

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 Sega'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, Sega 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	\$516,768		\$1,041,802	\$10,006,697	\$784,000	\$9,222,697
	15						
	16						
	17						
	Common		\$525,034				
Hawthorn	7	\$344,453	\$0	\$344,453	\$7,097,072	\$196,000	\$6,901,072
	8						
West Gardner	1						
	2	\$399,637	\$0	\$399,637	\$11,621,879	\$392,000	\$11,229,879
	3						
	4						
Osawatomie	1	\$274,345	\$0	\$274,345	\$5,483,584	\$98,000	\$5,385,584
Hawthorn	6	\$401,909	\$640,900	\$1,042,809	\$9,378,046	\$2,423,000	\$6,955,046
	9						
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, Sega reviewed and utilized these estimates, adjusting to 2014 present-day dollars. Where there was no prior estimate available, Sega developed an opinion of probable costs for their closure. Each of these costs is provided in Appendix A.

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

SECTION 3

DISMANTLEMENT

DISMANTLEMENT

3.1 INTRODUCTION

Sega developed an opinion of probable 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

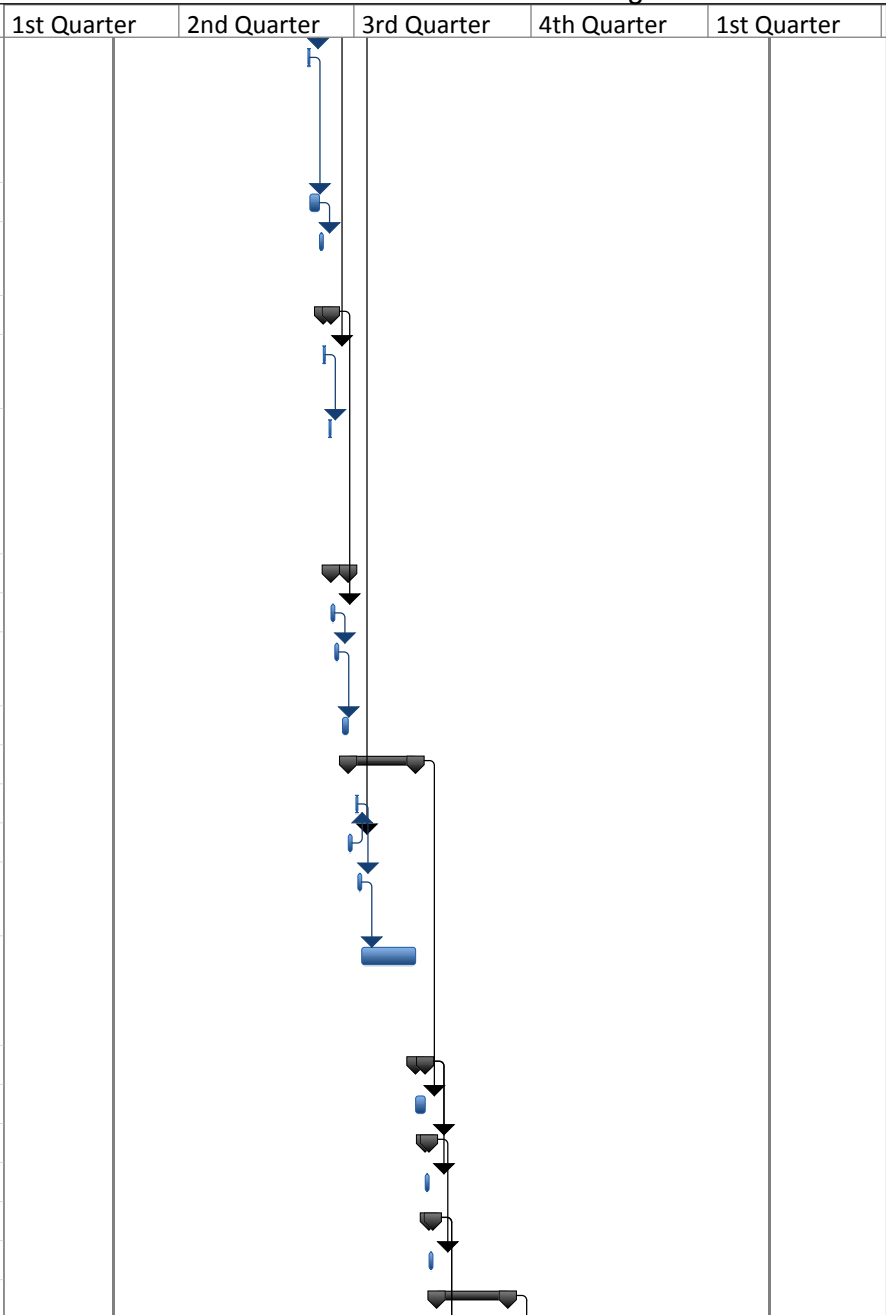
Montrose 1 Retirement		
ID	Task Name	Cost
41	Drain fuel oil system	\$2,528.16
42	Waste Oil System	\$1,685.44
43	Drain all waste oil systems	\$1,685.44
44	Boiler Chemical Feed	\$1,685.44
45	Drain all chemical feed tanks.	\$1,685.44
46	Boiler	\$27,484.77
47	Open boiler doors.	\$880.96
48	Gas side - perform 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
Page 2		

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 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					

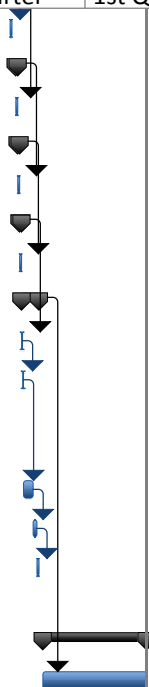
Montrose 1 Retirement

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
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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
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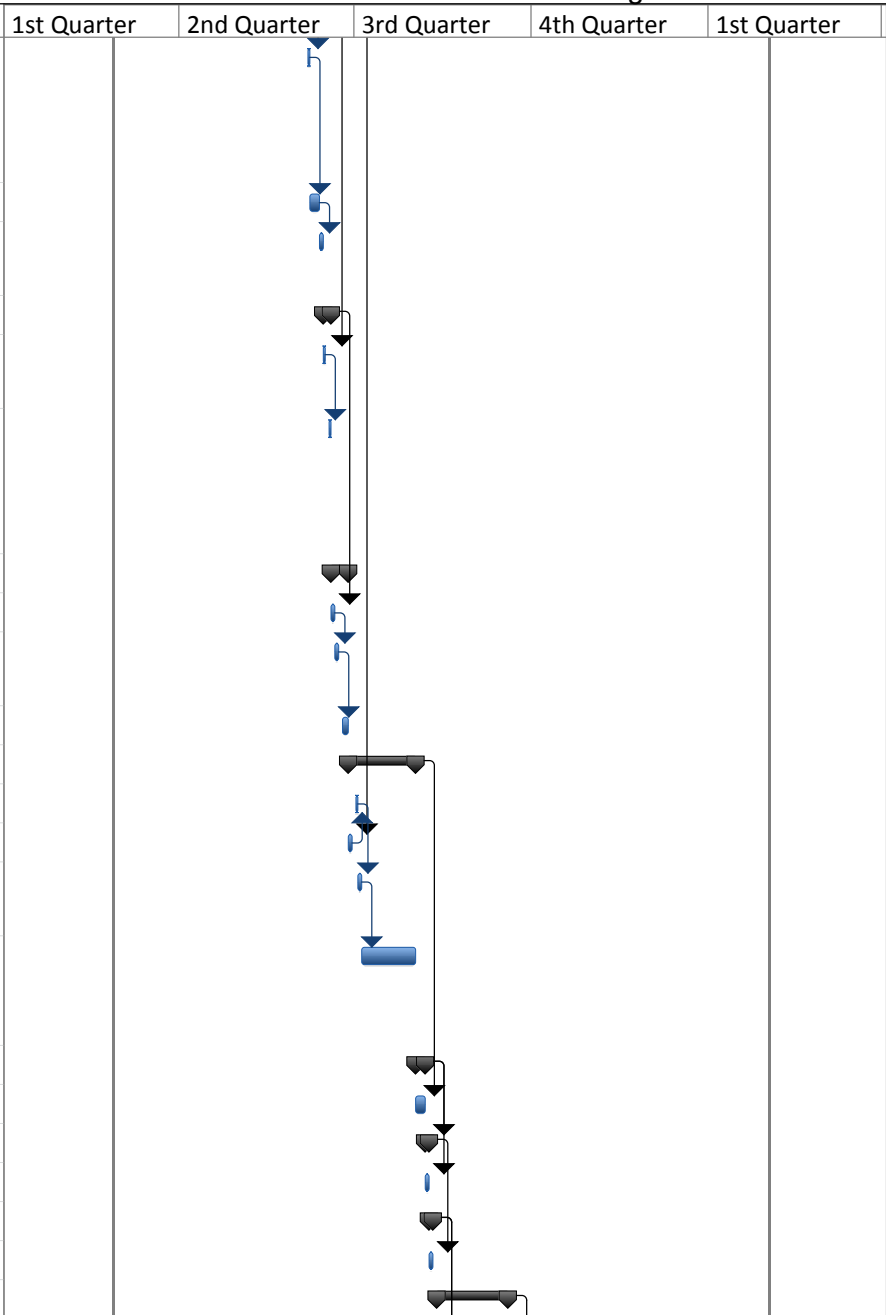
Montrose 2 Retirement		
ID	Task Name	Cost
72	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	\$2,679.84
73	Turbine(s) and Condenser	\$5,266.64
74	Drain hotwell and leave doors open.	\$861.84
75	Open main turbine doors.	\$880.96
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
Page 3		

Montrose 2 Retirement		
ID	Task Name	Cost
108	Post Retirement Activities	\$26,564.00

Montrose 2 Retirement

ID	Task Name	Duration	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					

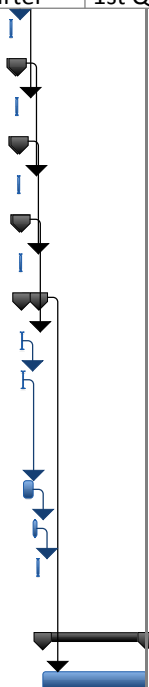
Montrose 2 Retirement

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
Consumables	\$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
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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
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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
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Montrose 3 Retirement		
ID	Task Name	Cost
108	Post Retirement Activities	\$26,564.00

Montrose 3 Retirement

ID	Task Name	Duration	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 secondary is de-energized.	1 day					

Montrose 3 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					

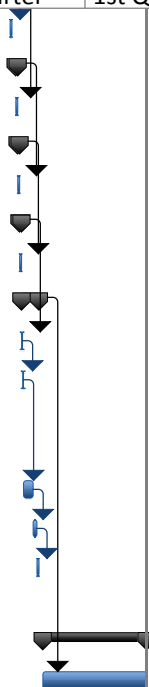
Montrose 3 Retirement

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

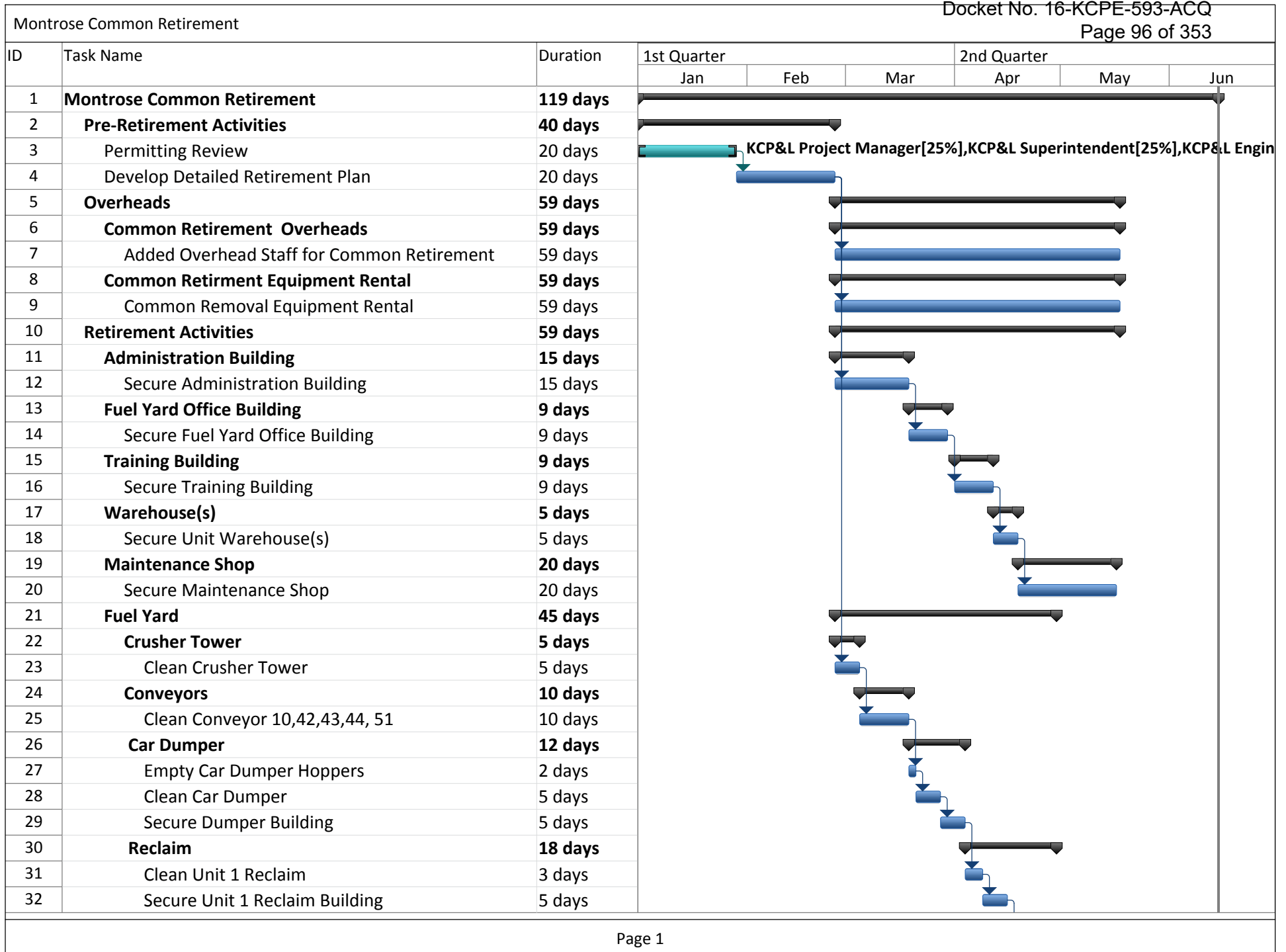
Activities Required by Permit or Regulation

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
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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
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

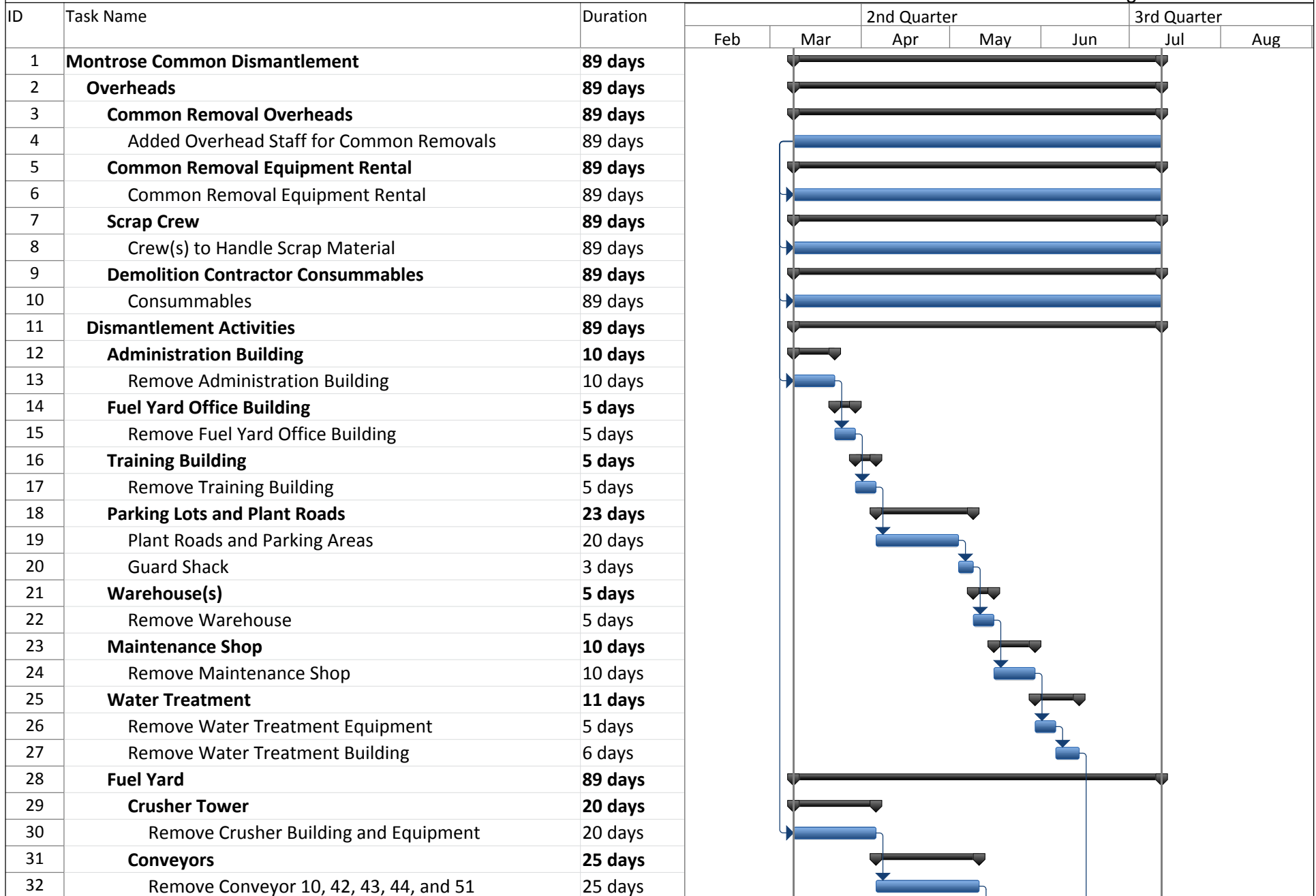
Owner Contingency: 25.00% \$2,289,002

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 Consumables	\$214,482.88
10	Consumables	\$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
Page 1		

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



Montrose Common Dismantlement

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

HAWTHORN 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
Page 1		

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
Page 2		

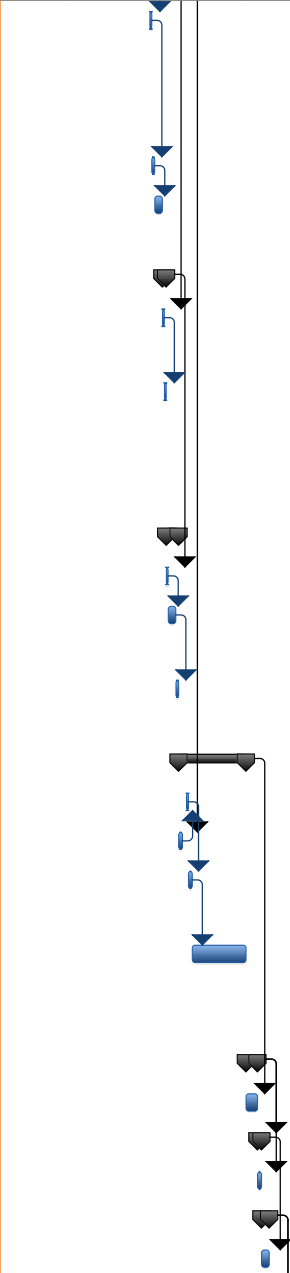
Hawthorn 5 Retirement		
ID	Task Name	Cost
73	Padlock or tack weld all hopper doors shut. (note: if ash hopper doors are indoors, they could be removed and the opening covered with bird screens.)	\$880.96
74	If walk-in plenum, padlock or tack weld all outlet plenum doors and compartment ventilation dampers 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
Page 3		

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
Page 4		

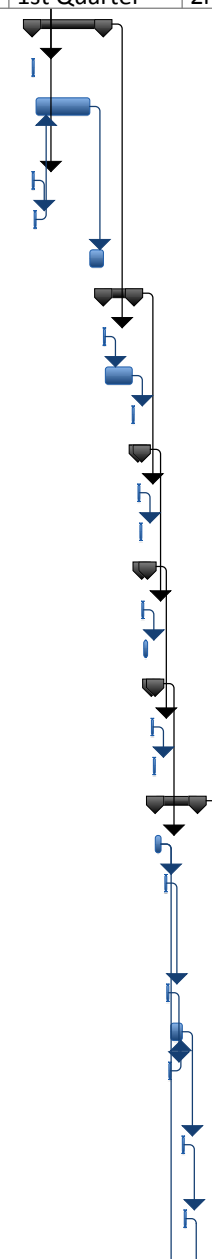
Hawthorn 5 Retirement

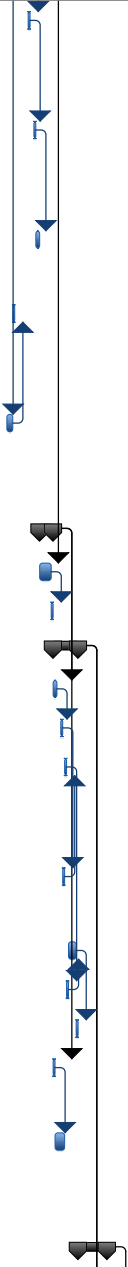
ID	Task Name	Duration	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter
1	Hawthorn 5 Retirement	275 days					
2	Pre-Engineering	66 days					
3	Permit review and engineering analysis, establish isolation points, and confirm fuel yard inventory has been reduced to	66 days					
4	KCL&L Overhead 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

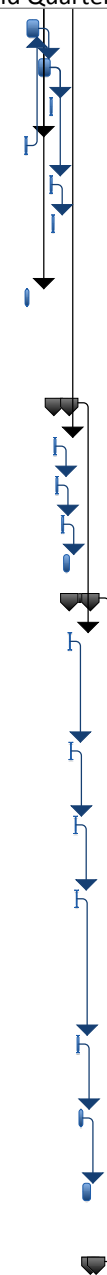
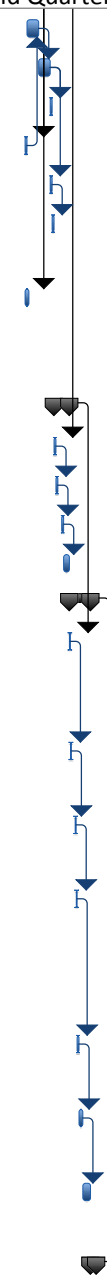
ID	Task Name	Duration	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter
25	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	1 day					
26	Drain and dispose of oil.	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

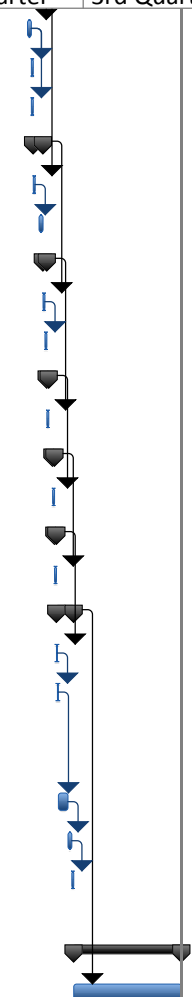
ID	Task Name	Duration	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter
46	Boiler	27 days					
47	Open boiler doors.	1 day					
48	Gas side - perform cleaning of the boiler and bottom ash system.	20 days					
49	Drain boiler, drum, downcomers and headers.	1 day					
50	Open drum doors.	1 day					
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			3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter
ID	Task Name	Duration					
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

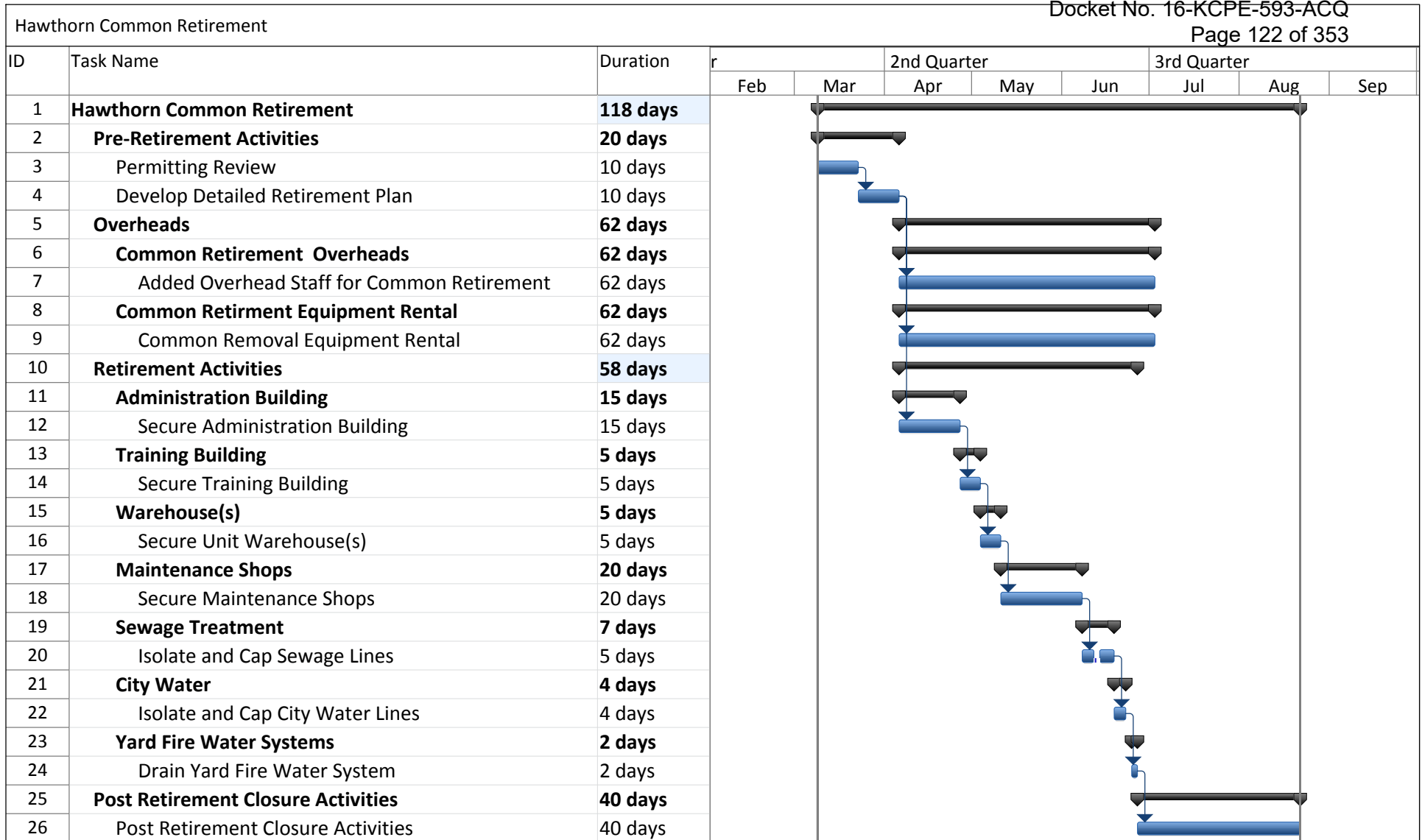
Hawthorn Common Retirement Opinion of Probable Cost: \$319,281.38

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
Page 1			



Hawthorn Common Dismantlement

Owner Additional Costs

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

Owner Costs Total	\$0

Demolition General Contractor (DGC) Costs

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

DGC Insurance	2.00%	\$126,633

Contingency/Profit	15.00%	\$968,745

Performance Bond	2.00%	\$148,541

Contractor Costs Total:	\$7,575,587

Total:	\$7,575,587

Owner Internal Costs:	5.00%	\$378,779

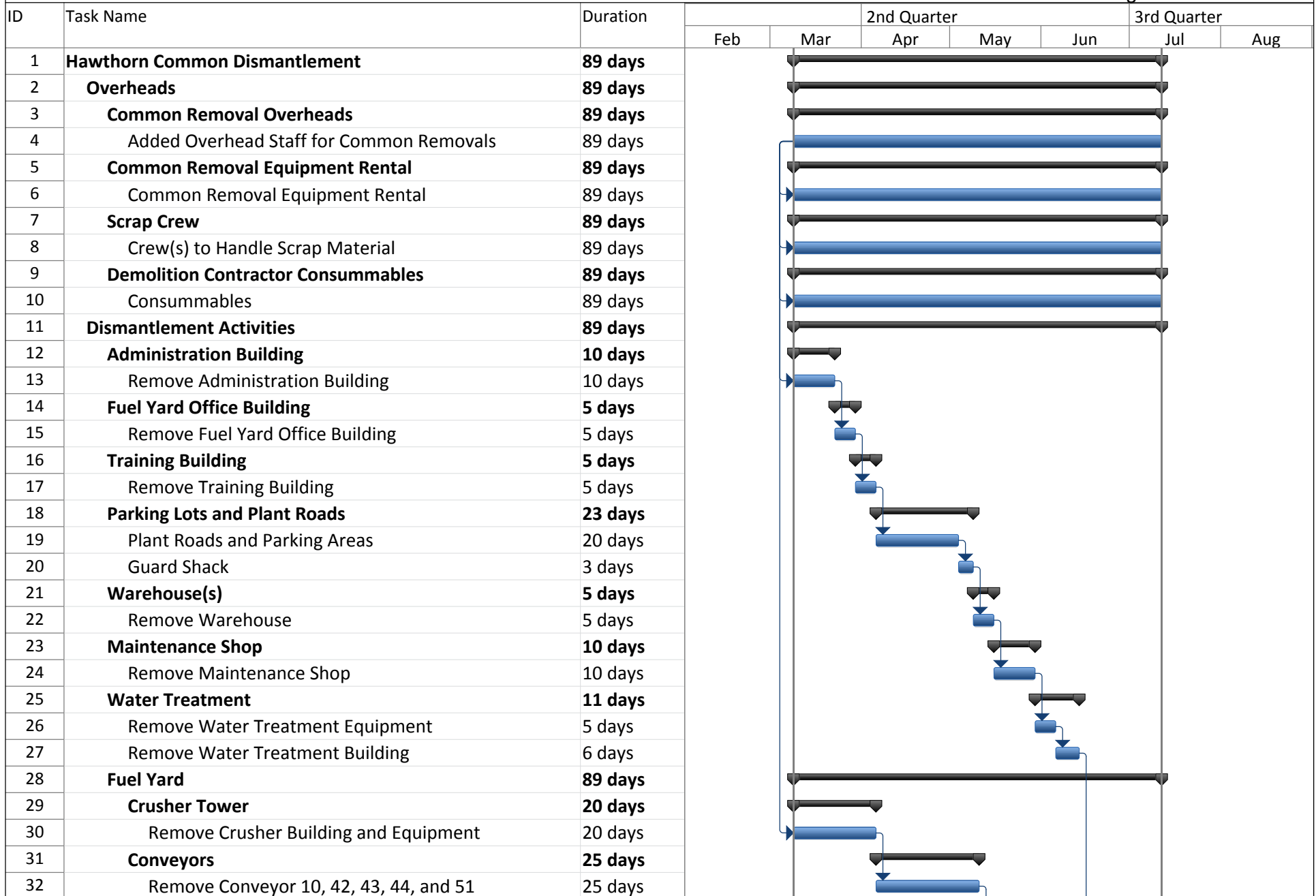
Owner Contingency:	25.00%	\$1,988,592

Hawthorn Common Dismantlement Opinion of Probable Cost:	\$9,942,959

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 Consumables	\$214,482.88
10	Consumables	\$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
Page 1		

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



Hawthorn Common Dismantlement

ID	Task Name	Duration	2nd Quarter			3rd Quarter			
			Feb	Mar	Apr	May	Jun	Jul	Aug
33	Car Dumper	26 days							
34	Remove Underground Equipment	4 days							
35	Remove Above Ground Equipment	10 days							
36	Remove Building	7 days							
37	Backfill Dumper Structure	5 days							
38	Reclaim	18 days							
39	Remove Underground Equipment	5 days							
40	Remove Above Ground Equipment	5 days							
41	Remove Building	4 days							
42	Backfill Structure	4 days							
43	Yard Fire Water Systems	10 days							
44	Remove Hydrants and Fire Water System Piping Down to 3' Below Grade	10 days							
45	Stacks	1 day							
46	Remove 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
Page 1		

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
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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
Page 3		

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
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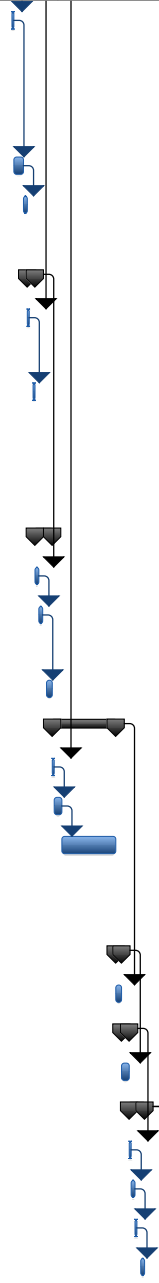
La Cygne 1 Retirement		
ID	Task Name	Cost
129	Drain.	\$1,685.44
130	Open water box doors.	\$880.96
131	Drain any circulating water chemical feed tanks.	\$842.72
132	Compressed Air System	\$842.72
133	Open vents and drains.	\$842.72
134	Auxiliary Steam System	\$842.72
135	Drain water from system.	\$842.72
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

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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					

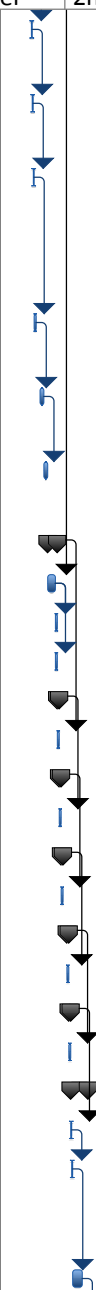
La Cygne 1 Retirement

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 position	2 days					
87	Remove solids from all inlet and outlet ductwork as necessary	2 days					
88	Open all vent station air and control air lines. Leave in open position	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	3 days					
92	FGD Reagent Preparation-Limestone wet Scrubber	14 days					
93	Remove limestone from day bins.	2 days					
94	Removed cartridges/bags from bin vent filters	2 days					
95	Padlock or tack weld all bin access doors shut. (note: if doors are indoors, they could be removed and the opening covered with bird screens.)	1 day					

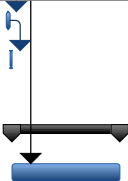
La Cygne 1 Retirement

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

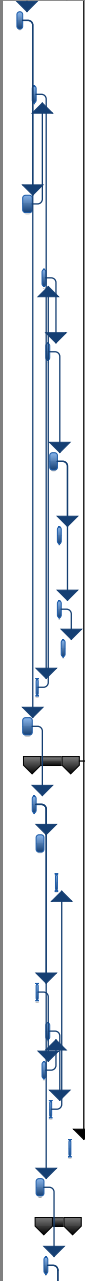
La Cygne 2 Retirement

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 secondary is de-energized.	1 day					

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 control	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 flue	1 day					
73	Padlock or tack weld all hopper doors shut. (note: if ash hopper	1 day					
74	If walk-in plenum, padlock or tack weld all outlet plenum doors	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 maintain	1 day					
77	Pull electrical supply breakers on all electrical equipment except	3 days					
78	Wet FGD system	19 days					

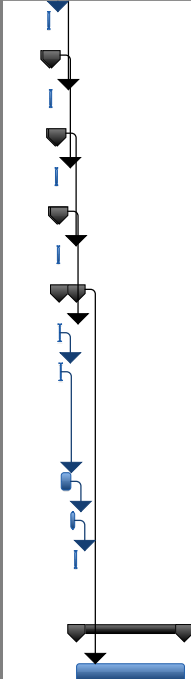
La Cygne 2 Retirement

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 except	3 days					
90	FGD Reagent Preparation-Limestone wet Scrubber	14 days					
91	Remove limestone from day bins.	2 days					
92	Removed cartridges/bags from bin vent filters	2 days					
93	Padlock or tack weld all bin access doors shut. (note: if doors are indoors, they could be removed and the opening covered with bird screens.)	1 day					
94	Remove bin discharge isolation valve and install bird screen	1 day					
95	Thoroughly wash and drain mills	2 days					
96	Remove balls from any ball mills	2 days					
97	Padlock or tack weld mill access doors closed.	1 day					
98	Establish natural ventilation or maintain HVAC fan to provide	1 day					
99	Pull electrical supply breakers on all electrical equipment except	2 days					
100	FGD Byproduct Dewatering - Hydrocyclones and Vacuum Filter	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 and	1 day					
103	Establish natural ventilation or maintain HVAC fan to provide	1 day					
104	Pull electrical supply breakers on all electrical equipment except	3 days					
105	Turbine(s) and Condenser	6 days					
106	Drain hotwell and leave doors open.	1 day					
107	Open main turbine doors.	1 day					
108	Open bfp turbine doors.	1 day					
109	Remove lube oil.	3 days					
110	Generator	7 days					
111	Verify that generator circuit breaker is open and racked out or that high-voltage disconnect switch on substation side of GSU transformer is locked in the open position.	0.5 days					
112	Verify that generator field breaker or contactor (if applicable) is open.	0.5 days					
113	De-energize power supplies to generator excitation system at the source.	0.5 days					
114	De-energize AC and DC power supplies to generator and exciter space heaters, cooling equipment, controls, lighting, etc. at the source and open circuit breakers or remove fuses at the generator and exciter.	0.5 days					
115	Drain generator and exciter cooling water systems (if applicable).	1 day					
116	Disconnect and remove hydrogen gas tanks and purge generator hydrogen system.	2 days					
117	Disconnect and remove fire protection system gas/foam tanks and purge fire protection system.	2 days					
118	Circulation Water and Turbine Cooling Water System	3 days					
119	Drain.	2 days					
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

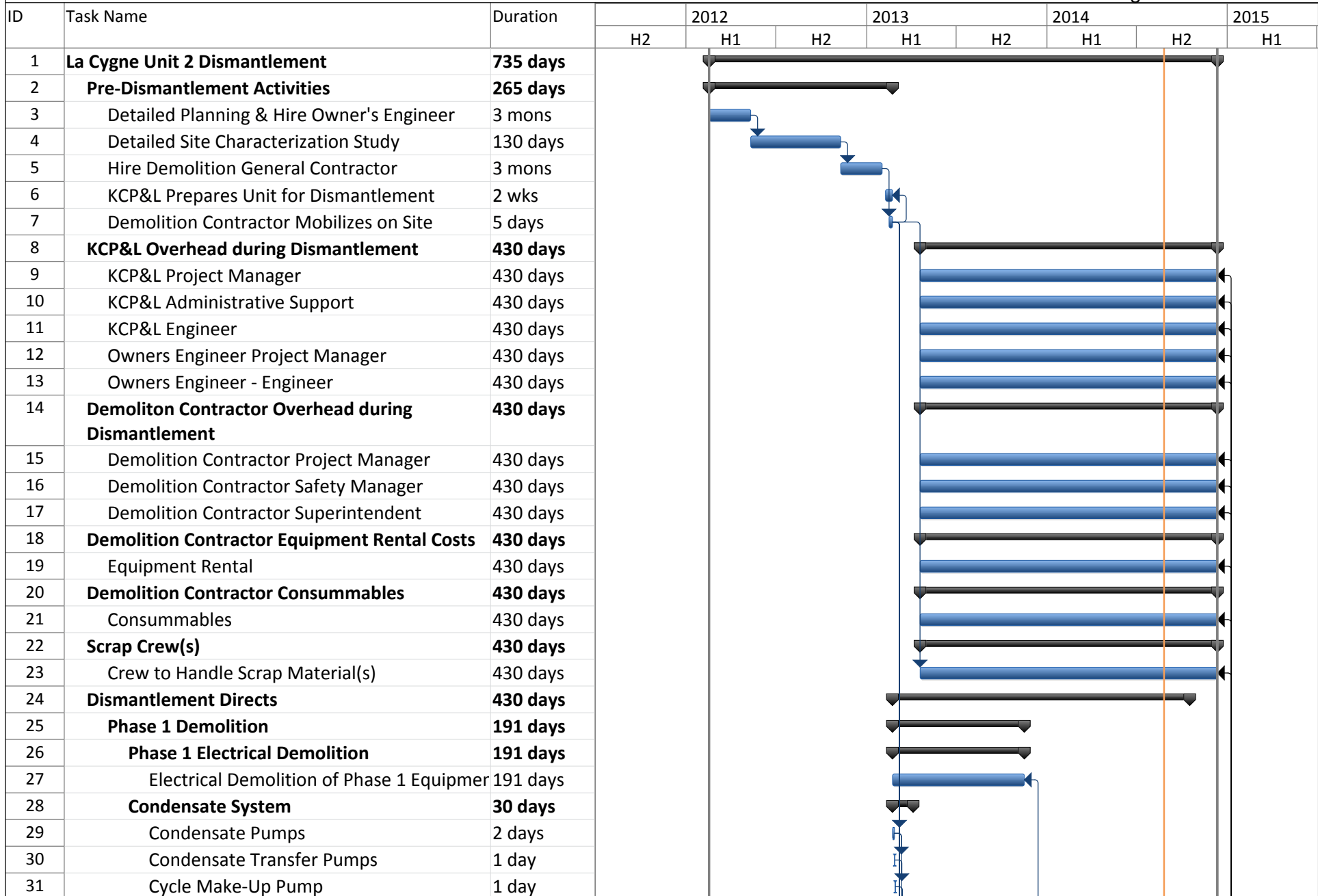
La Cygne 2 Dismantlement		
ID	Task Name	Cost
1	La Cygne Unit 2 Dismantlement	\$12,283,455.35
2	Pre-Dismantlement Activities	\$892,760.32
3	Detailed Planning & Hire Owner's Engineer	\$104,441.28
4	Detailed Site Characterization Study	\$610,335.44
5	Hire Demolition General Contractor	\$167,184.00
6	KCP&L 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
Page 3		

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



La Cygne 2 Dismantlement

ID	Task Name	Duration								
			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								
			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								
			H2	H1	H2	H1	H2	H1	H2	H1
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	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
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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

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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 Consumables	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 m	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 muliti-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
Page 1		

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

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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 Consummables	\$772,676.96
8	Consummables	\$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
Page 1		

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
Page 2		

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
Page 1		

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 dispoef 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
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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
Page 3		

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
Page 4		

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

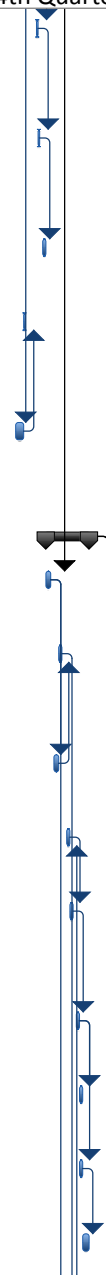
Iatan 1 Retirement			1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter
1	Iatan 1 Retirement	292 days						
2	Pre-Engineering	66 days						
3	Permit review and engineering analysis, establish isolation points, and confirm fuel yard inventory has been reduced to zero tons.	66 days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

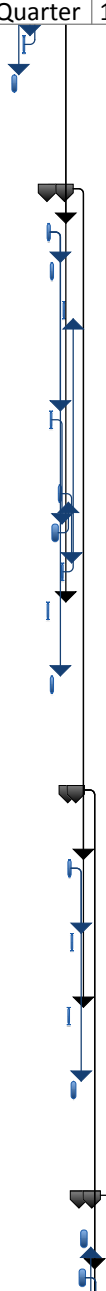
Iatan 1 Retirement

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

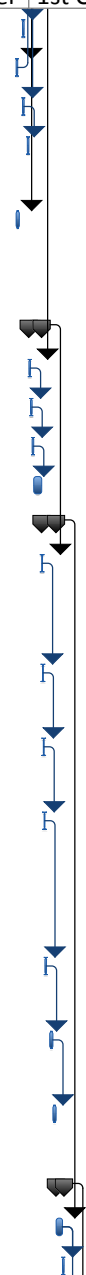
Iatan 1 Retirement

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						

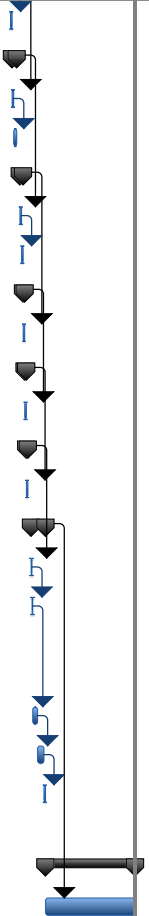
Iatan 1 Retirement

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

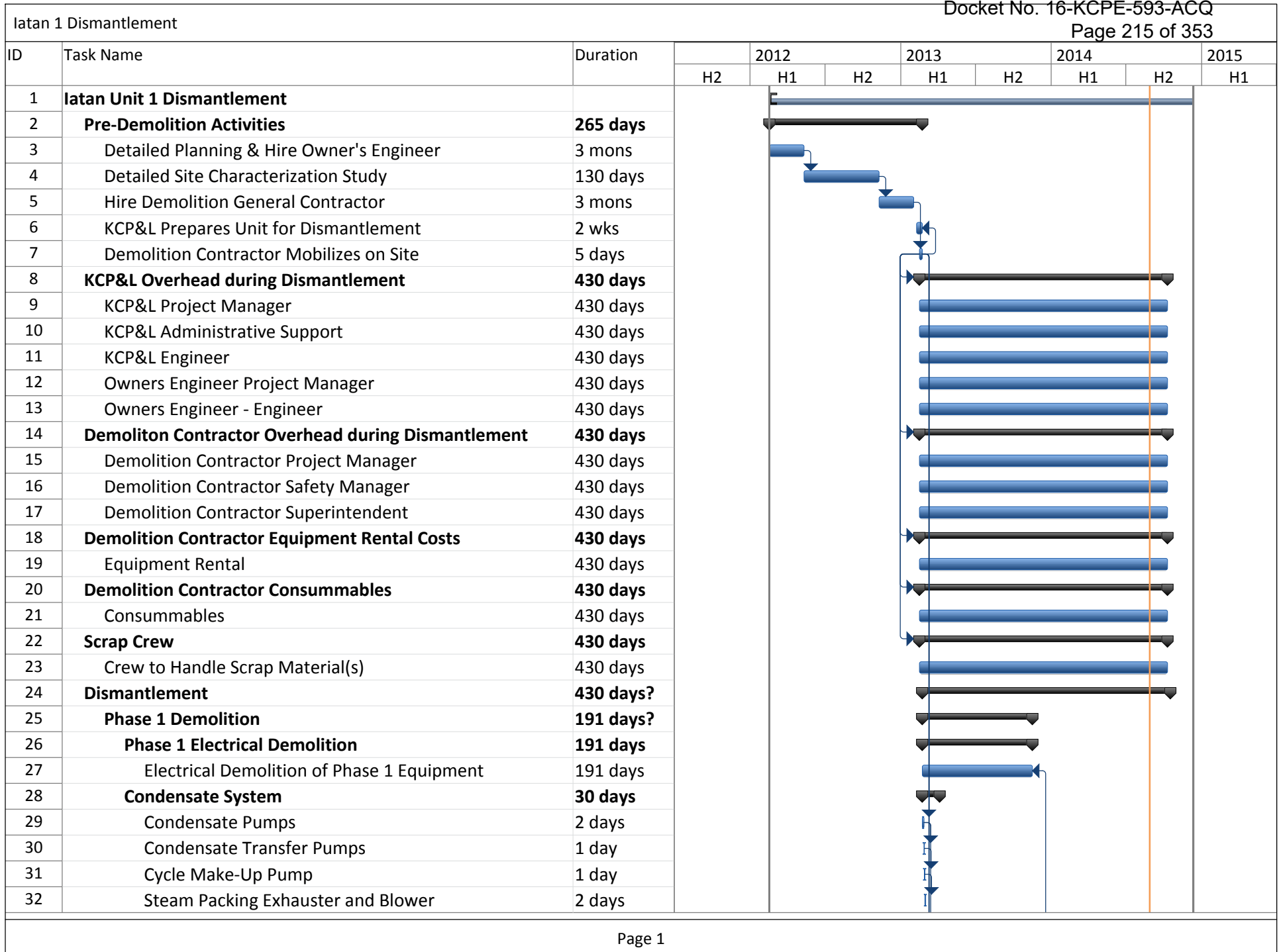
Iatan Unit 1 Dismantlement Opinion of Probable Cost:		\$24,018,833

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
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Iatan 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
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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	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								

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												

Iatan 1 Dismantlement											
ID	Task Name	Duration	2012			2013		2014		2015	
			H2	H1	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			Docket No. 16-KCPE-593-ACQ								
			Page 219 of 353								
ID	Task Name	Duration		2012		2013		2014		2015	
			H2	H1	H2	H1	H2	H1	H2	H1	
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 Rooding	41 days									
144	All Framing Elevations	60 days									
145	Bracing and Girts	20 days									
146	Columns	25 days									
147	Phase 3 Yard Demolition	150 days									
148	Circulating Water Pipe (yard)	40 days									
149	Excavate Circulating Water Pipe	10 days									
150	Collapse Circulating Water Pipe	20 days									
151	Backfill Circulating Water Pipe	10 days									
152	Remove Ash Handling Equipment and Piping	20 days									
153	Remove Fly-Ash Silo and Scale	15 days									
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									

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

Electrical Crew - Operator, Electrica

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 m	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	Qtr 1	Qtr 2	
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							Docket No. 16-KCPE-593-ACQ					
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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
Page 1		

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
Page 2		

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
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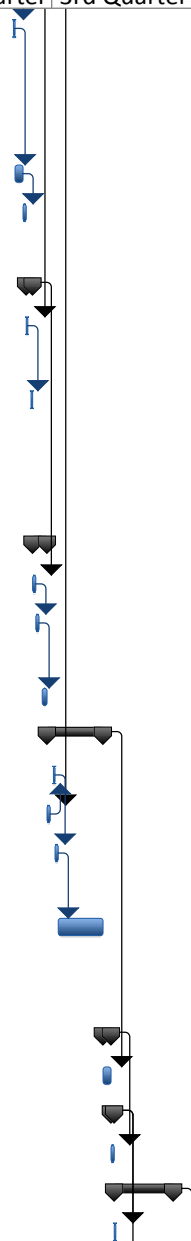
Iatan 2 Retirement		
ID	Task Name	Cost
97	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	\$1,786.56
98	FGD Byproduct Dewatering - Hydrocyclones and Vacuum Filters	\$7,287.12
99	Wash vacuum filter belt and remove all accumulated 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

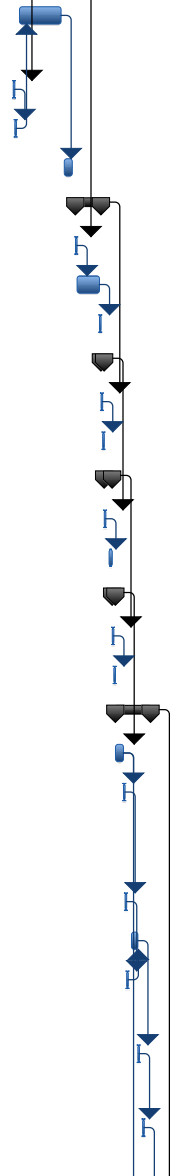
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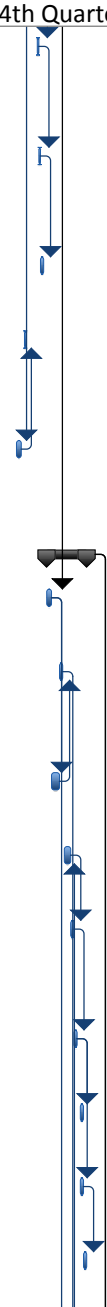
Iatan 2 Retirement			1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter
1	Iatan 2 Retirement	290 days						
2	Pre-Engineering	66 days						
3	Permit review and engineering analysis, establish isolation points, and confirm fuel yard inventory has been reduced to zero tons.	66 days						
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 secondary is de-energized.	1 day						

Iatan 2 Retirement

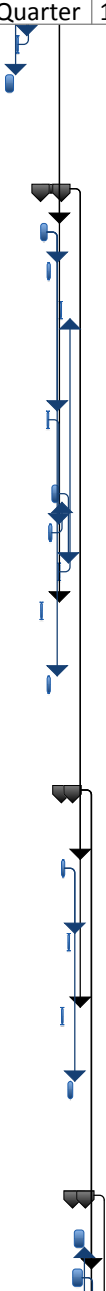
ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter
25	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	1 day						
26	Drain and 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

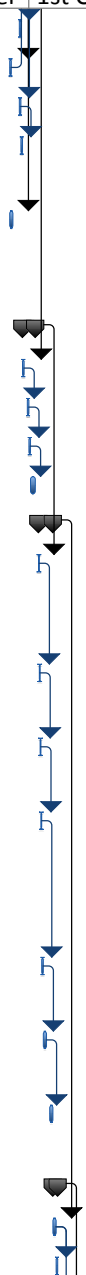
ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter
46	Gas side - perform cleaning of the boiler and bottom ash system.	20 days						
47	Drain boiler, drum, downcomers and headers.	1 day						
48	Open drum doors.	1 day						
49	Drain and clean the submerged flight 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			Docket No. 16-KCPE-593-ACQ							
			Page 238 of 353							
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								
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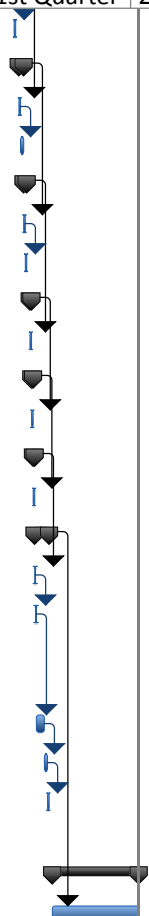
Iatan 2 Retirement

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

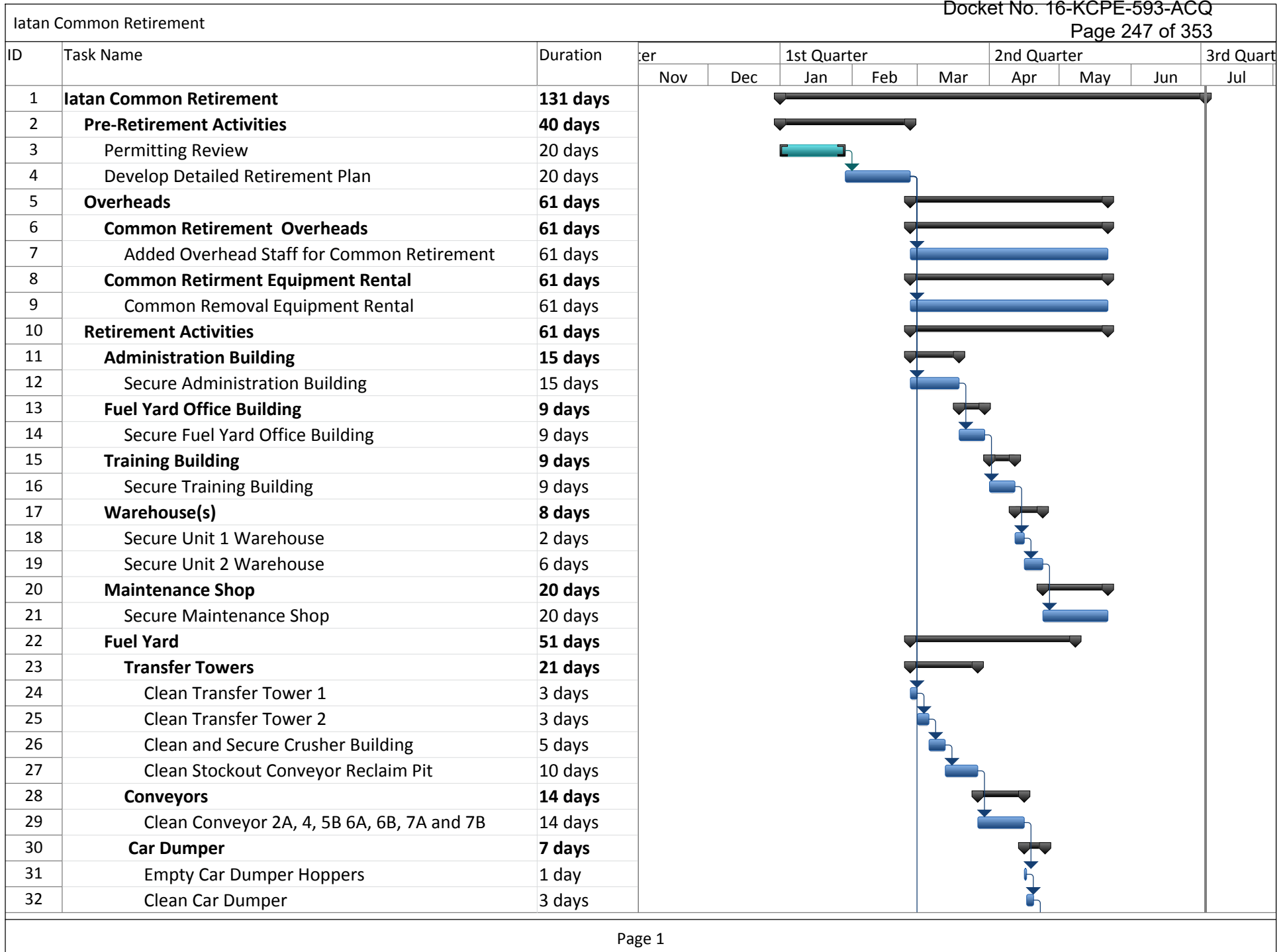
Iatan Fuel Oil Tank Removal	\$233,845
Iatan Landfill Retirement	\$3,510,641

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
Page 1		

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

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

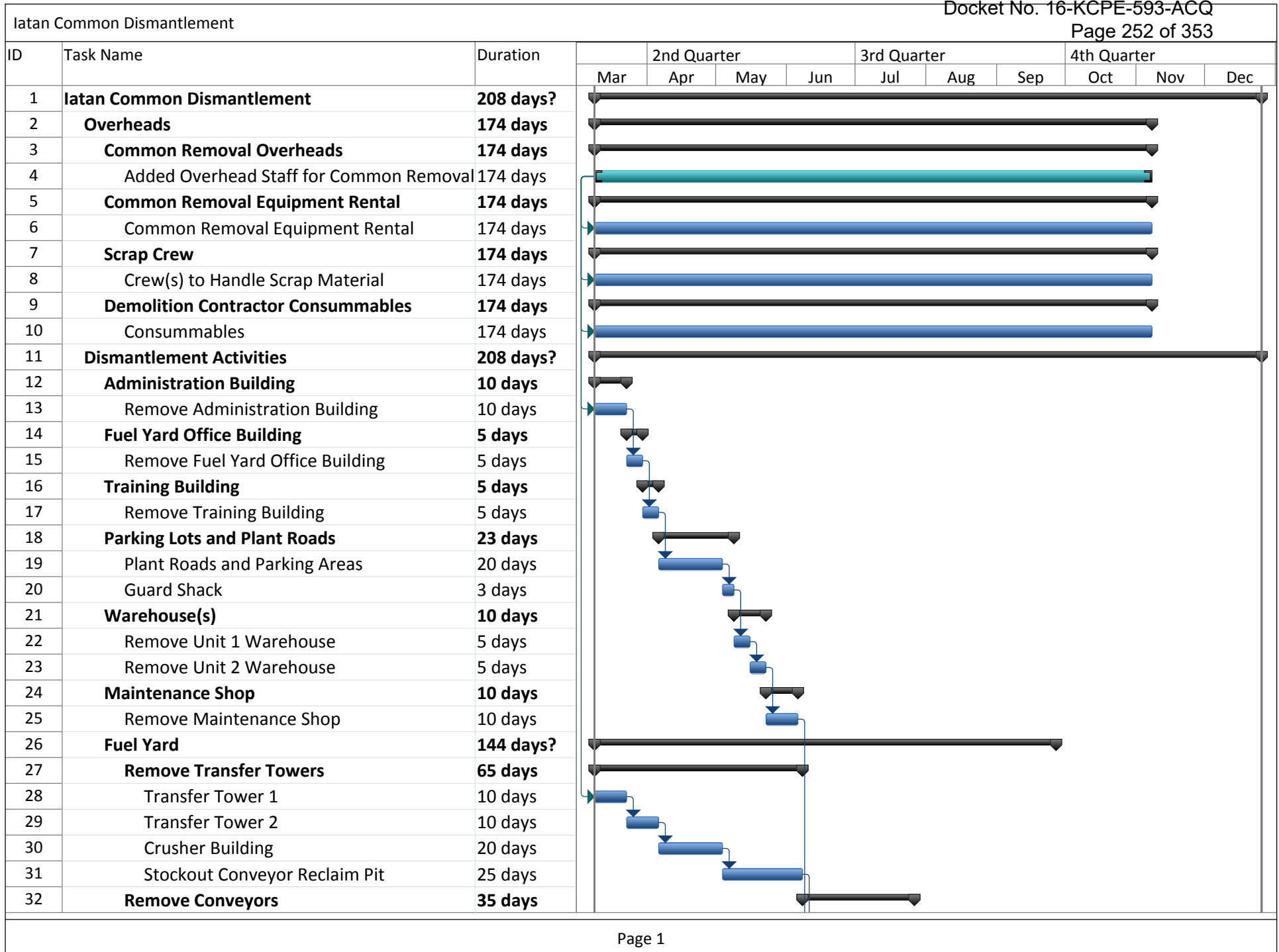
Owner Internal Costs: 5.00% \$947,602

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

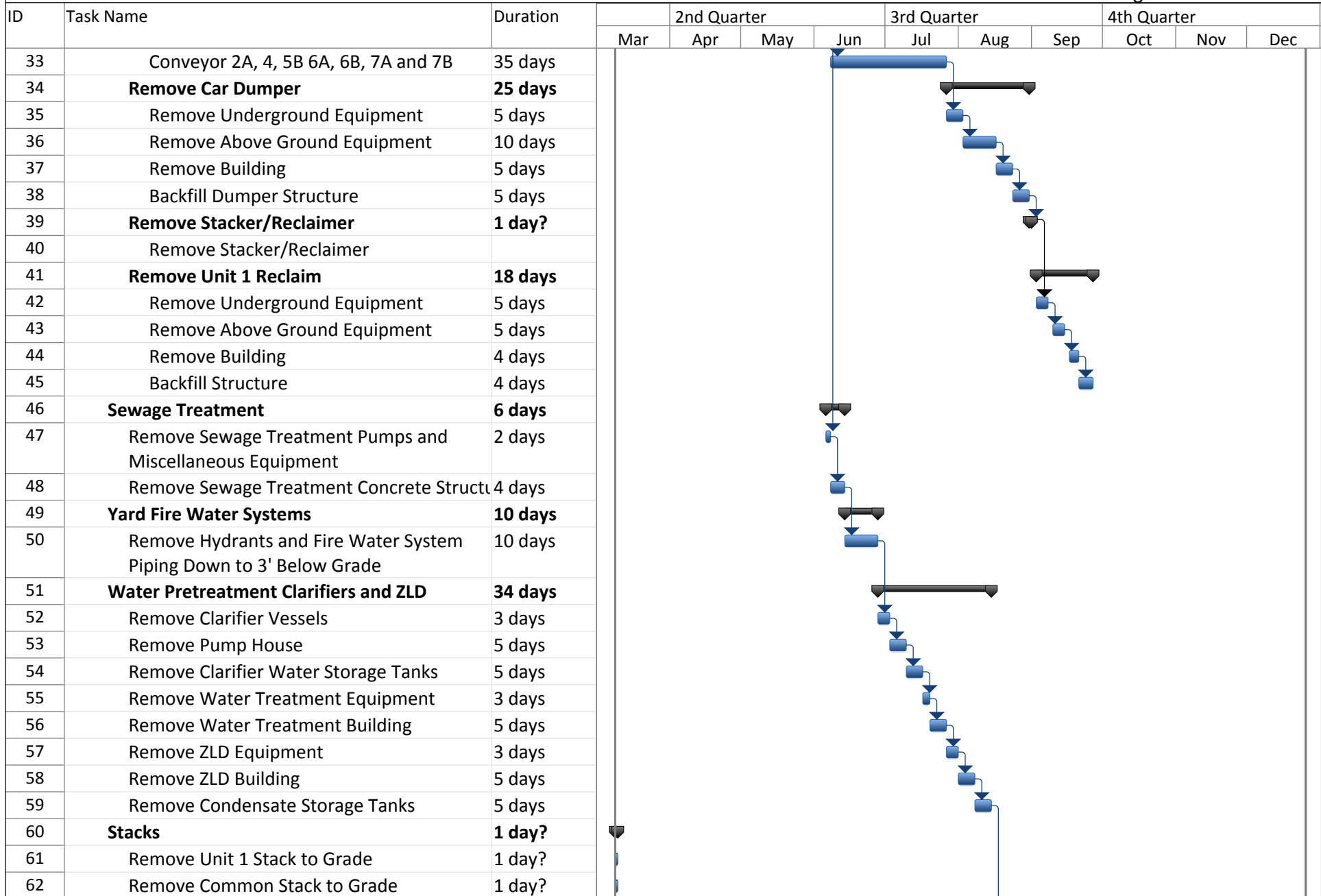
Iatan Common Dismantlement Opinion of Probable Cost: \$24,874,543

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 Consumables	\$419,326.08
10	Consumables	\$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
Page 1		

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
Page 2		



Iatan Common Dismantlement



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

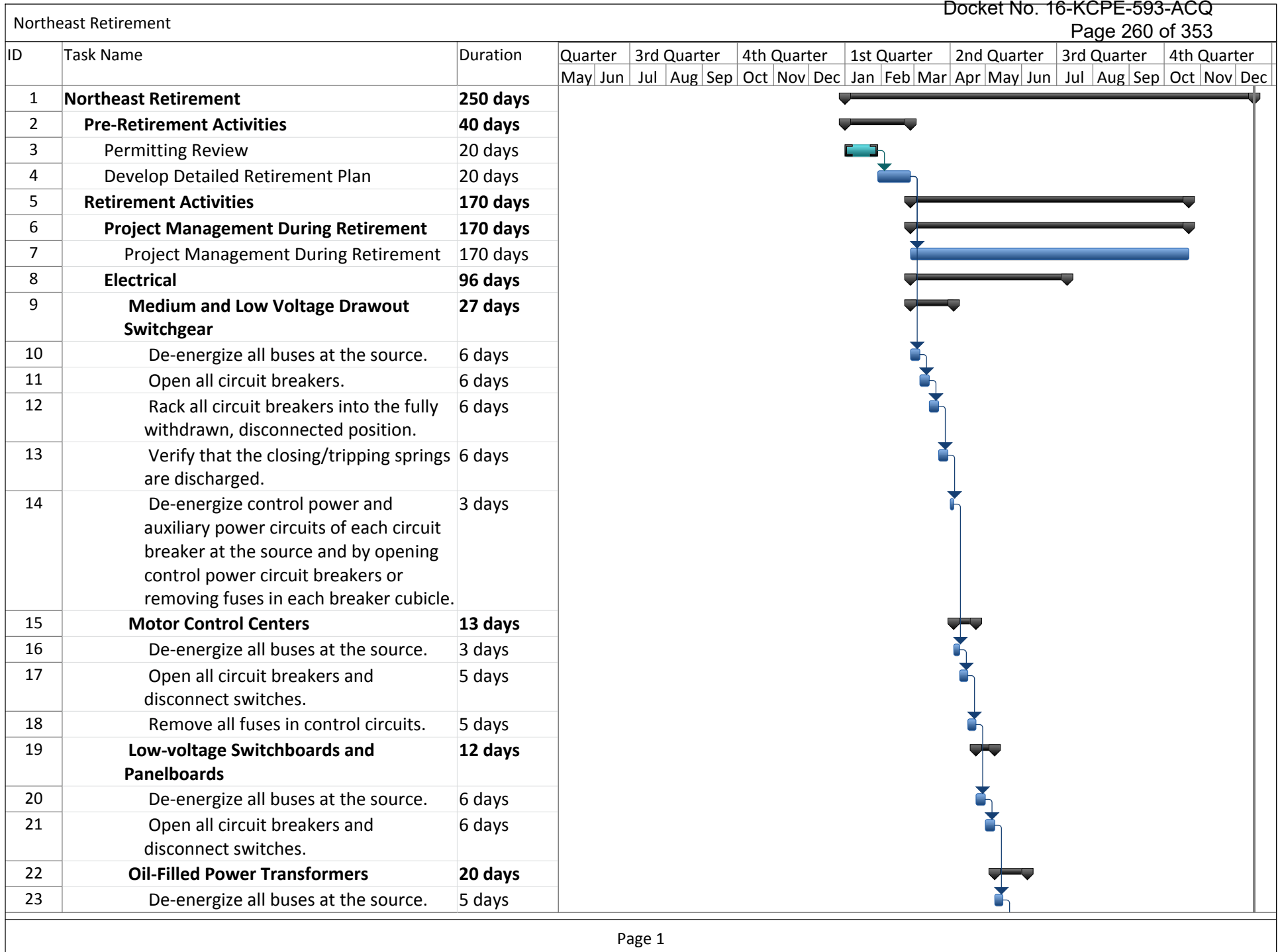
Northeast Fuel Oil Tank Removal \$525,034

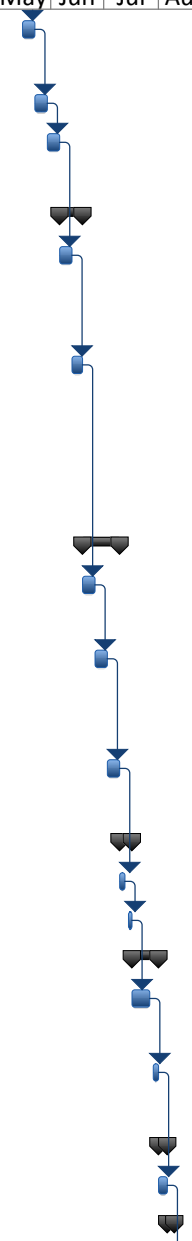
Activities Required by Permit or Regulation: \$525,034

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

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Northeast Retirement			Docket No. 16-KCPE-593-ACQ																							
			Page 261 of 353																							
ID	Task Name	Duration	Quarter		3rd Quarter			4th Quarter			1st Quarter			2nd Quarter			3rd Quarter			4th Quarter						
			May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec				
24	Open all circuit breakers and disconnect switches.	5 days																								
25	De-energize all buses at the source.	5 days																								
26	Open all circuit breakers and disconnect switches.	5 days																								
27	Dry-type Power Transformers	9 days																								
28	De-energize all transformer primaries and verify that the secondary is de-energized.	5 days																								
29	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	4 days																								
30	Motors	15 days																								
31	De-energize all primary power at the source.	5 days																								
32	De-energize all low-voltage power sources for space heaters or other auxiliary equipment at the source.	5 days																								
33	Drain lube oil system (if applicable) and dispose of oil.	5 days																								
34	Fuel Oil System	5 days																								
35	Isolate Fuel Oil System	3 days																								
36	Drain and Vent Fuel Oil Piping	2 days																								
37	Lube Oil Cooling Water System	11 days																								
38	Open and Drain the Water Side of the Lube Oil Coolers	8 days																								
39	Open and Vent the Coolers and Expansion Tank	3 days																								
40	Oily Drain Tank	3 days																								
41	Open and Pump Out the Oily Drain Tank	3 days																								
42	Compressed Air	4 days																								

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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

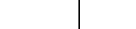
Owner Contingency:	25.00%	\$2,001,339

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

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Northeast Dismantlement			1st Quarter			
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				

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

Hawthorn 7 & 8 Retirement			2013						
ID	Task Name	Duration	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	
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							

ID	Task Name	Duration	2013		
			Qtr 2	Qtr 3	Qtr 4
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
Consumables	\$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

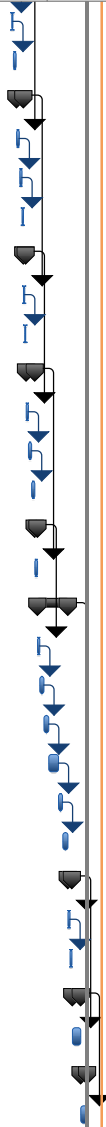
Hawthorn 7 & 8 Dismantlement		
ID	Task Name	Cost
1	Hawthorn 7&8 Dismantlement	\$4,821,840.52
2	Pre-Demolition Activities	\$892,760.32
3	Detailed Planning & Hire Owner's Engineer	\$104,441.28
4	Detailed Site Characterization Study	\$610,335.44
5	Hire Demolition general Contractor	\$167,184.00
6	KCP&L 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
Page 1		

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

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Hawthorn 7 & 8 Dismantlement			Docket No. 16-KCPE-593-ACQ			
			Page 279 of 353			
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				

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Hawthorn 7 & 8 Dismantlement				Docket No. 16-KCPE-593-ACQ						
				Page 280 of 353						
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								
Page 2										

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

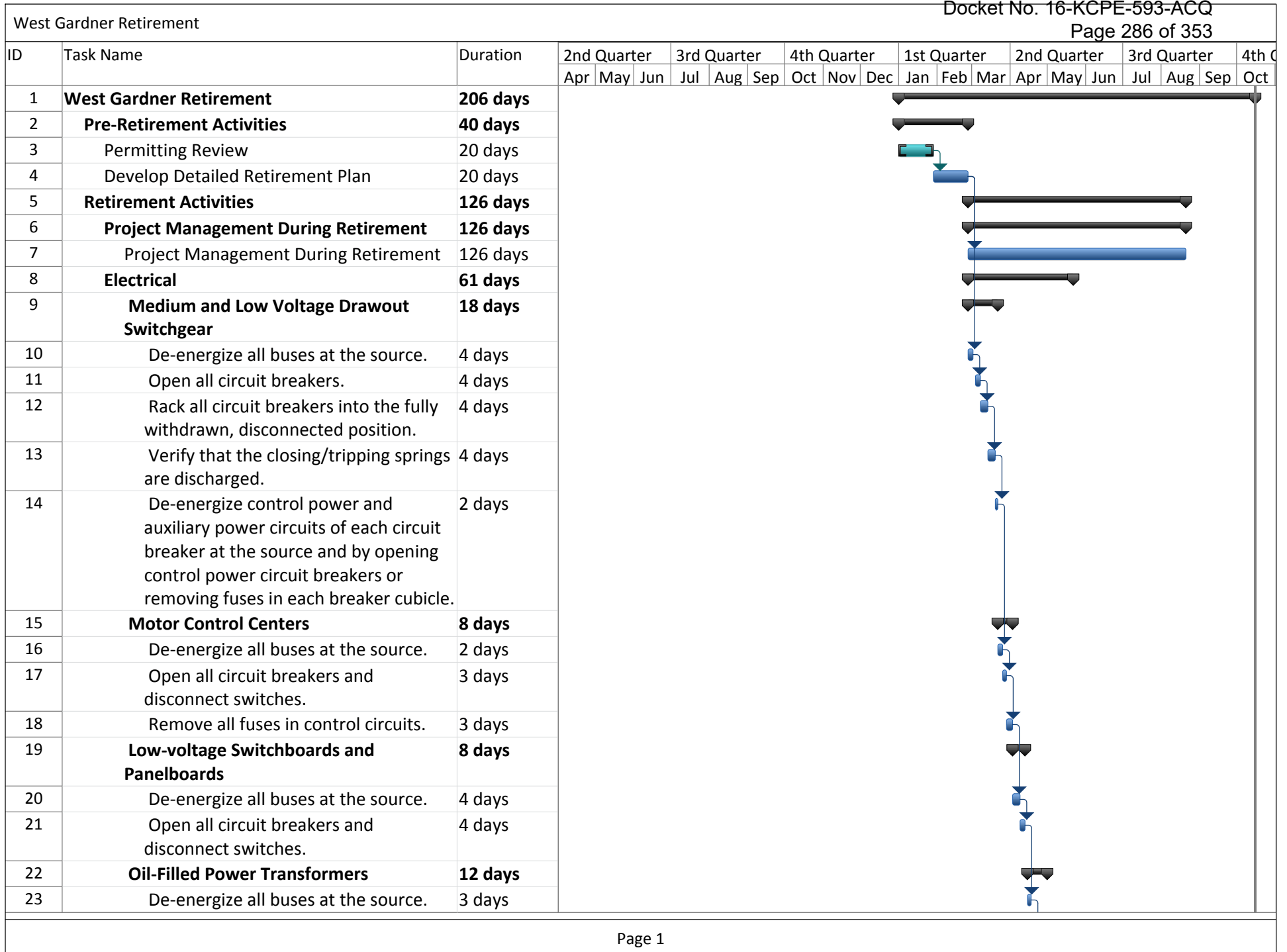
Owner Internal Costs: 5.00% \$15,224

Owner Contingency: 25.00% \$79,928

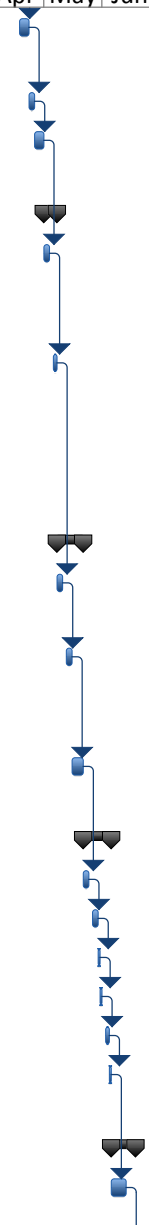
West Gardner Retirement Opinion of Probable Cost: \$399,637.88

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
Page 2		



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	Nov
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 Quarter
			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	Miscelleaneous Piping	17 days																			
54	Open and Vent the Exhaust Frame Cooling Piping	3 days																			
55	Open and Vent the CT Air Processing Piping	8 days																			
56	Open and Vent the Inlet Air Heating Piping	3 days																			
57	Open and Vent the CT Air Processing Piping	3 days																			
58	Fire Protection Piping	6 days																			
59	Empty the CO2 Storage Tank	4 days																			
60	Open and Vent the Fire Protection Piping	2 days																			
61	Lube Oil System	9 days																			
62	Empty and Remove from Site the Lubricating Oil	5 days																			
63	Drain Lubricating Oil Piping	4 days																			
64	Open and Vent Lubricating Oil Piping	2 days																			
65	Potable Water	3 days																			
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	Nov
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
Consumables	\$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
Page 1		

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

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West Gardner Dismantlement			1st Quarter			
ID	Task Name	Duration	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				Docket No. 16-KCPE-593-ACQ			
				Page 295 of 353			
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

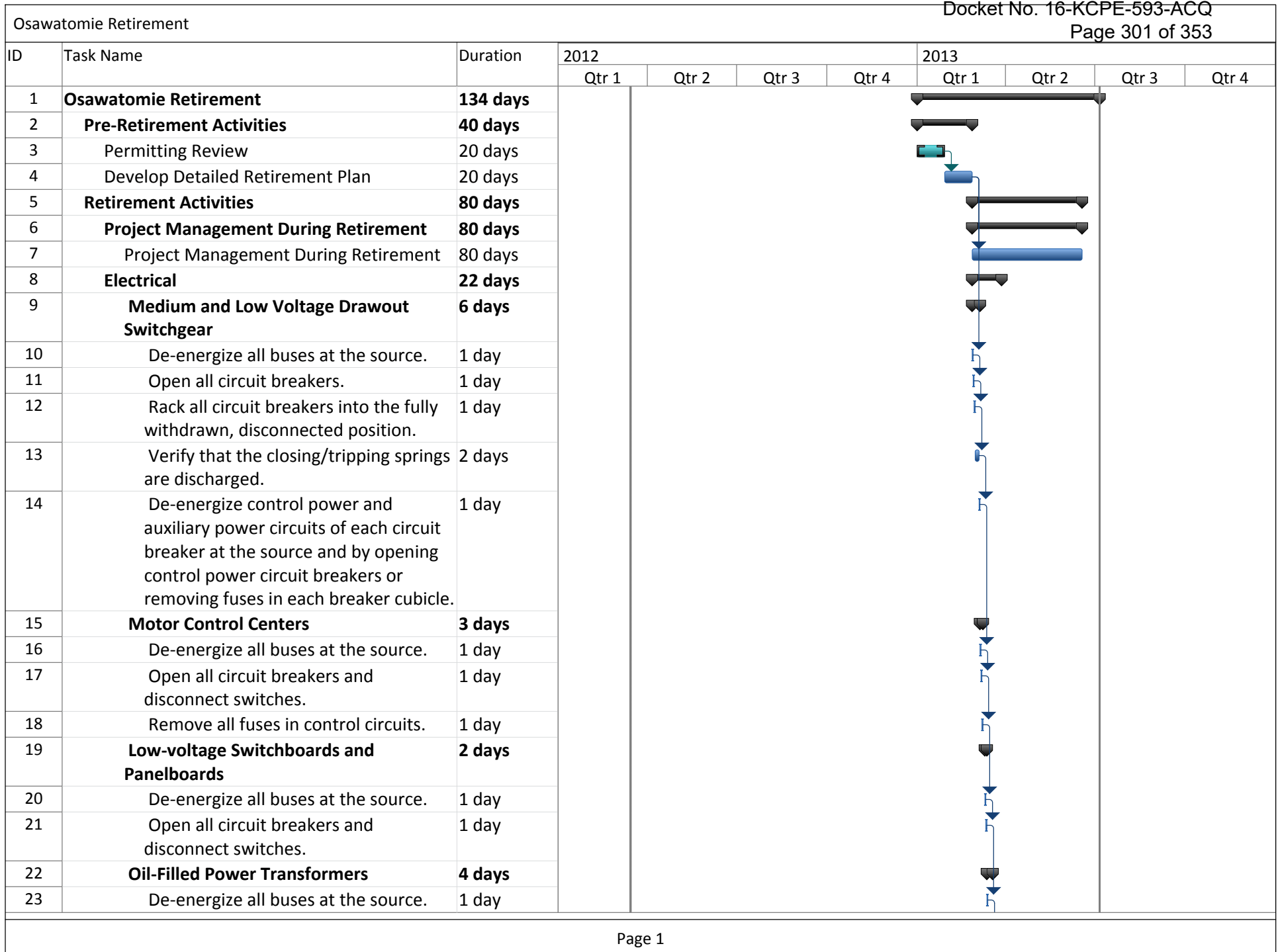
Owner Contingency: 25.00% \$54,869

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

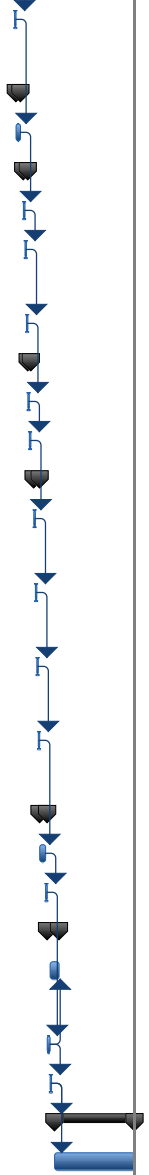
Osawatomie Retirement		
ID	Task Name	Cost
1	Osawatomie Retirement	\$209,025.44
2	Pre-Retirement Activities	\$43,834.00
3	Permitting Review	\$23,466.00
4	Develop Detailed Retirement Plan	\$20,368.00
5	Retirement Activities	\$120,039.44
6	Project Management During Retirement	\$64,161.60
7	Project Management 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

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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
Consummables	\$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			1st Quarter		1st Quarter	
ID	Task Name	Duration	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					

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 position.	1 day
14	Verify that the closing/tripping springs are discharged.	2 days
15	De-energize control power and auxiliary power circuits of each circuit breaker.	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 secondary is de-energized.	1 day
30	De-energize all low-voltage AC or DC power sources for space heaters or other loads.	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 other loads.	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 po	1 day
67	Verify that the closing/tripping springs are discharged.	2 days
68	De-energize control power and auxiliary power circuits of each cir	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 seconda	1 day
83	De-energize all low-voltage AC or DC power sources for space hea	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 ot	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	HRS	3 days
91	Open HRS 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 r	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	Sep
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										Docket No. 16-KCPE-593-ACQ										
										Page 319 of 353										
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																		

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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	Sep
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 all equipment.	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 is de-energized.	1 day																		
83	De-energize all low-voltage AC or DC power sources for space heating.	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 heating.	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	HRS	3 days																		
91	Open HRS 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			Docket No. 16-KCPE-593-ACQ																	
			Page 321 of 353																	
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																		

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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	Sep
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

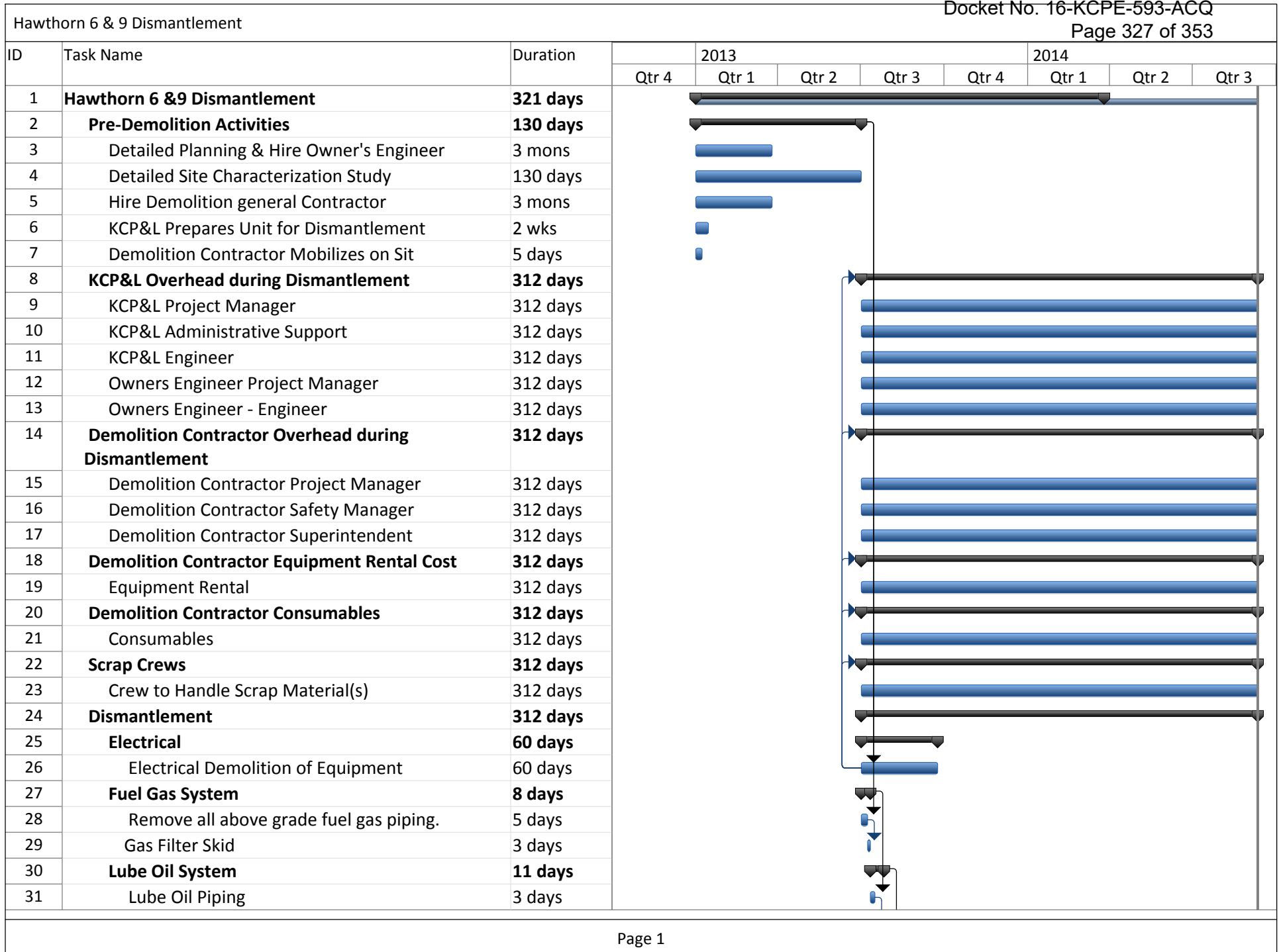
Hawthorn 6 & 9 Dismantlement Opinion of Probable Cost:	\$9,378,046

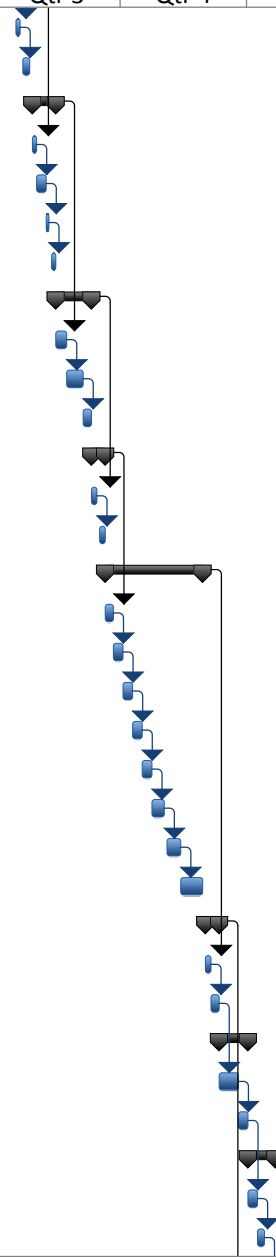
Hawthorn 6 & 9 Dismantlement		
ID	Task Name	Cost
1	Hawthorn 6 & 9 Dismantlement	\$6,323,660.96
2	Pre-Demolition Activities	\$892,760.32
3	Detailed Planning & Hire Owner's Engineer	\$104,441.28
4	Detailed Site Characterization Study	\$610,335.44
5	Hire Demolition general Contractor	\$167,184.00
6	KCP&L 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
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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	HRSG	\$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
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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

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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	Qtr 4
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	HRSR	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

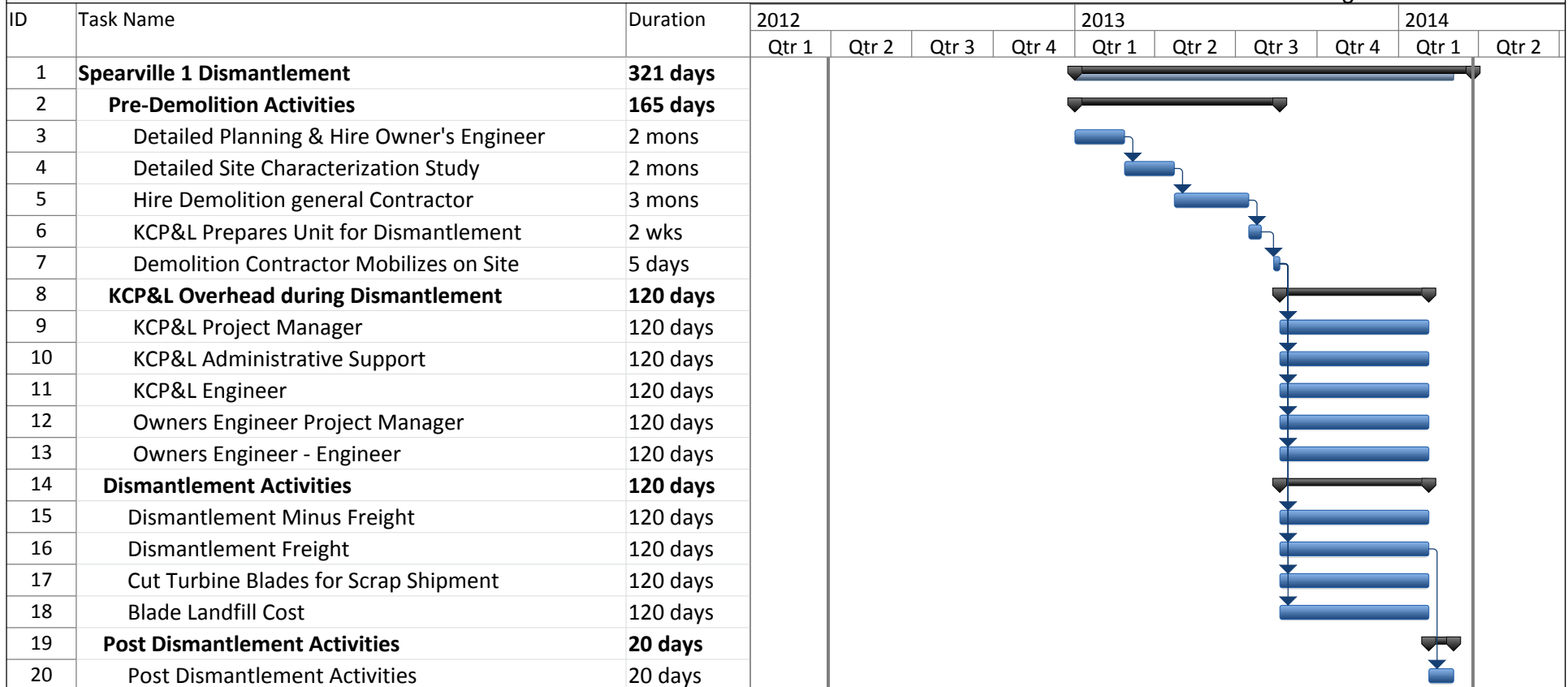
Owner Internal Costs:	5.00%	\$1,030,194

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



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

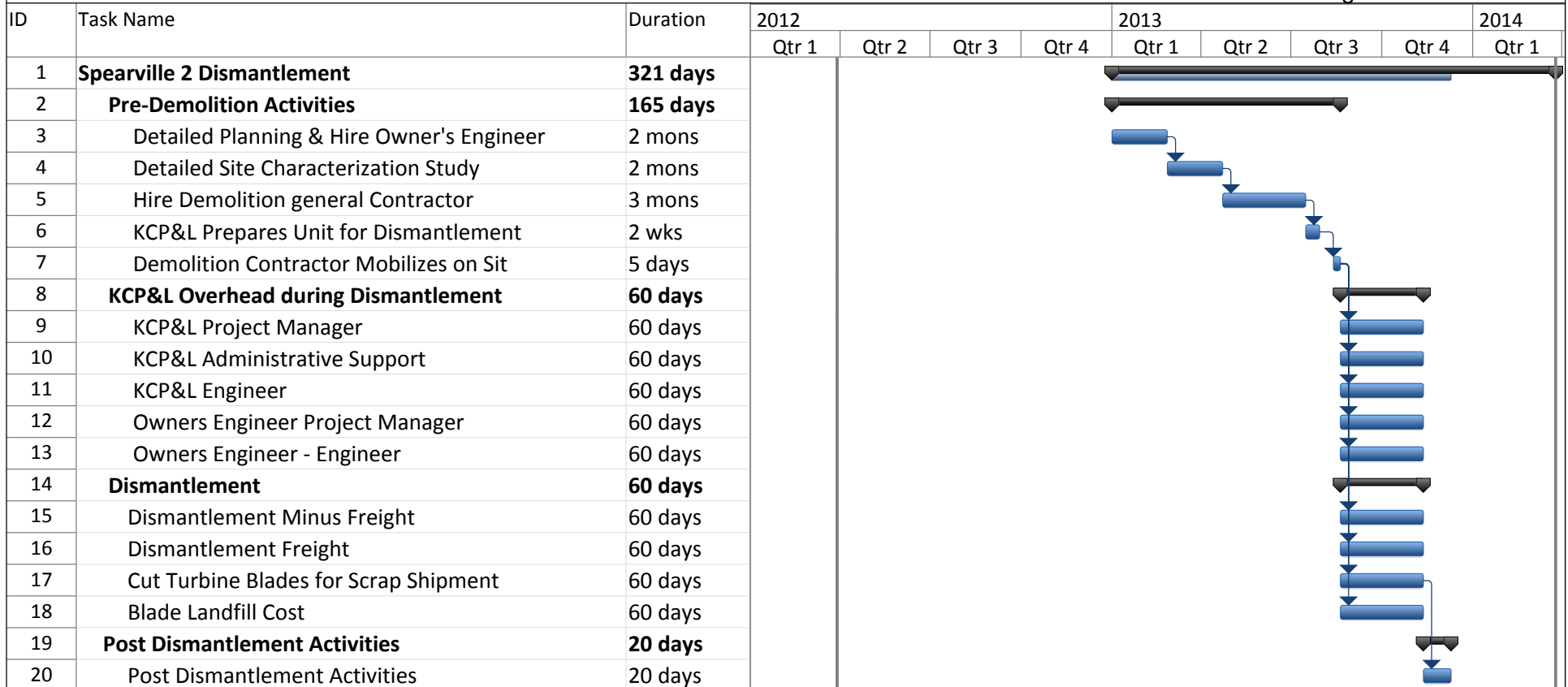
Owner Internal Costs: 5.00% \$488,196

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



APPENDIX B

OPINIONS OF COSTS FOR SCRAP

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):
 $(530,000 \text{ lbs}/2000 \text{ lbs/ton}) * \$370/\text{GT} = \$98,000$

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 -			168244	square feet		10	lbs/ft^2	841	
Coal Silos			285	Tons				285	tons
Fabricated Pipe 2.5" and Larger									
	Pipe (linear feet)								
Main Steam	911		28"		424	lbs/ft		193.132	tons
Hot Reheat	1412		36"		552	lbs/ft		389.712	tons
Cold Reheat	1173		36"		552	lbs/ft		323.748	tons
High Pressure Extraction	1400	Assume	6"		28.57	lbs/ft		19.999	tons
Boiler Safety Valve Vents	1022	Assume	6"		28.57	lbs/ft		14.59927	tons
Auxiliary Steam	2269	Assume	6"		28.57	lbs/ft		32.412665	tons
Boiler Vents and Drains	1019	Assume	6"		28.57	lbs/ft		14.556415	tons
Soot Blower Piping	1729	Assume	6"		28.57	lbs/ft		24.698765	tons
Temporary Blowout	796	Assume	6"		28.57	lbs/ft		11.37086	tons
Low Pressure Extraction	902	Assume	6"		28.57	lbs/ft		12.88507	tons
Turbine Seal and Drains	1085	Assume	6"		28.57	lbs/ft		15.499225	tons
BFPT Exhaust	25	Assume	6"		28.57	lbs/ft		0.357125	tons
Boiler Feed Discharge	615	Assume	6"		28.57	lbs/ft		8.785275	tons
BFP Recirc and Desuper Heat	2556	Assume	6"		28.57	lbs/ft		36.51246	tons
Boiler Feed Suction	414	Assume	6"		28.57	lbs/ft		5.91399	tons
Condensate	3901	Assume	6"		28.57	lbs/ft		55.725785	tons
Air Preheater Piping	5634	Assume	6"		28.57	lbs/ft		80.48169	tons
Heater Vents and Drains	2013	Assume	6"		28.57	lbs/ft		28.755705	tons
Heater Drips	2717	Assume	6"		28.57	lbs/ft		38.812345	tons
Water Pretreatment Piping	221	Assume	6"		28.57	lbs/ft		3.156985	tons
Chemical Feed	85	Assume	6"		28.57	lbs/ft		1.214225	tons
Make-Up Water	3924	Assume	6"		28.57	lbs/ft		56.05434	tons
Ash Sluice Water	6510	Assume	6"		28.57	lbs/ft		92.99535	tons
Chemical Clean	4892	Assume	6"		28.57	lbs/ft		69.88222	tons
Nitrogen	918	Assume	6"		28.57	lbs/ft		13.11363	tons
Auxiliary Cooling Water	6462	Assume	6"		28.57	lbs/ft		92.30967	tons
Extraction Traps and Drains	1279	Assume	6"		28.57	lbs/ft		18.270515	tons
Condenser Air Extraction	276	Assume	6"		28.57	lbs/ft		3.94266	tons
Fuel Oil System	804	Assume	6"		28.57	lbs/ft		11.48514	tons
Fire Protection System	4017	Assume	6"		28.57	lbs/ft		57.382845	tons
Service Water	5022	Assume	6"		28.57	lbs/ft		71.73927	tons
Generator Auxiliaries	196	Assume	6"		28.57	lbs/ft		2.79986	tons
Turbine Lube Oil	925	Assume	6"		28.57	lbs/ft		13.213625	tons
Waste Water		Assume	6"		28.57	lbs/ft		0	tons
Compressed Air System	12255	Assume	6"		28.57	lbs/ft		175.062675	tons
Building Heating	5438	Assume	6"		28.57	lbs/ft		77.68183	tons
Screen Wash	98	Assume	6"		28.57	lbs/ft		1.39993	tons
Bottom Ash Overflow	1032	Assume	6"		28.57	lbs/ft		14.74212	tons
Fly Ash Disposal	4099	Assume	6"		28.57	lbs/ft		58.554215	tons
Ash Storage	1313	Assume	6"		28.57	lbs/ft		18.756205	tons
BFP Seal		Assume	6"		28.57	lbs/ft		0	tons
Equipment Drains	447	Assume	6"		28.57	lbs/ft		6.385395	tons
Piping Provided With Equipment									
	Linear Feet								
Turbine Generator									
Stator Cooling Water	1072	Assume	8"		43.4	lbs/ft		23.2624	tons
Lube and Seal Oil	1293	Assume	8"		43.4	lbs/ft		28.0581	tons
Steam Seal	1700	Assume	8"		43.4	lbs/ft		36.89	tons
ECH	2000	Assume	8"		43.4	lbs/ft		43.4	tons
Hydrogen	1735	Assume	8"		43.4	lbs/ft		37.6495	tons
Main Steam Leads	322	Assume	8"		43.4	lbs/ft		6.9874	tons
Crossover Pipe	90	Assume	8"		43.4	lbs/ft		1.953	tons

Control Valve Leakoff	237	Assume	8"	43.4	lbs/ft	5.1429	tons
Steam- Generator		Assume	8"	43.4	lbs/ft	0	tons
Coal Bumer	10937	Assume	8"	43.4	lbs/ft	237.3329	tons
Soot Blower	8402	Assume	8"	43.4	lbs/ft	182.3234	tons
Boiler Vents and Drains	4870	Assume	8"	43.4	lbs/ft	105.679	tons
Seal Air	5150	Assume	8"	43.4	lbs/ft	111.755	tons
Start-up Bypass	0	Assume	8"	43.4	lbs/ft	0	tons
Igniter Oil	3702	Assume	8"	43.4	lbs/ft	80.3334	tons
Economizer Connection Pipe	481	Assume	8"	43.4	lbs/ft	10.4377	tons
Ash Handling System		Assume	8"	43.4	lbs/ft	0	tons
Bottom Ash Disposal	3095	Assume	8"	43.4	lbs/ft	67.1615	tons
Pyrites Discharge	939	Assume	8"	43.4	lbs/ft	20.3763	tons
Economizer and Gas Recirc Fly Ash	474	Assume	8"	43.4	lbs/ft	10.2858	tons
Precipitator Fly Ash	4442	Assume	8"	43.4	lbs/ft	96.3914	tons
2' and Under Piping	Linear Feet						
High Pressure Extraction	120	Assume	1"	2.17	lbs/ft	0.1302	tons
Boiler Safety Valve Vents	648	Assume	1"	2.17	lbs/ft	0.70308	tons
Auxiliary Steam	1966	Assume	1"	2.17	lbs/ft	2.13311	tons
Boiler Vents and Drains	2616	Assume	1"	2.17	lbs/ft	2.83836	tons
Soot Blower	545	Assume	1"	2.17	lbs/ft	0.591325	tons
Low Pressure Extraction	105	Assume	1"	2.17	lbs/ft	0.113925	tons
Turbine Seals and Drains	1741	Assume	1"	2.17	lbs/ft	1.888985	tons
Condensate	481	Assume	1"	2.17	lbs/ft	0.521885	tons
Air Preheater	1011	Assume	1"	2.17	lbs/ft	1.096935	tons
Heater Vents and Drains	1845	Assume	1"	2.17	lbs/ft	2.001825	tons
Heater Drips	412	Assume	1"	2.17	lbs/ft	0.44702	tons
Water Pretreatment	895	Assume	1"	2.17	lbs/ft	0.971075	tons
Chemical Feed	3518	Assume	1"	2.17	lbs/ft	3.81703	tons
Make-up Water	2410	Assume	1"	2.17	lbs/ft	2.61485	tons
Ash Sluice Water	324	Assume	1"	2.17	lbs/ft	0.35154	tons
Nitrogen	1340	Assume	1"	2.17	lbs/ft	1.4539	tons
Auxiliary Steam	4500	Assume	1"	2.17	lbs/ft	4.8825	tons
Cooling Water	1398	Assume	1"	2.17	lbs/ft	1.51683	tons
Extraction Traps and Drains	309	Assume	1"	2.17	lbs/ft	0.335265	tons
Fuel oil System	200	Assume	1"	2.17	lbs/ft	0.217	tons
Service Water	778	Assume	1"	2.17	lbs/ft	0.84413	tons
Generator Auxiliaries	4595	Assume	1"	2.17	lbs/ft	4.985575	tons
Turbine Lube Oil	765	Assume	1"	2.17	lbs/ft	0.830025	tons
Coal Handling Equipment Hydraulic Oil System	492	Assume	1"	2.17	lbs/ft	0.53382	tons
Compressed Air	400	Assume	1"	2.17	lbs/ft	0.434	tons
Building Heating	24000	Assume	1"	2.17	lbs/ft	26.04	tons
Screen Wash	7149	Assume	1"	2.17	lbs/ft	7.756665	tons
Miscellaneous Boiler Feedwater		Assume	1"	2.17	lbs/ft	0	tons
Sampling System	439	Assume	1"	2.17	lbs/ft	0.476315	tons
Equipment Drains	426	Assume	1"	2.17	lbs/ft	0.46221	tons
Fly Ash Disposal	6125	Assume	1"	2.17	lbs/ft	6.645625	tons
Sump Pump	62	Assume	1"	2.17	lbs/ft	0.06727	tons
Chemical Clean	68	Assume	1"	2.17	lbs/ft	0.07378	tons
Precipitator							
Precipitator	tons	2,635				2,635	tons
Inlet Duct	tons	741				741	tons
Outlet Duct	tons	615				615	tons
Breeching Duct	tons	225				225	tons
Fly Ash Silo Steel Plat	square feet	12,409		10.2	lbs/ft^2	63.2859	tons
Boiler							
Duct	tons	1,750				1750	tons
Casing	square feet	62,000		10.2	lbs/ft^2	316.2	tons
steam drum	tons	400				400	tons
Boiler	tons	9,800				9800	tons

Redactions Removed Pursuant to Commission Order

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

<u>Station</u>	<u>Equipment</u>	<u>Source of Requirement</u>
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

EXHIBIT JAL-34

Exhibit No.:
Issue: Dismantlement Costs
Witness: Christopher "Chris" Robert Rogers
Type of Exhibit: Direct Testimony
Sponsoring Party: KCP&L Greater Missouri Operations Company
Case No.: ER-2016-0156
Date Testimony Prepared: February 23, 2016

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO.: ER-2016-0156

DIRECT TESTIMONY

OF

CHRISTOPHER "CHRIS" ROBERT ROGERS

ON BEHALF OF

KCP&L GREATER MISSOURI OPERATIONS COMPANY

**Kansas City, Missouri
February 2016**

DIRECT TESTIMONY
OF
CHRISTOPHER “CHRIS” ROBERT ROGERS

Case No. ER-2016-0156

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

2 A: My name is Christopher “Chris” Robert Rogers and my business address is Segal, 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 KCP&L Greater Missouri Operations Company (“GMO” or
6 the “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 GMO’s fossil-fueled
11 electric generating units. All costs are presented in 2015 dollars as if incurred over night.
12 No timeline for retirement or dismantlement was considered in this study. As further
13 described later, certain activities are required by permit or regulation to be performed
14 upon retirement of a unit and their resulting costs would be incurred immediately at
15 retirement.

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

17 A: Since graduating from Kansas State University with a Bachelor of Science in Mechanical
18 Engineering, I have practiced engineering, principally in the power industry, for more
19 than 40 years. During the first decade of my career, I performed design, construction

1 contracting, scheduling, and resident construction management services for new coal-
2 fired electric generating stations with a nationally-recognized architect/engineer firm in
3 Kansas City. During this interval I also completed a Master of Science in Civil
4 Engineering specializing in construction management from the University of Missouri-
5 Columbia.

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

14 I am currently an employee-owner and Vice President of Sega, Inc., (“Sega”) an
15 engineering and technical services firm located in Overland Park, Kansas. Among other
16 duties, I provide consulting and project management services for Sega’s electric power
17 generating clients. Since joining Sega in 1994, I have worked on many projects for
18 KCP&L and our other electric utility clients. Sega has provided engineering services for
19 numerous plant betterment and new capacity projects for KCP&L’s generation stations.

20 In 2012, I provided pre-filed testimony in support of KCP&L before the Kansas
21 Corporation Commission in Docket No. 12-KCPE-764-RTS regarding the near term
22 costs of retirement and the potential future costs for dismantlement of the Company’s

1 fossil-fueled electric generating units. In 2014, I also provided pre-filed testimony for
2 KCP&L before the MPSC in Case No. ER-2014-0370 on this issue.

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

4 A: Yes. I am a licensed professional engineer in the State of Missouri (License No. 21087)
5 and 12 other states. I also hold a Certificate of Record from the National Council of
6 Examiners for Engineering and Surveying (No. 19249).

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

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

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

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

16 **SUMMARY**

17 **Q: Would you briefly describe the retirement and dismantlement costs developed for
18 GMO's non-nuclear generating units?**

19 A: Segra was retained by GMO to study the cost of decommissioning GMO's non-nuclear
20 generating units. Decommissioning is the planned and orderly retirement of a generating
21 unit and the dismantlement and reclamation of the site. The term *decommissioning*
22 includes both retirement and dismantlement activities. Upon retirement from service, a
23 generating unit may either be rendered safe and stored almost indefinitely through on-

1 going maintenance and security measures or it can be dismantled completely and the site
2 reclaimed for other uses. Based upon Sega's experience in the electric generation
3 industry at large and our familiarity with GMO's generating fleet, Sega developed an
4 opinion of the probable costs for GMO to retire each of its fossil-fueled generating units.
5 Costs for dismantlement were also developed separately for each unit.

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

7 A: Retirement, as used in this study, refers to the planned, orderly and safe shutdown and
8 removal from service of an electric generating unit, and assumes that the unit will not be
9 used for service again. No actions will be taken to preserve the unit or any of its
10 components for reuse. Retirement activities are specific to each unit and to the common
11 facilities at sites with multiple generating units. Common site facilities are presumed to
12 remain in service until the last unit on that site is retired.

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

18 First, the unit is rendered safe by de-energizing it and disconnecting it from
19 providing output to the electric grid. The switchyards at each unit will remain in service,
20 but isolated from the retired facility. Mechanical systems are de-energized as well. Fuel
21 unloading, handling and storage facilities will be cleaned out, as well as all liquids,
22 chemicals, coolants and reagents. Certain activities are required by specific unit permits
23 and/or state or federal regulations to be performed when the unit ceases operations.

1 These may include closure of ash landfills, removal of river water intakes, and/or
2 removal of fuel oil storage tanks. However, retirement activities do not include asbestos
3 and lead paint abatement measures that are typically handled as ongoing maintenance
4 expenses during the operating life of the unit and continuing if necessary after retirement.
5 More detail is provided on retirement activities in our report, which is Schedule CRR-2.

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

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

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

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

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

2 A: The opinion of the probable costs for retirement and dismantlement developed by Segal
3 for each of GMO's fossil-fueled units and the common facilities at each plant site are
4 provided below in Table 1. All costs shown are in 2015 dollars as if the activities were
5 performed in the current year and do not account for ownership percentages and
6 jurisdictional allocations. The development of these costs is described and supported by
7 the report in Schedule CRR-2.

8 In addition, Table 1 also contains a line item for retirement of common facilities
9 at the Jeffery Energy Center (JEC). Segal did not perform a study of the costs for
10 decommissioning the JEC. GMO owns a portion of the JEC, and Westar is the owner
11 and operator of this generating plant. As with the other GMO-owned plants, certain
12 activities are required by specific unit permits and/or state or federal regulations to be
13 performed when the unit ceases operations. In the case of the JEC this includes closure
14 of ash landfills. Since the costs for ash landfill closure are documented by Westar and
15 submitted annually to the Kansas Department of Health and Environment, these costs
16 were included in this Table 1. GMO will certainly have additional retirement costs when
17 JEC is retired, but such costs have not yet been determined.

18 As shown below in Table 1, there is a significant difference in cost between
19 retiring and dismantling a power plant. The costs to retire all of GMO's non-nuclear
20 generating units and the additional costs for the JEC ash landfill closure at retirement are
21 estimated to be approximately \$87.3 million. To dismantle all of GMO's non-nuclear
22 units, I estimate that it would cost an additional \$208.3 million, which does not include
23 JEC. Some components could be sold for scrap during dismantlement thereby recovering

1 an estimated \$38.5 million and bringing the estimated Net Terminal Value (cost to
2 dismantle less salvage) for all of GMO's fossil-fueled plants to \$169.9 million. This
3 amount does not include JEC.

Table 1 - Opinion of The Probable Costs for Decommissioning GMO's Electric Generating Units

(All cost values in 2015 dollars)

Name	Unit No.	Total Unit Capability ⁽¹⁾ MW	First Year In Service	Retirement			Dismantlement		
				Unit Retirement	Activities Required by Permit, Regulation ⁽²⁾ , or Agreement ⁽³⁾	Total Retirement	Dismantlement	Scrap Value ⁽⁴⁾	Net Terminal Cost
Sibley	1	49.8	1960	\$482,368		\$482,368	\$6,034,974	\$848,154	\$5,186,820
	2	47.1	1962	\$482,368		\$482,368	\$6,034,974	\$848,154	\$5,186,820
	3	364.1	1969	\$535,958		\$535,958	\$16,835,426	\$2,757,087	\$14,078,339
	Common			\$531,710	\$13,950,965	\$14,482,675	\$10,134,174	\$1,564,206	\$8,569,968
South Harper	1	101.2							
	2	102.1	2005	\$404,885		\$404,885	\$9,383,425	\$358,946	\$9,024,479
	3	100.0							
Greenwood	1	60.7	1975						
	2	61.7	1975						
	3	63.0	1977	\$413,021	\$471,333	\$884,354	\$11,063,645	\$353,736	\$10,709,909
	4	60.7	1979						
Crossroads	1	75.4							
	2	77.9	2002	\$400,303		\$400,303	\$11,249,327	\$389,486	\$10,859,841
	3	75.9							
	4	77.8							
KCI	1	0							
	2	0	1971	\$227,662		\$227,662	\$2,789,050	\$91,317	\$2,697,733
Nevada	1	17.7	1974	\$281,190	\$56,530	\$337,720	\$6,434,106	\$45,397	\$6,388,709
Ralph Green	3	70.9	1981	\$285,572	\$81,385	\$366,957	\$6,156,152	\$95,230	\$6,060,922
Lake Road	Boiler 1	N/A	1962	\$120,344		\$120,344	\$3,098,749	\$117,312	\$2,981,437
	Boiler 2	N/A	1962	\$120,344		\$120,344	\$3,098,749	\$117,312	\$2,981,437
	Boiler 3	N/A	1937	\$161,768		\$161,768	\$3,611,257	\$151,376	\$3,459,881
	Boiler 4	N/A	1951	\$138,357		\$138,357	\$4,045,457	\$196,024	\$3,849,433
	Boiler 5	N/A	1957	\$183,266	\$1,175,349	\$1,358,615	\$6,388,857	\$224,107	\$6,164,750
	Boiler 8	N/A	2006	\$105,550		\$105,550	\$2,250,354	\$224,107	\$2,026,247
	#4 / #6	96.3	1966	\$386,400	\$637,591	\$1,023,991	\$8,380,637	\$1,262,740	\$7,117,897
	Generator 1	9.4	1950	\$49,349		\$49,349	\$2,375,879	\$38,162	\$2,337,717
	Generator 2	19.0	1958	\$49,349		\$49,349	\$2,615,898	\$43,797	\$2,572,101
	Generator 3	6.6	1962	\$43,656		\$43,656	\$1,874,480	\$25,661	\$1,848,819
	CT 5	67.0	1974	\$209,711		\$209,711	\$2,414,288	\$88,266	\$2,326,022
	CT 6	21.0	1989	\$159,554		\$159,554	\$1,665,869	\$91,317	\$1,574,552
	CT 7	20.5	1990						
	Common			\$875,025	\$174,289	\$1,049,314	\$4,054,680	\$248,964	\$3,805,716
Iatan	1	712.9	1980	\$1,035,765	\$36,970,077	\$38,005,842	\$24,018,833	\$10,000,000	\$14,018,833
	2	881.5	2010	\$1,031,343		\$1,031,343	\$27,449,519	\$11,430,000	\$16,019,519
	Common			\$590,627	\$6,042,837	\$6,633,464	\$24,874,543	\$6,850,000	\$18,024,543
Jeffery Energy Center ⁽³⁾	1	718.0	1978						
	2	715.0	1980						
	3	722.0	1983						
	Common				\$18,426,409	\$18,426,409			
TOTALS		5,395	N/A	\$9,305,445	\$77,986,765	\$87,292,210	\$208,333,302	\$38,460,858	\$169,872,444

Notes

- (1) Current net SPP accredited unit capability, MW.
- (2) Activities required by permits and/or regulations that are to occur upon ceasing operations, including ash landfill closures, and river water intake.
- (3) GMO owns a percentage of Jeffery Energy Center. Westar is the controlling owner.
- (4) Current scrap values per averaged indices.

1 **Q: Are retirement costs optional for GMO?**

2 A: At present, GMO is not required to dismantle its plants upon retirement, and therefore, it
3 is not 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 for the costs of retiring the
5 generating units and common facilities. Retirement costs are the costs that will be
6 unavoidably incurred by the Company when the plant is shut-down, even if the closed
7 plant is never dismantled.

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

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

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

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

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

22 A: Yes.

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In the Matter of KCP&L Greater Missouri Operations)
Company's Request for Authority to Implement) Case No. ER-2016-0156
A General Rate Increase for Electric Service)

AFFIDAVIT OF CHRISTOPHER R. ROGERS

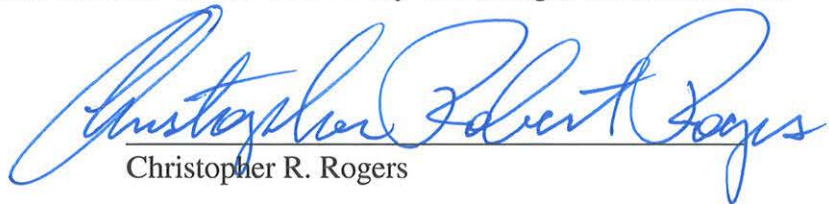
STATE OF KANSAS)
) ss
COUNTY OF JOHNSON)

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

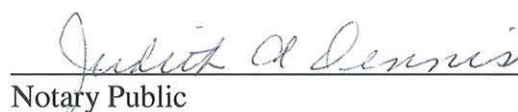
1. My name is Christopher R. Rogers. I am employed by Sega, Inc. I have been retained to serve as an expert witness to provide testimony on behalf of KCP&L Greater Missouri Operations Company.

2. Attached hereto and made a part hereof for all purposes is my Direct Testimony on behalf of KCP&L Greater Missouri Operations Company consisting of eight (8) pages, having been prepared in written form for introduction into evidence in the above-captioned docket.

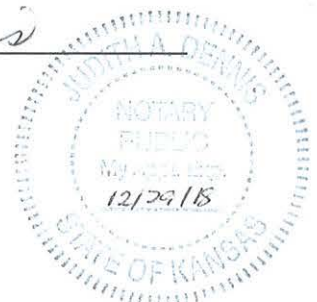
3. I have knowledge of the matters set forth therein. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded, including any attachments thereto, are true and accurate to the best of my knowledge, information and belief.


Christopher R. Rogers

Subscribed and sworn before me this 5th day of February, 2016.


Notary Public

My commission expires: December 29, 2018



Professional Qualifications

Schedule CRR-1

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

Mr. Rogers was the Manager of Generating Facilities in the Electric Department of the staff of the Missouri Public Service Commission from 1983 through 1986. He supervised the construction management audits in the 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 design services for large utility-owned coal-fired central generating facilities while employed by a nationally recognized consulting engineering firm. He served on project design teams in the main office and as the chief mechanical resident engineer on a green-field, coal-fired power plant construction site.

SELECTED PROJECT EXPERIENCE

- **Kansas City Power & Light Company, Kansas City, Missouri** - Officer-in-charge of study for the 2016 Kansas City Power & Light – Greater Missouri Operations Company (GMO) Missouri rate case providing opinion of probable costs of retirement and dismantlement of 25 fossil-fueled generating units totaling approximately 1,720-MW of capacity, including six (6) coal-fired units, and fifteen (19) combustion turbines. Prepared direct testimony for filing with the Missouri Public Service Commission sponsoring Segal's report in Case No. ER-2014-____.

Officer-in-charge of study for the 2014 Missouri rate case providing opinion of probable costs of retirement and dismantlement of 24 fossil-fueled generating units and 99 wind turbine generators totaling 5,306-MW of capacity, including eight (8) coal-fired units, one (1) combined-cycle plant, and fifteen (15) combustion turbines. Submitted pre-filed direct testimony before the Missouri Public Service Commission sponsoring Segal's report in Case No. ER-2014-0370.

Officer-in-charge of study for the 2014 Kansas rate case providing opinion of probable costs of retirement and dismantlement of 24 fossil-fueled generating units and 99 wind turbine generators totaling 5,306-MW of capacity, including eight (8) coal-fired units, one (1) combined-cycle plant, and fifteen (15) combustion turbines. Prepared direct testimony for filing with the Kansas Corporation Commission sponsoring Segal's report for Docket No. 15-KCPE-116-RTS.

Officer-in-charge of study for the 2012 Kansas rate case providing opinion of probable costs for retirement and dismantlement of 24 fossil-fueled generating units totaling 5,260-MW of capacity, including eight (8) coal-fired units, one (1) combined-cycle plant, and fifteen (15) combustion turbines. Provided pre-filed direct and rebuttal testimony before the Kansas Corporation Commission sponsoring Segal's report in Docket No. 12-KCPE-764-RTS.

- **Kansas City Power & Light Company, Kansas City, Missouri** - Officer-in-charge and project manager for 2014 power plant siting study to identify and evaluate multiple candidate sites for potential location of a new combined-cycle plants, simple-cycle peaking turbines, and reciprocating engine generating plants. Provided detailed report of findings to Kansas City Power & Light Company Resource Planning Department.

Chris R. Rogers, P.E.

Officer-in-charge and project manager for 2010 Great Plains Energy combined cycle plant siting study to identify and evaluate multiple candidate sites for potential location of new 600-MW class combined-cycle plant. Provided detailed report of findings to Kansas City Power & Light Company Resource Planning Department.

- **Kansas City Power & Light Company - GMO, Lake Road Generating Station, St. Joseph, Missouri** – Officer-in-charge and project manager for a study that assessed the feasibility of the KCP&L industrial steam generation and delivery system to serve its industrial steam customers.
- **Kansas City Power & Light - GMO (Formerly Aquila), South Harper Peaking Facility, Peculiar, Missouri** – 315-MW simple-cycle peaking plant. Project manager of Owner's Engineer for siting, permitting support, detailed installation design, balance of plant procurement, construction management services, commissioning, and documentation support. Sega's project manager and site 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.
- **Independence Power & Light Department, Independence, Missouri** – Master plan study for a nominal 320-MW municipal utility. Project manager for five-year planning 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 again on Oahu after lightning events on December 26, 2008. Officer-in-charge and project manager of team investigating causes of the outages, assessing utility outage recovery operations and identifying potential improvements to prevent or minimize future outages.
- **Utah Municipal Power Agency, Spanish Fork, Utah** – Officer-in-charge and project manager for due diligence assessment of a simple cycle 200-MW peaking plant consisting of five GE LM6000 combustion turbine generator sets.
- **Utah Municipal Power Agency, Spanish Fork, Utah** – Officer-in-Charge and Project manager for a study assessing the feasibility of potential sites and development of opinions of probable cost for installation of simple-cycle combustion turbines and reciprocating engine generating sets as a subcontractor to Sawvel and Associates of Findlay, Ohio.

Chris R. Rogers, P.E.

- **Kansas City Board of Public Utilities, Nearman Creek CT4, Kansas City, Kansas** – 85-MW simple-cycle peaking unit. Owner's Engineer (Sega, Inc.) site manager for commissioning, including checkout, performance testing, emissions testing and management of construction completion closeout activities.
- **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, Inc.'s project manager on a technical feasibility study for a 215-MW coal-fired atmospheric circulating fluidized bed boiler steam electric generating plant.
- **Cargill, Inc., Blair, Nebraska** – Sega, Inc.'s project manager for feasibility study for an 100-MW net combustion turbine and heat recovery steam generator cogeneration project.
- **Independence Power & Light Department, Independence, Missouri** – Sega, Inc.'s project manager for major refurbishment program on six GE Frame 5 and one GE 7B-regenerative, oil and gas-fired gas turbines. Project 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** – Sega, Inc.'s project manager for review of project proforma and preparation of testimony before the New Jersey Board of Public Utilities concerning net present value of a 110-MW net, gas-fired combined cycle cogeneration project.
- **Cherokee County Cogeneration Project, Gaffney, South Carolina** – Sega, Inc.'s project manager for an 80-MW net, gas-fired combined cycle (GE 106FA) cogeneration 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 FP&L.

Chris R. Rogers, P.E.

- **Independence Power and Light, Independence, Missouri** – Sega, Inc.'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.
- **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 (GE6B) cogeneration project in Oswego, New York.
- **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 consisting of 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.
- **ACE Cogeneration Project, Trona, California** – Bibb and Associates' project manager for independent engineering assessment 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.

Chris R. Rogers, P.E.

- **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.
- **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.
- **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.
- **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.
- **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 an 1150-MW, PWR nuclear generating station.

Chris R. Rogers, P.E.

- **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 1120-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 1250-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 during construction of a 220-MW pulverized coal power plant.
- **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, 600-MW, pulverized coal-generating units for the Missouri Basin Joint Power Project Agency, lead by the Basin Electric Power Cooperative, Inc.

Chris R. Rogers, P.E.

**TESTIMONY BEFORE THE
MISSOURI PUBLIC SERVICE COMMISSION**

<u>Issue Description</u>	<u>Exhibit No.</u>	<u>Transcript Vol. No.</u>	<u>Page Nos.</u>
AMEREN			
CASE NOS. EO-85-17 & ER-84-168 (on behalf of the MO PSC Staff)			
Phase I – Inservice Criteria	Direct Rebuttal Surrebuttal	A-7 A-12 A-14	7 492-83
Phase II – Net Electric Capability	Direct Surrebuttal	C-76 C-77	30 2852-2868
Phase III – Funding Decommissioning	Surrebuttal	C-38	28 2434-2440
Phase III – Inservice Review	Supplemental (1-28-85)	NA	NA NA
AMEREN			
CASE NO. ER-85-20 (on behalf of the MO PSC Staff)			
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 (on behalf of the MO PSC Staff)			
Phase I – Inservice Criteria Startup	Affidavits Direct (filed 1/10/85)	NA	NA
Phase IV – Fossil Plant Retirement Dates	Direct Surrebuttal	262 266	23 1798-1817
Phase IV – Depreciation – Wolf Creek	Rebuttal	259	
Phase IV – AWS Structural Steel Welding	Direct Surrebuttal	301 302	26 2294-2329
Phase IV – Net Electric Capability	Direct Surrebuttal	399 400	33 3682-3699
Phase IV – Accreditation Overview	Direct Surrebuttal Appendices (9/10/82)	262 436 263	23 7 1798-1817 4451-4483

Chris R. Rogers, P.E.

**TESTIMONY BEFORE THE
MISSOURI PUBLIC SERVICE COMMISSION (Cont'd)**

<u>Issue Description</u>	<u>Exhibit No.</u>	<u>Transcript Vol. No.</u>	<u>Page Nos.</u>
AMEREN			
CASE NO. ER-85-265 (on behalf of the MO PSC Staff)			
Functionalization and Classification of Costs (Jurisdictional Allocations)	Surrebuttal	89	6
			844-848
KANSAS CITY POWER & LIGHT (Formerly AQUIL INC.)			
CASE NO. EA-2006-0309 (on behalf of the Company)			
South Harper Peaking Facility Site Selection	Direct (filed 01/27/06)	N/A	N/A
KANSAS CITY POWER & LIGHT COMPANY, INC.			
CASE NO. ER-2014-0370 (on behalf of the Company)			
The Costs of Retirement and Dismantlement: Decommissioning KCP&L Fossil-Fueled Generating Units	Direct Testimony	131	N/A
			N/A

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

<u>Issue Description</u>	<u>Exhibit No.</u>	<u>Transcript Vol. No.</u>	<u>Page Nos.</u>
HAWAII ELECTRIC LIGHT COMPANY, INC.			
DOCKET NO. 99-207 (on behalf of Consumer Advocate)			
Keahole Projects or Facilities:	Direct Pre-filed CA-T-		288 – 301
1. Shop/Warehouse Building	12	II	301 – 309
2. Fire Protection System	Direct Examination	II	309 - 313
3. Water Treatment System	Commissioners' Exam		
4. Inclusion in Rate Base Amounts			

Chris R. Rogers, P.E.

**HAWAII ELECTRIC COMPANY, INC.,
MAUI ELECTRIC COMPANY, LTD., AND
HAWAII ELECTRIC LIGHT COMPANY, INC.
DOCKET NO. 2006-0431 (on behalf of Consumer Advocate)**

Consumer Advocates Statement of
Position:
Consumer Advocate's Supplement

Filed August 24, 2007
Filed: September , 19,
2008

**TESTIMONY BEFORE THE
KANSAS CORPORATION COMMISSION**

<u>Issue Description</u>	<u>Exhibit No.</u>	<u>Transcript Vol. No.</u>	<u>Page Nos.</u>

**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

Kansas City Power & Light Co.



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

Final, Rev. 1



February 2016



Project No. 14-0164

Kansas City Power & Light Co.



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

Final, Rev. 1

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February 2016



Project No. 14-0164

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CERTIFICATION

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



Christopher Robert Rogers
February 3, 2016

Christopher R. Rogers, P.E.
State of Missouri P.E. No. 021087

SECTION 1

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

1.1 INTRODUCTION

Kansas City Power & Light Company Greater Missouri Operations (GMO) Company retained Sega, Inc. (Sega) to provide an opinion of probable costs for retirement and dismantlement of its generating units. 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.

GMO 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, 2015 dollars.

1.2 DESCRIPTION OF FACILITIES

The GMO generating facilities are located on eight sites and include 18 simple-cycle combustion turbines, four steam electric generating units, and a steam production facility utilizing six boilers that can be fired to generate electricity by supplying steam to three turbine generators or supplying steam to commercial customers. 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
Sibley	1	51	1960	Coal/Steam
	2	51	1962	
	3	363.8	1969	
South Harper	1	104.5	2005	Natural Gas-Fired Combustion Turbines
	2	105.6	2005	
	3	103.8	2005	
Greenwood	1	62.5	1975	Distillate-Fired/ Natural Gas-Fired Combustion Turbines
	2	60.8	1975	
	3	65.8	1977	
	4	63.3	1979	
Crossroads	1	74.9	2002	Natural Gas-Fired Combustion Turbines
	2	72.9	2002	
	3	74.6	2002	
	4	74.4	2002	
KCI	1	0	1971	Natural Gas-Fired Combustion Turbines
	2	0	1971	
Nevada	1	20.8	1974	Distillate-Fired Combustion Turbine
Ralph Green	3	71.5	1981	Natural Gas-Fired Combustion Turbine
Lake Road	Boiler 1	N/A	1962	Distillate-Fired/ Natural Gas-Fired Boiler
	Boiler 2	N/A	1962	Distillate-Fired/ Natural Gas-Fired Boiler
	Boiler 3	N/A	1936	Natural Gas Fired Boiler
	Boiler 4	N/A	1951	Distillate-Fired/ Natural Gas-Fired Boiler
	Boiler 5	N/A	1959	Coal-Fired/Natural Gas- Fired Boiler
	Boiler 8	N/A	2006	Distillate-Fired/ Natural Gas-Fired Boiler
	#4/#6	99.0	1967	Coal-Fired/Natural Gas- Fired
	Generator 1	21.7	1951	Distillate-Fired/ Natural Gas-Fired Coal- Fired
	Generator 2	27.3	1957	Distillate-Fired/ Natural Gas-Fired Coal- Fired
	Generator 3	11.2	1962	Distillate-Fired/ Natural Gas-Fired Coal- Fired
	#5	63.0	1973	Distillate-Fired/ Natural Gas-Fired
	#6	21.0	1989	Distillate-Fired Combustion Turbine
	#7	21.7	1990	Distillate-Fired Combustion Turbine
Iatan	1	705	1980	Coal/Steam
	2	881	2010	Coal/Steam

Figure 1.1 - GMO Electric Generating Units

1.2.1 Facility Descriptions

Sibley Generating Station is a three-unit, coal-fired electric generating station located in Jackson County, near the town of Sibley, Missouri. Sibley Units 1 and 2 have sub-critical boilers, electrostatic precipitators (ESPs), and an SNCR. Sibley Unit 3 is a super-critical boiler, ESP, and an SCR.

South Harper Generating Station is a three-unit, natural gas-fired combustion turbine peaking plant in Cass County, near the town of Peculiar, Missouri.

Greenwood Generating Station is a four-unit distillate and natural gas-fired combustion turbine peaking plant in Jackson County, near the town of Greenwood, Missouri.

Crossroads Generating Station is a four-unit natural gas-fired combustion turbine peaking plant in Clarksdale, Mississippi.

KCI Generating Station is a two-unit, natural gas-fired combustion turbine peaking plant in Platte County, Missouri on the eastern edge of the Kansas City International Airport property.

Nevada Generating Station is a single-unit, distillate and natural gas-fired combustion turbine peaking plant located in Vernon County, near Nevada, Missouri.

Ralph Green Station is a single-unit, natural gas-fired combustion turbine peaking plant located in Cass County, in Pleasant Hill, Missouri.

Lake Road Generating Station is a multi-unit facility located in Buchanan County in St. Joseph, Missouri. Lake Road generates electricity from four steam turbine generators that receive steam from seven different boilers. These boilers burn either gas, distillate, or coal. These same boilers also produce steam that is sold to local steam customers. Lake Road also includes three combustion turbines that fire distillate (CTG 5, CTG 6, and CTG 7) or natural gas (CTG 5).

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.

1.3 APPROACH

Sega met with representatives of GMO to gather information about the generating units and visited each of the plant sites (with the exception of the Crossroads facility). 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 GMO's 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.

Dismantlement costs for Sibley Unit 3 was 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.

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 Sega but was not developed in an MS Project schedule. Both of these activities are represented in the MS Project schedule in Appendix A for the applicable units as a onetime cost/use in the resource allocation section of the file; therefore, they appear as a one-day activity in the schedule with the estimated costs as a one-time expense.

1.4 RESULTS

The opinion of the probable costs for retirement and dismantlement developed by Sega for each of GMO’s units and the common facilities at each plant site are provided in Figure 1.2. All costs shown are in 2015 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 Sega’s opinion, the probable cost to dismantle all of GMO’s units is approximately \$208 million. Some materials could be sold for scrap, thereby recovering approximately \$38 million and bringing the estimated net terminal value for dismantling all of GMO’s plants to \$170 million, based upon the current averaged scrap indices.

However, were GMO to retire its generating units in place without dismantlement, Sega believes the cost would be approximately \$68.9 million.

Name	Unit No.	Retirement			Dismantlement		
		Unit Retirement	Activities Required by Permit Agreement or Regulation ⁽²⁾	Total Retirement	Dismantlement	Scrap Value ⁽³⁾	Net Terminal Cost
Sibley	1	\$482,368		\$482,368	\$6,034,974	\$848,154	\$5,186,820
	2	\$482,368		\$482,368	\$6,034,974	\$848,154	\$5,186,820
	3	\$535,958		\$535,958	\$16,835,426	\$2,757,087	\$14,078,339
	Common	\$531,710	\$13,950,965	\$14,482,675	\$10,134,174	\$1,564,206	\$8,569,968
South Harper	1						
	2	\$404,885		\$404,885	\$9,383,425	\$358,946	\$9,024,479
	3						
Greenwood	1						
	2	\$413,021	\$471,333	\$884,354	\$11,063,645	\$353,746	\$10,709,899
	3						
	4						
Crossroads	1						
	2						
	3	\$400,303		\$400,303	\$11,249,327	\$389,486	\$10,859,841
	4						
KCI	1						
	2	\$227,662		\$227,662	\$2,789,050	\$91,317	\$2,697,733
Nevada	1	\$281,190	\$56,530	\$337,720	\$6,434,106	\$45,397	\$6,388,709
Ralph Green	3	\$285,572	\$81,385	\$366,957	\$6,156,152	\$95,230	\$6,060,922
Lake Road	Boiler 1	\$120,344		\$120,344	\$3,098,749	\$117,312	\$2,981,437
	Boiler 2	\$120,344		\$120,344	\$3,098,749	\$117,312	\$2,981,437
	Boiler 3	\$161,768		\$161,768	\$3,611,257	\$151,376	\$3,459,881
	Boiler 4	\$138,357		\$138,357	\$4,045,457	\$196,024	\$3,849,433
	Boiler 5	\$183,266	\$1,175,349	\$1,358,615	\$6,388,857	\$224,107	\$6,164,750
	Boiler 8	\$105,550		\$105,550	\$2,250,354	\$224,107	\$2,026,247
	#4 / #6	\$386,400	\$637,591	\$1,023,991	\$8,380,637	\$1,262,740	\$7,117,897
	Generator 1	\$49,349		\$49,349	\$2,375,879	\$38,162	\$2,337,717
	Generator 2	\$49,349		\$49,349	\$2,615,898	\$43,797	\$2,572,101
	Generator 3	\$43,656		\$43,656	\$1,874,480	\$25,661	\$1,848,819
	CT 5	\$209,711		\$209,711	\$2,414,288	\$88,266	\$2,326,022
	CT 6 & 7	\$159,554		\$159,554	\$1,665,869	\$91,317	\$1,574,552
	Common	\$875,025	\$174,289	\$1,049,314	\$4,054,680	\$248,964	\$3,805,716
Iatan	1	\$1,035,765	\$36,970,077	\$38,005,842	\$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	\$6,042,837	\$6,633,464	\$24,874,543	\$6,850,000	\$18,024,543
		\$9,305,445	\$59,560,356	\$68,865,801	\$208,333,302	\$38,460,868	\$169,872,434

**Figure 1.2 - Probable Costs of Decommissioning
GMO Electric Generating Units⁽¹⁾**

- (1) All values in 2015 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 structures.
- (3) Current scrap values per averaged indices.

SECTION 2

RETIREMENT

RETIREMENT

2.1 INTRODUCTION

Sega developed an opinion of probable cost to retire the GMO 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 (or boiler, turbine, and CTG in the case of Lake Road), plus the retirement of the common facilities. The common facilities will be retired when the last unit is retired at a site.

2.2 OPINION OF PROBABLE COST BASIS

Retirement activities will be performed by KCP&L bargaining unit personnel and managed by GMO. Man-hour costs for both management and bargaining unit personnel were provide by GMO. At the direction of GMO, 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. The only exception is at Lake Road. At Lake Road, CTG 5 is retired as a single unit and CTGs 6 and 7 are retired together per direction from the Lake Road plant staff.

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 GMO 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 open.
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.
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 GMO 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, GMO 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 GMO 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.

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 (Greenwood, Nevada, Lake Road, and Iatan Generating Stations).

While GMO accounts for asbestos abatement activities in AROs for the Greenwood, Nevada, and Sibley 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.

Wherever KCP&L already had estimates and a basis for valuing the costs of such ARO closure activities, Sega reviewed and utilized these estimates, adjusting to 2015 present-day dollars. Where there was no prior estimate available, Sega developed an opinion of probable costs for their closure. Each of these costs is provided in Appendix A.

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

SECTION 3

DISMANTLEMENT

DISMANTLEMENT

3.1 INTRODUCTION

Sega developed an opinion of probable cost to dismantle the GMO 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 with the exception of Lake Road. At Lake Road, CTG 5 is dismantled as a single unit and CTGs 6 and 7 are dismantled together per direction from the Lake Road plant staff.

3.2 OPINION OF PROBABLE COST BASIS

The project will be managed by GMO staff. GMO will hire an Owner's Engineer to assist with environmental issues and the technical dismantlement details. GMO 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 retired as detailed in Section 2 - Retirement.

A resource-loaded MS-Project dismantlement schedule and an opinion of probable cost was developed for Iatan Unit 1, Sibley Unit 3, South Harper (all three units), Greenwood (all four units), Crossroads (all four units), KCI (both units), Nevada (one unit), Ralph Green (one unit), and Lake Road Boiler 1, Lake Road Boiler 2, Lake Road Boiler 3, Lake Road Boiler 4, Lake Road Boiler 5, Lake Road Boiler 8, Lake Road CTGs 6 and 7, Lake Road CTG 5, Lake Road T-G 1, Lake Road T-G 2, Lake Road T-G 3, and the common facilities at Iatan, Sibley, and Lake Road. The opinion of probable costs developed for Sibley Unit 3 was used to derive the dismantlement costs for Sibley 1, Sibley 2, and Lake Road 4/6 using the AACE International Capacity Factor Method. The cost for Iatan Unit 2 was derived from the cost to dismantle Iatan 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 GMO 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 GMO 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 GMO 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 GMO 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 GMO 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 GMO project management team will be responsible for bidding and contracting with a qualified DGC.

Prior to the DGC mobilizing on site, the GMO 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.

3.4 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 GMO is complete and on file.

3.5 SCRAP METAL VALUES

Scrap metal weights were developed for a 700-MW coal-fired unit based on the actual quantities and materials documented in the original construction documents. 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, boilers, and turbine generators were based on weights for similar-sized equipment from previous Segal projects.

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

APPENDICES

APPENDIX A

OPINIONS OF COSTS BY UNITS

SIBLEY

SIBLEY STATION

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

Sibley Unit 1 has an SPP-accredited unit rating of 51 MW and was placed in service in 1960. Unit 1 has a sub-critical Babcock & Wilcox boiler and a Siemens turbine. River water is used for condenser cooling. Unit 1 has an electrostatic precipitator for particulate removal and an SNCR system for NO_x control.

Sibley Unit 2 has an SPP-accredited unit rating of 51 MW and was placed in service in 1962. Unit 2 has a sub-critical Babcock & Wilcox boiler and a General Electric turbine. River water is used for condenser cooling. Unit 2 has an electrostatic precipitator for particulate removal and an SNCR system for NO_x control.

Sibley Unit 3 has an SPP-accredited unit rating of 363.8 MW and was placed in service in 1969. Unit 3 has a super-critical Babcock & Wilcox boiler and a Siemens turbine. River water is used for condenser cooling. Unit 3 has an electrostatic precipitator for particulate removal and an SCR for NO_x control.

The Sibley common fuel yard has a bottom car dumper that can transfer fuel to either a bituminous fuel storage pile or a sub-bituminous fuel storage pile. The two different fuels can be blended prior to being transported to either the crusher house or to the blended pile. The blended pile has a reclaim system that can transport blended fuel to the crusher house. Crushed fuel is then transported to the Units 1, 2, and 3 silos. The fuel yard also has a tire chips storage and conveyor system that can transport tire chips to the Unit 3 silos.

All three Sibley units have a propane igniter system. The units are supplied with propane from common propane storage tanks and a common propane vaporizer.

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).

SIBLEY UNIT 1

1. Boiler and boiler auxiliaries.
2. Turbine, heat balance equipment, and turbine auxiliaries.
3. Electrostatic precipitator.
4. Dedicated Unit 1 fuel handling equipment.
5. Dedicated Unit 1 propane equipment.
6. Dedicated Unit 1 SNCR process equipment.

SIBLEY UNIT 2

1. Boiler and boiler auxiliaries.
2. Turbine, heat balance equipment, and turbine auxiliaries.
3. Electrostatic precipitator.
4. Dedicated Unit 2 fuel handling equipment.
5. Dedicated Unit 2 propane equipment.
6. Dedicated Unit 2 SNCR process equipment.

SIBLEY UNIT 3

1. Boiler and boiler auxiliaries.
2. Turbine, heat balance equipment, and turbine auxiliaries.
3. Electrostatic precipitator.

4. Dedicated Unit 3 fuel handling equipment.
5. Dedicated Unit 3 propane equipment.
6. Dedicated Unit 3 SCR process equipment.

COMMON

1. Administration/Service building.
2. Fuel yard office building.
3. Temporary service building.
4. Warehouses.
5. Tractor shed and out building.
6. Water treatment and sewage treatment.
8. Common fuel handling equipment.
9. NO_x out ultra system
10. Fire water systems.
11. Stack.
12. Diesel generator.
13. Intake.

UNIT 1

Sibley Unit 1 Retirement

Owner Costs

Pre-Retirement Activities	\$100,821
Retirement Activities	\$240,134
Post-Retirement Activities	\$26,564

Owner Direct Total	\$367,519

Owner Internal Costs	5.00%	\$18,376

Owner Contingency:	25.00%	\$96,474

Sibley Unit 1 Retirement Opinion of Probable Cost:	\$482,368.69

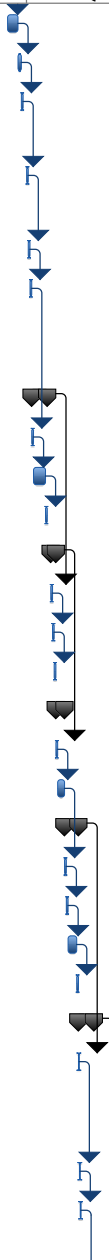
Sibley Unit 1 Retirement Costs		
ID	Task Name	Cost
1	Sibley Unit 1 Retirement	\$367,519.09
2	Pre-Engineering	\$100,821.60
3	Permit review and engineering analysis, establish isolation points, and confirm	\$100,821.60
4	KCL&L Overhead Costs	\$83,646.00
5	KCP&L Retirement Manager	\$83,646.00
6	Equipment Rentals	\$28,339.20
7	Vacuum truck	\$28,339.20
8	Retirement	\$128,148.29
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	\$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	\$893.28
25	De-energize all low-voltage AC or DC power sources for space heaters, co	\$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	\$1,120.00
28	Dry-type Power Transformers	\$1,786.56
29	De-energize all transformer primaries and verify that the secondary is de	\$893.28
30	De-energize all low-voltage AC or DC power sources for space heaters, co	\$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 aux	\$1,786.56
34	Drain lube oil system (if applicable) and dispose of oil.	\$2,642.88
35	Coal Handling	\$29,248.24
36	Isolate area K Unit 1 Silos.	\$8,522.80
37	Confirm all fuel lines and feedrs are clear of coal and coal dust.	\$1,685.44
38	Perform cleaning of the coal handling equipment to assure that all coal and	\$19,040.00
39	Propane Igniter System	\$2,528.16
40	Isolate lines from source, open and vent.	\$2,528.16
41	Boiler Chemical Feed	\$1,685.44
42	Drain all chemical feed tanks.	\$1,685.44
43	Boiler	\$29,591.57
44	Open boiler doors.	\$880.96

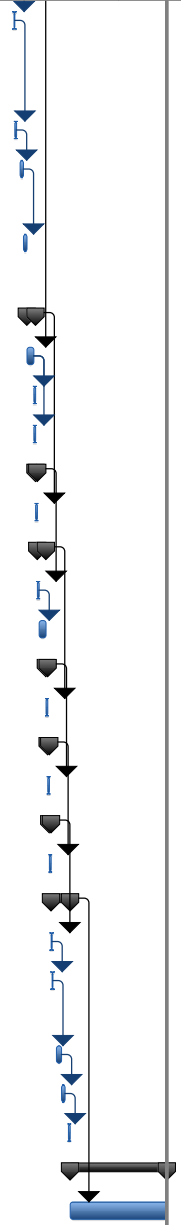
Sibley Unit 1 Retirement Costs		
ID	Task Name	Cost
45	Gas side - perform cleaning of the boiler and bottom ash system.	\$16,800.00
46	Drain boiler, drums, downcomers and headers.	\$842.72
47	Open drum doors and blowdown tank doors.	\$880.96
48	Drain and vent the service water and ash sluice water systems	\$1,541.36
49	Clean bottom ash, economizer ash and fly ash system.	\$2,480.13
50	Open, flush with water and vent the SNCR/RRI piping	\$6,165.44
51	Precipitator	\$10,603.04
52	Multiple cleaning cycles for collection plates.	\$2,528.16
53	Clear hoppers of all ash	\$2,805.44
54	Disconnect transformers.	\$1,786.56
55	Mechanically secure all compartment dampers and hopper outlet valves in	\$720.48
56	Disconnect ash transport piping and washdown hoppers and interior of cas	\$1,000.48
57	Install bird screens across hopper ash outlet and ash line flanges.	\$880.96
58	Padlock or tack weld all hopper doors shut. (note: if ash hopper doors are i	\$880.96
59	Ductwork	\$6,480.96
60	Open ductwork doors.	\$880.96
61	Perform extensive cleaning of the ductwork.	\$5,600.00
62	Isolate ductwork at tie to ductwork common to Unit 2	\$0.00
63	Condensate and Feedwater Piping	\$2,528.16
64	Drain water from the system.	\$842.72
65	Leave open vents and drains.	\$842.72
66	Drain, open and vent condensate storage tanks	\$842.72
67	Feedwater heaters	\$2,528.16
68	Drain feedwater heaters	\$842.72
69	Leave open vents and drains.	\$1,685.44
70	Turbine and Condenser	\$4,385.68
71	Drain hotwell and leave doors open.	\$861.84
72	Open main turbine doors.	\$880.96
73	Remove lube oil.	\$2,642.88
74	Drain Gland Water Tank and Condensate Collection Tank	\$0.00
75	Generator	\$6,095.76
76	Verify that generator circuit breaker is open and racked out or that high-vo	\$446.64
77	Verify that generator field breaker or contactor (if applicable) is open.	\$446.64
78	De-energize power supplies to generator excitation system at the source.	\$446.64
79	De-energize AC and DC power supplies to generator and exciter space heat	\$446.64
80	Drain generator and exciter cooling water systems (if applicable).	\$861.84
81	Disconnect and remove hydrogen gas tanks and purge generator hydrogen	\$1,685.44
82	Disconnect and remove fire protection system gas/foam tanks and purge fi	\$1,761.92
83	Circulation Water and Turbine Cooling Water System	\$3,409.12
84	Drain.	\$1,685.44
85	Open water box doors.	\$880.96
86	Drain any circulating water chemical feed tanks.	\$842.72
87	Compressed Air System	\$842.72
88	Open vents and drains.	\$842.72
Page 2		

ID	Task Name	Cost
89	Auxiliary Steam System	\$2,528.16
90	Drain water from system.	\$842.72
91	Open and vent F.D. Fan Steam Coils	\$1,685.44
92	Bearing Cooling Water and Boiler Cooling Water System	\$842.72
93	Drain water from system and vent.	\$842.72
94	Condenser Air Extraction System	\$842.72
95	Drain water from system.	\$842.72
96	Building Heating System	\$842.72
97	Drain water from system.	\$842.72
98	Battery System	\$4,253.28
99	De-energize all battery chargers from the source.	\$446.64
100	Open all AC and DC circuit breakers and/or fused switches on battery charge	\$446.64
101	Remove and dispose of battery electrolyte.	\$1,680.00
102	Remove and dispose of battery cells.	\$1,120.00
103	Clean up and dispose of electrolyte on surface areas around batteries.	\$560.00
104	Post Retirement Activities	\$26,564.00
105	Post Retirement Activities	\$26,564.00

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Sibley Unit 1 Retirement			1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
1	Sibley Unit 1 Retirement	241 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	135 days					
5	KCP&L Retirement Manager	135 days					
6	Equipment Rentals	135 days					
7	Vacuum truck	135 days					
8	Retirement	135 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					
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					

Sibley Unit 1 Retirement								
ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	
53	Clear hoppers of all ash	4 days						
54	Disconnect transformers.	2 days						
55	Mechanically secure all compartment dampers and hopper outlet valves in open position.	1 day						
56	Disconnect ash transport piping and washdown hoppers and interior of casing.	1 day						
57	Install bird screens across hopper ash outlet and ash line flanges.	1 day						
58	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						
59	Ductwork	7 days						
60	Open ductwork doors.	1 day						
61	Perform extensive cleaning of the ductwork.	5 days						
62	Isolate ductwork at tie to ductwork common to Unit 2	1 day						
63	Condensate and Feedwater Piping	3 days						
64	Drain water from the system.	1 day						
65	Leave open vents and drains.	1 day						
66	Drain, open and vent condensate storage tanks	1 day						
67	Feedwater heaters	3 days						
68	Drain feedwater heaters	1 day						
69	Leave open vents and drains.	2 days						
70	Turbine and Condenser	6 days						
71	Drain hotwell and leave doors open.	1 day						
72	Open main turbine doors.	1 day						
73	Remove lube oil.	3 days						
74	Drain Gland Water Tank and Condensate Collection Tank	1 day						
75	Generator	7 days						
76	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						
77	Verify that generator field breaker or contactor (if applicable) is open	0.5 days						
78	De-energize power supplies to generator excitation system at the source.	0.5 days						
Page 3								

Sibley Unit 1 Retirement								
ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	
79	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	0.5 days						
80	Drain generator and exciter cooling water systems (if applicable).	1 day						
81	Disconnect and remove hydrogen gas tanks and purge generator hydrogen system.	2 days						
82	Disconnect and remove fire protection system gas/foam tanks and purge fire protection system.	2 days						
83	Circulation Water and Turbine Cooling Water System	3 days						
84	Drain.	2 days						
85	Open water box doors.	1 day						
86	Drain any circulating water chemical feed tanks.	1 day						
87	Compressed Air System	1 day						
88	Open vents and drains.	1 day						
89	Auxiliary Steam System	3 days						
90	Drain water from system.	1 day						
91	Open and vent F.D. Fan Steam Coils	2 days						
92	Bearing Cooling Water and Boiler Cooling Water System	1 day						
93	Drain water from system and vent.	1 day						
94	Condenser Air Extraction System	1 day						
95	Drain water from system.	1 day						
96	Building Heating System	1 day						
97	Drain water from system.	1 day						
98	Battery System	7 days						
99	De-energize all battery chargers from the source.	0.5 days						
100	Open all AC and DC circuit breakers and/or fused switches on battery chargers and disconnect cables from batteries.	0.5 days						
101	Remove and dispose of battery electrolyte.	3 days						
102	Remove and dispose of battery cells.	2 days						
103	Clean up and dispose of electrolyte on surface areas around batteries.	1 day						
104	Post Retirement Activities	40 days						
105	Post Retirement Activities	40 days						

Sibley Unit 1 Dismantlement

Owner Costs

Pre-Dismantlement Activities	\$892,760	
Overhead During Dismantlement	\$492,984	
Post-Dismantlement Activities	\$49,140	
Owner Costs Total*		\$1,434,884

Demolition General Contractor (DGC) Costs

Site Management	\$268,729
Equipment Rental	\$457,572
Consumables	\$456,510
Scrap Crew(s)	\$452,980
Dismantlement	\$1,008,001

Contractor Direct Cost* \$2,643,792

Contractor Allowances

DGC Insurance	2.00%	\$52,876
Contingency/Profit	15.00%	\$404,500
Performance Bond	2.00%	\$62,023.36

Contractor Costs Total: \$3,163,191

Total: \$4,598,075

Owner Internal Costs: 5.00% \$229,904

Owner Contingency: 25.00% \$1,206,995

Sibley Unit 1 Dismantlement Opinion of Probable Cost: \$6,034,974

*Owner Costs Total + Contractor Direct Costs = Manpower Loaded Schedule Total w/o Contractor Allowances
= \$4,078,676

UNIT 2

Sibley Unit 2 Retirement

Owner Costs

Pre-Retirement Activities	\$100,821
Retirement Activities	\$240,134
Post-Retirement Activities	\$26,564

Owner Direct Total	\$367,519

Owner Internal Costs	5.00%	\$18,376

Owner Contingency:	25.00%	\$96,474

Sibley Unit 2 Retirement Opinion of Probable Cost:	\$482,368.69

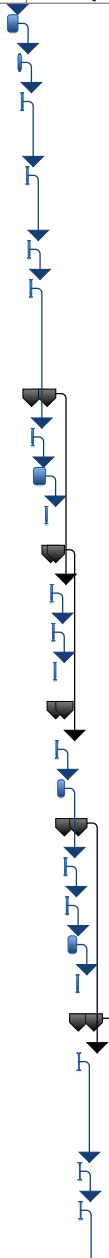
Sibley Unit 2 Retirement		
ID	Task Name	Cost
1	Sibley Unit 2 Retirement	\$367,519.09
2	Pre-Engineering	\$100,821.60
3	Permit review and engineering analysis, establish isolation points, and confirm	\$100,821.60
4	KCL&L Overhead Costs	\$83,646.00
5	KCP&L Retirement Manager	\$83,646.00
6	Equipment Rentals	\$28,339.20
7	Vacuum truck	\$28,339.20
8	Retirement	\$128,148.29
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	\$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	\$893.28
25	De-energize all low-voltage AC or DC power sources for space heaters, co	\$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	\$1,120.00
28	Dry-type Power Transformers	\$1,786.56
29	De-energize all transformer primaries and verify that the secondary is de	\$893.28
30	De-energize all low-voltage AC or DC power sources for space heaters, co	\$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 aux	\$1,786.56
34	Drain lube oil system (if applicable) and dispose of oil.	\$2,642.88
35	Coal Handling	\$29,248.24
36	Isolate area K Unit 1 Silos.	\$8,522.80
37	Confirm all fuel lines and feeders are clear of coal and coal dust.	\$1,685.44
38	Perform cleaning of the coal handling equipment to assure that all coal and	\$19,040.00
39	Propane Igniter System	\$2,528.16
40	Isolate lines from source, open and vent.	\$2,528.16
41	Boiler Chemical Feed	\$1,685.44
42	Drain all chemical feed tanks.	\$1,685.44
43	Boiler	\$29,591.57
44	Open boiler doors.	\$880.96

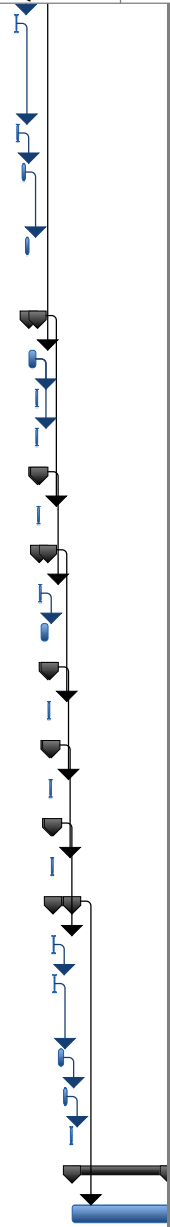
Sibley Unit 2 Retirement		
ID	Task Name	Cost
45	Gas side - perform cleaning of the boiler and bottom ash system.	\$16,800.00
46	Drain boiler, drums, downcomers and headers.	\$842.72
47	Open drum doors and blowdown tank doors.	\$880.96
48	Drain and vent the service water and ash sluice water systems	\$1,541.36
49	Clean bottom ash, economizer ash and fly ash system.	\$2,480.13
50	Open, flush with water and vent the SNCR/RRI piping	\$6,165.44
51	Precipitator	\$10,603.04
52	Multiple cleaning cycles for collection plates.	\$2,528.16
53	Clear hoppers of all ash	\$2,805.44
54	Disconnect transformers.	\$1,786.56
55	Mechanically secure all compartment dampers and hopper outlet valves in	\$720.48
56	Disconnect ash transport piping and washdown hoppers and interior of cas	\$1,000.48
57	Install bird screens across hopper ash outlet and ash line flanges.	\$880.96
58	Padlock or tack weld all hopper doors shut. (note: if ash hopper doors are i	\$880.96
59	Ductwork	\$6,480.96
60	Open ductwork doors.	\$880.96
61	Perform extensive cleaning of the ductwork.	\$5,600.00
62	Isolate ductwork at tie to ductwork common to Unit 2	\$0.00
63	Condensate and Feedwater Piping	\$2,528.16
64	Drain water from the system.	\$842.72
65	Leave open vents and drains.	\$842.72
66	Drain, open and vent condensate storage tanks	\$842.72
67	Feedwater heaters	\$2,528.16
68	Drain feedwater heaters	\$842.72
69	Leave open vents and drains.	\$1,685.44
70	Turbine and Condenser	\$4,385.68
71	Drain hotwell and leave doors open.	\$861.84
72	Open main turbine doors.	\$880.96
73	Remove lube oil.	\$2,642.88
74	Drain Gland Water Tank and Condensate Collection Tank	\$0.00
75	Generator	\$6,095.76
76	Verify that generator circuit breaker is open and racked out or that high-vo	\$446.64
77	Verify that generator field breaker or contactor (if applicable) is open.	\$446.64
78	De-energize power supplies to generator excitation system at the source.	\$446.64
79	De-energize AC and DC power supplies to generator and exciter space heat	\$446.64
80	Drain generator and exciter cooling water systems (if applicable).	\$861.84
81	Disconnect and remove hydrogen gas tanks and purge generator hydrogen	\$1,685.44
82	Disconnect and remove fire protection system gas/foam tanks and purge fi	\$1,761.92
83	Circulation Water and Turbine Cooling Water System	\$3,409.12
84	Drain.	\$1,685.44
85	Open water box doors.	\$880.96
86	Drain any circulating water chemical feed tanks.	\$842.72
87	Compressed Air System	\$842.72
88	Open vents and drains.	\$842.72
Page 2		

ID	Task Name	Cost
89	Auxiliary Steam System	\$2,528.16
90	Drain water from system.	\$842.72
91	Open and vent F.D. Fan Steam Coils	\$1,685.44
92	Bearing Cooling Water and Boiler Cooling Water System	\$842.72
93	Drain water from system and vent.	\$842.72
94	Condenser Air Extraction System	\$842.72
95	Drain water from system.	\$842.72
96	Building Heating System	\$842.72
97	Drain water from system.	\$842.72
98	Battery System	\$4,253.28
99	De-energize all battery chargers from the source.	\$446.64
100	Open all AC and DC circuit breakers and/or fused switches on battery charge	\$446.64
101	Remove and dispose of battery electrolyte.	\$1,680.00
102	Remove and dispose of battery cells.	\$1,120.00
103	Clean up and dispose of electrolyte on surface areas around batteries.	\$560.00
104	Post Retirement Activities	\$26,564.00
105	Post Retirement Activities	\$26,564.00

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Sibley Unit 2 Retirement			1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
1	Sibley Unit 2 Retirement	241 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	135 days					
5	KCP&L Retirement Manager	135 days					
6	Equipment Rentals	135 days					
7	Vacuum truck	135 days					
8	Retirement	135 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					
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					

Sibley Unit 2 Retirement								
ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	
53	Clear hoppers of all ash	4 days						
54	Disconnect transformers.	2 days						
55	Mechanically secure all compartment dampers and hopper outlet valves in open position.	1 day						
56	Disconnect ash transport piping and washdown hoppers and interior of casing.	1 day						
57	Install bird screens across hopper ash outlet and ash line flanges.	1 day						
58	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						
59	Ductwork	7 days						
60	Open ductwork doors.	1 day						
61	Perform extensive cleaning of the ductwork.	5 days						
62	Isolate ductwork at tie to ductwork common to Unit 2	1 day						
63	Condensate and Feedwater Piping	3 days						
64	Drain water from the system.	1 day						
65	Leave open vents and drains.	1 day						
66	Drain, open and vent condensate storage tanks	1 day						
67	Feedwater heaters	3 days						
68	Drain feedwater heaters	1 day						
69	Leave open vents and drains.	2 days						
70	Turbine and Condenser	6 days						
71	Drain hotwell and leave doors open.	1 day						
72	Open main turbine doors.	1 day						
73	Remove lube oil.	3 days						
74	Drain Gland Water Tank and Condensate Collection Tank	1 day						
75	Generator	7 days						
76	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						
77	Verify that generator field breaker or contactor (if applicable) is open	0.5 days						
78	De-energize power supplies to generator excitation system at the source.	0.5 days						
Page 3								

Sibley Unit 2 Retirement									
ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter		
79	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	0.5 days							
80	Drain generator and exciter cooling water systems (if applicable).	1 day							
81	Disconnect and remove hydrogen gas tanks and purge generator hydrogen system.	2 days							
82	Disconnect and remove fire protection system gas/foam tanks and purge fire protection system.	2 days							
83	Circulation Water and Turbine Cooling Water System	3 days							
84	Drain.	2 days							
85	Open water box doors.	1 day							
86	Drain any circulating water chemical feed tanks.	1 day							
87	Compressed Air System	1 day							
88	Open vents and drains.	1 day							
89	Auxiliary Steam System	3 days							
90	Drain water from system.	1 day							
91	Open and vent F.D. Fan Steam Coils	2 days							
92	Bearing Cooling Water and Boiler Cooling Water System	1 day							
93	Drain water from system and vent.	1 day							
94	Condenser Air Extraction System	1 day							
95	Drain water from system.	1 day							
96	Building Heating System	1 day							
97	Drain water from system.	1 day							
98	Battery System	7 days							
99	De-energize all battery chargers from the source.	0.5 days							
100	Open all AC and DC circuit breakers and/or fused switches on battery chargers and disconnect cables from batteries.	0.5 days							
101	Remove and dispose of battery electrolyte.	3 days							
102	Remove and dispose of battery cells.	2 days							
103	Clean up and dispose of electrolyte on surface areas around batteries.	1 day							
104	Post Retirement Activities	40 days							
105	Post Retirement Activities	40 days							
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Sibley Unit 2 Dismantlement

Owner Costs

Pre-Dismantlement Activities	\$892,760
Overhead During Dismantlement	\$492,984
Post-Dismantlement Activities	\$49,140
Owner Costs Total*	\$1,434,884

Demolition General Contractor (DGC) Costs

Site Management	\$268,729
Equipment Rental	\$457,572
Consummables	\$456,510
Scrap Crew(s)	\$452,980
Dismantlement	\$1,008,001

Contractor Direct Cost* \$2,643,792

Contractor Allowances

DGC Insurance	2.00%	\$52,876
Contingency/Profit	15.00%	\$404,500
Performance Bond	2.00%	\$62,023.36

Contractor Costs Total: \$3,163,191

Total: \$4,598,075

Owner Internal Costs: 5.00% \$229,904

Owner Contingency: 25.00% \$1,206,995

Sibley Unit 2 Dismantlement Opinion of Probable Cost: \$6,034,974

*Owner Costs Total + Contractor Direct Costs = Manpower Loaded Schedule Total w/o Contractor Allowances
= \$4,078,676

UNIT 3

Sibley Unit 3 Retirement

Owner Costs

Pre-Retirement Activities	\$100,821
Retirement Activities	\$280,964
Post-Retirement Activities	\$26,564

Owner Direct Total	\$408,349

Owner Internal Costs	5.00%	\$20,417

Owner Contingency:	25.00%	\$107,192

Sibley Unit 3 Retirement Opinion of Probable Cost:	\$535,958.06

Sibley Unit 3 Retirement		
ID	Task Name	Cost
1	Sibley Unit 3 Retirement	\$408,350.61
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	\$99,755.60
5	KCP&L Retirement Manager	\$99,755.60
6	Equipment Rentals	\$33,797.12
7	Vacuum truck	\$33,797.12
8	Retirement	\$147,412.29
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
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Sibley Unit 3 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 silos in Area M.	\$1,704.56
37	Confirm conveyors are run out of fuel.	\$1,685.44
38	Perform cleaning of the coal handling equipment to assure that all coal and coal dust has been removed from area.	\$22,400.00
39	Propane Igniter System	\$2,528.16
40	Isolate lines from source, open and vent.	\$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	\$32,108.85
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, vent and clean the fly ash, slag and transport water system	\$2,480.13
54	Drain and vent the steam coil air heaters and piping	\$1,541.36
55	Drain and vent the steam coil air heater drain tanks	\$1,541.36
56	Drain and vent boiler sampling system panel and piping	\$1,541.36
57	Precipitator	\$9,901.68
58	Multiple cleaning cycles for collection plates.	\$2,528.16
59	Clear hoppers of all ash	\$2,104.08
60	Disconnect transformers.	\$1,786.56
61	Mechanically secure all compartment dampers and hopper outlet valves in open position.	\$720.48
62	Disconnect ash transport piping and washdown hoppers and interior of casing.	\$1,000.48
63	Install bird screens across hopper ash outlet and ash line flanges.	\$880.96
64	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
65	Ductwork	\$12,080.96
66	Open ductwork doors.	\$880.96
67	Perform extensive cleaning of the ductwork.	\$11,200.00
68	Isolate ductwork at tie to common ductwork.	\$0.00
69	Condensate and Feedwater Piping	\$1,685.44
70	Drain water from the system.	\$842.72
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Sibley Unit 3 Retirement		
ID	Task Name	Cost
71	Leave open vents and drains.	\$842.72
72	Feedwater heaters	\$3,370.88
73	Drain feedwater heaters	\$842.72
74	Leave open vents and drains.	\$1,685.44
75	Drain and vent the heater drain piping.	\$842.72
76	Deaerator and Deaerator Storage Tank	\$1,685.44
77	Drain Deaerator and Storage	\$842.72
78	Leave open vents and drains.	\$842.72
79	SCR	\$9,053.52
80	Vacuum fly ash from catalyst.	\$1,680.00
81	Remove catalyst of salvage or disposal.	\$2,441.44
82	Padlock or tack weld access doors shut.	\$880.96
83	Remove ammonia from storage tank for resale.	\$701.36
84	Wash out and drain storage tank and supply piping.	\$701.36
85	Vent storage tank and all piping. Leave vent and drain valves open or remove. Install bird screens.	\$861.84
86	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	\$1,786.56
87	Turbine(s) and Condenser	\$5,266.64
88	Drain hotwell and leave doors open.	\$861.84
89	Open main turbine doors.	\$880.96
90	Open bfp turbine doors.	\$880.96
91	Remove lube oil.	\$2,642.88
92	Generator	\$6,095.76
93	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
94	Verify that generator field breaker or contactor (if applicable) is open.	\$446.64
95	De-energize power supplies to generator excitation system at the source.	\$446.64
96	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
97	Drain generator and exciter cooling water systems (if applicable).	\$861.84
98	Disconnect and remove hydrogen gas tanks and purge generator hydrogen system.	\$1,685.44
99	Disconnect and remove fire protection system gas/foam tanks and purge fire protection system.	\$1,761.92
100	Circulation Water and Turbine Cooling Water System	\$3,409.12
101	Drain.	\$1,685.44
102	Open water box doors.	\$880.96
103	Drain any circulating water chemical feed tanks.	\$842.72
Page 3		

ID	Task Name	Cost
104	Compressed Air System	\$842.72
105	Open vents and drains.	\$842.72
106	Auxiliary Steam System	\$842.72
107	Drain water from system.	\$842.72
108	Station Cooling Water System	\$1,685.44
109	Drain water from system.	\$842.72
110	Vent piping.	\$842.72
111	Condenser Air Extraction	\$842.72
112	Drain water from system.	\$842.72
113	Building Heating System	\$842.72
114	Drain water from system.	\$842.72
115	Battery System	\$4,253.28
116	De-energize all battery chargers from the source.	\$446.64
117	Open all AC and DC circuit breakers and/or fused switches on battery chargers and disconnect cables from batteries.	\$446.64
118	Remove and dispose of battery electrolyte.	\$1,680.00
119	Remove and dispose of battery cells.	\$1,120.00
120	Clean up and dispose of electrolyte on surface areas around batteries.	\$560.00
121	Post Retirement Activities	\$26,564.00
122	Post Retirement Activities	\$26,564.00

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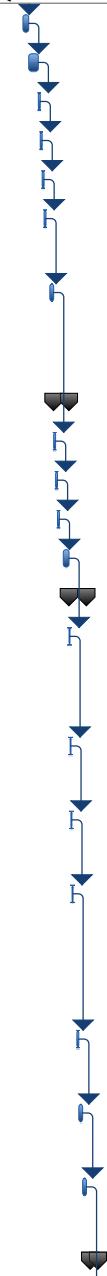
Sibley Unit 3 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
1	Sibley Unit 3 Retirement	267 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	161 days					
5	KCP&L Retirement Manager	161 days					
6	Equipment Rentals	161 days					
7	Vacuum truck	161 days					
8	Retirement	161 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					

Sibley Unit 3 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 silos in Area M.	1 day					
37	Confirm conveyors are run out of fuel.	2 days					
38	Perform cleaning of the coal handling equipment to assure that all coal and coal dust has been removed from area.	20 days					
39	Propane Igniter System	3 days					
40	Isolate lines from source, open and vent.	3 days					
41	Boiler Chemical Feed	2 days					
42	Drain all chemical feed tanks.	2 days					
43	Condensate Polisher	6 days					
44	Drain water from system.	1 day					
45	Drain acid and caustic tanks.	2 days					
46	Open tanks and vessels.	1 day					
47	Remove resin.	2 days					
48	Boiler	30 days					

Sibley Unit 3 Retirement

ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter
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, vent and clean the fly ash, slag and transport water system	5 days					
54	Drain and vent the steam coil air heaters and piping	1 day					
55	Drain and vent the steam coil air heater drain tanks	1 day					
56	Drain and vent boiler sampling system panel and piping	1 day					
57	Precipitator	12 days					
58	Multiple cleaning cycles for collection plates.	3 days					
59	Clear hoppers of all ash	3 days					
60	Disconnect transformers.	2 days					
61	Mechanically secure all compartment dampers and hopper	1 day					
62	Disconnect ash transport piping and washdown hoppers ar	1 day					
63	Install bird screens across hopper ash outlet and ash line fl	1 day					
64	Padlock or tack weld all hopper doors shut. (note: if ash ho	1 day					
65	Ductwork	13 days					
66	Open ductwork doors.	1 day					
67	Perform extensive cleaning of the ductwork.	10 days					
68	Isolate ductwork at tie to common ductwork.	2 days					
69	Condensate and Feedwater Piping	2 days					
70	Drain water from the system.	1 day					
71	Leave open vents and drains.	1 day					
72	Feedwater heaters	4 days					
73	Drain feedwater heaters	1 day					
74	Leave open vents and drains.	2 days					
75	Drain and vent the heater drain piping.	1 day					
76	Deaerator and Deaerator Storage Tank	2 days					
77	Drain Deaerator and Storage	1 day					
78	Leave open vents and drains.	1 day					
79	SCR	12 days					

Sibley Unit 3 Retirement								
ID	Task Name	Duration	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	
80	Vacuum fly ash from catalyst.	3 days						
81	Remove catalyst of salvage or disposal.	3 days						
82	Padlock or tack weld access doors shut.	1 day						
83	Remove ammonia from storage tank for resale.	1 day						
84	Wash out and drain storage tank and supply piping.	1 day						
85	Vent storage tank and all piping. Leave vent and drain valves open or remove. Install bird screens.	1 day						
86	Pull electrical supply breakers on all electrical equipment except lighting and HVAC components that are to remain in service.	2 days						
87	Turbine(s) and Condenser	6 days						
88	Drain hotwell and leave doors open.	1 day						
89	Open main turbine doors.	1 day						
90	Open bfp turbine doors.	1 day						
91	Remove lube oil.	3 days						
92	Generator	7 days						
93	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						
94	Verify that generator field breaker or contactor (if applicable) is open.	0.5 days						
95	De-energize power supplies to generator excitation system at the source.	0.5 days						
96	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						
97	Drain generator and exciter cooling water systems (if applicable).	1 day						
98	Disconnect and remove hydrogen gas tanks and purge generator hydrogen system.	2 days						
99	Disconnect and remove fire protection system gas/foam tanks and purge fire protection system.	2 days						
100	Circulation Water and Turbine Cooling Water System	4 days						
Page 4								

Sibley Unit 3 Dismantlement

Owner Costs

Pre-Dismantlement Activities	\$892,760	
Overhead During Dismantlement	\$1,602,538	
Post-Dismantlement Activities	\$49,140	
Owner Costs Total*		\$2,544,438

Demolition General Contractor (DGC) Costs

Site Management	\$873,555
Equipment Rental	\$1,487,425
Consumables	\$1,483,973
Scrap Crew(s)	\$1,472,497
Dismantlement	\$3,276,697

Contractor Direct Cost* \$8,594,147

Contractor Allowances

DGC Insurance	2.00%	\$171,883
Contingency/Profit	15.00%	\$1,314,904
Performance Bond	2.00%	\$201,618.69

Contractor Costs Total: \$10,282,553

Total: \$12,826,991

Owner Internal Costs: 5.00% \$641,350

Owner Contingency: 25.00% \$3,367,085

Sibley Unit 3 Dismantlement Opinion of Probable Cost: \$16,835,426

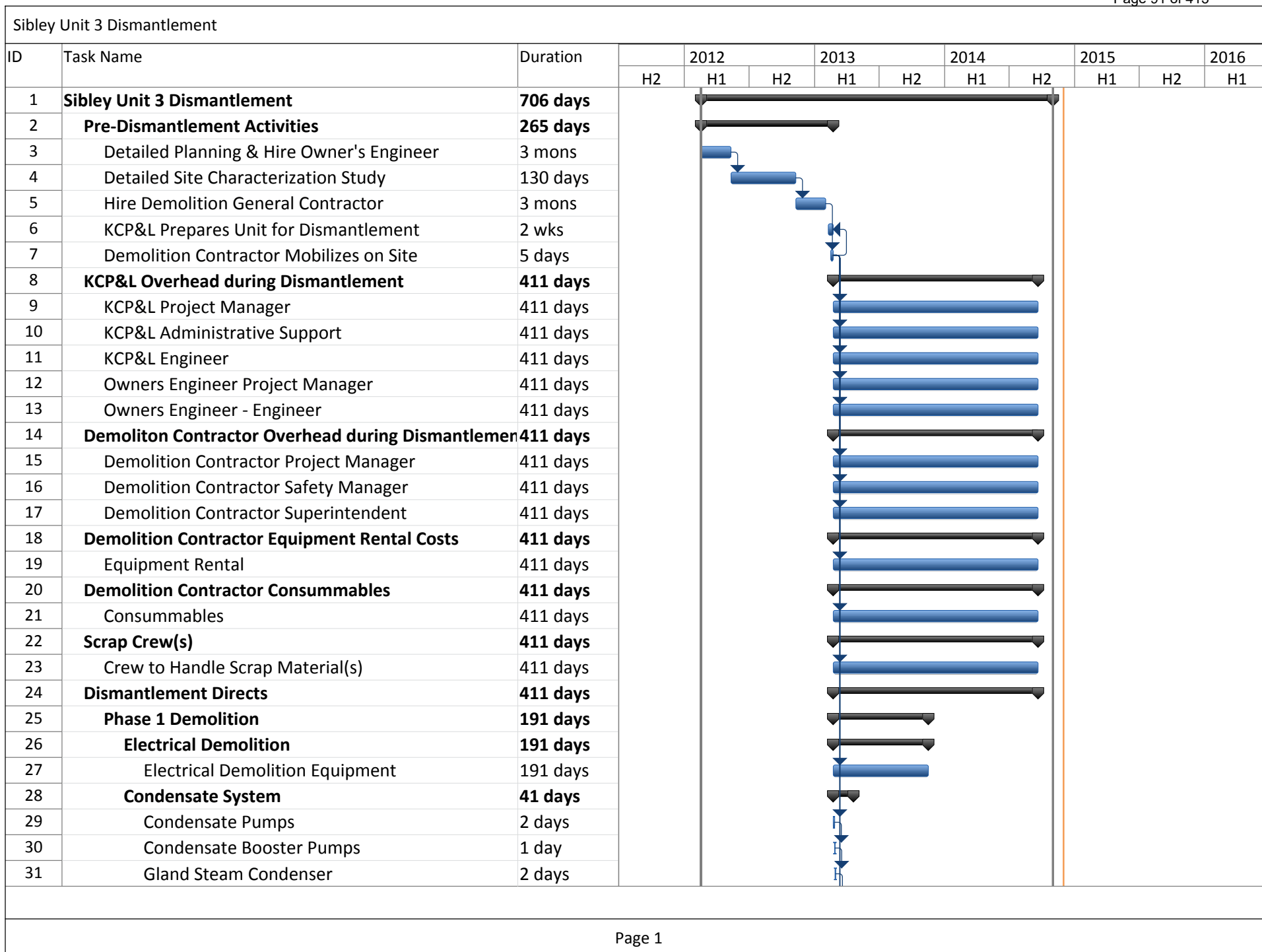
*Owner Costs Total + Contractor Direct Costs = Manpower Loaded Schedule Total w/o Contractor Allowances
= \$11,138,585

Sibley Unit 3 Dismantlement		
ID	Task Name	Cost
1	Sibley Unit 3 Dismantlement	\$11,138,588.64
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	\$1,602,538.32
9	KCP&L Project Manager	\$254,655.60
10	KCP&L Administrative Support	\$94,168.32
11	KCP&L Engineer	\$418,562.40
12	Owners Engineer Project Manager	\$124,944.00
13	Owners Engineer - Engineer	\$710,208.00
14	Demolition Contractor Overhead during Dismantlement	\$873,555.84
15	Demolition Contractor Project Manager	\$247,158.96
16	Demolition Contractor Safety Manager	\$220,065.84
17	Demolition Contractor Superintendent	\$406,331.04
18	Demolition Contractor Equipment Rental Costs	\$1,487,425.44
19	Equipment Rental	\$1,487,425.44
20	Demolition Contractor Consumables	\$1,483,973.04
21	Consumables	\$1,483,973.04
22	Scrap Crew(s)	\$1,472,497.92
23	Crew to Handle Scrap Material(s)	\$1,472,497.92
24	Dismantlement Directs	\$3,276,697.76
25	Phase 1 Demolition	\$775,861.84
26	Electrical Demolition	\$342,149.76
27	Electrical Demolition Equipment	\$342,149.76
28	Condensate System	\$73,445.76
29	Condensate Pumps	\$3,582.72
30	Condensate Booster Pumps	\$1,791.36
31	Gland Steam Condenser	\$3,582.72
32	Low Pressure Heaters (except the condenser neck heat exchangers)	\$26,870.40
33	Deaerator	\$7,165.44
34	Deaerator Storage Tank	\$7,165.44
35	Condensate Piping	\$17,913.60
36	Polisher Vessels, Regen Vessels and Support Skids	\$5,374.08
37	Boiler Feed System	\$42,298.88
38	Boiler Feed Pump Turbines (2) and Exhaust	\$10,054.40
39	Boiler Feed Pumps - Turbine Driven	\$14,330.88
40	Start-up Boiler Feed Pump	\$0.00
41	High Pressure Heaters	\$17,913.60
42	Feedwater piping	\$0.00
43	Critical Piping	\$69,863.04

Sibley Unit 3 Dismantlement		
ID	Task Name	Cost
44	Main Steam Piping	\$23,287.68
45	Cold Reheat Piping	\$23,287.68
46	Hot Reheat Piping	\$23,287.68
47	Extraction Steam System	\$17,913.60
48	Piping and Valves	\$17,913.60
49	Heater Drips	\$8,956.80
50	Heater Drip Pump	\$1,791.36
51	Piping	\$7,165.44
52	Auxiliary Steam	\$12,539.52
53	Auxiliary Steam Piping, Tanks and Misc. Equipment	\$12,539.52
54	Circulating Water (plant side)	\$5,374.08
55	Waterboxes	\$5,374.08
56	Station Cooling Water	\$16,122.24
57	Station Cooling Water Pumps	\$1,791.36
58	Station Cooling Water Heat Exchanger	\$3,582.72
59	Station Cooling Water Piping	\$10,748.16
60	Chemical Mixing Tank	\$0.00
61	Station Cooling Water Head Tank	\$0.00
62	Service Water	\$12,539.52
63	Service Water Piping	\$12,539.52
64	Propane System (plant side)	\$16,122.24
65	Propane Piping and Valves	\$7,165.44
66	Igniters	\$8,956.80
67	Air Preheat System	\$7,165.44
68	Steam Coil Air Heater Piping	\$3,582.72
69	Steam Coil Drain Pumps	\$1,791.36
70	Steam Coil Drain Tanks	\$1,791.36
71	Condenser Air Extraction System	\$12,539.52
72	Vacuum Pumps	\$7,165.44
73	Vacuum Priming Pump	\$1,791.36
74	Vacuum Pump Piping	\$3,582.72
75	Turbine Seals and Drains	\$7,165.44
76	Piping	\$7,165.44
77	Turbine Lube Oil System	\$20,564.40
78	Turbine Lube Oil Tank	\$9,816.24
79	Turbine Lube Oil Pumps	\$7,165.44
80	Turbine Oil Mist Eliminator	\$3,582.72
81	Generator Auxiliary Systems	\$25,079.04
82	Hydrogen Cooler Skid and Piping	\$5,374.08
83	Stator Cooling Water Skid and Piping	\$5,374.08
84	Isophase Bus Duct	\$7,165.44
85	Exciter Heat Exchanger	\$3,582.72
86	EHC Coolers	\$3,582.72
87	Chemical Feed Systems	\$14,330.88
Page 2		

Sibley Unit 3 Dismantlement		
ID	Task Name	Cost
88	Tanks	\$3,582.72
89	Pumps	\$5,374.08
90	Piping	\$5,374.08
91	Sampling Systems	\$10,017.12
92	Field Mounted Heat Exchangers	\$3,582.72
93	Piping	\$2,851.68
94	Sample Panel	\$3,582.72
95	Building Heating Systems	\$13,307.84
96	Steam Unit Heaters	\$9,505.60
97	Steam Piping	\$3,802.24
98	Compressed Air System	\$26,870.40
99	Air Compressors	\$7,165.44
100	Air Drying Equipment	\$5,374.08
101	Air Reciever Tanks	\$5,374.08
102	Compressed Air Piping	\$8,956.80
103	Miscellaneous Equipment	\$21,496.32
104	Miscellaneous Equipment (including Fire Protection)	\$21,496.32
105	Phase 2 Demolition	\$2,409,476.56
106	Precipitator	\$107,481.60
107	Remove Precipitator	\$107,481.60
108	Boiler Equipment	\$536,314.56
109	Fans	\$53,740.80
110	Bottom Ash	\$16,451.52
111	Air Heater	\$143,308.80
112	Steam Drum	\$71,654.40
113	Coal Bunkers	\$71,654.40
114	Soot Blowers	\$25,447.68
115	Ductwork	\$100,316.16
116	SCR	\$53,740.80
117	Boiler Removal	\$329,610.24
118	Furnace	\$179,136.00
119	Back Pass	\$150,474.24
120	Boiler Steel Framing	\$616,227.84
121	Hanger Girders at Top	\$107,481.60
122	All Other Framing	\$286,617.60
123	Bracing and Girts	\$143,308.80
124	Columns	\$78,819.84
125	Boiler Foundations	\$128,977.92
126	Equipment Foundation Demolition to Grade	\$128,977.92
127	Remove Turbine	\$690,864.40
128	Remove HP Turbine	\$26,321.60
129	Remove IP Turbine	\$26,321.60
130	Remove LP Turbine	\$26,321.60
131	Remove Generator	\$39,482.40
Page 3		

Sibley Unit 3 Dismantlement		
ID	Task Name	Cost
132	Remove Condenser Neck Heat Exchanger	\$13,160.80
133	Remove Condenser	\$26,321.60
134	Remove Misc. Auxiliary Turbine Equipment	\$39,482.40
135	Turbine Pedestal Demolition to Grade	\$197,412.00
136	Top Slab and Beams	\$78,964.80
137	Columns	\$118,447.20
138	Remove Turbine Building	\$296,040.40
139	Siding and Roofing	\$92,778.00
140	All Framing Elevations	\$131,608.00
141	Bracing and Girts	\$52,643.20
142	Columns	\$19,011.20
143	Phase 3 Demolition	\$91,359.36
144	Yard Demolition	\$91,359.36
145	Remove Ash Handling Equipment and Piping	\$62,697.60
146	Slag Tank	\$17,913.60
147	Hydrovayer Pumps	\$8,956.80
148	Slag Tank Pumps	\$3,582.72
149	Hydrovayer Fly Ash System	\$8,956.80
150	Vacuum Filter System	\$5,374.08
151	Remove Slag Transport System Piping and Misc. Equipment	\$17,913.60
152	Remove Fuel Yard Equipment	\$19,704.96
153	Remove Conveyor 10	\$8,956.80
154	Remove Conveyor 10A	\$3,582.72
155	Remove Conveyor 10AA	\$3,582.72
156	Remove Conveyor 10AB	\$3,582.72
157	Remove Condensate Storage Tanks (2)	\$8,956.80
158	Project Close-Out	\$49,140.00
159	Project Close-Out Activities	\$49,140.00



Sibley Unit 3 Dismantlement													
ID	Task Name	Duration	2012			2013		2014		2015		2016	
			H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H1
32	Low Pressure Heaters (except the condenser neck heat exchangers)	15 days											
33	Deaerator	4 days											
34	Deaerator Storage Tank	4 days											
35	Condensate Piping	10 days											
36	Polisher Vessels, Regen Vessels and Support Ski	3 days											
37	Boiler Feed System	30 days											
38	Boiler Feed Pump Turbines (2) and Exhaust	5 days											
39	Boiler Feed Pumps - Turbine Driven	8 days											
40	Start-up Boiler Feed Pump	2 days											
41	High Pressure Heaters	10 days											
42	Feedwater piping	5 days											
43	Critical Piping	39 days											
44	Main Steam Piping	13 days											
45	Cold Reheat Piping	13 days											
46	Hot Reheat Piping	13 days											
47	Extraction Steam System	10 days											
48	Piping and Valves	10 days											
49	Heater Drips	5 days											
50	Heater Drip Pump	1 day											
51	Piping	4 days											
52	Auxiliary Steam	7 days											
53	Auxiliary Steam Piping, Tanks and Misc. Equipm	7 days											
54	Circulating Water (plant side)	3 days											
55	Waterboxes	3 days											
56	Station Cooling Water	11 days											
57	Station Cooling Water Pumps	1 day											
58	Station Cooling Water Heat Exchanger	2 days											
59	Station Cooling Water Piping	6 days											
60	Chemical Mixing Tank	1 day											
61	Station Cooling Water Head Tank	1 day											
62	Service Water	7 days											

Sibley Unit 3 Dismantlement													
ID	Task Name	Duration		2012		2013		2014		2015		2016	
			H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H1
63	Service Water Piping	7 days											
64	Propane System (plant side)	9 days											
65	Propane Piping and Valves	4 days											
66	Igniters	5 days											
67	Air Preheat System	4 days											
68	Steam Coil Air Heater Piping	2 days											
69	Steam Coil Drain Pumps	1 day											
70	Steam Coil Drain Tanks	1 day											
71	Condenser Air Extraction System	7 days											
72	Vacuum Pumps	4 days											
73	Vacuum Priming Pump	1 day											
74	Vacuum Pump Piping	2 days											
75	Turbine Seals and Drains	4 days											
76	Piping	4 days											
77	Turbine Lube Oil System	15 days											
78	Turbine Lube Oil Tank	9 days											
79	Turbine Lube Oil Pumps	4 days											
80	Turbine Oil Mist Eliminator	2 days											
81	Generator Auxiliary Systems	14 days											
82	Hydrogen Cooler Skid and Piping	3 days											
83	Stator Cooling Water Skid and Piping	3 days											
84	Isophase Bus Duct	4 days											
85	Exciter Heat Exchanger	2 days											
86	EHC Coolers	2 days											
87	Chemical Feed Systems	8 days											
88	Tanks	2 days											
89	Pumps	3 days											
90	Piping	3 days											
91	Sampling Systems	7 days											
92	Field Mounted Heat Exchangers	2 days											
93	Piping	3 days											
94	Sample Panel	2 days											

Sibley Unit 3 Dismantlement													
ID	Task Name	Duration	2012			2013		2014		2015		2016	
			H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2
95	Building Heating Systems	14 days											
96	Steam Unit Heaters	10 days											
97	Steam Piping	4 days											
98	Compressed Air System	15 days											
99	Air Compressors	4 days											
100	Air Drying Equipment	3 days											
101	Air Reciever Tanks	3 days											
102	Compressed Air Piping	5 days											
103	Miscellaneous Equipment	12 days											
104	Miscellaneous Equipment (including Fire Protec	12 days											
105	Phase 2 Demolition	332 days											
106	Precipitator	30 days											
107	Remove Precipitator	30 days											
108	Boiler Equipment	152 days											
109	Fans	15 days											
110	Bottom Ash	6 days											
111	Air Heater	40 days											
112	Steam Drum	20 days											
113	Coal Bunkers	20 days											
114	Soot Blowers	8 days											
115	Ductwork	28 days											
116	SCR	15 days											
117	Boiler Removal	46 days											
118	Furnace	25 days											
119	Back Pass	21 days											
120	Boiler Steel Framing	86 days											
121	Hanger Girders at Top	15 days											
122	All Other Framing	40 days											
123	Bracing and Girts	20 days											
124	Columns	11 days											
125	Boiler Foundations	18 days											
126	Equipment Foundation Demolition to Grade	18 days											

Sibley Unit 3 Dismantlement													
ID	Task Name	Duration	H2	2012		2013		2014		2015		2016	
				H1	H2	H1	H2	H1	H2	H1	H2	H1	H2
127	Remove Turbine	275 days											
128	Remove HP Turbine	10 days											
129	Remove IP Turbine	10 days											
130	Remove LP Turbine	10 days											
131	Remove Generator	15 days											
132	Remove Condenser Neck Heat Exchanger	5 days											
133	Remove Condenser	10 days											
134	Remove Misc. Auxiliary Turbine Equipment	15 days											
135	Turbine Pedestal Demolition to Grade	75 days											
136	Top Slab and Beams	30 days											
137	Columns	45 days											
138	Remove Turbine Building	125 days											
139	Siding and Roofing	35 days											
140	All Framing Elevations	50 days											
141	Bracing and Girts	20 days											
142	Columns	20 days											
143	Phase 3 Demolition	46 days											
144	Yard Demolition	46 days											
145	Remove Ash Handling Equipment and Piping	30 days											
146	Slag Tank	10 days											
147	Hydrovayer Pumps	5 days											
148	Slag Tank Pumps	2 days											
149	Hydrovayer Fly Ash System	5 days											
150	Vacuum Filter System	3 days											
151	Remove Slag Transport System Piping and Misc. Equipment	10 days											
152	Remove Fuel Yard Equipment	11 days											
153	Remove Conveyor 10	5 days											
154	Remove Conveyor 10A	2 days											
155	Remove Conveyor 10AA	2 days											
156	Remove Conveyor 10AB	2 days											
157	Remove Condensate Storage Tanks (2)	5 days											

COMMON

Sibley Common Retirement

Owner Costs

Pre-Retirement Activities	\$52,488
Retirement Activities	\$326,401
Post-Retirement Activities	\$26,224

Owner Direct Total \$405,113

Owner Internal Costs 5.00% \$20,256

Owner Contingency: 25.00% \$106,342

Sibley Common Retirement Opinion of Probable Cost: \$531,710.81

Activities Required by Permit or Regulation

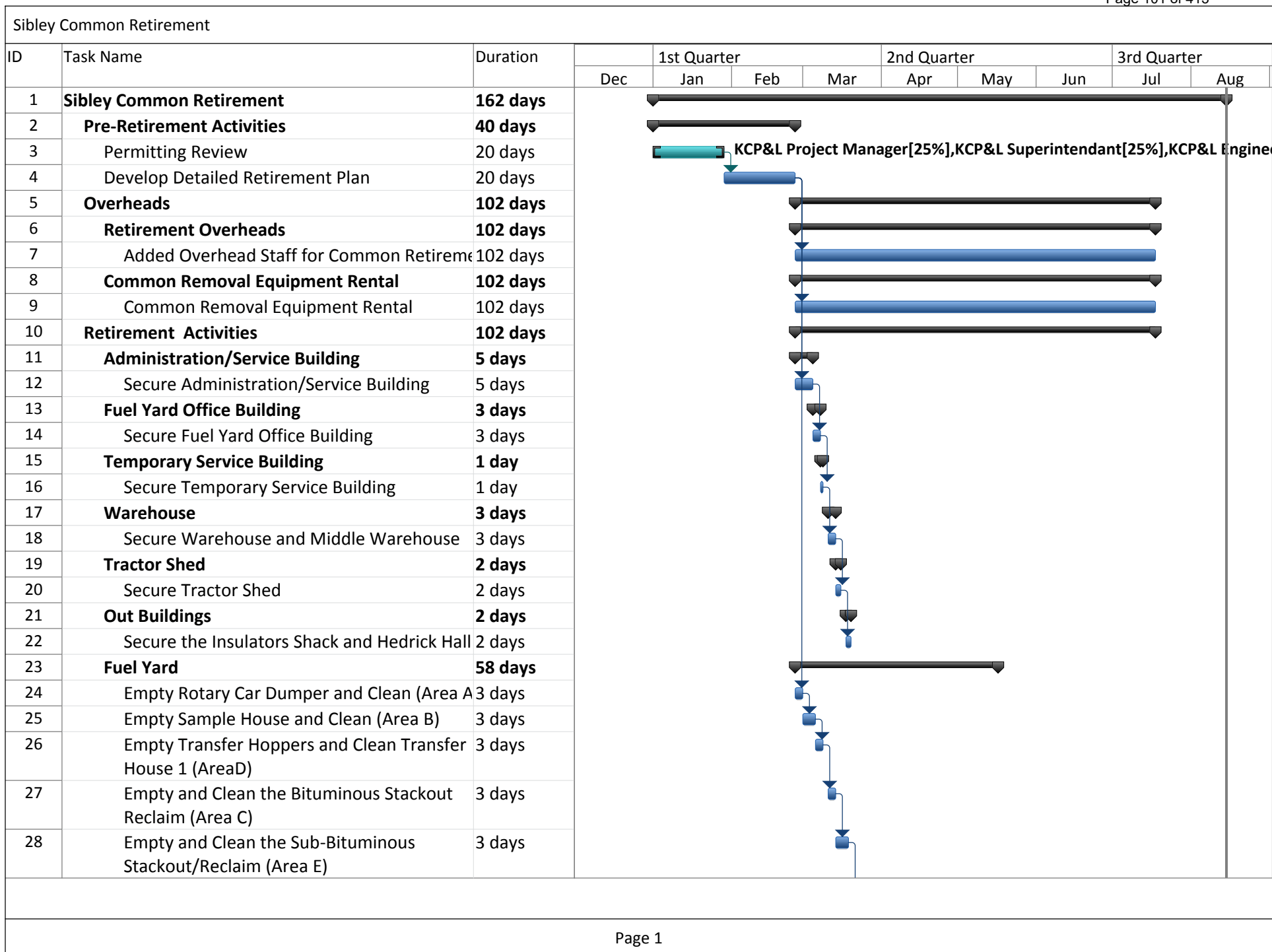
Propane Storage Tanks	\$32,531
Units 1 & 2 River Intake	\$592,147
Unit 3 River Intake	\$592,147
Landfill Stage A	\$1,150,440
Sibley Landfill Post Closure	\$2,082,900
Sibley Ash Pond Closure	\$9,500,800

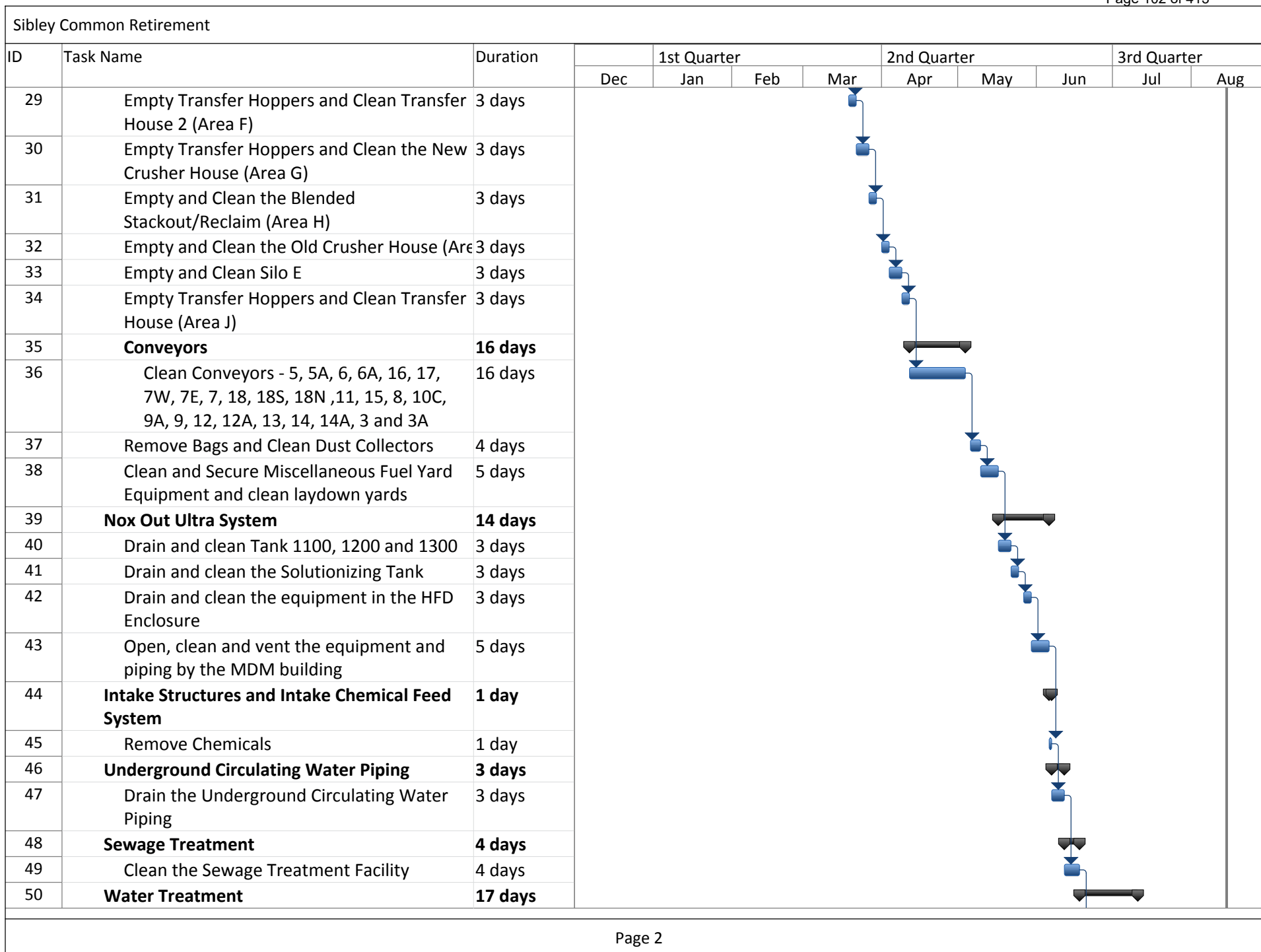
Activities Required by Permit or Regulation: \$13,950,965

Sibley Common Retirement		
ID	Task Name	Cost
1	Sibley Common Retirement	\$405,075.52
2	Pre-Retirement Activities	\$52,448.80
3	Permitting Review	\$26,224.40
4	Develop Detailed Retirement Plan	\$26,224.40
5	Overheads	\$170,845.92
6	Retirement Overheads	\$149,434.08
7	Added Overhead Staff for Common Retirement	\$149,434.08
8	Common Removal Equipment Rental	\$21,411.84
9	Common Removal Equipment Rental	\$21,411.84
10	Retirement Activities	\$155,556.40
11	Administration/Service Building	\$9,342.40
12	Secure Administration/Service Building	\$9,342.40
13	Fuel Yard Office Building	\$5,605.44
14	Secure Fuel Yard Office Building	\$5,605.44
15	Temporary Service Building	\$1,868.48
16	Secure Temporary Service Building	\$1,868.48
17	Warehouse	\$5,605.44
18	Secure Warehouse and Middle Warehouse	\$5,605.44
19	Tractor Shed	\$4,630.24
20	Secure Tractor Shed	\$4,630.24
21	Out Buildings	\$3,736.96
22	Secure the Insulators Shack and Hedrick Hall	\$3,736.96
23	Fuel Yard	\$72,354.40
24	Empty Rotary Car Dumper and Clean (Area A)	\$2,941.36
25	Empty Sample House and Clean (Area B)	\$3,784.08
26	Empty Transfer Hoppers and Clean Transfer House 1 (AreaD)	\$3,784.08
27	Empty and Clean the Bituminous Stackout Reclaim (Area C)	\$3,784.08
28	Empty and Clean the Sub-Bituminous Stackout/Reclaim (Area E)	\$3,784.08
29	Empty Transfer Hoppers and Clean Transfer House 2 (Area F)	\$3,784.08
30	Empty Transfer Hoppers and Clean the New Crusher House (Area G)	\$3,784.08
31	Empty and Clean the Blended Stackout/Reclaim (Area H)	\$3,784.08
32	Empty and Clean the Old Crusher House (Area I)	\$3,784.08
33	Empty and Clean Silo E	\$2,941.36
34	Empty Transfer Hoppers and Clean Transfer House (Area J)	\$3,784.08
35	Conveyors	\$20,181.76
36	Clean Conveyors - 5, 5A, 6, 6A, 16, 17, 7W, 7E, 7, 18, 18S, 18N, 11, 15, 8, 10C, 9A, 9, 12, 12A, 13, 14, 14A, 3 and 3A	\$20,181.76
37	Remove Bags and Clean Dust Collectors	\$5,926.40
38	Clean and Secure Miscellaneous Fuel Yard Equipment and clean laydown yards	\$6,306.80
39	Nox Out Ultra System	\$17,861.28
40	Drain and clean Tank 1100, 1200 and 1300	\$3,784.08
41	Drain and clean the Solutionizing Tank	\$3,784.08

Sibley Common Retirement		
ID	Task Name	Cost
42	Drain and clean the equipment in the HFD Enclosure	\$3,859.92
43	Open, clean and vent the equipment and piping by the MDM building	\$6,433.20
44	Intake Structures and Intake Chemical Feed System	\$842.72
45	Remove Chemicals	\$842.72
46	Underground Circulating Water Piping	\$3,849.60
47	Drain the Underground Circulating Water Piping	\$3,849.60
48	Sewage Treatment	\$4,202.72
49	Clean the Sewage Treatment Facility	\$4,202.72
50	Water Treatment	\$21,443.12
51	Drain and clean clarifier	\$2,522.72
52	Empty, clean and vent gravity filters	\$2,522.72
53	Open and vent storage tanks	\$1,261.36
54	Empty, clean and vent carbon filters	\$3,784.08
55	Remove RO membranes and open membrane housings	\$1,261.36
56	Remove demineralizer resins, clean and vent vessels	\$5,045.44
57	Remove chemicals and flush storage tanks	\$2,522.72
58	Flush and vent all water treatment piping.	\$2,522.72
59	Fuel Storage	\$3,370.88
60	Remove propane from propane storage tanks and vent.	\$842.72
61	Vent propane piping and vaporizer.	\$842.72
62	Drain and vent the Diesel Fuel Tank	\$1,685.44
63	Unit 3 Diesel Generator	\$842.72
64	Drain and vent diesel generator tank	\$842.72
65	Post Retirement Closure Activities	\$26,224.40
66	Post Retirement Closure Activities	\$26,224.40

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Sibley 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	\$123,085
Equipment Rental	\$600,070
Consummables	\$899,049
Scrap Crew(s)	\$892,097
Dismantlement	\$3,939,133

Contractor Direct Cost* \$6,453,434

Contractor Allowances

DGC Insurance	2.00%	\$129,069
Contingency/Profit	15.00%	\$987,375
Performance Bond	2.00%	\$151,398

Contractor Costs Total: \$7,721,276

Total: \$7,721,276

Owner Internal Costs: 5.00% \$386,064

Owner Contingency: 25.00% \$2,026,835

Sibley Common Dismantlement Opinion of Probable Cost: \$10,134,174

*Owner Costs Total + Contractor Direct Costs = Manpower Loaded Schedule Total w/o Contractor Allowances
= \$6,453,434

Sibley Common Dismantlement		
ID	Task Name	Cost
1	Sibley Common Dismantlement	\$6,453,436.08
2	Overheads	\$2,514,302.40
3	Common Removal Overheads	\$123,085.68
4	Added Overhead Staff for Common Removals	\$123,085.68
5	Common Removal Equipment Rental	\$600,070.08
6	Common Removal Equipment Rental	\$600,070.08
7	Demolition Contractor Consummables	\$899,049.36
8	Consummables	\$899,049.36
9	Scrap Crew	\$892,097.28
10	Crew(s) to Handle Scrap Material	\$892,097.28
11	Dismantlement Activities	\$3,939,133.68
12	Administration/Service Building	\$53,740.80
13	Remove Administration/Service Building	\$53,740.80
14	Fuel Yard Office Building	\$17,913.60
15	Remove Fuel Yard Office Building	\$17,913.60
16	Temporary Service Building	\$7,165.44
17	Remove Temporary Service Building	\$7,165.44
18	Parking Lots and Plant Roads	\$64,488.96
19	Plant Roads and Parking Areas	\$53,740.80
20	Guard Shack	\$10,748.16
21	Warehouse(s)	\$35,827.20
22	Remove Main Warehouse	\$21,496.32
23	Remove Middle Warehouse	\$14,330.88
24	Tractor Shed	\$14,330.88
25	Remove Tractor Shed	\$14,330.88
26	Out Buildings	\$11,607.60
27	Remove Insulators Shack	\$4,643.04
28	Remove Hedrick Hall	\$6,964.56
29	Fuel Equipment	\$25,536.72
30	Remove Propane Tanks and above ground piping	\$11,607.60
31	Remove Vaporizer	\$9,286.08
32	Remove Diesel Generator Tank	\$4,643.04
33	Fuel Yard	\$302,143.44
34	Remove Rotary Car Dumper	\$23,215.20
35	Remove Sample House	\$23,215.20
36	Remove Transfer Hoppers	\$11,607.60
37	Remove Bituminous Stackout Reclaim	\$16,250.64
38	Remove Sub-Bituminous Stackout/Reclaim	\$16,250.64
39	Remove Transfer House 2	\$13,929.12
40	Remove New Crusher House	\$34,822.80
41	Remove the Blended Stackout/Reclaim	\$16,250.64
42	Remove Old Crusher House	\$27,858.24
43	Remove Transfer House	\$13,929.12
44	Conveyors	\$46,430.40
Page 1		

Sibley Common Dismantlement		
ID	Task Name	Cost
45	Remove Conveyors - 5, 5A, 6, 6A, 16, 17, 7W, 7E, 7, 18, 18S, 18N ,1	\$46,430.40
46	Remove Dust Collectors	\$4,643.04
47	Remove Miscellaneous Fuel Yard Equipment	\$53,740.80
48	Nox Out Ultra System	\$18,572.16
49	Remove Tank 1100, 1200 and 1300	\$4,643.04
50	Remove Solutionizing Tank	\$4,643.04
51	Remove HFD Enclosure	\$6,964.56
52	Remove miscellaneous piping and steel.	\$2,321.52
53	Underground Circulating Water Piping	\$53,740.80
54	Excavate Underground Circulating Water Piping	\$17,913.60
55	Collapse Underground Circulating Water Piping	\$10,748.16
56	Backfill and Compact Over Circulating Water Piping	\$25,079.04
57	Sewage Treatment	\$21,496.32
58	Remove Sewage Treatment Pumps and Miscellaneous Equipment	\$7,165.44
59	Remove Sewage Treatment Concrete Structures	\$14,330.88
60	Yard Fire Water Systems	\$21,496.32
61	Remove Hydrants and Fire Water System Piping Down to 3' Below Grade	\$21,496.32
62	Water Treatment	\$46,430.40
63	Remove clarifier	\$4,643.04
64	Remove gravity filters	\$4,643.04
65	Remove storage tanks	\$9,286.08
66	Remove carbon filters	\$4,643.04
67	Remove RO skids	\$4,643.04
68	Remove demineralizer vessels	\$6,964.56
69	Remove regeneration equipment	\$6,964.56
70	Remove miscellaneous piping and support equipment	\$4,643.04
71	Unit 3 Diesel Generator	\$4,643.04
72	Remove Unit 3 Diesel Generator	\$4,643.04
73	Common Stack	\$3,240,000.00
74	Remove Common Stack to Grade	\$3,240,000.00
75	Final Site Grading and Drainage	\$0.00
76	Final Site Grading and Drainage	\$0.00

Sibley Common Dismantlement										
ID	Task Name	Duration	2012					2013		
			Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	
1	Sibley Common Dismantlement	250 days								
2	Overheads	249 days								
3	Common Removal Overheads	249 days								
4	Added Overhead Staff for Common Removals	249 days								
5	Common Removal Equipment Rental	249 days								
6	Common Removal Equipment Rental	249 days								
7	Demolition Contractor Consumables	249 days								
8	Consumables	249 days								
9	Scrap Crew	249 days								
10	Crew(s) to Handle Scrap Material	249 days								
11	Dismantlement Activities	249 days								
12	Administration/Service Building	15 days								
13	Remove Administration/Service Building	15 days								
14	Fuel Yard Office Building	5 days								
15	Remove Fuel Yard Office Building	5 days								
16	Temporary Service Building	2 days								
17	Remove Temporary Service Building	2 days								
18	Parking Lots and Plant Roads	18 days								
19	Plant Roads and Parking Areas	15 days								
20	Guard Shack	3 days								
21	Warehouse(s)	10 days								
22	Remove Main Warehouse	6 days								
23	Remove Middle Warehouse	4 days								
24	Tractor Shed	4 days								
25	Remove Tractor Shed	4 days								
26	Out Buildings	5 days								
27	Remove Insulators Shack	2 days								
28	Remove Hedrick Hall	3 days								
29	Fuel Equipment	11 days								
30	Remove Propane Tanks and above ground piping	5 days								
31	Remove Vaporizer	4 days								
32	Remove Diesel Generator Tank	2 days								

Sibley Common Dismantlement										
ID	Task Name	Duration	2012					2013		
			Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	
33	Fuel Yard	122 days								
34	Remove Rotary Car Dumper	10 days								
35	Remove Sample House	10 days								
36	Remove Transfer Hoppers	5 days								
37	Remove Bituminous Stackout Reclaim	7 days								
38	Remove Sub-Bituminous Stackout/Reclaim	7 days								
39	Remove Transfer House 2	6 days								
40	Remove New Crusher House	15 days								
41	Remove the Blended Stackout/Reclaim	7 days								
42	Remove Old Crusher House	12 days								
43	Remove Transfer House	6 days								
44	Conveyors	20 days								
45	Remove Conveyors - 5, 5A, 6, 6A, 16, 17, 7W, 7E, 7, 18, 18S, 18N ,11, 15, 8, 10C, 9A, 9, 12, 12A, 13, 14, 14A, 3 and 3A	20 days								
46	Remove Dust Collectors	2 days								
47	Remove Miscellaneous Fuel Yard Equipment	15 days								
48	Nox Out Ultra System	8 days								
49	Remove Tank 1100, 1200 and 1300	2 days								
50	Remove Solutionizing Tank	2 days								
51	Remove HFD Enclosure	3 days								
52	Remove miscellaneous piping and steel.	1 day								
53	Underground Circulating Water Piping	15 days								
54	Excavate Underground Circulating Water Piping	5 days								
55	Collapse Underground Circulating Water Piping	3 days								
56	Backfill and Compact Over Circulating Water Piping	7 days								
57	Sewage Treatment	6 days								
58	Remove Sewage Treatment Pumps and Miscellaneous Equipment	2 days								

Sibley Common Dismantlement										
ID	Task Name	Duration	2012					2013		
			Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3
59	Remove Sewage Treatment Concrete Structures	4 days								
60	Yard Fire Water Systems	6 days								
61	Remove Hydrants and Fire Water System Piping Down to 3' Below Grade	6 days								
62	Water Treatment	20 days								
63	Remove clarifier	2 days								
64	Remove gravity filters	2 days								
65	Remove storage tanks	4 days								
66	Remove carbon filters	2 days								
67	Remove RO skids	2 days								
68	Remove demineralizer vessels	3 days								
69	Remove regeneration equipment	3 days								
70	Remove miscellaneous piping and support equipment	2 days								
71	Unit 3 Diesel Generator	2 days								
72	Remove Unit 3 Diesel Generator	2 days								
73	Common Stack	1 day								
74	Remove Common Stack to Grade	1 day								
75	Final Site Grading and Drainage	1 day								
76	Final Site Grading and Drainage	1 day								

SOUTH HARPER

SOUTH HARPER STATION

The South Harper Generating Station consists of three natural gas-fired combustion turbine generator sets.

Combined, these combustion turbines have an SPP-accredited unit rating of 313.9 MW. South Harper was placed into service in 2005. Each unit is comprised of a Siemens Model 504D5A combustion turbine with a generator step-up transformer and auxiliary power transformer.

The following are the major systems and equipment that were included in the retirement and dismantlement of the South Harper Generating Station.

1. Combustion turbine generator sets and auxiliaries.
2. Generation step-up and auxiliary transformers.
3. Outdoor switchgear.
4. Exhaust stacks.
5. Administration building.
6. Natural gas filtering skid.
7. Flammable material storage building.
8. Service/Instrument air compressors.
9. Waste water tank.

South Harper Retirement

Owner Costs

Pre-Retirement Activities	\$43,834
Retirement Activities	\$219,498
Post-Retirement Activities	\$45,152

Owner Direct Total	\$308,484

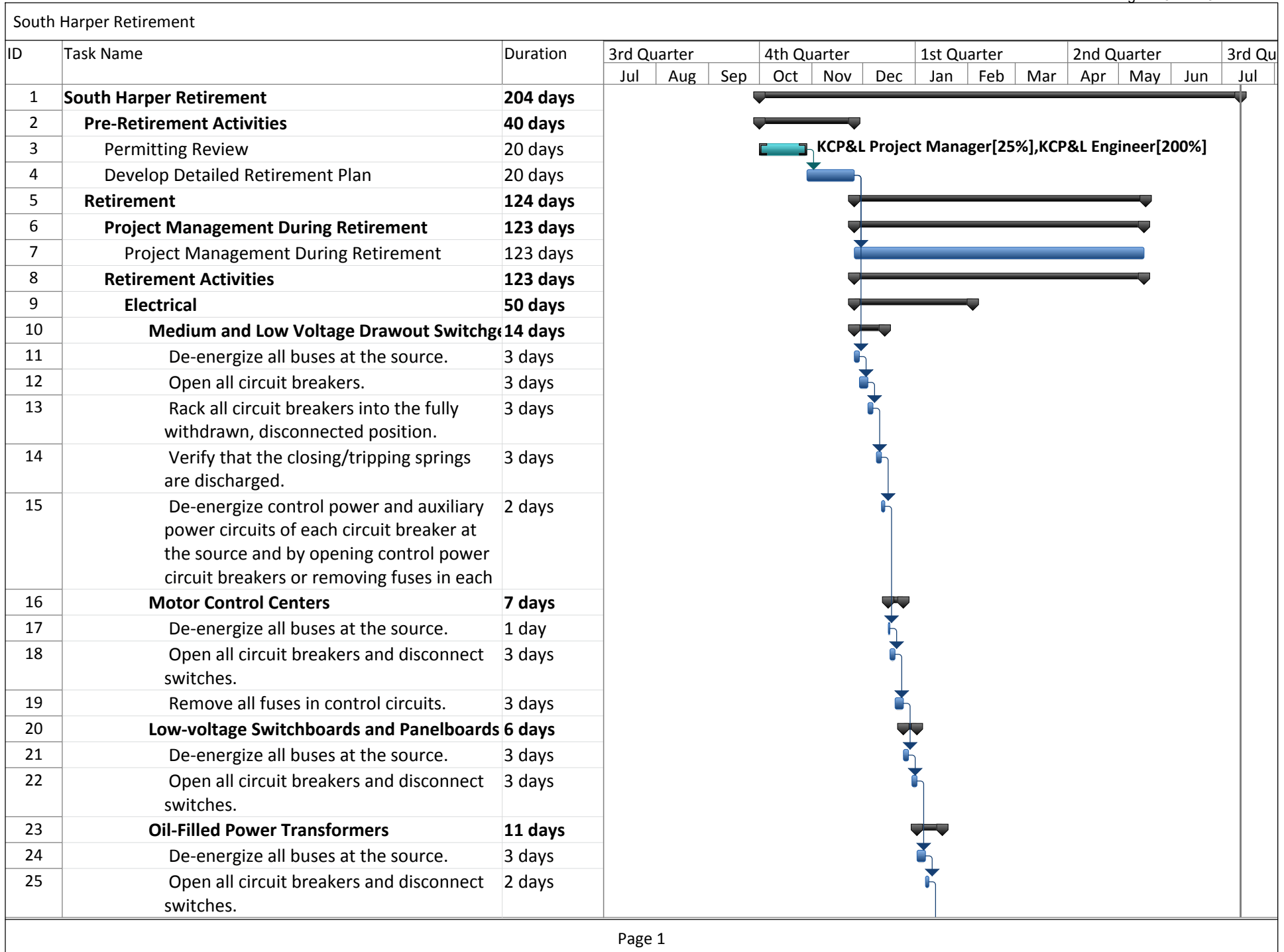
Owner Internal Costs	5.00%	\$15,424

Owner Contingency:	25.00%	\$80,977

South Harper Retirement Opinion of Probable Cost:	\$404,885.25

South Harper Retirement		
ID	Task Name	Cost
1	South Harper Retirement	\$308,484.94
2	Pre-Retirement Activities	\$43,834.00
3	Permitting Review	\$23,466.00
4	Develop Detailed Retirement Plan	\$20,368.00
5	Retirement	\$219,498.94
6	Project Management During Retirement	\$98,648.46
7	Project Management During Retirement	\$98,648.46
8	Retirement Activities	\$119,567.28
9	Electrical	\$44,664.00
10	Medium and Low Voltage Drawout Switchgear	\$12,505.92
11	De-energize all buses at the source.	\$2,679.84
12	Open all circuit breakers.	\$2,679.84
13	Rack all circuit breakers into the fully withdrawn, disconnected position.	\$2,679.84
14	Verify that the closing/tripping springs are discharged.	\$2,679.84
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.	\$1,786.56
16	Motor Control Centers	\$6,252.96
17	De-energize all buses at the source.	\$893.28
18	Open all circuit breakers and disconnect switches.	\$2,679.84
19	Remove all fuses in control circuits.	\$2,679.84
20	Low-voltage Switchboards and Panelboards	\$5,359.68
21	De-energize all buses at the source.	\$2,679.84
22	Open all circuit breakers and disconnect switches.	\$2,679.84
23	Oil-Filled Power Transformers	\$9,826.08
24	De-energize all buses at the source.	\$2,679.84
25	Open all circuit breakers and disconnect switches.	\$1,786.56
26	De-energize all buses at the source.	\$2,679.84
27	Open all circuit breakers and disconnect switches.	\$2,679.84
28	Dry-type Power Transformers	\$4,466.40
29	De-energize all transformer primaries and verify that the secondary is de-energized.	\$2,679.84
30	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	\$1,786.56
31	Motors	\$6,252.96
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.	\$2,679.84
35	Administration Building	\$9,342.40
36	Secure the Administration Building	\$9,342.40

South Harper Retirement		
ID	Task Name	Cost
37	Flammable Material Storage Building	\$5,605.44
38	Secure the Flammable Material Storage Building	\$5,605.44
39	Fuel Gas System	\$10,783.04
40	Isolate Fuel Gas System	\$3,907.44
41	Vent Fuel Gas Piping and Equipment	\$2,528.16
42	Open and Vent Knock-Out Drum	\$861.84
43	Drain, Open and Vent the Drain Tank	\$861.84
44	Empty the Coalescing Filter	\$1,761.92
45	Open and Vent Equipment on the CT Gas Valve Module	\$861.84
46	Lube Oil Cooling Water System	\$7,756.56
47	Open and Drain the Water Side of the Lube Oil Coolers	\$5,171.04
48	Open and Vent the Coolers and Expansion Tank	\$2,585.52
49	Oily Drain Tank	\$3,954.00
50	Open and Pump Out the Oily Drain Tank	\$3,954.00
51	Wash Water Skid	\$5,171.04
52	Open and Drain the Detergent Tank	\$1,723.68
53	Open and Drain the Demineralized Water Tank	\$1,723.68
54	Empty the Demineralized Water Tank	\$1,723.68
55	Compressed Air	\$3,447.36
56	Empty Dessiccant Air Dryers and Vent	\$1,723.68
57	Open and Vent the Air Receiver	\$1,723.68
58	Miscellaneous Piping	\$7,756.56
59	Open and Vent the Exhaust Frame Cooling Piping	\$2,585.52
60	Open and Vent the CT Air Processing Piping	\$0.00
61	Open and Vent the Inlet Air Heating Piping	\$2,585.52
62	Open and Vent the CT Air Processing Piping	\$2,585.52
63	Fire Protection Piping	\$6,856.48
64	Empty the CO2 Storage Tank	\$5,132.80
65	Open and Vent the Fire Protection Piping	\$1,723.68
66	Lube Oil System	\$11,587.04
67	Empty and Remove from Site the Lubricating Oil	\$6,416.00
68	Drain Lubricating Oil Piping	\$3,447.36
69	Open and Vent Lubricating Oil Piping	\$1,723.68
70	Potable Water	\$2,643.36
71	Disconnect Potable Water at Property Boundary	\$2,643.36
72	Waste Water Tank	\$1,283.20
73	Open, Drain and Vent Waste Water Tank	\$1,283.20
74	Post Retirement Closure Activity	\$45,152.00
75	Post Retirement Closure Activity	\$45,152.00
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South Harper Retirement																
ID	Task Name	Duration	3rd Quarter			4th Quarter			1st Quarter			2nd Quarter			3rd Qu	
			Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	
26	De-energize all buses at the source.	3 days														
27	Open all circuit breakers and disconnect switches.	3 days														
28	Dry-type Power Transformers	5 days														
29	De-energize all transformer primaries and verify that the secondary is de-energized.	3 days														
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	2 days														
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	Administration Building	5 days														
36	Secure the Administration Building	5 days														
37	Flammable Material Storage Building	3 days														
38	Secure the Flammable Material Storage Building	3 days														
39	Fuel Gas System	11 days														
40	Isolate Fuel Gas System	3 days														
41	Vent Fuel Gas Piping and Equipment	3 days														
42	Open and Vent Knock-Out Drum	1 day														
43	Drain, Open and Vent the Drain Tank	1 day														
44	Empty the Coalescing Filter	2 days														
45	Open and Vent Equipment on the CT Gas Valve Module	1 day														
46	Lube Oil Cooling Water System	9 days														
47	Open and Drain the Water Side of the Lube Oil Coolers	6 days														

South Harper Retirement																
ID	Task Name	Duration	3rd Quarter			4th Quarter			1st Quarter			2nd Quarter			3rd Qu	
			Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	
48	Open and Vent the Coolers and Expansion Tank	3 days														
49	Oily Drain Tank	3 days														
50	Open and Pump Out the Oily Drain Tank	3 days														
51	Wash Water Skid	6 days														
52	Open and Drain the Detergent Tank	2 days														
53	Open and Drain the Demineralized Water Tank	2 days														
54	Empty the Demineralized Water Tank	2 days														
55	Compressed Air	4 days														
56	Empty Dessiccant Air Dryers and Vent	2 days														
57	Open and Vent the Air Receiver	2 days														
58	Miscellaneous Piping	17 days														
59	Open and Vent the Exhaust Frame Cooling Piping	3 days														
60	Open and Vent the CT Air Processing Piping	8 days														
61	Open and Vent the Inlet Air Heating Piping	3 days														
62	Open and Vent the CT Air Processing Piping	3 days														
63	Fire Protection Piping	6 days														
64	Empty the CO2 Storage Tank	4 days														
65	Open and Vent the Fire Protection Piping	2 days														
66	Lube Oil System	9 days														
67	Empty and Remove from Site the Lubricating Oil	5 days														
68	Drain Lubricating Oil Piping	4 days														
69	Open and Vent Lubricating Oil Piping	2 days														
70	Potable Water	3 days														
71	Disconnect Potable Water at Property Boundary	3 days														
72	Waste Water Tank	1 day														
73	Open, Drain and Vent Waste Water Tank	1 day														
74	Post Retirement Closure Activity	40 days														
75	Post Retirement Closure Activity	40 days														

South Harper Dismantlement

Owner Costs

Pre-Dismantlement Activities	\$892,760
Overhead During Dismantlement	\$1,493,362
Post-Dismantlement Activities	\$49,140
Owner Costs Total*	\$2,435,262

Demolition General Contractor (DGC) Costs

Site Management	\$814,043
Equipment Rental	\$1,386,092
Consummables	\$138,875
Scrap Crew(s)	\$364,064
Dismantlement	\$1,236,894

Contractor Direct Cost* \$3,939,968

Contractor Allowances

DGC Insurance	2.00%	\$78,799
Contingency/Profit	15.00%	\$602,815
Performance Bond	2.00%	\$92,431.65

Contractor Costs Total: \$4,714,014

Total: \$7,149,276

Owner Internal Costs: 5.00% \$357,464

Owner Contingency: 25.00% \$1,876,685

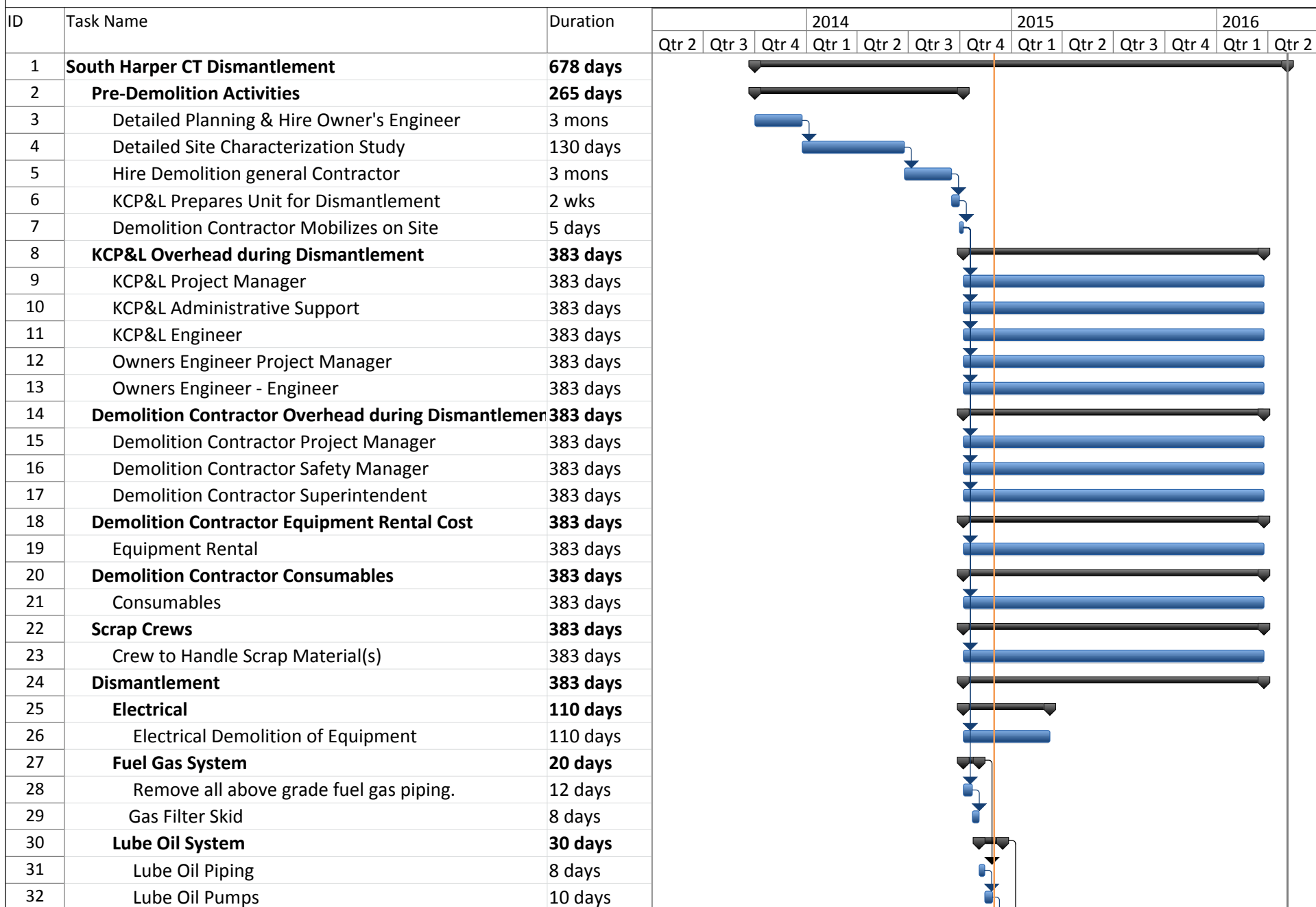
South Harper Dismantlement Opinion of Probable Cost: \$9,383,425

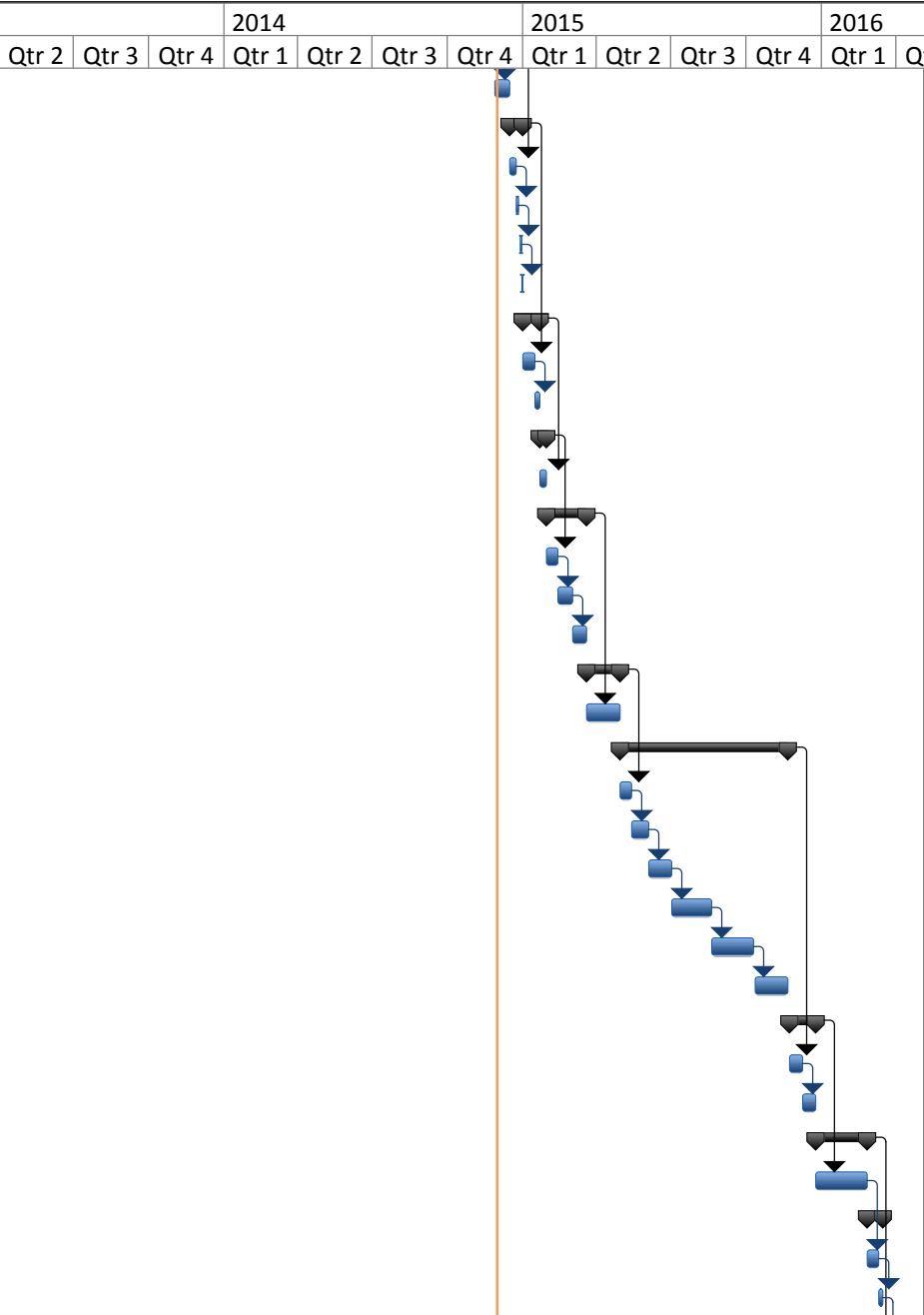
*Owner Costs Total + Contractor Direct Costs = Manpower Loaded Schedule Total w/o Contractor Allowances
= \$6,375,230

South Harper Dismantlement		
ID	Task Name	Cost
1	South Harper CT Dismantlement	\$6,375,218.40
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	\$1,493,362.96
9	KCP&L Project Manager	\$237,306.80
10	KCP&L Administrative Support	\$87,752.96
11	KCP&L Engineer	\$390,047.20
12	Owners Engineer Project Manager	\$116,432.00
13	Owners Engineer - Engineer	\$661,824.00
14	Demolition Contractor Overhead during Dismantlement	\$814,043.52
15	Demolition Contractor Project Manager	\$230,320.88
16	Demolition Contractor Safety Manager	\$205,073.52
17	Demolition Contractor Superintendent	\$378,649.12
18	Demolition Contractor Equipment Rental Cost	\$1,386,092.32
19	Equipment Rental	\$1,386,092.32
20	Demolition Contractor Consumables	\$138,860.48
21	Consumables	\$138,860.48
22	Scrap Crews	\$364,064.48
23	Crew to Handle Scrap Material(s)	\$364,064.48
24	Dismantlement	\$1,236,894.32
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	\$26,870.40
40	Fire Protection Piping	\$19,704.96
41	CO2 Storage Tank	\$7,165.44
42	Wash Water Skid	\$10,748.16
43	Detergent Tank	\$10,748.16
44	Miscellaneous Piping	\$62,697.60
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South Harper Dismantlement		
ID	Task Name	Cost
45	Exhaust Frame Cooling Piping	\$17,913.60
46	CT Air Processing Piping	\$21,496.32
47	Inlet Air Heating Piping	\$23,287.68
48	Generator	\$0.00
49	Generators	\$0.00
50	Combustion Turbine	\$263,329.92
51	Inlet Heaters	\$17,913.60
52	Inlet ducts	\$26,870.40
53	Exhaust ducts	\$35,827.20
54	Combustion Turbines	\$62,697.60
55	Combustion Turbine Foundations	\$66,280.32
56	Enclosures	\$53,740.80
57	CEMS	\$42,992.64
58	CEMS Building	\$21,496.32
59	CEMS Building Foundation	\$21,496.32
60	Stack	\$80,611.20
61	Stacks	\$80,611.20
62	Buildings	\$23,287.68
63	Remove Administration Building	\$17,913.60
64	Remove Flammable Material Storage Building	\$5,374.08
65	Waste Water Tank	\$8,956.80
66	Remove Waste Water Tank	\$8,956.80
67	Site Prep	\$424,000.00
68	Final Grading and Drainage	\$424,000.00
69	Post Dismantlement Activities	\$49,140.00
70	Post Dismantlement Activities	\$49,140.00

South Harper Dismantlement



South Harper Dismantlement																
ID	Task Name	Duration					2014				2015				2016	
			Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	
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	15 days														
40	Fire Protection Piping	11 days														
41	CO2 Storage Tank	4 days														
42	Wash Water Skid	6 days														
43	Detergent Tank	6 days														
44	Miscellaneous Piping	35 days														
45	Exhaust Frame Cooling Piping	10 days														
46	CT Air Processing Piping	12 days														
47	Inlet Air Heating Piping	13 days														
48	Generator	29 days														
49	Generators	29 days														
50	Combustion Turbine	147 days														
51	Inlet Heaters	10 days														
52	Inlet ducts	15 days														
53	Exhaust ducts	20 days														
54	Combustion Turbines	35 days														
55	Combustion Turbine Foundations	37 days														
56	Enclosures	30 days														
57	CEMS	24 days														
58	CEMS Building	12 days														
59	CEMS Building Foundation	12 days														
60	Stack	45 days														
61	Stacks	45 days														
62	Buildings	13 days														
63	Remove Administration Building	10 days														
64	Remove Flammable Material Storage Building	3 days														

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GREENWOOD

GREENWOOD STATION

The Greenwood Generating Station consists of four natural gas-fired and distillate-fired combustion turbine generator sets.

Combined, these combustion turbines have an SPP-accredited unit rating of 252.7 MW. Greenwood Units 1 and 2 were placed in service in 1975. Greenwood Unit 3 was placed in service in 1977. Greenwood Unit 4 was placed in service in 1979. Each unit is comprised of a GE Model MA7001B combustion turbine with a generator step-up transformer and auxiliary power transformer.

The following are the major systems and equipment that were included in the retirement and dismantlement of the Greenwood Generating Station.

1. Combustion turbine generator sets and auxiliaries.
2. Generation step-up and auxiliary transformers.
3. Outdoor switchgear.
4. Exhaust stacks.
5. Administration building.
6. Combustion turbine building.
7. Natural gas filtering skid.
8. Water treatment.
9. Service/Instrument air compressors.
10. Diesel generator.
11. Fuel oil storage and transfer equipment.

Greenwood Retirement

Owner Costs

Pre-Retirement Activities	\$43,834
Retirement Activities	\$225,697
Post-Retirement Activities	\$45,152

Owner Direct Total	\$314,683

Owner Internal Costs	5.00%	\$15,734

Owner Contingency:	25.00%	\$82,604

Greenwood Retirement Opinion of Probable Cost:	\$413,021.44

Activities Required by Permit or Regulation

Greenwood Storage Tank	\$157,111
Greenwood Storage Tank (2)	\$157,111
Greenwood Storage Tank (3)	\$157,111

Activities Required by Permit or Regulation:	\$471,333

Greenwood Retirement		
ID	Task Name	Cost
1	Greenwood Retirement	\$314,683.28
2	Pre-Retirement Activities	\$43,834.00
3	Permitting Review	\$23,466.00
4	Develop Detailed Retirement Plan	\$20,368.00
5	Retirement	\$225,697.28
6	Project Management During Retirement	\$105,866.64
7	Project Management During Retirement	\$105,866.64
8	Retirement Activities	\$119,830.64
9	Electrical	\$44,664.00
10	Medium and Low Voltage Drawout Switchgear	\$12,505.92
11	De-energize all buses at the source.	\$2,679.84
12	Open all circuit breakers.	\$2,679.84
13	Rack all circuit breakers into the fully withdrawn, disconnected position.	\$2,679.84
14	Verify that the closing/tripping springs are discharged.	\$2,679.84
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.	\$1,786.56
16	Motor Control Centers	\$6,252.96
17	De-energize all buses at the source.	\$893.28
18	Open all circuit breakers and disconnect switches.	\$1,786.56
19	Remove all fuses in control circuits.	\$3,573.12
20	Low-voltage Switchboards and Panelboards	\$5,359.68
21	De-energize all buses at the source.	\$2,679.84
22	Open all circuit breakers and disconnect switches.	\$2,679.84
23	Oil-Filled Power Transformers	\$9,826.08
24	De-energize all buses at the source.	\$2,679.84
25	Open all circuit breakers and disconnect switches.	\$1,786.56
26	De-energize all buses at the source.	\$2,679.84
27	Open all circuit breakers and disconnect switches.	\$2,679.84
28	Dry-type Power Transformers	\$4,466.40
29	De-energize all transformer primaries and verify that the secondary is de-energized.	\$2,679.84
30	De-energize all low-voltage AC or DC power sources for space heaters, cooling equipment, controls, etc. at the source and open circuit breakers or remove fuses at transformer end.	\$1,786.56
31	Motors	\$6,252.96
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.	\$2,679.84
35	Administration Building	\$7,473.92

Greenwood Retirement		
ID	Task Name	Cost
36	Secure the Administration Building/Maintenance Shop	\$7,473.92
37	Combustion Turbine Buildings	\$0.00
38	Secure the Combustion Turbine Buildings	\$0.00
39	Fuel Gas System	\$10,783.04
40	Isolate Fuel Gas System	\$3,907.44
41	Vent Fuel Gas Piping and Equipment	\$2,528.16
42	Open and Vent Knock-Out Drum	\$861.84
43	Drain, Open and Vent the Drain Tank	\$861.84
44	Empty the Coalescing Filter	\$1,761.92
45	Open and Vent Equipment on the CT Gas Valve Module	\$861.84
46	Lube Oil Cooling Water System	\$7,756.56
47	Open and Drain the Water Side of the Lube Oil Coolers	\$5,171.04
48	Open and Vent the Coolers and Expansion Tank	\$2,585.52
49	Oily Drain Tank	\$3,954.00
50	Open and Pump Out the Oily Drain Tank	\$3,954.00
51	Wash Water Skid	\$5,171.04
52	Open and Drain the Detergent Tank	\$1,723.68
53	Open and Drain the Demineralized Water Tank	\$1,723.68
54	Empty the Demineralized Water Tank	\$1,723.68
55	Compressed Air	\$3,447.36
56	Empty Dessiccant Air Dryers and Vent	\$1,723.68
57	Open and Vent the Air Receiver	\$1,723.68
58	Miscellaneous Piping	\$7,756.56
59	Open and Vent the Exhaust Frame Cooling Piping	\$2,585.52
60	Open and Vent the CT Air Processing Piping	\$0.00
61	Open and Vent the Inlet Air Heating Piping	\$2,585.52
62	Open and Vent the CT Air Processing Piping	\$2,585.52
63	Fire Protection Piping	\$6,856.48
64	Empty the CO2 Storage Tank	\$5,132.80
65	Open and Vent the Fire Protection Piping	\$1,723.68
66	Lube Oil System	\$11,587.04
67	Empty and Remove from Site the Lubricating Oil	\$6,416.00
68	Drain Lubricating Oil Piping	\$3,447.36
69	Open and Vent Lubricating Oil Piping	\$1,723.68
70	Fuel Oil Storage and Unloading	\$861.84
71	Remove Fuel Oil from Fuel Oil Storage and Vent	\$861.84
72	Water Treatment	\$7,756.56
73	Drain All Tanks and Vessels	\$1,723.68
74	Remove Resin from Vessels	\$2,585.52
75	Remove Chemicals	\$2,585.52
76	Open and Vent Vessels	\$861.84
77	Diesel Generator	\$0.00
78	Empty and Vent Diesel Generator F.O. Tank	\$0.00
79	Potable Water	\$1,762.24

Greenwood Retirement		
ID	Task Name	Cost
80	Disconnect Potable Water at Property Boundary	\$1,762.24
81	Post Retirement Closure Activity	\$45,152.00
82	Post Retirement Closure Activity	\$45,152.00

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Greenwood Retirement																						
ID	Task Name	Duration	1st Quarter	2nd Quarter				3rd Quarter			4th Quarter			1st Quarter			2nd Quarter			3rd Quarter		
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
26	De-energize all buses at the source.	3 days																				
27	Open all circuit breakers and disconnect switches.	3 days																				
28	Dry-type Power Transformers	5 days																				
29	De-energize all transformer primaries and verify that the secondary is de-energized.	3 days																				
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	2 days																				
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	Administration Building	4 days																				
36	Secure the Administration Building/Maintenance Shop	4 days																				
37	Combustion Turbine Buildings	3 days																				
38	Secure the Combustion Turbine Buildings	3 days																				
39	Fuel Gas System	11 days																				
40	Isolate Fuel Gas System	3 days																				
41	Vent Fuel Gas Piping and Equipment	3 days																				
42	Open and Vent Knock-Out Drum	1 day																				
43	Drain, Open and Vent the Drain Tank	1 day																				
44	Empty the Coalescing Filter	2 days																				
45	Open and Vent Equipment on the CT Gas Valve Module	1 day																				
46	Lube Oil Cooling Water System	9 days																				

Greenwood Retirement																						
ID	Task Name	Duration	1st Quarter	2nd Quarter				3rd Quarter			4th Quarter			1st Quarter		2nd Quarter				3rd Quarter		
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
47	Open and Drain the Water Side of the Lube Oil Coolers	6 days																				
48	Open and Vent the Coolers and Expansion Tank	3 days																				
49	Oily Drain Tank	3 days																				
50	Open and Pump Out the Oily Drain Tank	3 days																				
51	Wash Water Skid	6 days																				
52	Open and Drain the Detergent Tank	2 days																				
53	Open and Drain the Demineralized Water Tank	2 days																				
54	Empty the Demineralized Water Tank	2 days																				
55	Compressed Air	4 days																				
56	Empty Dessiccant Air Dryers and Vent	2 days																				
57	Open and Vent the Air Receiver	2 days																				
58	Miscellaneous Piping	17 days																				
59	Open and Vent the Exhaust Frame Cooling Piping	3 days																				
60	Open and Vent the CT Air Processing Piping	8 days																				
61	Open and Vent the Inlet Air Heating Piping	3 days																				
62	Open and Vent the CT Air Processing Piping	3 days																				
63	Fire Protection Piping	6 days																				
64	Empty the CO2 Storage Tank	4 days																				
65	Open and Vent the Fire Protection Piping	2 days																				
66	Lube Oil System	9 days																				
67	Empty and Remove from Site the Lubricating Oil	5 days																				
68	Drain Lubricating Oil Piping	4 days																				
69	Open and Vent Lubricating Oil Piping	2 days																				
70	Fuel Oil Storage and Unloading	1 day																				
71	Remove Fuel Oil from Fuel Oil Storage and Vent	1 day																				
72	Water Treatment	9 days																				
73	Drain All Tanks and Vessels	2 days																				
74	Remove Resin from Vessels	3 days																				
75	Remove Chemicals	3 days																				
76	Open and Vent Vessels	1 day																				
77	Diesel Generator	1 day																				