Valve Module	1 day
41	**Lube Oil Cooling Water System**	**9 days**



ID	Task Name	Duration
42	Open and Drain the Water Side of the Lube Oil Coolers	6 days
43	Open and Vent the Coolers and Expansion Tank	3 days
44	**Oily Drain Tank**	**3 days**
45	Open and Pump Out the Oily Drain Tank	3 days
46	**Wash Water Skid**	**6 days**
47	Open and Drain the Detergent Tank	2 days
48	Open and Drain the Demineralized Water Tank	2 days
49	Empty the Demineralized Water Tank	2 days
50	**Compressed Air**	**4 days**
51	Empty Dessiccant Air Dryers and Vent	2 days
52	Open and Vent the Air Reciever	2 days
53	**Miscelleaneous Piping**	**17 days**
54	Open and Vent the Exhaust Frame Cooling Piping	3 days
55	Open and Vent the CT Air Processing Piping	8 days
56	Open and Vent the Inlet Air Heating Piping	3 days
57	Open and Vent the CT Air Processing Piping	3 days
58	**Fire Protection Piping**	**6 days**
59	Empty the CO2 Storage Tank	4 days
60	Open and Vent the Fire Protection Piping	2 days
61	**Lube Oil System**	**9 days**
62	Empty and Remove from Site the Lubricating Oil	5 days
63	Drain Lubricating Oil Piping	4 days
64	Open and Vent Lubricating Oil Piping	2 days
65	**Potable Water**	**3 days**

ID	Task Name	Duration
66	Disconnect Potable Water at Property Boundary	3 days
67	**Post Retirement Closure Activity**	**40 days**
68	Post Retirement Closure Activity	40 days



West Gardner Dismantlement

Owner Costs				
Pre-Dismantlement Activities		$1,104,559		
Overhead During Dismantlement		$1,953,579		
Post-Dismantlement Activities		$52,133		
Owner Costs Total			$3,110,271	
Demolition General Contractor (DGC) Costs				
Site Management		$944,359		
Equipment Rental		$1,591,597		
Consumables		$1,587,876		
Scrap Crew(s)		$411,525		
Dismantlement		$1,012,014		
DGC Insurance	2.00%	$110,947		
Contingency/Profit	15.00%	$848,748		
Performance Bond	2.00%	$130,141		
Contractor Costs Total:			$6,637,207	
Total:				$9,747,478
Owner Internal Costs:	5.00%			$487,374
Owner Contingency:	25.00%			$2,558,713
West Gardner Dismantlement Opinion of Probable Cost:				$12,793,564

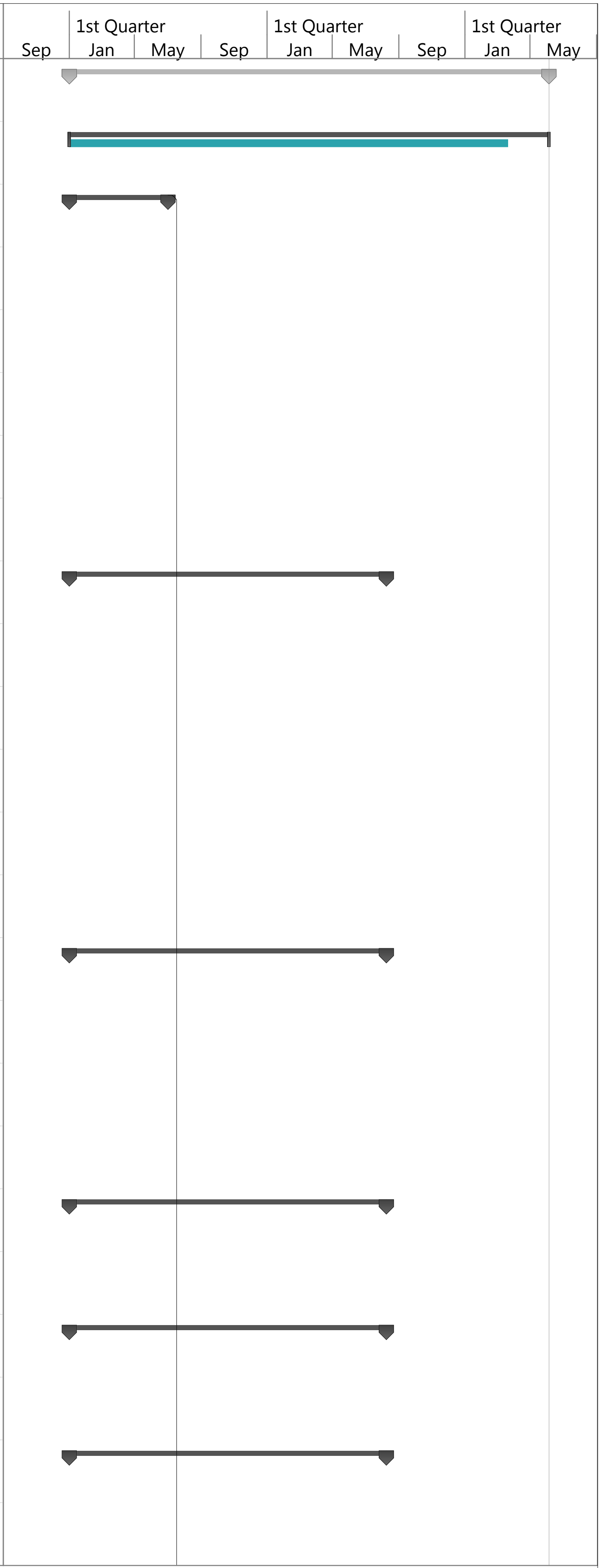
West Gardner CT Dismantlement

ID	Task Name	Cost
0	**West Gardner CT Dismantlement**	**$8,657,641.22**
1	**West Gardner CT Dismantlement**	**$8,657,641.22**
2	**Pre-Demolition Activities**	**$1,104,558.96**
3	Detailed Planning & Hire Owner's Engineer	$110,802.72
4	Detailed Site Characterization Study	$783,536.00
5	Hire Demolition general Contractor	$198,647.04
6	KCP&L Prepares Unit for Dismantlement	$11,573.20
7	Demolition Contractor Mobilizes on Sit	$0.00
8	**KCP&L Overhead during Dismantlement**	**$1,953,579.12**
9	KCP&L Project Manager	$275,400.32
10	KCP&L Administrative Support	$101,867.28
11	KCP&L Engineer	$452,721.12
12	Owners Engineer Project Manager	$138,102.40
13	Owners Engineer - Engineer	$985,488.00
14	**Demolition Contractor Overhead during Dismantleme**	**$944,358.96**
15	Demolition Contractor Project Manager	$267,187.92
16	Demolition Contractor Safety Manager	$237,924.96
17	Demolition Contractor Superintendent	$439,246.08
18	**Demolition Contractor Equipment Rental Cost**	**$1,591,596.64**
19	Equipment Rental	$1,591,596.64
20	**Demolition Contractor Consumables**	**$1,587,875.92**
21	Consumables	$1,587,875.92
22	**Scrap Crews**	**$411,525.04**
23	Crew to Handle Scrap Material(s)	$411,525.04
24	**Dismantlement**	**$1,012,013.78**
25	**Electrical**	**$252,850.40**
26	Electrical Demolition of Equipment	$252,850.40
27	**Fuel Gas System**	**$21,814.00**
28	Remove all above grade fuel gas piping.	$7,010.16
29	Gas Filter Skid	$14,803.84
30	**Lube Oil System**	**$55,514.40**
31	Lube Oil Piping	$14,803.84
32	Lube Oil Pumps	$18,504.80
33	Lube Oil Tanks	$22,205.76
34	**Compressed Air System**	**$22,205.76**
35	Compressed Air Piping	$11,102.88
36	Compressors	$5,551.44
37	Air Receiver	$3,700.96
38	Dryer	$1,850.48
39	**Fire Protection**	**$42,561.04**
40	Fire Protection Piping	$20,355.28
41	Firewater Tank	$14,803.84
42	CO2 Storage Tank	$7,401.92
43	**Wash Water Skid**	**$25,906.72**

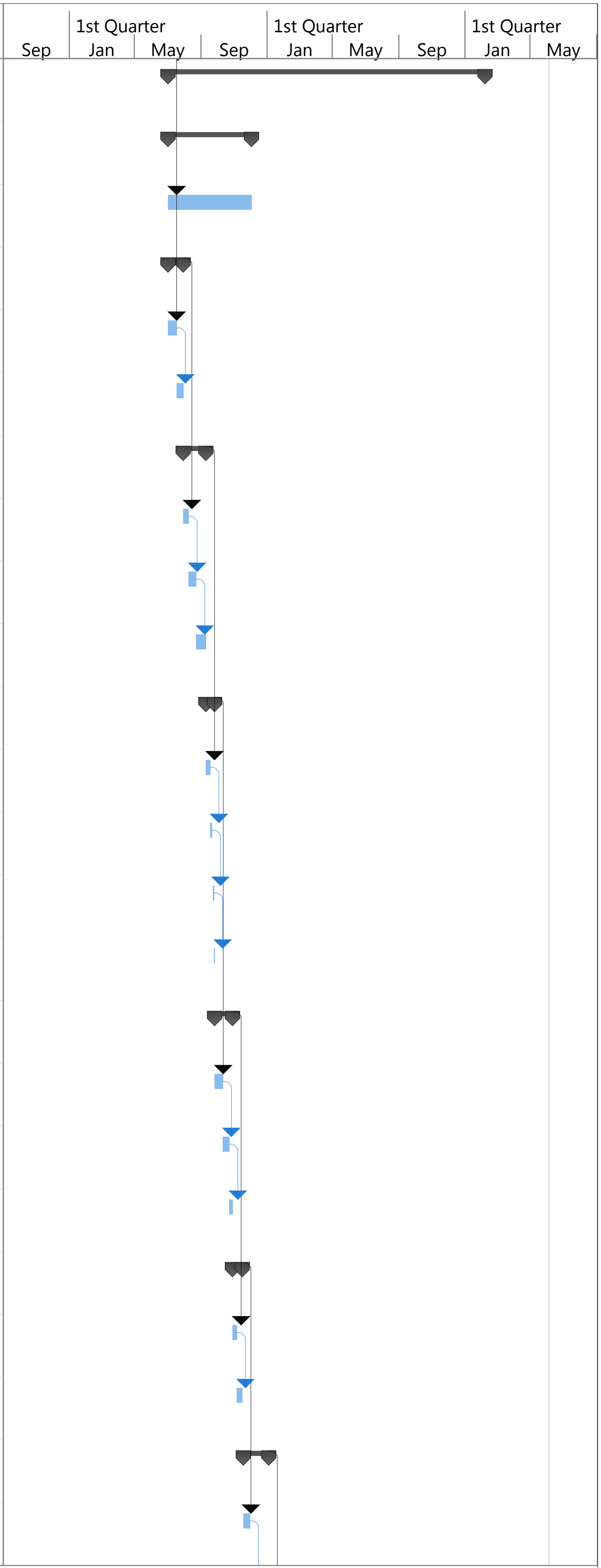
West Gardner CT Dismantlement

ID	Task Name	Cost
44	Detergent Tank	$11,102.88
45	Demineralized Water Tank	$14,803.84
46	**Miscellaneous Piping**	**$64,766.80**
47	Exhaust Frame Cooling Piping	$18,504.80
48	CT Air Processing Piping	$22,205.76
49	Inlet Air Heating Piping	$24,056.24
50	**Generator**	**$0.00**
51	Generator	$0.00
52	**Combustion Turbine**	**$272,020.56**
53	Inlet Heater	$18,504.80
54	Inlet duct	$27,757.20
55	Exhaust duct	$37,009.60
56	Combustion Turbine	$64,766.80
57	Combustion Turbine Foundation	$68,467.76
58	Enclosure	$55,514.40
59	**CEMS**	**$44,411.52**
60	CEMS Building	$22,205.76
61	CEMS Building Foundation	$22,205.76
62	**Stack**	**$83,271.60**
63	Stack	$83,271.60
64	**Site Prep**	**$126,690.98**
65	Final Grading and Drainage	$126,690.98
66	**Post Dismantlement Activities**	**$52,132.80**
67	Post Dismantlement Activities	$52,132.80

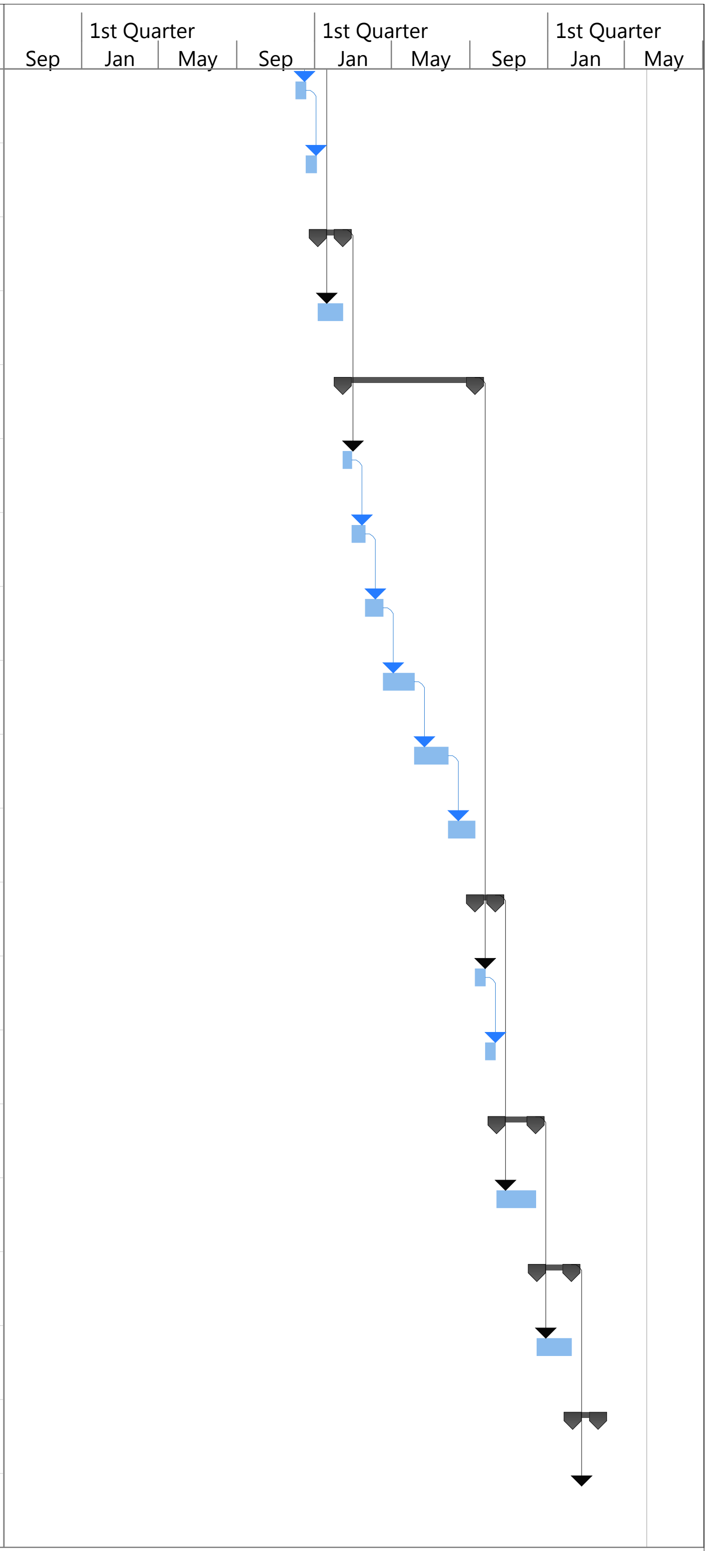
ID	Task Name	Duration
0	**West Gardner CT Dismantlement**	**633 days**
1	**West Gardner CT Dismantlement**	**633 days**
2	**Pre-Demolition Activities**	**130 days**
3	Detailed Planning & Hire Owner's Engineer	3 mons
4	Detailed Site Characterization Study	130 days
5	Hire Demolition general Contractor	3 mons
6	KCP&L Prepares Unit for Dismantlement	2 wks
7	Demolition Contractor Mobilizes on Sit	5 days
8	**KCP&L Overhead during Dismantlement**	**419 days**
9	KCP&L Project Manager	419 days
10	KCP&L Administrative Support	419 days
11	KCP&L Engineer	419 days
12	Owners Engineer Project Manager	419 days
13	Owners Engineer - Engineer	419 days
14	**Demolition Contractor Overhead during Dismantlement**	**419 days**
15	Demolition Contractor Project Manager	419 days
16	Demolition Contractor Safety Manager	419 days
17	Demolition Contractor Superintendent	419 days
18	**Demolition Contractor Equipment Rental Cost**	**419 days**
19	Equipment Rental	419 days
20	**Demolition Contractor Consumables**	**419 days**
21	Consumables	419 days
22	**Scrap Crews**	**419 days**
23	Crew to Handle Scrap Material(s)	419 days



ID	Task Name	Duration
24	**Dismantlement**	**419 days**
25	**Electrical**	**110 days**
26	Electrical Demolition of Equipment	110 days
27	**Fuel Gas System**	**20 days**
28	Remove all above grade fuel gas piping.	12 days
29	Gas Filter Skid	8 days
30	**Lube Oil System**	**30 days**
31	Lube Oil Piping	8 days
32	Lube Oil Pumps	10 days
33	Lube Oil Tanks	12 days
34	**Compressed Air System**	**12 days**
35	Compressed Air Piping	6 days
36	Compressors	3 days
37	Air Receiver	2 days
38	Dryer	1 day
39	**Fire Protection**	**23 days**
40	Fire Protection Piping	11 days
41	Firewater Tank	8 days
42	CO2 Storage Tank	4 days
43	**Wash Water Skid**	**14 days**
44	Detergent Tank	6 days
45	Demineralized Water Tank	8 days
46	**Miscellaneous Piping**	**35 days**
47	Exhaust Frame Cooling Piping	10 days



ID	Task Name	Duration
48	CT Air Processing Piping	12 days
49	Inlet Air Heating Piping	13 days
50	**Generator**	**29 days**
51	Generator	29 days
52	**Combustion Turbine**	**147 days**
53	Inlet Heater	10 days
54	Inlet duct	15 days
55	Exhaust duct	20 days
56	Combustion Turbine	35 days
57	Combustion Turbine Foundation	37 days
58	Enclosure	30 days
59	**CEMS**	**24 days**
60	CEMS Building	12 days
61	CEMS Building Foundation	12 days
62	**Stack**	**45 days**
63	Stack	45 days
64	**Site Prep**	**40 days**
65	Final Grading and Drainage	40 days
66	**Post Dismantlement Activities**	**30 days**
67	Post Dismantlement Activities	30 days



OSAWATOMIE GENERATING STATION

OSAWATOMIE GENERATING STATION

The Osawatomie Generating Station is a single natural gas-fired combustion turbine generator set.

This combustion turbine has an SPP-accredited unit rating of 75 MW and was placed in service in 2003. This unit is comprised of a General Electric Model 7EA CT, with a generator step-up transformer and auxiliary power transformer. The combustion turbine employs dry low NO_X burner technology and burns only natural gas fuel.

The following are the major systems and equipment that were included in the retirement and dismantlement of the unit and the major systems and equipment that were considered common (additional details are listed in the attached retirement and dismantlement schedules included in this Appendix).

OSAWATOMIE

1. Combustion turbine generator set with auxiliaries.
2. Generator step-up and auxiliary transformers.
3. Freestanding outdoor switchgear.
4. Exhaust stack.
5. Natural gas filtering skid.
6. Service/Instrument air compressors.

Osawatomie Retirement

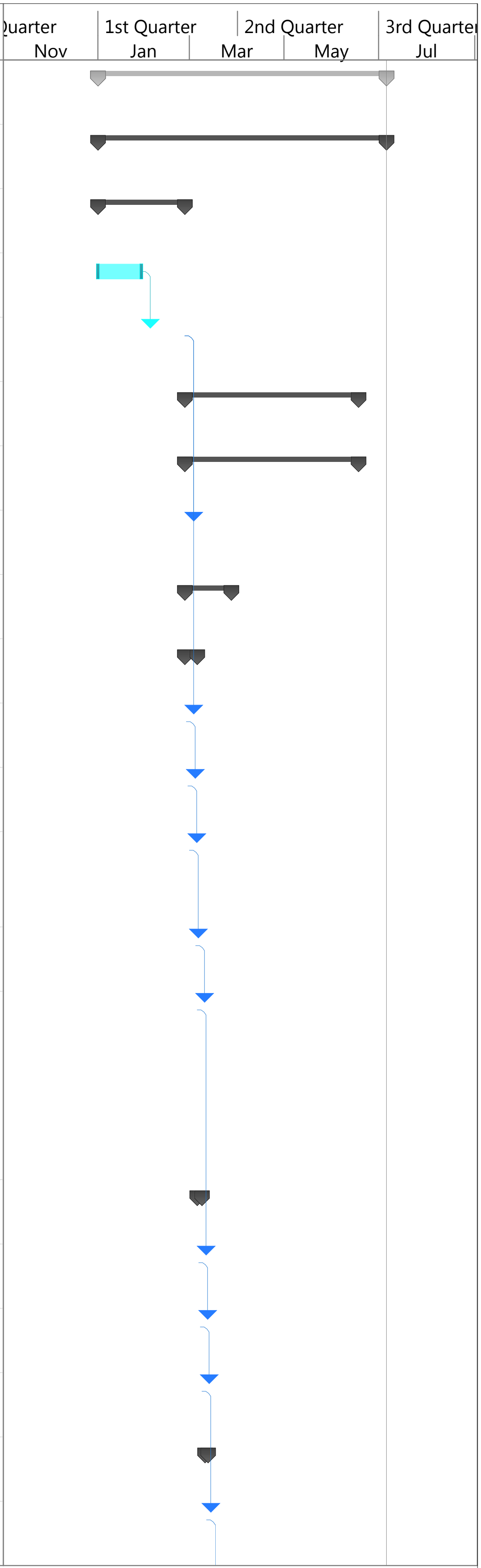
Owner Costs				
Pre-Retirement Activities		$46,506		
Retirement Activities		$129,218		
Post-Retirement Activities		$47,901		
Owner Direct Total:			$223,624	
Owner Internal Costs:	5.00%		$11,181	
Owner Contingency:	25.00%		$58,701	
Osawatomie Retirement Opinion of Probable Cost:				$293,506

Osawatomie Retirement

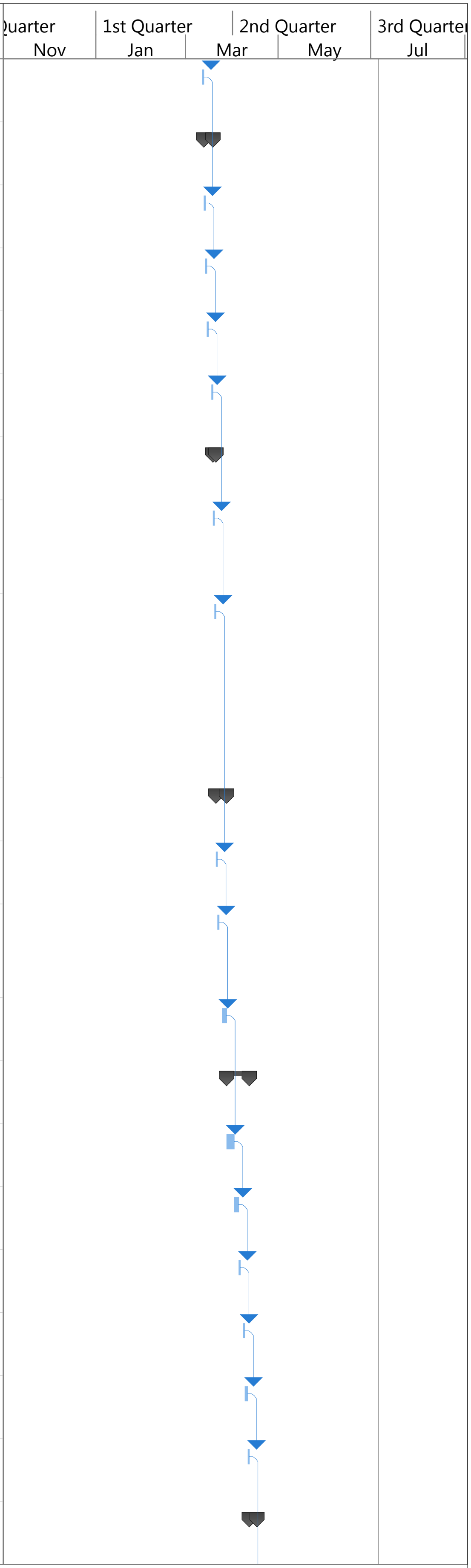
ID	Task Name	Cost
0	**Osawatomie Retirement**	**$223,623.92**
1	**Osawatomie Retirement**	**$223,623.92**
2	**Pre-Retirement Activities**	**$46,505.60**
3	Permitting Review	$24,896.00
4	Develop Detailed Retirement Plan	$21,609.60
5	**Retirement Activities**	**$129,217.52**
6	**Project Management During Retirement**	**$68,070.40**
7	Project Management During Retirement	$68,070.40
8	**Electrical**	**$21,584.64**
9	**Medium and Low Voltage Drawout Switchgear**	**$5,886.72**
10	De-energize all buses at the source.	$981.12
11	Open all circuit breakers.	$981.12
12	Rack all circuit breakers into the fully withdrawn, disconnected position.	$981.12
13	Verify that the closing/tripping springs are discharged.	$1,962.24
14	De-energize control power and auxiliary power circuits of each circuit breaker at the source and by opening control power circuit breakers or removing fuses in each breaker cubicle.	$981.12
15	**Motor Control Centers**	**$2,943.36**
16	De-energize all buses at the source.	$981.12
17	Open all circuit breakers and disconnect switches.	$981.12
18	Remove all fuses in control circuits.	$981.12
19	**Low-voltage Switchboards and Panelboards**	**$1,962.24**
20	De-energize all buses at the source.	$981.12
21	Open all circuit breakers and disconnect switches.	$981.12
22	**Oil-Filled Power Transformers**	**$3,924.48**
23	De-energize all buses at the source.	$981.12
24	Open all circuit breakers and disconnect switches.	$981.12
25	De-energize all buses at the source.	$981.12
26	Open all circuit breakers and disconnect switches.	$981.12
27	**Dry-type Power Transformers**	**$1,962.24**
28	De-energize all transformer primaries and verify that the secondary is de-energized.	$981.12
29	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	$981.12
30	**Motors**	**$4,905.60**
31	De-energize all primary power at the source.	$981.12
32	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	$981.12
33	Drain lube oil system (if applicable) and dispose of oil.	$2,943.36
34	**Fuel Gas System**	**$11,786.24**
35	Isolate Fuel Gas System	$4,264.32
36	Vent Fuel Gas Piping and Equipment	$2,751.84

ID	Task Name	Cost
37	Open and Vent Knock-Out Drum	$943.52
38	Drain, Open and Vent the Drain Tank	$943.52
39	Empty the Coalescing Filter	$1,939.52
40	Open and Vent Equipment on the CT Gas Valve Module	$943.52
41	**Lube Oil Cooling Water System**	**$2,830.56**
42	Open and Drain the Water Side of the Lube Oil Coolers	$1,887.04
43	Open and Vent the Coolers and Expansion Tank	$943.52
44	**Oily Drain Tank**	**$4,266.96**
45	Open and Pump Out the Oily Drain Tank	$4,266.96
46	**Wash Water Skid**	**$2,830.56**
47	Open and Drain the Detergent Tank	$943.52
48	Open and Drain the Demineralized Water Tank	$943.52
49	Empty the Demineralized Water Tank	$943.52
50	**Compressed Air**	**$1,887.04**
51	Empty Dessiccant Air Dryers and Vent	$943.52
52	Open and Vent the Air Reciever	$943.52
53	**Miscelleaneous Piping**	**$3,774.08**
54	Open and Vent the Exhaust Frame Cooling Piping	$943.52
55	Open and Vent the CT Air Processing Piping	$943.52
56	Open and Vent the Inlet Air Heating Piping	$943.52
57	Open and Vent the CT Air Processing Piping	$943.52
58	**Fire Protection Piping**	**$3,747.84**
59	Empty the CO2 Storage Tank	$2,804.32
60	Open and Vent the Fire Protection Piping	$943.52
61	**Lube Oil System**	**$8,439.20**
62	Empty and Remove from Site the Lubricating Oil	$5,608.64
63	Drain Lubricating Oil Piping	$1,887.04
64	Open and Vent Lubricating Oil Piping	$943.52
65	**Post Retirement Closure Activity**	**$47,900.80**
66	Post Retirement Closure Activity	$47,900.80

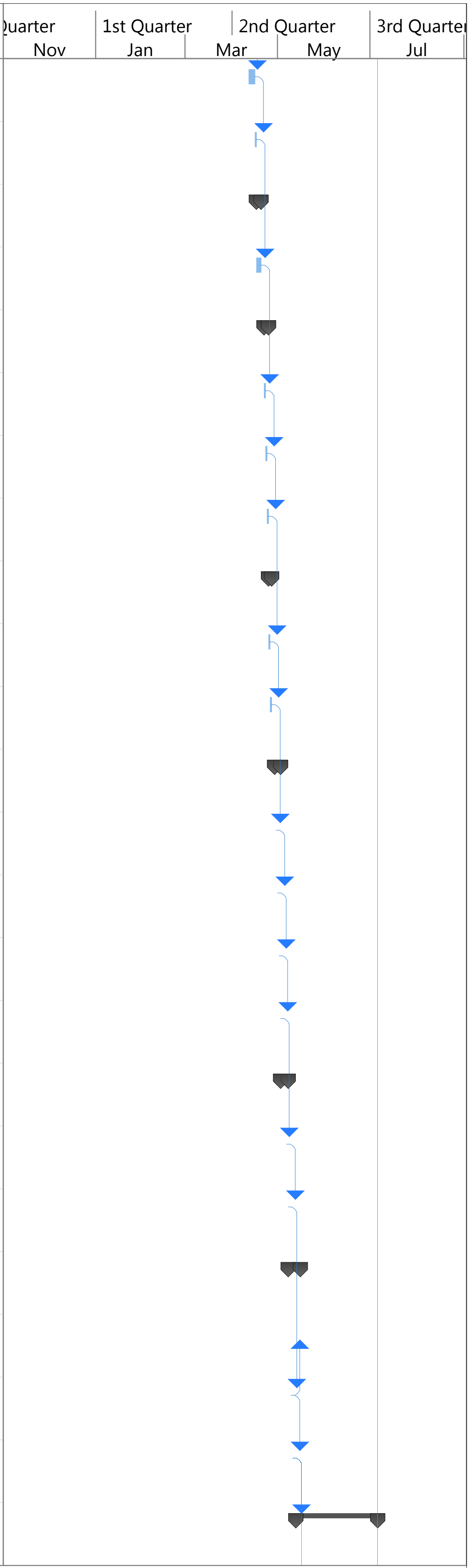
ID	Task Name	Duration
0	**Osawatomie Retirement**	**134 days**
1	**Osawatomie Retirement**	**134 days**
2	**Pre-Retirement Activities**	**40 days**
3	Permitting Review	20 days
4	Develop Detailed Retirement Plan	20 days
5	**Retirement Activities**	**80 days**
6	**Project Management During Retirement**	**80 days**
7	Project Management During Retirement	80 days
8	**Electrical**	**22 days**
9	**Medium and Low Voltage Drawout Switchgear**	**6 days**
10	De-energize all buses at the source.	1 day
11	Open all circuit breakers.	1 day
12	Rack all circuit breakers into the fully withdrawn, disconnected position.	1 day
13	Verify that the closing/tripping springs are discharged.	2 days
14	De-energize control power and auxiliary power circuits of each circuit breaker at the source and by opening control power circuit breakers or removing fuses in each breaker cubicle.	1 day
15	**Motor Control Centers**	**3 days**
16	De-energize all buses at the source.	1 day
17	Open all circuit breakers and disconnect switches.	1 day
18	Remove all fuses in control circuits.	1 day
19	**Low-voltage Switchboards and Panelboards**	**2 days**
20	De-energize all buses at the source.	1 day



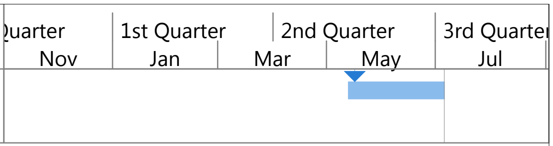
ID	Task Name	Duration
21	Open all circuit breakers and disconnect switches.	1 day
22	**Oil-Filled Power Transformers**	**4 days**
23	De-energize all buses at the source.	1 day
24	Open all circuit breakers and disconnect switches.	1 day
25	De-energize all buses at the source.	1 day
26	Open all circuit breakers and disconnect switches.	1 day
27	**Dry-type Power Transformers**	**2 days**
28	De-energize all transformer primaries and verify that the secondary is de-energized.	1 day
29	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	1 day
30	**Motors**	**5 days**
31	De-energize all primary power at the source.	1 day
32	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	1 day
33	Drain lube oil system (if applicable) and dispose of oil.	3 days
34	**Fuel Gas System**	**11 days**
35	Isolate Fuel Gas System	3 days
36	Vent Fuel Gas Piping and Equipment	3 days
37	Open and Vent Knock-Out Drum	1 day
38	Drain, Open and Vent the Drain Tank	1 day
39	Empty the Coalescing Filter	2 days
40	Open and Vent Equipment on the CT Gas Valve Module	1 day
41	**Lube Oil Cooling Water System**	**3 days**



ID	Task Name	Duration
42	Open and Drain the Water Side of the Lube Oil Coolers	2 days
43	Open and Vent the Coolers and Expansion Tank	1 day
44	**Oily Drain Tank**	**3 days**
45	Open and Pump Out the Oily Drain Tank	3 days
46	**Wash Water Skid**	**3 days**
47	Open and Drain the Detergent Tank	1 day
48	Open and Drain the Demineralized Water Tank	1 day
49	Empty the Demineralized Water Tank	1 day
50	**Compressed Air**	**2 days**
51	Empty Dessiccant Air Dryers and Vent	1 day
52	Open and Vent the Air Reciever	1 day
53	**Miscelleaneous Piping**	**4 days**
54	Open and Vent the Exhaust Frame Cooling Piping	1 day
55	Open and Vent the CT Air Processing Piping	1 day
56	Open and Vent the Inlet Air Heating Piping	1 day
57	Open and Vent the CT Air Processing Piping	1 day
58	**Fire Protection Piping**	**3 days**
59	Empty the CO2 Storage Tank	2 days
60	Open and Vent the Fire Protection Piping	1 day
61	**Lube Oil System**	**6 days**
62	Empty and Remove from Site the Lubricating Oil	4 days
63	Drain Lubricating Oil Piping	2 days
64	Open and Vent Lubricating Oil Piping	1 day
65	**Post Retirement Closure Activity**	**40 days**



ID	Task Name	Duration
66	Post Retirement Closure Activity	40 days



Osawatomie Dismantlement

Owner Costs				
Pre-Dismantlement Activities		$1,104,559		
Overhead During Dismantlement		$787,959		
Post-Dismantlement Activities		$34,755		
Owner Costs Total			$1,927,273	
Demolition General Contractor (DGC) Costs				
Site Management		$380,899		
Equipment Rental		$641,957		
Consumables		$640,456		
Scrap Crew(s)		$165,985		
Dismantlement		$468,067		
DGC Insurance	2.00%	$45,947		
Contingency/Profit	15.00%	$351,497		
Performance Bond	2.00%	$53,896		
Contractor Costs Total:			$2,748,703	
Total:				$4,675,977
Owner Internal Costs:	5.00%			$233,799
Owner Contingency:	25.00%			$1,227,444
Osawatomie Dismantlement Opinion of Probable Cost:				$6,137,219

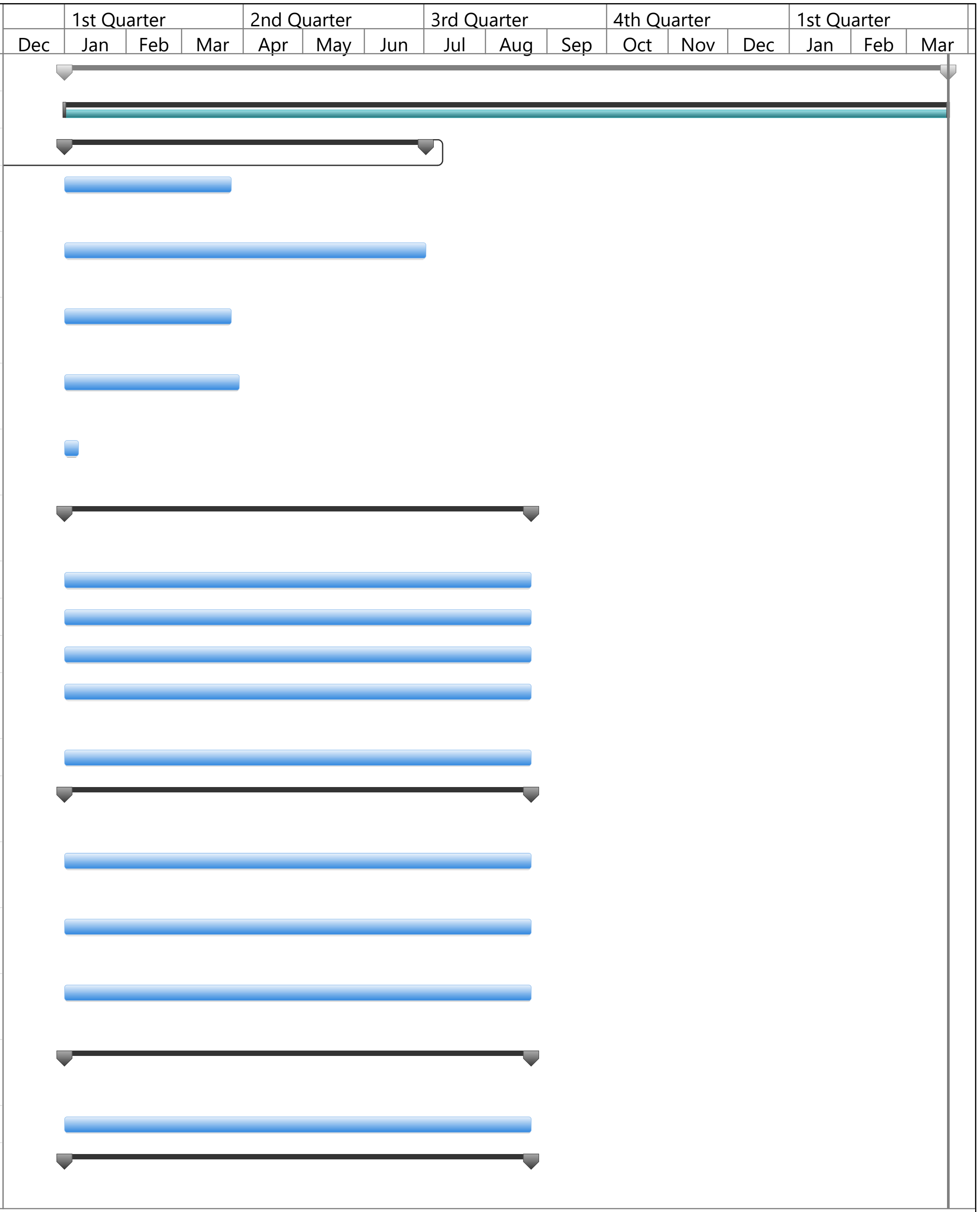
Osawatomie Dismantlement

ID	Task Name	Cost
0	**Osawatomie Dismantlement**	**$4,224,636.58**
1	**Osawatomie Dismantlement**	**$4,224,636.58**
2	**Pre-Demolition Activities**	**$1,104,558.96**
3	Detailed Planning & Hire Owner's Engineer	$110,802.72
4	Detailed Site Characterization Study	$783,536.00
5	Hire Demolition general Contractor	$198,647.04
6	KCP&L Prepares Unit for Dismantlement	$11,573.20
7	Demolition Contractor Mobilizes on Sit	$0.00
8	**KCP&L Overhead during Dismantlement**	**$787,959.12**
9	KCP&L Project Manager	$111,080.32
10	KCP&L Administrative Support	$41,087.28
11	KCP&L Engineer	$182,601.12
12	Owners Engineer Project Manager	$55,702.40
13	Owners Engineer - Engineer	$397,488.00
14	**Demolition Contractor Overhead during Dismantlement**	**$380,898.96**
15	Demolition Contractor Project Manager	$107,767.92
16	Demolition Contractor Safety Manager	$95,964.96
17	Demolition Contractor Superintendent	$177,166.08
18	**Demolition Contractor Equipment Rental Cost**	**$641,956.64**
19	Equipment Rental	$641,956.64
20	**Demolition Contractor Consumables**	**$640,455.92**
21	Consumables	$640,455.92
22	**Scrap Crews**	**$165,985.04**
23	Crew to Handle Scrap Material(s)	$165,985.04
24	**Dismantlement**	**$468,066.74**
25	**Electrical**	**$137,918.40**
26	Electrical Demolition of Equipment	$137,918.40
27	**Fuel Gas System**	**$8,725.60**
28	Remove all above grade fuel gas piping.	$3,174.16
29	Gas Filter Skid	$5,551.44
30	**Lube Oil System**	**$18,504.80**
31	Lube Oil Piping	$5,551.44
32	Lube Oil Pumps	$5,551.44
33	Lube Oil Tanks	$7,401.92
34	**Compressed Air System**	**$24,056.24**
35	Compressed Air Piping	$5,551.44
36	Compressors	$9,252.40
37	Air Receiver	$3,700.96
38	Dryer	$5,551.44
39	**Fire Protection**	**$27,757.20**
40	Fire Protection Piping	$11,102.88
41	Firewater Tank	$9,252.40
42	CO2 Storage Tank	$7,401.92
43	**Wash Water Skid**	**$14,803.84**
44	Detergent Tank	$7,401.92
45	Demineralized Water Tank	$7,401.92
46	**Miscellaneous Piping**	**$25,906.72**
47	Exhaust Frame Cooling Piping	$7,401.92
48	CT Air Processing Piping	$9,252.40

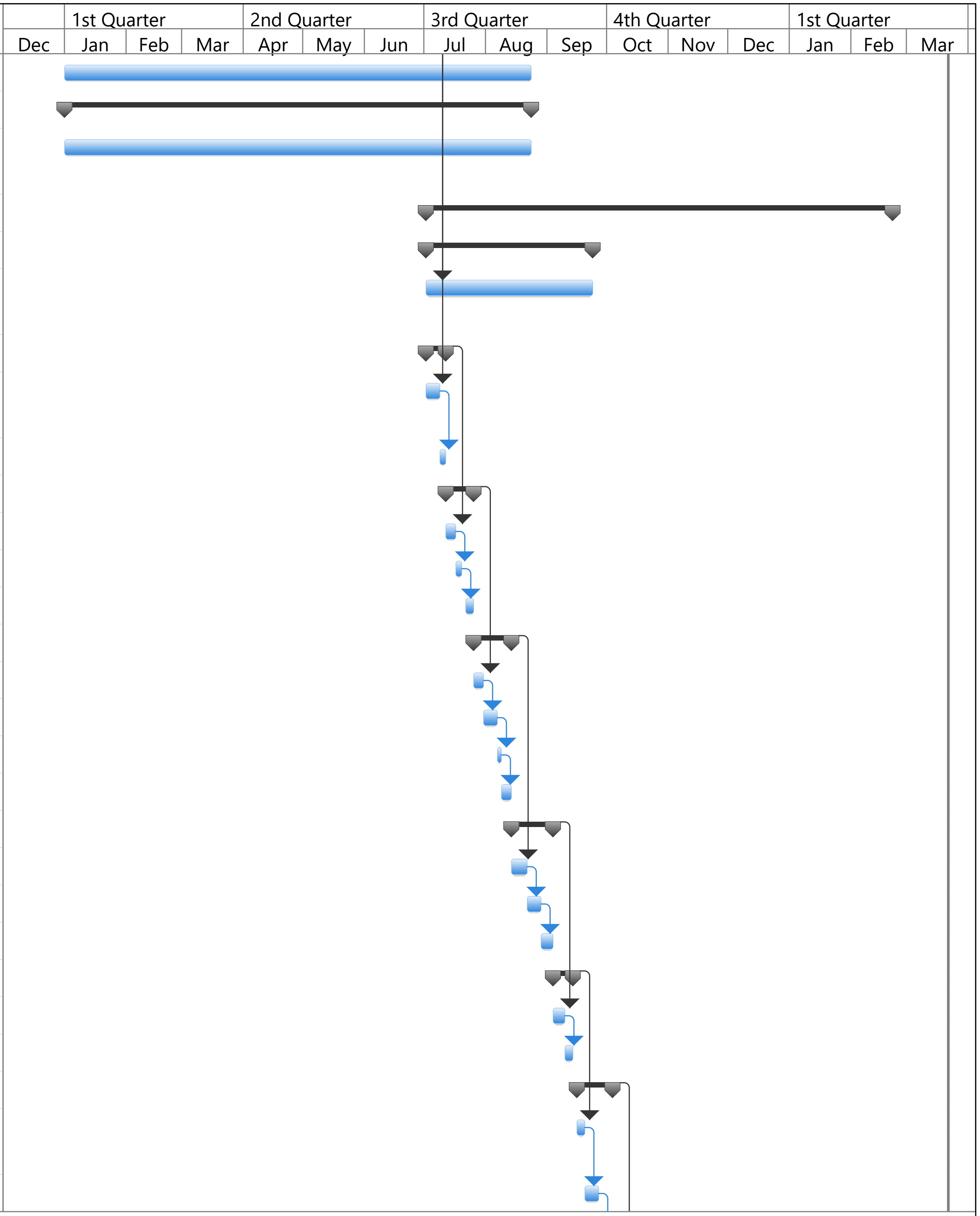
Osawatomie Dismantlement

ID	Task Name	Cost
49	Inlet Air Heating Piping	$9,252.40
50	**Generator**	**$0.00**
51	Generator	$0.00
52	**Combustion Turbine**	**$96,224.96**
53	Inlet Heater	$5,551.44
54	Inlet duct	$11,102.88
55	Exhaust duct	$14,803.84
56	Combustion Turbine	$29,607.68
57	Combustion Turbine Foundation	$16,654.32
58	Enclosure	$18,504.80
59	**CEMS**	**$14,803.84**
60	CEMS Building	$7,401.92
61	CEMS Building Foundation	$7,401.92
62	**Stack**	**$27,757.20**
63	Stack	$27,757.20
64	**Site Prep**	**$71,607.94**
65	Final Grading and Drainage	$71,607.94
66	**Post Dismantlement Activities**	**$34,755.20**
67	Post Dismantlement Activities	$34,755.20

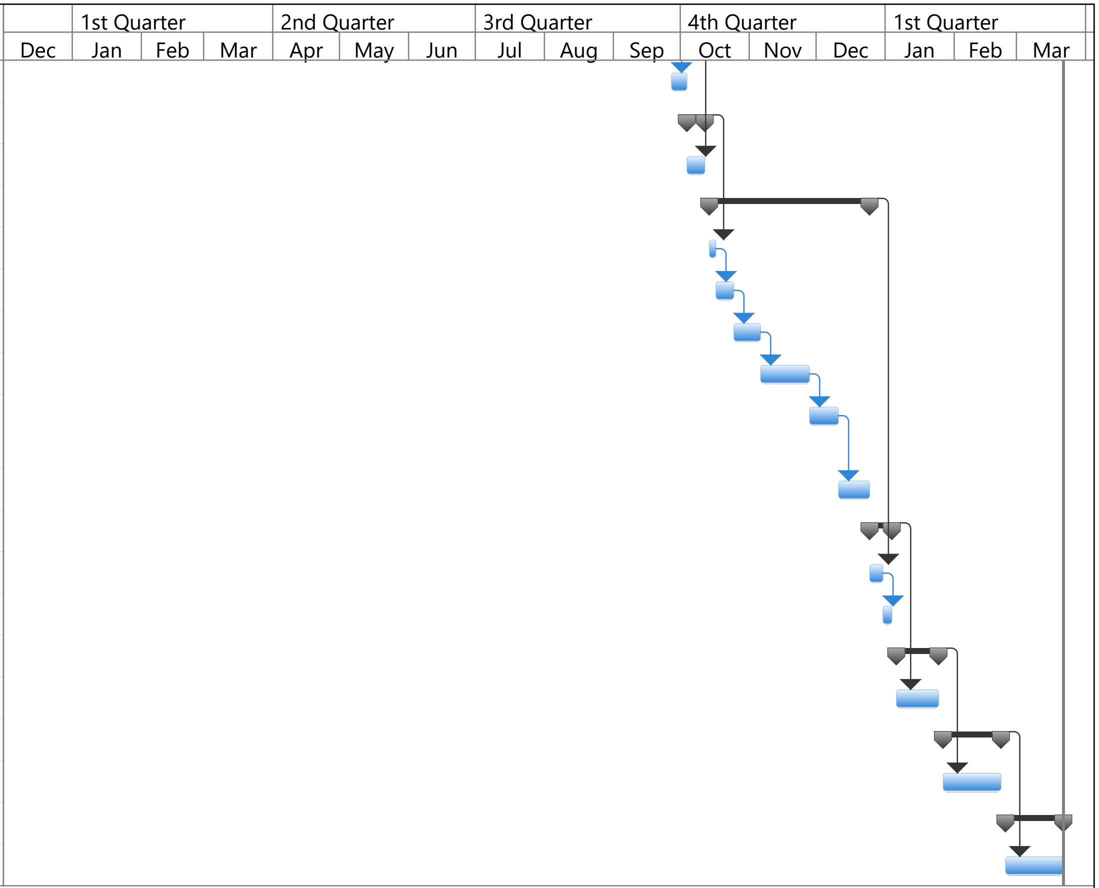
ID	Task Name	Duration
0	**Osawatomie Dismantlement**	**319 days**
1	**Osawatomie Dismantlement**	**319 days**
2	**Pre-Demolition Activities**	**130 days**
3	Detailed Planning & Hire Owner's Engineer	3 mons
4	Detailed Site Characterization Study	130 days
5	Hire Demolition general Contractor	3 mons
6	KCP&L Prepares Unit for Dismantlement	12.8 wks
7	Demolition Contractor Mobilizes on Site	5 days
8	**KCP&L Overhead during Dismantlement**	**169 days**
9	KCP&L Project Manager	169 days
10	KCP&L Administrative Support	169 days
11	KCP&L Engineer	169 days
12	Owners Engineer Project Manager	169 days
13	Owners Engineer - Engineer	169 days
14	**Demolition Contractor Overhead during Dismantlement**	**169 days**
15	Demolition Contractor Project Manager	169 days
16	Demolition Contractor Safety Manager	169 days
17	Demolition Contractor Superintendent	169 days
18	**Demolition Contractor Equipment Rental Cost**	**169 days**
19	Equipment Rental	169 days
20	**Demolition Contractor Consumables**	**169 days**



ID	Task Name	Duration
21	Consumables	169 days
22	**Scrap Crews**	**169 days**
23	Crew to Handle Scrap Material(s)	169 days
24	**Dismantlement**	**169 days**
25	**Electrical**	**60 days**
26	Electrical Demolition of Equipment	60 days
27	**Fuel Gas System**	**8 days**
28	Remove all above grade fuel gas piping.	5 days
29	Gas Filter Skid	3 days
30	**Lube Oil System**	**10 days**
31	Lube Oil Piping	3 days
32	Lube Oil Pumps	3 days
33	Lube Oil Tanks	4 days
34	**Compressed Air System**	**13 days**
35	Compressed Air Piping	3 days
36	Compressors	5 days
37	Air Receiver	2 days
38	Dryer	3 days
39	**Fire Protection**	**15 days**
40	Fire Protection Piping	6 days
41	Firewater Tank	5 days
42	CO2 Storage Tank	4 days
43	**Wash Water Skid**	**8 days**
44	Detergent Tank	4 days
45	Demineralized Water Tank	4 days
46	**Miscellaneous Piping**	**14 days**
47	Exhaust Frame Cooling Piping	4 days
48	CT Air Processing Piping	5 days



ID	Task Name	Duration
49	Inlet Air Heating Piping	5 days
50	**Generator**	**6 days**
51	Generator	6 days
52	**Combustion Turbine**	**52 days**
53	Inlet Heater	3 days
54	Inlet duct	6 days
55	Exhaust duct	8 days
56	Combustion Turbine	16 days
57	Combustion Turbine Foundation	9 days
58	Enclosure	10 days
59	**CEMS**	**8 days**
60	CEMS Building	4 days
61	CEMS Building Foundation	4 days
62	**Stack**	**15 days**
63	Stack	15 days
64	**Site Prep**	**20 days**
65	Final Grading and Drainage	20 days
66	**Post Dismantlement Activities**	**20 days**
67	Post Dismantlement Activities	20 days



HAWTHORN GENERATING STATION
UNITS 6 AND 9

HAWTHORN GENERATING STATION UNITS 6 AND 9

Hawthorn Units 6 and 9 are a combined-cycle plant that utilizes a combustion turbine generator set equipped with a heat recovery steam generator (HRSG) that utilizes waste heat to produce steam to repower the existing steam turbine generator from the former Unit 4 (re-designated Unit 9) at the Hawthorn Generating Station.

Unit 6 is a Siemens Model V84.3A combustion turbine set that has an SPP-accredited unit rating of 151 MW in simple-cycle configuration when utilizing a bypass damper and stack arrangement. Unit 6 began service in 1997. When Unit 6 is operated in combined-cycle configuration exhausting through the HRSG to produce steam to power the Unit 9 steam turbine generator, the combined SPP-accredited plant rating increases to 232 MW, net. Unit 9 began service in 2000. Each unit is interconnected to the grid through its own generator step-up transformer arrangement. The combustion turbine employs dry low NO_X burner technology and burns only natural gas fuel. The HRSG has an ammonia SCR arrangement to further reduce NO_X emissions.

The following are the major systems and equipment that were included in the retirement and dismantlement of each unit and the major systems and equipment that were considered common (additional details are listed in the attached retirement and dismantlement schedules included in this Appendix).

HAWTHORN UNITS 6 AND 9

1. Combustion turbine generator set and auxiliaries (one)
2. Steam turbine generator set and auxiliaries (one).
2. Generator step-up and auxiliary transformers (two).
3. HRSG and auxiliaries (one).
4. Selective catalytic reduction system, including catalyst and reagent systems (one).

5. Combustion turbine bypass damper and exhaust stack (one).

6. HRSG exhaust stack (one).

7. Circulating water intake structure, circulating water piping, and circulating water equipment (formerly Unit 4).

8. Natural gas filtering skid.

9. Service/Instrument air compressors.

Hawthorn 6 & 9 Retirement

Owner Costs				
Pre-Retirement Activities		$46,506		
Retirement Activities		$232,780		
Post-Retirement Activities		$49,792		
Owner Direct Total			$329,078	
Owner Internal Costs	5.00%		$16,454	
Owner Contingency:	25.00%		$86,383	
Hawthorn 6 & 9 Retirement Opinion of Probable Cost:				$431,914

<u>Activities Required by Permit or Regulation</u>

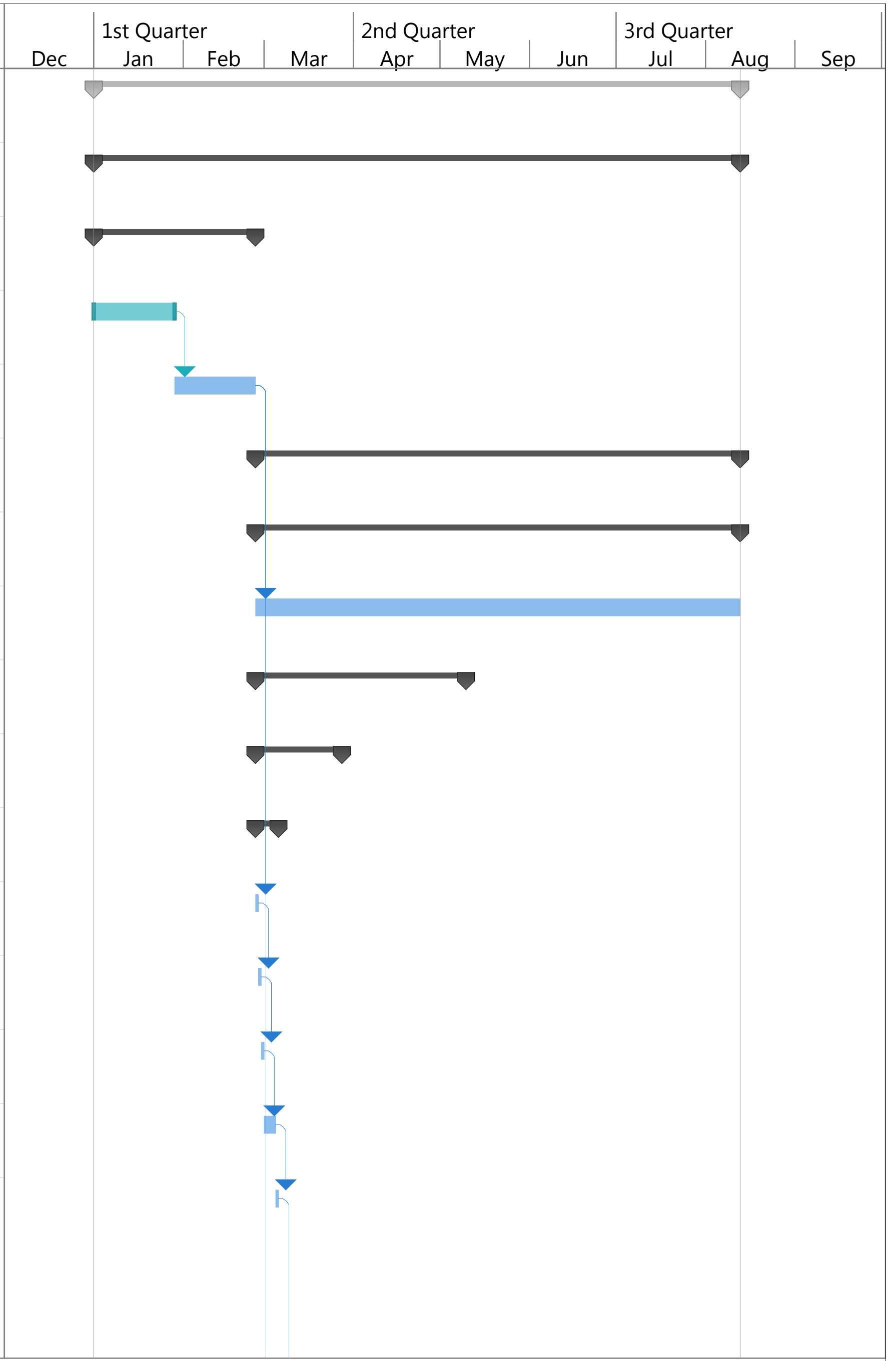
Hawthorn 9 Intake Removal	$679,931	
Activities Required by Permit or Regulation:		$679,931

ID	Task Name	Cost
0	**Hawthorn 6&9 Retirement**	**$329,077.68**
1	**Hawthorn 6 & 9 Retirement**	**$329,077.68**
2	**Pre-Retirement Activities**	**$46,505.60**
3	Permitting Review	$24,896.00
4	Develop Detailed Retirement Plan	$21,609.60
5	**Retirement Activities**	**$232,780.08**
6	**Project Management During Retirement**	**$232,780.08**
7	Project Management During Retirement	$102,105.60
8	**CT-6 Retirement Activities**	**$54,993.12**
9	**Electrical**	**$21,584.64**
10	**Medium and Low Voltage Drawout Switchgear**	**$5,886.72**
11	De-energize all buses at the source.	$981.12
12	Open all circuit breakers.	$981.12
13	Rack all circuit breakers into the fully withdrawn, disconnected positi	$981.12
14	Verify that the closing/tripping springs are discharged.	$1,962.24
15	De-energize control power and auxiliary power circuits of each circuit	$981.12
16	**Motor Control Centers**	**$2,943.36**
17	De-energize all buses at the source.	$981.12
18	Open all circuit breakers and disconnect switches.	$981.12
19	Remove all fuses in control circuits.	$981.12
20	**Low-voltage Switchboards and Panelboards**	**$1,962.24**
21	De-energize all buses at the source.	$981.12
22	Open all circuit breakers and disconnect switches.	$981.12
23	**Oil-Filled Power Transformers**	**$3,924.48**
24	De-energize all buses at the source.	$981.12
25	Open all circuit breakers and disconnect switches.	$981.12
26	De-energize all buses at the source.	$981.12
27	Open all circuit breakers and disconnect switches.	$981.12
28	**Dry-type Power Transformers**	**$1,962.24**
29	De-energize all transformer primaries and verify that the secondary is	$981.12
30	De-energize all low-voltage AC or DC power sources for space heaters	$981.12
31	**Motors**	**$4,905.60**
32	De-energize all primary power at the source.	$981.12
33	De-energize all low-voltage power sources for space heaters or other	$981.12
34	Drain lube oil system (if applicable) and dispose of oil.	$2,943.36
35	**Fuel Gas System**	**$11,786.24**
36	Isolate Fuel Gas System	$4,264.32
37	Vent Fuel Gas Piping and Equipment	$2,751.84
38	Open and Vent Knock-Out Drum	$943.52
39	Drain, Open and Vent the Drain Tank	$943.52
40	Empty the Coalescing Filter	$1,939.52
41	Open and Vent Equipment on the CT Gas Valve Module	$943.52
42	**Lube Oil Cooling Water System**	**$2,830.56**
43	Open and Drain the Water Side of the Lube Oil Coolers	$1,887.04
44	Open and Vent the Coolers and Expansion Tank	$943.52
45	**Wash Water Skid**	**$2,830.56**
46	Open and Drain the Detergent Tank	$943.52
47	Open and Drain the Demineralized Water Tank	$943.52
48	Empty the Demineralized Water Tank	$943.52

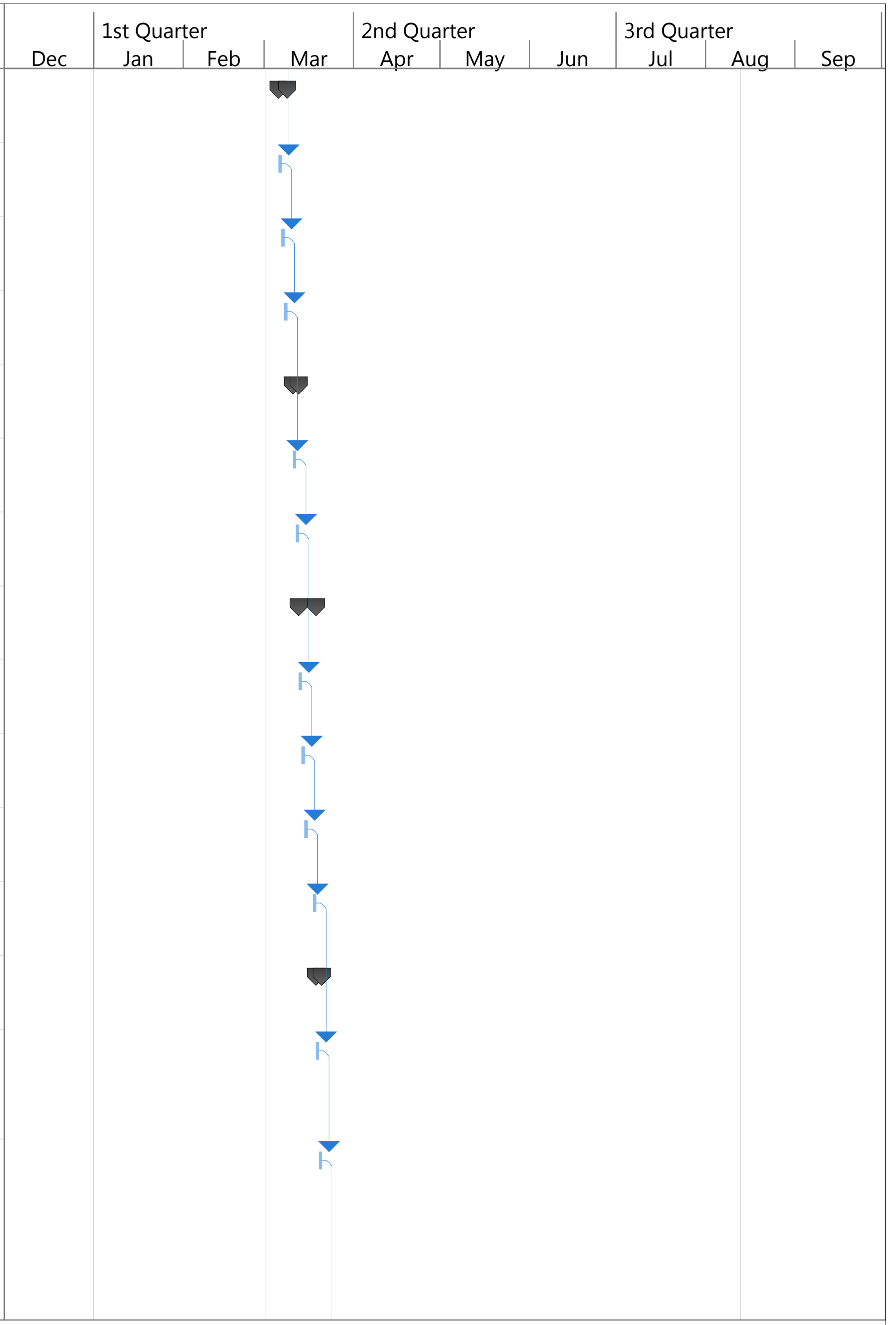
ID	Task Name	Cost
49	**Miscelleaneous Piping**	**$3,774.08**
50	Open and Vent the Exhaust Frame Cooling Piping	$943.52
51	Open and Vent the CT Air Processing Piping	$943.52
52	Open and Vent the Inlet Air Heating Piping	$943.52
53	Open and Vent the CT Air Processing Piping	$943.52
54	**Fire Protection Piping**	**$3,747.84**
55	Empty the CO2 Storage Tank	$2,804.32
56	Open and Vent the Fire Protection Piping	$943.52
57	**Lube Oil System**	**$8,439.20**
58	Empty and Remove from Site the Lubricating Oil	$5,608.64
59	Drain Lubricating Oil Piping	$1,887.04
60	Open and Vent Lubricating Oil Piping	$943.52
61	**Hawthorn 9 Retirement Activities**	**$75,681.36**
62	**Electrical**	**$21,584.64**
63	**Medium and Low Voltage Drawout Switchgear**	**$5,886.72**
64	De-energize all buses at the source.	$981.12
65	Open all circuit breakers.	$981.12
66	Rack all circuit breakers into the fully withdrawn, disconnected positi	$981.12
67	Verify that the closing/tripping springs are discharged.	$1,962.24
68	De-energize control power and auxiliary power circuits of each circuit	$981.12
69	**Motor Control Centers**	**$2,943.36**
70	De-energize all buses at the source.	$981.12
71	Open all circuit breakers and disconnect switches.	$981.12
72	Remove all fuses in control circuits.	$981.12
73	**Low-voltage Switchboards and Panelboards**	**$1,962.24**
74	De-energize all buses at the source.	$981.12
75	Open all circuit breakers and disconnect switches.	$981.12
76	**Oil-Filled Power Transformers**	**$3,924.48**
77	De-energize all buses at the source.	$981.12
78	Open all circuit breakers and disconnect switches.	$981.12
79	De-energize all buses at the source.	$981.12
80	Open all circuit breakers and disconnect switches.	$981.12
81	**Dry-type Power Transformers**	**$1,962.24**
82	De-energize all transformer primaries and verify that the secondary is	$981.12
83	De-energize all low-voltage AC or DC power sources for space heaters	$981.12
84	**Motors**	**$4,905.60**
85	De-energize all primary power at the source.	$981.12
86	De-energize all low-voltage power sources for space heaters or other	$981.12
87	Drain lube oil system (if applicable) and dispose of oil.	$2,943.36
88	**Boiler Chemical Feed**	**$1,834.56**
89	Drain all chemical feed tanks.	$1,834.56
90	**HRSG**	**$2,856.80**
91	Open HRSG doors.	$969.76
92	Drain boiler, drums, downcomers and headers.	$917.28
93	Open drum doors.	$969.76
94	**Stack and Ductwork**	**$969.76**
95	Open ductwork doors.	$969.76
96	Place cap over stack opening to keep moisture out.	$0.00
97	**Condensate and Feedwater Piping**	**$1,834.56**

ID	Task Name	Cost
98	Drain water from the system.	$917.28
99	Leave open vents and drains.	$917.28
100	**SCR**	**$8,660.48**
101	Remove catalyst of salvage or disposal.	$3,879.04
102	Padlock or tack weld access doors shut.	$969.76
103	Remove ammonia from storage tank for resale.	$943.52
104	Wash out and drain storage tank and supply piping.	$943.52
105	Vent storage tank and all piping. Leave vent and drain valves open or re	$943.52
106	Pull electrical supply breakers on all electrical equipment except lighting	$981.12
107	**Turbine(s) and Condenser**	**$3,367.92**
108	Drain hotwell and leave doors open.	$943.52
109	Open main turbine doors.	$484.88
110	Open bfp turbine doors.	$484.88
111	Remove lube oil.	$1,454.64
112	**Generator**	**$13,649.12**
113	Verify that generator circuit breaker is open and racked out or that high	$981.12
114	Verify that generator field breaker or contactor (if applicable) is open.	$981.12
115	De-energize power supplies to generator excitation system at the sourc	$981.12
116	De-energize AC and DC power supplies to generator and exciter space h	$1,962.24
117	Drain lubricating oil system and dispose of oil.	$2,943.36
118	Drain generator and exciter cooling water systems (if applicable).	$2,856.80
119	Disconnect and remove hydrogen gas tanks and purge generator hydrog	$981.12
120	Disconnect and remove fire protection system gas/foam tanks and purg	$1,962.24
121	**Circulating Water and Turbine Cooling Water System**	**$3,669.12**
122	Drain.	$1,834.56
123	Open water box doors.	$917.28
124	Drain any circulating water chemical feed tanks.	$917.28
125	**Compressed Air System**	**$3,774.08**
126	Open vents and drains.	$917.28
127	Remove desiccant from desiccant dryers.	$2,856.80
128	**Auxiliary Steam System**	**$1,834.56**
129	Drain water from system.	$917.28
130	Remove aux boiler chemicals.	$917.28
131	**Auxiliary Cooling Water System**	**$917.28**
132	Drain water from system.	$917.28
133	**Condenser Air Extraction and Waterbox Priming System**	**$917.28**
134	Drain water from system.	$917.28
135	**Battery System**	**$9,811.20**
136	Turn off battery charger and disconnect cables from batteries.	$1,962.24
137	De-energize all battery chargers from the source.	$981.12
138	Open all AC and DC circuit breakers and/or fused switches on battery ch	$981.12
139	Remove and dispose of battery electrolyte.	$2,943.36
140	Remove and dispose of battery cells.	$1,962.24
141	Clean up and dispose of electrolyte on surface areas around batteries.	$981.12
142	**Post Retirement Activities**	**$49,792.00**
143	Post Retirement Activities	$49,792.00

ID	Task Name	Duration
0	**Hawthorn 6&9 Retirement**	**160 days**
1	**Hawthorn 6 & 9 Retirement**	**160 days**
2	**Pre-Retirement Activities**	**40 days**
3	Permitting Review	20 days
4	Develop Detailed Retirement Plan	20 days
5	**Retirement Activities**	**120 days**
6	**Project Management During Retirement**	**120 days**
7	Project Management During Retirement	120 days
8	**CT-6 Retirement Activities**	**53 days**
9	**Electrical**	**22 days**
10	**Medium and Low Voltage Drawout Switchgear**	**6 days**
11	De-energize all buses at the source.	1 day
12	Open all circuit breakers.	1 day
13	Rack all circuit breakers into the fully withdrawn, disconnected position.	1 day
14	Verify that the closing/tripping springs are discharged.	2 days
15	De-energize control power and auxiliary power circuits of each circuit breaker at the source and by opening control power circuit breakers or removing fuses in each breaker cubicle.	1 day

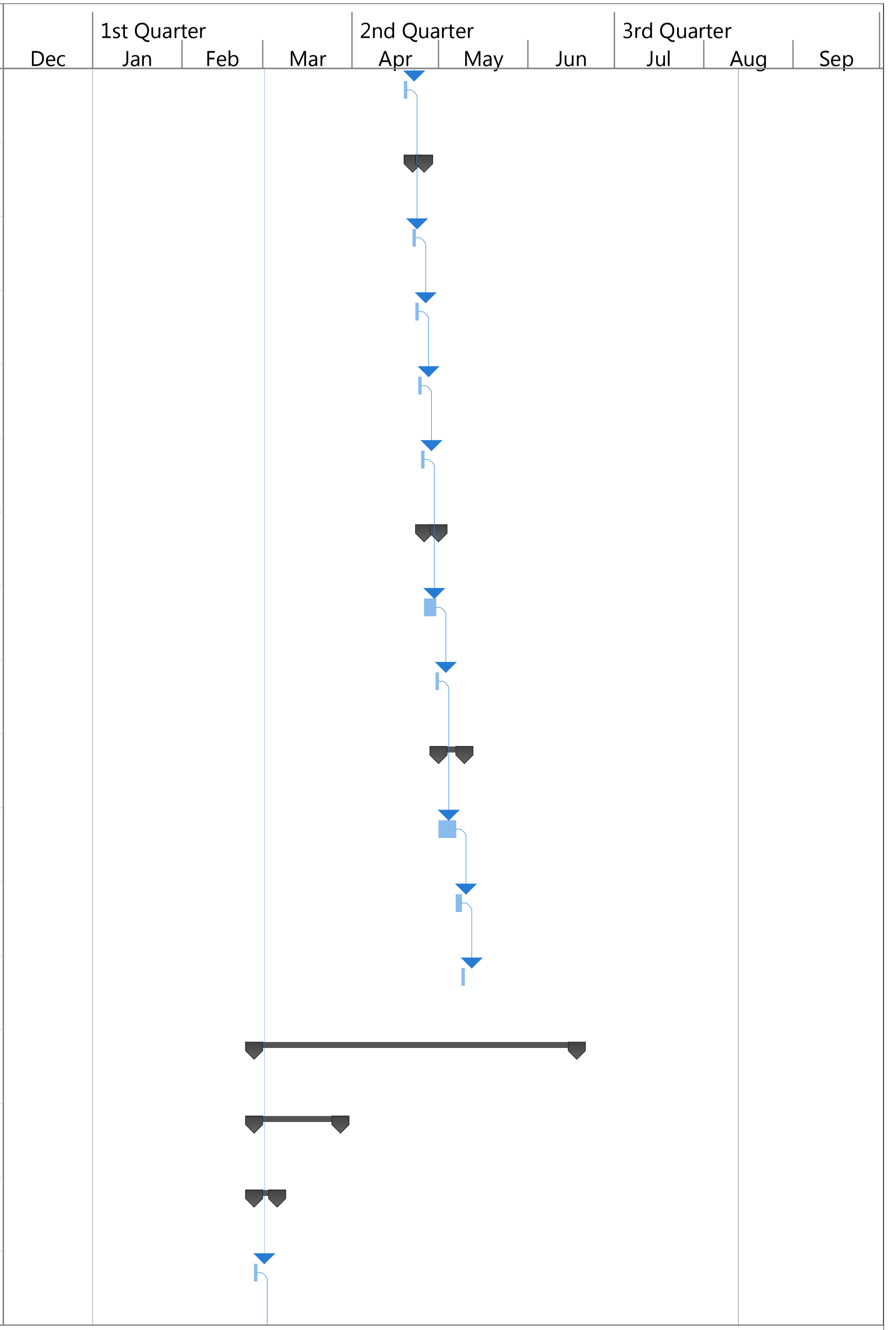


ID	Task Name	Duration
16	**Motor Control Centers**	**3 days**
17	De-energize all buses at the source.	1 day
18	Open all circuit breakers and disconnect switches.	1 day
19	Remove all fuses in control circuits.	1 day
20	**Low-voltage Switchboards and Panelboards**	**2 days**
21	De-energize all buses at the source.	1 day
22	Open all circuit breakers and disconnect switches.	1 day
23	**Oil-Filled Power Transformers**	**4 days**
24	De-energize all buses at the source.	1 day
25	Open all circuit breakers and disconnect switches.	1 day
26	De-energize all buses at the source.	1 day
27	Open all circuit breakers and disconnect switches.	1 day
28	**Dry-type Power Transformers**	**2 days**
29	De-energize all transformer primaries and verify that the secondary is de-energized.	1 day
30	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	1 day

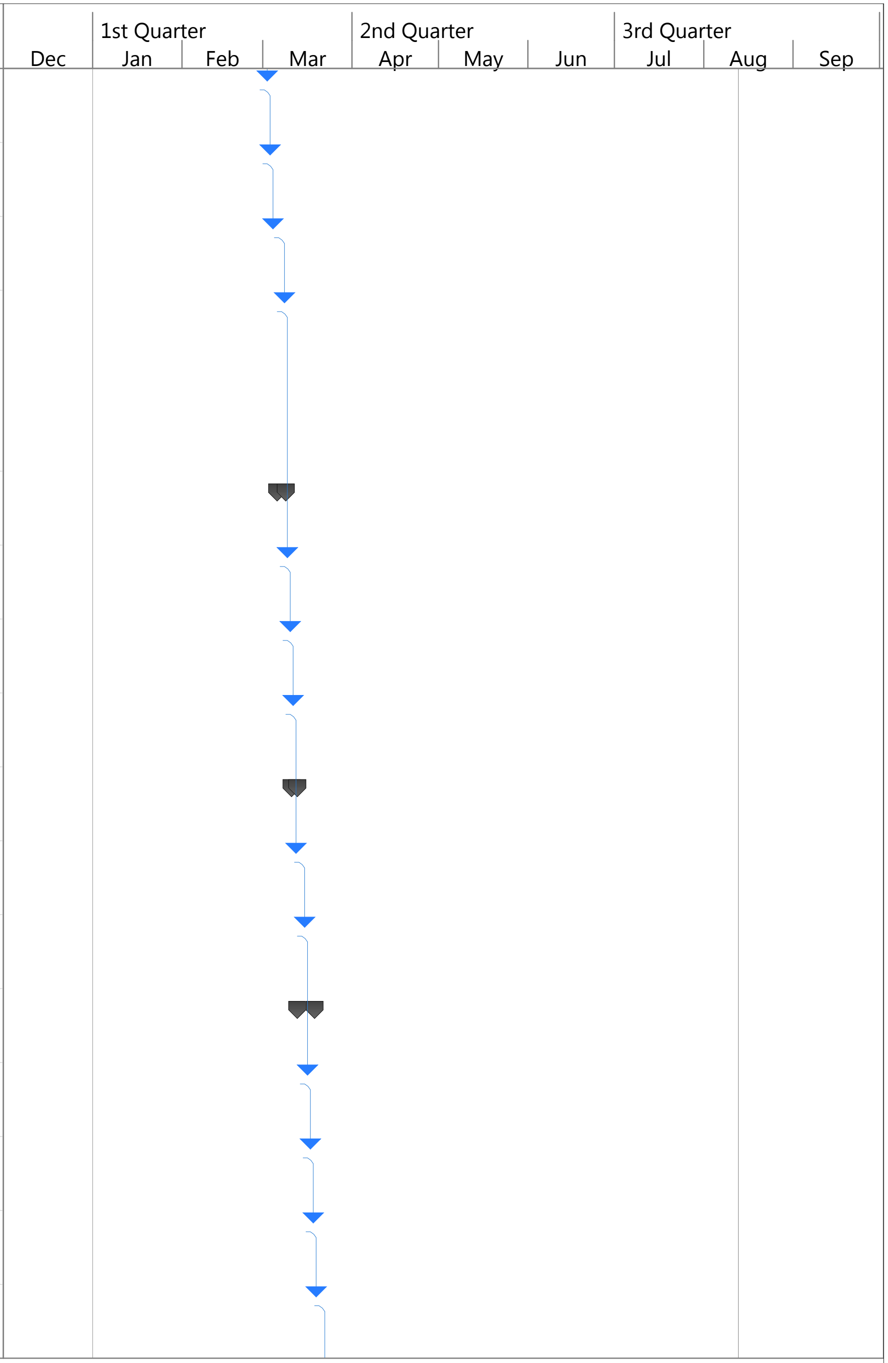


ID	Task Name	Duration
31	**Motors**	**5 days**
32	De-energize all primary power at the source.	1 day
33	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	1 day
34	Drain lube oil system (if applicable) and dispose of oil.	3 days
35	**Fuel Gas System**	**11 days**
36	Isolate Fuel Gas System	3 days
37	Vent Fuel Gas Piping and Equipment	3 days
38	Open and Vent Knock-Out Drum	1 day
39	Drain, Open and Vent the Drain Tank	1 day
40	Empty the Coalescing Filter	2 days
41	Open and Vent Equipment on the CT Gas Valve Module	1 day
42	**Lube Oil Cooling Water System**	**3 days**
43	Open and Drain the Water Side of the Lube Oil Coolers	2 days
44	Open and Vent the Coolers and Expansion Tank	1 day
45	**Wash Water Skid**	**3 days**
46	Open and Drain the Detergent Tank	1 day
47	Open and Drain the Demineralized Water Tank	1 day

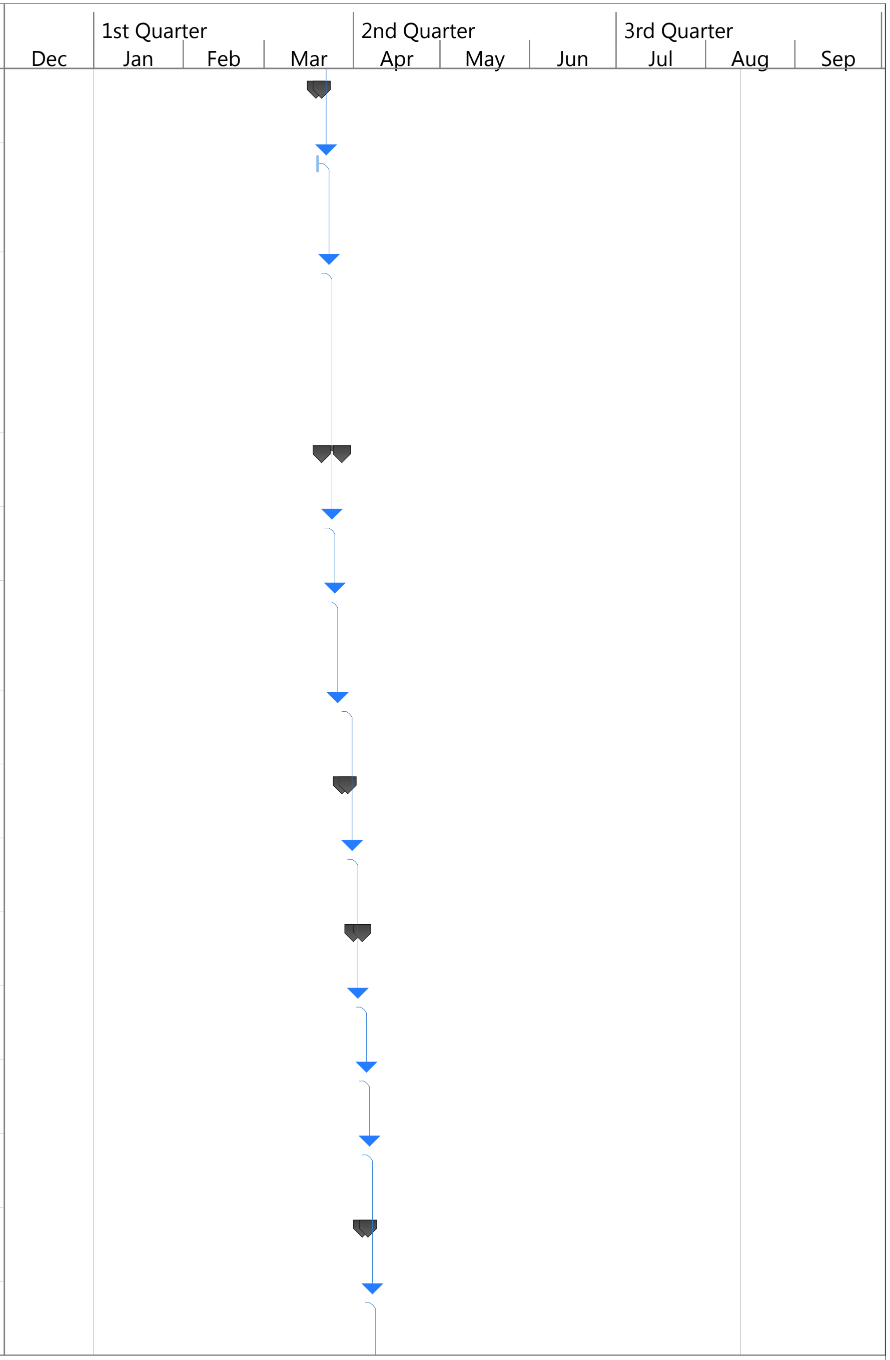
ID	Task Name	Duration
48	Empty the Demineralized Water Tank	1 day
49	**Miscelleaneous Piping**	**4 days**
50	Open and Vent the Exhaust Frame Cooling Piping	1 day
51	Open and Vent the CT Air Processing Piping	1 day
52	Open and Vent the Inlet Air Heating Piping	1 day
53	Open and Vent the CT Air Processing Piping	1 day
54	**Fire Protection Piping**	**3 days**
55	Empty the CO2 Storage Tank	2 days
56	Open and Vent the Fire Protection Piping	1 day
57	**Lube Oil System**	**7 days**
58	Empty and Remove from Site the Lubricating Oil	4 days
59	Drain Lubricating Oil Piping	2 days
60	Open and Vent Lubricating Oil Piping	1 day
61	**Hawthorn 9 Retirement Activities**	**80 days**
62	**Electrical**	**22 days**
63	**Medium and Low Voltage Drawout Switchgear**	**6 days**
64	De-energize all buses at the source.	1 day



ID	Task Name	Duration
65	Open all circuit breakers.	1 day
66	Rack all circuit breakers into the fully withdrawn, disconnected position.	1 day
67	Verify that the closing/tripping springs are discharged.	2 days
68	De-energize control power and auxiliary power circuits of each circuit breaker at the source and by opening control power circuit breakers or removing fuses in each breaker cubicle.	1 day
69	**Motor Control Centers**	**3 days**
70	De-energize all buses at the source.	1 day
71	Open all circuit breakers and disconnect switches.	1 day
72	Remove all fuses in control circuits.	1 day
73	**Low-voltage Switchboards and Panelboards**	**2 days**
74	De-energize all buses at the source.	1 day
75	Open all circuit breakers and disconnect switches.	1 day
76	**Oil-Filled Power Transformers**	**4 days**
77	De-energize all buses at the source.	1 day
78	Open all circuit breakers and disconnect switches.	1 day
79	De-energize all buses at the source.	1 day
80	Open all circuit breakers and disconnect switches.	1 day



ID	Task Name	Duration
81	**Dry-type Power Transformers**	**2 days**
82	De-energize all transformer primaries and verify that the secondary is de-energized.	1 day
83	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	1 day
84	**Motors**	**5 days**
85	De-energize all primary power at the source.	1 day
86	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	1 day
87	Drain lube oil system (if applicable) and dispose of oil.	3 days
88	**Boiler Chemical Feed**	**2 days**
89	Drain all chemical feed tanks.	2 days
90	**HRSG**	**3 days**
91	Open HRSG doors.	1 day
92	Drain boiler, drums, downcomers and headers.	1 day
93	Open drum doors.	1 day
94	**Stack and Ductwork**	**2 days**
95	Open ductwork doors.	1 day



ID	Task Name	Duration
96	Place cap over stack opening to keep moisture out.	1 day
97	**Condensate and Feedwater Piping**	**2 days**
98	Drain water from the system.	1 day
99	Leave open vents and drains.	1 day
100	**SCR**	**9 days**
101	Remove catalyst of salvage or disposal.	4 days
102	Padlock or tack weld access doors shut.	1 day
103	Remove ammonia from storage tank for resale.	1 day
104	Wash out and drain storage tank and supply piping.	1 day
105	Vent storage tank and all piping. Leave vent and drain valves open or remove. Install bird screens.	1 day
106	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	1 day
107	**Turbine(s) and Condenser**	**6 days**
108	Drain hotwell and leave doors open.	1 day
109	Open main turbine doors.	1 day
110	Open bfp turbine doors.	1 day
111	Remove lube oil.	3 days

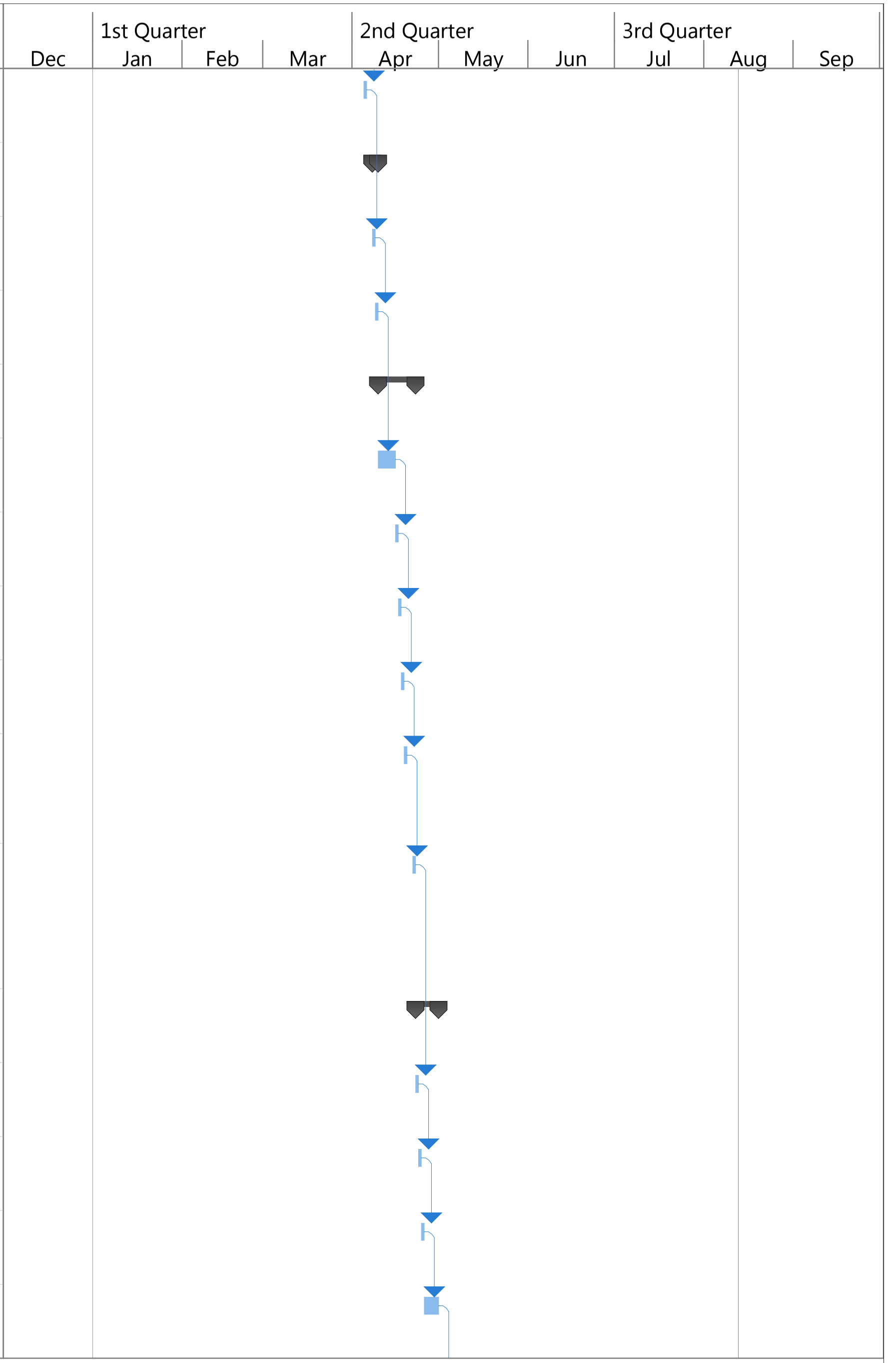
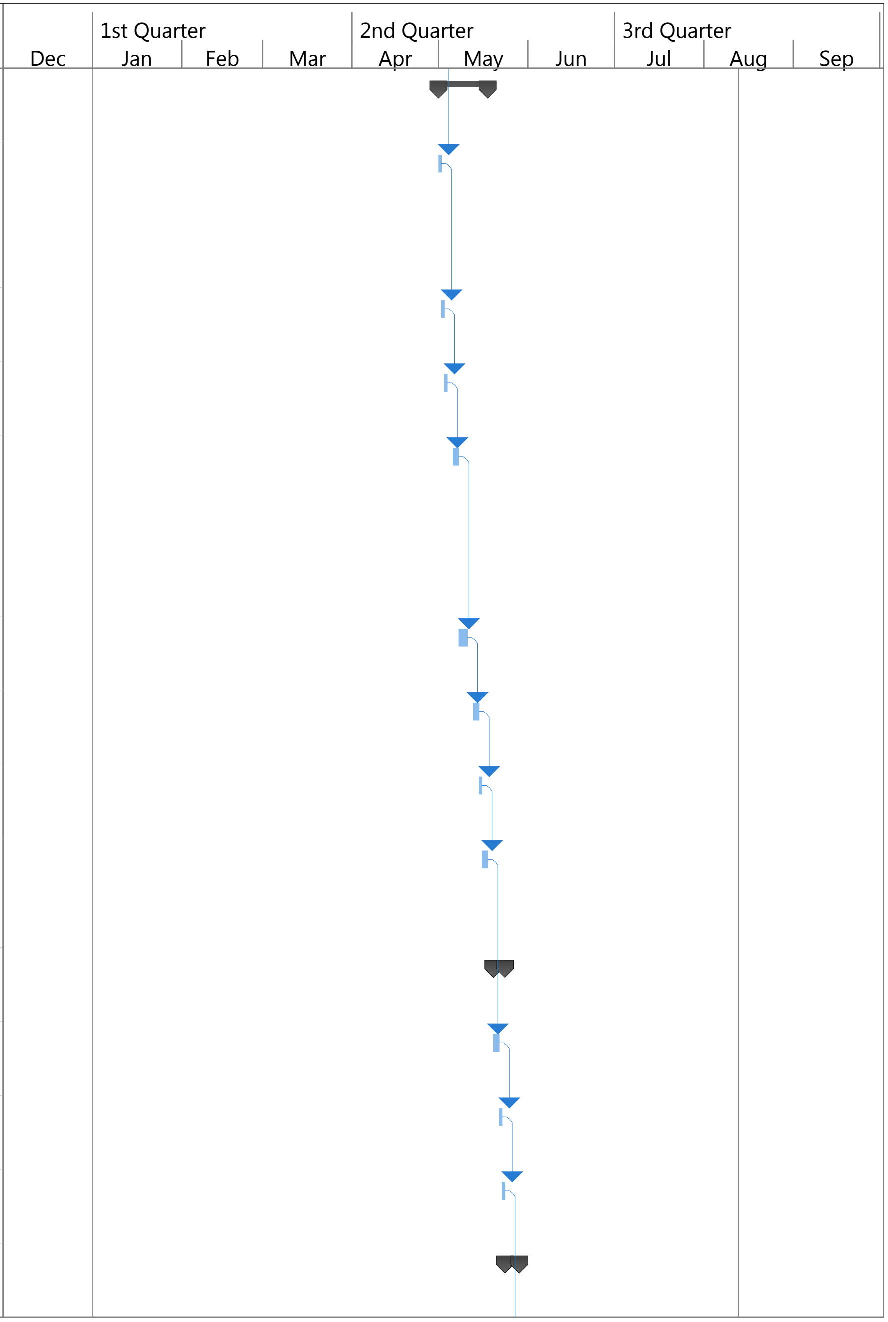


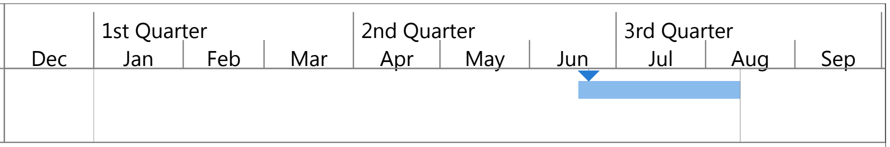
Exhibit RAK-9

ID	Task Name	Duration
112	**Generator**	**13 days**
113	Verify that generator circuit breaker is open and racked out or that high-voltage disconnect switch on substation side of GSU transformer is locked in the open position.	1 day
114	Verify that generator field breaker or contactor (if applicable) is open.	1 day
115	De-energize power supplies to generator excitation system at the source.	1 day
116	De-energize AC and DC power supplies to generator and exciter space heaters, cooling equipment, controls, lighting, etc. at the source and open circuit breakers or remove fuses at the generator and exciter.	2 days
117	Drain lubricating oil system and dispose of oil.	3 days
118	Drain generator and exciter cooling water systems (if applicable).	2 days
119	Disconnect and remove hydrogen gas tanks and purge generator hydrogen system.	1 day
120	Disconnect and remove fire protection system gas/foam tanks and purge fire protection system.	2 days
121	**Circulating Water and Turbine Cooling Water System**	**4 days**
122	Drain.	2 days
123	Open water box doors.	1 day
124	Drain any circulating water chemical feed tanks.	1 day
125	**Compressed Air System**	**3 days**



ID	Task Name	Duration
126	Open vents and drains.	1 day
127	Remove desiccant from desiccant dryers.	2 days
128	**Auxiliary Steam System**	**2 days**
129	Drain water from system.	1 day
130	Remove aux boiler chemicals.	1 day
131	**Auxiliary Cooling Water System**	**1 day**
132	Drain water from system.	1 day
133	**Condenser Air Extraction and Waterbox Priming System**	**1 day**
134	Drain water from system.	1 day
135	**Battery System**	**10 days**
136	Turn off battery charger and disconnect cables from batteries.	2 days
137	De-energize all battery chargers from the source.	1 day
138	Open all AC and DC circuit breakers and/or fused switches on battery chargers.	1 day
139	Remove and dispose of battery electrolyte.	3 days
140	Remove and dispose of battery cells.	2 days
141	Clean up and dispose of electrolyte on surface areas around batteries.	1 day
142	**Post Retirement Activities**	**40 days**

ID	Task Name	Duration
143	Post Retirement Activities	40 days



Hawthorn 6 & 9 Dismantlement

Owner Costs				
Pre-Dismantlement Activities		$1,104,559		
Overhead During Dismantlement		$1,454,694		
Post-Dismantlement Activities		$34,755		
Owner Costs Total			$2,594,008	
Demolition General Contractor (DGC) Costs				
Site Management		$703,198		
Equipment Rental		$1,185,151		
Consumables		$1,182,380		
Scrap Crew(s)		$306,434		
Dismantlement		$1,025,050		
DGC Insurance	2.00%	$88,044		
Contingency/Profit	15.00%	$673,539		
Performance Bond	2.00%	$103,276		
Contractor Costs Total:			$5,267,072	
Total:				$7,861,080
Owner Internal Costs:	5.00%			$393,054
Owner Contingency:	25.00%			$2,063,534
Hawthorn 6 & 9 Dismantlement Opinion of Probable Cost:				$10,317,668

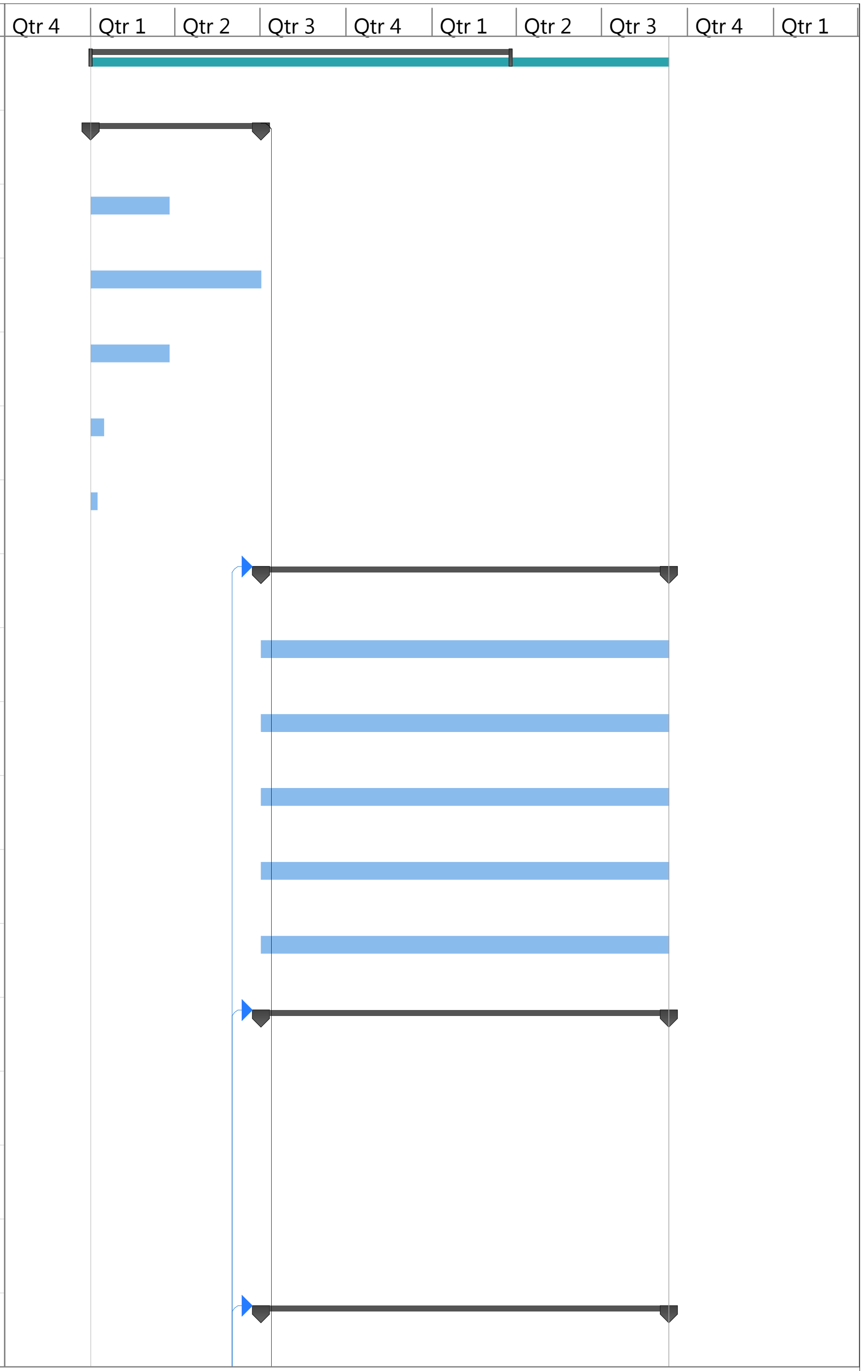
Hawthorn 6 & 9 Dismantlement

ID	Task Name	Cost
0	**Hawthorn 6 & 9 Dismantlement**	**$6,996,221.28**
1	**Hawthorn 6 &9 Dismantlement**	**$6,996,221.28**
2	**Pre-Demolition Activities**	**$1,104,558.96**
3	Detailed Planning & Hire Owner's Engineer	$110,802.72
4	Detailed Site Characterization Study	$783,536.00
5	Hire Demolition general Contractor	$198,647.04
6	KCP&L Prepares Unit for Dismantlement	$11,573.20
7	Demolition Contractor Mobilizes on Sit	$0.00
8	**KCP&L Overhead during Dismantlement**	**$1,454,693.76**
9	KCP&L Project Manager	$205,071.36
10	KCP&L Administrative Support	$75,853.44
11	KCP&L Engineer	$337,109.76
12	Owners Engineer Project Manager	$102,835.20
13	Owners Engineer - Engineer	$733,824.00
14	**Demolition Contractor Overhead during Dismantlement**	**$703,198.08**
15	Demolition Contractor Project Manager	$198,956.16
16	Demolition Contractor Safety Manager	$177,166.08
17	Demolition Contractor Superintendent	$327,075.84
18	**Demolition Contractor Equipment Rental Cost**	**$1,185,150.72**
19	Equipment Rental	$1,185,150.72
20	**Demolition Contractor Consumables**	**$1,182,380.16**
21	Consumables	$1,182,380.16
22	**Scrap Crews**	**$306,433.92**
23	Crew to Handle Scrap Material(s)	$306,433.92
24	**Dismantlement**	**$1,025,050.48**
25	**Electrical**	**$137,918.40**
26	Electrical Demolition of Equipment	$137,918.40
27	**Fuel Gas System**	**$8,725.60**
28	Remove all above grade fuel gas piping.	$3,174.16
29	Gas Filter Skid	$5,551.44
30	**Lube Oil System**	**$20,355.28**
31	Lube Oil Piping	$5,551.44
32	Lube Oil Pumps	$5,551.44
33	Lube Oil Tanks	$9,252.40
34	**Compressed Air System**	**$24,056.24**
35	Compressed Air Piping	$5,551.44
36	Compressors	$9,252.40
37	Air Receiver	$3,700.96
38	Dryer	$5,551.44
39	**Fire Protection**	**$33,308.64**
40	Fire Protection Piping	$11,102.88
41	Firewater Tank	$14,803.84
42	CO2 Storage Tank	$7,401.92
43	**Wash Water Skid**	**$14,803.84**
44	Detergent Tank	$7,401.92
45	Demineralized Water Tank	$7,401.92
46	**Miscellaneous Piping**	**$94,374.48**
47	Exhaust Frame Cooling Piping	$7,401.92
48	CT Air Processing Piping	$9,252.40

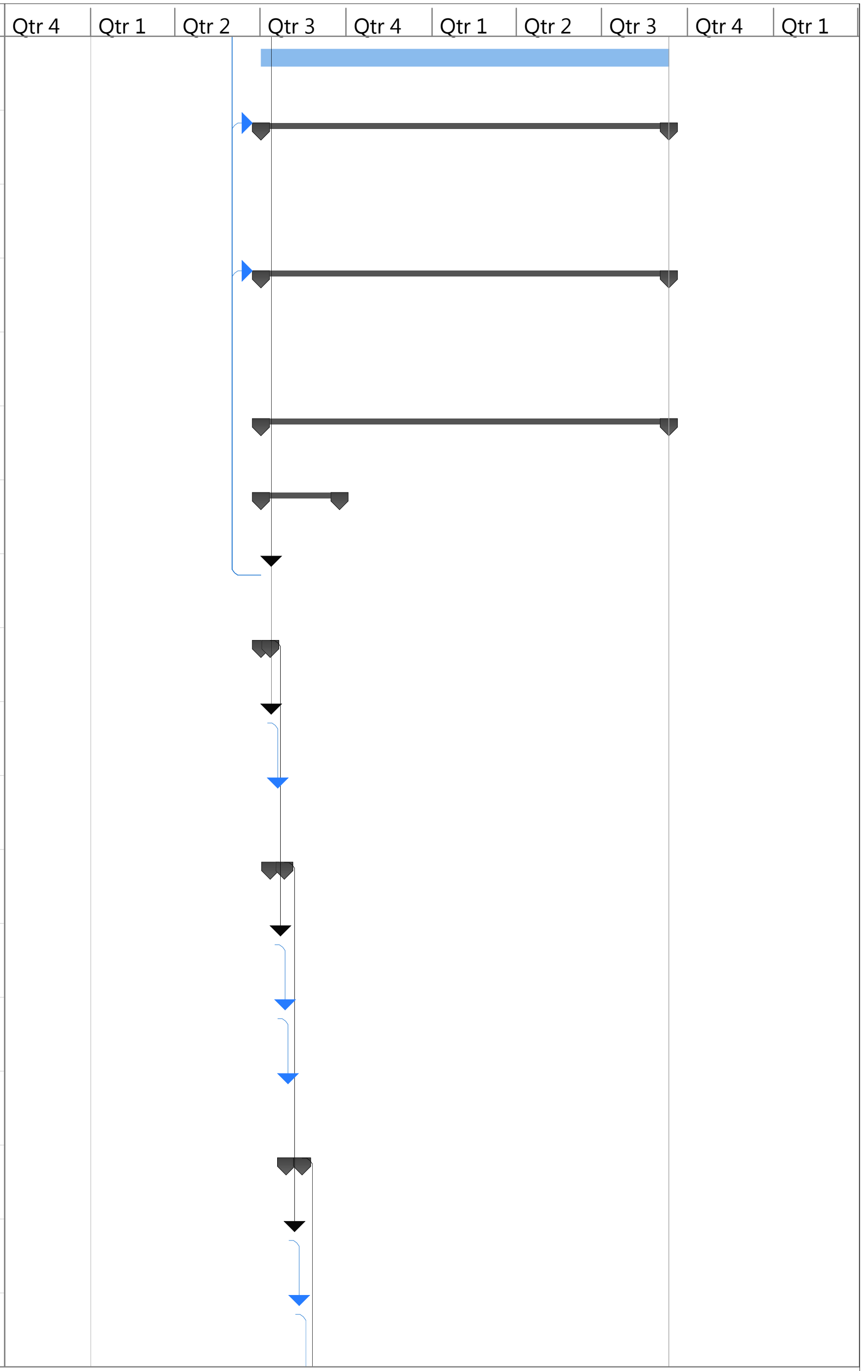
Hawthorn 6 & 9 Dismantlement

ID	Task Name	Cost
49	Inlet Air Heating Piping	$9,252.40
50	Auxiliary Steam Piping	$9,252.40
51	Auxiliary Cooling Piping	$9,252.40
52	Feedwater Piping	$12,953.36
53	Condensate Piping	$14,803.84
54	High Pressure Steam Piping	$22,205.76
55	**Generators**	**$14,803.84**
56	CT Generator	$7,401.92
57	ST Generator	$7,401.92
58	**Steam Turbine and Condenser**	**$27,757.20**
59	Remove Steam Turbine	$18,504.80
60	Remove Condenser Internals	$9,252.40
61	**General Service Pumps**	**$25,906.72**
62	Boiler Feed Pumps	$9,252.40
63	Condensate Pumps	$5,551.44
64	Turbine Cooling Water Pumps	$3,700.96
65	General Service Pumps - Misc.	$7,401.92
66	**Combustion Turbine**	**$96,224.96**
67	Inlet Heater	$5,551.44
68	Inlet duct	$11,102.88
69	Exhaust duct	$14,803.84
70	Combustion Turbine	$29,607.68
71	Combustion Turbine Foundation	$16,654.32
72	Enclosure	$18,504.80
73	**Boiler Chemical Feed**	**$7,401.92**
74	Chemical Feed tanks	$7,401.92
75	**Condenser**	**$31,458.16**
76	Condenser Air Extraction and Waterbox Priming System	$7,401.92
77	Condenser External Parts	$24,056.24
78	**HRSG**	**$351,591.20**
79	Remove Boiler Tubes	$111,028.80
80	Remove Boiler Ductwork Casing	$74,019.20
81	Remove Boiler Steel	$166,543.20
82	**Turbine Building**	**$62,344.80**
83	Remove the Turbine Building	$62,344.80
84	**Circulating Water and Turbine Cooling Water System**	**$22,205.76**
85	Chemical Feed tanks	$3,700.96
86	Excavate Collapse and Back Fill Circulation Water Piping	$18,504.80
87	**CEMS**	**$14,803.84**
88	CEMS Building	$7,401.92
89	CEMS Building Foundation	$7,401.92
90	**Stack**	**$37,009.60**
91	Stacks and By-Pass Damper	$37,009.60
92	**Post Dismantlement Activities**	**$34,755.20**
93	Post Dismantlement Activities	$34,755.20

ID	Task Name	Duration
1	**Hawthorn 6 &9 Dismantlement**	**321 days**
2	**Pre-Demolition Activities**	**130 days**
3	Detailed Planning & Hire Owner's Engineer	3 mons
4	Detailed Site Characterization Study	130 days
5	Hire Demolition general Contractor	3 mons
6	KCP&L Prepares Unit for Dismantlement	2 wks
7	Demolition Contractor Mobilizes on Sit	5 days
8	**KCP&L Overhead during Dismantlement**	**312 days**
9	KCP&L Project Manager	312 days
10	KCP&L Administrative Support	312 days
11	KCP&L Engineer	312 days
12	Owners Engineer Project Manager	312 days
13	Owners Engineer - Engineer	312 days
14	**Demolition Contractor Overhead during Dismantlement**	**312 days**
15	Demolition Contractor Project Manager	312 days
16	Demolition Contractor Safety Manager	312 days
17	Demolition Contractor Superintendent	312 days
18	**Demolition Contractor Equipment Rental Cost**	**312 days**

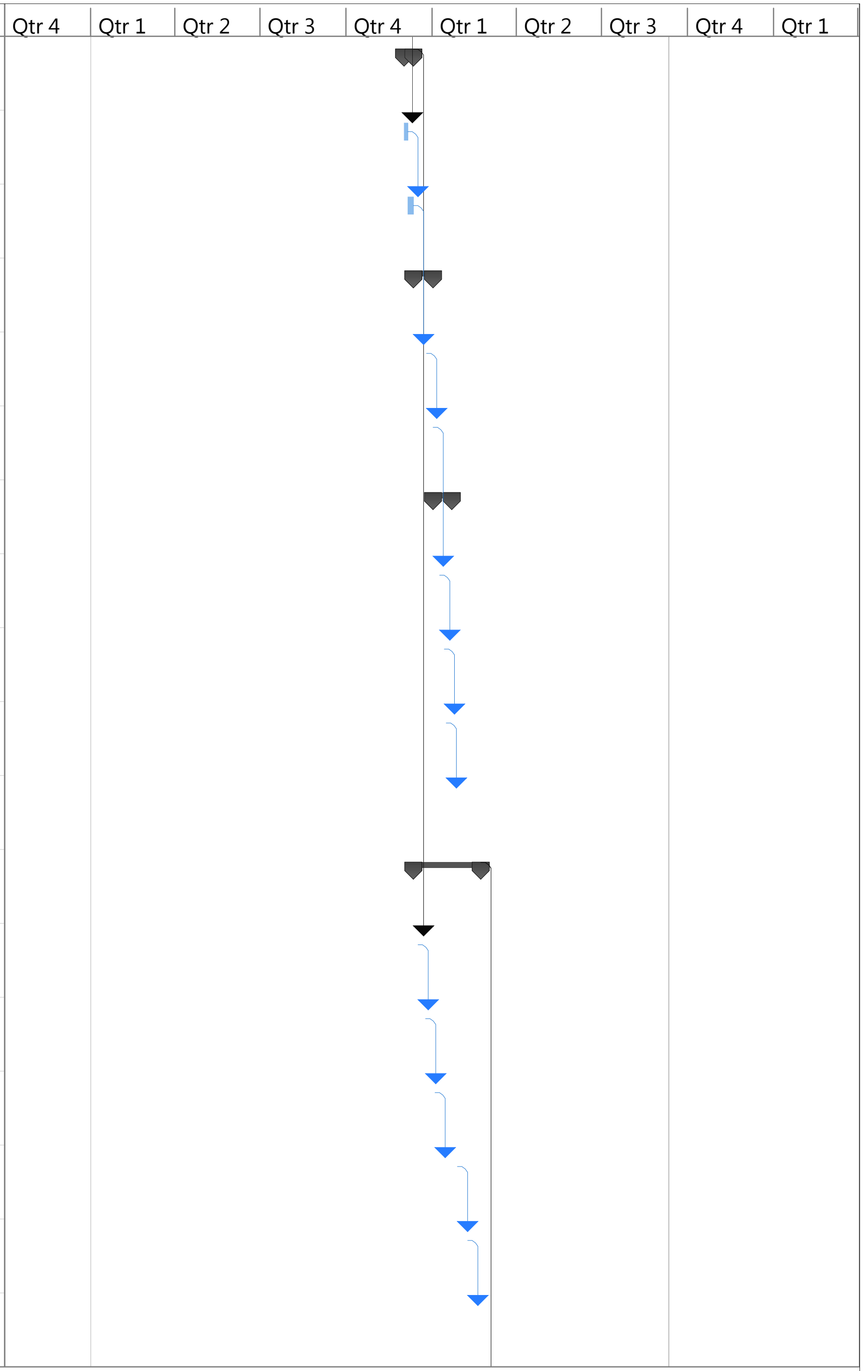


ID	Task Name	Duration
19	Equipment Rental	312 days
20	**Demolition Contractor Consumables**	**312 days**
21	Consumables	312 days
22	**Scrap Crews**	**312 days**
23	Crew to Handle Scrap Material(s)	312 days
24	**Dismantlement**	**312 days**
25	**Electrical**	**60 days**
26	Electrical Demolition of Equipment	60 days
27	**Fuel Gas System**	**8 days**
28	Remove all above grade fuel gas piping.	5 days
29	Gas Filter Skid	3 days
30	**Lube Oil System**	**11 days**
31	Lube Oil Piping	3 days
32	Lube Oil Pumps	3 days
33	Lube Oil Tanks	5 days
34	**Compressed Air System**	**13 days**
35	Compressed Air Piping	3 days
36	Compressors	5 days

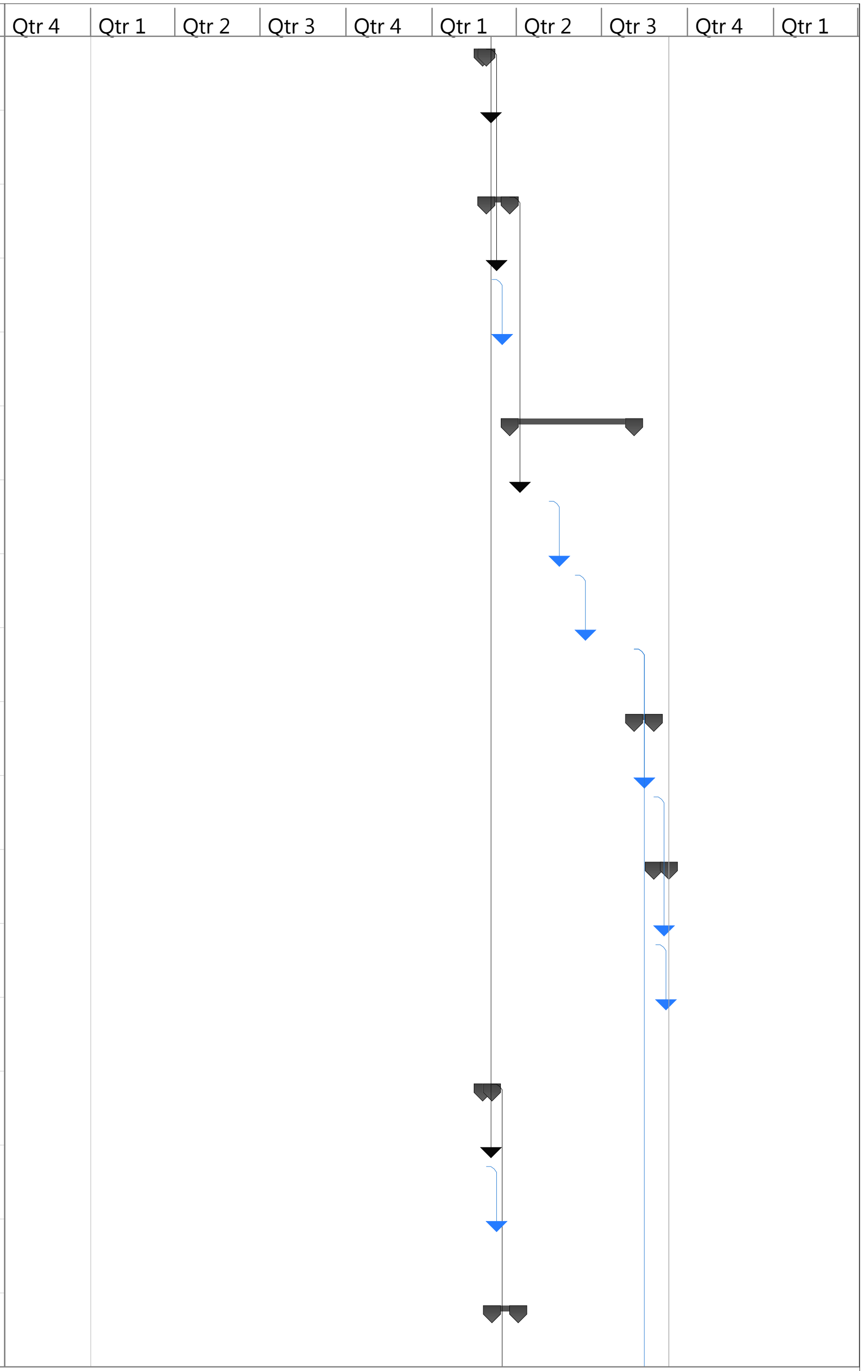


ID	Task Name	Duration
37	Air Receiver	2 days
38	Dryer	3 days
39	**Fire Protection**	**18 days**
40	Fire Protection Piping	6 days
41	Firewater Tank	8 days
42	CO2 Storage Tank	4 days
43	**Wash Water Skid**	**8 days**
44	Detergent Tank	4 days
45	Demineralized Water Tank	4 days
46	**Miscellaneous Piping**	**51 days**
47	Exhaust Frame Cooling Piping	4 days
48	CT Air Processing Piping	5 days
49	Inlet Air Heating Piping	5 days
50	Auxiliary Steam Piping	5 days
51	Auxiliary Cooling Piping	5 days
52	Feedwater Piping	7 days
53	Condensate Piping	8 days
54	High Pressure Steam Piping	12 days

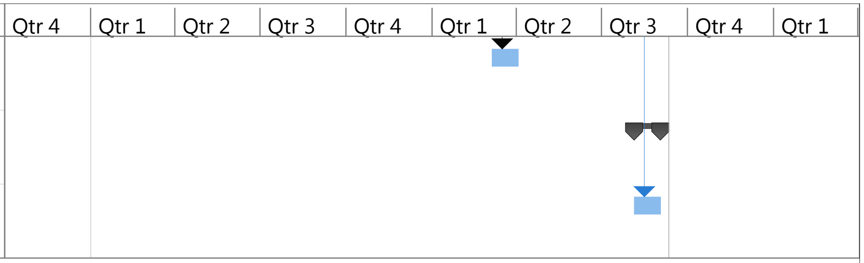
ID	Task Name	Duration
55	**Generators**	**8 days**
56	CT Generator	4 days
57	ST Generator	4 days
58	**Steam Turbine and Condenser**	**15 days**
59	Remove Steam Turbine	10 days
60	Remove Condenser Internals	5 days
61	**General Service Pumps**	**14 days**
62	Boiler Feed Pumps	5 days
63	Condensate Pumps	3 days
64	Turbine Cooling Water Pumps	2 days
65	General Service Pumps - Misc.	4 days
66	**Combustion Turbine**	**52 days**
67	Inlet Heater	3 days
68	Inlet duct	6 days
69	Exhaust duct	8 days
70	Combustion Turbine	16 days
71	Combustion Turbine Foundation	9 days
72	Enclosure	10 days



ID	Task Name	Duration
73	**Boiler Chemical Feed**	**4 days**
74	Chemical Feed tanks	4 days
75	**Condenser**	**17 days**
76	Condenser Air Extraction and Waterbox Priming System	4 days
77	Condenser External Parts	13 days
78	**HRSG**	**95 days**
79	Remove Boiler Tubes	30 days
80	Remove Boiler Ductwork Casing	20 days
81	Remove Boiler Steel	45 days
82	**Turbine Building**	**15 days**
83	Remove the Turbine Building	15 days
84	**Circulating Water and Turbine Cooling Water System**	**12 days**
85	Chemical Feed tanks	2 days
86	Excavate Collapse and Back Fill Circulation Water Piping	10 days
87	**CEMS**	**8 days**
88	CEMS Building	4 days
89	CEMS Building Foundation	4 days
90	**Stack**	**20 days**



ID	Task Name	Duration
91	Stacks and By-Pass Damper	20 days
92	**Post Dismantlement Activities**	**20 days**
93	Post Dismantlement Activities	20 days



SPEARVILLE WIND GENERATING STATION

SPEARVILLE WIND GENERATING STATION

The Spearville Wind Generating Station consists of 99 wind turbine generators.

Spearville Unit 1 has 67 wind turbines and an SPP-accredited rating of 100.5 MW. Spearville Unit 1 was placed in service in 2006. Spearville Unit 2 has 32 wind turbines and an SPP-accredited rating of 48 MW. Spearville Unit 2 was placed in service in 2010. The turbines are General Electric SLE rated at 1.5 MW each.

The following are the major systems and equipment that were included in the dismantlement of the units.

SPEARVILLE

1. Wind turbine generators.
2. Concrete foundations.
3. Roads.
4. Tower transformers.
5. Underground collection cables.

UNIT 1

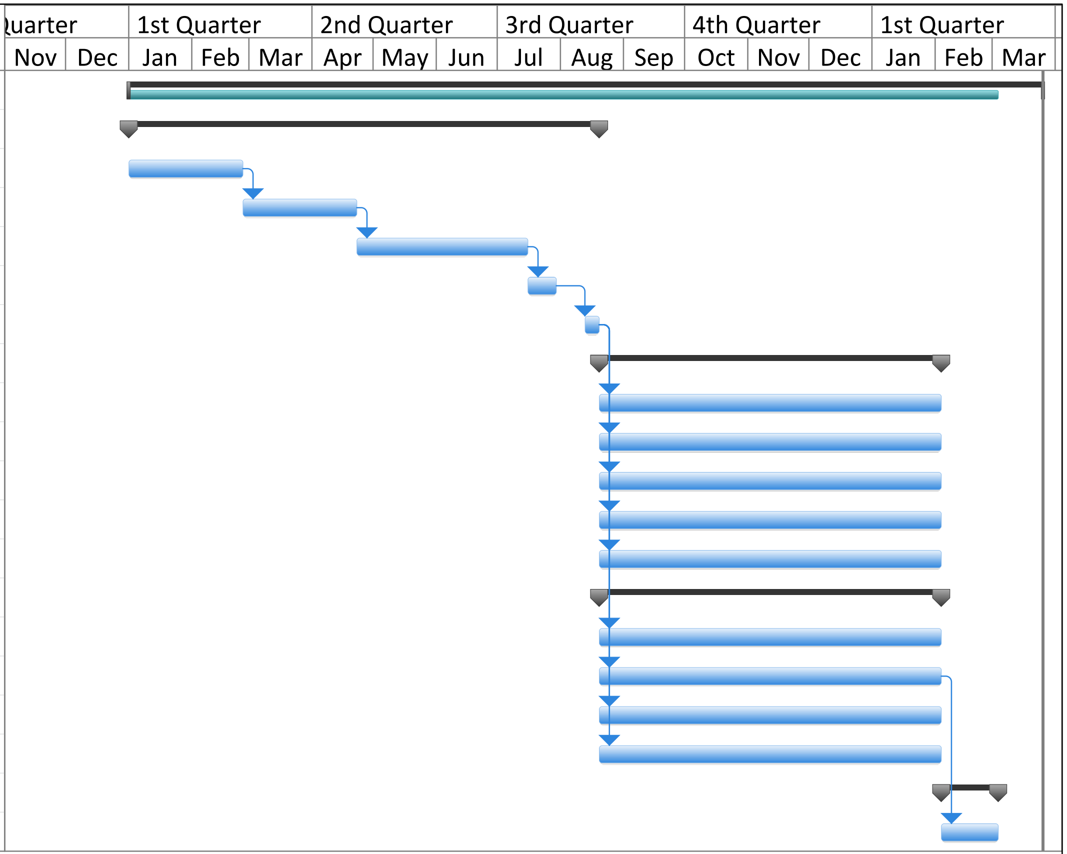
Spearville 1 Retirement/Dismantlement(1)

Owner Costs				
Pre-Dismantlement Activities		$378,127		
Overhead During Dismantlement		$173,030		
Post-Dismantlement Activities		$34,755		
Owner Costs Total			$585,912	
Demolition General Contractor (DGC) Costs				
Dismantlement		$17,854,626		
DGC Insurance	2.00%	$357,093		
Contingency/Profit	15.00%	$2,731,758		
Performance Bond	2.00%	$418,870		
Contractor Costs Total:			$21,362,346	
Total:				$21,948,258
Owner Internal Costs:	5.00%			$1,097,413
Owner Contingency:	25.00%			$5,761,418
Spearville 1 Retirement/Dismantlement Opinion of Probable Cost:				$28,807,088
Spearville 1 Retirement/Dismantlement Opinion of Probable Cost minus ARO:				$16,274,266
<u>Activities Required by Permit or Regulation</u>				
Spearville 1 Wind Farm		$12,532,822		
Activities Required by Permit or Regulation				$12,532,822

(1) The Spearville Land Lease requires the wind turbines to be dismantled within 12 months of retirement.

ID	Task Name	Remaining	W
1	**Spearville 1 Dismantlement**	**$18,440,539.32**	
2	**Pre-Demolition Activities**	**$378,127.12**	
3	Detailed Planning & Hire Owner's Engineer	$52,258.88	
4	Detailed Site Characterization Study	$115,648.00	
5	Hire Demolition general Contractor	$198,647.04	
6	KCP&L Prepares Unit for Dismantlement	$11,573.20	
7	Demolition Contractor Mobilizes on Site	$0.00	
8	**KCP&L Overhead during Dismantlement**	**$173,030.40**	
9	KCP&L Project Manager	$15,774.72	
10	KCP&L Administrative Support	$5,834.88	
11	KCP&L Engineer	$64,828.80	
12	Owners Engineer Project Manager	$39,552.00	
13	Owners Engineer - Engineer	$47,040.00	
14	**Dismantlement Activities**	**$17,854,626.60**	
15	Dismantlement Minus Freight	$5,635,873.00	
16	Dismantlement Freight	$8,830,920.00	
17	Cut Turbine Blades for Scrap Shipment	$626,457.60	
18	Blade Landfill Cost	$2,761,376.00	
19	**Post Dismantlement Activities**	**$34,755.20**	
20	Post Dismantlement Activities	$34,755.20	

ID	Task Name	Duration
1	**Spearville 1 Dismantlement**	**321 days**
2	**Pre-Demolition Activities**	**165 days**
3	Detailed Planning & Hire Owner's Engineer	2 mons
4	Detailed Site Characterization Study	2 mons
5	Hire Demolition general Contractor	3 mons
6	KCP&L Prepares Unit for Dismantlement	2 wks
7	Demolition Contractor Mobilizes on Site	5 days
8	**KCP&L Overhead during Dismantlement**	**120 days**
9	KCP&L Project Manager	120 days
10	KCP&L Administrative Support	120 days
11	KCP&L Engineer	120 days
12	Owners Engineer Project Manager	120 days
13	Owners Engineer - Engineer	120 days
14	**Dismantlement Activities**	**120 days**
15	Dismantlement Minus Freight	120 days
16	Dismantlement Freight	120 days
17	Cut Turbine Blades for Scrap Shipment	120 days
18	Blade Landfill Cost	120 days
19	**Post Dismantlement Activities**	**20 days**
20	Post Dismantlement Activities	20 days



UNIT 2

Spearville 2 Retirement/Dismantlement(1)

Owner Costs				
Pre-Dismantlement Activities		$378,127		
Overhead During Dismantlement		$86,515		
Post-Dismantlement Activities		$34,755		
Owner Costs Total			$499,397	
Demolition General Contractor (DGC) Costs				
Dismantlement		$8,248,518		
DGC Insurance	2.00%	$164,970		
Contingency/Profit	15.00%	$1,262,023		
Performance Bond	2.00%	$193,510		
Contractor Costs Total:			$9,869,022	
Total:				$10,368,419
Owner Internal Costs:	5.00%			$518,421
Owner Contingency:	25.00%			$2,721,710
Spearville 2 Dismantlement Opinion of Probable Cost:				$13,608,549
Spearville 1 Retirement/Dismantlement Opinion of Probable Cost minus ARO:				$8,238,655
<u>Activities Required by Permit or Regulation</u>				
Spearville 2 Wind Farm		$5,369,894		
Activities Required by Permit or Regulation				$5,369,894

(1) The Spearville Land Lease requires the wind turbines to be dismantled within 12 months of retirement.

ID	Task Name	Remaining	W
1	**Spearville 2 Dismantlement**	**$8,747,915.32**	
2	**Pre-Demolition Activities**	**$378,127.12**	
3	Detailed Planning & Hire Owner's Engineer	$52,258.88	
4	Detailed Site Characterization Study	$115,648.00	
5	Hire Demolition general Contractor	$198,647.04	
6	KCP&L Prepares Unit for Dismantlement	$11,573.20	
7	Demolition Contractor Mobilizes on Sit	$0.00	
8	**KCP&L Overhead during Dismantlement**	**$86,515.20**	
9	KCP&L Project Manager	$7,887.36	
10	KCP&L Administrative Support	$2,917.44	
11	KCP&L Engineer	$32,414.40	
12	Owners Engineer Project Manager	$19,776.00	
13	Owners Engineer - Engineer	$23,520.00	
14	**Dismantlement**	**$8,248,517.80**	
15	Dismantlement Minus Freight	$4,350,887.00	
16	Dismantlement Freight	$2,273,222.00	
17	Cut Turbine Blades for Scrap Shipment	$313,228.80	
18	Blade Landfill Cost	$1,311,180.00	
19	**Post Dismantlement Activities**	**$34,755.20**	
20	Post Dismantlement Activities	$34,755.20	

Exhibit RAK-9

ID	Task Name	Duration
1	**Spearville 2 Dismantlement**	**321 days**
2	**Pre-Demolition Activities**	**165 days**
3	Detailed Planning & Hire Owner's Engineer	2 mons
4	Detailed Site Characterization Study	2 mons
5	Hire Demolition general Contractor	3 mons
6	KCP&L Prepares Unit for Dismantlement	2 wks
7	Demolition Contractor Mobilizes on Sit	5 days
8	**KCP&L Overhead during Dismantlement**	**60 days**
9	KCP&L Project Manager	60 days
10	KCP&L Administrative Support	60 days
11	KCP&L Engineer	60 days
12	Owners Engineer Project Manager	60 days
13	Owners Engineer - Engineer	60 days
14	**Dismantlement**	**60 days**
15	Dismantlement Minus Freight	60 days
16	Dismantlement Freight	60 days
17	Cut Turbine Blades for Scrap Shipment	60 days
18	Blade Landfill Cost	60 days
19	**Post Dismantlement Activities**	**20 days**
20	Post Dismantlement Activities	20 days

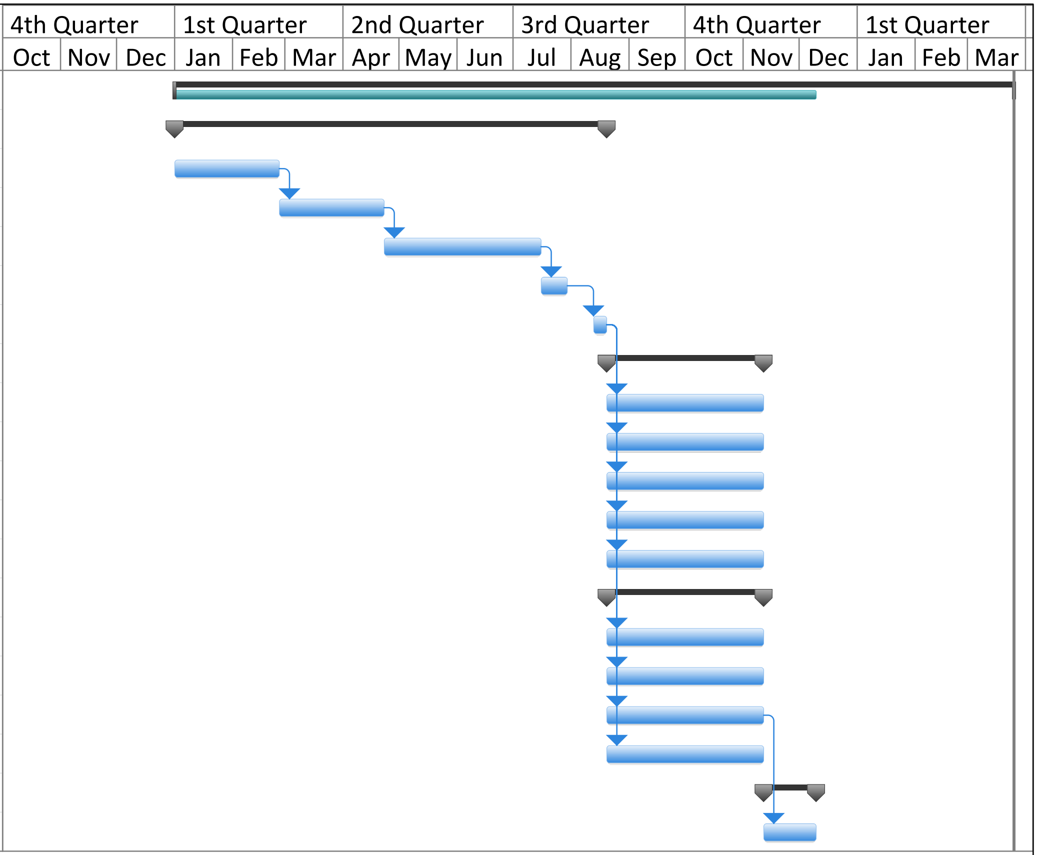


Exhibit RAK-9

APPENDIX B

OPINION OF COSTS FOR SCRAP

OPINIONS OF SCRAP VALUES

The opinion of scrap value was based on a scrap value of:

1. Mixed Scrap: $185.00/MT.
2. Insulated Cables: $1.57/lb.
3. Motors: $0.15/lb.

These scrap values were taken from www.scrapmonster.com. This website is an industry-recognized source of scrap information that provides daily scrap pricing for the worldwide scrap market.

Attached is a spreadsheet that was developed from the quantities used to build Iatan Unit 1 to calculate the current scrap value of Iatan Unit 1 value rates. Per the attached spreadsheet:

1. Iatan Unit 1 Scrap Value: $4,660,000.

The AACE International Capacity Factor Method was used to estimate the scrap value of the other coal-fired units. The capacity factor method is based on the following calculation:

UnitA(scrap value)=Iatan1(scrap value)*(CapacityUnitA/CapacityIatan1)^e

Where:

1. UnitA(scrap value) = Unit A Scrap Value.
2. Iatan1(scrap value)= Iatan Unit 1 Scrap Value: $4,660,000.
3. CapacityUnitA = Capacity of Unit A.
4. CapacityIatan1 = Capacity of Iatan Unit 1: 705 MW.
5. e = Proration Factor: 0.6 per the AACE guidelines.

Therefore, the scrap value of the other coal-fired power plants are as follows:

MONTROSE UNIT 1

1. Capacity A = 170 MW.
2. Scrap Value = $1,985,000.

MONTROSE UNIT 2

1. Capacity A = 164 MW.
2. Scrap Value = $1,943,000.

MONTROSE UNIT 3

1. Capacity A = 176 MW.
2. Scrap Value = $2,027,000.

HAWTHORN UNIT 5

1. Capacity A = 564 MW.
2. Scrap Value = $4,076,000.

LA CYGNE UNIT 1

1. Capacity A = 735 MW.
2. Scrap Value = $4,788,000.

LA CYGNE UNIT 2

1. Capacity A = 686 MW.
2. Scrap Value = $4,584,000.

IATAN UNIT 2

1. Capacity A = 881 MW.
2. Scrap Value = $5,327,000.

The value of the common portion of these facilities was estimated at approximately 12-percent of the combined scrap values of the units on site.

Therefore:

1. Montrose Common: Scrap Value = $714,600.
2. Hawthorn Common: Scrap Value = $489,000.
3. La Cygne Common: Scrap Value = $1,123,000.
4. Iatan Common: Scrap Value = $1,198,000.

The scrap value of the combustion turbines was calculated based on the following scrap weights:

1. Combustion Turbine: 250,000 lbs.
2. Generator: 280,000 lbs.
3. Total: 530,000 lbs.
4. Scrap Value (for One Combustion Turbine):
   (530,000 lbs/2204.6 lbs/ton) * $185/MT: = $44,500

Therefore:

NORTHEAST

1. (Eight combustion turbines)*$44,500/CT: Scrap Value = $356,000.

HAWTHORN UNITS 7 AND 8

1. (Two combustion turbines)*$44,500/CT: Scrap Value = $89,000.

WEST GARDNER

1. (Four combustion turbines)*$44,500/CT: Scrap Value = $178,000.

OSAWATOMIE

1. (One combustion turbine)*$44,500/CT Scrap Value = $44,500.

The scrap value of Hawthorn Units 6 and 9 was calculated in two parts: the scrap value of the CT (Hawthorn Unit 6) and the scrap value of the steam turbine plant (Hawthorn Unit 9):

HAWTHORN UNIT 6

1. (One combustion turbine)*$44,500/CT: Scrap Value=$44,500.

HAWTHORN UNIT 9

1. Capacity A = 62 MW: Scrap Value = 1,105,000.

Total Hawthorn Units 6 and 9 Scrap Value: $1,150,000.

SPEARVILLE

Scrap Value Per Turbine		
Tower - 281,275 lbs. steel		
Gearbox - 40,000 lbs. steel		
Total Steel - 321,275 lbs.		
Scrap Value: (321,275lb./2,204.6 lbs.ton)*185/MT =	$ 27,0000	
Generator - 18,000 lbs.		
Scrap Value: (18,000 lb.)(0.37/lb) =	$ 2,700	
Total Scrap Value Per Turbine =		$ 29,700
Scrap Value of Units 1 and 2 Collection Cable =		$ 546,000
Spearville 1 Scrap Value		
(67 turbines)(29,700/turbine) + (546,000)(67/99) =		$ 2,359,000
Spearville 2 Scrap Value		
(32 turbines)(29,700/turbine) + (546,000)(32/99) =		$ 1,127,000

Iatan Unit 1 Materials from the Final Construction Report

Mixed Scrap Steel -										
Structural Steel -			11085	Tons					11085	tons
Handrail -			32647	linear feet		3.65	lbs/ft		60	tons
Grating -			168244	square feet		10	lbs/ft^2		841	
Coal Silos			285	Tons					285	tons
Fabricated Pipe 2.5" and Larger	**Pipe (linear feet)**									
Main Steam	911		28"	424	lbs/ft				193.132	tons
Hot Reheat	1412		36"	552	lbs/ft				389.712	tons
Cold Reheat	1173		36"	552	lbs/ft				323.748	tons
High Pressure Extraction	1400	Assume	6"	28.57	lbs/ft				19.999	tons
Boiler Safety Valve Vents	1022	Assume	6"	28.57	lbs/ft				14.59927	tons
Auxiliary Steam	2269	Assume	6"	28.57	lbs/ft				32.412665	tons
Boiler Vents and Drains	1019	Assume	6"	28.57	lbs/ft				14.556415	tons
Soot Blower Piping	1729	Assume	6"	28.57	lbs/ft				24.698765	tons
Temporary Blowout	796	Assume	6"	28.57	lbs/ft				11.37086	tons
Low Pressure Extraction	902	Assume	6"	28.57	lbs/ft				12.88507	tons
Turbine Seal and Drains	1085	Assume	6"	28.57	lbs/ft				15.499225	tons
BFPT Exhaust	25	Assume	6"	28.57	lbs/ft				0.357125	tons
Boiler Feed Discharge	615	Assume	6"	28.57	lbs/ft				8.785275	tons
BFP Recirc and Desuper Heat	2556	Assume	6"	28.57	lbs/ft				36.51246	tons
Boiler Feed Suction	414	Assume	6"	28.57	lbs/ft				5.91399	tons
Condensate	3901	Assume	6"	28.57	lbs/ft				55.725785	tons
Air Preheater Piping	5634	Assume	6"	28.57	lbs/ft				80.48169	tons
Heater Vents and Drains	2013	Assume	6"	28.57	lbs/ft				28.755705	tons
Heater Drips	2717	Assume	6"	28.57	lbs/ft				38.812345	tons
Water Pretreatment Piping	221	Assume	6"	28.57	lbs/ft				3.156985	tons
Chemical Feed	85	Assume	6"	28.57	lbs/ft				1.214225	tons
Make-Up Water	3924	Assume	6"	28.57	lbs/ft				56.05434	tons
Ash Sluice Water	6510	Assume	6"	28.57	lbs/ft				92.99535	tons
Chemical Clean	4892	Assume	6"	28.57	lbs/ft				69.88222	tons
Nitrogen	918	Assume	6"	28.57	lbs/ft				13.11363	tons
Auxiliary Cooling Water	6462	Assume	6"	28.57	lbs/ft				92.30967	tons
Extraction Traps and Drains	1279	Assume	6"	28.57	lbs/ft				18.270515	tons
Condenser Air Extraction	276	Assume	6"	28.57	lbs/ft				3.94266	tons
Fuel Oil System	804	Assume	6"	28.57	lbs/ft				11.48514	tons
Fire Protection System	4017	Assume	6"	28.57	lbs/ft				57.382845	tons
Service Water	5022	Assume	6"	28.57	lbs/ft				71.73927	tons
Generator Auxiliaries	196	Assume	6"	28.57	lbs/ft				2.79986	tons
Turbine Lube Oil	925	Assume	6"	28.57	lbs/ft				13.213625	tons
Waste Water		Assume	6"	28.57	lbs/ft				0	tons
Compressed Air System	12255	Assume	6"	28.57	lbs/ft				175.062675	tons
Building Heating	5438	Assume	6"	28.57	lbs/ft				77.68183	tons
Screen Wash	98	Assume	6"	28.57	lbs/ft				1.39993	tons
Bottom Ash Overflow	1032	Assume	6"	28.57	lbs/ft				14.74212	tons
Fly Ash Disposal	4099	Assume	6"	28.57	lbs/ft				58.554215	tons
Ash Storage	1313	Assume	6"	28.57	lbs/ft				18.756205	tons
BFP Seal		Assume	6"	28.57	lbs/ft				0	tons
Equipment Drains	447	Assume	6"	28.57	lbs/ft				6.385395	tons
Piping Provided With Equipment	**Linear Feet**									
Turbine Generator										
Stator Cooling Water	1072	Assume	8"	43.4	lbs/ft				23.2624	tons
Lube and Seal Oil	1293	Assume	8"	43.4	lbs/ft				28.0581	tons
Steam Seal	1700	Assume	8"	43.4	lbs/ft				36.89	tons
ECH	2000	Assume	8"	43.4	lbs/ft				43.4	tons
Hydrogen	1735	Assume	8"	43.4	lbs/ft				37.6495	tons
Main Steam Leads	322	Assume	8"	43.4	lbs/ft				6.9874	tons
Crossover Pipe	90	Assume	8"	43.4	lbs/ft				1.953	tons

Control Valve Leakoff	237	Assume	8"	43.4	lbs/ft				5.1429	tons				
Steam- Generator		Assume	8"	43.4	lbs/ft				0	tons				
Coal Burner	10937	Assume	8"	43.4	lbs/ft				237.3329	tons				
Soot Blower	8402	Assume	8"	43.4	lbs/ft				182.3234	tons				
Boiler Vents and Drains	4870	Assume	8"	43.4	lbs/ft				105.679	tons				
Seal Air	5150	Assume	8"	43.4	lbs/ft				111.755	tons				
Start-up Bypass	0	Assume	8"	43.4	lbs/ft				0	tons				
Igniter Oil	3702	Assume	8"	43.4	lbs/ft				80.3334	tons				
Economizer Connection Pipe	481	Assume	8"	43.4	lbs/ft				10.4377	tons				
Ash Handling System		Assume	8"	43.4	lbs/ft				0	tons				
Bottom Ash Disposal	3095	Assume	8"	43.4	lbs/ft				67.1615	tons				
Pyrites Discharge	939	Assume	8"	43.4	lbs/ft				20.3763	tons				
Economizer and Gas Recirc Fly Ash	474	Assume	8"	43.4	lbs/ft				10.2858	tons				
Precipitator Fly Ash	4442	Assume	8"	43.4	lbs/ft				96.3914	tons				
2' and Under Piping	**Linear Feet**													
High Pressure Extraction	120	Assume	1"	2.17	lbs/ft				0.1302	tons				
Boiler Safety Valve Vents	648	Assume	1"	2.17	lbs/ft				0.70308	tons				
Auxiliary Steam	1966	Assume	1"	2.17	lbs/ft				2.13311	tons				
Boiler Vents and Drains	2616	Assume	1"	2.17	lbs/ft				2.83836	tons				
Soot Blower	545	Assume	1"	2.17	lbs/ft				0.591325	tons				
Low Pressure Extraction	105	Assume	1"	2.17	lbs/ft				0.113925	tons				
Turbine Seals and Drains	1741	Assume	1"	2.17	lbs/ft				1.888985	tons				
Condensate	481	Assume	1"	2.17	lbs/ft				0.521885	tons				
Air Preheater	1011	Assume	1"	2.17	lbs/ft				1.096935	tons				
Heater Vents and Drains	1845	Assume	1"	2.17	lbs/ft				2.001825	tons				
Heater Drips	412	Assume	1"	2.17	lbs/ft				0.44702	tons				
Water Pretreatment	895	Assume	1"	2.17	lbs/ft				0.971075	tons				
Chemical Feed	3518	Assume	1"	2.17	lbs/ft				3.81703	tons				
Make-up Water	2410	Assume	1"	2.17	lbs/ft				2.61485	tons				
Ash Sluice Water	324	Assume	1"	2.17	lbs/ft				0.35154	tons				
Nitrogen	1340	Assume	1"	2.17	lbs/ft				1.4539	tons				
Auxiliary Steam	4500	Assume	1"	2.17	lbs/ft				4.8825	tons				
Cooling Water	1398	Assume	1"	2.17	lbs/ft				1.51683	tons				
Extraction Traps and Drains	309	Assume	1"	2.17	lbs/ft				0.335265	tons				
Fuel oil System	200	Assume	1"	2.17	lbs/ft				0.217	tons				
Service Water	778	Assume	1"	2.17	lbs/ft				0.84413	tons				
Generator Auxiliaries	4595	Assume	1"	2.17	lbs/ft				4.985575	tons				
Turbine Lube Oil	765	Assume	1"	2.17	lbs/ft				0.830025	tons				
Coal Handling Equipment Hydraulic Oil System	492	Assume	1"	2.17	lbs/ft				0.53382	tons				
Compressed Air	400	Assume	1"	2.17	lbs/ft				0.434	tons				
Building Heating	24000	Assume	1"	2.17	lbs/ft				26.04	tons				
Screen Wash	7149	Assume	1"	2.17	lbs/ft				7.756665	tons				
Miscellaneous Boiler Feedwater		Assume	1"	2.17	lbs/ft				0	tons				
Sampling System	439	Assume	1"	2.17	lbs/ft				0.476315	tons				
Equipment Drains	426	Assume	1"	2.17	lbs/ft				0.46221	tons				
Fly Ash Disposal	6125	Assume	1"	2.17	lbs/ft				6.645625	tons				
Sump Pump	62	Assume	1"	2.17	lbs/ft				0.06727	tons				
Chemical Clean	68	Assume	1"	2.17	lbs/ft				0.07378	tons				
Precipitator														
Precipitator	tons	2,635							2,635	tons				
Inlet Duct	tons	741							741	tons				
Outlet Duct	tons	615							615	tons				
Breeching Duct	tons	225							225	tons				
Fly Ash Silo Steel Plat	square feet	12,409		10.2	lbs/ft^2				63.2859	tons				
Boiler														
Duct	tons	1,750							1750	tons				
Casing	square feet	62,000		10.2	lbs/ft^2				316.2	tons				
steam drum	tons	400							400	tons				
Boiler	tons	9,800							9800	tons				

Air preheaters														
Primary	tons	536							536	tons				
Secondary	tons	832							832	tons				
Mixed Scrap Steel Total									33536	tons	@	324	$/GT	$10,865,529
Motors	lbs								91943	lbs	@	0.41	$/lb	$37,696.63
Cable														
6.9 KV	Linear Feet	115,300		795	lb/1000 ft				91663.5	lbs				
480V,120V AC and 125V DC	Linear Feet	333,000		548	lb/1000 ft				182484	lbs				
Control	Linear Feet	200,200		141	lb/1000 ft				28228.2	lbs				
Thermocouple and Instrument	Linear Feet	557,000		102	lb/1000 ft				56814	lbs				
Communication	Linear Feet	40,000		102	lb/1000 ft				4080	lbs				
Cable Totals									363270	lbs	@	1.65	$/lb	$599,395
				Total Opinion of Scrap Value for Iatan 1 and Iatan 1 Common*										$11,502,620
				*	Common at the time that Iatan Unit 1 was built.									
Assume that 25% of the quantities above are "common facilities"; therefore, the scrap value of Iatan Unit 1 is:					$8,500,000									

APPENDIX C

REFERENCE DOCUMENTS

REFERENCE DOCUMENTS

1. *Decommissioning Handbook for Coal-Fired Power Plants*, EPRI, Palo Alto, CA: 2004. (1011220)

2. *Decommissioning Process for Fossil-Fueled Power Plants*, EPRI, Palo Alto, CA: 2010. (1020652)

3. Association for the Advancement of Cost Estimating (AACE) International, *Skills and Knowledge of Cost Engineering*, 5th Edition, 2004.

4. Combustion Fossil Power, Fourth Edition, 1991.

5. Steam Its Generation and Use, 40th Edition, 1992.

6. Daniel International Corporation, La Cygne Station - Unit 2, Weekly Progress Report No. 175, October 1, 1976.

7. Black & Veatch, Iatan Steam Generating Station Monthly Progress Report, November 1979.

APPENDIX D

ARO - PERMIT SUMMARY

ARO Permit Summary

					Basis of Requirement
Montrose	Common	$23,869,916			
	Montrose Fuel Oil Tank Removal		$264,743		Missouri Regulation 10 CSR 26-5.020 Release Reporting and Initial Release Response Measures
	Montrose Wastewater Lagoon Removal		$127,520		10 CSR 20-6.010(12) Closure of Treatment Facilities and 10 CSR 20-6.015 No-Discharge Permits (5) Closure of Waste Storage Structures
	Montrose Landfill Closure		$2,329,000		Disposal of Coal Combustion Residuals from Electric Utilities final rule on December 19, 2014,
	Montrose Landfill Post Closure		$1,874,330		Disposal of Coal Combustion Residuals from Electric Utilities final rule on December 19, 2014,
	Montrose Ash Pond(s)		$274,742		Disposal of Coal Combustion Residuals from Electric Utilities final rule on December 19, 2014,
	Montrose Station Asbestos Removal (total plant)		$18,999,581		EPA – 40 CFR Part 61 Subpart M Missouri – Missouri Air Conservation Law Sections 643.225 – 643.250 of the Revised Statutes of Missouri Kansas – Kansas Statutes Annotated Chapter 65, Article 53
Hawthorn					
	Unit 5	$1,271,750			
	Hawthorn 5 Intake Equip, Intake Structures, Levee piping Removal		$1,271,750		US Army Corps of Engineers Section 10 Permit - Rivers & Harbor Act of March 3, 1899
	Common	$19,014,090			
	Hawthorn Ash Pond(s)		$7,840,251		Disposal of Coal Combustion Residuals from Electric Utilities final rule on December 19, 2014,
	Hawthorn Asbestos Removal		$11,173,839		EPA – 40 CFR Part 61 Subpart M Missouri – Missouri Air Conservation Law Sections 643.225 – 643.250 of the Revised Statutes of Missouri Kansas – Kansas Statutes Annotated Chapter 65, Article 53
La Cygne	Common	$93,864,399			
	La Cygne Wastewater Lagoon Removal		$226,058		28-16-173. Municipal, commercial and industrial wastewater lagoons: closure requirements.
	La Cygne Landfill - Closure (total plant)		$9,954,062		Disposal of Coal Combustion Residuals from Electric Utilities final rule on December 19, 2014,
	La Cygne Landfill - Post Closure (total plant)		$6,162,607		Disposal of Coal Combustion Residuals from Electric Utilities final rule on December 19, 2014,
	La Cygne Ash Pond(s)- Closure (total plant)		$61,277,411		Disposal of Coal Combustion Residuals from Electric Utilities final rule on December 19, 2014,
	La Cygne Ash Pond(s) - Post Closure (total plant)		$10,300,356		Disposal of Coal Combustion Residuals from Electric Utilities final rule on December 19, 2014,
	La Cygne Station Asbestos Removal (total plant)		$5,943,906		EPA – 40 CFR Part 61 Subpart M Missouri – Missouri Air Conservation Law Sections 643.225 – 643.250 of the Revised Statutes of Missouri Kansas – Kansas Statutes Annotated Chapter 65, Article 53
Iatan	Common	$41,291,803			
	Iatan Intake Equip and Intake Structures Removal (total plant)		$395,036		Missouri Regulation 10 CSR 26-5.020 Release Reporting and Initial Release Response Measures
	Iatan Fuel Storage (total plant)		$191,130		Missouri Regulation 10 CSR 26-5.020 Release Reporting and Initial Release Response Measures
	Iatan Oil Storage (total plant)		$53,766		Solid Waste Operating Permit No. 0916501
	Iatan Landfill Retirement (total plant)		$3,415,033		Disposal of Coal Combustion Residuals from Electric Utilities final rule on December 19, 2014,
	Iatan Ash Pond(s) (total plant)		$37,236,839		Disposal of Coal Combustion Residuals from Electric Utilities final rule on December 19, 2014,
Northeast	Common	$553,553			
	Northeast Fuel Oil Tank Removal		$553,553		Missouri Regulation 10 CSR 26-5.020 Release Reporting and Initial Release Response Measures
Hawthorn	6 & 9	$679,931			
	Hawthorn 9 Intake Removal		$679,931		US Army Corps of Engineers Section 10 Permit - Rivers & Harbor Act of March 3, 1899
Spearville	Unit 1	$12,532,822			Spearville Wind Project Decommissioning Agreement dated June 21, 2006
	Unit 2	$5,396,894			Spearville 2 Wind Project Decommissioning Agreement dated August 24, 2010

Exhibit RAK-9