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Case No.: ER-2014-0370
Date Testimony Prepared: October 30, 2014

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO.: ER-2014-0370

DIRECT TESTIMONY

OF

CHRISTOPHER "CHRIS" ROBERT ROGERS

ON BEHALF OF

KANSAS CITY POWER & LIGHT COMPANY

**Kansas City, Missouri
October 2014**

KCP&L Exhibit No. 131
Date 6.15.15 Reporter AT
File No. ER. 2014-0370

DIRECT TESTIMONY
OF
CHRISTOPHER “CHRIS” ROBERT ROGERS

Case No. ER-2014-0370

1 **Q: Please state your name and business address.**

2 A: My name is Christopher “Chris” Robert Rogers and my business address is Sega, Inc.,
3 16041 Foster Street, Overland Park, Kansas 66085.

4 **Q: On whose behalf are you testifying?**

5 A: I am testifying on behalf of Kansas City Power & Light Company (“KCP&L” or the
6 “Company”).

7 **Q: What is the purpose of your testimony?**

8 A: The purpose of my testimony is to present and support the report attached to my
9 testimony as Schedule CRR-2 which separately addresses the near term costs of
10 retirement and the potential future costs for dismantlement of KCP&L’s fossil-fueled and
11 wind electric generating units.

12 **Q: Please describe your educational background, professional training and experience.**

13 A: Since graduating from Kansas State University with a Bachelor of Science in Mechanical
14 Engineering, I have practiced engineering, principally in the power industry, for 40 years.
15 During the first decade of my career, I performed design, construction contracting,
16 scheduling, and resident construction management services for new coal-fired electric
17 generating stations with a nationally-recognized architect/engineer firm in Kansas City.
18 During this interval I also completed a Master of Science in Civil Engineering
19 specializing in construction management from the University of Missouri-Columbia.

1 From 1983 through 1986 I served as the Manager of Generating Facilities on the
2 staff of the Missouri Public Service Commission (“Commission” or “MPSC”) and
3 participated in several major rate cases, including the AmerenUE Callaway Nuclear Plant
4 and KCP&L Wolf Creek Nuclear Plant rate cases before the MPSC. Later while
5 employed as a consultant, I provided testimony on behalf of Aquila, Inc. in the South
6 Harper Generating Facility certification case before the MPSC. I have also testified
7 before the Hawaii Public Utilities Commission on behalf of the Hawaii State Consumer
8 Advocate.

9 I am currently an employee-owner and Vice President of Sega, Inc., (“Sega”) an
10 engineering and technical services firm located in Overland Park, Kansas. Among other
11 things, I provide consulting and project management services for Sega’s electric power
12 generating clients. Since joining Sega, Inc. in 1994, I have worked on many projects for
13 KCP&L and our other electric utility clients. Sega, Inc. has performed numerous plant
14 betterment engineering projects on KCP&L’s generation stations.

15 In 2012, I provided pre-filed testimony in support of KCP&L before the Kansas
16 Corporation Commission in Docket No. 12-KCPE-764-RTS regarding the near term
17 costs of retirement and the potential future costs for dismantlement of the Company’s
18 fossil-fueled electric generating units.

19 **Q: Do you hold any professional licenses?**

20 **A:** Yes. I am a licensed professional engineer in the State of Missouri (License No. 21087)
21 and 11 other states. I also hold a Certificate of Record from the National Council of
22 Examiners for Engineering and Surveying (No. 19249).

1 **Q: Have you prepared an appendix that describes your training, licenses and power**
2 **industry experience?**

3 A: Yes. My professional qualifications are provided in Schedule CRR-1.

4 **Q: Have you previously testified in a proceeding before the MPSC or before any other**
5 **utility regulatory agency?**

6 A: Yes, I have previously testified before the MPSC, the Public Utility Commission of the
7 State of Hawaii and the Kansas Corporation Commission. The subject matter and
8 references for the cases in which I participated are provided at the back of Schedule
9 CRR-1.

10 SUMMARY

11 **Q: Would you briefly describe the retirement and dismantlement costs developed for**
12 **KCP&L's non-nuclear generating units?**

13 A: Segra, Inc. was retained by KCP&L to study the cost of decommissioning KCP&L's non-
14 nuclear generating units. Decommissioning is the planned and orderly retirement of a
15 generating unit and the dismantlement and reclamation of the site. The term
16 *decommissioning* includes both retirement and dismantlement activities. Upon retirement
17 from service, a generating unit may either be rendered safe and stored almost indefinitely
18 through on-going maintenance and security measures or it can be dismantled completely
19 and the site reclaimed for other potential uses. Based upon our experience in the electric
20 generation industry at large and our familiarity with KCP&L's generating fleet, Segra
21 developed opinions of probable cost for KCP&L to retire each of its fossil-fueled
22 generating units. Costs for dismantlement were also developed separately for each unit.

1 **Q: Please summarize retirement of an electric generating unit.**

2 A: Retirement, as used in this study, refers to the planned, orderly and safe shutdown and
3 removal from service of an electric generating unit, and assumes that the unit will not be
4 used for service again. No actions will be taken to preserve the unit or any of its
5 components for reuse. Retirement activities are specific to each unit and to the common
6 facilities at sites with multiple generating units. Since each of KCP&L's units except
7 Osawatomie is located on a multiple unit site, it was assumed that the common site
8 facilities will remain in service until the last unit on that site is retired.

9 Approximately three to six months before initiating retirement, a specific
10 retirement plan will be prepared for each unit that takes into account environmental
11 permits and regulatory requirements for removing that unit from service. The retirement
12 plan will also provide for necessary safety and security measures during retirement of the
13 unit and for the time period from retirement until dismantlement commences.

14 First, the unit is rendered safe by de-energizing it and disconnecting it from the
15 electric grid. The switchyards at each unit will remain in service, but isolated from the
16 retired facility. Mechanical systems are de-energized as well. Fuel unloading, handling
17 and storage facilities will be cleaned out, as well as all liquids, chemicals, coolants and
18 reagents. Certain activities are required by specific unit permits and/or state or federal
19 regulations to be performed when the unit ceases operations. These may include closure
20 of ash landfills, removal of river water intakes, and/or removal of fuel oil storage tanks.
21 However, retirement activities do not include asbestos and lead paint abatement measures
22 that are typically handled as ongoing maintenance expenses during the operating life of

1 the unit and continuing if necessary after retirement. More detail is provided on
2 retirement activities in the report, which is Schedule CRR-2.

3 **Q: Please summarize dismantlement of an electric generating unit.**

4 A: Once the unit or facility has been retired and its dismantlement is scheduled, an Owner's
5 Engineer will be retained to assist with environmental issues and technical details in a
6 dismantlement plan. The unit or facility will be characterized and the boundaries for
7 demolition defined to set the scope of the work. A specialty demolition contractor will be
8 hired to perform dismantlement and salvage for the company. Dismantlement as
9 contemplated in this study provides for the orderly removal of the unit's components to
10 maximize safety and scrap value while preventing damage to the surrounding facilities.
11 The assumptions for dismantlement for each of the units and facilities are provided in
12 Schedule CRR-2.

13 **Q: Did you consider salvage value in reaching your opinion of probable dismantlement
14 costs for these units?**

15 A: Yes, the approximate scrap value for iron and steel and non-ferrous metals were tallied
16 for each unit or facility, based upon estimated quantities and average current-year scrap
17 prices. These scrap values were listed separately because the scrap metal prices vary
18 considerably, depending on industrial trends, international events and uncontrollable
19 circumstances at the time of the salvage transactions.

20 **Q: What are the results of your study?**

21 A: The opinion of the probable costs for retirement and dismantlement developed by Segal
22 for each of KCP&L's fossil-fueled units and the common facilities at each plant site are
23 provided below in Table 1. All costs shown are in 2014 dollars and do not account for

1 ownership percentages and jurisdictional allocations. The development of these costs is
2 described and supported by the report in Schedule CRR-2.

3 As shown below in Table 1, there is a significant difference in cost between
4 retiring and dismantling a power plant. The cost to retire all of KCP&L's non-nuclear
5 generating units is estimated to be approximately \$105.4 million. To dismantle all of
6 KCP&L's non-nuclear units, I estimate that it would cost an additional \$255.4 million.
7 Some components could be sold for scrap during dismantlement thereby recovering an
8 estimated \$86.4 million and bringing the estimated Net Terminal Value (cost to dismantle
9 less salvage) for all of KCP&L's fossil-fueled plants to \$169 million.

Table 1 - Opinion of The Probable Costs for Decommissioning KCP&L's Electric Generating Units

(All cost values in 2014 dollars)

Name	Unit No.	Capability ⁽¹⁾	First Year In Service	Retirement			Dismantlement		
				Unit Retirement	Activities Required by Permit, Regulation ⁽³⁾ , or Agreement ⁽⁴⁾	Total Retirement	Dismantlement	Scrap Value ⁽⁵⁾	Net Terminal Cost
Montrose	1	170	1958	\$496,957		\$496,957	\$8,058,485	\$4,260,000	\$3,798,485
	2	164	1960	\$496,957		\$496,957	\$7,886,609	\$4,170,000	\$3,716,609
	3	176	1964	\$496,957		\$496,957	\$8,227,950	\$4,350,000	\$3,877,950
	Common			\$447,132	\$2,597,269	\$3,044,401	\$11,445,008	\$2,170,000	\$9,275,008
Hawthorn	5	564	1969 / 2001	\$977,615		\$977,615	\$21,004,708	\$8,750,000	\$12,254,708
	Common			\$319,281	\$1,198,746	\$1,518,027	\$9,942,959	\$1,120,000	\$8,822,959
LaCygne	1	735	1973	\$1,047,834		\$1,047,834	\$26,459,962	\$10,250,000	\$16,209,962
	2	686	1977	\$998,295		\$998,295	\$25,598,523	\$9,840,000	\$15,758,523
	Common			\$593,828	\$45,751,862	\$46,345,690	\$16,881,376	\$1,920,000	\$14,961,376
Iatan	1	705	1980	\$1,035,765	\$595,211	\$1,630,976	\$24,018,833	\$10,000,000	\$14,018,833
	2	881	2010	\$1,031,343		\$1,031,343	\$27,449,519	\$11,430,000	\$16,019,519
	Common			\$590,627	\$3,744,486	\$4,335,113	\$24,874,543	\$6,850,000	\$18,024,543
Northeast	11	48	1972						
	12	51	1972						
	13	51	1975						
	14	54	1975						
	15	50	1976	\$516,768		\$1,041,802	\$10,006,697	\$784,000	\$9,222,697
	16	44	1976						
	17	54	1977						
	18	56	1977						
Common				\$525,034					
Hawthorn	7	77	2000	\$344,453	\$0	\$344,453	\$7,097,072	\$196,000	\$6,901,072
	8	77	2000						
West Gardner	1	77							
	2	78							
	3	77	2003	\$399,637	\$0	\$399,637	\$11,621,879	\$392,000	\$11,229,879
	4	78							
Osawatomie	1	75	2003	\$274,345	\$0	\$274,345	\$5,483,584	\$98,000	\$5,385,584
Hawthorn	6	232	1979	\$401,909	\$640,900	\$1,042,809	\$9,378,046	\$2,423,000	\$6,955,046
	9		2000						
Spearville ⁽²⁾	1	31.2	2006	\$0	\$27,042,605	\$27,042,605	\$0	\$5,030,809	(\$5,030,809)
	2	14.9	2010	\$0	\$12,815,140	\$12,815,140	\$0	\$2,402,775	(\$2,402,775)
TOTALS		5,306		\$10,469,703	\$94,911,253	\$105,380,956	\$255,435,753	\$86,436,584	\$168,999,169

Notes

- (1) Current net SPP accredited unit capability, MW.
- (2) Spearville Phase 1 nameplate capacity is 100.5 MW; Phase 2 nameplate capacity is 48 MW.
- (3) Activities required by permits and/or regulations that are to occur upon ceasing operations, including ash landfill closures, and river water intake.
- (4) The Spearville Land Leases require each wind turbine to be dismantled within 12 months of ceasing operation.
- (5) Current scrap values per averaged indices.

1 **Q: Are retirement costs optional for KCP&L?**

2 A: KCP&L is not required to dismantle its plants upon retirement, and therefore, it is not
3 known when, or even if, the portion of the costs in my study related only to
4 dismantlement will be incurred. However, that is not the case with the costs of retirement
5 only. Retirement costs represent the costs that unavoidably will be incurred by the
6 Company when the plant is shut-down, even if the closed plant is never dismantled.

7 **Q: How have the results of your study been used in this case?**

8 A: It is my understanding that the retirement costs I have identified have been incorporated
9 into the depreciation study performed for KCP&L by Company witness, Mr. John
10 Spanos. It is also my understanding that Mr. Spanos has not included the dismantling
11 costs from my study in his depreciation study. By keeping the two categories of costs
12 separate in my study, I have facilitated Mr. Spanos' efforts in this regard, and I have
13 provided substantial evidence to the Commission clearly showing the distinction between
14 the two categories of costs.

15 **Q: Was the Schedule CRR-2 study prepared under your direction and supervision?**

16 A: Yes. I was the Officer-in-Charge at Sega for this study and participated in determining
17 the methodology and in the performance of the work with our team. I visited each of the
18 plant sites, supervised the preparation of the report, and reviewed the results for
19 reasonableness and appropriateness.

20 **Q: Does this conclude your testimony?**

21 A: Yes.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Kansas City Power & Light)
Company's Request for Authority to Implement) Case No. ER-2014-0370
A General Rate Increase for Electric Service)

AFFIDAVIT OF CHRISTOPHER R. ROGERS

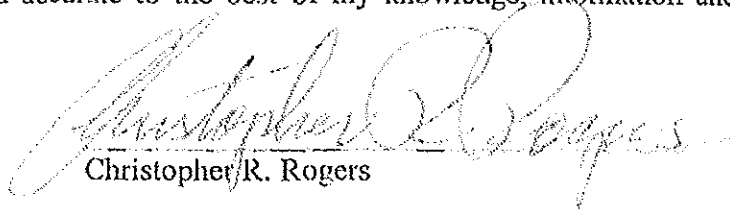
STATE OF KANSAS)
) ss
COUNTY OF JOHNSON)

Christopher R. Rogers, being first duly sworn on his oath, states:

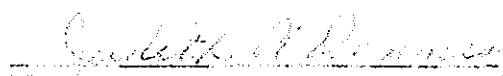
1. My name is Christopher R. Rogers. I am employed by Sega, Inc. I have been retained to serve as an expert witness to provide testimony on behalf of Kansas City Power & Light Company.

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 eight (8) pages, having been prepared in written form for introduction into evidence in the above-captioned docket.

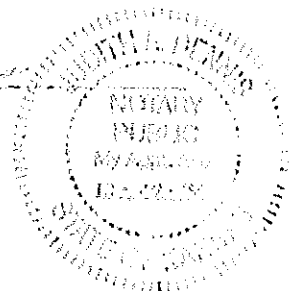
3. I have knowledge of the matters set forth therein. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded, including any attachments thereto, are true and accurate to the best of my knowledge, information and belief.


Christopher R. Rogers

Subscribed and sworn before me this 20th day of September, 2014.


Notary Public

My commission expires: November 23, 2014



Chris R. Rogers, P.E.

POSITION Vice President, Sega, Inc.

EDUCATION B.S.M.E., 1974
Kansas State University
Manhattan, Kansas

M.S.C.E. Civil Engineering – Construction Management, 1981
University of Missouri-Columbia
Columbia, Missouri

LICENSES Professional Engineer Licenses

- California
- Colorado
- Florida
- Hawaii
- Idaho
- Illinois
- Kansas
- Kentucky
- Michigan
- Missouri
- Montana
- North Carolina
- NCEES Record Certificate

AFFILIATIONS American Society of Mechanical Engineers

EXPERIENCE SUMMARY

Mr. Rogers is a Vice President of Sega, Inc. and a licensed professional engineer with 40 years of experience in the power industry. Among other things at Sega, he is responsible for corporate risk management activities and directs the firm's planning and studies practice. Mr. Rogers also provides project management and engineering services for Sega's electric power generating clients.

He has performed engineering and management services for many types of electric generating plants, including simple and combined cycle combustion turbine projects, coal and waste coal-fired fluidized bed boiler projects, pulverized coal units, and biomass-fired projects. He has performed engineering and feasibility reviews for financing, construction monitoring, and performance testing of numerous generating facilities.

Mr. Rogers served as the Manager of Generating Facilities in the Electric Department of the Missouri Public Service Commission from 1983 through 1986. He covered issues in conjunction with the construction management audits and rate cases for the Callaway Plant and Wolfcreek Nuclear Generating Station, had limited participation in the Grand Gulf Nuclear Station rate case, and performed other assignments concerning regulated generating facilities throughout the State of Missouri.

Chris R. Rogers, P.E.

During the first decade of his career, Mr. Rogers performed mechanical engineering for large utility-owned coal-fired central generating stations while employed by a nationally recognized engineering firm. He served on project design teams in the main office and as the chief mechanical resident engineer on a plant construction site.

SELECTED PROJECT EXPERIENCE

- **Kansas Municipal Energy Agency, Overland Park, Kansas** – Segal's Officer-in-charge and project manager of a planning study for installation of a peaking plant in Garden City, Kansas. Performed technical assessment of candidate combustion turbine and reciprocating engine generator sets, evaluated potential sites, developed permitting strategies, and compiled preliminary project plan including contracting methodology, procurement lists, and opinions of probable cost and schedule.
- **City of Independence Power & Light Department, Independence, Missouri** – Segal's Officer-in-charge for salvage and sale of a 50-MW GE Frame 7B regenerative combustion turbine generator. Segal developed requests for proposals, an informational website, and evaluated proposals, resulting in awards to four buyers.
- **City of Independence Power & Light Department, Independence, Missouri** – Segal's Officer-in-charge for decommissioning study that provided an opinion of the probable cost to the City for retirement and dismantlement of the 40-MW, coal-fired Missouri City Power Plant.
- **Kansas City Power & Light Company, Kansas City, Missouri** – Segal's Officer-in-charge and project manager for a generating plant siting study that investigated and evaluated multiple candidate sites for potential new 600-MW class combined cycle generating units, 200-MW nominal gas turbine peaking units and 100-MW reciprocating engine generator plants.
- **Kansas City Power & Light Company, Kansas City, Missouri** – Segal's Officer-in-charge of decommissioning study for Kansas rate case providing opinions of probable costs for retirement and dismantlement of 24 generating units totaling 5,260-MW of capacity, including eight (8) coal-fired units, one (1) combined-cycle plant, and fifteen (15) combustion turbines.
- **Kansas City Power & Light Company, Kansas City, Missouri** – Segal's project manager for combined cycle plant siting study that investigated and evaluated multiple candidate sites for potential new 600-MW class combined cycle generating station.

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- **Kansas City Power & Light Company**, Lake Road Generating Station, Kansas City, Missouri – Sega’s project manager for a study that assessed the feasibility of the KCP&L industrial steam generation system to serve industrial steam customers.
- **Independence Power & Light Department**, Independence, Missouri – Master plan study for a nominal 320-MW municipal utility. Sega, Inc.’s project manager for study including existing generation assessment, transmission system assessment, load forecast, alternative power supply analysis and economic evaluation.
- **State of Hawaii Division of Consumer Advocacy** – Investigated island-wide blackouts that occurred on Oahu and Maui after the earthquakes on October 15, 2006 and on Oahu after lightning events on December 26, 2008. Project manager of Sega, Inc. team for investigation of causes of the outages, utility outage recovery operations and potential improvements to prevent or minimize future outages.
- **Kansas City Board of Public Utilities**, Nearman Creek CT4, Kansas City, Kansas – 85-MW simple-cycle peaking plant. Owner’s Engineer (Sega, Inc.) site manager for commissioning, including checkout, performance testing, emissions testing and management of construction completion closeout activities.
- **Kansas City Power & Light-GMO (Formerly Aquila)**, South Harper Peaking Facility, Peculiar, Missouri – 315-MW simple-cycle peaking plant. Project manager for the Owner’s Engineer (Sega Inc.) for siting, permitting support, detailed installation design, balance of plant procurement, construction management services, commissioning, and documentation support. Sega’s project manager.
- **Kansas City Power & Light**, West Gardner and Osawatomie Generating Stations – Two simple-cycle peaking projects. Sega, Inc’s turnkey proposal manager for engineer-led EPC proposal for 400-MW of GE 7E gas turbine generator sets.
- **Idaho Power Company**, Mountain Home, Idaho – Sega’s project manager for a study to convert 2 W 251B12 gas turbines from peaking to combined-cycle (150MW).
- **Trigen – Kansas City Energy Corporation**, Kansas City, Missouri – Sega, Inc.’s project manager for feasibility study to repower a district heating plant with an 80-MW combustion turbine and heat recovery steam generator cogeneration project.
- **Conserve Energy System**, Centralia, Illinois – Sega’s project manager on a technical feasibility study for a 215-MW coal-fired atmospheric circulating fluidized bed boiler steam electric generating plant.

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- **Tulare County Power Projects**, Goshen and Tipton, California – Segal's project manager for conceptual design and detailed design proposal for 24-MW net, natural gas-fired reciprocating engine generator set peaking plants located planned at four existing utility substations.
- **High Plains Corp Cogeneration Project**, Wichita, Kansas – Segal's project manager for conceptual design, feasibility study and detailed design-build proposal for a 6-MW net, landfill recovery gas-fired combustion turbine and heat recovery steam generator cogeneration project.
- **City Utilities of Springfield, Missouri** – Segal's project manager for feasibility study for an 8-MW net, natural gas-fired combustion turbine and heat recovery steam generator cogeneration project at local university campus.
- **Cargill, Inc.**, Blair, Nebraska – Segal's project manager for feasibility study for a 100-MW net combustion turbine and heat recovery steam generator cogeneration project.
- **Quantum Dynamics, Inc. / Quebecor Printing, Inc.**, Fernley, Nevada – Segal's project manager for balance-of-plant design/build contract on a 3-MW net, gas-fired combustion turbine (ASE40) and heat recovery project at a printing plant.
- **Trigen – St. Louis Energy Corporation**, St. Louis, Missouri – Segal's project manager for detailed design, construction administration, and startup assistance for a 20-MW condensing steam turbine addition to an existing CHP plant on a fast-tracked basis.
- **University of Missouri-Rolla/Rolla Municipal Utilities** – Segal's project manager for a joint participation CHP project feasibility study that investigated alternative power supplies, generating options, and interconnection arrangements for the mutual benefit of the University and the City.
- **LTV Hennepin**, Hennepin, Illinois – Segal's project manager on an engineer-led EPC team for a 9-MW net, gas-fired combustion turbine (3 x ASE 40) and heat recovery project at LTV Steel Company plant in Hennepin, Illinois.
- **University of Missouri-Columbia** – Combustion turbine consultant for Owner's Engineer (Segal, Inc.) on feasibility study and subsequent detailed project design and equipment procurement for a 27-MW cogeneration project that used two Solar Titan 130 combustion turbine generator sets and heat recovery steam generators.
- **Witco Corporation**, Memphis, Tennessee – Segal's project manager on engineer-led EPC team 7-MW net, gas-fired combustion turbine (2 x ASE 50) and heat recovery project at Witco Corporation plant in Memphis, Tennessee.

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- **Trigen – St. Louis Energy Corporation, St. Louis, Missouri** – Segal's project manager for detailed installation design for 15-MW net, gas-fired combustion turbine (two Solar Taurus 60/STAC) and heat recovery project.
- **Independence Power & Light Department, Independence, Missouri** – Segal's project manager for major refurbishment program on six GE Frame 5 and one GE 7B-regenerative, oil and gas-fired gas turbines. Services included condition assessments, specifications, and contracting for renewal and upgrade components, unit controls replacement, remote digital controls addition, and major overhaul of each unit.
- **Somerset Generating Station, Somerset, Massachusetts** – Black & Veatch's project manager on independent engineering review, performing condition assessments for Montaup Electric Company's divestiture of a 40-MW net, oil-fired combustion turbine (2 x FT4) black start peaking unit, a 100-MW coal-fired power plant, a total of 16-MW of diesel generators (8 x 2-MW GM-EMD) and a 2-MW hydro electric plant.
- **Constellation Energy, Freehold, New Jersey** – Segal's project manager for review of project proforma and preparation of testimony before the New Jersey Board of Public Utilities for NPV of a 110-MW net, gas-fired combined cycle cogeneration project.
- **Cherokee County Cogeneration Project, Gaffney, South Carolina** – Segal's project manager for an 80-MW net, gas-fired combined cycle (GE 106FA) CHP project in Gaffney, South Carolina for Prudential Power Financing. Performed technical review of project during design, permitting, contracting, and financing. Conducted construction monitoring for lender. Also served as interim president of project development entity during lender's takeover of project and equity sale to Florida Power & Light.
- **Independence of Power and Light, Independence, Missouri** – Segal's project manager for study of 100-MW coal-fired steam electric unit, including conceptual design and estimating performance and cost for client's comparison to participation in Iatan II Project. Compiled and compared capital and operation and maintenance cost of alternative 100-MW coal-fired steam electric plants including pulverized coal and CFB plants, and natural gas-fired combined cycle and simple cycle units of the same size.
- **University of New Mexico** – Segal's project manager for cogeneration feasibility study evaluating replacement of campus central heating plant with a 30-MW net, gas-fired combustion turbine and heat recovery steam generator.

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- **Florida State Correction Facility**, Starke, Florida – Bibb and Associates' project manager for independent review for potential equity investor, KLT Power, Inc. on a 23-MW, wood gasification and natural gas-fired, combined-cycle cogeneration project proposed near Starke, Florida.
- **Indeck-Oswego Energy Center**, Oswego, New York – Bibb and Associates' project manager on independent engineering review for BA Securities, Inc. regarding the power sales agreement during term of financing of 51-MW, gas-fired combined-cycle (GE 6B) cogeneration project in Oswego, New York.
- **Honeywell FM&T**, Kansas City, Missouri – Bibb and Associates' project manager on AlliedSignal's engineering team for feasibility studies, conceptual design, permitting support, bidding, and evaluation of developer qualifications for a 40-MW, gas-fired, combustion turbine cogeneration project providing steam and electric service to a federal government complex in Kansas City, Missouri.
- **North Carolina EMC**, Raleigh, North Carolina – Bibb and Associates' project manager of the Owner's Engineer team that wrote specifications and evaluated EPC proposals for a 330-MW gas-fired combined-cycle project and 100-MW gas-fired simple-cycle project in North Carolina.
- **Indeck-Olean Energy Center**, Olean, New York – Bibb and Associates' project manager on independent engineering review for bank group that included Canadian Imperial Bank of Commerce, BOT Financial, Inc., Westpac Banking Corporation, and Toronto Dominion Bank. Project was a 79-MW, gas-fired combined-cycle (GE 6B) cogeneration project in Olean, New York. Scope included review of technical feasibility and economic viability of project for financing, construction progress monitoring and oversight of performance demonstration tests.
- **Orlando CoGen Limited**, L.P, Orlando, Florida. – Bibb and Associates' project manager for independent engineering review for senior lender, the Sumitomo Bank, Limited of a 120-MW gas-fired, single-shaft combined cycle (ABB11N1/VAX) cogeneration project in Orlando, Florida developed by Air Products and Chemicals, Inc. and Utilicorp United.
- **Empire Cogen**, Tampa, Florida – Bibb and Associates' project manager for an independent engineering review for senior lender, National Westminster Bank PLC of a 10-MW, gas-fired multiple gas turbine (Allison/US Turbine) cogeneration project located on MacDill Air Force Base near Tampa, Florida.

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- **ACE Cogeneration Project**, Trona, California – Bibb and Associates' project manager for independent engineering review for equity investor, US West Capital, Inc., including design, permit status, operations and maintenance of an existing 96-MW, coal-fired CFB steam electric plant.
- **Arroyo Cogeneration**, Escondido, California – Bibb and Associates' project manager for engineering review of project for development financing for Heller Financial, Inc, including alternate site selection program for a 49.9-MW, gas-fired, combined cycle (GE LM6000) cogeneration project.
- **Nestles Freehold Cogeneration Project**, Freehold, New Jersey – Bibb and Associates' project manager for independent engineering review for development financing by Heller Financial, Inc. of a proposed 110-MW, gas-fired, single-shaft combined cycle (ABB11N1/VAX) cogeneration project by Constellation Energy.
- **Northeast Cogen**, Solvay, New York – Bibb and Associates' independent review engineer for development financing by Heller Financial, Inc. for a proposed 49-MW, gas-fired combined cycle (GE6B/LM6000) cogeneration project.
- **Newbay Cogeneration Project**, East Providence, Rhode Island – Bibb and Associates' project manager for independent engineering review for development/bridge financing by Heller Financial, Inc of a proposed 72.2 MW, coal-fired circulating fluidized bed boiler generating plant. Reviewed design, permit applications, and development status.
- **Redding Power Project**, Redding, California – Bibb and Associates' project manager for independent engineering review for National Westminster Bank PLC during lay-up, preservation, foreclosure, receivership, and resale of 23-MW, two biomass-fired stoker boiler generating units.
- **San Joaquin Valley Energy Partners I**, Fresno, California – Bibb and Associates' project manager for independent engineering review for take-over lender Canadian Imperial Bank of Commerce, for the evaluation, and equity re-sale of a 43-MW, three unit, biomass-fired fluidized bed boiler plant.
- **Redding Peaking**, Redding, California – Bibb and Associates' project manager for engineering review for bridge financing by Heller Financial, Inc. of a proposed 49.9-MW, gas-fired simple cycle combustion turbine (GE 6) peaking plant.
- **Intercontinental Energy**, Bellingham, Massachusetts and Sayreville, New Jersey – Bibb and Associates' project manager for independent engineering review for potential equity investor, American Energy Division of Potomac Capital Investment Corporation, for two 300-MW, gas-fired combined cycle (2 x W501D) cogeneration projects.

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- **Gifford-Hill Cement Cogeneration Project**, Oro Grande, California – Bibb and Associates' project manager for independent engineering review for US West Capital, Inc., for financing the sale/lease back of an existing 20-MW heat recovery steam electric cogeneration plant.
- **Sunnyside Cogeneration Project**, Carbon County, Utah – RW Beck and Associates' project manager for independent engineering review for senior lender, Swiss Bank Corporation, of the design and permitting review of a 50-MW waste coal-fired circulating fluidized bed boiler electric generating plant.
- **North Branch Power Project**, Bayard, West Virginia – RW Beck and Associates' project manager on independent engineering review for financing and construction monitoring for senior lender, Security Pacific Bank of a 80-MW waste coal-fired, circulating fluidized bed boiler project.
- **Unocal Geothermal**, Monterey, California – RW Beck and Associates' engineer, retained by Unocal to provide independent third-party oversight and monitoring of biennial performance tests by Pacific Gas and Electric Company at the Moss Landing Power Station (two 750-MW super-critical, gas and oil-fired steam electric generating units) related to geothermal steam pricing at Unocal's Geysers Geothermal projects.
- **Viking Power Projects** in Lincoln and McBain, Michigan, and Northumberland, Pennsylvania – RW Beck and Associates' project manager on independent engineering review for financing, construction monitoring and performance testing for senior lender, CIGNA, of three 16-MW biomass fueled stoker-generating plants.
- **St. Nicholas Power Project**, Mahanoy Township, Pennsylvania – RW Beck and Associates' project manager on independent engineering review for financing, construction monitoring and performance test monitoring for senior lender, Bank of New England for an 80-MW waste coal-fired steam electric plant.
- **Chinese Station**, Inyokern, California – RW Beck and Associates' project manager on engineering review for take-over and resale; reviewed design, plant betterment program, and projected operation and maintenance program of a 25-MW biomass-fired generating plant.
- **Koma Kulshan Hydro Project**, Whatcom County, Washington – RW Beck and Associates' project manager on independent engineering review of design and construction monitoring for senior lender National Westminster Bank PLC of a 12-MW hydroelectric station.

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- **Scrubgrass Power Project**, Venango County, Pennsylvania – RW Beck and Associates' project manager on independent engineering review of design, permits, and contracts for financing and construction monitoring for senior lender, National Westminster Bank, PLC of an 80-MW waste coal-fired, circulating fluidized-bed boiler project.
- **Callaway Nuclear Generating Station**, Fulton, Missouri – Manager of Generating Facilities for the Missouri PSC staff, investigated and/or provided testimony concerning project construction management, in-service criteria, net electric capability, decommissioning funding, and in-service completion in rate case for a 1,150-MW PWR nuclear generating station.
- **Wolf Creek Nuclear Generating Station**, Burlington, Kansas – Manager of Generating Facilities for the Missouri PSC staff, investigated and/or provided testimony concerning project construction management, in-service criteria and startup, related fossil-fuel plant retirements, related plant accreditations, depreciation, and net electric capability in rate case for an 1,120-MW PWR nuclear generating station.
- **Grand Gulf Generating Station I**, Grand Gulf, Mississippi – Manager of Generating Facilities for the Missouri PSC staff, investigated and provided testimony concerning in-service criteria, in-service status, and overall project NRC inspection and licensing status for a 1,250-MW BWR nuclear generating station.
- **Plains-Escalante Generating Station, Unit 1**, Prewitt, New Mexico – Burns & McDonnell's senior mechanical design engineer for mechanical equipment and systems, equipment procurement, construction contracting and coordination; and chief resident mechanical engineer for construction of 210-MW pulverized coal power plant.
- **EPRI-DOE Fuel Cell Demonstration Project**, San Jose, California – Burns & McDonnell's mechanical engineer on cogeneration feasibility study for commercial demonstration of 5-MW fuel cell cogeneration demonstration project.
- **Basin Electric Power Cooperative, Inc.**, Laramie River Station, Wheatland, Wyoming - Burns & McDonnell's mechanical design engineer for equipment and systems, equipment procurement, and construction contracting and CPM scheduler for coordination of construction completion of systems with sequenced system start-up program for three, 550-MW net, pulverized coal-generating units for the Missouri Basin Joint Power Project Agency, lead by the Basin Electric Power Cooperative, Inc.

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TESTIMONY BEFORE THE MISSOURI PUBLIC SERVICE COMMISSION

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Phase III – Inservice Review	Supplemental (1-28-85)	NA	NA NA
AMEREN			
CASE NO. ER-85-20			
Status of Grand Gulf 1 and Waterford 3	Supplemental	12	4 118-181
KANSAS CITY POWER & LIGHT			
CASE NO. ER-85-128 & EO-85-185			
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Phase IV – Fossil Plant Retirement Dates	Direct	262	
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Functionalization and Classification of Costs (Jurisdictional Allocations)	Surrebuttal 89	6	844-848

KANSAS CITY POWER & LIGHT (Formerly AQUILA, INC.)

CASE NO. EA-2006-0309			
South Harper Peaking Facility Site Selection	Direct (filed 01/27/06)	N/A	N/A

**TESTIMONY BEFORE THE
PUBLIC UTILITIES COMMISSION
OF THE STATE OF HAWAII**

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DOCKET NO. 99-207			
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2. Fire Protection System	Direct Examination	II	309 - 313
3. Water Treatment System	Commissioners' Exam		
4. Inclusion in Rate Base Amounts			

**HAWAII ELECTRIC COMPANY, INC.,
MAUI ELECTRIC COMPANY, LTD., AND
HAWAII ELECTRIC LIGHT COMPANY, INC.**

DOCKET NO. 2006-0431			
Consumer Advocates Statement of Position:	Filed August 24, 2007		
Consumer Advocate's Supplement	Filed: September , 19, 2008		

Chris R. Rogers, P.E.

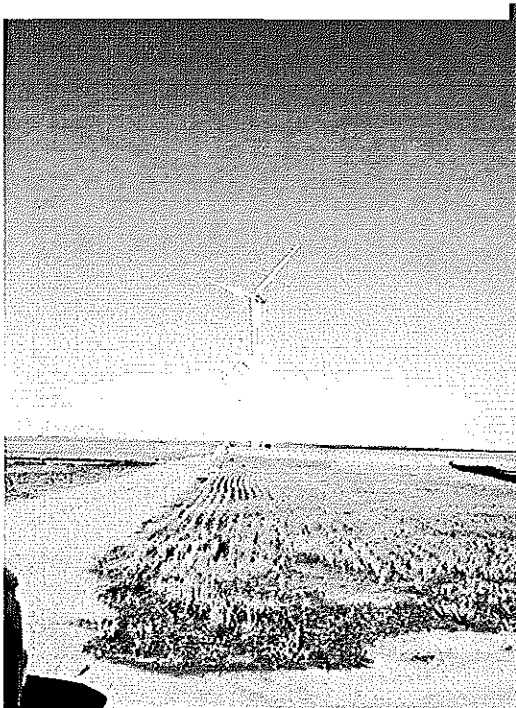
**TESTIMONY BEFORE THE
KANSAS CORPORATION COMMISSION**

Issue Description	Exhibit No.	Transcript Vol. No.	Page Nos.
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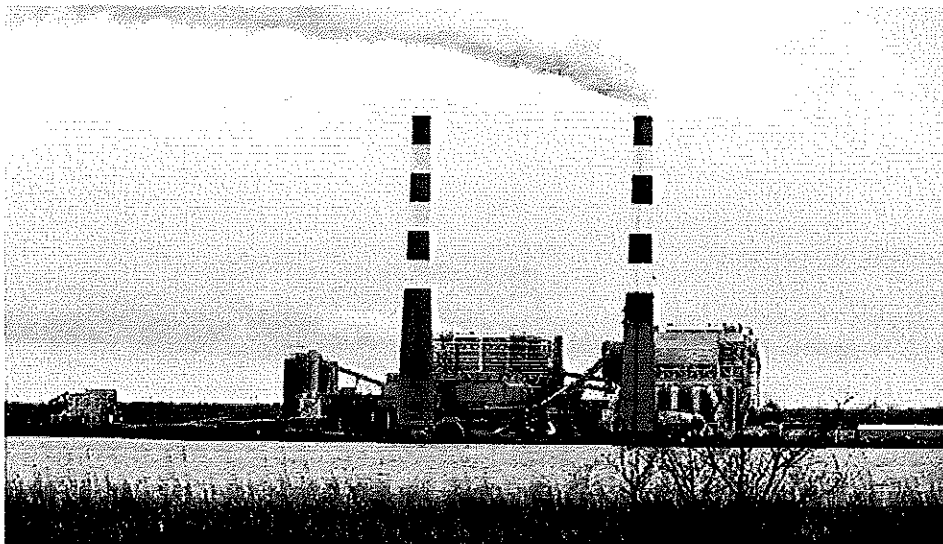
**KANSAS CITY POWER & LIGHT COMPANY, INC.
DOCKET NO. 12-KCPE-764-RTS**

The Costs of Retirement and Dismantlement: Decommissioning KCP&L Fossil-Fueled Generating Units	Pre-filed Direct Testimony Pre-filed Rebuttal Testimony
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Kansas City Power & Light Co.



The Costs of Retirement and Dismantlement: *Decommissioning KCP&L's Generating Units*



Kansas City Power & Light Co.



The Costs of Retirement and Dismantlement: *Decommissioning KCP&L's Generating Units*

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October 2014



ENGINEERING & TECHNICAL SERVICES

Project No. 14-0162

Schedule CRR-2

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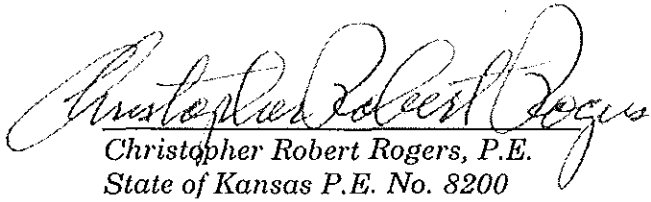
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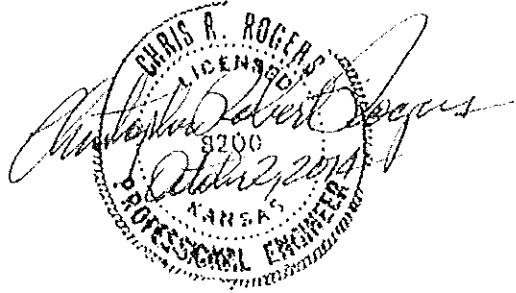
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CERTIFICATION

I hereby certify that this plan or report 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 Kansas.


Christopher Robert Rogers, P.E.
State of Kansas P.E. No. 8200



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 presents the results of Sega's study of the costs 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, 2014 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	735	1973	Coal / Steam
	2	686	1977	Coal / Steam
Iatan	1	705	1980	Coal / Steam
	2	881	2010	Coal / Steam
Northeast	11	48	1972	Distillate-Fired Combustion Turbines
	12	51		
	13	51		
	14	54	1975	
	15	50	1976	
	16	44		
	17	54	1977	
18	56			
Hawthorn	7	77	2000	Natural Gas-Fired Gas Turbines
	8	77	2000	
Hawthorn	6	232	1997	Natural Gas-Fired Gas Turbine
	9		2000	HRSG & Turbine in Combined Cycle
West Gardner	1	77	2003	Natural Gas-Fired Gas Turbines
	2	78		
	3	77		
	4	78		
Osawatomie	1	75	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.

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 and wet scrubber. Unit 2 is a pulverized coal-fired steam electric plant with an electrostatic precipitator. Each unit is currently being retrofitted with a baghouse and wet scrubber. Unit 2 is also being retrofitted with an SCR. This report includes the opinions of probable costs to retire and dismantle the new equipment.

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

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 2010 (MS Project) software with resource loading to develop and compile opinions of probable costs and schedules 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.

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.

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. For instance, applicable ash landfill closure costs for the units were included in the common plant category rather than for individual units. 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 a budgetary estimate for the demolition of the existing Iatan Unit 1 stack. This estimate 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 Segal 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 Segal 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 2014 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 not 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 Segal's opinion, the probable cost to dismantle all of KCP&L's units is approximately \$255 million. Some materials could be sold for scrap, thereby recovering approximately \$86 million and bringing the estimated net terminal value for dismantling all of KCP&L's plants to \$169 million, based upon the current averaged scrap indices.

However, were KCP&L to retire its generating units in place without dismantlement, Segal believes the cost would be approximately \$105 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 asset retirement obligations (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	\$496,957		\$496,957	\$8,058,485	\$4,260,000	\$3,798,485
	2	\$496,957		\$496,957	\$7,886,609	\$4,170,000	\$3,716,609
	3	\$496,957		\$496,957	\$8,227,950	\$4,350,000	\$3,877,950
	Common	\$447,132	\$2,597,269	\$3,044,401	\$11,445,008	\$2,170,000	\$9,275,008
Hawthorn	5	\$977,615		\$977,615	\$21,004,708	\$8,750,000	\$12,254,708
	Common	\$319,281	\$1,198,746	\$1,518,027	\$9,942,959	\$1,120,000	\$8,822,959
LaCygne	1	\$1,047,834		\$1,047,834	\$26,459,962	\$10,250,000	\$16,209,962
	2	\$998,295		\$998,295	\$25,598,523	\$9,840,000	\$15,758,523
	Common	\$593,828	\$45,751,862	\$46,345,690	\$16,881,376	\$1,920,000	\$14,961,376
Iatan	1	\$1,035,765	\$595,211	\$1,630,976	\$24,018,833	\$10,000,000	\$14,018,833
	2	\$1,031,343		\$1,031,343	\$27,449,519	\$11,430,000	\$16,019,519
	Common	\$590,627	\$3,744,486	\$4,335,113	\$24,874,543	\$6,850,000	\$18,024,543
Northeast	11						
	12						
	13						
	14						
	15	\$516,768		\$516,768	\$10,006,697	\$784,000	\$9,222,697
	16						
	17						
	18						
Common		\$525,034	\$525,034				
Hawthorn	7		\$0	\$0	\$7,097,072	\$196,000	\$6,901,072
	8	\$344,453	\$0	\$344,453	\$7,097,072	\$196,000	\$6,901,072
West Gardner	1						
	2						
	3	\$399,637	\$0	\$399,637	\$11,621,879	\$392,000	\$11,229,879
	4						
Osawatomie	1	\$274,345	\$0	\$274,345	\$5,483,584	\$98,000	\$5,385,584
Hawthorn	6		\$640,900	\$640,900	\$9,378,046	\$2,423,000	\$6,955,046
	9	\$401,909	\$640,900	\$1,042,809	\$9,378,046	\$2,423,000	\$6,955,046
Spearville	1	\$0	\$27,042,605	\$27,042,605	\$0	\$5,030,809	(\$5,030,809)
	2	\$0	\$12,815,140	\$12,815,140	\$0	\$2,402,775	(\$2,402,775)
		\$10,469,703	\$94,911,253	\$105,380,956	\$255,435,753	\$86,436,584	\$168,999,169

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

- (1) All values in 2014 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.

SECTION 2

RETIREMENT

RETIREMENT

2.1 INTRODUCTION

Sega developed an opinion of probable cost to retire the KCP&L facilities previously listed in Figure 1.1 and further described in Appendix A. The opinion of probable cost 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. 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 cost 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 COST 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 provide 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.

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:

1. 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.

2. 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).
3. Fuel yard equipment will be cleaned and vacuumed to reduce or eliminate the hazards of fugitive coal dust.
4. To the maximum extent possible, all drains will be emptied and vented. Low-point drains will remain open.
5. Fuel gas piping and city/rural water piping will be cut and capped at the property line.
6. Chimney Federal Aviation Agency (FAA) required lighting will be kept in service.
7. 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.
8. Fuel oil and waste oil will be drained and removed.
9. Boiler chemicals will be drained and removed.
10. 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.
11. Ductwork will be vacuumed and left opened.
12. Condensate and feedwater piping will be drained and vented.
13. Feedwater heaters will be drained and vented.
14. Deaerator and deaerator storage tanks will be drained and vented.
15. The turbine and condenser will be drained and vented. Turbine lube oil will be removed.

16. 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.
17. Compressed air systems will be drained and vented. Desiccant will be removed from the compressed air dryer systems.
18. Circulating water systems and turbine cooling water systems will be drained and vented. Circulating water chemical feeds will be drained and vented.
19. Baghouses will be opened, cleaned, and vented. Filter bags and cages will be removed.
20. Wet Flue Gas Desulfurization (FGD) systems will be drained, opened, cleaned, and vented.
21. Dry FGD systems will be drained, opened, cleaned, and vented.
22. Re-agent preparation facilities will be drained, opened, cleaned, and vented.
23. SCRs will be opened, cleaned, and vented. Catalyst will be removed. Ammonia storage tanks will be emptied and vented.
24. The battery systems will have the battery electrolytes and battery cells removed and disposed.
25. Sewage treatment facilities will be drained, cleaned, and vented.
26. Oily drain tanks will be opened and pumped out.
27. CO₂ systems used for fire protection will be drained, opened, and vented.
28. 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 ARO ACTIVITIES

Asset Retirement Obligations (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).

While KCP&L accounts for asbestos abatement activities in AROs for the La Cygne, Montrose, and Hawthorn Generating Stations, these activities were excluded 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. Thus, asbestos abatement was not included in this decommissioning study.

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, Segra reviewed and utilized these estimates, adjusting to 2014 present-day dollars. Where there was no prior estimate available, Segra 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.

10/1/00

10/1/00

10/1/00

10/1/00

SECTION 3

DISMANTLEMENT

DISMANTLEMENT

3.1 INTRODUCTION

Sega developed an opinion of probable cost to dismantle the KCP&L facilities that are listed in Appendix A. The opinion of probable cost 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 cost 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 cost 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 COST 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 cost 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 cost was 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 get any additional required permits in place 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.

APPENDICES

APPENDIX A

OPINIONS OF COSTS BY UNITS

MONTROSE

MONTROSE 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).

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

Montrose 1 Retirement

Owner Costs

Pre-Retirement Activities	\$100,822
Retirement Activities	\$251,249
Post-Retirement Activities	\$26,564

Owner Direct Total \$378,635

Owner Internal Costs 5.00% \$18,932

Owner Contingency: 25.00% \$99,392

Montrose 1 Retirement Opinion of Probable Cost: \$496,957.91

Montrose 1 Retirement		
ID	Task Name	Cost
1	Montrose 1 Retirement	\$378,635.89
2	Pre-Engineering	\$100,821.60
3	Permit review and engineering analysis, establish isolation points, and confirm fuel yard inventory has been reduced to zero tons.	\$100,821.60
4	KCC&L Overhead Costs	\$86,124.40
5	KCP&L Retirement Manager	\$86,124.40
6	Equipment Rentals	\$29,178.88
7	Vacuum truck	\$29,178.88
8	Retirement	\$135,947.01
9	Electrical	\$18,911.68
10	Medium and Low Voltage Draw out Switchgear	\$2,679.84
11	De-energize all buses at the source.	\$446.64
12	Open all circuit breakers.	\$446.64
13	Rack all circuit breakers into the fully withdrawn, disconnected position.	\$446.64
14	Verify that the closing/tripping springs are discharged.	\$446.64
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.	\$893.28
16	Motor Control Centers	\$1,786.56
17	De-energize all buses at the source.	\$446.64
18	Open all circuit breakers and disconnect switches.	\$446.64
19	Remove all fuses in control circuits.	\$893.28
20	Low-voltage Switchboards and Panelboards	\$893.28
21	De-energize all buses at the source.	\$446.64
22	Open all circuit breakers and disconnect switches.	\$446.64
23	Oil-Filled Power Transformers	\$5,549.44
24	De-energize all transformer primaries and verify that the secondary is de-energized.	\$893.28
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.	\$893.28
26	Drain and dispose of oil.	\$2,642.88
27	Clean up and dispose of oil on surface areas around the transformers on in containment pits.	\$1,120.00
28	Dry-type Power Transformers	\$1,786.56
29	De-energize all transformer primaries and verify that the secondary is de-energized.	\$893.28
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.	\$893.28
31	Motors	\$6,216.00
32	De-energize all primary power at the source.	\$1,786.56
33	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	\$1,786.56
34	Drain lube oil system (if applicable) and dispose of oil.	\$2,642.88
35	Coal Handling	\$27,475.44
36	Empty all transfer hoppers.	\$1,704.56
37	Burn out coal silos.	\$1,685.44
38	Confirm all fuel lines, conveyors and trippers are clear of fuel.	\$1,685.44
39	Perform cleaning of the coal handling equipment to assure that all coal and coal dust has been removed from site.	\$22,400.00
40	Fuel Oil and Igniter System	\$2,528.16

Montrose 1 Retirement

ID	Task Name	Cost
41	Drain fuel oil system	\$2,528.16
42	Waste Oil System	\$1,685.44
43	Drain all waste oil systems	\$1,685.44
44	Boiler Chemical Feed	\$1,685.44
45	Drain all chemical feed tanks.	\$1,685.44
46	Boiler	\$27,484.77
47	Open boiler doors.	\$880.96
48	Gas side - perform cleaning of the boiler and bottom ash system.	\$22,400.00
49	Drain boiler, drum, downcomers and headers.	\$842.72
50	Open drum doors.	\$880.96
51	Drain and clean the submerged flight conveyor system.	\$2,480.13
52	Stack and Ductwork	\$12,080.96
53	Open ductwork doors.	\$880.96
54	Perform cleaning of the ductwork.	\$11,200.00
55	Condensate and Feedwater Piping	\$1,685.44
56	Drain water from the system.	\$842.72
57	Leave open vents and drains.	\$842.72
58	Feedwater heaters	\$2,528.16
59	Drain feedwater heaters	\$842.72
60	Leave open vents and drains.	\$1,685.44
61	Deaerator and Deaerator Storage Tank	\$1,685.44
62	Drain Deaerator and Storage	\$842.72
63	Leave open vents and drains.	\$842.72
64	Precipitator	\$14,114.96
65	Multiple cleaning cycles for collection plates.	\$2,528.16
66	Clear hoppers of all ash	\$2,805.44
67	Disconnect transformers.	\$2,036.80
68	Mechanically secure all compartment dampers and hopper outlet valves in open position.	\$880.96
69	Disconnect ash transport piping and washdown baghouse hoppers and interior of casing.	\$1,421.84
70	Install bird screens across hopper ash outlet and ash line flanges.	\$880.96
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.)	\$880.96
72	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	\$2,679.84
73	Turbine(s) and Condenser	\$5,266.64
74	Drain hotwell and leave doors open.	\$861.84
75	Open main turbine doors.	\$880.96
76	Open bfp turbine doors.	\$880.96
77	Remove lube oil.	\$2,642.88
78	Generator	\$6,095.76
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.	\$446.64
80	Verify that generator field breaker or contactor (if applicable) is open.	\$446.64
81	De-energize power supplies to generator excitation system at the source.	\$446.64
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.	\$446.64
83	Drain generator and exciter cooling water systems (if applicable).	\$861.84
84	Disconnect and remove hydrogen gas tanks and purge generator hydrogen system.	\$1,685.44

Montrose 1 Retirement

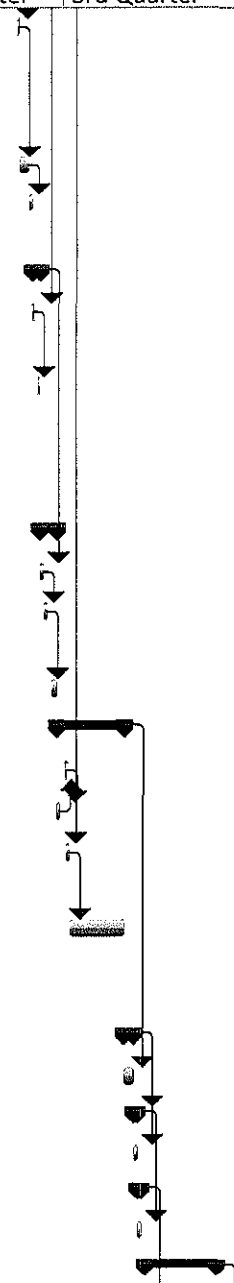
ID	Task Name	Cost
85	Disconnect and remove fire protection system gas/foam tanks and purge fire protection system.	\$1,761.92
86	Circulation Water and Turbine Cooling Water System	\$3,409.12
87	Drain.	\$1,685.44
88	Open water box doors.	\$880.96
89	Drain any circulating water chemical feed tanks.	\$842.72
90	Compressed Air System	\$842.72
91	Open vents and drains.	\$842.72
92	Auxiliary Steam System	\$1,685.44
93	Drain water from system.	\$842.72
94	Remove aux boiler chemicals.	\$842.72
95	Auxiliary Cooling Water System	\$842.72
96	Drain water from system.	\$842.72
97	Condenser Air Extraction	\$842.72
98	Drain water from system.	\$842.72
99	Building Heating System	\$842.72
100	Drain water from system.	\$842.72
101	Battery System	\$4,253.28
102	De-energize all battery chargers from the source.	\$446.64
103	Open all AC and DC circuit breakers and/or fused switches on battery chargers and disconnect cables from batteries.	\$446.64
104	Remove and dispose of battery electrolyte.	\$1,680.00
105	Remove and dispose of battery cells.	\$1,120.00
106	Clean up and dispose of electrolyte on surface areas around batteries.	\$560.00
107	Post Retirement Activities	\$26,564.00
108	Post Retirement Activities	\$26,564.00

Montrose 1 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	
1	Montrose 1 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	KCC&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 1 day secondary is de-energized.	1 day						

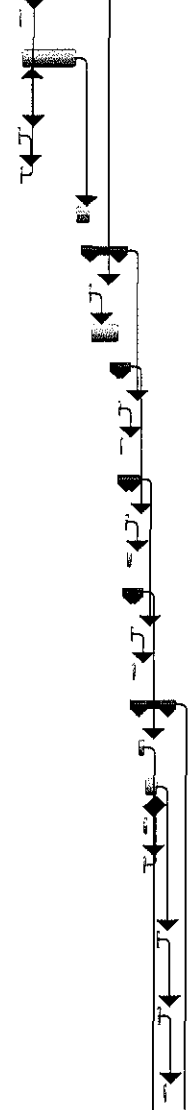
Montrose 1 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
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					



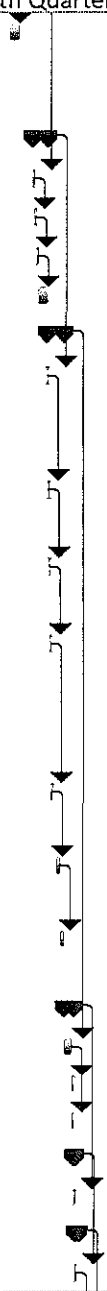
Montrose 1 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
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 transformers.	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					



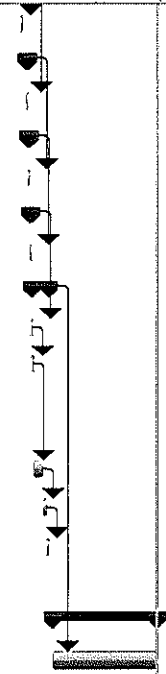
Montrose 1 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
72	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	3 days					
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					



Montrose 1 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
94	Remove aux boiler chemicals.	1 day					
95	Auxiliary Cooling Water System	1 day					
96	Drain water from system.	1 day					
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 1 Dismantlement

Owner Costs

Pre-Dismantlement Activities	\$387,025
Overhead During Dismantlement	\$725,955
Post-Dismantlement Activities	\$28,369

Owner Costs Total \$1,141,349

Demolition General Contractor (DGC) Costs

Site Management	\$395,724
Equipment Rental	\$673,809
Consummables	\$672,245
Scrap Crew(s)	\$667,046
Dismantlement*	\$1,768,874

DGC Insurance 2.00% \$83,554

Contingency/Profit 15.00% \$639,188

Performance Bond 2.00% \$98,009

Contractor Costs Total: \$4,998,449

Total: \$6,139,798

Owner Internal Costs: 5.00% \$306,990

Owner Contingency: 25.00% \$1,611,697

Montrose Unit 1 Dismantlement Opinion of Probable Cost: \$8,058,485

UNIT 2

Montrose 2 Retirement

Owner Costs

Pre-Retirement Activities	\$100,822
Retirement Activities	\$251,249
Post-Retirement Activities	\$26,564

Owner Direct Total \$378,635

Owner Internal Costs 5.00% \$18,932

Owner Contingency: 25.00% \$99,392

Montrose 2 Retirement Opinion of Probable Cost: \$496,957.91

Montrose 2 Retirement		
ID	Task Name	Cost
1	Montrose 2 Retirement	\$378,635.89
2	Pre-Engineering	\$100,821.60
3	Permit review and engineering analysis, establish isolation points, and confirm fuel yard inventory has been reduced to zero tons.	\$100,821.60
4	KCL&L Overhead Costs	\$86,124.40
5	KCP&L Retirement Manager	\$86,124.40
6	Equipment Rentals	\$29,178.88
7	Vacuum truck	\$29,178.88
8	Retirement	\$135,947.01
9	Electrical	\$18,911.68
10	Medium and Low Voltage Draw out Switchgear	\$2,679.84
11	De-energize all buses at the source.	\$446.64
12	Open all circuit breakers.	\$446.64
13	Rack all circuit breakers into the fully withdrawn, disconnected position.	\$446.64
14	Verify that the closing/tripping springs are discharged.	\$446.64
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.	\$893.28
16	Motor Control Centers	\$1,786.56
17	De-energize all buses at the source.	\$446.64
18	Open all circuit breakers and disconnect switches.	\$446.64
19	Remove all fuses in control circuits.	\$893.28
20	Low-voltage Switchboards and Panelboards	\$893.28
21	De-energize all buses at the source.	\$446.64
22	Open all circuit breakers and disconnect switches.	\$446.64
23	Oil-Filled Power Transformers	\$5,549.44
24	De-energize all transformer primaries and verify that the secondary is de-energized.	\$893.28
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.	\$893.28
26	Drain and dispose of oil.	\$2,642.88
27	Clean up and dispose of oil on surface areas around the transformers on in containment pits.	\$1,120.00
28	Dry-type Power Transformers	\$1,786.56
29	De-energize all transformer primaries and verify that the secondary is de-energized.	\$893.28
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.	\$893.28
31	Motors	\$6,216.00
32	De-energize all primary power at the source.	\$1,786.56
33	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	\$1,786.56

Montrose 2 Retirement

ID	Task Name	Cost
34	Drain lube oil system (if applicable) and dispose of oil.	\$2,642.88
35	Coal Handling	\$27,475.44
36	Empty all transfer hoppers.	\$1,704.56
37	Burn out coal silos.	\$1,685.44
38	Confirm all fuel lines, conveyors and trippers are clear of fuel.	\$1,685.44
39	Perform cleaning of the coal handling equipment to assure that all coal and coal dust has been removed from site.	\$22,400.00
40	Fuel Oil and Igniter System	\$2,528.16
41	Drain fuel oil system	\$2,528.16
42	Waste Oil System	\$1,685.44
43	Drain all waste oil systems	\$1,685.44
44	Boiler Chemical Feed	\$1,685.44
45	Drain all chemical feed tanks.	\$1,685.44
46	Boiler	\$27,484.77
47	Open boiler doors.	\$880.96
48	Gas side - perform cleaning of the boiler and bottom ash system.	\$22,400.00
49	Drain boiler, drum, downcomers and headers.	\$842.72
50	Open drum doors.	\$880.96
51	Drain and clean the submerged flight conveyor system.	\$2,480.13
52	Stack and Ductwork	\$12,080.96
53	Open ductwork doors.	\$880.96
54	Perform cleaning of the ductwork.	\$11,200.00
55	Condensate and Feedwater Piping	\$1,685.44
56	Drain water from the system.	\$842.72
57	Leave open vents and drains.	\$842.72
58	Feedwater heaters	\$2,528.16
59	Drain feedwater heaters	\$842.72
60	Leave open vents and drains.	\$1,685.44
61	Deaerator and Deaerator Storage Tank	\$1,685.44
62	Drain Deaerator and Storage	\$842.72
63	Leave open vents and drains.	\$842.72
64	Precipitator	\$14,114.96
65	Multiple cleaning cycles for collection plates.	\$2,528.16
66	Clear hoppers of all ash	\$2,805.44
67	Disconnect transformers.	\$2,036.80
68	Mechanically secure all compartment dampers and hopper outlet valves in open position.	\$880.96
69	Disconnect ash transport piping and washdown baghouse hoppers and interior of casing.	\$1,421.84
70	Install bird screens across hopper ash outlet and ash line flanges.	\$880.96
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.)	\$880.96

Montrose 2 Retirement

ID	Task Name	Cost
72	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	\$2,679.84
73	Turbine(s) and Condenser	\$5,266.64
74	Drain hotwell and leave doors open.	\$861.84
75	Open main turbine doors.	\$880.96
76	Open bfp turbine doors.	\$880.96
77	Remove lube oil.	\$2,642.88
78	Generator	\$6,095.76
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.	\$446.64
80	Verify that generator field breaker or contactor (if applicable) is open.	\$446.64
81	De-energize power supplies to generator excitation system at the source.	\$446.64
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.	\$446.64
83	Drain generator and exciter cooling water systems (if applicable).	\$861.84
84	Disconnect and remove hydrogen gas tanks and purge generator hydrogen system.	\$1,685.44
85	Disconnect and remove fire protection system gas/foam tanks and purge fire protection system.	\$1,761.92
86	Circulation Water and Turbine Cooling Water System	\$3,409.12
87	Drain.	\$1,685.44
88	Open water box doors.	\$880.96
89	Drain any circulating water chemical feed tanks.	\$842.72
90	Compressed Air System	\$842.72
91	Open vents and drains.	\$842.72
92	Auxiliary Steam System	\$1,685.44
93	Drain water from system.	\$842.72
94	Remove aux boiler chemicals.	\$842.72
95	Auxiliary Cooling Water System	\$842.72
96	Drain water from system.	\$842.72
97	Condenser Air Extraction	\$842.72
98	Drain water from system.	\$842.72
99	Building Heating System	\$842.72
100	Drain water from system.	\$842.72
101	Battery System	\$4,253.28
102	De-energize all battery chargers from the source.	\$446.64
103	Open all AC and DC circuit breakers and/or fused switches on battery chargers and disconnect cables from batteries.	\$446.64
104	Remove and dispose of battery electrolyte.	\$1,680.00
105	Remove and dispose of battery cells.	\$1,120.00
106	Clean up and dispose of electrolyte on surface areas around batteries.	\$560.00
107	Post Retirement Activities	\$26,564.00

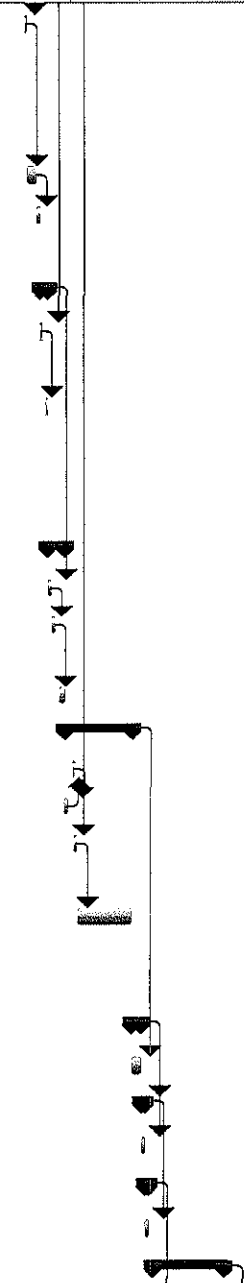
Montrose 2 Retirement

ID	Task Name	Cost
108	Post Retirement Activities	\$26,564.00

Montrose 2 Retirement			1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	
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						

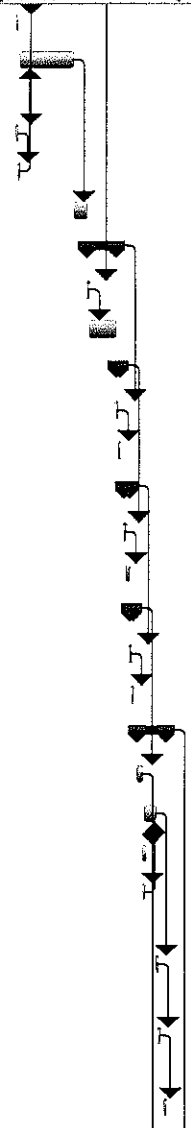
Montrose 2 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
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					



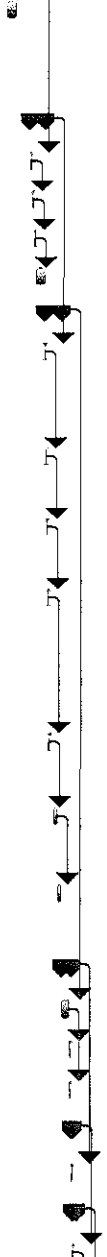
Montrose 2 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
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 transformers.	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					



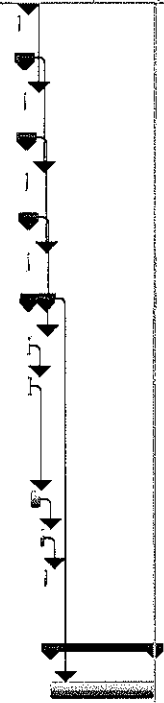
Montrose 2 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
72	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	3 days					
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					



Montrose 2 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
94	Remove aux boiler chemicals.	1 day					
95	Auxiliary Cooling Water System	1 day					
96	Drain water from system.	1 day					
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	\$378,770
Overhead During Dismantlement	\$710,472
Post-Dismantlement Activities	\$27,764

Owner Costs Total \$1,117,006

Demolition General Contractor (DGC) Costs

Site Management	\$387,284
Equipment Rental	\$659,437
Consummables	\$657,907
Scrap Crew(s)	\$652,819
Dismantlement*	\$1,731,147

DGC Insurance 2.00% \$81,772

Contingency/Profit 15.00% \$625,554.90

Performance Bond 2.00% \$95,918.42

Contractor Costs Total: \$4,891,839

Total: \$6,008,845

Owner Internal Costs: 5.00% \$300,442.27

Owner Contingency: 25.00% \$1,577,321.89

Montrose Unit 2 Dismantlement Opinion of Probable Cost: \$7,886,609.46

UNIT 3

Montrose 3 Retirement

Owner Costs

Pre-Retirement Activities	\$100,822
Retirement Activities	\$251,249
Post-Retirement Activities	\$26,564

Owner Direct Total \$378,635

Owner Internal Costs 5.00% \$18,932

Owner Contingency: 25.00% \$99,392

Montrose 3 Retirement Opinion of Probable Cost: \$496,957.91

Montrose 3 Retirement		
ID	Task Name	Cost
1	Montrose 3 Retirement	\$378,635.89
2	Pre-Engineering	\$100,821.60
3	Permit review and engineering analysis, establish isolation points, and confirm fuel yard inventory has been reduced to zero tons.	\$100,821.60
4	KCL&L Overhead Costs	\$86,124.40
5	KCP&L Retirement Manager	\$86,124.40
6	Equipment Rentals	\$29,178.88
7	Vacuum truck	\$29,178.88
8	Retirement	\$135,947.01
9	Electrical	\$18,911.68
10	Medium and Low Voltage Draw out Switchgear	\$2,679.84
11	De-energize all buses at the source.	\$446.64
12	Open all circuit breakers.	\$446.64
13	Rack all circuit breakers into the fully withdrawn, disconnected position.	\$446.64
14	Verify that the closing/tripping springs are discharged.	\$446.64
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.	\$893.28
16	Motor Control Centers	\$1,786.56
17	De-energize all buses at the source.	\$446.64
18	Open all circuit breakers and disconnect switches.	\$446.64
19	Remove all fuses in control circuits.	\$893.28
20	Low-voltage Switchboards and Panelboards	\$893.28
21	De-energize all buses at the source.	\$446.64
22	Open all circuit breakers and disconnect switches.	\$446.64
23	Oil-Filled Power Transformers	\$5,549.44
24	De-energize all transformer primaries and verify that the secondary is de-energized.	\$893.28
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.	\$893.28
26	Drain and dispose of oil.	\$2,642.88
27	Clean up and dispose of oil on surface areas around the transformers on in containment pits.	\$1,120.00
28	Dry-type Power Transformers	\$1,786.56
29	De-energize all transformer primaries and verify that the secondary is de-energized.	\$893.28
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.	\$893.28
31	Motors	\$6,216.00
32	De-energize all primary power at the source.	\$1,786.56
33	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	\$1,786.56

Montrose 3 Retirement

ID	Task Name	Cost
34	Drain lube oil system (if applicable) and dispose of oil.	\$2,642.88
35	Coal Handling	\$27,475.44
36	Empty all transfer hoppers.	\$1,704.56
37	Burn out coal silos.	\$1,685.44
38	Confirm all fuel lines, conveyors and trippers are clear of fuel.	\$1,685.44
39	Perform cleaning of the coal handling equipment to assure that all coal and coal dust has been removed from site.	\$22,400.00
40	Fuel Oil and Igniter System	\$2,528.16
41	Drain fuel oil system	\$2,528.16
42	Waste Oil System	\$1,685.44
43	Drain all waste oil systems	\$1,685.44
44	Boiler Chemical Feed	\$1,685.44
45	Drain all chemical feed tanks.	\$1,685.44
46	Boiler	\$27,484.77
47	Open boiler doors.	\$880.96
48	Gas side - perform cleaning of the boiler and bottom ash system.	\$22,400.00
49	Drain boiler, drum, downcomers and headers.	\$842.72
50	Open drum doors.	\$880.96
51	Drain and clean the submerged flight conveyor system.	\$2,480.13
52	Stack and Ductwork	\$12,080.96
53	Open ductwork doors.	\$880.96
54	Perform cleaning of the ductwork.	\$11,200.00
55	Condensate and Feedwater Piping	\$1,685.44
56	Drain water from the system.	\$842.72
57	Leave open vents and drains.	\$842.72
58	Feedwater heaters	\$2,528.16
59	Drain feedwater heaters	\$842.72
60	Leave open vents and drains.	\$1,685.44
61	Deaerator and Deaerator Storage Tank	\$1,685.44
62	Drain Deaerator and Storage	\$842.72
63	Leave open vents and drains.	\$842.72
64	Precipitator	\$14,114.96
65	Multiple cleaning cycles for collection plates.	\$2,528.16
66	Clear hoppers of all ash	\$2,805.44
67	Disconnect transformers.	\$2,036.80
68	Mechanically secure all compartment dampers and hopper outlet valves in open position.	\$880.96
69	Disconnect ash transport piping and washdown baghouse hoppers and interior of casing.	\$1,421.84
70	Install bird screens across hopper ash outlet and ash line flanges.	\$880.96
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.)	\$880.96

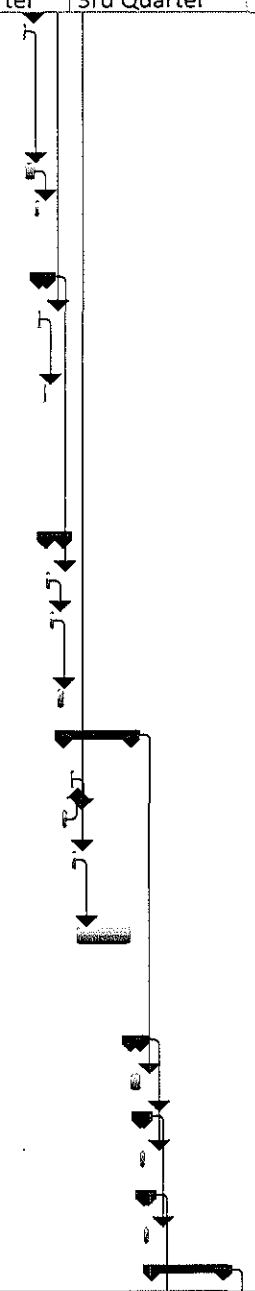
Montrose 3 Retirement		
ID	Task Name	Cost
72	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	\$2,679.84
73	Turbine(s) and Condenser	\$5,266.64
74	Drain hotwell and leave doors open.	\$861.84
75	Open main turbine doors.	\$880.96
76	Open bfp turbine doors.	\$880.96
77	Remove lube oil.	\$2,642.88
78	Generator	\$6,095.76
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.	\$446.64
80	Verify that generator field breaker or contactor (if applicable) is open.	\$446.64
81	De-energize power supplies to generator excitation system at the source.	\$446.64
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.	\$446.64
83	Drain generator and exciter cooling water systems (if applicable).	\$861.84
84	Disconnect and remove hydrogen gas tanks and purge generator hydrogen system.	\$1,685.44
85	Disconnect and remove fire protection system gas/foam tanks and purge fire protection system.	\$1,761.92
86	Circulation Water and Turbine Cooling Water System	\$3,409.12
87	Drain.	\$1,685.44
88	Open water box doors.	\$880.96
89	Drain any circulating water chemical feed tanks.	\$842.72
90	Compressed Air System	\$842.72
91	Open vents and drains.	\$842.72
92	Auxiliary Steam System	\$1,685.44
93	Drain water from system.	\$842.72
94	Remove aux boiler chemicals.	\$842.72
95	Auxiliary Cooling Water System	\$842.72
96	Drain water from system.	\$842.72
97	Condenser Air Extraction	\$842.72
98	Drain water from system.	\$842.72
99	Building Heating System	\$842.72
100	Drain water from system.	\$842.72
101	Battery System	\$4,253.28
102	De-energize all battery chargers from the source.	\$446.64
103	Open all AC and DC circuit breakers and/or fused switches on battery chargers and disconnect cables from batteries.	\$446.64
104	Remove and dispose of battery electrolyte.	\$1,680.00
105	Remove and dispose of battery cells.	\$1,120.00
106	Clean up and dispose of electrolyte on surface areas around batteries.	\$560.00
107	Post Retirement Activities	\$26,564.00

Montrose 3 Retirement

ID	Task Name	Cost
108	Post Retirement Activities	\$26,564.00

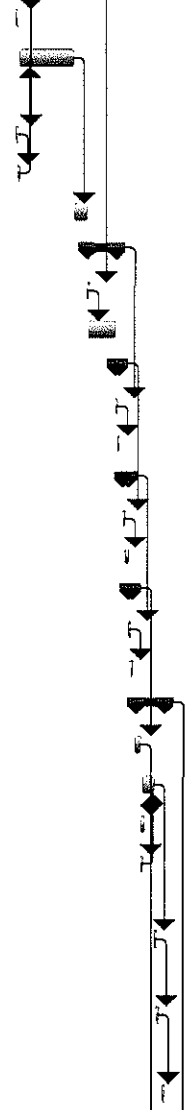
Montrose 3 Retirement			1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	
1	Montrose 3 Retirement	245 days						
2	Pre-Engineering	66 days						
3	Permit review and engineering analysis, establish isolation points, and confirm fuel yard inventory has been reduced to zero tons.	66 days						
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 1 day secondary is de-energized.	1 day						

Montrose 3 Retirement				1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
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						



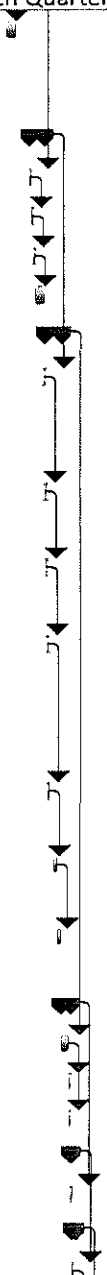
Montrose 3 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
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 transformers.	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					



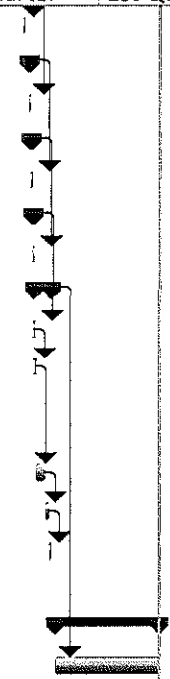
Montrose 3 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
72	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	3 days					
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					



Montrose 3 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
94	Remove aux boiler chemicals.	1 day					
95	Auxiliary Cooling Water System	1 day					
96	Drain water from system.	1 day					
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	\$395,164
Overhead During Dismantlement	\$741,222
Post-Dismantlement Activities	\$28,966

Owner Costs Total \$1,165,351

Demolition General Contractor (DGC) Costs

Site Management	\$404,046
Equipment Rental	\$687,979
Consummables	\$686,382
Scrap Crew(s)	\$681,074
Dismantlement*	\$1,806,073

DGC Insurance 2.00% \$85,311

Contingency/Profit 15.00% \$652,630

Performance Bond 2.00% \$100,070

Contractor Costs Total: \$5,103,563

Total: \$6,268,914

Owner Internal Costs: 5.00% \$313,446

Owner Contingency: 25.00% \$1,645,590

Montrose Unit 3 Dismantlement Opinion of Probable Cost: \$8,227,950

COMMON

Montrose Common Retirement

Owner Costs

Pre-Retirement Activities	\$52,448
Retirement Activities	\$272,184
Post-Retirement Activities	\$16,040

Owner Direct Total \$340,672

Owner Internal Costs 5.00% \$17,034

Owner Contingency: 25.00% \$89,426

Montrose Common Retirement Opinion of Probable Cost: \$447,132.00

Activities Required by Permit or Regulation

Montrose Fuel Oil Tank Removal	\$251,103
Montrose Wastewater Lagoon Removal	\$127,520
Montrose Landfill Retirement	\$2,218,646

Activities Required by Permit or Regulation: \$2,597,269

Montrose Common Retirement		
ID	Task Name	Cost
1	Montrose Common Retirement	\$340,674.40
2	Pre-Retirement Activities	\$52,448.80
3	Permitting Review	\$26,224.40
4	Develop Detailed Retirement Plan	\$26,224.40
5	Overheads	\$98,822.64
6	Common Retirement Overheads	\$86,437.36
7	Added Overhead Staff for Common Retirement	\$86,437.36
8	Common Retirement Equipment Rental	\$12,385.28
9	Common Removal Equipment Rental	\$12,385.28
10	Retirement Activities	\$173,362.56
11	Administration Building	\$19,408.80
12	Secure Administration Building	\$19,408.80
13	Fuel Yard Office Building	\$11,645.28
14	Secure Fuel Yard Office Building	\$11,645.28
15	Training Building	\$11,645.28
16	Secure Training Building	\$11,645.28
17	Warehouse(s)	\$9,342.40
18	Secure Unit Warehouse(s)	\$9,342.40
19	Maintenance Shop	\$37,369.60
20	Secure Maintenance Shop	\$37,369.60
21	Fuel Yard	\$69,627.60
22	Crusher Tower	\$19,173.20
23	Clean Crusher Tower	\$6,306.80
24	Conveyors	\$12,613.60
25	Clean Conveyor 10,42,43,44, 51	\$12,613.60
26	Car Dumper	\$15,136.32
27	Empty Car Dumper Hoppers	\$2,522.72
28	Clean Car Dumper	\$6,306.80
29	Secure Dumper Building	\$6,306.80
30	Reclaim	\$22,704.48
31	Clean Unit 1 Reclaim	\$3,784.08
32	Secure Unit 1 Reclaim Building	\$6,306.80
33	Clean Stock Out Conveyor Reclaim	\$12,613.60
34	Sewage Treatment	\$4,202.72
35	Clean Sewage Treatment and Transfer Points	\$4,202.72
36	Fuel Oil Storage and Unloading	\$842.72
37	Remove Fuel Oil from Fuel Oil Storage and Vent	\$842.72
38	Water Treatment	\$5,469.52
39	Drain All Tanks and Vessels	\$1,261.36
40	Remove Membranes, Resin and Sand from Filters	\$2,522.72
41	Remove Chemicals	\$842.72
42	Open and Vent Vessels	\$842.72
43	Compressed Air	\$1,685.44
44	Vent Compressed Air	\$842.72

Montrose Common Retirement

ID	Task Name	Cost
45	Vent Compressed Air Vessels	\$842.72
46	Yard Fire Water Systems	\$2,123.20
47	Drain Yard Fire Water System	\$2,123.20
48	Post Retirement Closure Activities	\$16,040.40
49	Post Retirement Closure Activities	\$16,040.40

Montrose Common Retirement

ID	Task Name	Duration	1st Quarter			2nd Quarter		
			Jan	Feb	Mar	Apr	May	Jun
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 Retirement Equipment Rental	59 days						
9	Common Removal Equipment Rental	59 days						
10	Retirement Activities	59 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						

Montrose Common Retirement

ID	Task Name	Duration	1st Quarter			2nd Quarter		
			Jan	Feb	Mar	Apr	May	Jun
33	Clean Stock Out Conveyor Reclaim	10 days						
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	Post Retirement Closure Activities	20 days						
49	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	\$791,822
Equipment Rental	\$322,094
Consummables	\$214,482
Scrap Crew(s)	\$318,862
Dismantlement	\$5,640,912

DGC Insurance 2.00% \$145,763

Contingency/Profit 15.00% \$1,115,090

Performance Bond 2.00% \$170,981

Contractor Costs Total: \$8,720,006

Total: \$8,720,006

Owner Internal Costs: 5.00% \$436,000

Owner Contingency: 25.00% \$2,289,002

Montrose Common Dismantlement Opinion of Probable Cost: \$11,445,008

Montrose Common Dismantlement		
ID	Task Name	Cost
1	Montrose Common Dismantlement	\$6,540,346.59
2	Overheads	\$899,434.00
3	Common Removal Overheads	\$43,994.48
4	Added Overhead Staff for Common Removals	\$43,994.48
5	Common Removal Equipment Rental	\$322,094.56
6	Common Removal Equipment Rental	\$322,094.56
7	Scrap Crew	\$318,862.08
8	Crew(s) to Handle Scrap Material	\$318,862.08
9	Demolition Contractor Consummables	\$214,482.88
10	Consummables	\$214,482.88
11	Dismantlement Activities	\$5,640,912.59
12	Administration Building	\$35,827.20
13	Remove Administration Building	\$35,827.20
14	Fuel Yard Office Building	\$17,913.60
15	Remove Fuel Yard Office Building	\$17,913.60
16	Training Building	\$17,913.60
17	Remove Training Building	\$17,913.60
18	Parking Lots and Plant Roads	\$82,402.56
19	Plant Roads and Parking Areas	\$71,654.40
20	Guard Shack	\$10,748.16
21	Warehouse(s)	\$17,913.60
22	Remove Warehouse	\$17,913.60
23	Maintenance Shop	\$23,215.20
24	Remove Maintenance Shop	\$23,215.20
25	Water Treatment	\$39,409.92
26	Remove Water Treatment Equipment	\$17,913.60
27	Remove Water Treatment Building	\$21,496.32
28	Fuel Yard	\$390,516.48
29	Crusher Tower	\$143,308.80
30	Remove Crusher Building and Equipment	\$71,654.40
31	Conveyors	\$89,568.00
32	Remove Conveyor 10, 42, 43, 44, and 51	\$89,568.00
33	Car Dumper	\$93,150.72
34	Remove Underground Equipment	\$14,330.88
35	Remove Above Ground Equipment	\$35,827.20
36	Remove Building	\$25,079.04
37	Backfill Dumper Structure	\$17,913.60
38	Reclaim	\$64,488.96
39	Remove Underground Equipment	\$17,913.60
40	Remove Above Ground Equipment	\$17,913.60
41	Remove Building	\$14,330.88
42	Backfill Structure	\$14,330.88
43	Yard Fire Water Systems	\$35,827.20
44	Remove Hydrants and Fire Water System Piping Down to 3' Below Grade	\$35,827.20

Montrose Common Dismantlement

ID	Task Name	Cost
45	Stacks	\$4,507,653.12
46	Remove Unit 1 and Unit 2 Stack to Grade	\$2,681,749.63
47	Remove Unit 3 Stack to Grade	\$1,825,903.49
48	Final Site Grading and Drainage	\$472,320.11
49	Final Site Grading and Drainage	\$472,320.11

Montrose Common Dismantlement

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

Montrose Common Dismantlement

ID	Task Name	Duration	2nd Quarter				3rd Quarter	
			Feb	Mar	Apr	May	Jun	Jul
33	Car Dumper	26 days				[Gantt bar from May 1 to May 27]		
34	Remove Underground Equipment	4 days				[Task bar from May 1 to May 5]		
35	Remove Above Ground Equipment	10 days				[Task bar from May 5 to May 15]		
36	Remove Building	7 days				[Task bar from May 15 to May 22]		
37	Backfill Dumper Structure	5 days				[Task bar from May 22 to May 27]		
38	Reclaim	18 days					[Gantt bar from June 1 to June 19]	
39	Remove Underground Equipment	5 days					[Task bar from June 1 to June 6]	
40	Remove Above Ground Equipment	5 days					[Task bar from June 6 to June 11]	
41	Remove Building	4 days					[Task bar from June 11 to June 15]	
42	Backfill Structure	4 days					[Task bar from June 15 to June 19]	
43	Yard Fire Water Systems	10 days					[Gantt bar from June 19 to July 9]	
44	Remove Hydrants and Fire Water System Piping Down to 3' Below Grade	10 days					[Task bar from June 19 to July 9]	
45	Stacks	1 day						[Task bar from March 1 to March 1]
46	Remove Unit 1 and Unit 2 Stack to Grade	1 day						[Task bar from March 1 to March 1]
47	Remove Unit 3 Stack to Grade	1 day						[Task bar from March 1 to March 1]
48	Final Site Grading and Drainage	1 day						[Task bar from March 1 to March 1]
49	Final Site Grading and Drainage	1 day						[Task bar from March 1 to March 1]

HAWTHORN UNIT 5

HAWTHORN STATION

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 off site the majority of their coal combustion products. 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	\$100,822
Retirement Activities	\$617,464
Post-Retirement Activities	\$26,564

Owner Direct Total \$744,850

Owner Internal Costs 5.00% \$37,242

Owner Contingency: 25.00% \$195,523

Hawthorn 5 Retirement Opinion of Probable Cost: \$977,615.10

Hawthorn 5 Retirement		
ID	Task Name	Cost
1	Hawthorn 5 Retirement	\$744,850.69
2	Pre-Engineering	\$100,821.60
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	\$104,712.40
5	KCP&L Retirement Manager	\$104,712.40
6	Equipment Rentals	\$35,476.48
7	Vacuum truck	\$35,476.48
8	Retirement	\$477,276.21
9	Electrical	\$15,375.52
10	Medium and Low Voltage Draw out Switchgear	\$2,679.84
11	De-energize all buses at the source.	\$446.64
12	Open all circuit breakers.	\$446.64
13	Rack all circuit breakers into the fully withdrawn, disconnected position.	\$446.64
14	Verify that the closing/tripping springs are discharged.	\$446.64
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.	\$893.28
16	Motor Control Centers	\$1,786.56
17	De-energize all buses at the source.	\$446.64
18	Open all circuit breakers and disconnect switches.	\$446.64
19	Remove all fuses in control circuits.	\$893.28
20	Low-voltage Switchboards and Panelboards	\$893.28
21	De-energize all buses at the source.	\$446.64
22	Open all circuit breakers and disconnect switches.	\$446.64
23	Oil-Filled Power Transformers	\$4,228.00
24	De-energize all transformer primaries and verify that the secondary is de-energized.	\$893.28
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.	\$893.28
26	Drain and dispose of oil.	\$1,321.44
27	Clean up and dispose of oil on surface areas around transformers and in containment pits.	\$1,120.00
28	Dry-type Power Transformers	\$1,786.56
29	De-energize all transformer primaries and verify that the secondary is de-energized.	\$893.28
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.	\$893.28
31	Motors	\$4,001.28
32	De-energize all primary power at the source.	\$893.28
33	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	\$1,786.56

Hawthorn 5 Retirement

ID	Task Name	Cost
34	Drain lube oil system (if applicable) and dispose of oil.	\$1,321.44
35	Coal Handling	\$27,475.44
36	Empty all transfer hoppers.	\$1,704.56
37	Burn out coal silos.	\$1,685.44
38	Confirm all fuel lines, conveyors and trippers are clear of fuel.	\$1,685.44
39	Perform cleaning of the coal handling equipment to assure that all coal and coal dust has been removed from site.	\$22,400.00
40	Gas and Igniter System	\$1,762.08
41	Isolate fuel gas system in gas yard and vent gas piping	\$1,762.08
42	Waste Oil System	\$1,685.44
43	Drain all waste oil systems	\$1,685.44
44	Boiler Chemical Feed	\$1,685.44
45	Drain all chemical feed tanks.	\$1,685.44
46	Boiler	\$27,484.77
47	Open boiler doors.	\$880.96
48	Gas side - perform cleaning of the boiler and bottom ash system.	\$22,400.00
49	Drain boiler, drum, downcomers and headers.	\$842.72
50	Open drum doors.	\$880.96
51	Drain and clean the submerged flight conveyor system.	\$2,480.13
52	Stack and Ductwork	\$326,961.04
53	Open ductwork doors.	\$880.96
54	Perform extensive cleaning of the ductwork.	\$11,200.00
55	Place cap over stack opening to keep moisture out.	\$314,880.08
56	Condensate and Feedwater Piping	\$1,685.44
57	Drain water from the system.	\$842.72
58	Leave open vents and drains.	\$842.72
59	Feedwater heaters	\$2,528.16
60	Drain feedwater heaters	\$842.72
61	Leave open vents and drains.	\$1,685.44
62	Deaerator and Deaerator Storage Tank	\$1,685.44
63	Drain Deaerator and Storage	\$842.72
64	Leave open vents and drains.	\$842.72
65	Baghouse	\$17,351.92
66	Multiple cleaning cycles for filter bags.	\$2,528.16
67	Open all vent and drain lines on bag cleaning air and control air lines. Leave in open position or remove vent valves.	\$842.72
68	Remove all filter bags and cages.	\$880.96
69	Clear hoppers of all ash	\$2,805.44
70	Mechanically secure all compartment dampers and hopper outlet valves in open position.	\$880.96
71	Disconnect ash transport piping and washdown baghouse hoppers and interior of casing.	\$1,421.84
72	Install bird screens across hopper ash outlet and ash line flanges.	\$880.96

Hawthorn 5 Retirement		
ID	Task Name	Cost
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.)	\$880.96
74	If walk-in plenum, padlock or tack weld all outlet plenum doors and compartment ventilation dampers shut.	\$880.96
75	If top-door plenum, close and secure top doors and remove/disable door lift hoist.	\$1,723.68
76	If top-door plenum, establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in penthouse enclosure.	\$945.44
77	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	\$2,679.84
78	Spray Dryer Absorber FGD	\$4,806.40
79	Clear SDA of all accumulated solids	\$3,925.44
80	Padlock or tack weld SDA module access doors closed.	\$880.96
81	Lime Slurry Preparation System	\$10,775.44
82	Remove lime from day bins.	\$1,962.72
83	Removed cartridges/bags from bin vent filters	\$701.36
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.)	\$880.96
85	Remove bin discharge isolation valve and install bird screen.	\$880.96
86	Thoroughly wash and drain slakers.	\$1,122.72
87	Remove balls from any ball mills from ball mill slakers.	\$720.48
88	Padlock or tack weld slaker access doors closed.	\$880.96
89	Establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in building.	\$945.44
90	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	\$2,679.84
91	SCR	\$10,054.00
92	Vacuum fly ash from catalyst.	\$2,240.00
93	Remove catalyst of salvage or disposal.	\$2,881.92
94	Padlock or tack weld access doors shut.	\$880.96
95	Remove ammonia from storage tank for resale.	\$701.36
96	Wash out and drain storage tank and supply piping.	\$701.36
97	Vent storage tank and all piping. Leave vent and drain valves open or remove. Install bird screens.	\$861.84
98	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	\$1,786.56
99	Turbine(s) and Condenser	\$5,266.64
100	Drain hotwell and leave doors open.	\$861.84
101	Open main turbine doors.	\$880.96
102	Open bfp turbine doors.	\$880.96
103	Remove lube oil.	\$2,642.88
104	Generator	\$6,095.76

Hawthorn 5 Retirement

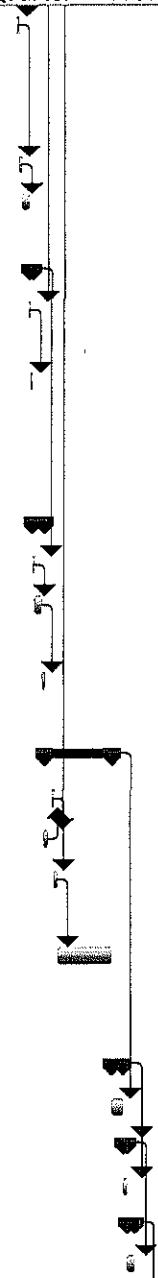
ID	Task Name	Cost
105	Verify that generator circuit breaker is open and racked out or that high-voltage disconnect switch on substation side of GSU transformer is locked in the open position.	\$446.64
106	Verify that generator field breaker or contactor (if applicable) is open.	\$446.64
107	De-energize power supplies to generator excitation system at the source.	\$446.64
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.	\$446.64
109	Drain generator and exciter cooling water systems (if applicable).	\$861.84
110	Disconnect and remove hydrogen gas tanks and purge generator hydrogen system.	\$1,685.44
111	Disconnect and remove fire protection system gas/foam tanks and purge fire protection system.	\$1,761.92
112	Circulation Water and Turbine Cooling Water System	\$3,409.12
113	Drain.	\$1,685.44
114	Open water box doors.	\$880.96
115	Drain any circulating water chemical feed tanks.	\$842.72
116	Compressed Air System	\$2,721.28
117	Open vents and drains.	\$842.72
118	Remove desiccant from desiccant dryers.	\$1,878.56
119	Auxiliary Steam System	\$1,685.44
120	Drain water from system.	\$842.72
121	Remove aux boiler chemicals.	\$842.72
122	Auxiliary Cooling Water System	\$842.72
123	Drain water from system.	\$842.72
124	Condenser Air Extraction and Waterbox Priming System	\$842.72
125	Drain water from system.	\$842.72
126	Building Heating System	\$842.72
127	Drain water from system.	\$842.72
128	Battery System	\$4,253.28
129	De-energize all battery chargers from the source.	\$446.64
130	Open all AC and DC circuit breakers and/or fused switches on battery chargers and disconnect cables from batteries.	\$446.64
131	Remove and dispose of battery electrolyte.	\$1,680.00
132	Remove and dispose of battery cells.	\$1,120.00
133	Clean up and dispose of electrolyte on surface areas around batteries.	\$560.00
134	Post Retirement Activities	\$26,564.00
135	Post Retirement Activities	\$26,564.00

Hawthorn 5 Retirement

ID	Task Name	Duration	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter
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	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					
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					

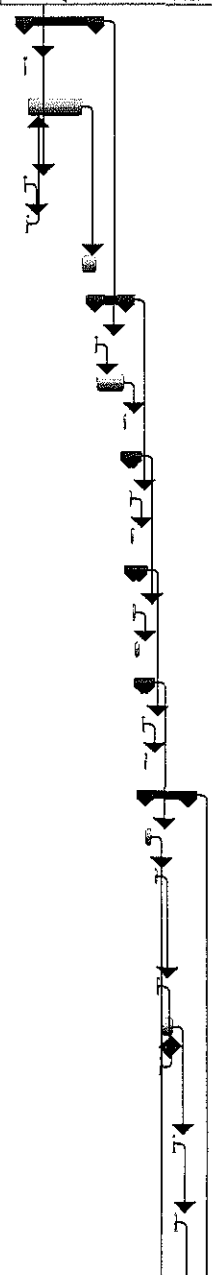
Hawthorn 5 Retirement

ID	Task Name	Duration	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter
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					
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					



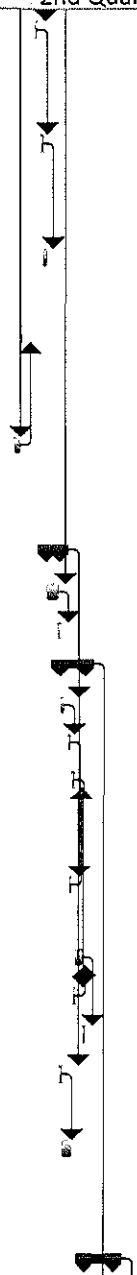
Hawthorn 5 Retirement

ID	Task Name	Duration	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter
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					
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					
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					



Hawthorn 5 Retirement

ID	Task Name	Duration	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter
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					
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					



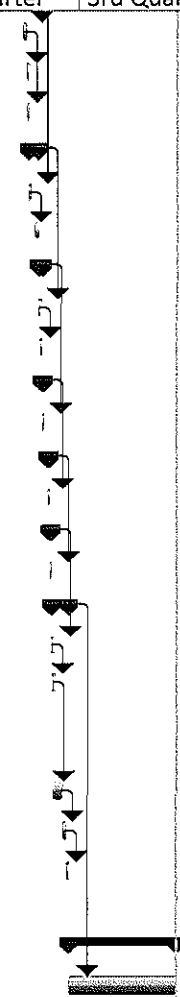
Hawthorn 5 Retirement

ID	Task Name	Duration	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter
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					
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					



Hawthorn 5 Retirement

ID	Task Name	Duration	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter
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					
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		\$780,888	
Overhead During Dismantlement		\$1,466,523	
Post-Dismantlement Activities		\$54,021	
Owner Costs Total			\$2,301,432

Demolition General Contractor (DGC) Costs

Additional Site Management		\$1,097,854	
Equipment Rental		\$1,900,559	
Consummables		\$2,074,718	
Scrap Crew(s)		\$1,880,260	
Dismantlement*		\$4,498,857	
DGC Insurance	2.00%	\$229,045	
Contingency/Profit	15.00%	\$1,752,194	
Performance Bond	2.00%	\$268,669.71	
Contractor Costs Total:			\$13,702,155

Total: \$16,003,587

Owner Internal Costs: 5.00% \$800,179

Owner Contingency: 25.00% \$4,200,942

Hawthorn Unit 5 Dismantlement Opinion of Probable Cost: \$21,004,708

COMMON

Hawthorn Common Retirement

Owner Costs

Pre-Retirement Activities	\$26,224
Retirement Activities	\$184,958
Post-Retirement Activities	\$32,080

Owner Direct Total \$243,262

Owner Internal Costs 5.00% \$12,163

Owner Contingency: 25.00% \$63,856

Hawthorn Common Retirement Opinion of Probable Cost: \$319,281.38

Activities Required by Permit or Regulation

Hawthorn 1 & 2 Intake Removal	\$640,900
Hawthorn 5 Intake Removal	\$557,846

Activities Required by Permit or Regulation: \$1,198,746

Hawthorn Common Retirement			
ID	Task Name	Cost	Cost
1	Hawthorn Common Retirement	\$243,263.76	\$243,263.76
2	Pre-Retirement Activities	\$26,224.40	\$26,224.40
3	Permitting Review	\$13,112.20	\$13,112.20
4	Develop Detailed Retirement Plan	\$13,112.20	\$13,112.20
5	Overheads	\$103,847.52	\$103,847.52
6	Common Retirement Overheads	\$90,832.48	\$90,832.48
7	Added Overhead Staff for Common Retirement	\$90,832.48	\$90,832.48
8	Common Retirement Equipment Rental	\$13,015.04	\$13,015.04
9	Common Removal Equipment Rental	\$13,015.04	\$13,015.04
10	Retirement Activities	\$81,111.04	\$81,111.04
11	Administration Building	\$19,408.80	\$19,408.80
12	Secure Administration Building	\$19,408.80	\$19,408.80
13	Training Building	\$7,618.72	\$7,618.72
14	Secure Training Building	\$7,618.72	\$7,618.72
15	Warehouse(s)	\$9,342.40	\$9,342.40
16	Secure Unit Warehouse(s)	\$9,342.40	\$9,342.40
17	Maintenance Shops	\$37,369.60	\$37,369.60
18	Secure Maintenance Shops	\$37,369.60	\$37,369.60
19	Sewage Treatment	\$5,248.32	\$5,248.32
20	Isolate and Cap Sewage Lines	\$5,248.32	\$5,248.32
21	City Water	\$0.00	\$0.00
22	Isolate and Cap City Water Lines	\$0.00	\$0.00
23	Yard Fire Water Systems	\$2,123.20	\$2,123.20
24	Drain Yard Fire Water System	\$2,123.20	\$2,123.20
25	Post Retirement Closure Activities	\$32,080.80	\$32,080.80
26	Post Retirement Closure Activities	\$32,080.80	\$32,080.80

Hawthorn Common Retirement

ID	Task Name	Duration	2nd Quarter					3rd Quarter				
			Feb	Mar	Apr	May	Jun	Jul	Aug	Sep		
1	Hawthorn Common Retirement	118 days		[Gantt bar from start of Mar to end of Aug]								
2	Pre-Retirement Activities	20 days		[Gantt bar in Mar]								
3	Permitting Review	10 days		[Gantt bar in Mar]								
4	Develop Detailed Retirement Plan	10 days		[Gantt bar in Mar]								
5	Overheads	62 days			[Gantt bar in Apr]							
6	Common Retirement Overheads	62 days			[Gantt bar in Apr]							
7	Added Overhead Staff for Common Retirement	62 days			[Gantt bar in Apr]							
8	Common Retirement Equipment Rental	62 days			[Gantt bar in Apr]							
9	Common Removal Equipment Rental	62 days			[Gantt bar in Apr]							
10	Retirement Activities	58 days			[Gantt bar in Apr]							
11	Administration Building	15 days			[Gantt bar in Apr]							
12	Secure Administration Building	15 days			[Gantt bar in Apr]							
13	Training Building	5 days			[Gantt bar in Apr]							
14	Secure Training Building	5 days			[Gantt bar in Apr]							
15	Warehouse(s)	5 days			[Gantt bar in Apr]							
16	Secure Unit Warehouse(s)	5 days			[Gantt bar in Apr]							
17	Maintenance Shops	20 days			[Gantt bar in Apr]							
18	Secure Maintenance Shops	20 days			[Gantt bar in Apr]							
19	Sewage Treatment	7 days			[Gantt bar in Apr]							
20	Isolate and Cap Sewage Lines	5 days			[Gantt bar in Apr]							
21	City Water	4 days			[Gantt bar in Apr]							
22	Isolate and Cap City Water Lines	4 days			[Gantt bar in Apr]							
23	Yard Fire Water Systems	2 days			[Gantt bar in Apr]							
24	Drain Yard Fire Water System	2 days			[Gantt bar in Apr]							
25	Post Retirement Closure Activities	40 days						[Gantt bar in Jul]				
26	Post Retirement Closure Activities	40 days						[Gantt bar in Jul]				

Hawthorn Common Dismantlement

Owner Additional Costs

Pre-Dismantlement Activities	\$0
Overhead During Dismantlement	\$0

Owner Costs Total	\$0
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Demolition General Contractor (DGC) Costs

Additional Site Management	\$43,994
Equipment Rental	\$161,574
Consummables	\$214,482
Scrap Crew(s)	\$318,862
Dismantlement	\$5,592,756

DGC Insurance	2.00%	\$126,633
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Contingency/Profit	15.00%	\$968,745
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Performance Bond	2.00%	\$148,541
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Contractor Costs Total:	\$7,575,587
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Total:	\$7,575,587
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Owner Internal Costs:	5.00%	\$378,779
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Owner Contingency:	25.00%	\$1,988,592
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Hawthorn Common Dismantlement Opinion of Probable Cost:	\$9,942,959
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Hawthorn Common Dismantlement		
ID	Task Name	Cost
1	Hawthorn Common Dismantlement	\$6,331,670.53
2	Overheads	\$738,913.60
3	Common Removal Overheads	\$43,994.48
4	Added Overhead Staff for Common Removals	\$43,994.48
5	Common Removal Equipment Rental	\$161,574.16
6	Common Removal Equipment Rental	\$161,574.16
7	Scrap Crew	\$318,862.08
8	Crew(s) to Handle Scrap Material	\$318,862.08
9	Demolition Contractor Consummables	\$214,482.88
10	Consummables	\$214,482.88
11	Dismantlement Activities	\$5,592,756.93
12	Administration Building	\$35,827.20
13	Remove Administration Building	\$35,827.20
14	Fuel Yard Office Building	\$17,913.60
15	Remove Fuel Yard Office Building	\$17,913.60
16	Training Building	\$17,913.60
17	Remove Training Building	\$17,913.60
18	Parking Lots and Plant Roads	\$82,402.56
19	Plant Roads and Parking Areas	\$71,654.40
20	Guard Shack	\$10,748.16
21	Warehouse(s)	\$17,913.60
22	Remove Warehouse	\$17,913.60
23	Maintenance Shop	\$23,215.20
24	Remove Maintenance Shop	\$23,215.20
25	Water Treatment	\$39,409.92
26	Remove Water Treatment Equipment	\$17,913.60
27	Remove Water Treatment Building	\$21,496.32
28	Fuel Yard	\$390,516.48
29	Crusher Tower	\$143,308.80
30	Remove Crusher Building and Equipment	\$71,654.40
31	Conveyors	\$89,568.00
32	Remove Conveyor 10, 42, 43, 44, and 51	\$89,568.00
33	Car Dumper	\$93,150.72
34	Remove Underground Equipment	\$14,330.88
35	Remove Above Ground Equipment	\$35,827.20
36	Remove Building	\$25,079.04
37	Backfill Dumper Structure	\$17,913.60
38	Reclaim	\$64,488.96
39	Remove Underground Equipment	\$17,913.60
40	Remove Above Ground Equipment	\$17,913.60
41	Remove Building	\$14,330.88
42	Backfill Structure	\$14,330.88
43	Yard Fire Water Systems	\$35,827.20
44	Remove Hydrants and Fire Water System Piping Down to 3' Below Grade	\$35,827.20

Hawthorn Common Dismantlement

ID	Task Name	Cost
45	Stacks	\$3,672,297.27
46	Remove Hawthorn 5 Stack to Grade	\$3,672,297.27
47	Final Site Grading and Drainage	\$1,259,520.30
48	Final Site Grading and Drainage	\$1,259,520.30

Hawthorn Common Dismantlement

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

Hawthorn Common Dismantlement

ID	Task Name	Duration	2nd Quarter					3rd Quarter	
			Feb	Mar	Apr	May	Jun	Jul	Aug
33	Car Dumper	26 days				[Gantt bar from May 1 to Jun 1]			
34	Remove Underground Equipment	4 days				[Task bar from May 1 to May 5]			
35	Remove Above Ground Equipment	10 days				[Task bar from May 5 to May 15]			
36	Remove Building	7 days				[Task bar from May 15 to May 22]			
37	Backfill Dumper Structure	5 days				[Task bar from May 22 to May 27]			
38	Reclaim	18 days				[Gantt bar from Jun 1 to Jun 19]			
39	Remove Underground Equipment	5 days				[Task bar from Jun 1 to Jun 6]			
40	Remove Above Ground Equipment	5 days				[Task bar from Jun 6 to Jun 11]			
41	Remove Building	4 days				[Task bar from Jun 11 to Jun 15]			
42	Backfill Structure	4 days				[Task bar from Jun 15 to Jun 19]			
43	Yard Fire Water Systems	10 days				[Gantt bar from Jun 19 to Jun 29]			
44	Remove Hydrants and Fire Water System Piping Down to 3' Below Grade	10 days				[Task bar from Jun 19 to Jun 29]			
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

LA CYGNE 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. Current plans are to dismantle the original stack in 2015 and dismantle the limestone slurry equipment, ID fans, and outlet flues in 2016. These costs are not included in this study. The original scrubber building and equipment inside the building will be abandoned in place. 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	\$100,821
Retirement Activities	\$670,965
Post-Retirement Activities	\$26,564

Owner Direct Total \$798,350

Owner Internal Costs 5.00% \$39,918

Owner Contingency: 25.00% \$209,567

La Cygne 1 Retirement Opinion of Probable Cost: \$1,047,834.38

La Cygne 1 Retirement		
ID	Task Name	Cost
1	LaCygne 1 Retirement	\$798,351.57
2	Pre-Engineering	\$100,821.60
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	\$123,300.40
5	KCP&L Retirement Manager	\$123,300.40
6	Equipment Rentals	\$41,774.08
7	Vacuum truck	\$41,774.08
8	Retirement	\$505,891.49
9	Electrical	\$18,911.68
10	Medium and Low Voltage Draw out Switchgear	\$2,679.84
11	De-energize all buses at the source.	\$446.64
12	Open all circuit breakers.	\$446.64
13	Rack all circuit breakers into the fully withdrawn, disconnected position.	\$446.64
14	Verify that the closing/tripping springs are discharged.	\$446.64
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.	\$893.28
16	Motor Control Centers	\$1,786.56
17	De-energize all buses at the source.	\$446.64
18	Open all circuit breakers and disconnect switches.	\$446.64
19	Remove all fuses in control circuits.	\$893.28
20	Low-voltage Switchboards and Panelboards	\$893.28
21	De-energize all buses at the source.	\$446.64
22	Open all circuit breakers and disconnect switches.	\$446.64
23	Oil-Filled Power Transformers	\$5,549.44
24	De-energize all transformer primaries and verify that the secondary is de-energized.	\$893.28
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.	\$893.28
26	Drain and dispose of oil.	\$2,642.88
27	Clean up and dispose of oil on surface areas around the transformers on in containment pits.	\$1,120.00
28	Dry-type Power Transformers	\$1,786.56
29	De-energize all transformer primaries and verify that the secondary is de-energized.	\$893.28
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.	\$893.28
31	Motors	\$6,216.00
32	De-energize all primary power at the source.	\$1,786.56

La Cygne 1 Retirement		
ID	Task Name	Cost
33	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	\$1,786.56
34	Drain lube oil system (if applicable) and dispose of oil.	\$2,642.88
35	Coal Handling	\$25,790.00
36	Empty all transfer hoppers.	\$1,704.56
37	Confirm all fuel lines and conveyors.	\$1,685.44
38	Perform cleaning of the coal handling equipment to assure that all coal and coal dust has been removed from site.	\$22,400.00
39	Fuel Oil and Igniter System	\$2,528.16
40	Drain fuel oil system	\$2,528.16
41	Boiler Chemical Feed	\$1,685.44
42	Drain all chemical feed tanks.	\$1,685.44
43	Condensate Polisher	\$4,529.12
44	Drain water from system.	\$842.72
45	Drain acid and caustic tanks.	\$1,685.44
46	Open tanks and vessels.	\$880.96
47	Remove resin.	\$1,120.00
48	Boiler	\$27,484.77
49	Open boiler doors.	\$880.96
50	Gas side - perform cleaning of the boiler and bottom ash system.	\$22,400.00
51	Drain boiler, drum, downcomers and headers.	\$842.72
52	Open drum doors.	\$880.96
53	Drain and clean the submerged flight conveyor system.	\$2,480.13
54	Stack and Ductwork	\$326,960.96
55	Open ductwork doors.	\$880.96
56	Perform extensive cleaning of the ductwork.	\$11,200.00
57	Install Flue Cap on L1 Stack Flue	\$314,880.00
58	Condensate and Feedwater Piping	\$1,685.44
59	Drain water from the system.	\$842.72
60	Leave open vents and drains.	\$842.72
61	Feedwater heaters	\$2,528.16
62	Drain feedwater heaters	\$842.72
63	Leave open vents and drains.	\$1,685.44
64	Deaerator and Deaerator Storage Tank	\$1,685.44
65	Drain Deaerator and Storage	\$842.72
66	Leave open vents and drains.	\$842.72
67	Baghouse	\$17,351.92
68	Multiple cleaning cycles for filter bags.	\$2,528.16
69	Open all vent and drain lines on bag cleaning air and control air lines. Leave in open position or remove vent valves.	\$842.72
70	Remove all filter bags and cages.	\$880.96
71	Clear hoppers of all ash	\$2,805.44
72	Mechanically secure all compartment dampers and hopper outlet valves in open position.	\$880.96

La Cygne 1 Retirement

ID	Task Name	Cost
73	Disconnect ash transport piping and washdown baghouse hoppers and interior of casing.	\$1,421.84
74	Install bird screens across hopper ash outlet and ash line flanges.	\$880.96
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.)	\$880.96
76	If walk-in plenum, padlock or tack weld all outlet plenum doors and compartment ventilation dampers shut.	\$880.96
77	If top-door plenum, close and secure top doors and remove/disable door lift hoist.	\$1,723.68
78	If top-door plenum, establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in penthouse enclosure.	\$945.44
79	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	\$2,679.84
80	Wet FGD system	\$23,908.00
81	Multiple mist eliminator wash cycles. Remove ME's from absorber.	\$2,145.04
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.	\$1,723.68
83	Drain and wash out the reaction tank, reagent storage tank, recycle water tank, absorber blowdown tank, etc.	\$4,624.08
84	Leave all tank drain valves open or remove. Install bird screens across openings.	\$1,761.92
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.	\$2,604.64
86	Mechanically secure all flue gas isolation dampers in open position or remove damper blades.	\$1,761.92
87	Remove solids from all inlet and outlet ductwork as necessary	\$2,240.00
88	Open all vent station air and control air lines. Leave in open position or remove vent valves	\$1,723.68
89	Padlock or tack weld all access doors to modules and ductwork shut.	\$1,762.24
90	Remove access doors to open-top tanks.	\$880.96
91	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	\$2,679.84
92	FGD Reagent Preparation-Limestone wet Scrubber	\$10,262.88
93	Remove limestone from day bins.	\$1,402.72
94	Removed cartridges/bags from bin vent filters	\$1,402.72
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.)	\$881.12
96	Remove bin discharge isolation valve and install bird screen.	\$440.48
97	Thoroughly wash and drain mills	\$1,402.72
98	Remove balls from any ball mills	\$1,120.00

La Cygne 1 Retirement

ID	Task Name	Cost
99	Padlock or tack weld mill access doors closed.	\$881.12
100	Establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in building.	\$945.44
101	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	\$1,786.56
102	FGD Byproduct Dewatering - Hydrocyclones and Vacuum Filters	\$7,287.12
103	Wash vacuum filter belt and remove all accumulated solids	\$2,240.00
104	Wash out vacuum receiver, remove pressure relief valve and access door. Install bird screens.	\$1,421.84
105	Establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in building.	\$945.44
106	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	\$2,679.84
107	SCR	\$10,054.00
108	Vacuum fly ash from catalyst.	\$2,240.00
109	Remove catalyst of salvage or disposal.	\$2,881.92
110	Padlock or tack weld access doors shut.	\$880.96
111	Remove ammonia from storage tank for resale.	\$701.36
112	Wash out and drain storage tank and supply piping.	\$701.36
113	Vent storage tank and all piping. Leave vent and drain valves open or remove. Install bird screens.	\$861.84
114	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	\$1,786.56
115	Turbine(s) and Condenser	\$5,266.64
116	Drain hotwell and leave doors open.	\$861.84
117	Open main turbine doors.	\$880.96
118	Open bfp turbine doors.	\$880.96
119	Remove lube oil.	\$2,642.88
120	Generator	\$6,095.76
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.	\$446.64
122	Verify that generator field breaker or contactor (if applicable) is open.	\$446.64
123	De-energize power supplies to generator excitation system at the source.	\$446.64
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.	\$446.64
125	Drain generator and exciter cooling water systems (if applicable).	\$861.84
126	Disconnect and remove hydrogen gas tanks and purge generator hydrogen system.	\$1,685.44
127	Disconnect and remove fire protection system gas/foam tanks and purge fire protection system.	\$1,761.92
128	Circulation Water and Turbine Cooling Water System	\$3,409.12

La Cygne 1 Retirement

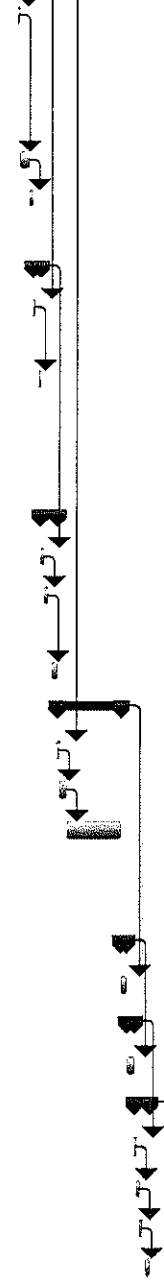
ID	Task Name	Cost
129	Drain.	\$1,685.44
130	Open water box doors.	\$880.96
131	Drain any circulating water chemical feed tanks.	\$842.72
132	Compressed Air System	\$842.72
133	Open vents and drains.	\$842.72
134	Auxiliary Steam System	\$842.72
135	Drain water from system.	\$842.72
136	Auxiliary Cooling Water System	\$842.72
137	Drain water from system.	\$842.72
138	Condenser Air Extraction and Waterbox Priming System	\$842.72
139	Drain water from system.	\$842.72
140	Building Heating System	\$842.72
141	Drain water from system.	\$842.72
142	Battery System	\$4,253.28
143	De-energize all battery chargers from the source.	\$446.64
144	Open all AC and DC circuit breakers and/or fused switches on battery chargers and disconnect cables from batteries.	\$446.64
145	Remove and dispose of battery electrolyte.	\$1,680.00
146	Remove and dispose of battery cells.	\$1,120.00
147	Clean up and dispose of electrolyte on surface areas around batteries.	\$560.00
148	Post Retirement Activities	\$26,564.00
149	Post Retirement Activities	\$26,564.00

La Cygne 1 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
1	LaCygne 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					
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					

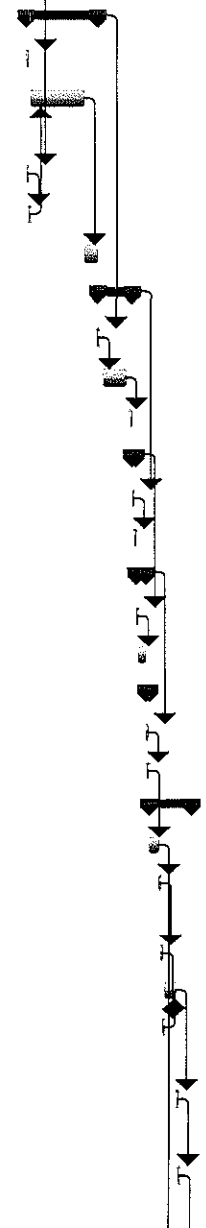
La Cygne 1 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
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	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					



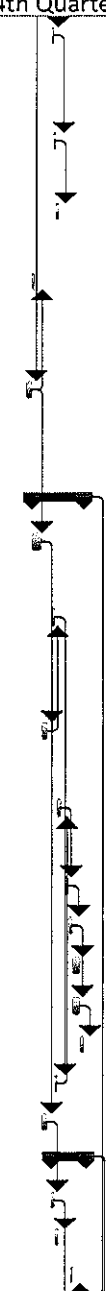
La Cygne 1 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
48	Boiler	27 days					
49	Open boiler doors.	1 day					
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	Stack and 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					
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	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					



La Cygne 1 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
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					
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	2 days					
86	Mechanically secure all flue gas isolation dampers in open	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	2 days					
89	Padlock or tack weld all access doors to modules and ductwork	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	Remove 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					







La Cygne 1 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
96	Remove bin discharge isolation valve and install bird screer	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					
100	Establish natural ventilation or maintain HVAC fan to provic	1 day					
101	Pull electrical supply breakers on all electrical equipment e	2 days					
102	FGD Byproduct Dewatering - Hydrocyclones and Vacuum Filt	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 ir	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 ir	2 days					
115	Turbine(s) and Condenser	6 days					
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					

La Cygne 1 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
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					
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					

La Cygne 1 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
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		\$915,364	
Overhead During Dismantlement		\$1,719,071	
Post-Dismantlement Activities		\$63,324	
Owner Costs Total			\$2,697,758

Demolition General Contractor (DGC) Costs

Site Management		\$1,297,925	
Equipment Rental		\$2,835,424	
Consummables		\$2,890,202	
Scrap Crew(s)		\$2,223,714	
Dismantlement*		\$5,347,634	
DGC Insurance	2.00%	\$291,898	
Contingency/Profit	15.00%	\$2,233,020	
Performance Bond	2.00%	\$342,396.33	
Contractor Costs Total:			\$17,462,213

Total: \$20,159,971

Owner Internal Costs: 5.00% \$1,007,999

Owner Contingency: 25.00% \$5,291,992

La Cygne Unit 1 Dismantlement Opinion of Probable Cost: \$26,459,962

UNIT 2

La Cygne 2 Retirement

Owner Costs

Pre-Retirement Activities	\$100,821
Retirement Activities	\$633,221
Post-Retirement Activities	\$26,564

Owner Direct Total \$760,606

Owner Internal Costs 5.00% \$38,030

Owner Contingency: 25.00% \$199,659

La Cygne 2 Retirement Opinion of Probable Cost: \$998,295.38

La Cygne 2 Retirement		
ID	Task Name	Cost
1	LaCygne 2 Retirement	\$760,607.97
2	Pre-Engineering	\$100,821.60
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	\$102,853.60
5	KCP&L Retirement Manager	\$102,853.60
6	Equipment Rentals	\$34,846.72
7	Vacuum truck	\$34,846.72
8	Retirement	\$495,522.05
9	Electrical	\$18,911.68
10	Medium and Low Voltage Draw out Switchgear	\$2,679.84
11	De-energize all buses at the source.	\$446.64
12	Open all circuit breakers.	\$446.64
13	Rack all circuit breakers into the fully withdrawn, disconnected position.	\$446.64
14	Verify that the closing/tripping springs are discharged.	\$446.64
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.	\$893.28
16	Motor Control Centers	\$1,786.56
17	De-energize all buses at the source.	\$446.64
18	Open all circuit breakers and disconnect switches.	\$446.64
19	Remove all fuses in control circuits.	\$893.28
20	Low-voltage Switchboards and Panelboards	\$893.28
21	De-energize all buses at the source.	\$446.64
22	Open all circuit breakers and disconnect switches.	\$446.64
23	Oil-Filled Power Transformers	\$5,549.44
24	De-energize all transformer primaries and verify that the secondary is de-energized.	\$893.28
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.	\$893.28
26	Drain and dispose of oil.	\$2,642.88
27	Clean up and dispose of oil on surface areas around the transformers on in containment pits.	\$1,120.00
28	Dry-type Power Transformers	\$1,786.56
29	De-energize all transformer primaries and verify that the secondary is de-energized.	\$893.28
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.	\$893.28
31	Motors	\$6,216.00
32	De-energize all primary power at the source.	\$1,786.56
33	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	\$1,786.56

La Cygne 2 Retirement

ID	Task Name	Cost
34	Drain lube oil system (if applicable) and dispose of oil.	\$2,642.88
35	Coal Handling	\$27,475.44
36	Empty all transfer hoppers.	\$1,704.56
37	Burn out coal silos.	\$1,685.44
38	Confirm all fuel lines, conveyors and trippers are clear of fuel.	\$1,685.44
39	Perform cleaning of the coal handling equipment to assure that all coal and coal dust has been removed from site.	\$22,400.00
40	Fuel Oil and Igniter System	\$2,528.16
41	Drain fuel oil system	\$2,528.16
42	Waste Oil System	\$1,685.44
43	Drain all waste oil systems	\$1,685.44
44	Boiler Chemical Feed	\$1,685.44
45	Drain all chemical feed tanks.	\$1,685.44
46	Boiler	\$27,484.77
47	Open boiler doors.	\$880.96
48	Gas side - perform cleaning of the boiler and bottom ash system.	\$22,400.00
49	Drain boiler, drum, downcomers and headers.	\$842.72
50	Open drum doors.	\$880.96
51	Drain and clean the submerged flight conveyor system.	\$2,480.13
52	Stack and Ductwork	\$326,961.04
53	Open ductwork doors.	\$880.96
54	Perform extensive cleaning of the ductwork.	\$11,200.00
55	Install Flue Cap on L2 Flue	\$314,880.08
56	Condensate and Feedwater Piping	\$1,685.44
57	Drain water from the system.	\$842.72
58	Leave open vents and drains.	\$842.72
59	Feedwater heaters	\$2,528.16
60	Drain feedwater heaters	\$842.72
61	Leave open vents and drains.	\$1,685.44
62	Deaerator and Deaerator Storage Tank	\$1,685.44
63	Drain Deaerator and Storage	\$842.72
64	Leave open vents and drains.	\$842.72
65	Baghouse	\$17,351.92
66	Multiple cleaning cycles for filter bags.	\$2,528.16
67	Open all vent and drain lines on bag cleaning air and control air lines. Leave in open position or remove vent valves.	\$842.72
68	Remove all filter bags and cages.	\$880.96
69	Clear hoppers of all ash	\$2,805.44
70	Mechanically secure all compartment dampers and hopper outlet valves in open position.	\$880.96
71	Disconnect ash transport piping and washdown baghouse hoppers and interior of casing.	\$1,421.84
72	Install bird screens across hopper ash outlet and ash line flanges.	\$880.96

La Cygne 2 Retirement

ID	Task Name	Cost
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.)	\$880.96
74	If walk-in plenum, padlock or tack weld all outlet plenum doors and compartment ventilation dampers shut.	\$880.96
75	If top-door plenum, close and secure top doors and remove/disable door lift hoist.	\$1,723.68
76	If top-door plenum, establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in penthouse enclosure.	\$945.44
77	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	\$2,679.84
78	Wet FGD system	\$23,908.00
79	Multiple mist eliminator wash cycles. Remove ME's from absorber.	\$2,145.04
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.	\$1,723.68
81	Drain and wash out the reaction tank, reagent storage tank, recycle water tank, absorber blowdown tank, etc.	\$4,624.08
82	Leave all tank drain valves open or remove. Install bird screens across openings.	\$1,761.92
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.	\$2,604.64
84	Mechanically secure all flue gas isolation dampers in open position or remove damper blades.	\$1,761.92
85	Remove solids from all inlet and outlet ductwork as necessary	\$2,240.00
86	Open all vent station air and control air lines. Leave in open position or remove vent valves	\$1,723.68
87	Padlock or tack weld all access doors to modules and ductwork shut.	\$1,762.24
88	Remove access doors to open-top tanks.	\$880.96
89	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	\$2,679.84
90	FGD Reagent Preparation-Limestone wet Scrubber	\$10,262.88
91	Remove limestone from day bins.	\$1,402.72
92	Removed cartridges/bags from bin vent filters	\$1,402.72
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.)	\$881.12
94	Remove bin discharge isolation valve and install bird screen.	\$440.48
95	Thoroughly wash and drain mills	\$1,402.72
96	Remove balls from any ball mills	\$1,120.00
97	Padlock or tack weld mill access doors closed.	\$881.12
98	Establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in building.	\$945.44

La Cygne 2 Retirement		
ID	Task Name	Cost
99	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	\$1,786.56
100	FGD Byproduct Dewatering - Hydrocyclones and Vacuum Filters	\$7,287.12
101	Wash vacuum filter belt and remove all accumulated solids	\$2,240.00
102	Wash out vacuum receiver, remove pressure relief valve and access door. Install bird screens.	\$1,421.84
103	Establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in building.	\$945.44
104	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	\$2,679.84
105	Turbine(s) and Condenser	\$5,266.64
106	Drain hotwell and leave doors open.	\$861.84
107	Open main turbine doors.	\$880.96
108	Open bfp turbine doors.	\$880.96
109	Remove lube oil.	\$2,642.88
110	Generator	\$6,095.76
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.	\$446.64
112	Verify that generator field breaker or contactor (if applicable) is open.	\$446.64
113	De-energize power supplies to generator excitation system at the source.	\$446.64
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.	\$446.64
115	Drain generator and exciter cooling water systems (if applicable).	\$861.84
116	Disconnect and remove hydrogen gas tanks and purge generator hydrogen system.	\$1,685.44
117	Disconnect and remove fire protection system gas/foam tanks and purge fire protection system.	\$1,761.92
118	Circulation Water and Turbine Cooling Water System	\$3,409.12
119	Drain.	\$1,685.44
120	Open water box doors.	\$880.96
121	Drain any circulating water chemical feed tanks.	\$842.72
122	Compressed Air System	\$842.72
123	Open vents and drains.	\$842.72
124	Auxiliary Steam System	\$1,685.44
125	Drain water from system.	\$842.72
126	Remove aux boiler chemicals.	\$842.72
127	Auxiliary Cooling Water System	\$842.72
128	Drain water from system.	\$842.72
129	Condenser Air Extraction and Waterbox Priming System	\$842.72
130	Drain water from system.	\$842.72
131	Building Heating System	\$842.72
132	Drain water from system.	\$842.72

La Cygne 2 Retirement

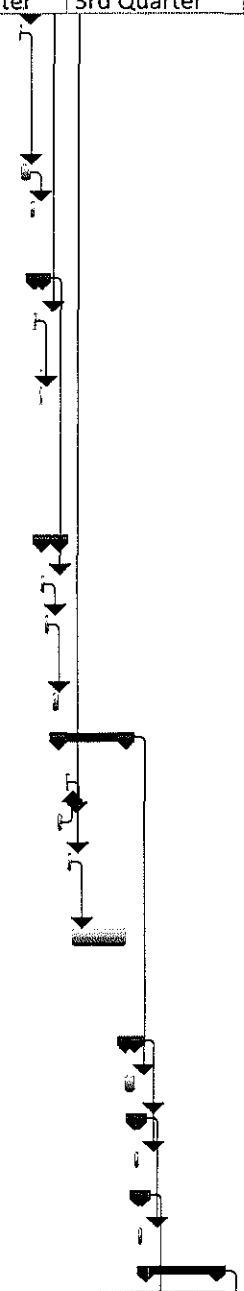
ID	Task Name	Cost
133	Battery System	\$4,253.28
134	De-energize all battery chargers from the source.	\$446.64
135	Open all AC and DC circuit breakers and/or fused switches on battery chargers and disconnect cables from batteries.	\$446.64
136	Remove and dispose of battery electrolyte.	\$1,680.00
137	Remove and dispose of battery cells.	\$1,120.00
138	Clean up and dispose of electrolyte on surface areas around batteries.	\$560.00
139	Post Retirement Activities	\$26,564.00
140	Post Retirement Activities	\$26,564.00

La Cygne 2 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	
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						
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 1 day secondary is de-energized.	1 day						

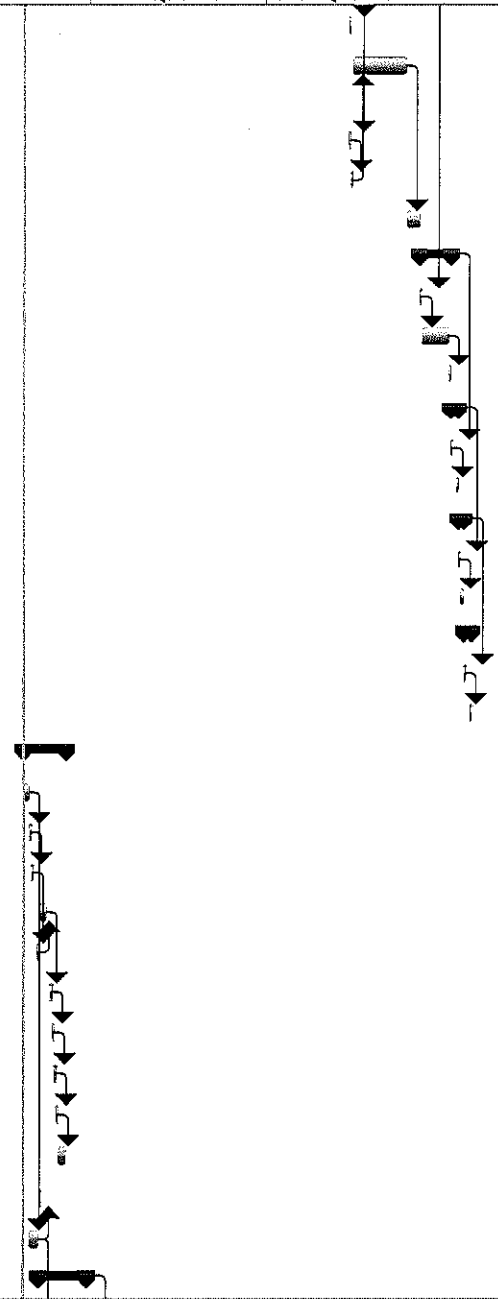
La Cygne 2 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
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					



La Cygne 2 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
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	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 contr	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	1 day					
71	Disconnect ash transport piping and washdown baghouse	1 day					
72	Install bird screens across hopper ash outlet and ash line fl	1 day					
73	Padlock or tack weld all hopper doors shut. (note: if ash ho	1 day					
74	If walk-in plenum, padlock or tack weld all outlet plenum d	1 day					
75	If top-door plenum, close and secure top doors and remove	2 days					
76	If top-door plenum, establish natural ventilation or maintai	1 day					
77	Pull electrical supply breakers on all electrical equipment e	3 days					
78	Wet FGD system	19 days					



La Cygne 2 Retirement

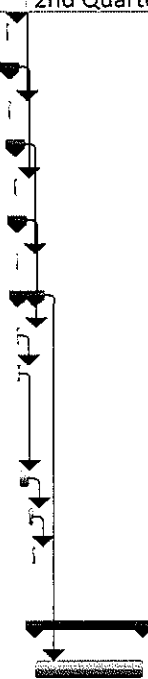
ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
79	Multiple mist eliminator wash cycles. Remove ME's from absorber.	3 days					
80	Drain and flush all slurry and reclaim water pumps and piping. Leave vent and drain valves open or remove. Install bird screens across drain 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					
86	Open all vent station air and control air lines. Leave in open	2 days					
87	Padlock or tack weld all access doors to modules and ductwork	2 days					
88	Remove access doors to open-top tanks.	1 day					
89	Pull electrical supply breakers on all electrical equipment e	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 screer	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	1 day					
99	Pull electrical supply breakers on all electrical equipment e	2 days					
100	FGD Byproduct Dewatering - Hydrocyclones and Vacuum Filt	11 days					
101	Wash vacuum filter belt and remove all accumulated solids	2 days					

La Cygne 2 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
102	Wash out vacuum receiver, remove pressure relief valve an	1 day					
103	Establish natural ventilation or maintain HVAC fan to provic	1 day					
104	Pull electrical supply breakers on all electrical equipment e	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	0.5 days					
	or that high-voltage disconnect switch on substation side						
	of GSU transformer is locked in the open position.						
112	Verify that generator field breaker or contactor (if	0.5 days					
	applicable) is open.						
113	De-energize power supplies to generator excitation system	0.5 days					
	at the source.						
114	De-energize AC and DC power supplies to generator and	0.5 days					
	exciter space heaters, cooling equipment, controls,						
	lighting, etc. at the source and open circuit breakers or						
	remove fuses at the generator and exciter.						
115	Drain generator and exciter cooling water systems (if	1 day					
	applicable).						
116	Disconnect and remove hydrogen gas tanks and purge	2 days					
	generator hydrogen system.						
117	Disconnect and remove fire protection system gas/foam	2 days					
	tanks and purge fire protection system.						
118	Circulation Water and Turbine Cooling Water System	3 days					
119	Drain.	2 days					
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					

La Cygne 2 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
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					
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	\$892,760
Overhead During Dismantlement	\$1,676,622
Post-Dismantlement Activities	\$65,520

Owner Costs Total \$2,634,902

Demolition General Contractor (DGC) Costs

Site Management	\$1,260,153
Equipment Rental	\$2,745,747
Consummables	\$2,798,245
Scrap Crew(s)	\$2,158,588
Dismantlement	\$5,136,138

DGC Insurance 2.00% \$281,977

Contingency/Profit 15.00% \$2,157,127.26

Performance Bond 2.00% \$330,759.51

Contractor Costs Total: \$16,868,735

Total: \$19,503,637

Owner Internal Costs: 5.00% \$975,181.85

Owner Contingency: 25.00% \$5,119,704.73

La Cygne Unit 2 Dismantlement Opinion of Probable Cost: \$25,598,523.64

La Cygne 2 Dismantlement		
ID	Task Name	Cost
1	La Cygne Unit 2 Dismantlement	\$12,283,455.35
2	Pre-Dismantlement Activities	\$892,760.32
3	Detailed Planning & Hire Owner's Engineer	\$104,441.28
4	Detailed Site Characterization Study	\$610,335.44
5	Hire Demolition General Contractor	\$167,184.00
6	KCP&L Prepares Unit for Dismantlement	\$10,799.60
7	Demolition Contractor Mobilizes on Site	\$0.00
8	KCP&L Overhead during Dismantlement	\$1,676,621.54
9	KCP&L Project Manager	\$266,427.98
10	KCP&L Administrative Support	\$98,521.59
11	KCP&L Engineer	\$437,911.97
12	Owners Engineer Project Manager	\$130,720.00
13	Owners Engineer - Engineer	\$743,040.00
14	Demolition Contractor Overhead during Dismantlement	\$913,939.13
15	Demolition Contractor Project Manager	\$258,584.78
16	Demolition Contractor Safety Manager	\$230,239.18
17	Demolition Contractor Superintendent	\$425,115.17
18	Demolition Contractor Equipment Rental Costs	\$1,556,187.08
19	Equipment Rental	\$1,556,187.08
20	Demolition Contractor Consumables	\$1,552,575.20
21	Consumables	\$1,552,575.20
22	Scrap Crew(s)	\$1,540,569.60
23	Crew to Handle Scrap Material(s)	\$1,540,569.60
24	Dismantlement Directs	\$4,085,282.48
25	Phase 1 Demolition	\$948,948.64
26	Phase 1 Electrical Demolition	\$342,149.76
27	Electrical Demolition of Phase 1 Equipment	\$342,149.76
28	Condensate System	\$105,690.24
29	Condensate Pumps	\$3,582.72
30	Condensate Transfer Pumps	\$1,791.36
31	Cycle Make-Up Pump	\$1,791.36
32	Steam Packing Exhauster and Blower	\$3,582.72
33	Low Pressure Heaters (except the condenser neck heat exchangers)	\$53,740.80
34	Deaerator	\$14,330.88
35	Deaerator Storage Tank	\$8,956.80
36	Condensate Piping	\$17,913.60
37	Boiler Feed System	\$67,816.96
38	Boiler Feed Pump Turbine and Exhaust	\$14,076.16
39	Boiler Feed Pump	\$17,913.60
40	High Pressure Heaters	\$35,827.20
41	Critical Piping	\$80,611.20
42	Main Steam Piping	\$26,870.40
43	Cold Reheat Piping	\$26,870.40
44	Hot Reheat Piping	\$26,870.40

La Cygne 2 Dismantlement		
ID	Task Name	Cost
45	Extraction Steam System	\$17,913.60
46	Piping	\$17,913.60
47	Heater Drips	\$14,330.88
48	Piping	\$14,330.88
49	Auxiliary Steam	\$16,122.24
50	Auxiliary Steam Piping	\$16,122.24
51	Circulating Water (plant side)	\$8,956.80
52	Waterboxes	\$8,956.80
53	Bearing Cooling Water	\$30,453.12
54	Bearing Cooling Water Pumps	\$3,582.72
55	Bearing Cooling Water Heat Exchanger	\$8,956.80
56	Bearing Cooling Water Piping	\$17,913.60
57	Auxiliary Cooling Water	\$28,661.76
58	Auxiliary Cooling Water Heat Exchanger	\$5,374.08
59	Auxiliary Cooling Water Pumps	\$5,374.08
60	Auxiliary Cooling Water Piping	\$17,913.60
61	Service Water	\$8,956.80
62	Service Water Piping	\$8,956.80
63	Fuel Oil System (plant side)	\$41,201.28
64	Igniter Fuel Oil Pumps	\$5,374.08
65	Igniter Fuel Oil and Atomizing Air Piping	\$8,956.80
66	Igniters	\$26,870.40
67	Waste Oil System	\$12,539.52
68	Waste Oil Tank	\$3,582.72
69	Waste Oil Transfer Pump	\$3,582.72
70	Waste Oil Piping	\$5,374.08
71	Air Preheat System	\$10,236.64
72	Air Preheat Pumps	\$3,582.72
73	Air Preheat Piping	\$6,653.92
74	Condenser Air Extraction System	\$10,748.16
75	Vacuum Pumps	\$7,165.44
76	Extraction Piping	\$3,582.72
77	Turbine Seals and Drains	\$12,539.52
78	Piping	\$12,539.52
79	Turbine Lube Oil System	\$20,363.52
80	Turbine Lube Oil Tank	\$11,406.72
81	Turbine Lube Oil Pumps	\$7,165.44
82	Turbine Oil Mist Eliminator	\$1,791.36
83	Generator Auxiliary Systems	\$32,244.48
84	Hydrogen Cooler Skid and Piping	\$8,956.80
85	Stator Cooling Water Skid and Piping	\$8,956.80
86	Isophase Bus Duct	\$7,165.44
87	Exciter Heat Exchanger	\$3,582.72
88	EHC Coolers	\$3,582.72

La Cygne 2 Dismantlement		
ID	Task Name	Cost
89	Chemical Feed Systems	\$19,303.20
90	Tanks	\$8,555.04
91	Pumps	\$5,374.08
92	Piping	\$5,374.08
93	Sampling Systems	\$6,434.40
94	Field Mounted Heat Exchangers	\$3,582.72
95	Piping	\$2,851.68
96	Building Heating Systems	\$13,307.84
97	Steam Unit Heaters	\$9,505.60
98	Steam Piping	\$3,802.24
99	Compressed Air System	\$26,870.40
100	Air Compressors	\$7,165.44
101	Air Drying Equipment	\$5,374.08
102	Air Reciever Tanks	\$5,374.08
103	Compressed Air Piping	\$8,956.80
104	Miscellaneous Equipment	\$21,496.32
105	Miscellaneous Equipment (including Fire Protection)	\$21,496.32
106	Phase 2 Demolition	\$2,907,661.04
107	Precipitator	\$107,481.60
108	Remove Precipitator	\$107,481.60
109	Boiler Equipment	\$710,993.92
110	Fans	\$63,246.40
111	Pulverizers	\$71,654.40
112	Bottom Ash	\$16,451.52
113	Air Heater	\$200,632.32
114	Steam Drum	\$89,568.00
115	Coal Bunkers	\$71,654.40
116	Coal Feeders	\$46,575.36
117	Soot Blowers	\$50,895.36
118	Ductwork	\$100,316.16
119	Boiler Removal	\$401,264.64
120	Furnace	\$229,294.08
121	Back Pass	\$171,970.56
122	Boiler Steel Framing	\$723,709.44
123	Hanger Girders at Top	\$107,481.60
124	All Other Framing	\$336,775.68
125	Bracing and Girts	\$164,805.12
126	Columns	\$114,647.04
127	Boiler Foundations	\$128,977.92
128	Equipment Foundation Demolition to Grade	\$128,977.92
129	Remove Turbine	\$835,233.52
130	Remove HP Turbine	\$26,321.60
131	Remove IP Turbine	\$26,321.60
132	Remove LP Turbine	\$26,321.60

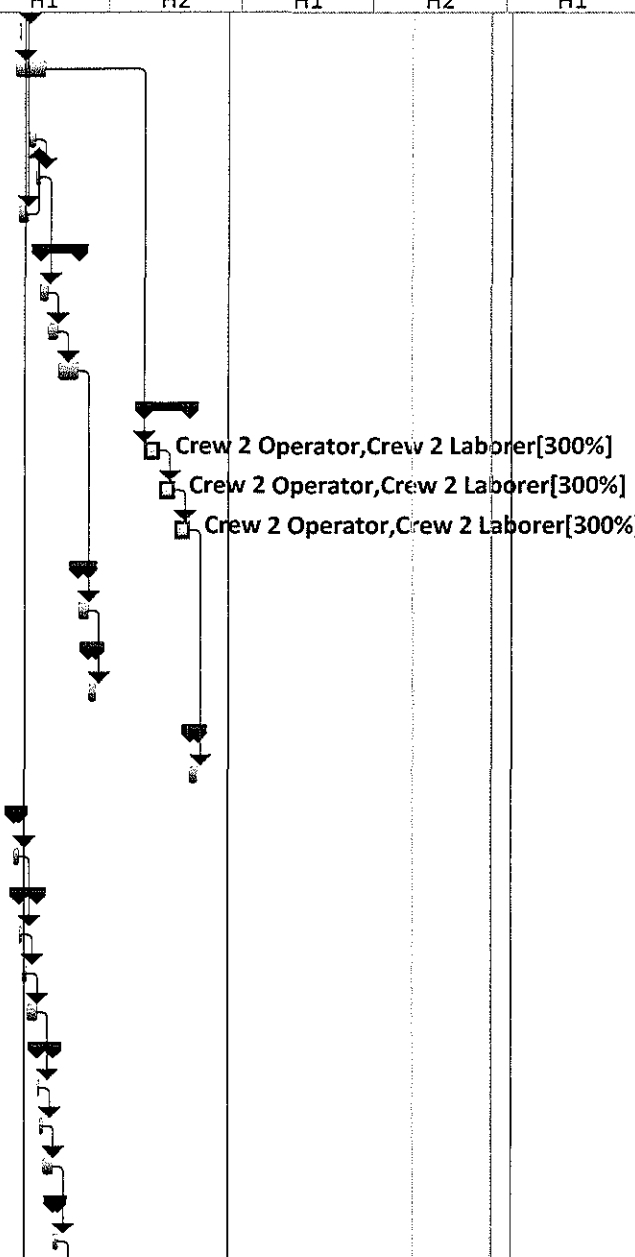
La Cygne 2 Dismantlement		
ID	Task Name	Cost
133	Remove Generator	\$52,643.20
134	Remove Condenser Neck Heat Exchanger	\$26,321.60
135	Remove Condenser	\$26,321.60
136	Remove Misc. Auxiliary Turbine Equipment	\$39,482.40
137	Turbine Pedestal Demolition to Grade	\$268,480.32
138	Top Slab and Beams	\$105,286.40
139	Columns	\$163,193.92
140	Remove Turbine Building	\$343,019.60
141	Siding and Roofing	\$108,682.80
142	All Framing Elevations	\$157,929.60
143	Bracing and Girts	\$52,643.20
144	Columns	\$23,764.00
145	Phase 3 Demolition	\$228,672.80
146	Yard Demolition	\$228,672.80
147	Remove Circulating Water Pumps, Screens and Intake Auxiliaries	\$17,913.60
148	Remove Ash Handling Equipment and Piping	\$44,784.00
149	Remove Fly Ash Storage Silo 2A	\$17,913.60
150	Remove Dewatering Bin 2A and 2B	\$8,956.80
151	Remove Piping and Misc. Equipment	\$17,913.60
152	Remove Fuel Yard Equipment	\$80,611.20
153	Remove Crushers 2A, 2B and Surge Bin	\$26,870.40
154	Remove Conveyor 206	\$17,913.60
155	Remove Conveyor 207	\$17,913.60
156	Remove Conveyor 2A	\$17,913.60
157	Remove Laydown Equipment and Warehoused Equipment	\$17,913.60
158	Remove Unit 2 Condensate Storage Tank and Pump	\$4,752.80
159	Remove Unit 2 Make-Up Water Storage Tank	\$8,956.80
160	Remove Unit 2 Water Pre-Treatment Equipment and Building	\$53,740.80
161	Project Close-Out	\$65,520.00
162	Project Close-Out Activities	\$65,520.00

La Cygne 2 Dismantlement

ID	Task Name	Duration	2012		2013		2014		2015
			H2	H1	H2	H1	H2	H1	H2
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							
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 Equipmer	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							

La Cygne 2 Dismantlement

ID	Task Name	Duration	2012			2013		2014		2015
			H2	H1	H2	H1	H2	H1	H2	H1
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								
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								
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								



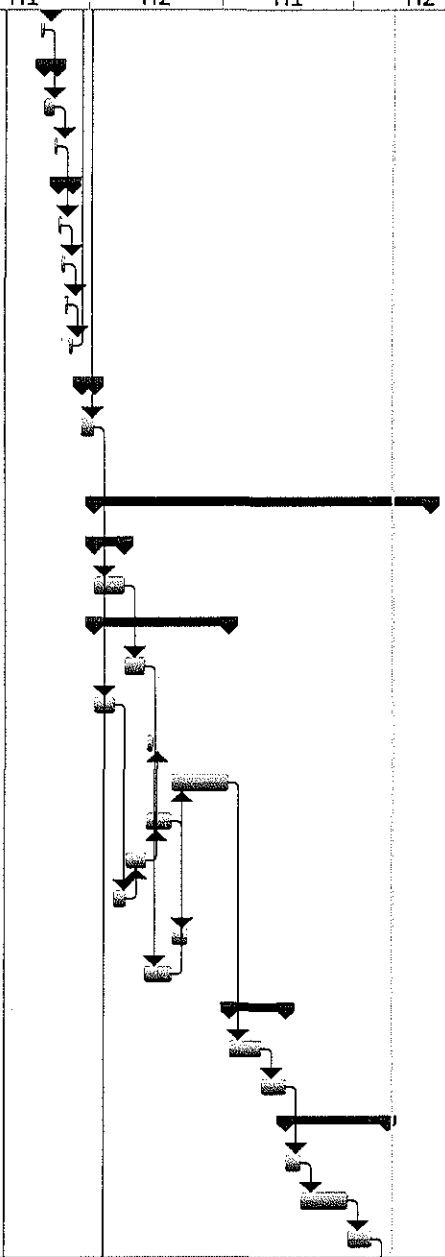
La Cygne 2 Dismantlement

ID	Task Name	Duration	2012			2013			2014		2015
			H2	H1	H2	H1	H2	H1	H2	H1	
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									
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									
90	Tanks	9 days									
91	Pumps	3 days									
92	Piping	3 days									
93	Sampling Systems	5 days									
94	Field Mounted Heat Exchangers	2 days									

Crew 3 Operator, Crew 3 Laborer [300%]

La Cygne 2 Dismantlement

ID	Task Name	Duration	2012		2013		2014			2015
			H2	H1	H2	H1	H2	H1	H2	H1
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								
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								



La Cygne 2 Dismantlement

ID	Task Name	Duration	2012		2013		2014		2015
			H2	H1	H2	H1	H2	H1	H2
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 Roofing	41 days							
142	All Framing Elevations	60 days							
143	Bracing and Girts	20 days							
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							

La Cygne 2 Dismantlement

ID	Task Name	Duration	2012			2013			2014		2015
			H2	H1	H2	H1	H2	H1	H2	H1	
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	Project Close-Out	40 days									
162	Project Close-Out Activities	40 days									

La Cygne 2 AQCS Dismantlement		
ID	Task Name	Cost
1	La Cygne Unit 2 AQCS Dismantlement	\$4,450,320.72
2	Common Removal Overheads	\$346,214.40
3	Added Overhead Staff for Common Removals	\$346,214.40
4	Scrap Crew	\$618,019.20
5	Crew(s) to Handle Scrap Material	\$618,019.20
6	Demolition Contractor Consumables	\$1,245,670.80
7	Consumables	\$1,245,670.80
8	Demolition Contractor Equipment Rental Costs	\$1,189,560.00
9	Equipment Rental	\$1,189,560.00
10	Dismantlement	\$1,050,856.32
11	Initial Structural	\$130,313.68
12	Remove SCR box & ductwork lagging & insulation	\$17,913.60
13	Remove SCR expansion joints	\$10,748.16
14	Remove ductwork lagging & insulation	\$7,952.40
15	Remove ductwork expansion joints	\$17,913.60
16	Remove ductwork access platforms & ladders	\$17,913.60
17	Remove FF lagging, insulation, wall panel, & roof panels	\$35,827.20
18	Remove ID fan lagging & insulation	\$7,165.44
19	Removal all HVAC equipment located on FGD Bldg roof	\$5,374.08
20	Remove FGD Bldg lagging, insulation, wall panel, & roof	\$9,505.60
21	General Electric	\$186,301.44
22	Remove Unit 2 Air Quality Control Equipment Transformer	\$5,374.08
23	Remove breakers serving all FF equipment	\$895.68
24	Remove breakers serving all FGD equipment	\$1,791.36
25	Remove breakers serving all ID fan equipment	\$895.68
26	Remove breakers serving all SCR equipment	\$895.68
27	Remove breakers serving all comp air equipment	\$895.68
28	Remove all ductwork primary instrumentation, controls & assoc'd cables, and conduit	\$8,956.80
29	Remove all FGD primary instrumentation, controls & assoc'd cables, and conduit	\$26,870.40
30	Remove all FF primary instrumentation, controls & assoc'd cables, and conduit	\$17,913.60
31	Remove SCR primary instrumentation, controls, & assoc'd cable & conduit	\$8,956.80
32	Remove NH3 supply primary instrumentation, controls, & assoc'd cable & conduit	\$8,956.80
33	Remove wiring and conduit serving FGD equipment, HVAC, lighting and convenience outlets	\$35,827.20
34	Remove wiring and conduit serving FF equipment, HVAC, lighting and convenience outlets	\$17,913.60
35	Remove wiring and conduit serving the ID fans and assoc'd equipment	\$21,496.32
Page 1		

La Cygne 2 AQCS Dismantlement		
ID	Task Name	Cost
36	Remove wiring & conduit serving SCR vaporization & injection equipment	\$5,374.08
37	Remove wiring & conduit serving compressed air equipment	\$5,374.08
38	Remove electrical control cabinets & switchgear	\$17,913.60
39	FGD System	\$272,070.32
40	Remove ductwork between FGD module and chimney	\$7,952.40
41	Remove support steel and access platforms between FGD and chimney	\$5,374.08
42	Remove all mechanical equipment, pumps, and motors and tanks in FGD Bldg	\$35,827.20
43	Remove oxi air blowers	\$895.68
44	Remove all FGD piping & valves other than recirc piping	\$26,870.40
45	Remove ox air lines	\$5,374.08
46	Remove FGD MEs panels	\$9,542.88
47	Remove FGD outlet duct and top cone	\$5,374.08
48	Remove FGD internal wash ME piping and ME supports	\$5,374.08
49	Remove FGD internal spray header piping	\$8,956.80
50	Remove FGD support steel, access provisions, stair tower, and recirc piping from top down	\$35,827.20
51	Remove FGD module walls	\$71,654.40
52	Remove FGD inlet duct	\$5,374.08
53	Remove FGD reaction tank walls and floor	\$17,913.60
54	Remove FGD Bldg trench floor grating	\$3,582.72
55	Remove Unit 2 Sorbent Injection System Silo	\$7,165.44
56	Remove Unit 2 Sorbent Injection Equipment and Injection Blower Building	\$8,956.80
57	Remove Unit 2 Mercury Reduction System Silo	\$10,054.40
58	ID Fans	\$78,819.84
59	Remove ductwork between ID fan outlets and FGD module	\$12,539.52
60	Remove support steel and access platforms between ID fan outlets and FGD module	\$5,374.08
61	Remove ductwork between FF outlet and ID fan inlets	\$12,539.52
62	Remove support steel between FF outlet and ID fan inlets	\$5,374.08
63	Removed ID fan isolation dampers	\$14,330.88
64	Removed ID fan drive motor	\$7,165.44
65	Remove ID fan seal air system	\$7,165.44
66	Remove fan casing & rotor	\$14,330.88
67	Fabric Filters	\$309,905.28
68	Remove ductwork between air heater and FF	\$8,956.80
69	Remove ductwork structural steel between AH and FF	\$5,374.08
70	Remove FF penthouse hoists and trolleys	\$7,165.44
71	Remove FF hopper heaters, HVAC, lighting and convenience outlets	\$17,913.60
72	Remove FF ash handling piping	\$26,870.40

La Cygne 2 AQCS Dismantlement

ID	Task Name	Cost
73	Remove compress air blower, dryers, and receivers, piping & valves	\$17,913.60
74	Remove FF penthouse roof panels supporting steel	\$17,913.60
75	Remove FF compartment roof hatches	\$5,374.08
76	Remove FF compartment pulse air piping	\$5,374.08
77	Remove FF compartment pulse air and compressed air supply piping	\$10,748.16
78	Remove FF outlet poppet damper operators	\$12,539.52
79	Remove FF bags & cages	\$25,079.04
80	Remove FF bag support sheets	\$25,079.04
81	Remove remaining FF roof	\$7,165.44
82	Remove FF outlet dampers	\$7,165.44
83	Remove ductwork between air heater and FF	\$8,956.80
84	Remove FF wall panels to hopper level	\$50,158.08
85	Remove ductwork structural steel between AH and FF	\$5,374.08
86	Remove FF stair tower(s)	\$17,913.60
87	Remove FF inlet dampers	\$7,165.44
88	Remove FF hoppers	\$12,539.52
89	Remove FF support steel	\$7,165.44
90	SCR and Ammonia Supply	\$73,445.76
91	Vacuum SCR catalyst	\$3,582.72
92	Remove SCR catalyst	\$16,122.24
93	Remove ammonia injection grid	\$3,582.72
94	Remove NH3 piping between storage & injection	\$3,582.72
95	Remove air horn air receiver & supply piping	\$3,582.72
96	Remove SCR guillotine dampers	\$7,165.44
97	Remove SCR muliti-louver dampers	\$3,582.72
98	Remove SCR box, internal supports, & assoc'd ductwork	\$26,870.40
99	Remove NH3 piping between storage & vaporizers	\$5,374.08

La Cygne 2 AQCS Dismantlement

ID	Task Name	Duration	2012				2013					
			Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	
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										
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										

La Cygne 2 AQCS Dismantlement

ID	Task Name	Duration	2012				2013						
			Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4		
32	Remove NH3 supply primary instrumentation, controls, & assoc'd cable & cond	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											
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 electrical 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 fr	20 days											
51	Remove FGD module walls	20 days											
52	Remove FGD inlet duct	3 days											
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 n	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											

La Cygne 2 AQCS Dismantlement

ID	Task Name	Duration	2012				2013				
			Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4
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									
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									
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									

La Cygne 2 AQCS Dismantlement

ID	Task Name	Duration	2012				2013				
			Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4
95	Remove air horn air receiver & supply piping	2 days			■						
96	Remove SCR guillotine dampers	4 days			■						
97	Remove SCR multi-louver dampers	2 days			■						
98	Remove SCR box, internal supports, & assoc'd ductwork	15 days			■						
99	Remove NH3 piping between storage & vaporizers	3 days			■						

COMMON

La Cygne Common Retirement

Owner Costs

Pre-Retirement Activities	\$52,449
Retirement Activities	\$373,748
Post-Retirement Activities	\$26,244

Owner Direct Total \$452,441

Owner Internal Costs 5.00% \$22,622

Owner Contingency: 25.00% \$118,766

La Cygne Common Retirement Opinion of Probable Cost: \$593,828.55

Activities Required by Permit or Regulation

La Cygne Wastewater Lagoon Removal	\$226,058
La Cygne Landfill Retirement	\$45,525,804

Activities Required by Permit or Regulation: \$45,751,862

La Cygne Common Retirement		
ID	Task Name	Cost
1	La Cygne Common Retirement	\$452,422.39
2	Pre-Retirement Activities	\$52,448.80
3	Permitting Review	\$26,224.40
4	Develop Detailed Retirement Plan	\$26,224.40
5	Overheads	\$169,170.95
6	Retirement Overheads	\$147,969.03
7	Added Overhead Staff for Common Retirement	\$147,969.03
8	Common Removal Equipment Rental	\$21,201.92
9	Common Removal Equipment Rental	\$21,201.92
10	Retirement Activities	\$204,578.24
11	Administration Building	\$9,342.40
12	Secure Administration Building	\$9,342.40
13	Fuel Yard Office Building	\$5,605.44
14	Secure Fuel Yard Office Building	\$5,605.44
15	Training Building	\$5,605.44
16	Secure Training Building	\$5,605.44
17	Warehouse(s)	\$7,473.92
18	Secure Unit 1 Warehouse	\$3,736.96
19	Secure Unit 2 Warehouse	\$3,736.96
20	Welding Shop	\$11,575.60
21	Secure Welding Shop	\$11,575.60
22	Maintenance Shop	\$5,605.44
23	Secure Maintenance Shop	\$5,605.44
24	Insulators Shop	\$5,605.44
25	Secure Insulators Shop	\$5,605.44
26	Auxiliary Boilers and Building	\$4,213.60
27	Remove Aux. Boiler Chemicals	\$842.72
28	Drain Auxiliary Boilers	\$2,528.16
29	Open and Vent Auxiliary Boilers	\$842.72
30	Fuel Yard	\$109,605.28
31	Empty and Clean Silo 2a	\$2,941.36
32	Empty and Clean Silo E	\$2,941.36
33	Empty and Clean Silo F	\$2,941.36
34	Empty Transfer Hoppers and Clean Transfer Tower 201	\$3,784.08
35	Clean Truck Reclaim	\$3,784.08
36	Car Dumper	\$8,829.52
37	Empty Car Dumper Hoppers	\$1,261.36
38	Clean Car Dumper	\$3,784.08
39	Secure Dumper Building	\$3,784.08
40	Stacker/Reclaimer	\$19,173.20
41	Clean and Secure the Stacker/Reclaimer	\$6,306.80
42	Unit 1 Reclaim	\$5,045.44
43	Clean Unit 1 Reclaim	\$2,522.72
44	Secure the Unit 1 Reclaim Building	\$2,522.72

La Cygne Common Retirement

ID	Task Name	Cost
45	Unit 2 Reclaim	\$5,045.44
46	Clean Unit 2 Reclaim	\$2,522.72
47	Secure the Unit 2 Reclaim Building	\$2,522.72
48	Clean and Secure Transfer Tower 201	\$6,306.80
49	Clean and Secure Transfer Tower 3	\$6,306.80
50	Clean and Secure Primary Crusher Building	\$6,306.80
51	Clean and Secure Old Truck Unloader	\$3,784.08
52	Clean Conveyors - 300, 302, 301, 203, 202, 201, 3, 204	\$20,181.76
53	Remove Bags and Clean Dust Collectors	\$5,926.40
54	Clean and Secure Miscellaneous Fuel Yard Equipment	\$6,306.80
55	Reagent Prep and Gypsum Handling	\$29,365.20
56	Clean and Secure Limestone Unloading Facility	\$3,784.08
57	Clean and Secure Limestone Storage Facility	\$3,784.08
58	Clean Limestone Conveyor	\$3,859.92
59	Clean and Secure Limestone Prep Building	\$6,433.20
60	Clean Gypsum Stackout Conveyor	\$2,573.28
61	Clean and Secure PCM-1	\$2,573.28
62	Clean and Secure PCM-2	\$2,573.28
63	Clean and Secure the Vacuum Pump and Air Compressor Building	\$3,784.08
64	Lake Intake Structure and Intake Chemical Feed System	\$842.72
65	Remove Chemicals	\$842.72
66	Underground Circulating Water Piping	\$3,849.60
67	Drain the Underground Circulating Water Piping	\$3,849.60
68	Sewage Treatment	\$4,202.72
69	Clean the Sewage Treatment Tanks and Transfer Points	\$4,202.72
70	Fuel Oil Storage and Unloading	\$1,685.44
71	Remove Fuel from the Fuel Oil Storage Tank(s) and Vent	\$842.72
72	Drain Fuel Oil Pipe and Vent	\$842.72
73	Post Retirement Closure Activities	\$26,224.40
74	Post Retirement Closure Activities	\$26,224.40

La Cygne Common Retirement		
ID	Task Name	Duration
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
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

La Cygne Common Retirement

ID	Task Name	Duration
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
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	Post Retirement Closure Activities	20 days
74	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	\$105,784
Equipment Rental	\$515,722
Consummables	\$772,676
Scrap Crew(s)	\$766,702
Dismantlement	\$8,589,162

DGC Insurance 2.00% \$215,001

Contingency/Profit 15.00% \$1,644,757

Performance Bond 2.00% \$252,196

Contractor Costs Total: \$12,862,001

Total: \$12,862,001

Owner Internal Costs: 5.00% \$643,100

Owner Contingency: 25.00% \$3,376,275

La Cygne Common Dismantlement Opinion of Probable Cost: \$16,881,376

La Cygne Common Dismantlement

ID	Task Name	Cost
1	La Cygne Common Dismantlement	\$11,960,763.18
2	Overheads	\$2,160,886.40
3	Common Removal Overheads	\$105,784.48
4	Added Overhead Staff for Common Removals	\$105,784.48
5	Common Removal Equipment Rental	\$515,722.88
6	Common Removal Equipment Rental	\$515,722.88
7	Demolition Contractor Consumables	\$772,676.96
8	Consumables	\$772,676.96
9	Scrap Crew	\$766,702.08
10	Crew(s) to Handle Scrap Material	\$766,702.08
11	Dismantlement Activities	\$8,589,162.89
12	Administration Building	\$35,827.20
13	Remove Administration Building	\$35,827.20
14	Fuel Yard Office Building	\$17,913.60
15	Remove Fuel Yard Office Building	\$17,913.60
16	Training Building	\$17,913.60
17	Remove Training Building	\$17,913.60
18	Parking Lots and Plant Roads	\$82,402.56
19	Plant Roads and Parking Areas	\$71,654.40
20	Guard Shack	\$10,748.16
21	Warehouse(s)	\$53,740.80
22	Remove Unit 1 Warehouse	\$17,913.60
23	Remove Unit 2 Warehouse	\$17,913.60
24	Remove 20,000 S.F. Warehouse	\$17,913.60
25	Welding Shop	\$28,661.76
26	Remove Welding Shop	\$28,661.76
27	Maintenance Shop	\$23,215.20
28	Remove Maintenance Shop	\$23,215.20
29	Insulators Shop	\$17,913.60
30	Remove Insulators Shop	\$17,913.60
31	Auxiliary Boilers and Building	\$89,568.00
32	Remove Auxiliary Boilers	\$53,740.80
33	Remove Building	\$17,913.60
34	Remove Piping and Tressell	\$17,913.60
35	Fuel Yard	\$766,702.08
36	Remove Silo 2A	\$3,582.72
37	Remove Silo E	\$3,582.72
38	Remove Silo F	\$3,582.72
39	Remove Transfer Tower 201	\$35,827.20
40	Remove Truck Reclaim	\$17,913.60
41	Remove Car Dumper	\$89,568.00
42	Remove Underground Equipment	\$17,913.60
43	Remove Above Ground Equipment	\$35,827.20
44	Remove Building	\$17,913.60

La Cygne Common Dismantlement		
ID	Task Name	Cost
45	Backfill Dumper Structure	\$17,913.60
46	Remove Stacker/Reclaimer	\$35,827.20
47	Remove Unit 1 Reclaim	\$64,488.96
48	Remove Underground Equipment	\$17,913.60
49	Remove Above Ground Equipment	\$17,913.60
50	Remove Building	\$14,330.88
51	Backfill Structure	\$14,330.88
52	Remove Unit 2 Reclaim	\$64,488.96
53	Remove Underground Equipment	\$17,913.60
54	Remove Above Ground Equipment	\$17,913.60
55	Remove Building	\$14,330.88
56	Backfill Structure	\$14,330.88
57	Remove Transfer Tower 201	\$53,740.80
58	Remove Transfer Tower 3	\$53,740.80
59	Remove Primary Crusher Building	\$71,654.40
60	Remove Old Truck Unloader	\$71,654.40
61	Remove Conveyors - 300, 302, 301, 203, 202, 201, 3, 204	\$143,308.80
62	Remove Dust Collectors	\$17,913.60
63	Remove Miscellaneous Fuel Yard Equipment	\$35,827.20
64	AQCS Common	\$400,668.24
65	Remove Limestone Unloading Facility	\$35,827.20
66	Remove Limestone Storage Facility	\$17,913.60
67	Remove Limestone Conveyor	\$17,913.60
68	Remove Limestone Prep Building	\$143,308.80
69	Remove Gypsum Stackout Conveyor	\$17,913.60
70	Remove PCM-1	\$7,165.44
71	Remove PCM-2	\$7,165.44
72	Remove the Vacuum Pump and Air Compressor Building	\$71,654.40
73	Remove Gypsum Dewatering Building	\$9,963.28
74	Remove Service Water Tanks	\$5,722.00
75	Remove Emergency Limestone Conveyor Tunnel	\$3,601.36
76	Remove Limestone Slurry Tanks	\$8,902.96
77	Remove AQCS Electrical Enclosure	\$2,211.76
78	Remove FlyAsh Equipment Building	\$9,963.28
79	Remove Limestone and Gypsum Handling Conveyors	\$11,023.60
80	Remove Reclaim Water Tanks	\$5,722.00
81	Remove Remaining Absorber Equipment Building	\$6,782.32
82	Remove Miscellaneous Equipment	\$17,913.60
83	Lake Intake Structure and Intake Chemical Feed System	\$114,647.04
84	Remove Chemical Feed System and Misc. Equipment	\$7,165.44
85	Remove Concrete Intake Structure	\$71,654.40
86	Complete Intake Grading and Drainage	\$35,827.20
87	Underground Circulating Water Piping	\$53,740.80
88	Excavate Underground Circulating Water Piping	\$17,913.60

La Cygne Common Dismantlement

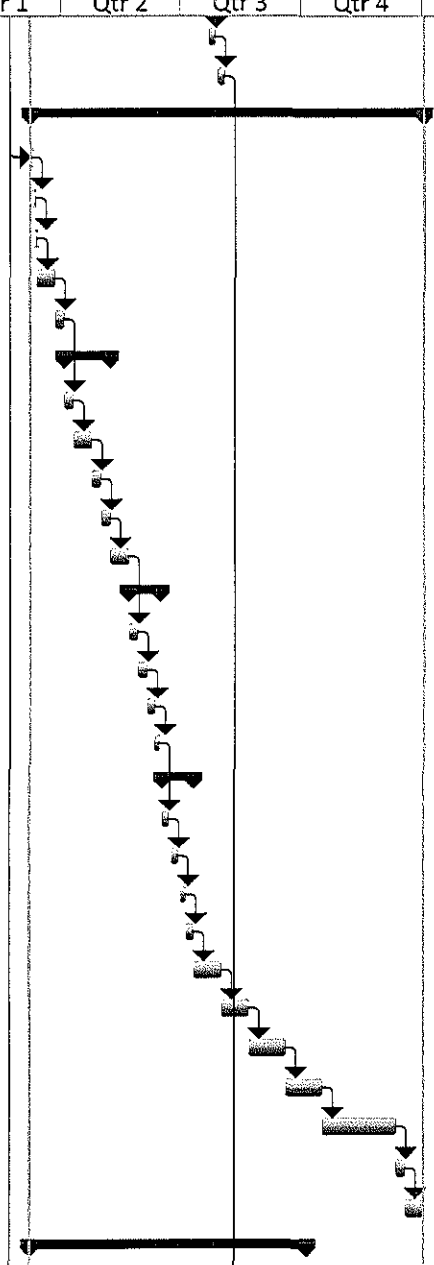
ID	Task Name	Cost
89	Collapse Underground Circulating Water Piping	\$10,748.16
90	Backfill and Compact Over Circulating Water Piping	\$25,079.04
91	Sewage Treatment	\$21,496.32
92	Remove Sewage Treatment Pumps and Miscellaneous Equipment	\$7,165.44
93	Remove Sewage Treatment Concrete Structures	\$14,330.88
94	Yard Fire Water Systems	\$35,827.20
95	Remove Hydrants and Fire Water System Piping Down to 3' Below Grade	\$35,827.20
96	Common Stack	\$6,828,924.89
97	Remove Common Stack to Grade	\$6,828,924.89
98	Final Site Grading and Drainage	\$1,210,713.89
99	Final Site Grading and Drainage	\$1,210,713.89

La Cygne Common Dismantlement

ID	Task Name	Duration	2012					2013	
			Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2
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							

La Cygne Common Dismantlement

ID	Task Name	Duration	2012				2013		
			Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2
33	Remove Building	5 days							
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							



La Cygne Common Dismantlement									
ID	Task Name	Duration	2012					2013	
			Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2
65	Remove Limestone Unloading Facility	10 days							
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							

La Cygne Common Dismantlement

ID	Task Name	Duration	2012					2013	
			Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2
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							
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

IATAN 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	\$100,822
Retirement Activities	\$661,769
Post-Retirement Activities	\$26,564

Owner Direct Total \$789,155

Owner Internal Costs 5.00% \$39,458

Owner Contingency: 25.00% \$207,153

Iatan 1 Retirement Opinion of Probable Cost: \$1,035,765.41

Activities Required by Permit or Regulation

Iatan 1 Intake Removal \$595,211

Activities Required by Permit or Regulation: \$595,211

Iatan 1 Retirement		
ID	Task Name	Cost
1	Iatan 1 Retirement	\$789,156.31
2	Pre-Engineering	\$100,821.60
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	\$115,245.60
5	KCP&L Retirement Manager	\$115,245.60
6	Equipment Rentals	\$39,070.50
7	Vacuum truck	\$39,070.50
8	Retirement	\$507,454.61
9	Electrical	\$18,911.68
10	Medium and Low Voltage Draw out Switchgear	\$2,679.84
11	De-energize all buses at the source.	\$446.64
12	Open all circuit breakers.	\$446.64
13	Rack all circuit breakers into the fully withdrawn, disconnected position.	\$446.64
14	Verify that the closing/tripping springs are discharged.	\$446.64
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.	\$893.28
16	Motor Control Centers	\$1,786.56
17	De-energize all buses at the source.	\$446.64
18	Open all circuit breakers and disconnect switches.	\$446.64
19	Remove all fuses in control circuits.	\$893.28
20	Low-voltage Switchboards and Panelboards	\$893.28
21	De-energize all buses at the source.	\$446.64
22	Open all circuit breakers and disconnect switches.	\$446.64
23	Oil-Filled Power Transformers	\$5,549.44
24	De-energize all transformer primaries and verify that the secondary is de-energized.	\$893.28
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.	\$893.28
26	Drain and dispose of oil.	\$2,642.88
27	Clean up and dispose of oil on surface areas around the transformers on in containment pits.	\$1,120.00
28	Dry-type Power Transformers	\$1,786.56
29	De-energize all transformer primaries and verify that the secondary is de-energized.	\$893.28
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.	\$893.28
31	Motors	\$6,216.00
32	De-energize all primary power at the source.	\$1,786.56

Iatan 1 Retirement

ID	Task Name	Cost
33	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	\$1,786.56
34	Drian lube oil system (if applicable) and dispoe of oil.	\$2,642.88
35	Coal Handling	\$27,475.44
36	Empty all transfer hoppers.	\$1,704.56
37	Burn out coal silos.	\$1,685.44
38	Confirm all fuel lines, conveyors and trippers are clear of fuel.	\$1,685.44
39	Perform cleaning of the coal handling equipment to assure that all coal and coal dust has been removed from site.	\$22,400.00
40	Fuel Oil and Igniter System	\$2,528.16
41	Drain fuel oil system	\$2,528.16
42	Waste Oil System	\$1,685.44
43	Drain all waste oil systems	\$1,685.44
44	Boiler Chemical Feed	\$1,685.44
45	Drain all chemical feed tanks.	\$1,685.44
46	Boiler	\$27,484.77
47	Open boiler doors.	\$880.96
48	Gas side - perform cleaning of the boiler and bottom ash system.	\$22,400.00
49	Drain boiler, drum, downcomers and headers.	\$842.72
50	Open drum doors.	\$880.96
51	Drain and clean the submerged flight conveyor system.	\$2,480.13
52	Stack and Ductwork	\$326,961.04
53	Open ductwork doors.	\$880.96
54	Perform extensive cleaning of the ductwork.	\$11,200.00
55	Place cap over stack opening to keep moisture out.	\$314,880.08
56	Condensate and Feedwater Piping	\$1,685.44
57	Drain water from the system.	\$842.72
58	Leave open vents and drains.	\$842.72
59	Feedwater heaters	\$2,528.16
60	Drain feedwater heaters	\$842.72
61	Leave open vents and drains.	\$1,685.44
62	Deaerator and Deaerator Storage Tank	\$1,685.44
63	Drain Deaerator and Storage	\$842.72
64	Leave open vents and drains.	\$842.72
65	Baghouse	\$17,351.92
66	Multiple cleaning cycles for filter bags.	\$2,528.16
67	Open all vent and drain lines on bag cleaning air and control air lines. Leave in open position or remove vent valves.	\$842.72
68	Remove all filter bags and cages.	\$880.96
69	Clear hoppers of all ash	\$2,805.44
70	Mechanically secure all compartment dampers and hopper outlet valves in open position.	\$880.96
71	Disconnect ash transport piping and washdown baghouse hoppers and interior of casing.	\$1,421.84

Iatan 1 Retirement		
ID	Task Name	Cost
72	Install bird screens across hopper ash outlet and ash line flanges.	\$880.96
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.)	\$880.96
74	If walk-in plenum, padlock or tack weld all outlet plenum doors and compartment ventilation dampers shut.	\$880.96
75	If top-door plenum, close and secure top doors and remove/disable door lift hoist.	\$1,723.68
76	If top-door plenum, establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in penthouse enclosure.	\$945.44
77	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	\$2,679.84
78	Wet FGD system	\$23,908.00
79	Multiple mist eliminator wash cycles. Remove ME's from absorber.	\$2,145.04
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.	\$1,723.68
81	Drain and wash out the reaction tank, reagent storage tank, recycle water tank, absorber blowdown tank, etc.	\$4,624.08
82	Leave all tank drain valves open or remove. Install bird screens across openings.	\$1,761.92
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.	\$2,604.64
84	Mechanically secure all flue gas isolation dampers in open position or remove damper blades.	\$1,761.92
85	Remove solids from all inlet and outlet ductwork as necessary	\$2,240.00
86	Open all vent station air and control air lines. Leave in open position or remove vent valves	\$1,723.68
87	Padlock or tack weld all access doors to modules and ductwork shut.	\$1,762.24
88	Remove access doors to open-top tanks.	\$880.96
89	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	\$2,679.84
90	FGD Reagent Preparation-Limestone wet Scrubber	\$10,262.88
91	Remove limestone from day bins.	\$1,402.72
92	Removed cartridges/bags from bin vent filters	\$1,402.72
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.)	\$881.12
94	Remove bin discharge isolation valve and install bird screen.	\$440.48
95	Thoroughly wash and drain mills	\$1,402.72
96	Remove balls from any ball mills	\$1,120.00
97	Padlock or tack weld mill access doors closed.	\$881.12

Iatan 1 Retirement		
ID	Task Name	Cost
98	Establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in building.	\$945.44
99	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	\$1,786.56
100	FGD Byproduct Dewatering - Hydrocyclones and Vacuum Filters	\$7,287.12
101	Wash vacuum filter belt and remove all accumulated solids	\$2,240.00
102	Wash out vacuum receiver, remove pressure relief valve and access door. Install bird screens.	\$1,421.84
103	Establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in building.	\$945.44
104	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	\$2,679.84
105	SCR	\$10,054.00
106	Vacuum fly ash from catalyst.	\$2,240.00
107	Remove catalyst of salvage or disposal.	\$2,881.92
108	Padlock or tack weld access doors shut.	\$880.96
109	Remove ammonia from storage tank for resale.	\$701.36
110	Wash out and drain storage tank and supply piping.	\$701.36
111	Vent storage tank and all piping. Leave vent and drain valves open or remove. Install bird screens.	\$861.84
112	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	\$1,786.56
113	Turbine(s) and Condenser	\$5,266.64
114	Drain hotwell and leave doors open.	\$861.84
115	Open main turbine doors.	\$880.96
116	Open bfp turbine doors.	\$880.96
117	Remove lube oil.	\$2,642.88
118	Generator	\$6,095.76
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.	\$446.64
120	Verify that generator field breaker or contactor (if applicable) is open.	\$446.64
121	De-energize power supplies to generator excitation system at the source.	\$446.64
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.	\$446.64
123	Drain generator and exciter cooling water systems (if applicable).	\$861.84
124	Disconnect and remove hydrogen gas tanks and purge generator hydrogen system.	\$1,685.44
125	Disconnect and remove fire protection system gas/foam tanks and purge fire protection system.	\$1,761.92
126	Circulation Water and Turbine Cooling Water System	\$3,409.12
127	Drain.	\$1,685.44

Iatan 1 Retirement

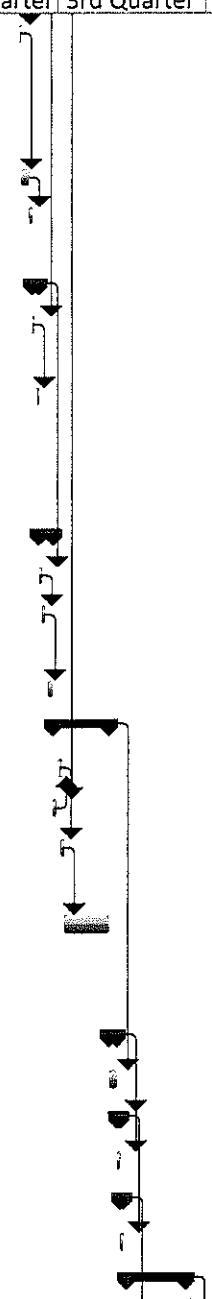
ID	Task Name	Cost
128	Open water box doors.	\$880.96
129	Drain any circulating water chemical feed tanks.	\$842.72
130	Compressed Air System	\$2,721.28
131	Open vents and drains.	\$842.72
132	Remove desiccant from desiccant dryers.	\$1,878.56
133	Auxiliary Steam System	\$1,685.44
134	Drain water from system.	\$842.72
135	Remove aux boiler chemicals.	\$842.72
136	Auxiliary Cooling Water System	\$842.72
137	Drain water from system.	\$842.72
138	Condenser Air Extraction and Waterbox Priming System	\$842.72
139	Drain water from system.	\$842.72
140	Building Heating System	\$842.72
141	Drain water from system.	\$842.72
142	Battery System	\$4,253.28
143	De-energize all battery chargers from the source.	\$446.64
144	Open all AC and DC circuit breakers and/or fused switches on battery chargers and disconnect cables from batteries.	\$446.64
145	Remove and dispose of battery electrolyte.	\$1,680.00
146	Remove and dispose of battery cells.	\$1,120.00
147	Clean up and dispose of electrolyte on surface areas around batteries.	\$560.00
148	Post Retirement Activities	\$26,564.00
149	Post Retirement Activities	\$26,564.00

Iatan 1 Retirement

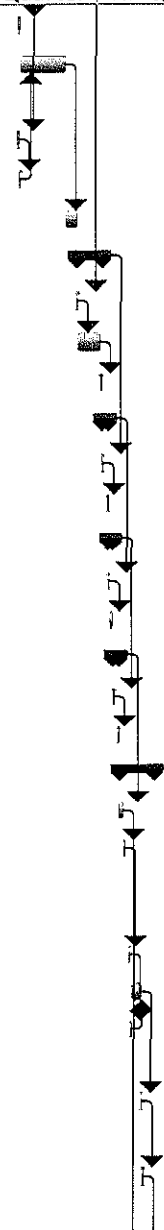
ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter
1	Iatan 1 Retirement	292 days						
2	Pre-Engineering	66 days						
3	Permit review and engineering analysis, establish isolation points, and confirm fuel yard inventory has been reduced to zero tons.	66 days						
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						
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						

Iatan 1 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter
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	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						

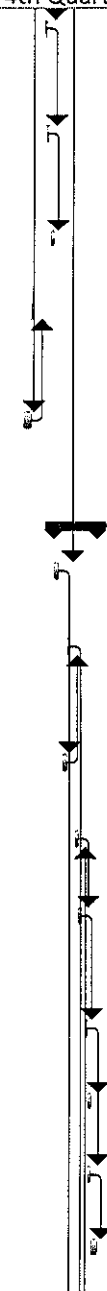


Iatan 1 Retirement				1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter
ID	Task Name	Duration							
47	Open boiler doors.	1 day							
48	Gas side - perform cleaning of the boiler and bottom ash system.	20 days							
49	Drain boiler, drum, downcomers and headers.	1 day							
50	Open drum doors.	1 day							
51	Drain and clean the submerged flight conveyor system.	5 days							
52	Stack and Ductwork	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							
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							



Iatan 1 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter
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						
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						



Iatan 1 Retirement

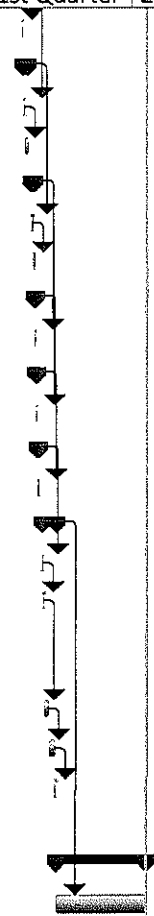
ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter
88	Remove access doors to open-top tanks.	1 day						
89	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	3 days						
90	FGD Reagent 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						
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						

Iatan 1 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter
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						
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						
128	Open water box doors.	1 day						

Iatan 1 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter
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						
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	\$892,760	
Overhead During Dismantlement	\$1,676,621	
Post-Dismantlement Activities	\$65,520	
Owner Costs Total		\$2,634,901

Demolition General Contractor (DGC) Costs

Site Management		\$1,255,135
Equipment Rental		\$2,172,838
Consummables		\$2,371,947
Scrap Crew(s)		\$2,149,631
Dismantlement		\$5,143,375
DGC Insurance	2.00%	\$261,859
Contingency/Profit	15.00%	\$2,003,218
Performance Bond	2.00%	\$307,160.04
Contractor Costs Total:		\$15,665,162

Total: \$18,300,063

Owner Internal Costs: 5.00% \$915,003

Owner Contingency: 25.00% \$4,803,767

Iatan Unit 1 Dismantlement Opinion of Probable Cost: \$24,018,833

Iatan 1 Dismantlement		
ID	Task Name	Cost
1	Iatan Unit 1 Dismantlement	\$12,345,531.67
2	Pre-Demolition Activities	\$892,760.32
3	Detailed Planning & Hire Owner's Engineer	\$104,441.28
4	Detailed Site Characterization Study	\$610,335.44
5	Hire Demolition General Contractor	\$167,184.00
6	KCP&L Prepares Unit for Dismantlement	\$10,799.60
7	Demolition Contractor Mobilizes on Site	\$0.00
8	KCP&L Overhead during Dismantlement	\$1,676,621.54
9	KCP&L Project Manager	\$266,427.98
10	KCP&L Administrative Support	\$98,521.59
11	KCP&L Engineer	\$437,911.97
12	Owners Engineer Project Manager	\$130,720.00
13	Owners Engineer - Engineer	\$743,040.00
14	Demolition Contractor Overhead during Dismantlement	\$913,939.13
15	Demolition Contractor Project Manager	\$258,584.78
16	Demolition Contractor Safety Manager	\$230,239.18
17	Demolition Contractor Superintendent	\$425,115.17
18	Demolition Contractor Equipment Rental Costs	\$1,556,187.08
19	Equipment Rental	\$1,556,187.08
20	Demolition Contractor Consumables	\$1,552,575.20
21	Consumables	\$1,552,575.20
22	Scrap Crew	\$1,540,569.60
23	Crew to Handle Scrap Material(s)	\$1,540,569.60
24	Dismantlement	\$4,147,358.80
25	Phase 1 Demolition	\$957,905.44
26	Phase 1 Electrical Demolition	\$342,149.76
27	Electrical Demolition of Phase 1 Equipment	\$342,149.76
28	Condensate System	\$105,690.24
29	Condensate Pumps	\$3,582.72
30	Condensate Transfer Pumps	\$1,791.36
31	Cycle Make-Up Pump	\$1,791.36
32	Steam Packing Exhauster and Blower	\$3,582.72
33	Low Pressure Heaters (except the condenser neck heat exchangers)	\$53,740.80
34	Deaerator	\$14,330.88
35	Deaerator Storage Tank	\$8,956.80
36	Condensate Piping	\$17,913.60
37	Boiler Feed System	\$67,816.96
38	Boiler Feed Pump Turbine and Exhaust	\$14,076.16
39	Boiler Feed Pump	\$17,913.60
40	High Pressure Heaters	\$35,827.20
41	Critical Piping	\$80,611.20
42	Main Steam Piping	\$26,870.40
43	Cold Reheat Piping	\$26,870.40

Iatan 1 Dismantlement		
ID	Task Name	Cost
44	Hot Reheat Piping	\$26,870.40
45	Extraction Steam System	\$17,913.60
46	Piping	\$17,913.60
47	Heater Drips	\$14,330.88
48	Piping	\$14,330.88
49	Auxiliary Steam	\$25,079.04
50	Auxiliary Boilers and Auxiliary Skids	\$8,956.80
51	Auxiliary Steam Piping	\$16,122.24
52	Circulating Water (plant side)	\$8,956.80
53	Waterboxes	\$8,956.80
54	Bearing Cooling Water	\$30,453.12
55	Bearing Cooling Water Pumps	\$3,582.72
56	Bearing Cooling Water Heat Exchanger	\$8,956.80
57	Bearing Cooling Water Piping	\$17,913.60
58	Auxiliary Cooling Water	\$28,661.76
59	Auxiliary Cooling Water Heat Exchanger	\$5,374.08
60	Auxiliary Cooling Water Pumps	\$5,374.08
61	Auxiliary Cooling Water Piping	\$17,913.60
62	Service Water	\$8,956.80
63	Service Water Piping	\$8,956.80
64	Fuel Oil System (plant side)	\$41,201.28
65	Igniter Fuel Oil Pumps	\$5,374.08
66	Igniter Fuel Oil and Atomizing Air Piping	\$8,956.80
67	Igniters	\$26,870.40
68	Waste Oil System	\$12,539.52
69	Waste Oil Tank	\$3,582.72
70	Waste Oil Transfer Pump	\$3,582.72
71	Waste Oil Piping	\$5,374.08
72	Air Preheat System	\$10,236.64
73	Air Preheat Pumps	\$3,582.72
74	Air Preheat Piping	\$6,653.92
75	Condenser Air Extraction System	\$10,748.16
76	Vacuum Pumps	\$7,165.44
77	Extraction Piping	\$3,582.72
78	Turbine Seals and Drains	\$12,539.52
79	Piping	\$12,539.52
80	Turbine Lube Oil System	\$20,363.52
81	Turbine Lube Oil Tank	\$11,406.72
82	Turbine Lube Oil Pumps	\$7,165.44
83	Turbine Oil Mist Eliminator	\$1,791.36
84	Generator Auxiliary Systems	\$32,244.48
85	Hydrogen Cooler Skid and Piping	\$8,956.80
86	Stator Cooling Water Skid and Piping	\$8,956.80
87	Isophase Bus Duct	\$7,165.44

latan 1 Dismantlement

ID	Task Name	Cost
88	Exciter Heat Exchanger	\$3,582.72
89	EHC Coolers	\$3,582.72
90	Chemical Feed Systems	\$19,303.20
91	Tanks	\$8,555.04
92	Pumps	\$5,374.08
93	Piping	\$5,374.08
94	Sampling Systems	\$6,434.40
95	Field Mounted Heat Exchangers	\$3,582.72
96	Piping	\$2,851.68
97	Building Heating Systems	\$13,307.84
98	Steam Unit Heaters	\$9,505.60
99	Steam Piping	\$3,802.24
100	Compressed Air System	\$26,870.40
101	Air Compressors	\$7,165.44
102	Air Drying Equipment	\$5,374.08
103	Air Reciever Tanks	\$5,374.08
104	Compressed Air Piping	\$8,956.80
105	Miscellaneous Equipment	\$21,496.32
106	Miscellaneous Equipment (including Fire Protection)	\$21,496.32
107	Phase 2 Demolition	\$2,929,157.36
108	Precipitator	\$107,481.60
109	Remove Precipitator	\$107,481.60
110	Boiler Equipment	\$732,490.24
111	Fans	\$63,246.40
112	Pulverizers	\$71,654.40
113	Bottom Ash	\$16,451.52
114	Air Heater	\$200,632.32
115	Steam Drum	\$89,568.00
116	Coal Bunkers	\$71,654.40
117	Coal Feeders	\$46,575.36
118	Soot Blowers	\$50,895.36
119	Ductwork	\$100,316.16
120	Miscellaneous Other	\$21,496.32
121	Boiler Removal	\$401,264.64
122	Furnace	\$229,294.08
123	Back Pass	\$171,970.56
124	Boiler Steel Framing	\$723,709.44
125	Hanger Girders at Top	\$107,481.60
126	All Other Framing	\$336,775.68
127	Bracing and Girts	\$164,805.12
128	Columns	\$114,647.04
129	Boiler Foundations	\$128,977.92
130	Equipment Foundation Demolition to Grade	\$128,977.92
131	Remove Turbine	\$835,233.52

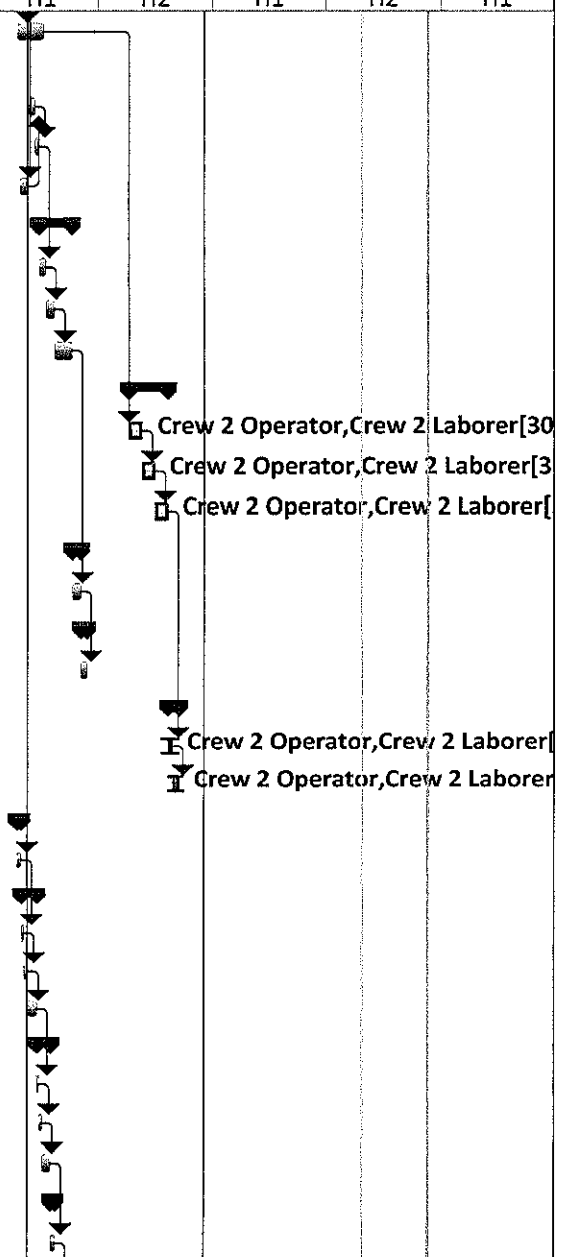
Iatan 1 Dismantlement		
ID	Task Name	Cost
132	Remove HP Turbine	\$26,321.60
133	Remove IP Turbine	\$26,321.60
134	Remove LP Turbine	\$26,321.60
135	Remove Generator	\$52,643.20
136	Remove Condenser Neck Heat Exchanger	\$26,321.60
137	Remove Condenser	\$26,321.60
138	Remove Misc. Auxiliary Turbine Equipment	\$39,482.40
139	Turbine Pedestal Demolition to Grade	\$268,480.32
140	Top Slab and Beams	\$105,286.40
141	Columns	\$163,193.92
142	Remove Turbine Building	\$343,019.60
143	Siding and Roofing	\$108,682.80
144	All Framing Elevations	\$157,929.60
145	Bracing and Girts	\$52,643.20
146	Columns	\$23,764.00
147	Phase 3 Yard Demolition	\$260,296.00
148	Circulating Water Pipe (yard)	\$71,654.40
149	Excavate Circulating Water Pipe	\$17,913.60
150	Collapse Circulating Water Pipe	\$35,827.20
151	Backfill Circulating Water Pipe	\$17,913.60
152	Remove Ash Handling Equipment and Piping	\$35,827.20
153	Remove Fly-Ash Silo and Scale	\$26,870.40
154	Remove Ash Piping and Misc. Equipment	\$8,956.80
155	Remove Laydown Equipment and Warehoused Equipment	\$71,654.40
156	Remove Unit 1 Condensate Storage Tank and Pump	\$9,505.60
157	Remove Unit 1 Make-Up Water Storage Tank	\$17,913.60
158	Remove Unit 1 Water Treatment Equipment and Building	\$53,740.80
159	Post Dismantlement Activities	\$65,520.00
160	Post Dismantlement Activities	\$65,520.00

Iatan 1 Dismantlement

ID	Task Name	Duration	2012		2013		2014		2015
			H2	H1	H2	H1	H2	H1	H2
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	Demolition 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							
18	Demolition Contractor Equipment Rental Costs	430 days							
19	Equipment Rental	430 days							
20	Demolition Contractor Consumables	430 days							
21	Consumables	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							

Iatan 1 Dismantlement

ID	Task Name	Duration	2012		2013		2014		2015
			H2	H1	H2	H1	H2	H1	H1
33	Low Pressure Heaters (except the condenser neck heat exchangers)	30 days							
34	Deaerator	8 days							
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							
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							



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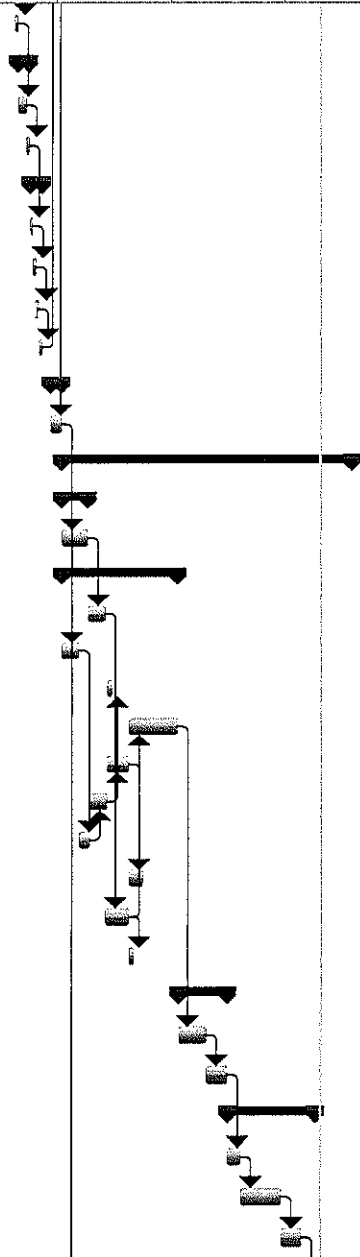
Iatan 1 Dismantlement

ID	Task Name	Duration	2012			2013		2014		2015
			H2	H1	H2	H1	H2	H1	H2	H1
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								
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								
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								

Crew 3 Operator, Crew 3 Laborer [30

Iatan 1 Dismantlement

ID	Task Name	Duration	2012		2013		2014		2015
			H2	H1	H2	H1	H2	H1	H1
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							
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							
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							



Iatan 1 Dismantlement			2012		2013		2014		2015
ID	Task Name	Duration	H2	H1	H2	H1	H2	H1	H2
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							
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 Roofing	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							
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							

Iatan 1 Dismantlement

ID	Task Name	Duration	2012		2013			2014		2015
			H2	H1	H2	H1	H2	H1	H2	H1
158	Remove Unit 1 Water Treatment Equipment and Building	30 days								
159	Post Dismantlement Activities	40 days								
160	Post Dismantlement Activities	40 days								

Iatan 1 AQCS		
ID	Task Name	Cost
1	Iatan Unit 1 AQCS Dismantlement	\$3,382,301.12
2	Common Removal Overheads	\$341,196.80
3	Added Overhead Staff for Common Removals	\$341,196.80
4	Scrap Crew	\$609,062.40
5	Crew(s) to Handle Scrap Material	\$609,062.40
6	Demolition Contractor Consummables	\$819,372.80
7	Consummables	\$819,372.80
8	Demolition Contractor Equipment Rental Costs	\$616,651.20
9	Equipment Rental	\$616,651.20
10	Dismantlement	\$996,017.92
11	Initial Structural	\$130,313.68
12	Remove SCR box & ductwork lagging & insulation	\$17,913.60
13	Remove SCR expansion joints	\$10,748.16
14	Remove ductwork lagging & insulation	\$7,952.40
15	Remove ductwork expansion joints	\$17,913.60
16	Remove ductwork access platforms & ladders	\$17,913.60
17	Remove FF lagging, insulation, wall panel, & roof panels	\$35,827.20
18	Remove ID fan lagging & insulation	\$7,165.44
19	Removal all HVAC equipment located on FGD Bldg roof	\$5,374.08
20	Remove FGD Bldg lagging, insulation, wall panel, & roof	\$9,505.60
21	General Electric	\$202,423.68
22	Remove breakers serving all FF equipment	\$895.68
23	Remove breakers serving all FGD equipment	\$1,791.36
24	Remove breakers serving all ID fan equipment	\$895.68
25	Remove breakers serving all SCR equipment	\$895.68
26	Remove breakers serving all comp air equipment	\$895.68
27	Remove all ductwork primary instrumentation, controls & assoc'd cables, and conduit	\$8,956.80
28	Remove all FGD primary instrumentation, controls & assoc'd cables, and conduit	\$26,870.40
29	Remove all FF primary instrumentation, controls & assoc'd cables, and conduit	\$17,913.60
30	Remove SCR primary instrumentation, controls, & assoc'd cable & conduit	\$8,956.80
31	Remove NH3 supply primary instrumentation, controls, & assoc'd cable & conduit	\$8,956.80
32	Remove wiring and conduit serving FGD equipment, HVAC, lighting and convenience outlets	\$35,827.20
33	Remove wiring and conduit serving FF equipment, HVAC, lighting and convenience outlets	\$17,913.60
34	Remove wiring and conduit serving the ID fans and assoc'd equipment	\$21,496.32
35	Remove wiring & conduit serving SCR vaporization & injection equipment	\$5,374.08

Iatan 1 AQCS		
ID	Task Name	Cost
36	Remove wiring & conduit serving compressed air equipment	\$5,374.08
37	Remove wiring & conduit serving comp air equipment	\$3,582.72
38	Remove electrical control cabinets & switchgear	\$17,913.60
39	Demolish electrical control room	\$17,913.60
40	FGD System	\$201,109.68
41	Remove ductwork between FGD module and chimney	\$7,952.40
42	Remove support steel and access platforms between FGD and chimney	\$5,374.08
43	Remove FGD elevator	\$8,956.80
44	Remove all mechanical equipment, pumps, and motors and tanks in FGD Bldg	\$35,827.20
45	Remove oxi air blowers	\$895.68
46	Remove all FGD piping & valves other than recirc piping	\$26,870.40
47	Remove ox air lines	\$5,374.08
48	Remove FGD MEs panels	\$9,542.88
49	Remove FGD outlet duct and top cone	\$5,374.08
50	Remove FGD internal wash ME piping and ME supports	\$5,374.08
51	Remove FGD internal spray header piping	\$8,956.80
52	Remove FGD support steel, access provisions, stair tower, and recirc piping from top down	\$35,827.20
53	Remove FGD module walls	\$17,913.60
54	Remove FGD inlet duct	\$5,374.08
55	Remove FGD reaction tank walls and floor	\$17,913.60
56	Remove FGD Bldg trench floor grating	\$3,582.72
57	ID Fans	\$78,819.84
58	Remove ductwork between ID fan outlets and FGD module	\$12,539.52
59	Remove support steel and access platforms between ID fan outlets and FGD module	\$5,374.08
60	Remove ductwork between FF outlet and ID fan inlets	\$12,539.52
61	Remove support steel between FF outlet and ID fan inlets	\$5,374.08
62	Removed ID fan isolation dampers	\$14,330.88
63	Removed ID fan drive motor	\$7,165.44
64	Remove ID fan seal air system	\$7,165.44
65	Remove fan casing & rotor	\$14,330.88
66	Fabric Filters	\$309,905.28
67	Remove ductwork between air heater and FF	\$8,956.80
68	Remove ductwork structural steel between AH and FF	\$5,374.08
69	Remove FF penthouse hoists and trolleys	\$7,165.44
70	Remove FF hopper heaters, HVAC, lighting and convenience outlets	\$17,913.60
71	Remove FF ash handling piping	\$26,870.40
72	Remove compress air blower, dryers, and receivers, piping & valves	\$17,913.60
73	Remove FF penthouse roof panels supporting steel	\$17,913.60
74	Remove FF compartment roof hatches	\$5,374.08

Iatan 1 AQCS

ID	Task Name	Cost
75	Remove FF compartment pulse air piping	\$5,374.08
76	Remove FF compartment pulse air and compressed air supply piping	\$10,748.16
77	Remove FF outlet poppet damper operators	\$12,539.52
78	Remove FF bags & cages	\$25,079.04
79	Remove FF bag support sheets	\$25,079.04
80	Remove remaining FF roof	\$7,165.44
81	Remove FF outlet dampers	\$7,165.44
82	Remove ductwork between air heater and FF	\$8,956.80
83	Remove FF wall panels to hopper level	\$50,158.08
84	Remove ductwork structural steel between AH and FF	\$5,374.08
85	Remove FF stair tower(s)	\$17,913.60
86	Remove FF inlet dampers	\$7,165.44
87	Remove FF hoppers	\$12,539.52
88	Remove FF support steel	\$7,165.44
89	SCR and Ammonia Supply	\$73,445.76
90	Vacuum SCR catalyst	\$3,582.72
91	Remove SCR catalyst	\$16,122.24
92	Remove ammonia injection grid	\$3,582.72
93	Remove NH3 piping between storage & injection	\$3,582.72
94	Remove air horn air receiver & supply piping	\$3,582.72
95	Remove SCR guillotine dampers	\$7,165.44
96	Remove SCR muliti-louver dampers	\$3,582.72
97	Remove SCR box, internal supports, & assoc'd ductwork	\$26,870.40
98	Remove NH3 piping between storage & vaporizers	\$5,374.08
99	Site Preperation Work	\$0.00
100	<New Task>	\$0.00

Iatan 1 AQCS Dismantlement

ID	Task Name	Duration	2013				2014					
			Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	
1	Iatan Unit 1 AQCS Dismantlement	594.5 days	[Gantt bar spanning from start of 2013 Qtr 2 to end of 2014 Qtr 2]									
2	Common Removal Overheads	340 days	[Gantt bar from start of 2013 Qtr 2 to end of 2014 Qtr 1]									
3	Added Overhead Staff for Common Removals	340 days	[Gantt bar from start of 2013 Qtr 2 to end of 2014 Qtr 1]									
4	Scrap Crew	340 days	[Gantt bar from start of 2013 Qtr 2 to end of 2014 Qtr 1]									
5	Crew(s) to Handle Scrap Material	340 days	[Gantt bar from start of 2013 Qtr 2 to end of 2014 Qtr 1]									
6	Demolition Contractor Consummables	340 days	[Gantt bar from start of 2013 Qtr 2 to end of 2014 Qtr 1]									
7	Consummables	340 days	[Gantt bar from start of 2013 Qtr 2 to end of 2014 Qtr 1]									
8	Demolition Contractor Equipment Rental Costs	340 days	[Gantt bar from start of 2013 Qtr 2 to end of 2014 Qtr 1]									
9	Equipment Rental	340 days	[Gantt bar from start of 2013 Qtr 2 to end of 2014 Qtr 1]									
10	Dismantlement	340.5 days	[Gantt bar from start of 2013 Qtr 2 to end of 2014 Qtr 1]									
11	Initial Structural	202.5 days	[Gantt bar from start of 2013 Qtr 2 to end of 2014 Qtr 1]									
12	Remove SCR box & ductwork lagging & insulation	10 days	[Gantt bar from start of 2013 Qtr 4 to end of 2014 Qtr 1]									
13	Remove SCR expansion joints	6 days	[Gantt bar from start of 2013 Qtr 4 to end of 2014 Qtr 1]									
14	Remove ductwork lagging & insulation	5 days	[Gantt bar from start of 2013 Qtr 4 to end of 2014 Qtr 1]									
15	Remove ductwork expansion joints	10 days	[Gantt bar from start of 2013 Qtr 4 to end of 2014 Qtr 1]									
16	Remove ductwork access platforms & ladders	10 days	[Gantt bar from start of 2013 Qtr 4 to end of 2014 Qtr 1]									
17	Remove FF lagging, insulation, wall panel, & roof panels	20 days	[Gantt bar from start of 2013 Qtr 4 to end of 2014 Qtr 1]									
18	Remove ID fan lagging & insulation	4 days	[Gantt bar from start of 2013 Qtr 4 to end of 2014 Qtr 1]									
19	Removal all HVAC equipment located on FGD Bldg roof	3 days	[Gantt bar from start of 2013 Qtr 4 to end of 2014 Qtr 1]									
20	Remove FGD Bldg lagging, insulation, wall panel, & roof	10 days	[Gantt bar from start of 2013 Qtr 4 to end of 2014 Qtr 1]									
21	General Electric	108 days	[Gantt bar from start of 2013 Qtr 4 to end of 2014 Qtr 1]									
22	Remove breakers serving all FF equipment	0.5 days	[Gantt bar from start of 2013 Qtr 4 to end of 2014 Qtr 1]									
23	Remove breakers serving all FGD equipment	1 day	[Gantt bar from start of 2013 Qtr 4 to end of 2014 Qtr 1]									
24	Remove breakers serving all ID fan equipment	0.5 days	[Gantt bar from start of 2013 Qtr 4 to end of 2014 Qtr 1]									
25	Remove breakers serving all SCR equipment	0.5 days	[Gantt bar from start of 2013 Qtr 4 to end of 2014 Qtr 1]									
26	Remove breakers serving all comp air equipment	0.5 days	[Gantt bar from start of 2013 Qtr 4 to end of 2014 Qtr 1]									
27	Remove all ductwork primary instrumentation, controls & assoc'd cables, and c	5 days	[Gantt bar from start of 2013 Qtr 4 to end of 2014 Qtr 1]									
28	Remove all FGD primary instrumentation, controls & assoc'd cables, and cond	15 days	[Gantt bar from start of 2013 Qtr 4 to end of 2014 Qtr 1]									
29	Remove all FF primary instrumentation, controls & assoc'd cables, and conduit	10 days	[Gantt bar from start of 2013 Qtr 4 to end of 2014 Qtr 1]									
30	Remove SCR primary instrumentation, controls, & assoc'd cable & conduit	5 days	[Gantt bar from start of 2013 Qtr 4 to end of 2014 Qtr 1]									
31	Remove NH3 supply primary instrumentation, controls, & assoc'd cable & cond	5 days	[Gantt bar from start of 2013 Qtr 4 to end of 2014 Qtr 1]									

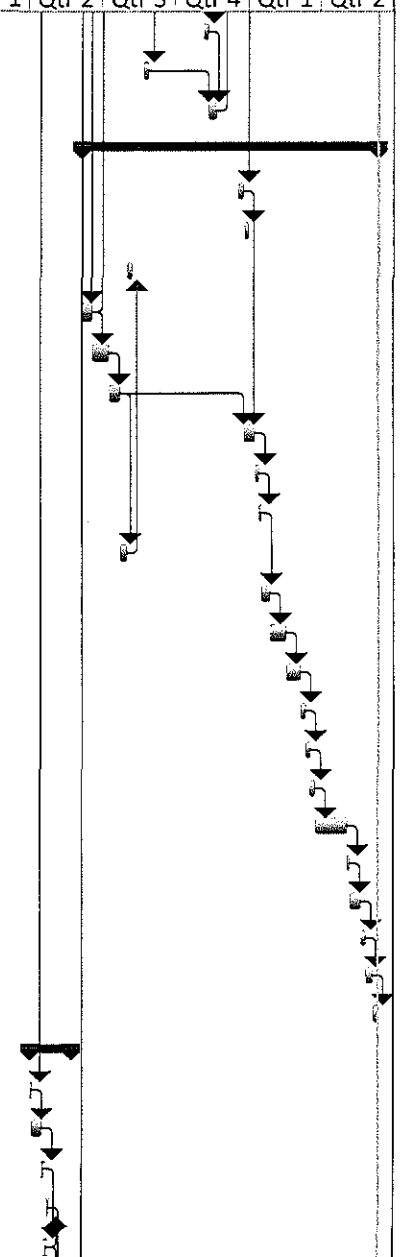
Electrical Crew - Operator, Electrician

Iatan 1 AQCS Dismantlement

ID	Task Name	Duration	2013				2014													
			Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2									
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																		
36	Remove wiring & conduit serving compressed air equipment	3 days																		
37	Remove wiring & conduit serving comp air equipment	2 days																		
38	Remove electrical 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 fr	20 days																		
53	Remove FGD module walls	10 days																		
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 r	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																		

Iatan 1 AQCS Dismantlement

ID	Task Name	Duration	2013				2014			
			Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	
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								
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								
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								



Iatan 1 AQCS Dismantlement

ID	Task Name	Duration	2013				2014					
			Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	
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	\$100,822
Retirement Activities	\$658,400
Post-Retirement Activities	\$26,564

Owner Direct Total \$785,786

Owner Internal Costs 5.00% \$39,289

Owner Contingency: 25.00% \$206,269

Iatan 2 Retirement Opinion of Probable Cost: \$1,031,343.60

Iatan 2 Retirement		
ID	Task Name	Cost
1	Iatan 2 Retirement	\$785,786.45
2	Pre-Engineering	\$100,821.60
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	\$114,006.40
5	KCP&L Retirement Manager	\$114,006.40
6	Equipment Rentals	\$38,625.28
7	Vacuum truck	\$38,625.28
8	Retirement	\$505,769.17
9	Electrical	\$18,911.68
10	Medium and Low Voltage Draw out Switchgear	\$2,679.84
11	De-energize all buses at the source.	\$446.64
12	Open all circuit breakers.	\$446.64
13	Rack all circuit breakers into the fully withdrawn, disconnected position.	\$446.64
14	Verify that the closing/tripping springs are discharged.	\$446.64
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.	\$893.28
16	Motor Control Centers	\$1,786.56
17	De-energize all buses at the source.	\$446.64
18	Open all circuit breakers and disconnect switches.	\$446.64
19	Remove all fuses in control circuits.	\$893.28
20	Low-voltage Switchboards and Panelboards	\$893.28
21	De-energize all buses at the source.	\$446.64
22	Open all circuit breakers and disconnect switches.	\$446.64
23	Oil-Filled Power Transformers	\$5,549.44
24	De-energize all transformer primaries and verify that the secondary is de-energized.	\$893.28
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.	\$893.28
26	Drain and dispose of oil.	\$2,642.88
27	Clean up and dispose of oil on surface areas around the transformers on in containment pits.	\$1,120.00
28	Dry-type Power Transformers	\$1,786.56
29	De-energize all transformer primaries and verify that the secondary is de-energized.	\$893.28
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.	\$893.28
31	Motors	\$6,216.00
32	De-energize all primary power at the source.	\$1,786.56

Iatan 2 Retirement

ID	Task Name	Cost
33	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	\$1,786.56
34	Drain lube oil system (if applicable) and dispose of oil.	\$2,642.88
35	Coal Handling	\$27,475.44
36	Empty all transfer hoppers.	\$1,704.56
37	Burn out coal silos.	\$1,685.44
38	Confirm all fuel lines, conveyors and trippers are clear of fuel.	\$1,685.44
39	Perform cleaning of the coal handling equipment to assure that all coal and coal dust has been removed from site.	\$22,400.00
40	Fuel Oil and Igniter System	\$2,528.16
41	Drain fuel oil system	\$2,528.16
42	Boiler Chemical Feed	\$1,685.44
43	Drain all chemical feed tanks.	\$1,685.44
44	Boiler	\$27,484.77
45	Open boiler doors.	\$880.96
46	Gas side - perform cleaning of the boiler and bottom ash system.	\$22,400.00
47	Drain boiler, drum, downcomers and headers.	\$842.72
48	Open drum doors.	\$880.96
49	Drain and clean the submerged flight conveyor system.	\$2,480.13
50	Stack and Ductwork	\$326,961.04
51	Open ductwork doors.	\$880.96
52	Perform extensive cleaning of the ductwork.	\$11,200.00
53	Place cap over stack opening to keep moisture out.	\$314,880.08
54	Condensate and Feedwater Piping	\$1,685.44
55	Drain water from the system.	\$842.72
56	Leave open vents and drains.	\$842.72
57	Feedwater heaters	\$2,528.16
58	Drain feedwater heaters	\$842.72
59	Leave open vents and drains.	\$1,685.44
60	Deaerator and Deaerator Storage Tank	\$1,685.44
61	Drain Deaerator and Storage	\$842.72
62	Leave open vents and drains.	\$842.72
63	Baghouse	\$17,351.92
64	Multiple cleaning cycles for filter bags.	\$2,528.16
65	Open all vent and drain lines on bag cleaning air and control air lines. Leave in open position or remove vent valves.	\$842.72
66	Remove all filter bags and cages.	\$880.96
67	Clear hoppers of all ash	\$2,805.44
68	Mechanically secure all compartment dampers and hopper outlet valves in open position.	\$880.96
69	Disconnect ash transport piping and washdown baghouse hoppers and interior of casing.	\$1,421.84
70	Install bird screens across hopper ash outlet and ash line flanges.	\$880.96

Iatan 2 Retirement		
ID	Task Name	Cost
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.)	\$880.96
72	If walk-in plenum, padlock or tack weld all outlet plenum doors and compartment ventilation dampers shut.	\$880.96
73	If top-door plenum, close and secure top doors and remove/disable door lift hoist.	\$1,723.68
74	If top-door plenum, establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in penthouse enclosure.	\$945.44
75	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	\$2,679.84
76	Wet FGD system	\$23,908.00
77	Multiple mist eliminator wash cycles. Remove ME's from absorber.	\$2,145.04
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.	\$1,723.68
79	Drain and wash out the reaction tank, reagent storage tank, recycle water tank, absorber blowdown tank, etc.	\$4,624.08
80	Leave all tank drain valves open or remove. Install bird screens across openings.	\$1,761.92
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.	\$2,604.64
82	Mechanically secure all flue gas isolation dampers in open position or remove damper blades.	\$1,761.92
83	Remove solids from all inlet and outlet ductwork as necessary	\$2,240.00
84	Open all vent station air and control air lines. Leave in open position or remove vent valves	\$1,723.68
85	Padlock or tack weld all access doors to modules and ductwork shut.	\$1,762.24
86	Remove access doors to open-top tanks.	\$880.96
87	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	\$2,679.84
88	FGD Reagent Preparation-Limestone wet Scrubber	\$10,262.88
89	Remove limestone from day bins.	\$1,402.72
90	Removed cartridges/bags from bin vent filters	\$1,402.72
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.)	\$881.12
92	Remove bin discharge isolation valve and install bird screen.	\$440.48
93	Thoroughly wash and drain mills	\$1,402.72
94	Remove balls from any ball mills	\$1,120.00
95	Padlock or tack weld mill access doors closed.	\$881.12
96	Establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in building.	\$945.44

Iatan 2 Retirement		
ID	Task Name	Cost
97	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	\$1,786.56
98	FGD Byproduct Dewatering - Hydrocyclones and Vacuum Filters	\$7,287.12
99	Wash vacuum filter belt and remove all accumulated solids	\$2,240.00
100	Wash out vacuum receiver, remove pressure relief valve and access door. Install bird screens.	\$1,421.84
101	Establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in building.	\$945.44
102	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	\$2,679.84
103	SCR	\$10,054.00
104	Vacuum fly ash from catalyst.	\$2,240.00
105	Remove catalyst of salvage or disposal.	\$2,881.92
106	Padlock or tack weld access doors shut.	\$880.96
107	Remove ammonia from storage tank for resale.	\$701.36
108	Wash out and drain storage tank and supply piping.	\$701.36
109	Vent storage tank and all piping. Leave vent and drain valves open or remove. Install bird screens.	\$861.84
110	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	\$1,786.56
111	Turbine(s) and Condenser	\$5,266.64
112	Drain hotwell and leave doors open.	\$861.84
113	Open main turbine doors.	\$880.96
114	Open bfp turbine doors.	\$880.96
115	Remove lube oil.	\$2,642.88
116	Generator	\$6,095.76
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.	\$446.64
118	Verify that generator field breaker or contactor (if applicable) is open.	\$446.64
119	De-energize power supplies to generator excitation system at the source.	\$446.64
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.	\$446.64
121	Drain generator and exciter cooling water systems (if applicable).	\$861.84
122	Disconnect and remove hydrogen gas tanks and purge generator hydrogen system.	\$1,685.44
123	Disconnect and remove fire protection system gas/foam tanks and purge fire protection system.	\$1,761.92
124	Circulation Water and Turbine Cooling Water System	\$3,409.12
125	Drain.	\$1,685.44
126	Open water box doors.	\$880.96
127	Drain any circulating water chemical feed tanks.	\$842.72

Iatan 2 Retirement

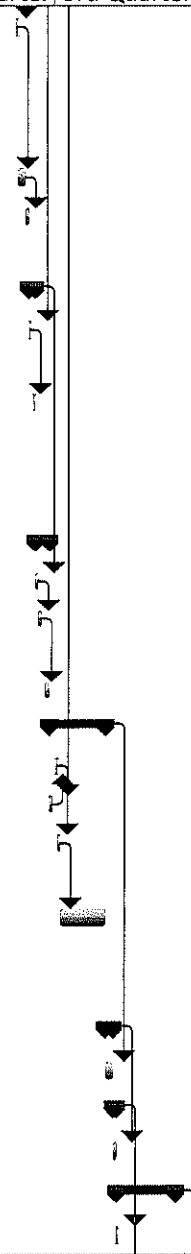
ID	Task Name	Cost
128	Compressed Air System	\$2,721.28
129	Open vents and drains.	\$842.72
130	Remove desiccant from desiccant dryers.	\$1,878.56
131	Auxiliary Steam System	\$1,685.44
132	Drain water from system.	\$842.72
133	Remove aux boiler chemicals.	\$842.72
134	Auxiliary Cooling Water System	\$842.72
135	Drain water from system.	\$842.72
136	Condenser Air Extraction and Waterbox Priming System	\$842.72
137	Drain water from system.	\$842.72
138	Building Heating System	\$842.72
139	Drain water from system.	\$842.72
140	Battery System	\$4,253.28
141	De-energize all battery chargers from the source.	\$446.64
142	Open all AC and DC circuit breakers and/or fused switches on battery chargers and disconnect cables from batteries.	\$446.64
143	Remove and dispose of battery electrolyte.	\$1,680.00
144	Remove and dispose of battery cells.	\$1,120.00
145	Clean up and dispose of electrolyte on surface areas around batteries.	\$560.00
146	Post Retirement Activities	\$26,564.00
147	Post Retirement Activities	\$26,564.00

Iatan 2 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter		
1	Iatan 2 Retirement	290 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	184 days								
5	KCP&L Retirement Manager	184 days								
6	Equipment Rentals	184 days								
7	Vacuum truck	184 days								
8	Retirement	184 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 1 day secondary is de-energized.	1 day								

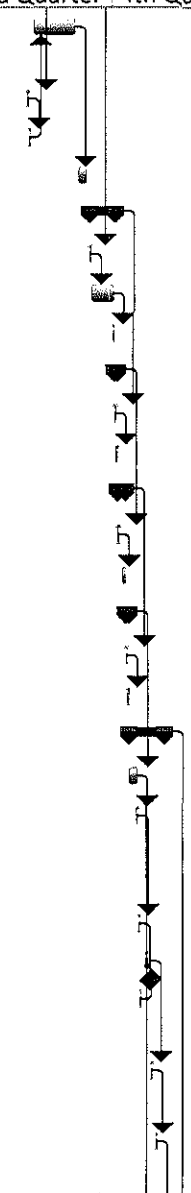
Iatan 2 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter
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	Boiler Chemical Feed	2 days						
43	Drain all chemical feed tanks.	2 days						
44	Boiler	27 days						
45	Open boiler doors.	1 day						



Iatan 2 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter
46	Gas side - perform cleaning of the boiler and bottom ash system.	20 days						
47	Drain boiler, drum, downcomers and headers.	1 day						
48	Open drum doors.	1 day						
49	Drain and clean the submerged flight conveyor system.	5 days						
50	Stack and Ductwork	12 days						
51	Open ductwork doors.	1 day						
52	Perform extensive cleaning of the ductwork.	10 days						
53	Place cap over stack opening to keep moisture out.	1 day						
54	Condensate and Feedwater Piping	2 days						
55	Drain water from the system.	1 day						
56	Leave open vents and drains.	1 day						
57	Feedwater heaters	3 days						
58	Drain feedwater heaters	1 day						
59	Leave open vents and drains.	2 days						
60	Deaerator and Deaerator Storage Tank	2 days						
61	Drain Deaerator and Storage	1 day						
62	Leave open vents and drains.	1 day						
63	Baghouse	16 days						
64	Multiple cleaning cycles for filter bags.	3 days						
65	Open all vent and drain lines on bag cleaning air and control air lines. Leave in open position or remove vent valves.	1 day						
66	Remove all filter bags and cages.	1 day						
67	Clear hoppers of all ash	4 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						



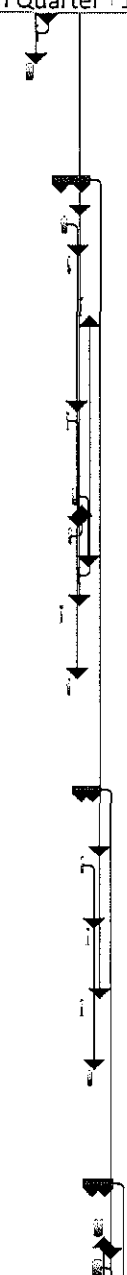
Iatan 2 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter
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	If walk-in plenum, padlock or tack weld all outlet plenum doors and compartment ventilation dampers shut.	1 day						
73	If top-door plenum, close and secure top doors and remove/disable door lift hoist.	2 days						
74	If top-door plenum, establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in penthouse enclosure.	1 day						
75	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	3 days						
76	Wet FGD system	19 days						
77	Multiple mist eliminator wash cycles. Remove ME's from absorber.	3 days						
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.	2 days						
79	Drain and wash out the reaction tank, reagent storage tank, recycle water tank, absorber blowdown tank, etc.	3 days						
80	Leave all tank drain valves open or remove. Install bird screens across openings.	2 days						
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.	2 days						
82	Mechanically secure all flue gas isolation dampers in open position or remove damper blades.	2 days						
83	Remove solids from all inlet and outlet ductwork as necessary	2 days						
84	Open all vent station air and control air lines. Leave in open position or remove vent valves	2 days						
85	Padlock or tack weld all access doors to modules and ductwork shut.	2 days						



Iatan 2 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter
86	Remove access doors to open-top tanks.	1 day						
87	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	3 days						
88	FGD Reagent Preparation-Limestone wet Scrubber	9 days						
89	Remove limestone from day bins.	2 days						
90	Removed cartridges/bags from bin vent filters	2 days						
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.)	1 day						
92	Remove bin discharge isolation valve and install bird screen.	1 day						
93	Thoroughly wash and drain mills	2 days						
94	Remove balls from any ball mills	2 days						
95	Padlock or tack weld mill access doors closed.	1 day						
96	Establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in building.	1 day						
97	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	2 days						
98	FGD Byproduct Dewatering - Hydrocyclones and Vacuum Filters	5 days						
99	Wash vacuum filter belt and remove all accumulated solids	2 days						
100	Wash out vacuum receiver, remove pressure relief valve and access door. Install bird screens.	1 day						
101	Establish natural ventilation or maintain HVAC fan to provide minimum air changes per hour in building.	1 day						
102	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	3 days						
103	SCR	6 days						
104	Vacuum fly ash from catalyst.	4 days						
105	Remove catalyst of salvage or disposal.	4 days						

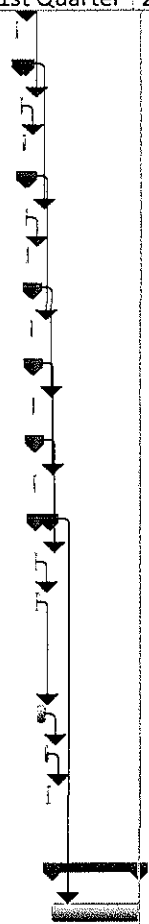


Iatan 2 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter
106	Padlock or tack weld access doors shut.	1 day					█	
107	Remove ammonia from storage tank for resale.	1 day				█		
108	Wash out and drain storage tank and supply piping.	1 day				█		
109	Vent storage tank and all piping. Leave vent and drain valves open or remove. Install bird screens.	1 day				█		
110	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	2 days				█		
111	Turbine(s) and Condenser	6 days				█		
112	Drain hotwell and leave doors open.	1 day				█		
113	Open main turbine doors.	1 day				█		
114	Open bfp turbine doors.	1 day				█		
115	Remove lube oil.	3 days				█		
116	Generator	7 days				█		
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.	0.5 days				█		
118	Verify that generator field breaker or contactor (if applicable) is open.	0.5 days				█		
119	De-energize power supplies to generator excitation system at the source.	0.5 days				█		
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.	0.5 days				█		
121	Drain generator and exciter cooling water systems (if applicable).	1 day				█		
122	Disconnect and remove hydrogen gas tanks and purge generator hydrogen system.	2 days				█		
123	Disconnect and remove fire protection system gas/foam tanks and purge fire protection system.	2 days				█		
124	Circulation Water and Turbine Cooling Water System	3 days				█		
125	Drain.	2 days				█		
126	Open water box doors.	1 day				█		

Iatan 2 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter
127	Drain any circulating water chemical feed tanks.	1 day						
128	Compressed Air System	3 days						
129	Open vents and drains.	1 day						
130	Remove desiccant from desiccant dryers.	2 days						
131	Auxiliary Steam System	2 days						
132	Drain water from system.	1 day						
133	Remove aux boiler chemicals.	1 day						
134	Auxiliary Cooling Water System	1 day						
135	Drain water from system.	1 day						
136	Condenser Air Extraction and Waterbox Priming System	1 day						
137	Drain water from system.	1 day						
138	Building Heating System	1 day						
139	Drain water from system.	1 day						
140	Battery System	7 days						
141	De-energize all battery chargers from the source.	0.5 days						
142	Open all AC and DC circuit breakers and/or fused switches on battery chargers and disconnect cables from batteries.	0.5 days						
143	Remove and dispose of battery electrolyte.	3 days						
144	Remove and dispose of battery cells.	2 days						
145	Clean up and dispose of electrolyte on surface areas around batteries.	1 day						
146	Post Retirement Activities	40 days						
147	Post Retirement Activities	40 days						



Iatan 2 Dismantlement

Owner Additional Costs

Pre-Dismantlement Activities	\$1,020,485	
Overhead During Dismantlement	\$1,916,492	
Post-Dismantlement Activities	\$70,596	
Owner Costs Total		\$3,007,573

Demolition General Contractor (DGC) Costs

Additional Site Management	\$1,434,705
Equipment Rental	\$2,483,702
Consummables	\$2,711,297
Scrap Crew(s)	\$2,457,174
Dismantlement*	\$5,879,227

DGC Insurance 2.00% \$299,322

Contingency/Profit 15.00% \$2,289,814

Performance Bond 2.00% \$351,104.82

Contractor Costs Total: \$17,906,346

Total: \$20,913,919

Owner Internal Costs: 5.00% \$1,045,696

Owner Contingency: 25.00% \$5,489,904

Iatan Unit 2 Dismantlement Opinion of Probable Cost: \$27,449,519

COMMON

Iatan Common Retirement

Owner Costs

Pre-Retirement Activities	\$52,449
Retirement Activities	\$365,473
Post-Retirement Activities	\$32,080

Owner Direct Total \$450,002

Owner Internal Costs 5.00% \$22,500

Owner Contingency: 25.00% \$118,125

Iatan Common Retirement Opinion of Probable Cost: \$590,627.36

Activities Required by Permit or Regulation

Iatan Fuel Oil Tank Removal	\$233,845
Iatan Landfill Retirement	\$3,510,641

Activities Required by Permit or Regulation: \$3,744,486

Iatan Common Retirement		
ID	Task Name	Cost
1	Iatan Common Retirement	\$450,003.76
2	Pre-Retirement Activities	\$52,448.80
3	Permitting Review	\$26,224.40
4	Develop Detailed Retirement Plan	\$26,224.40
5	Overheads	\$102,172.56
6	Common Retirement Overheads	\$89,367.44
7	Added Overhead Staff for Common Retirement	\$89,367.44
8	Common Retirement Equipment Rental	\$12,805.12
9	Common Removal Equipment Rental	\$12,805.12
10	Retirement Activities	\$263,301.60
11	Administration Building	\$17,175.60
12	Secure Administration Building	\$17,175.60
13	Fuel Yard Office Building	\$10,305.36
14	Secure Fuel Yard Office Building	\$10,305.36
15	Training Building	\$10,305.36
16	Secure Training Building	\$10,305.36
17	Warehouse(s)	\$10,607.20
18	Secure Unit 1 Warehouse	\$3,736.96
19	Secure Unit 2 Warehouse	\$6,870.24
20	Maintenance Shop	\$25,951.20
21	Secure Maintenance Shop	\$25,951.20
22	Fuel Yard	\$131,234.64
23	Transfer Towers	\$80,527.44
24	Clean Transfer Tower 1	\$3,784.08
25	Clean Transfer Tower 2	\$3,784.08
26	Clean and Secure Crusher Building	\$6,306.80
27	Clean Stockout Conveyor Reclaim Pit	\$12,613.60
28	Conveyors	\$17,659.04
29	Clean Conveyor 2A, 4, 5B 6A, 6B, 7A and 7B	\$17,659.04
30	Car Dumper	\$8,829.52
31	Empty Car Dumper Hoppers	\$1,261.36
32	Clean Car Dumper	\$3,784.08
33	Secure Dumper Building	\$3,784.08
34	Remove Stacker/Reclaimer	\$19,173.20
35	Clean and Secure Stacker/Reclaimer	\$6,306.80
36	Unit 1 Reclaim	\$5,045.44
37	Clean Unit 1 Reclaim	\$2,522.72
38	Secure Unit 1 Reclaim Building	\$2,522.72
39	Sewage Treatment	\$4,202.72
40	Clean Sewage Treatment and Transfer Points	\$4,202.72
41	Fuel Oil Storage and Unloading	\$842.72
42	Remove Fuel Oil from Fuel Oil Storage and Vent	\$842.72
43	Yard Fire Water Systems	\$842.72
44	Drain Yard Fire Water System	\$842.72

Iatan Common Retirement

ID	Task Name	Cost
45	Reagent Prep and Gypsum Handling	\$29,365.20
46	Clean and Secure Limestone Unloading Facility	\$3,784.08
47	Clean and Secure Limestone Storage Facility	\$3,784.08
48	Clean Limestone Conveyor	\$3,859.92
49	Clean and Secure Limestone Prep Building	\$6,433.20
50	Clean Gypsum Stackout Conveyor	\$2,573.28
51	Clean and Secure PCM-1	\$2,573.28
52	Clean and Secure PCM-2	\$2,573.28
53	Clean and Secure the Vacuum Pump and Air Compressor Building	\$3,784.08
54	Water Pretreatment and ZLD	\$22,468.88
55	Drain and Clean Clarifiers	\$3,784.08
56	Drain and Clean ZLD System	\$7,568.16
57	Clean and Secure ZLD Building	\$8,593.92
58	Drain and Vent Storage Tanks	\$2,522.72
59	Post Retirement Closure Activities	\$32,080.80
60	Post Retirement Closure Activities	\$32,080.80

Iatan Common Retirement				Year		1st Quarter			2nd Quarter			3rd Quarter
ID	Task Name	Duration		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
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 Retirement 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										
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										

Iatan Common Retirement

ID	Task Name	Duration	er		1st Quarter		2nd Quarter			3rd Quart		
			Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	
33	Secure Dumper Building	3 days										
34	Remove Stacker/Reclaimer	5 days										
35	Clean and Secure Stacker/Reclaimer	5 days										
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										
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		\$86,011	
Equipment Rental		\$419,326	
Consummables		\$628,251	
Scrap Crew(s)		\$623,393	
Dismantlement		\$14,083,108	
DGC Insurance	2.00%	\$316,802	
Contingency/Profit	15.00%	\$2,423,534	
Performance Bond	2.00%	\$371,608.49	
Contractor Costs Total:			\$18,952,033

Total: \$18,952,033

Owner Internal Costs: 5.00% \$947,602

Owner Contingency: 25.00% \$4,974,909

Iatan Common Dismantlement Opinion of Probable Cost: \$24,874,543

Iatan Common Dismantlement		
ID	Task Name	Cost
1	Iatan Common Dismantlement	\$15,631,165.71
2	Overheads	\$1,548,057.20
3	Common Removal Overheads	\$86,011.67
4	Added Overhead Staff for Common Removals	\$86,011.67
5	Common Removal Equipment Rental	\$419,326.08
6	Common Removal Equipment Rental	\$419,326.08
7	Scrap Crew	\$623,393.36
8	Crew(s) to Handle Scrap Material	\$623,393.36
9	Demolition Contractor Consummables	\$419,326.08
10	Consummables	\$419,326.08
11	Dismantlement Activities	\$14,083,108.51
12	Administration Building	\$35,827.20
13	Remove Administration Building	\$35,827.20
14	Fuel Yard Office Building	\$17,913.60
15	Remove Fuel Yard Office Building	\$17,913.60
16	Training Building	\$17,913.60
17	Remove Training Building	\$17,913.60
18	Parking Lots and Plant Roads	\$82,402.56
19	Plant Roads and Parking Areas	\$71,654.40
20	Guard Shack	\$10,748.16
21	Warehouse(s)	\$35,827.20
22	Remove Unit 1 Warehouse	\$17,913.60
23	Remove Unit 2 Warehouse	\$17,913.60
24	Maintenance Shop	\$23,215.20
25	Remove Maintenance Shop	\$23,215.20
26	Fuel Yard	\$752,371.20
27	Remove Transfer Towers	\$465,753.60
28	Transfer Tower 1	\$35,827.20
29	Transfer Tower 2	\$35,827.20
30	Crusher Building	\$71,654.40
31	Stockout Conveyor Reclaim Pit	\$89,568.00
32	Remove Conveyors	\$125,395.20
33	Conveyor 2A, 4, 5B 6A, 6B, 7A and 7B	\$125,395.20
34	Remove Car Dumper	\$89,568.00
35	Remove Underground Equipment	\$17,913.60
36	Remove Above Ground Equipment	\$35,827.20
37	Remove Building	\$17,913.60
38	Backfill Dumper Structure	\$17,913.60
39	Remove Stacker/Reclaimer	\$7,165.44
40	Remove Stacker/Reclaimer	\$3,582.72
41	Remove Unit 1 Reclaim	\$64,488.96
42	Remove Underground Equipment	\$17,913.60
43	Remove Above Ground Equipment	\$17,913.60
44	Remove Building	\$14,330.88

Iatan Common Dismantlement

ID	Task Name	Cost
45	Backfill Structure	\$14,330.88
46	Sewage Treatment	\$21,496.32
47	Remove Sewage Treatment Pumps and Miscellaneous Equipment	\$7,165.44
48	Remove Sewage Treatment Concrete Structures	\$14,330.88
49	Yard Fire Water Systems	\$35,827.20
50	Remove Hydrants and Fire Water System Piping Down to 3' Below Grade	\$35,827.20
51	Water Pretreatment Clarifiers and ZLD	\$121,812.48
52	Remove Clarifier Vessels	\$10,748.16
53	Remove Pump House	\$17,913.60
54	Remove Clarifier Water Storage Tanks	\$17,913.60
55	Remove Water Treatment Equipment	\$10,748.16
56	Remove Water Treatment Building	\$17,913.60
57	Remove ZLD Equipment	\$10,748.16
58	Remove ZLD Building	\$17,913.60
59	Remove Condensate Storage Tanks	\$17,913.60
60	Stacks	\$11,027,325.89
61	Remove Unit 1 Stack to Grade	\$4,198,401.00
62	Remove Common Stack to Grade	\$6,828,924.89
63	Reagent Prep and Gypsum Handling	\$336,775.68
64	Remove Limestone Unloading Facility	\$35,827.20
65	Remove Limestone Storage Facility	\$17,913.60
66	Remove Limestone Conveyor	\$17,913.60
67	Remove Limestone Prep Building	\$143,308.80
68	Remove Gypsum Stackout Conveyor	\$17,913.60
69	Remove PCM-1	\$7,165.44
70	Remove PCM-2	\$7,165.44
71	Remove the Vacuum Pump and Air Compressor Building	\$71,654.40
72	Remove Miscellaneous Equipment	\$17,913.60
73	Final Site Grading and Drainage	\$1,574,400.38
74	Final Site Grading and Drainage	\$1,574,400.38

Iatan Common Dismantlement			2nd Quarter				3rd Quarter			4th Quarter				
ID	Task Name	Duration	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
1	Iatan Common Dismantlement	208 days?	[Gantt bar from Mar to Dec]											
2	Overheads	174 days	[Gantt bar from Mar to Nov]											
3	Common Removal Overheads	174 days	[Gantt bar from Mar to Nov]											
4	Added Overhead Staff for Common Removal	174 days	[Gantt bar from Mar to Nov]											
5	Common Removal Equipment Rental	174 days	[Gantt bar from Mar to Nov]											
6	Common Removal Equipment Rental	174 days	[Gantt bar from Mar to Nov]											
7	Scrap Crew	174 days	[Gantt bar from Mar to Nov]											
8	Crew(s) to Handle Scrap Material	174 days	[Gantt bar from Mar to Nov]											
9	Demolition Contractor Consummables	174 days	[Gantt bar from Mar to Nov]											
10	Consummables	174 days	[Gantt bar from Mar to Nov]											
11	Dismantlement Activities	208 days?	[Gantt bar from Mar to Dec]											
12	Administration Building	10 days	[Gantt bar in Mar]											
13	Remove Administration Building	10 days	[Gantt bar in Mar]											
14	Fuel Yard Office Building	5 days	[Gantt bar in Apr]											
15	Remove Fuel Yard Office Building	5 days	[Gantt bar in Apr]											
16	Training Building	5 days	[Gantt bar in Apr]											
17	Remove Training Building	5 days	[Gantt bar in Apr]											
18	Parking Lots and Plant Roads	23 days	[Gantt bar in Apr]											
19	Plant Roads and Parking Areas	20 days	[Gantt bar in Apr]											
20	Guard Shack	3 days	[Gantt bar in Apr]											
21	Warehouse(s)	10 days	[Gantt bar in May]											
22	Remove Unit 1 Warehouse	5 days	[Gantt bar in May]											
23	Remove Unit 2 Warehouse	5 days	[Gantt bar in May]											
24	Maintenance Shop	10 days	[Gantt bar in May]											
25	Remove Maintenance Shop	10 days	[Gantt bar in May]											
26	Fuel Yard	144 days?	[Gantt bar from Mar to Oct]											
27	Remove Transfer Towers	65 days	[Gantt bar from Mar to Jun]											
28	Transfer Tower 1	10 days	[Gantt bar in Mar]											
29	Transfer Tower 2	10 days	[Gantt bar in Mar]											
30	Crusher Building	20 days	[Gantt bar in Apr]											
31	Stockout Conveyor Reclaim Pit	25 days	[Gantt bar in May]											
32	Remove Conveyors	35 days	[Gantt bar in Jun]											

Iatan Common Dismantlement

ID	Task Name	Duration	2nd Quarter			3rd Quarter			4th Quarter		
			Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
33	Conveyor 2A, 4, 5B 6A, 6B, 7A and 7B	35 days				[Task Bar]					
34	Remove Car Dumper	25 days					[Task Bar]				
35	Remove Underground Equipment	5 days						[Task Bar]			
36	Remove Above Ground Equipment	10 days						[Task Bar]			
37	Remove Building	5 days						[Task Bar]			
38	Backfill Dumper Structure	5 days						[Task Bar]			
39	Remove Stacker/Reclaimer	1 day?						[Task Bar]			
40	Remove Stacker/Reclaimer							[Task Bar]			
41	Remove Unit 1 Reclaim	18 days							[Task Bar]		
42	Remove Underground Equipment	5 days						[Task Bar]			
43	Remove Above Ground Equipment	5 days						[Task Bar]			
44	Remove Building	4 days						[Task Bar]			
45	Backfill Structure	4 days						[Task Bar]			
46	Sewage Treatment	6 days									
47	Remove Sewage Treatment Pumps and Miscellaneous Equipment	2 days						[Task Bar]			
48	Remove Sewage Treatment Concrete Structure	4 days						[Task Bar]			
49	Yard Fire Water Systems	10 days									
50	Remove Hydrants and Fire Water System Piping Down to 3' Below Grade	10 days						[Task Bar]			
51	Water Pretreatment Clarifiers and ZLD	34 days									
52	Remove Clarifier Vessels	3 days						[Task Bar]			
53	Remove Pump House	5 days						[Task Bar]			
54	Remove Clarifier Water Storage Tanks	5 days						[Task Bar]			
55	Remove Water Treatment Equipment	3 days						[Task Bar]			
56	Remove Water Treatment Building	5 days						[Task Bar]			
57	Remove ZLD Equipment	3 days						[Task Bar]			
58	Remove ZLD Building	5 days						[Task Bar]			
59	Remove Condensate Storage Tanks	5 days						[Task Bar]			
60	Stacks	1 day?									
61	Remove Unit 1 Stack to Grade	1 day?						[Task Bar]			
62	Remove Common Stack to Grade	1 day?						[Task Bar]			

Iatan Common Dismantlement

ID	Task Name	Duration	2nd Quarter				3rd Quarter		4th Quarter				
			Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
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

NORTHEAST

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 numbers 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	\$43,834
Retirement Activities	\$304,742
Post Retirement Activities	\$45,152

Owner Direct Total \$393,728

Owner Internal Costs 5.00% \$19,686

Owner Contingency: 25.00% \$103,354

Northeast Retirement Opinion of Probable Cost: \$516,768.00

Activities Required by Permit or Regulation

Northeast Fuel Oil Tank Removal \$525,034

Activities Required by Permit or Regulation: \$525,034

Northeast Retirement		
ID	Task Name	Cost
1	Northeast Retirement	\$393,773.80
2	Pre-Retirement Activities	\$43,834.00
3	Permitting Review	\$23,466.00
4	Develop Detailed Retirement Plan	\$20,368.00
5	Retirement Activities	\$304,787.80
6	Project Management During Retirement	\$136,343.40
7	Project Management During Retirement	\$136,343.40
8	Electrical	\$85,754.88
9	Medium and Low Voltage Drawout Switchgear	\$24,118.56
10	De-energize all buses at the source.	\$5,359.68
11	Open all circuit breakers.	\$5,359.68
12	Rack all circuit breakers into the fully withdrawn, disconnected position.	\$5,359.68
13	Verify that the closing/tripping springs are discharged.	\$5,359.68
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.	\$2,679.84
15	Motor Control Centers	\$11,612.64
16	De-energize all buses at the source.	\$2,679.84
17	Open all circuit breakers and disconnect switches.	\$4,466.40
18	Remove all fuses in control circuits.	\$4,466.40
19	Low-voltage Switchboards and Panelboards	\$10,719.36
20	De-energize all buses at the source.	\$5,359.68
21	Open all circuit breakers and disconnect switches.	\$5,359.68
22	Oil-Filled Power Transformers	\$17,865.60
23	De-energize all buses at the source.	\$4,466.40
24	Open all circuit breakers and disconnect switches.	\$4,466.40
25	De-energize all buses at the source.	\$4,466.40
26	Open all circuit breakers and disconnect switches.	\$4,466.40
27	Dry-type Power Transformers	\$8,039.52
28	De-energize all transformer primaries and verify that the secondary is de-energized.	\$4,466.40
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.	\$3,573.12
30	Motors	\$13,399.20
31	De-energize all primary power at the source.	\$4,466.40
32	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	\$4,466.40
33	Drain lube oil system (if applicable) and dispose of oil.	\$4,466.40
34	Fuel Oil System	\$5,631.12
35	Isolate Fuel Oil System	\$3,907.44
36	Drain and Vent Fuel Oil Piping	\$1,723.68
37	Lube Oil Cooling Water System	\$9,480.24

Northeast Retirement

ID	Task Name	Cost
38	Open and Drain the Water Side of the Lube Oil Coolers	\$6,894.72
39	Open and Vent the Coolers and Expansion Tank	\$2,585.52
40	Oily Drain Tank	\$3,954.00
41	Open and Pump Out the Oily Drain Tank	\$3,954.00
42	Compressed Air	\$3,447.36
43	Empty Dessiccant Air Dryers and Vent	\$1,723.68
44	Open and Vent the Air Reciever	\$1,723.68
45	Miscelleaneous Piping	\$14,651.28
46	Open and Vent the Exhaust Frame Cooling Piping	\$2,585.52
47	Open and Vent the Inlet Air Heating Piping	\$2,585.52
48	Open & Vent the CT Air Process Piping	\$6,894.72
49	Open and Vent the CT Air Processing Piping	\$2,585.52
50	Fire Protection Piping	\$6,856.48
51	Empty the CO2 Storage Tank	\$5,132.80
52	Open and Vent the Fire Protection Piping	\$1,723.68
53	Lube Oil System	\$29,590.08
54	Empty and Remove from Site the Lubricating Oil	\$19,248.00
55	Drain Lubricating Oil Piping	\$8,618.40
56	Open and Vent Lubricating Oil Piping	\$1,723.68
57	Potable Water	\$2,643.36
58	Disconnect Potable Water at Property Boundary	\$2,643.36
59	Waste Water	\$3,907.44
60	Disconnect Waste Water at Property Boundary	\$3,907.44
61	Unleaded Gasoline Fueling Station	\$2,528.16
62	Drain the Unleaded Gasoline Fueling Station	\$2,528.16
63	Post Retirement Closure Activity	\$45,152.00
64	Post Retirement Closure Activity	\$45,152.00

Northeast Dismantlement

Owner Costs

Pre-Dismantlement Activities	\$892,760
Overhead During Dismantlement	\$1,286,709
Post-Dismantlement Activities	\$65,520

Owner Costs Total \$2,244,989

Demolition General Contractor (DGC) Costs

Site Management	\$701,395
Equipment Rental	\$1,194,283
Consummables	\$1,191,511
Scrap Crew(s)	\$313,684
Dismantlement	\$1,095,024

DGC Insurance 2.00% \$89,918

Contingency/Profit 15.00% \$687,872

Performance Bond 2.00% \$105,474

Contractor Costs Total: \$5,379,161

Total: \$7,624,150

Owner Internal Costs: 5.00% \$381,208

Owner Contingency: 25.00% \$2,001,339

Northeast Dismantlement Opinion of Probable Cost: \$10,006,697

Northeast Dismantlement		
ID	Task Name	Cost
1	Northeast CT Dismantlement	\$6,740,888.68
2	Pre-Demolition Activities	\$892,760.32
3	Detailed Planning & Hire Owner's Engineer	\$104,441.28
4	Detailed Site Characterization Study	\$610,335.44
5	Hire Demolition general Contractor	\$167,184.00
6	KCP&L Prepares Unit for Dismantlement	\$10,799.60
7	Demolition Contractor Mobilizes on Sit	\$0.00
8	KCP&L Overhead during Dismantlement	\$1,286,709.60
9	KCP&L Project Manager	\$204,468.00
10	KCP&L Administrative Support	\$75,609.60
11	KCP&L Engineer	\$336,072.00
12	Owners Engineer Project Manager	\$100,320.00
13	Owners Engineer - Engineer	\$570,240.00
14	Demolition Contractor Overhead during Dismantlement	\$701,395.20
15	Demolition Contractor Project Manager	\$198,448.80
16	Demolition Contractor Safety Manager	\$176,695.20
17	Demolition Contractor Superintendent	\$326,251.20
18	Demolition Contractor Equipment Rental Cost	\$1,194,283.20
19	Equipment Rental	\$1,194,283.20
20	Demolition Contractor Consumables	\$1,191,511.20
21	Consumables	\$1,191,511.20
22	Scrap Crews	\$313,684.80
23	Crew to Handle Scrap Material(s)	\$313,684.80
24	Dismantlement	\$1,095,024.36
25	Electrical	\$232,876.80
26	Electrical Demolition of Equipment	\$232,876.80
27	Fuel Oil System	\$26,286.40
28	Remove Above Ground Fuel Oil Piping	\$8,372.80
29	Fuel Skids	\$17,913.60
30	Lube Oil System	\$62,697.60
31	Lube Oil Piping	\$26,870.40
32	Lube Oil Pumps	\$17,913.60
33	Lube Oil Tanks	\$17,913.60
34	Fire Protection	\$59,114.88
35	Fire Protection Piping	\$28,661.76
36	Firewater Tank	\$16,122.24
37	CO2 Storage Tank	\$14,330.88
38	Miscellaneous Piping	\$84,193.92
39	Exhaust Frame Cooling Piping	\$26,870.40
40	CT Air Processing Piping	\$30,453.12
41	Inlet Air Heating Piping	\$26,870.40
42	Generator	\$89,568.00
43	Generator	\$89,568.00
44	Combustion Turbine	\$254,373.12

Northeast Dismantlement

ID	Task Name	Cost
45	Inlet Heater	\$17,913.60
46	Inlet duct	\$30,453.12
47	Exhaust duct	\$35,827.20
48	Combustion Turbine	\$107,481.60
49	Combustion Turbine Foundation	\$26,870.40
50	Enclosure	\$35,827.20
51	CEMS	\$17,913.60
52	CEMS Building	\$8,956.80
53	CEMS Building Foundation	\$8,956.80
54	Stack	\$71,654.40
55	Stacks	\$71,654.40
56	Site Buildings	\$17,913.60
57	Remove Site Buildings	\$17,913.60
58	Site Prep	\$178,432.04
59	Final Grading and Drainage	\$178,432.04
60	Post Dismantlement Activities	\$65,520.00
61	Post Dismantlement Activities	\$65,520.00

Northeast Dismantlement						
ID	Task Name	Duration	1st Quarter		1st Quarter	
			Jan	Jan	Jan	Jan
1	Northeast CT Dismantlement	944 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	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				
31	Lube Oil Piping	15 days				

Northeast Dismantlement				
ID	Task Name	Duration	1st Quarter	
			Jan	Jan
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 UNITS 7 AND 8

HAWTHORN UNITS 7 AND 8

Hawthorn Units 7 and 8 are twin natural gas-fired combustion turbine generator sets that were added to the existing Hawthorn Generating Station 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	\$43,834
Retirement Activities	\$173,455
Post-Retirement Activities	\$45,152

Owner Direct Total \$262,441

Owner Internal Costs 5.00% \$13,122

Owner Contingency: 25.00% \$68,891

Hawthorn 7 & 8 Retirement Opinion of Probable Cost: \$344,453.81

Hawthorn 7 & 8 Retirement		
ID	Task Name	Cost
1	Hawthorn 7&8 Retirement	\$262,441.02
2	Pre-Retirement Activities	\$43,834.00
3	Permitting Review	\$23,466.00
4	Develop Detailed Retirement Plan	\$20,368.00
5	Retirement Activities	\$173,455.02
6	Project Management During Retirement	\$98,648.46
7	Project Management During Retirement	\$98,648.46
8	Electrical	\$74,806.56
9	Medium and Low Voltage Drawout Switchgear	\$8,039.52
10	De-energize all buses at the source.	\$893.28
11	Open all circuit breakers.	\$1,786.56
12	Rack all circuit breakers into the fully withdrawn, disconnected position.	\$1,786.56
13	Verify that the closing/tripping springs are discharged.	\$1,786.56
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.	\$1,786.56
15	Motor Control Centers	\$4,466.40
16	De-energize all buses at the source.	\$893.28
17	Open all circuit breakers and disconnect switches.	\$1,786.56
18	Remove all fuses in control circuits.	\$1,786.56
19	Low-voltage Switchboards and Panelboards	\$2,679.84
20	De-energize all buses at the source.	\$893.28
21	Open all circuit breakers and disconnect switches.	\$1,786.56
22	Oil-Filled Power Transformers	\$6,252.96
23	De-energize all buses at the source.	\$893.28
24	Open all circuit breakers and disconnect switches.	\$1,786.56
25	De-energize all buses at the source.	\$1,786.56
26	Open all circuit breakers and disconnect switches.	\$1,786.56
27	Dry-type Power Transformers	\$3,573.12
28	De-energize all transformer primaries and verify that the secondary is de-energized.	\$1,786.56
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.	\$1,786.56
30	Motors	\$6,252.96
31	De-energize all primary power at the source.	\$893.28
32	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	\$1,786.56
33	Drain lube oil system (if applicable) and dispose of oil.	\$3,573.12
34	Fuel Gas System	\$10,783.04
35	Isolate Fuel Gas System	\$3,907.44
36	Vent Fuel Gas Piping and Equipment	\$2,528.16

Hawthorn 7 & 8 Retirement		
ID	Task Name	Cost
37	Open and Vent Knock-Out Drum	\$861.84
38	Drain, Open and Vent the Drain Tank	\$861.84
39	Empty the Coalescing Filter	\$1,761.92
40	Open and Vent Equipment on the CT Gas Valve Module	\$861.84
41	Lube Oil Cooling Water System	\$3,447.36
42	Open and Drain the Water Side of the Lube Oil Coolers	\$2,585.52
43	Open and Vent the Coolers and Expansion Tank	\$861.84
44	Oily Drain Tank	\$3,954.00
45	Open and Pump Out the Oily Drain Tank	\$3,954.00
46	Wash Water Skid	\$5,171.04
47	Open and Drain the Detergent Tank	\$1,723.68
48	Open and Drain the Demineralized Water Tank	\$1,723.68
49	Empty the Demineralized Water Tank	\$1,723.68
50	Compressed Air	\$1,723.68
51	Empty Dessiccant Air Dryers and Vent	\$861.84
52	Open and Vent the Air Reciever	\$861.84
53	Miscelleaneous Piping	\$5,171.04
54	Open and Vent the Exhaust Frame Cooling Piping	\$861.84
55	Open and Vent the CT Air Processing Piping	\$1,723.68
56	Open and Vent the Inlet Air Heating Piping	\$861.84
57	Open and Vent the CT Air Processing Piping	\$1,723.68
58	Fire Protection Piping	\$3,428.24
59	Empty the CO2 Storage Tank	\$2,566.40
60	Open and Vent the Fire Protection Piping	\$861.84
61	Lube Oil System	\$9,863.36
62	Empty and Remove from Site the Lubricating Oil	\$6,416.00
63	Drain Lubricating Oil Piping	\$2,585.52
64	Open and Vent Lubricating Oil Piping	\$861.84
65	Post Retirement Closure Activity	\$45,152.00
66	Post Retirement Closure Activity	\$45,152.00

Hawthorn 7 & 8 Retirement						2013		
ID	Task Name	Duration	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3
1	Hawthorn 7&8 Retirement	163 days				[Gantt bar spanning Qtr 1, Qtr 2, and Qtr 3]		
2	Pre-Retirement Activities	40 days				[Gantt bar spanning Qtr 1 and Qtr 2]		
3	Permitting Review	20 days				[Gantt bar in Qtr 1]		
4	Develop Detailed Retirement Plan	20 days				[Gantt bar in Qtr 1]		
5	Retirement Activities	123 days				[Gantt bar spanning Qtr 1, Qtr 2, and Qtr 3]		
6	Project Management During Retirement	123 days				[Gantt bar spanning Qtr 1, Qtr 2, and Qtr 3]		
7	Project Management During Retirement	123 days				[Gantt bar spanning Qtr 1, Qtr 2, and Qtr 3]		
8	Electrical	79 days				[Gantt bar spanning Qtr 1, Qtr 2, and Qtr 3]		
9	Medium and Low Voltage Drawout Switchgear	9 days				[Gantt bar in Qtr 1]		
10	De-energize all buses at the source.	1 day				[Gantt bar in Qtr 1]		
11	Open all circuit breakers.	2 days				[Gantt bar in Qtr 1]		
12	Rack all circuit breakers into the fully withdrawn, disconnected position.	2 days				[Gantt bar in Qtr 1]		
13	Verify that the closing/tripping springs are discharged.	2 days				[Gantt bar in Qtr 1]		
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				[Gantt bar in Qtr 1]		
15	Motor Control Centers	5 days				[Gantt bar in Qtr 1]		
16	De-energize all buses at the source.	1 day				[Gantt bar in Qtr 1]		
17	Open all circuit breakers and disconnect switches.	2 days				[Gantt bar in Qtr 1]		
18	Remove all fuses in control circuits.	2 days				[Gantt bar in Qtr 1]		
19	Low-voltage Switchboards and Panelboards	3 days				[Gantt bar in Qtr 1]		
20	De-energize all buses at the source.	1 day				[Gantt bar in Qtr 1]		
21	Open all circuit breakers and disconnect switches.	2 days				[Gantt bar in Qtr 1]		
22	Oil-Filled Power Transformers	7 days				[Gantt bar in Qtr 1]		
23	De-energize all buses at the source.	1 day				[Gantt bar in Qtr 1]		
24	Open all circuit breakers and disconnect switches.	2 days				[Gantt bar in Qtr 1]		
25	De-energize all buses at the source.	2 days				[Gantt bar in Qtr 1]		
26	Open all circuit breakers and disconnect switches.	2 days				[Gantt bar in Qtr 1]		
27	Dry-type Power Transformers	4 days				[Gantt bar in Qtr 1]		
28	De-energize all transformer primaries and verify that the secondary is de-energized.	2 days				[Gantt bar in Qtr 1]		

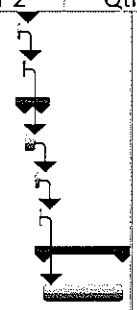
Hawthorn 7 & 8 Retirement

ID	Task Name	Duration	2013			Qtr 1	Qtr 2	Qtr 3
			Qtr 2	Qtr 3	Qtr 4			
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	2 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	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						
51	Empty Dessiccant Air Dryers and Vent	1 day						
52	Open and Vent the Air Reciever	1 day						
53	Miscellaneous 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						



Hawthorn 7 & 8 Retirement

ID	Task Name	Duration	2013						
			Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	
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	\$892,760
Overhead During Dismantlement	\$916,293
Post-Dismantlement Activities	\$32,760

Owner Costs Total \$1,841,814

Demolition General Contractor (DGC) Costs

Site Management	\$499,478
Equipment Rental	\$850,474
Consummables	\$848,500
Scrap Crew(s)	\$223,381
Dismantlement	\$558,191

DGC Insurance 2.00% \$59,600

Contingency/Profit 15.00% \$455,944

Performance Bond 2.00% \$69,911

Contractor Costs Total: \$3,565,480

Total: \$5,407,293

Owner Internal Costs: 5.00% \$270,365

Owner Contingency: 25.00% \$1,419,414

Hawthorn 7 & 8 Dismantlement Opinion of Probable Cost: \$7,097,072

Hawthorn 7 & 8 Dismantlement		
ID	Task Name	Cost
1	Hawthorn 7&8 Dismantlement	\$4,821,840.52
2	Pre-Demolition Activities	\$892,760.32
3	Detailed Planning & Hire Owner's Engineer	\$104,441.28
4	Detailed Site Characterization Study	\$610,335.44
5	Hire Demolition general Contractor	\$167,184.00
6	KCP&L Prepares Unit for Dismantlement	\$10,799.60
7	Demolition Contractor Mobilizes on Sit	\$0.00
8	KCP&L Overhead during Dismantlement	\$916,293.24
9	KCP&L Project Manager	\$145,606.01
10	KCP&L Administrative Support	\$53,843.21
11	KCP&L Engineer	\$239,324.02
12	Owners Engineer Project Manager	\$71,440.00
13	Owners Engineer - Engineer	\$406,080.00
14	Demolition Contractor Overhead during Dismantlement	\$499,478.45
15	Demolition Contractor Project Manager	\$141,319.61
16	Demolition Contractor Safety Manager	\$125,828.41
17	Demolition Contractor Superintendent	\$232,330.42
18	Demolition Contractor Equipment Rental Cost	\$850,474.48
19	Equipment Rental	\$850,474.48
20	Demolition Contractor Consumables	\$848,500.48
21	Consumables	\$848,500.48
22	Scrap Crews	\$223,381.62
23	Crew to Handle Scrap Material(s)	\$223,381.62
24	Dismantlement	\$558,191.92
25	Electrical	\$161,222.40
26	Electrical Demolition of Equipment	\$161,222.40
27	Fuel Gas System	\$15,409.84
28	Remove all above grade fuel gas piping.	\$4,661.68
29	Gas Filter Skid	\$10,748.16
30	Lube Oil System	\$35,827.20
31	Lube Oil Piping	\$8,956.80
32	Lube Oil Pumps	\$8,956.80
33	Lube Oil Tanks	\$17,913.60
34	Fire Protection	\$39,409.92
35	Fire Protection Piping	\$17,913.60
36	Firewater Tank	\$14,330.88
37	CO2 Storage Tank	\$7,165.44
38	Wash Water Skid	\$14,330.88
39	Detergent Tank	\$7,165.44
40	Demineralized Water Tank	\$7,165.44
41	Miscellaneous Piping	\$50,158.08
42	Exhaust Frame Cooling Piping	\$14,330.88
43	CT Air Processing Piping	\$17,913.60
44	Inlet Air Heating Piping	\$17,913.60

Hawthorn 7 & 8 Dismantlement

ID	Task Name	Cost
45	Generator	\$0.00
46	Generator	\$0.00
47	Combustion Turbine	\$170,179.20
48	Inlet Heater	\$14,330.88
49	Inlet duct	\$21,496.32
50	Exhaust duct	\$26,870.40
51	Combustion Turbine	\$55,532.16
52	Combustion Turbine Foundation	\$23,287.68
53	Enclosure	\$28,661.76
54	CEMS	\$25,079.04
55	CEMS Building	\$12,539.52
56	CEMS Building Foundation	\$12,539.52
57	Stack	\$46,575.36
58	Stack	\$46,575.36
59	Post Dismantlement Activities	\$32,760.00
60	Post Dismantlement Activities	\$32,760.00

Hawthorn 7 & 8 Dismantlement

ID	Task Name	Duration	1st Quarter		1st Quarter	
			Jan	Jan	Jan	Jan
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				
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				

Hawthorn 7 & 8 Dismantlement

ID	Task Name	Duration	1st Quarter		1st Quarter	
			Jan	Jan	Jan	Jan
32	Lube Oil Pumps	5 days				
33	Lube Oil Tanks	10 days				
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				
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

WEST GARDNER

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

Combined these combustion turbines have an 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	\$43,834
Retirement Activities	\$215,500
Post-Retirement Activities	\$45,152

Owner Direct Total \$304,486

Owner Internal Costs: 5.00% \$15,224

Owner Contingency: 25.00% \$79,928

West Gardner Retirement Opinion of Probable Cost: \$399,637.88

West Gardner Retirement		
ID	Task Name	Cost
1	West Gardner Retirement	\$304,486.04
2	Pre-Retirement Activities	\$43,834.00
3	Permitting Review	\$23,466.00
4	Develop Detailed Retirement Plan	\$20,368.00
5	Retirement Activities	\$215,500.04
6	Project Management During Retirement	\$101,054.52
7	Project Management During Retirement	\$101,054.52
8	Electrical	\$54,490.08
9	Medium and Low Voltage Drawout Switchgear	\$16,079.04
10	De-energize all buses at the source.	\$3,573.12
11	Open all circuit breakers.	\$3,573.12
12	Rack all circuit breakers into the fully withdrawn, disconnected position.	\$3,573.12
13	Verify that the closing/tripping springs are discharged.	\$3,573.12
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.	\$1,786.56
15	Motor Control Centers	\$7,146.24
16	De-energize all buses at the source.	\$1,786.56
17	Open all circuit breakers and disconnect switches.	\$2,679.84
18	Remove all fuses in control circuits.	\$2,679.84
19	Low-voltage Switchboards and Panelboards	\$7,146.24
20	De-energize all buses at the source.	\$3,573.12
21	Open all circuit breakers and disconnect switches.	\$3,573.12
22	Oil-Filled Power Transformers	\$10,719.36
23	De-energize all buses at the source.	\$2,679.84
24	Open all circuit breakers and disconnect switches.	\$2,679.84
25	De-energize all buses at the source.	\$2,679.84
26	Open all circuit breakers and disconnect switches.	\$2,679.84
27	Dry-type Power Transformers	\$4,466.40
28	De-energize all transformer primaries and verify that the secondary is de-energized.	\$2,679.84
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.	\$1,786.56
30	Motors	\$8,932.80
31	De-energize all primary power at the source.	\$2,679.84
32	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	\$2,679.84
33	Drain lube oil system (if applicable) and dispose of oil.	\$3,573.12
34	Fuel Gas System	\$10,783.04
35	Isolate Fuel Gas System	\$3,907.44
36	Vent Fuel Gas Piping and Equipment	\$2,528.16

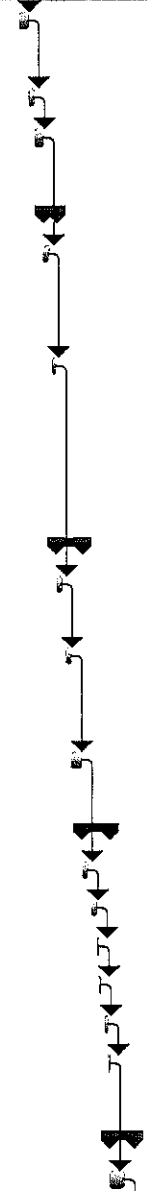
West Gardner Retirement		
ID	Task Name	Cost
37	Open and Vent Knock-Out Drum	\$861.84
38	Drain, Open and Vent the Drain Tank	\$861.84
39	Empty the Coalescing Filter	\$1,761.92
40	Open and Vent Equipment on the CT Gas Valve Module	\$861.84
41	Lube Oil Cooling Water System	\$7,756.56
42	Open and Drain the Water Side of the Lube Oil Coolers	\$5,171.04
43	Open and Vent the Coolers and Expansion Tank	\$2,585.52
44	Oily Drain Tank	\$3,954.00
45	Open and Pump Out the Oily Drain Tank	\$3,954.00
46	Wash Water Skid	\$5,171.04
47	Open and Drain the Detergent Tank	\$1,723.68
48	Open and Drain the Demineralized Water Tank	\$1,723.68
49	Empty the Demineralized Water Tank	\$1,723.68
50	Compressed Air	\$3,447.36
51	Empty Dessiccant Air Dryers and Vent	\$1,723.68
52	Open and Vent the Air Reciever	\$1,723.68
53	Miscelleaneous Piping	\$7,756.56
54	Open and Vent the Exhaust Frame Cooling Piping	\$2,585.52
55	Open and Vent the CT Air Processing Piping	\$0.00
56	Open and Vent the Inlet Air Heating Piping	\$2,585.52
57	Open and Vent the CT Air Processing Piping	\$2,585.52
58	Fire Protection Piping	\$6,856.48
59	Empty the CO2 Storage Tank	\$5,132.80
60	Open and Vent the Fire Protection Piping	\$1,723.68
61	Lube Oil System	\$11,587.04
62	Empty and Remove from Site the Lubricating Oil	\$6,416.00
63	Drain Lubricating Oil Piping	\$3,447.36
64	Open and Vent Lubricating Oil Piping	\$1,723.68
65	Potable Water	\$2,643.36
66	Disconnect Potable Water at Property Boundary	\$2,643.36
67	Post Retirement Closure Activity	\$45,152.00
68	Post Retirement Closure Activity	\$45,152.00

West Gardner Retirement

ID	Task Name	Duration	2nd Quarter			3rd Quarter			4th Quarter			1st Quarter			2nd Quarter			3rd Quarter			4th Quarter					
			Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct					
1	West Gardner Retirement	206 days	[Gantt bar spanning from Jan to Oct]																							
2	Pre-Retirement Activities	40 days	[Gantt bar spanning from Jan to Feb]																							
3	Permitting Review	20 days	[Gantt bar spanning from Jan to Feb]																							
4	Develop Detailed Retirement Plan	20 days	[Gantt bar spanning from Jan to Feb]																							
5	Retirement Activities	126 days	[Gantt bar spanning from Feb to Sep]																							
6	Project Management During Retirement	126 days	[Gantt bar spanning from Feb to Sep]																							
7	Project Management During Retirement	126 days	[Gantt bar spanning from Feb to Sep]																							
8	Electrical	61 days	[Gantt bar spanning from Feb to Mar]																							
9	Medium and Low Voltage Drawout Switchgear	18 days	[Gantt bar spanning from Feb to Mar]																							
10	De-energize all buses at the source.	4 days	[Gantt bar spanning from Feb to Mar]																							
11	Open all circuit breakers.	4 days	[Gantt bar spanning from Feb to Mar]																							
12	Rack all circuit breakers into the fully withdrawn, disconnected position.	4 days	[Gantt bar spanning from Feb to Mar]																							
13	Verify that the closing/tripping springs are discharged.	4 days	[Gantt bar spanning from Feb to Mar]																							
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	[Gantt bar spanning from Feb to Mar]																							
15	Motor Control Centers	8 days	[Gantt bar spanning from Feb to Mar]																							
16	De-energize all buses at the source.	2 days	[Gantt bar spanning from Feb to Mar]																							
17	Open all circuit breakers and disconnect switches.	3 days	[Gantt bar spanning from Feb to Mar]																							
18	Remove all fuses in control circuits.	3 days	[Gantt bar spanning from Feb to Mar]																							
19	Low-voltage Switchboards and Panelboards	8 days	[Gantt bar spanning from Feb to Mar]																							
20	De-energize all buses at the source.	4 days	[Gantt bar spanning from Feb to Mar]																							
21	Open all circuit breakers and disconnect switches.	4 days	[Gantt bar spanning from Feb to Mar]																							
22	Oil-Filled Power Transformers	12 days	[Gantt bar spanning from Feb to Mar]																							
23	De-energize all buses at the source.	3 days	[Gantt bar spanning from Feb to Mar]																							

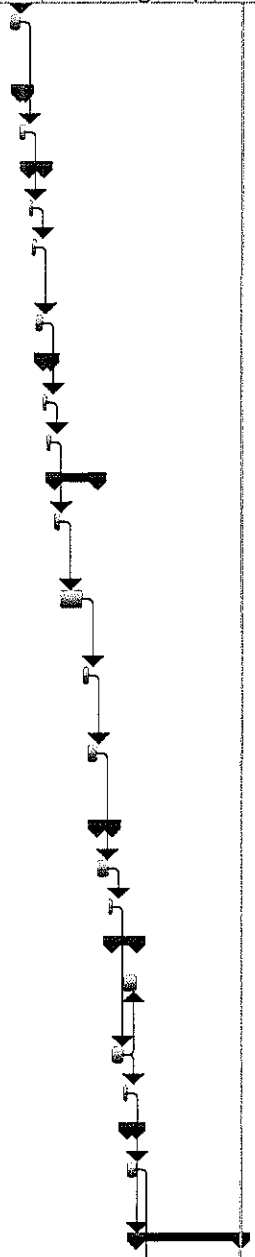
West Gardner Retirement

ID	Task Name	Duration	2nd Quarter			3rd Quarter			4th Quarter			1st Quarter			2nd Quarter			3rd Quarter			4th Q
			Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
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																			
42	Open and Drain the Water Side of the Lube Oil Coolers	6 days																			



West Gardner Retirement

ID	Task Name	Duration	2nd Quarter			3rd Quarter			4th Quarter			1st Quarter			2nd Quarter			3rd Quarter			4th Q
			Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
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	Miscellaneous 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																			
66	Disconnect Potable Water at Property Boundary	3 days																			
67	Post Retirement Closure Activity	40 days																			



West Gardner Retirement

ID	Task Name	Duration	2nd Quarter			3rd Quarter			4th Quarter			1st Quarter			2nd Quarter			3rd Quarter			4th Q
			Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
68	Post Retirement Closure Activity	40 days																			

West Gardner Dismantlement

Owner Costs

Pre-Dismantlement Activities	\$892,760
Overhead During Dismantlement	\$1,633,731
Post-Dismantlement Activities	\$49,140

Owner Costs Total \$2,575,631

Demolition General Contractor (DGC) Costs

Site Management	\$890,559
Equipment Rental	\$1,516,377
Consummables	\$1,512,858
Scrap Crew(s)	\$398,284
Dismantlement	\$930,015

DGC Insurance 2.00% \$104,962

Contingency/Profit 15.00% \$802,958

Performance Bond 2.00% \$123,120

Contractor Costs Total: \$6,279,133

Total: \$8,854,765

Owner Internal Costs: 5.00% \$442,738

Owner Contingency: 25.00% \$2,324,376

West Gardner Dismantlement Opinion of Probable Cost: \$11,621,879

West Gardner Dismantlement

ID	Task Name	Cost
1	West Gardner CT Dismantlement	\$7,823,727.15
2	Pre-Demolition Activities	\$892,760.32
3	Detailed Planning & Hire Owner's Engineer	\$104,441.28
4	Detailed Site Characterization Study	\$610,335.44
5	Hire Demolition general Contractor	\$167,184.00
6	KCP&L Prepares Unit for Dismantlement	\$10,799.60
7	Demolition Contractor Mobilizes on Sit	\$0.00
8	KCP&L Overhead during Dismantlement	\$1,633,731.28
9	KCP&L Project Manager	\$259,612.40
10	KCP&L Administrative Support	\$96,001.28
11	KCP&L Engineer	\$426,709.60
12	Owners Engineer Project Manager	\$127,376.00
13	Owners Engineer - Engineer	\$724,032.00
14	Demolition Contractor Overhead during Dismantlement	\$890,559.36
15	Demolition Contractor Project Manager	\$251,969.84
16	Demolition Contractor Safety Manager	\$224,349.36
17	Demolition Contractor Superintendent	\$414,240.16
18	Demolition Contractor Equipment Rental Cost	\$1,516,377.76
19	Equipment Rental	\$1,516,377.76
20	Demolition Contractor Consumables	\$1,512,858.16
21	Consumables	\$1,512,858.16
22	Scrap Crews	\$398,284.64
23	Crew to Handle Scrap Material(s)	\$398,284.64
24	Dismantlement	\$930,015.63
25	Electrical	\$197,049.60
26	Electrical Demolition of Equipment	\$197,049.60
27	Fuel Gas System	\$21,113.20
28	Remove all above grade fuel gas piping.	\$6,782.32
29	Gas Filter Skid	\$14,330.88
30	Lube Oil System	\$53,740.80
31	Lube Oil Piping	\$14,330.88
32	Lube Oil Pumps	\$17,913.60
33	Lube Oil Tanks	\$21,496.32
34	Compressed Air System	\$21,496.32
35	Compressed Air Piping	\$10,748.16
36	Compressors	\$5,374.08
37	Air Receiver	\$3,582.72
38	Dryer	\$1,791.36
39	Fire Protection	\$41,201.28
40	Fire Protection Piping	\$19,704.96
41	Firewater Tank	\$14,330.88
42	CO2 Storage Tank	\$7,165.44
43	Wash Water Skid	\$25,079.04
44	Detergent Tank	\$10,748.16

West Gardner Dismantlement

ID	Task Name	Cost
45	Demineralized Water Tank	\$14,330.88
46	Miscellaneous Piping	\$62,697.60
47	Exhaust Frame Cooling Piping	\$17,913.60
48	CT Air Processing Piping	\$21,496.32
49	Inlet Air Heating Piping	\$23,287.68
50	Generator	\$0.00
51	Generator	\$0.00
52	Combustion Turbine	\$263,329.92
53	Inlet Heater	\$17,913.60
54	Inlet duct	\$26,870.40
55	Exhaust duct	\$35,827.20
56	Combustion Turbine	\$62,697.60
57	Combustion Turbine Foundation	\$66,280.32
58	Enclosure	\$53,740.80
59	CEMS	\$42,992.64
60	CEMS Building	\$21,496.32
61	CEMS Building Foundation	\$21,496.32
62	Stack	\$80,611.20
63	Stack	\$80,611.20
64	Site Prep	\$120,704.03
65	Final Grading and Drainage	\$120,704.03
66	Post Dismantlement Activities	\$49,140.00
67	Post Dismantlement Activities	\$49,140.00

West Gardner Dismantlement





ID	Task Name	Duration	1st Quarter		1st Quarter	
			Jan	Jan	Jan	Jan
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				
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				

West Gardner Dismantlement

ID	Task Name	Duration	1st Quarter		1st Quarter	
			Jan	Jan	Jan	Jan
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				
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				



West Gardner Dismantlement

ID	Task Name	Duration	1st Quarter		1st Quarter	
			Jan	Jan	Jan	Jan
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

OSAWATOMIE

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	\$43,834
Retirement Activities	\$120,039
Post-Retirement Activities	\$45,152

Owner Direct Total: \$209,025

Owner Internal Costs: 5.00% \$10,451

Owner Contingency: 25.00% \$54,869

Osawatomie Retirement Opinion of Probable Cost: \$274,345.31

Osawatomie Retirement		
ID	Task Name	Cost
1	Osawatomie Retirement	\$209,025.44
2	Pre-Retirement Activities	\$43,834.00
3	Permitting Review	\$23,466.00
4	Develop Detailed Retirement Plan	\$20,368.00
5	Retirement Activities	\$120,039.44
6	Project Management During Retirement	\$64,161.60
7	Project Management During Retirement	\$64,161.60
8	Electrical	\$19,652.16
9	Medium and Low Voltage Drawout Switchgear	\$5,359.68
10	De-energize all buses at the source.	\$893.28
11	Open all circuit breakers.	\$893.28
12	Rack all circuit breakers into the fully withdrawn, disconnected position.	\$893.28
13	Verify that the closing/tripping springs are discharged.	\$1,786.56
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.	\$893.28
15	Motor Control Centers	\$2,679.84
16	De-energize all buses at the source.	\$893.28
17	Open all circuit breakers and disconnect switches.	\$893.28
18	Remove all fuses in control circuits.	\$893.28
19	Low-voltage Switchboards and Panelboards	\$1,786.56
20	De-energize all buses at the source.	\$893.28
21	Open all circuit breakers and disconnect switches.	\$893.28
22	Oil-Filled Power Transformers	\$3,573.12
23	De-energize all buses at the source.	\$893.28
24	Open all circuit breakers and disconnect switches.	\$893.28
25	De-energize all buses at the source.	\$893.28
26	Open all circuit breakers and disconnect switches.	\$893.28
27	Dry-type Power Transformers	\$1,786.56
28	De-energize all transformer primaries and verify that the secondary is de-energized.	\$893.28
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.	\$893.28
30	Motors	\$4,466.40
31	De-energize all primary power at the source.	\$893.28
32	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	\$893.28
33	Drain lube oil system (if applicable) and dispose of oil.	\$2,679.84
34	Fuel Gas System	\$10,783.04
35	Isolate Fuel Gas System	\$3,907.44
36	Vent Fuel Gas Piping and Equipment	\$2,528.16
37	Open and Vent Knock-Out Drum	\$861.84

Osawatomie Retirement

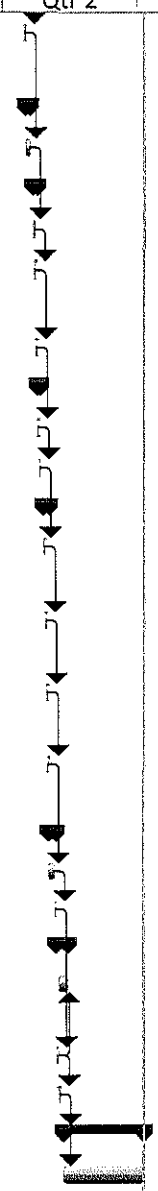
ID	Task Name	Cost
38	Drain, Open and Vent the Drain Tank	\$861.84
39	Empty the Coalescing Filter	\$1,761.92
40	Open and Vent Equipment on the CT Gas Valve Module	\$861.84
41	Lube Oil Cooling Water System	\$2,585.52
42	Open and Drain the Water Side of the Lube Oil Coolers	\$1,723.68
43	Open and Vent the Coolers and Expansion Tank	\$861.84
44	Oily Drain Tank	\$3,954.00
45	Open and Pump Out the Oily Drain Tank	\$3,954.00
46	Wash Water Skid	\$2,585.52
47	Open and Drain the Detergent Tank	\$861.84
48	Open and Drain the Demineralized Water Tank	\$861.84
49	Empty the Demineralized Water Tank	\$861.84
50	Compressed Air	\$1,723.68
51	Empty Dessiccant Air Dryers and Vent	\$861.84
52	Open and Vent the Air Reciever	\$861.84
53	Miscelleaneous Piping	\$3,447.36
54	Open and Vent the Exhaust Frame Cooling Piping	\$861.84
55	Open and Vent the CT Air Processing Piping	\$861.84
56	Open and Vent the Inlet Air Heating Piping	\$861.84
57	Open and Vent the CT Air Processing Piping	\$861.84
58	Fire Protection Piping	\$3,428.24
59	Empty the CO2 Storage Tank	\$2,566.40
60	Open and Vent the Fire Protection Piping	\$861.84
61	Lube Oil System	\$7,718.32
62	Empty and Remove from Site the Lubricating Oil	\$5,132.80
63	Drain Lubricating Oil Piping	\$1,723.68
64	Open and Vent Lubricating Oil Piping	\$861.84
65	Post Retirement Closure Activity	\$45,152.00
66	Post Retirement Closure Activity	\$45,152.00

Osawatomie Retirement			2012				2013			
ID	Task Name	Duration	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4
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								
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								

Osawatomie Retirement

ID	Task Name	Duration	2012				2013				
			Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	
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									
42	Open and Drain the Water Side of the Lube Oil Coolers	2 days									

Osawatomie Retirement										
ID	Task Name	Duration	2012				2013			
			Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4
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								
66	Post Retirement Closure Activity	40 days								



Osawatomie Dismantlement

Owner Costs

Pre-Dismantlement Activities	\$892,760
Overhead During Dismantlement	\$658,951
Post-Dismantlement Activities	\$32,760

Owner Costs Total \$1,584,472

Demolition General Contractor (DGC) Costs

Site Management	\$359,199
Equipment Rental	\$611,617
Consumables	\$610,198
Scrap Crew(s)	\$160,644
Dismantlement	\$425,984

DGC Insurance 2.00% \$43,353

Contingency/Profit 15.00% \$331,649

Performance Bond 2.00% \$50,853

Contractor Costs Total: \$2,593,497

Total: \$4,177,969

Owner Internal Costs: 5.00% \$208,898

Owner Contingency: 25.00% \$1,096,717

Osawatomie Dismantlement Opinion of Probable Cost: \$5,483,584

Osawatomie Dismantlement		
ID	Task Name	Cost
1	Osawatomie Dismantlement	\$3,752,116.02
2	Pre-Demolition Activities	\$892,760.32
3	Detailed Planning & Hire Owner's Engineer	\$104,441.28
4	Detailed Site Characterization Study	\$610,335.44
5	Hire Demolition general Contractor	\$167,184.00
6	KCP&L Prepares Unit for Dismantlement	\$10,799.60
7	Demolition Contractor Mobilizes on Sit	\$0.00
8	KCP&L Overhead during Dismantlement	\$658,951.28
9	KCP&L Project Manager	\$104,712.40
10	KCP&L Administrative Support	\$38,721.28
11	KCP&L Engineer	\$172,109.60
12	Owners Engineer Project Manager	\$51,376.00
13	Owners Engineer - Engineer	\$292,032.00
14	Demolition Contractor Overhead during Dismantlement	\$359,199.36
15	Demolition Contractor Project Manager	\$101,629.84
16	Demolition Contractor Safety Manager	\$90,489.36
17	Demolition Contractor Superintendent	\$167,080.16
18	Demolition Contractor Equipment Rental Cost	\$611,617.76
19	Equipment Rental	\$611,617.76
20	Demolition Contractor Consumables	\$610,198.16
21	Consumables	\$610,198.16
22	Scrap Crews	\$160,644.64
23	Crew to Handle Scrap Material(s)	\$160,644.64
24	Dismantlement	\$425,984.50
25	Electrical	\$107,481.60
26	Electrical Demolition of Equipment	\$107,481.60
27	Fuel Gas System	\$8,445.28
28	Remove all above grade fuel gas piping.	\$3,071.20
29	Gas Filter Skid	\$5,374.08
30	Lube Oil System	\$17,913.60
31	Lube Oil Piping	\$5,374.08
32	Lube Oil Pumps	\$5,374.08
33	Lube Oil Tanks	\$7,165.44
34	Compressed Air System	\$23,287.68
35	Compressed Air Piping	\$5,374.08
36	Compressors	\$8,956.80
37	Air Receiver	\$3,582.72
38	Dryer	\$5,374.08
39	Fire Protection	\$26,870.40
40	Fire Protection Piping	\$10,748.16
41	Firewater Tank	\$8,956.80
42	CO2 Storage Tank	\$7,165.44
43	Wash Water Skid	\$14,330.88
44	Detergent Tank	\$7,165.44

Osawatomie Dismantlement

ID	Task Name	Cost
45	Demineralized Water Tank	\$7,165.44
46	Miscellaneous Piping	\$25,079.04
47	Exhaust Frame Cooling Piping	\$7,165.44
48	CT Air Processing Piping	\$8,956.80
49	Inlet Air Heating Piping	\$8,956.80
50	Generator	\$0.00
51	Generator	\$0.00
52	Combustion Turbine	\$93,150.72
53	Inlet Heater	\$5,374.08
54	Inlet duct	\$10,748.16
55	Exhaust duct	\$14,330.88
56	Combustion Turbine	\$28,661.76
57	Combustion Turbine Foundation	\$16,122.24
58	Enclosure	\$17,913.60
59	CEMS	\$14,330.88
60	CEMS Building	\$7,165.44
61	CEMS Building Foundation	\$7,165.44
62	Stack	\$26,870.40
63	Stack	\$26,870.40
64	Site Prep	\$68,224.02
65	Final Grading and Drainage	\$68,224.02
66	Post Dismantlement Activities	\$32,760.00
67	Post Dismantlement Activities	\$32,760.00

Osawatomie Dismantlement

ID	Task Name	Duration	1st Quarter		1st Quarter	
			Jan	Jan	Jan	Jan
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	2 wks				
7	Demolition Contractor Mobilizes on Sit	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				
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				

Osawatomie Dismantlement

ID	Task Name	Duration	1st Quarter		1st Quarter	
			Jan	Jan	Jan	Jan
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				
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				

Osawatomie Dismantlement

ID	Task Name	Duration	1st Quarter		1st Quarter	
			Jan	Jan	Jan	Jan
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 UNITS 6 AND 9

HAWTHORN 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	\$43,834
Retirement Activities	\$215,451
Post-Retirement Activities	\$46,932

Owner Direct Total \$306,217

Owner Internal Costs 5.00% \$15,311

Owner Contingency: 25.00% \$80,382

Hawthorn 6 & 9 Retirement Opinion of Probable Cost: \$401,909.81

Activities Required by Permit or Regulation

Hawthorn 9 Intake Removal \$640,900

Activities Required by Permit or Regulation: \$640,900

Hawthorn 6 & 9 Retirement

ID	Task Name	Duration
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 po	1 day
14	Verify that the closing/tripping springs are discharged.	2 days
15	De-energize control power and auxiliary power circuits of each cir	1 day
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 seconda	1 day
30	De-energize all low-voltage AC or DC power sources for space hea	1 day
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 ot	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

Hawthorn 6 & 9 Retirement		
ID	Task Name	Duration
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
48	Empty the Demineralized Water Tank	1 day
49	Miscellaneous 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
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.	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
81	Dry-type Power Transformers	2 days
82	De-energize all transformer primaries and verify that the secondary windings are de-energized.	1 day
83	De-energize all low-voltage AC or DC power sources for space heaters or other loads.	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 loads.	1 day
87	Drain lube oil system (if applicable) and dispose of oil.	3 days
88	Boiler Chemical Feed	2 days

Hawthorn 6 & 9 Retirement

ID	Task Name	Duration
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
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 o	1 day
106	Pull electrical supply breakers on all electrical equipment except ligh	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
112	Generator	13 days
113	Verify that generator circuit breaker is open and racked out or that f	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 so	1 day
116	De-energize AC and DC power supplies to generator and exciter spac	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 hyc	1 day
120	Disconnect and remove fire protection system gas/foam tanks and p	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
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

Hawthorn 6 & 9 Retirement

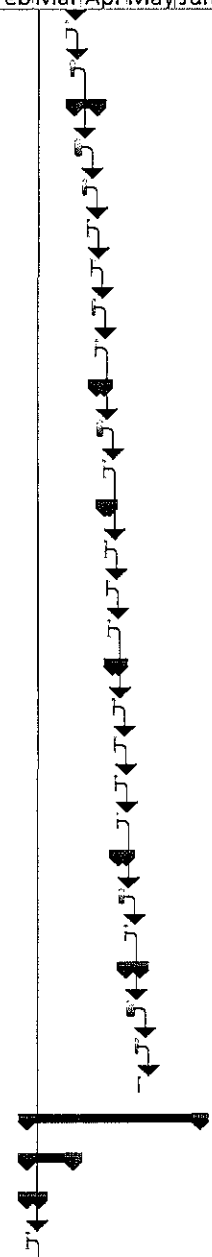
ID	Task Name	Duration
133	Condenser Air Extraction and Waterbox Priming System	1 day
134	Drain water from system.	1 day
135	Battery System	10 days
136	Turn off battery charger and disconnect cables from batteries.	2 days
137	De-energize all battery chargers from the source.	1 day
138	Open all AC and DC circuit breakers and/or fused switches on batter	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 batterie	1 day
142	Post Retirement Activities	40 days
143	Post Retirement Activities	40 days

Hawthorn 6 & 9 Retirement

ID	Task Name	Duration	2nd Quarter			3rd Quarter			4th Quarter			1st Quarter			2nd Quarter			3rd Quarter		
			Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
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, disconnect	1 day																		
14	Verify that the closing/tripping springs are discharged.	2 days																		
15	De-energize control power and auxiliary power circuits of	1 day																		
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 s	1 day																		
30	De-energize all low-voltage AC or DC power sources for sp	1 day																		
31	Motors	5 days																		
32	De-energize all primary power at the source.	1 day																		

Hawthorn 6 & 9 Retirement

ID	Task Name	Duration	2nd Quarter			3rd Quarter			4th Quarter			1st Quarter			2nd Quarter			3rd Quarter	
			Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
33	De-energize all low-voltage power sources for space heating	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																	
48	Empty the Demineralized Water Tank	1 day																	
49	Miscellaneous 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																	

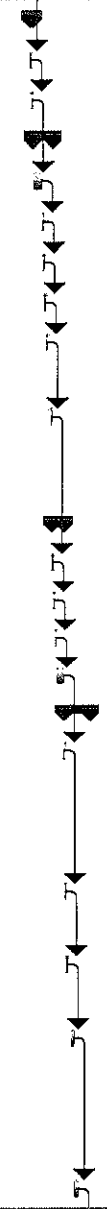


Hawthorn 6 & 9 Retirement

ID	Task Name	Duration	2nd Quarter			3rd Quarter			4th Quarter			1st Quarter			2nd Quarter			3rd Quarter		
			Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
65	Open all circuit breakers.	1 day																		
66	Rack all circuit breakers into the fully withdrawn, disconnect	1 day																		
67	Verify that the closing/tripping springs are discharged.	2 days																		
68	De-energize control power and auxiliary power circuits of	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																		
81	Dry-type Power Transformers	2 days																		
82	De-energize all transformer primaries and verify that the	1 day																		
83	De-energize all low-voltage AC or DC power sources for sp	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 heat	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																		
96	Place cap over stack opening to keep moisture out.	1 day																		

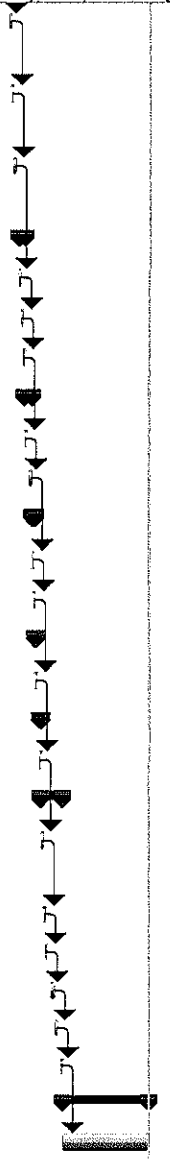
Hawthorn 6 & 9 Retirement

ID	Task Name	Duration	2nd Quarter			3rd Quarter			4th Quarter			1st Quarter			2nd Quarter			3rd Quarter	
			Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
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																	
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																	



Hawthorn 6 & 9 Retirement

ID	Task Name	Duration	2nd Quarter			3rd Quarter			4th Quarter			1st Quarter			2nd Quarter			3rd Quarter	
			Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
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																	
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 or	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	1 day																	
142	Post Retirement Activities	40 days																	
143	Post Retirement Activities	40 days																	



Hawthorn 6 & 9 Dismantlement

Owner Costs

Pre-Dismantlement Activities	\$892,760
Overhead During Dismantlement	\$1,216,525
Post-Dismantlement Activities	\$32,760

Owner Costs Total \$2,142,045

Demolition General Contractor (DGC) Costs

Site Management	\$663,137
Equipment Rental	\$1,129,140
Consummables	\$1,126,519
Scrap Crew(s)	\$296,574
Dismantlement	\$966,243

DGC Insurance 2.00% \$83,632

Contingency/Profit 15.00% \$639,787

Performance Bond 2.00% \$98,101

Contractor Costs Total: \$5,003,133

Total: \$7,145,178

Owner Internal Costs: 5.00% \$357,259

Owner Contingency: 25.00% \$1,875,609

Hawthorn 6 & 9 Dismantlement Opinion of Probable Cost: \$9,378,046

Hawthorn 6 & 9 Dismantlement

ID	Task Name	Cost
1	Hawthorn 6 & 9 Dismantlement	\$6,323,660.96
2	Pre-Demolition Activities	\$892,760.32
3	Detailed Planning & Hire Owner's Engineer	\$104,441.28
4	Detailed Site Characterization Study	\$610,335.44
5	Hire Demolition general Contractor	\$167,184.00
6	KCP&L Prepares Unit for Dismantlement	\$10,799.60
7	Demolition Contractor Mobilizes on Sit	\$0.00
8	KCP&L Overhead during Dismantlement	\$1,216,525.44
9	KCP&L Project Manager	\$193,315.20
10	KCP&L Administrative Support	\$71,485.44
11	KCP&L Engineer	\$317,740.80
12	Owners Engineer Project Manager	\$94,848.00
13	Owners Engineer - Engineer	\$539,136.00
14	Demolition Contractor Overhead during Dismantlement	\$663,137.28
15	Demolition Contractor Project Manager	\$187,624.32
16	Demolition Contractor Safety Manager	\$167,057.28
17	Demolition Contractor Superintendent	\$308,455.68
18	Demolition Contractor Equipment Rental Cost	\$1,129,140.48
19	Equipment Rental	\$1,129,140.48
20	Demolition Contractor Consumables	\$1,126,519.68
21	Consumables	\$1,126,519.68
22	Scrap Crews	\$296,574.72
23	Crew to Handle Scrap Material(s)	\$296,574.72
24	Dismantlement	\$966,243.04
25	Electrical	\$107,481.60
26	Electrical Demolition of Equipment	\$107,481.60
27	Fuel Gas System	\$8,445.28
28	Remove all above grade fuel gas piping.	\$3,071.20
29	Gas Filter Skid	\$5,374.08
30	Lube Oil System	\$19,704.96
31	Lube Oil Piping	\$5,374.08
32	Lube Oil Pumps	\$5,374.08
33	Lube Oil Tanks	\$8,956.80
34	Compressed Air System	\$23,287.68
35	Compressed Air Piping	\$5,374.08
36	Compressors	\$8,956.80
37	Air Receiver	\$3,582.72
38	Dryer	\$5,374.08
39	Fire Protection	\$32,244.48
40	Fire Protection Piping	\$10,748.16
41	Firewater Tank	\$14,330.88
42	CO2 Storage Tank	\$7,165.44
43	Wash Water Skid	\$14,330.88
44	Detergent Tank	\$7,165.44

Hawthorn 6 & 9 Dismantlement

ID	Task Name	Cost
45	Demineralized Water Tank	\$7,165.44
46	Miscellaneous Piping	\$91,359.36
47	Exhaust Frame Cooling Piping	\$7,165.44
48	CT Air Processing Piping	\$8,956.80
49	Inlet Air Heating Piping	\$8,956.80
50	Auxiliary Steam Piping	\$8,956.80
51	Auxiliary Cooling Piping	\$8,956.80
52	Feedwater Piping	\$12,539.52
53	Condensate Piping	\$14,330.88
54	High Pressure Steam Piping	\$21,496.32
55	Generators	\$14,330.88
56	CT Generator	\$7,165.44
57	ST Generator	\$7,165.44
58	Steam Turbine and Condenser	\$26,870.40
59	Remove Steam Turbine	\$17,913.60
60	Remove Condenser Internals	\$8,956.80
61	General Service Pumps	\$25,079.04
62	Boiler Feed Pumps	\$8,956.80
63	Condensate Pumps	\$5,374.08
64	Turbine Cooling Water Pumps	\$3,582.72
65	General Service Pumps - Misc.	\$7,165.44
66	Combustion Turbine	\$93,150.72
67	Inlet Heater	\$5,374.08
68	Inlet duct	\$10,748.16
69	Exhaust duct	\$14,330.88
70	Combustion Turbine	\$28,661.76
71	Combustion Turbine Foundation	\$16,122.24
72	Enclosure	\$17,913.60
73	Boiler Chemical Feed	\$7,165.44
74	Chemical Feed tanks	\$7,165.44
75	Condenser	\$30,453.12
76	Condenser Air Extraction and Waterbox Priming System	\$7,165.44
77	Condenser External Parts	\$23,287.68
78	HRSO	\$340,358.40
79	Remove Boiler Tubes	\$107,481.60
80	Remove Boiler Ductwork Casing	\$71,654.40
81	Remove Boiler Steel	\$161,222.40
82	Turbine Building	\$60,326.40
83	Remove the Turbine Building	\$60,326.40
84	Circulating Water and Turbine Cooling Water System	\$21,496.32
85	Chemical Feed tanks	\$3,582.72
86	Excavate Collapse and Back Fill Circulation Water Piping	\$17,913.60
87	CEMS	\$14,330.88
88	CEMS Building	\$7,165.44

Hawthorn 6 & 9 Dismantlement

ID	Task Name	Cost
89	CEMS Building Foundation	\$7,165.44
90	Stack	\$35,827.20
91	Stacks and By-Pass Damper	\$35,827.20
92	Post Dismantlement Activities	\$32,760.00
93	Post Dismantlement Activities	\$32,760.00

Hawthorn 6 & 9 Dismantlement

ID	Task Name	Duration	2013				2014				
			Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	
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									
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									

Hawthorn 6 & 9 Dismantlement

ID	Task Name	Duration	2013				2014				
			Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	
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									
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									
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									

Hawthorn 6 & 9 Dismantlement

ID	Task Name	Duration	2013				2014				
			Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	
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									
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									
91	Stacks and By-Pass Damper	20 days									

Hawthorn 6 & 9 Dismantlement

ID	Task Name	Duration	2013					2014				
			Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3		
92	Post Dismantlement Activities	20 days										
93	Post Dismantlement Activities	20 days										

SPEARVILLE

SPEARVILLE

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 Dismantlement

Owner Costs

Pre-Dismantlement Activities		\$322,878
Overhead During Dismantlement		\$152,513
Post-Dismantlement Activities		\$32,760

Owner Costs Total \$508,151

Demolition General Contractor (DGC) Costs
Dismantlement

\$16,795,997

DGC Insurance 2.00% \$335,920

Contingency/Profit 15.00% \$2,569,788

Performance Bond 2.00% \$394,034

Contractor Costs Total: \$20,095,739

Total: \$20,603,890

Owner Internal Costs: 5.00% \$1,030,194

Owner Contingency: 25.00% \$5,408,521

Spearville 1 Dismantlement Opinion of Probable Cost: \$27,042,605

Spearville 1 Dismantlement		
ID	Task Name	Cost
1	Spearville 1 Dismantlement	\$17,304,149.52
2	Pre-Demolition Activities	\$322,878.64
3	Detailed Planning & Hire Owner's Engineer	\$49,259.52
4	Detailed Site Characterization Study	\$95,635.52
5	Hire Demolition general Contractor	\$167,184.00
6	KCP&L Prepares Unit for Dismantlement	\$10,799.60
7	Demolition Contractor Mobilizes on Site	\$0.00
8	KCP&L Overhead during Dismantlement	\$152,513.28
9	KCP&L Project Manager	\$14,870.40
10	KCP&L Administrative Support	\$5,498.88
11	KCP&L Engineer	\$61,104.00
12	Owners Engineer Project Manager	\$36,480.00
13	Owners Engineer - Engineer	\$34,560.00
14	Dismantlement Activities	\$16,795,997.60
15	Dismantlement Minus Freight	\$5,333,042.00
16	Dismantlement Freight	\$8,356,410.00
17	Cut Turbine Blades for Scrap Shipment	\$493,545.60
18	Blade Landfill Cost	\$2,613,000.00
19	Post Dismantlement Activities	\$32,760.00
20	Post Dismantlement Activities	\$32,760.00

Spearville 1 Dismantlement

ID	Task Name	Duration	2012				2013				2014	
			Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2
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 Dismantlement

Owner Costs

Pre-Dismantlement Activities	\$322,878
Overhead During Dismantlement	\$76,256
Post-Dismantlement Activities	\$32,760

Owner Costs Total \$431,894

Demolition General Contractor (DGC) Costs
Dismantlement

\$7,799,694

DGC Insurance 2.00% \$155,994

Contingency/Profit 15.00% \$1,193,353

Performance Bond 2.00% \$182,981

Contractor Costs Total: \$9,332,022

Total: \$9,763,916

Owner Internal Costs: 5.00% \$488,196

Owner Contingency: 25.00% \$2,563,028

Spearville 2 Dismantlement Opinion of Probable Cost: \$12,815,140

Spearville 2 Dismantlement

ID	Task Name	Cost
1	Spearville 2 Dismantlement	\$8,231,590.08
2	Pre-Demolition Activities	\$322,878.64
3	Detailed Planning & Hire Owner's Engineer	\$49,259.52
4	Detailed Site Characterization Study	\$95,635.52
5	Hire Demolition general Contractor	\$167,184.00
6	KCP&L Prepares Unit for Dismantlement	\$10,799.60
7	Demolition Contractor Mobilizes on Sit	\$0.00
8	KCP&L Overhead during Dismantlement	\$76,256.64
9	KCP&L Project Manager	\$7,435.20
10	KCP&L Administrative Support	\$2,749.44
11	KCP&L Engineer	\$30,552.00
12	Owners Engineer Project Manager	\$18,240.00
13	Owners Engineer - Engineer	\$17,280.00
14	Dismantlement	\$7,799,694.80
15	Dismantlement Minus Freight	\$4,141,237.00
16	Dismantlement Freight	\$2,163,685.00
17	Cut Turbine Blades for Scrap Shipment	\$246,772.80
18	Blade Landfill Cost	\$1,248,000.00
19	Post Dismantlement Activities	\$32,760.00
20	Post Dismantlement Activities	\$32,760.00

Spearville 2 Dismantlement

ID	Task Name	Duration	2012				2013				2014
			Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1
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									

APPENDIX B

OPINIONS OF COSTS FOR SCRAP

11/11

11

OPINIONS OF SCRAP VALUES

The opinion of scrap value was based on a scrap value of:

1. Mixed Scrap: \$370.00/GT.
2. Insulated Cables: \$2.56/lb.
3. Motors: \$0.37/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: \$10,000,000.

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:

$$\text{UnitA}(\text{scrap value}) = \text{Iatan1}(\text{scrap value}) * (\text{CapacityUnitA} / \text{CapacityIatan1})^e$$

Where:

1. UnitA(scrap value) = Unit A Scrap Value.
2. Iatan1(scrap value) = Iatan Unit 1 Scrap Value: \$10,000,000.
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 = \$4,260,000.

MONTROSE UNIT 2

1. Capacity A = 164 MW.
2. Scrap Value = \$4,170,000.

MONTROSE UNIT 3

1. Capacity A = 176 MW.
2. Scrap Value = 4,350,000.

HAWTHORN UNIT 5

1. Capacity A = 564 MW.
2. Scrap Value = \$8,750,000.

LA CYGNE UNIT 1

1. Capacity A = 735 MW.
2. Scrap Value = \$10,250,000.

LA CYGNE UNIT 2

1. Capacity A = 686 MW.
2. Scrap Value = \$9,840,000.

IATAN UNIT 2

1. Capacity A = 881 MW.
2. Scrap Value = \$11,430,000.

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 = \$2,170,000.
2. Hawthorn Common: Scrap Value = \$1,120,000.
3. La Cygne Common: Scrap Value = \$1,920,000.
4. Iatan Common: Scrap Value = \$6,850,000.

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/2000 lbs/ton) * \$370/GT: = \$98,000

Therefore:

NORTHEAST

1. (Eight combustion turbines)*\$98,000/CT: Scrap Value = \$784,000.

HAWTHORN UNITS 7 AND 8

1. (Two combustion turbines)*\$98,000/CT: Scrap Value = \$196,000.

WEST GARDNER

1. (Four combustion turbines)*\$98,000/CT: Scrap Value = \$392,000.

OSAWATOMIE

1. (One combustion turbine)*\$98,000/CT Scrap Value = \$98,000.

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)*\$98,000/CT: Scrap Value=\$98,000.

HAWTHORN UNIT 9

1. Capacity A = 62 MW: Scrap Value = \$2,325,528.

Total Hawthorn Units 6 and 9 Scrap Value: \$2,423,000.

SPEARVILLE

Scrap Value Per Turbine

Tower - 281,275 lbs. steel

Gearbox - 40,000 lbs. steel

Total Steel - 321,275 lbs.

Scrap Value: $(321,275 \text{ lb.} / 2,000 \text{ lbs. ton}) * 370 / \text{GT} =$ \$ 59,435

Generator - 18,000 lbs.

Scrap Value: $(18,000 \text{ lb.}) (0.37 / \text{lb}) =$ \$ 6,660

Total Scrap Value Per Turbine = \$ 66,095

Scrap Value of Units 1 and 2 Collection Cable = \$ 890,180

Spearville 1 Scrap Value

$(67 \text{ turbines}) (66,095 / \text{turbine}) + (890,180) (67 / 99) =$ \$ 5,030,810

Spearville 2 Scrap Value

$(32 \text{ turbines}) (66,095 / \text{turbine}) + (890,180) (32 / 99) =$ \$ 2,402,775

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 -				166244 square feet	10 lbs/ft ²	841 tons
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		14,558415 tons
Soot Blower Piping	1729	Assume	6"	28.57 lbs/ft		24,698765 tons
Temporary Blowout	796	Assume	6"	28.57 lbs/ft		11,37096 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		3,94265 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		175,052675 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	10,2658	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

APPENDIX C

REFERENCES

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 - SOURCE OF REQUIREMENT

Station	Equipment	Source of Requirement
Montrose	Montrose Fuel Oil Tank Removal	Missouri Regulation 10 CSR 26-5.020 Release Reporting and Initial Release Response Measures
	Montrose Wastewater Lagoon Removal	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 Retirement	Solid Waste Operating Permit No. 708305
Hawthorn	Hawthorn 1 & 2 Intake Removal	US Army Corps of Engineers Section 10 Permit - Rivers & Harbor Act of March 3, 1899
	Hawthorn 5 Intake Removal	US Army Corps of Engineers Section 10 Permit - Rivers & Harbor Act of March 3, 1899
La Cygne	La Cygne Wastewater Lagoon Removal	28-16-173. Municipal, commercial and industrial wastewater lagoons: closure requirements.
	La Cygne Landfill Retirement	Kansas Solid Waste Permit No. 337
Iatan	Iatan 1 Intake Removal	US Army Corps of Engineers Section 10 Permit - Rivers & Harbor Act of March 3, 1899
	Iatan Fuel Oil Tank Removal	Missouri Regulation 10 CSR 26-5.020 Release Reporting and Initial Release Response Measures
	Iatan Landfill Retirement	Solid Waste Operating Permit No. 0916501
Northeast	Northeast Fuel Oil Tank Removal	Missouri Regulation 10 CSR 26-5.020 Release Reporting and Initial Release Response Measures
Hawthorn	Hawthorn 9 Intake Removal	US Army Corps of Engineers Section 10 Permit - Rivers & Harbor Act of March 3, 1899
Spearville	Unit 1	Spearville Wind Project Decommissioning Agreement dated June 21, 2006
	Unit 2	Spearville 2 Wind Project Decommissioning Agreement dated August 24, 2010