BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

APPLICATION OF PUBLIC SERVICE COMPANY OF OKLAHOMA, AN OKLAHOMA CORPORATION, FOR AN ADJUSTMENT IN ITS RATES AND CHARGES AND THE ELECTRIC SERVICE RULES, REGULATIONS AND CONDITIONS OF SERVICE FOR ELECTRIC SERVICE IN THE STATE OF OKLAHOMA	)))))))	CAUSE NO. PUD 202100055

FILED
APR 30 2021
COURT CLERK'S OFFICE - OKC
CORPORATION COMMISSION
OF OKLAHOMA

DIRECT TESTIMONY OF

JASON A. CASH

ON BEHALF OF

PUBLIC SERVICE COMPANY OF OKLAHOMA

APRIL 2021

TESTIMONY INDEX

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND POSITION.

A. My name is Jason A. Cash. My business address is 1 Riverside Plaza, Columbus, Ohio 43215. I am employed by American Electric Power Service Corporation (AEPSC) as an Accounting Senior Manager. AEPSC, a wholly-owned subsidiary of American Electric Power Company, Inc. (AEP). AEP is the parent company of Public Service Company of Oklahoma (PSO or the Company).

Q. WHAT ARE YOUR PRINCIPAL AREAS OF RESPONSIBILITY?

A. My responsibilities include providing the AEP electric operating subsidiaries including Public Service Company of Oklahoma (PSO or the Company), with accounting support for regulatory filings, including preparation of depreciation studies and testimony. I also monitor regulatory proceedings and legislation for accounting implications and assist in determining the appropriate regulatory accounting treatment from those proceedings.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS CASE?

A. I am testifying on behalf of PSO.

Q. PLEASE STATE YOUR QUALIFICATIONS.

A. I graduated with a Bachelor of Science degree with a major in accounting from The Ohio State University in 2000. In 2000, I joined AEPSC and have held several positions within the Accounting organization, including general ledger accounting and financial reporting for Ohio Power Company and AEPSC. From 2008 through 2013, I worked in AEPSC's Transmission Accounting department where I was promoted to Supervisor of Transmission Accounting in 2013. From 2014 through 2019, I worked

in AEPSC's Accounting Policy & Research department as a Staff Accountant and was later promoted to Senior Staff Accountant in 2019. In 2019, I was promoted to my current position of Accounting Senior Manager.

Q. HAVE YOU PRESENTED TESTIMONY IN RATE AND DEPRECIATION PROCEEDINGS BEFORE REGULATORY AGENCIES?

A. Yes. EXHIBIT JAC-1, details my rate case and depreciation experience.

Q. HAVE YOU HAD ANY FORMAL TRAINING RELATING TO DEPRECIATION AND UTILITY ACCOUNTING?

A. Yes. I am a member of the Society of Depreciation Professionals (SDP) and was a former at-large director for the SDP. I have completed training courses offered by the SDP, which include Depreciation Fundamentals, Life and Net Salvage Analysis, and Analyzing the Life of Real World Property. These training classes included topics such as an introduction to plant and depreciation accounting, data requirements and collection, depreciation models, life cycle analysis, current regulatory issues, actuarial life analysis, net salvage analysis, and simulation life analysis.

II. PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. My testimony recommends revised depreciation accrual rates for electric plant in service based on a Depreciation Study Report (See EXHIBIT JAC-2) for PSO's electric utility plant in service at December 31, 2020. Schedules I and II in the Depreciation Study Report detail the results of the study. Schedule III provides a comparison of the current study mortality characteristics that were used to compute the existing depreciation rates and the mortality characteristics used to determine the recommended

depreciation rates and accruals for the Transmission, Distribution and General Plant functions. Schedule IV provides a listing of PSO's generating plant assets along with their estimated retirement dates. The depreciation rates determined by the study are intended to provide recovery of invested capital, cost of removal, and credit for salvage over the expected life of the property.

The revised depreciation rates are primarily required as a result of changes in average service life and net salvage costs that need to be recovered through depreciation rates since the Company's last depreciation study dated December 31, 2017.

III. DEFINITION OF DEPRECIATION

Q. PLEASE EXPLAIN THE DEFINITION OF DEPRECIATION AS USED IN PREPARING YOUR STUDY.

A. The definition of depreciation that I used in preparing the study is the same that is used by the FERC and the National Association of Regulatory Utility Commissioners. That definition is:

> Depreciation, as applied to depreciable electric plant, means the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of electric plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand and requirements of public authorities.
>
> Service value means the difference between original cost and the net salvage value (net salvage value means the salvage value of the property retired less the cost of removal) of the electric plant. [1]

[1] 18 C.F.R. pt. 101 ("Definitions" ¶¶ 12, 19, 37).

IV. DEPRECIATION STUDY OVERVIEW

Q. WHAT ARE PSO'S CURRENT DEPRECIATION RATES BASED ON?

A. The Commission last reviewed the Company's depreciation rates in Cause No. PUD 201800097 using Company plant in service balances as of December 31, 2017. Per Section III.E.(c) of the Final Order in that Cause, depreciation rates were to remain unchanged from those depreciation rates approved in Cause No. PUD 201700151 using Company plant in service balances as of December 31, 2016.

Q. WAS THE DEPRECIATION STUDY FILED BY PSO IN THIS PROCEEDING PREPARED BY YOU OR UNDER YOUR DIRECTION AND CONTROL?

A. Yes. I prepared the depreciation study submitted by PSO with its filing in this proceeding. My report is provided as EXHIBIT JAC-2 and is titled "Depreciation Study Report". The report provides the calculation of annual depreciation accruals related to electric plant in service as of December 31, 2020, and includes the results of my depreciation study for PSO.

Q. DID YOU FOLLOW GENERALLY ACCEPTED PRACTICES IN THE FIELD OF DEPRECIATION WHEN PREPARING THE DEPRECIATION STUDY?

A. Yes. I followed generally accepted practices in the field of depreciation.

Q. ARE THE METHODS AND PROCEDURES OF THIS DEPRECIATION STUDY CONSISTENT WITH COMMISSION ORDERS?

A. Yes, the methods and procedures of this study are the same as those utilized in prior studies to develop depreciation rates adopted by the Commission. Depreciation rates are determined based on the average service life procedure and the remaining life method.

Q. CAN YOU SUMMARIZE THE IMPACT ON DEPRECIATION RATES BASED ON THE DEPRECIATION STUDY?

A. Yes. Table 1 below sets forth a comparison of the currently approved functional depreciation rates and expense to the proposed functional depreciation rates and expense as of December 31, 2020.

Table 1 - PSO, Composite Depreciation Rates and Accruals
Based on Plant In Service at December 31, 2020

	Existing		Study		
Functional Plant Group	Rates	Accruals	Rates	Accruals	Difference
Production (1)	3.05%	$44,242,372	6.66%	$96,757,262	$52,514,890
Transmission	2.44%	$26,019,887	2.61%	$27,805,526	$1,785,639
Distribution	2.97%	$84,613,270	3.00%	$85,332,033	$718,763
General	3.60%	$7,128,671	4.70%	$9,298,053	$2,169,382
Total Depreciable Plant	2.91%	$162,004,200	3.94%	$219,192,874	$57,188,674

Note:
(1) Production Plant includes the undepreciated balance of PSO's share of the Oklaunion Plant, which retired in September 2020.

Based on results of the study and applying PSO rates to the plant in service as of December 31, 2020, the recommended revised depreciation rates produce an increase in annual depreciation expense of $57,188,674.

V. STUDY METHODS AND PROCEDURES

Q. PLEASE BRIEFLY DESCRIBE THE METHODS AND PROCEDURES USED IN YOUR DEPRECIATION STUDY.

A. The methods and procedures used by the current study to develop depreciation rates are consistent with the methods and procedures recommended by "Public Utility Depreciation Practices" (published by the NARUC, August 1996). These methods and

procedures are fully described in the Depreciation Study Report which is attached as EXHIBIT JAC-2. In summary, all of the property included in the Depreciation Study Report was considered as part of a group plan methodology. Under the group plan, depreciation is accrued on the basis of the original cost of all property included in each depreciable plant group instead of individual items of property. Upon retirement of any depreciable property, its full cost, less any net salvage realized, is charged to accumulated provision for depreciation for the applicable plant group regardless of the age of the particular item retired.

Also under this methodology, the investment dollars in each primary plant account are considered as a separate group for depreciation accounting purposes and an annual depreciation rate for each primary plant account is determined. In this study, the plant groups consisted of the individual primary plant accounts for Production, Transmission, Distribution and General Plant property.

The depreciation rates were calculated by using the Average Remaining Life Method, which is the same method that was used to calculate PSO's current depreciation rates. The Average Remaining Life method, which is consistent with FERC's General Instruction 22, Depreciation Accounting[2], recovers the original cost of the plant, adjusted for net salvage, less accumulated depreciation over the average remaining life of the plant.

For Production Plant, estimated generating unit retirement dates for individual plant accounts were used to determine average service lives and remaining lives of each

[2] Code of Federal Regulations, Title 18, Part 101, General Instructions, item 22 Depreciation Accounting, page 376 (4-1-12 Edition).

specific account at each plant. The estimated generating unit retirement dates were provided by Company witness Daryll Jackson. The average service lives for the Company's Transmission, Distribution and General Plant (Account 390) were determined using statistical procedures similar to those used in the insurance industry in studies of human mortality. The historical retirement experience of property groups was studied and retirement characteristics of the property were described using the Iowa-type retirement dispersion curves.

Net salvage for each property group was determined based on actual historical experience for Production, Transmission, Distribution and General Plant accounts. In addition, Production plant included terminal retirement net salvage amounts for Steam and Other Production Plant. This methodology for determining net salvage is consistent with NARUC's "Public Utility Depreciation Practices"[3].

Q. DOES THE DEPRECIATION STUDY MAKE ANY CHANGES TO DATA BOOKED BY THE COMPANY?

A. Yes. The depreciation study makes several adjustments as noted on the depreciation study work papers used to calculate net salvage percentages for Distribution and Transmission Plant to Retirements, Removal Cost and Salvage in booked amounts dated 2009 or older to adjust atypical amounts used in the calculation of annual net salvage percentages in those older years (See EXHIBIT JAC-3, Depreciation Study Work Papers). The adjustments include items such as transferring the year removal costs were recorded to match the year of the related original cost retirement,

[3] Public Utility Depreciation Practices, published by National Association of Regulatory Utility Commissioners, August 1996, Chapter XI, Estimating Salvage and Removal, pages 157-164.

transferring stores material returns classified as negative removal to salvage and adjustments to remove unusual amounts recorded on some work orders related to ice and wind storms.

Q. IS IT AN UNUSUAL PRACTICE TO MAKE ADJUSTMENTS TO RETIREMENTS, REMOVAL COST AND SALVAGE WHEN PREPARING A DEPRECIATION STUDY?

A. No. Adjustments are typically made in a depreciation study to eliminate anomalies which would distort the results. This practice is supported by NARUC's "Public Utility Depreciation Practices", at page 158 which states:

> "Generally, if transfers or sales of plant have contributed significantly to realized salvage, and such transactions are considered to be unrepresentative of the future, these transactions should be eliminated from the data."

Q. HOW WERE THE NET SALVAGE PERCENTAGES FOR PRODUCTION PLANT DETERMINED IN YOUR DEPRECIATION STUDY?

A. I estimated the interim net salvage percentages for production plant accounts by examining historical for Steam and Other Production plant from 2002 through 2020. In addition, Production plant includes terminal retirement net salvage amounts for both Steam and Other Production Plant. To determine these terminal retirement amounts, PSO commissioned the independent engineering firm, Sargent & Lundy (S&L), to update the conceptual dismantling cost estimates that were used to establish PSO's current depreciation rates. The recommended depreciation rates for Production Plant include terminal dismantling costs for Comanche, Northeastern Units 1&2,

Northeastern Units 3&4, Riverside, Southwestern, Tulsa and Weleetka Plants at their estimated retirement dates.

Q. WHY DID PSO RETAIN S&L TO PERFORM A DISMANTLING STUDY OF ITS GENERATING UNITS?

A. S&L dismantling studies provide (i) estimated terminal removal cost and salvage amounts specific to each of the Company's generating stations and (ii) a reasonable method of determining future expected terminal net salvage amounts. A copy of the S&L dismantling studies for each production plant is attached as EXHIBIT JAC-3.

Q. WERE THERE ANY ADJUSTMENTS MADE TO THE RESULTS PROVIDED BY THE DISMANTLING STUDY WHEN ADDING THE S&L NET SALVAGE AMOUNTS TO THE DEPRECIATION STUDY?

A. Yes. S&L provided terminal net salvage amounts stated at a 2021 price level (excluding any asbestos, ash pond, or landfill type removal costs). I applied a 2.20% inflation rate factor to the net salvage amounts provided by the S&L study to determine the terminal net salvage amount at each plant's retirement year. The terminal net salvage amount after inflation was used in the calculation of net salvage percentages in the depreciation study.

Q. WHAT IS THE SOURCE OF THE 2.20% INFLATION RATE USED FOR THIS PURPOSE?

A. The 2.20% annual inflation rate was taken from a publication titled "The Livingston Survey" dated December 18, 2020. The Livingston Survey is published by the research department of the Federal Reserve Bank of Philadelphia and provides a long-term inflation outlook that projects an inflation rate for a 10-year period.

Q. DO YOUR NET SALVAGE AMOUNTS FOR PRODUCTION PLANT INCLUDE ASSET RETIREMENT OBLIGATION (ARO) TYPE REMOVAL COSTS?

A. No. The cost to remove asbestos and to cover ash ponds and landfills are included in the Companies' accounting for asset retirement obligations (ARO) and the depreciation and accretion on these AROs are incorporated in cost of service outside of the depreciation study.

Q. PLEASE DESCRIBE HOW YOU ESTIMATED NET SALVAGE PERCENTAGES FOR TRANSMISSION, DISTRIBUTION AND GENERAL ACCOUNTS.

A. I estimated the net salvage percentages for transmission, distribution and general accounts by examining historical data for the period 1985 through 2020. This methodology is consistent with NARUC's "Public Utility Depreciation Practices"[4] (note that for some accounts, detail was not available for this entire time period).

Q. DID YOU PHYSICALLY OBSERVE PSO'S PLANT AND EQUIPMENT AS PART OF YOUR DEPRECIATION STUDY?

A. I was present when a field review of PSO's property was performed in June 2018. The field review was performed to support the depreciation study that was submitted by the Company in Cause No. PUD 201800097. Representative portions of the Company's Production, Transmission and Distribution plant were observed during the field review and was conducted to confirm that depreciation methodology used during the depreciation study reflected Company operations, the reasons for retirements and the expected future causes of retirements. The knowledge obtained during the field review,

[4] Public Utility Depreciation Practices published by the National Association of Regulatory Utility Commissioners, August 1996, Chapter XI, Estimating Salvage and Removal, pages 157-164.

my experience of the accounting and operations of PSO and other AEP affiliates, and discussions with management were all considered in the preparation of my depreciation study filed in this case.

Q. DID YOU MAKE ANY ADJUSTMENTS WHEN PREPARING THE DEPRECIATION STUDY AND DO YOU HAVE ANY RECOMMENDATIONS?

A. Yes, for depreciation rate calculation purposes, I allocated the booked general plant accumulated depreciation (reserve) balances by plant account using the theoretical reserve amount for each plant account to provide a realistic depreciation rate and reserve balance for each plant account. Two of the general plant accounts (account 391 and 395) had a negative reserve balance due to retirements and the allocation produces a more reasonable depreciation rate for all of the general plant accounts.

My recommendation is to reallocate the general plant book reserve balances using the same methodology as the depreciation study.

VI. NORTHEASTERN UNIT 3

Q. PLEASE DISCUSS HOW NORTHEASTERN UNIT 3 IS TREATED IN THE CURRENT DEPRECIATION STUDY.

A. Northeastern Unit 3 will retire in 2026 and it is appropriate to recover the cost of an asset over its actual service life while it is providing service to the customer. FERC endorses setting depreciation rates that fully depreciate an asset during its service life as provided by the following guidance:

> 22. Depreciation Accounting – A. Method. Utilities must use a method of depreciation that allocates in a systematic and rational manner the service value of depreciable property over the service life of the property.[5]

Proposals made by the Company in previous Causes were to use a retirement date of 2040, first approved by Commission Order No. 657877 in Cause No. PUD 201500208. However, continued use of a 2040 retirement date used to calculate depreciation rates will cause future customers to bear some of the undepreciated costs of the unit after its true 2026 retirement date. Therefore, it is the recommendation of this depreciation study to update the depreciation rate calculation for Northeastern Unit 3 using a 2026 retirement date, or when the unit is set to retire. Additionally and as discussed further in Section VII, it is the recommendation of this depreciation study to include the undepreciated balance of PSO's share of the Oklaunion Plant in the accumulated depreciation balance of Northeastern Unit 3 and recover the undepreciated balance over the remaining life of PSO's remaining coal unit.

VII. OKLAUNION PLANT

Q. PLEASE DISCUSS HOW OKLAUNION PLANT IS TREATED IN THE CURRENT DEPRECIATION STUDY.

A. The Oklaunion Plant retired in September 2020. The final order from Cause No. PUD 201700151 approved depreciation rates for Oklaunion Plant using a 2046 retirement year and the plant's depreciation rates were never adjusted to reflect the actual retirement which occurred in 2020. As a result, the Company is left with an

[5] Code of Federal Regulations, Title 18, Conservation of Power and Water Resources, Part 101, General Instructions, Item 22 Depreciation Accounting, part A, page 376 (4-1-2012 edition).

undepreciated balance for its share of the Oklaunion Plant at December 31, 2020. Therefore, it is the recommendation of this depreciation study to include PSO's share of the undepreciated balance of the Oklaunion Plant in the accumulated depreciation balance of Northeastern Unit 3 and recover the undepreciated balance over the remaining life of PSO's remaining coal unit.

Q. IS IT REASONABLE TO COMBINE THE REMAINING BALANCE OF THE OKLAUNION PLANT BY CHARGING ACCUMULATED DEPRECIATION AND RECOVERING THAT COST OVER THE REMAINING LIFE OF NORTHEASTERN UNIT 3?

A. Yes. Because depreciation of an asset should cease upon the retirement of the asset, including the remaining Oklaunion plant balance in accumulated depreciation and recovering the cost over the remaining life of Northeastern Unit 3 spreads the remaining cost of Oklaunion over the remaining 6 years of Northeastern Unit 3.

Q. IS RECOVERY OF THE REMAINING NET BOOK VALUE OF PROPERTY, PLANT AND EQUIPMENT RETIRED A NORMAL UTILITY RATEMAKING PRACTICE?

A. Yes. Recovery of the remaining value of a generating station or Transmission, Distribution and General property is the normal utility ratemaking practice in accordance with FERC Electric Plant Instruction No. 10 "Additions and Retirements of Electric Plant", paragraph (2) which states:

> "(2) When a retirement unit is retired from electric plant, with or without replacement, the book cost thereof shall be credited to the electric plant account in which it is included, determined in the manner set forth in paragraph D, below. If the retirement is of a depreciable class, the book cost of the unit retired and

credited to electric plant shall be charged to the accumulated provision for depreciation applicable to such property."

VIII. STUDY RESULTS

Q. PLEASE EXPLAIN THE RESULTS OF YOUR STUDY FOR PRODUCTION PLANT.

A. As Table 1 above indicates, the composite depreciation rate for Production Plant (including the undepreciated balance of PSO's share of the Oklaunion Plant) increased from 3.05% to 6.66% (or 3.61%) and the annualized depreciation accrual increase due to the change in Production Plant depreciation rates was approximately $52.5 million. The depreciation accrual increase was mainly due to an update of the retirement date of Northeastern Unit 3 from 2040 to 2026 to align with the units actual retirement date and the inclusion of the undepreciated balance of the Oklaunion Plant with the depreciation rates of Northeastern Unit 3. Updating the retirement date of Northeastern Unit 3 from 2040 to 2026 and inclusion of the undepreciated balance of the Oklaunion Plant account for $45 million of the $52 million increase.

Q. PLEASE EXPLAIN THE RESULTS OF YOUR STUDY FOR TRANSMISSION PLANT.

A. The composite depreciation rate for Transmission Plant increased from 2.44% to 2.61% (or 0.17%). The annualized depreciation expense accrual increase due to the change in depreciation rates was approximately $1.8 million (see Table 1, above). The increase in the annual Transmission accrual was primarily due to a decrease in average service life for accounts 353, 355 and 356 and an increase in the net salvage ratio for accounts 354 and 356.

The relatively minor recommended decrease in average service life for accounts 353, 355 and 356 of -3, -4 and -2 years respectively was proposed because the actuarial analysis provided a mathematically best fitting curve using the slightly shorter recommended average service life for each account. The change from the average service life currently approved is minimal, reasonable and supported by the analysis.

The increase in the net salvage ratio for accounts 354 and 356 is supported by the Transmission net salvage analysis provided with the depreciation study work papers in EXHIBIT JAC-3.

The increase in the annual accrual was partially offset by a decrease in the net salvage ratio for accounts 352 and 353.

Q. PLEASE EXPLAIN THE RESULTS OF YOUR STUDY FOR DISTRIBUTION PLANT?

A. The composite depreciation rate for Distribution Plant increased from 2.97% to 3.00% (or 0.03%) and the annualized depreciation expense accrual increase due to the change in depreciation rates was approximately $0.7 million (see Table 1, above). The increase in the annual Distribution accrual was primarily due to a decrease in average service life for accounts 361, 365 and 368 and an increase in the net salvage ratio for accounts 362, 367 and 370.16.

The decrease in average service life for accounts 365 and 368 of -1 and -1 years respectively was recommended because the actuarial analysis provided a mathematically best fitting curve using the slightly shorter recommended average service lives for each account. For account 361, the recommended decrease in average service life from 45 years to 40 years was proposed using a review of the retirements

in the account and by using analyst judgment to move to a more conservative decrease in average service life than what was produced by the analysis.

The increase in the net salvage ratio for accounts 362 and 367 is supported by the Distribution net salvage analysis provided with the depreciation study work papers in EXHIBIT JAC-3. The increase in the net salvage ratio for account 370.16 AMI Meters from 0% to 30% was based on the net salvage ratio for account 370 Meters since it's logical to expect that the cost to remove the AMI meters in account 370.16 would be equal to the cost to remove the older meters in account 370.

The increase in the annual accrual was offset by an increase in the average service life for accounts 364, 367, 371 and 373 and decreases in the net salvage ratio for accounts 365, 369, 371 and 373.

Q. SHOULD THE MATHEMATICALLY BEST FITTING CURVE ALWAYS BE SELECTED?

A. Not necessarily as is demonstrated with the analysis of account 361. Mathematical curve fitting is an important tool but it doesn't always provide the best result. An account may have an insufficient or irregular retirement history that influences the analysis and provides an incorrect result. Judgment should be used by the analyst when selecting the best average service life for an account.

Q. PLEASE EXPLAIN THE RESULTS OF YOUR STUDY FOR GENERAL PLANT.

A. The composite depreciation rate for General Plant increased from 3.60% to 4.70% (or 1.10%) and the annualized depreciation expense accrual increase due to the change in depreciation rates was approximately $2.2 million. The increase in the annual General Plant accrual was primarily due to a decrease in average service life for account 390.

The decrease in average service life for account 390 of -8 years was recommended since the actuarial analysis provided a mathematically best fitting curve using an average service life of 56 years.

Q. WHAT IS THE TOTAL AMOUNT OF INCREASE IN EXPENSE RECOMMENDED BY THE CURRENT DEPRECIATION STUDY INCLUDING THE REGULATORY ASSET TREATMENT RECOMMENDED FOR OKLAUNION PLANT?

A. The current depreciation study recommends an increase in total Company depreciation rates (including PSO's share of the undepreciated balance of the Oklaunion Plant) from 2.91% to 3.94% (or 1.03%) which results in a change in the annual accrual of $57.2 million (or 35.3%) based on depreciable plant in service at December 31, 2020.

RATE CASE EXPERIENCE OF JASON A. CASH					
No.	**Year**	**Company**	**Commission**	**Case, Cause or Docket No.**	**Items Provided/Filed**
1.	2015	Transource West Virginia, LLC	Federal Energy Regulatory Commission	Docket No. ER15-2114-000	Testimony and Depreciation Study
2.	2016	Kingsport Power Company	Tennessee Regulatory Authority	Docket No. 16-00001	Testimony and Depreciation Study
3.	2016	Transource Pennsylvania, LLC and Transource Maryland, LLC	Federal Energy Regulatory Commission	Docket No. ER17-419-000	Testimony and Depreciation Study
4.	2017	Kentucky Power Company	Public Service Commission of Kentucky	Case No. 2017-00179	Testimony and Depreciation Study
5.	2017	Indiana Michigan Power Company	Michigan Public Service Commission	Case No. U-18370	Testimony and Depreciation Study
6.	2017	Indiana Michigan Power Company	Indiana Utility Regulatory Commission	Cause No. 44967	Testimony and Depreciation Study
7.	2018	Appalachian Power Company and Wheeling Power Company	Public Service Commission of West Virginia	Case Nos. 18-0645-E-D and 18-0646-E-42T	Testimony and Depreciation Study
8.	2019	Appalachian Power Company and Wheeling Power Company	Public Service Commission of West Virginia	Case No. 19-0063-E-PC	Testimony

RATE CASE EXPERIENCE OF JASON A. CASH					
No.	**Year**	**Company**	**Commission**	**Case, Cause or Docket No.**	**Items Provided/Filed**
9.	2019	AEP Texas Inc.	Public Utility Commission of Texas	Docket No. 49494	Testimony and Depreciation Study
10.	2019	Indiana Michigan Power Company	Indiana Utility Regulatory Commission	Cause No. 45235	Testimony and Depreciation Study
11.	2019	Indiana Michigan Power Company	Michigan Public Service Commission	Case No. U-20359	Testimony and Depreciation Study
12.	2019	Southwestern Electric Power Company	Arkansas Public Service Commission	Docket No. 19-008-U	Adopted the Testimony and Depreciation Study of Company witness David Davis in Addition to Filing Sur-Surrebuttal Testimony
13.	2020	Appalachian Power Company	Virginia State Corporation Commission	Case No. PUE-2020-00015	Testimony and Depreciation Study
14.	2020	Ohio Power Company	Public Utilities Commission of Ohio	Case No. 20-585-EL-AIR	Testimony and Depreciation Study
15.	2020	Appalachian Power Company	Public Service Commission of West Virginia	Case No. 20-0675-E-PC	Testimony
16.	2020	Southwestern Electric Power Company	Public Utility Commission of Texas	Docket No. 51415	Testimony and Depreciation Study

RATE CASE EXPERIENCE OF JASON A. CASH					
No.	**Year**	**Company**	**Commission**	**Case, Cause or Docket No.**	**Items Provided/Filed**
17.	2020	Southwestern Electric Power Company	Louisiana Public Service Commission	Docket No. U-35441	Testimony and Depreciation Study

PUBLIC SERVICE COMPANY OF OKLAHOMA

DEPRECIATION STUDY REPORT

OF

ELECTRIC PLANT IN SERVICE

AT DECEMBER 31, 2020

DEPRECIATION STUDY REPORT

Table of Contents

I. INTRODUCTION

This report presents the results of a depreciation study of Public Service Company's (PSO or Company) depreciable electric utility plant in service at December 31, 2020. The study was prepared by Jason A. Cash, Accounting Senior Manager at American Electric Power Service Corporation (AEPSC). The purpose of the depreciation study was to develop appropriate annual depreciation accrual rates for each of the primary plant accounts that comprise the functional groups for which PSO computes its annual depreciation expense.

The recommended depreciation rates are based on the Average Remaining Life Method of computing depreciation. Further explanation of this method is contained in Section II of this report.

The definition of depreciation used in my Study is the same as that used by the Federal Energy Regulatory Commission (FERC) and the National Association of Regulatory Utility Commissioners:

> "Depreciation, as applied to depreciable electric plant, means the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of electric plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand and requirements of public authorities."

> "Service value means the difference between original cost and the net salvage value (net salvage value means the salvage value of the property retired less the cost of removal) of the electric plant." (FERC Accounting and Reporting Requirements for Public Utilities and Licensees, ¶15.001.)

Schedule I of this report shows the recommended depreciation accrual rates by primary plant accounts and by weighted average functional plant classifications. Schedule II compares depreciation expense using rates approved by the Commission and rates recommended by my depreciation study. Schedule III shows a comparison of the current study mortality characteristics that were used to compute the recommended depreciation rates and the mortality characteristics used to determine the existing depreciation rates and accruals for the Transmission, Distribution and General Plant Functions. Schedule IV provides a listing of the Company's generating plants, their estimated year to be retired and calculated life span.

Table 1 below, presents a comparison of PSO's current functional group composite depreciation rates and accruals to the recommended functional group rates and accruals for electric plant in service as of December 31, 2020:

Table 1 - PSO, Composite Depreciation Rates and Accruals
Based on Plant In Service at December 31, 2020

	Existing		Study		
Functional Plant Group	Rates	Accruals	Rates	Accruals	Difference
Production (1)	3.05%	$44,242,372	6.66%	$96,757,262	$52,514,890
Transmission	2.44%	$26,019,887	2.61%	$27,805,526	$1,785,639
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Total Depreciable Plant	2.91%	$162,004,200	3.94%	$219,192,874	$57,188,674

Note:
(1) Production Plant includes the undepreciated balance of PSO's share of the Oklaunion Plant, which retired in September 2020.

Based on total Company Depreciable Plant In-Service as of December 31, 2020, the recommended depreciation rates are 1.03% higher than the existing rates and produce an increase in total Company annual depreciation expense of $57,188,674. The depreciation rate changes are necessary because of changes in average service lives and net salvage estimates used to calculate PSO's current depreciation rates as discussed below.

II. DISCUSSION OF METHODS AND PROCEDURES USED IN THE STUDY

1. Group Method

All of the depreciable property included in this report was considered on a group plan methodology. Under the group plan, depreciation expense is accrued upon the basis of the original cost of all property included in each depreciable plant account. Upon retirement of any depreciable property, its full cost, less any net

salvage realized, is charged to the accrued depreciation reserve regardless of the age of the particular item retired. Also, under this plan, the dollars in each primary plant account are considered as a separate group for depreciation accounting purposes and an annual depreciation rate for each account is determined. The annual accruals by primary account were then summed, to arrive at the total accrual for each functional group. The total accrual divided by the original cost yields the functional group accrual rate.

2. Annual Depreciation Rates by the Average Remaining Life Method

PSO's current depreciation rates are based on the Average Remaining Life Method. The Average Remaining Life Method recovers the original cost of the plant, adjusted for net salvage, less accumulated depreciation, over the average remaining life of the plant. By this method, the annual depreciation rate for each account is determined on the following basis:

$$\text{Annual Depreciation Expense} = \frac{(\text{Orig. Cost})\ (\text{Net Salvage Ratio}) - \text{Accumulated Depreciation}}{\text{Average Remaining Life}}$$

$$\text{Annual Depreciation Rate} = \frac{\text{Annual Depreciation Expense}}{\text{Original Cost}}$$

3. Methods of Life Analysis

Depending upon the type of property and the nature of the data available from the property accounting records, one of three life analyses

was used to arrive at the historically realized mortality characteristics and service lives of the depreciable plant investments. These methods are identified and described as follows:

Life Span Analysis

The life span analysis was employed for Production Plant. PSO's investment in production plant includes steam and other production plants. The life-span method of analysis is particularly suited to specific location property, such as a generating plant, where nearly all of the surviving investments are likely to be retired in total at a future date.

The key elements in the life span analysis are the age of the surviving investments, the projected retirement date of the facility and the expected interim retirements. Interim retirements are those that are expected to occur between the date of the depreciation study and the expected final retirement date of the generating plant. Examples of interim retirements include fans, pumps, motors, a set of boiler tubes, a turbine rotor, etc.

The age of the surviving investments was obtained from PSO's property accounting records. PSO personnel provided the estimated retirement dates used in the life-span analysis for Production Plant. A discussion of the life analyses for Production Plants follows:

Production Plant

PSO's depreciable investments in Production Plant are provided on Schedule IV of this report.

Since PSO's last depreciation study (property investment dated December 31, 2017), PSO retired Weleetka Unit 6 in March 2019. The retirement of Weletka Unit 6 is included with the Weleetka Plant in the depreciation study. In addition, PSO and its co-owners retired the Oklaunion Plant in September 2020. The Oklaunion Plant used an estimated retirement date of 2046 to establish depreciation rates in the prior depreciation studies and an undepreciated balance for the plant remains. This depreciation study includes PSO's share of the undepreciated balance of the Oklaunion Plant in the accumulated depreciation balance of Northeastern Unit 3 and requests to recover the undepreciated balance of the Oklaunion Plant over the remaining life of PSO's remaining coal unit

Per an agreement with the Federal Environmental Protection Agency, the Company intends to retire Northeastern Unit 3 in 2026. However, Northeastern Unit 3 is currently using a 2040 retirement year to calculate depreciation rates as approved in previous Causes, including Cause No. PUD 201800097, the Company's most recent Cause. This depreciation study requests a depreciation rate for Northeastern Unit 3 in this Cause using 2026 as the retirement year, or when the unit is set to retire.

Actuarial Analysis – Transmission, Distribution and General Plant

This method of analyzing past experience represents the application to industrial property of statistical procedures developed in the life insurance field for investigating human mortality. It is distinguished from other methods of life estimation by the requirement that it is necessary to know

the age of the property at the time of its retirement and the age of survivors, or plant remaining in service; that is, the installation date must be known for each particular retirement and for each particular survivor.

The application of this method involves the statistical procedure known as the "annual rate method" of analysis. This procedure relates the retirements during each age interval to the exposures at the beginning of that interval, the ratio of these being the annual retirement ratio. Subtracting each retirement ratio from unity yields a sequence of annual survival ratios from which a survivor curve can be determined. This is accomplished by the consecutive multiplication of the survivor ratios. The length of this curve depends primarily upon the age of the oldest property. Normally, if the period of years from the inception of the account to the time of the study is short in relation to the expected maximum life of the property, an incomplete or stub survivor curve results.

While there are a number of acceptable methods of smoothing and extending this stub survivor curve in order to compute the area under it from which the average life is determined, the well-known Iowa Type Curve Method was used in this study.

By this procedure, instead of mathematically smoothing and projecting the stub survivor curve to determine the average life of the group, it was assumed that the stub curve would have the same mortality characteristics as the type curve selected. The selection of the appropriate type curve and average life is accomplished by plotting the stub curve, superimposing on it Iowa curves of the various types and average lives

drawn to the same scale, and then determining which Iowa type curve and average life best matches the stub.

The Actuarial Method of Life Analysis was used for Transmission Plant, Distribution Plant and General Plant account 390.

The result of the actuarial analysis for the above accounts is detailed in the depreciation study work papers.

Vintage Year Accounting – General Equipment

In 1996, the Company began using a vintage year accounting method for general plant accounts 391 to 398 in accordance with Federal Energy Regulatory Commission Accounting Release Number 15 (AR-15). This accounting method requires amortization of vintage groups of property over their useful lives. AR-15 also requires that property be retired when it meets its average service life.

As a result, my recommendation for these accounts is that the current useful life approved by the Commission be retained and used to continue amortization of the account balances.

4. Final Selection of Average Life and Curve Type

The final selection of average life and curve type for each depreciable plant account analyzed by the Actuarial Method was primarily based on the results of the mortality analyses of past retirement history.

III. NET SALVAGE

1. Net Salvage - Production Plant

The net salvage analysis for production plant included a review of the Company's experienced functional interim retirement, salvage and removal history to include interim retirements in the calculation of production plant depreciation rates. Interim retirements are those that are expected to occur between the date of the depreciation study and the expected final retirement date of the generating plant. Examples of interim retirements include items such as fans, pumps, motors, a set of boiler tubes, a turbine rotor, etc.

The net salvage analysis also included a calculation of final retirement/demolition cost for the Company's production plants. To assist in establishing total final net salvage (demolition cost less salvage) applicable to PSO's generating plants, PSO contracted with Sargent & Lundy (S&L) to update the conceptual demolition cost estimates for plants that were included in PSO's previous depreciation studies. The updated S&L cost estimates to demolish the plants are based on current (2021) price levels which were inflated to the retirement date in the depreciation study. The estimate of final demolition costs was included in the net salvage ratios for production plant. S&L's demolition costs do not include Asset Retirement Obligation (ARO) amounts associated with the removal of asbestos or any cost associated with the final disposition of landfills and ash ponds.

2. Net Salvage – Transmission, Distribution and General Plant

The net salvage percentages used in this report for Transmission, Distribution and General Plant are expressed as percent of original cost and are based on the Company's experience combined with the judgment of the analyst. To determine gross salvage, gross removal and net salvage percentages for individual plant accounts, original cost retirements, salvage and removal were detailed by account for the period 1985 through 2020. The gross salvage and cost of removal percentages were calculated for this time period for each account (history was not available for every account back to 1985). The salvage and removal percentages were then netted to determine a net salvage percentage for each account.

The net salvage percents were converted to net salvage ratios (1 minus the net salvage percentage). The net salvage ratios appear in Column IV on Schedule I and the ratios were used to determine the total amount to be recovered through depreciation. The net salvage percentage for each account was reflected in the determination of the calculated depreciation requirement.

5. Net Salvage – Ratios

The net salvage ratios shown in Column IV on Schedule I of this report may be explained as follows:

a. Where the ratio is shown as unity (1.00), the net salvage in that particular account would be zero.

b. Where the ratio is less than unity, the salvage exceeded the removal costs. For example, if the net salvage were 20%, the net salvage ratio would be

expressed as .80.

c. Where the ratio is greater than unity, the salvage was less than the cost of removal. For example, if the net salvage were minus 5%, the net salvage ratio would be expressed as 1.05.

IV. DEPRECIATION REQUIREMENT AT DECEMBER 31, 2020

Accumulated depreciation by plant account and generating plant location was taken from PSO's property record system with the exception of general plant where the functional total general plant booked accumulated depreciation balance was allocated to individual plant accounts based on the calculation of a depreciation requirement (theoretical reserve) for each plant account using the average service life, curve type and net salvage amount recommended in this study.

V. STUDY RESULTS

Production, Transmission, Distribution and General plant results are discussed below. In addition, Transmission, Distribution and General Plant average service life, retirement dispersion pattern and net salvage percentages used to calculate each primary plant account's depreciation rate are shown on Schedule III. The mortality characteristics and net salvage values for the current rates are also shown. Changes to the mortality characteristics follow trends shown by historical retirement experience. Gross salvage and gross cost of removal percentages were largely based on history for each account for the period 1985-2020.

Production Plant

The depreciation rate for Production Plant (including the undepreciated balance of PSO's share of the Oklaunion Plant) increased from 3.05% to 6.66% (or 3.61%) and the annualized depreciation accrual increase due to the change in Production Plant depreciation rates was approximately $52.5 million. The depreciation accrual increase was mainly due to an update of the retirement date of Northeastern Unit 3 from 2040 to 2026 to align with the units actual retirement date and the inclusion of the undepreciated balance of the Oklaunion Plant with the depreciation rates of Northeastern Unit 3. Updating the retirement date of Northeastern Unit 3 from 2040 to 2026 and inclusion of the undepreciated balance of the Oklaunion Plant account for $45 million of the $52.5 million increase.

Transmission Plant

The composite depreciation rate for Transmission Plant increased from 2.44% to 2.61% (or 0.17%). The annualized depreciation expense accrual increase due to the change in depreciation rates was approximately $1.8 million (see Table 1, above). The increase in the annual Transmission accrual was primarily due to a decrease in average service life for accounts 353, 355 and 356 and an increase in the net salvage ratio for accounts 354 and 356.

The relatively minor recommended decrease in average service life for accounts 353, 355 and 356 of -3, -4 and -2 years respectively was proposed because the actuarial analysis provided a mathematically best fitting curve using the slightly shorter recommended average service life for each account. The

change from the average service life currently approved is minimal, reasonable and supported by the analysis.

The increase in the net salvage ratio for accounts 354 and 356 is supported by the Transmission net salvage analysis provided with the depreciation study work papers in EXHIBIT JAC-3.

The increase in the annual accrual was partially offset by a decrease in the net salvage ratio for accounts 352 and 353.

Distribution Plant

The composite depreciation rate for Distribution Plant increased from 2.97% to 3.00% (or 0.03%) and the annualized depreciation expense accrual increase due to the change in depreciation rates was approximately $0.7 million (see Table 1, above). The increase in the annual Distribution accrual was primarily due to a decrease in average service life for accounts 361, 365 and 368 and an increase in the net salvage ratio for accounts 362, 367 and 370.16.

The decrease in average service life for accounts 365 and 368 of -1 and -1 years respectively was recommended because the actuarial analysis provided a mathematically best fitting curve using the slightly shorter recommended average service lives for each account. For account 361, the recommended decrease in average service life from 45 years to 40 years was proposed using a review of the retirements in the account and by using analyst judgment to move to a more conservative decrease in average service life than what was produced by the analysis.

The increase in the net salvage ratio for accounts 362 and 367 is supported by the Distribution net salvage analysis provided with the depreciation study work papers in EXHIBIT JAC-3. The increase in the net salvage ratio for account 370.16 AMI Meters from 0% to 30% was based on the net salvage ratio for account 370 Meters since it's logical to expect that the cost to remove the AMI meters in account 370.16 would be equal to the cost to remove the older meters in account 370.

The increase in the annual accrual was offset by an increase in the average service life for accounts 364, 367, 371 and 373 and decreases in the net salvage ratio for accounts 365, 369, 371 and 373.

General Plant

The composite depreciation rate for General Plant increased from 3.60% to 4.70% (or 1.10%) and the annualized depreciation expense accrual increase due to the change in depreciation rates was approximately $2.2 million. The increase in the annual General Plant accrual was primarily due to a decrease in average service life for account 390.

The decrease in average service life for account 390 of -8 years was recommended since the actuarial analysis provided a mathematically best fitting curve using an average service life of 56 years.

SCHEDULE I – EXPLANATION OF COLUMN HEADINGS

Schedule I shows the determination of the recommended annual depreciation accrual rate by primary plant accounts by the straight line remaining life method. An explanation of the schedule follows:

Column I	-	Account number.
Column II	-	Account title.
Column III	-	Original Cost.
Column IV	-	Net Salvage Ratio.
Column V	-	Total to be Recovered (Column III) * (Column IV).
Column VI	-	Calculated Depreciation Requirement.
Column VII	-	Accumulated Depreciation.
Column VIII	-	Remaining to be Recovered (Column V - Column VII).
Column IX	-	Average Remaining Life.
Column X	-	Recommended Annual Accrual Amount.
Column XI	-	Accrual Percent or Depreciation Rate (Column X/Column III).

PUBLIC SERVICE COMPANY OF OKLAHOMA
SCHEDULE I - CALCULATION OF DEPRECIATION RATES BY THE REMAINING LIFE METHOD
BASED ON PLANT IN SERVICE AT DECEMBER 31, 2020
AVERAGE LIFE GROUP (ALG) METHOD ACCRUAL RATES

Acct. No. (I)	Account Title (II)	Original Cost (III)	Net Salvage Ratio (IV)	Total to Be Recovered (V)	Calculated Depreciation Requirement (VI)	Accumulated Depreciation (VII)	Remaining to Be Recovered (VIII)	Average Remain Life (IX)	Accrual Amount (X)	Accrual Percent (XI)
STEAM PRODUCTION PLANT (1)										
Coal Plants										
NORTHEASTERN UNIT 3 (1)										
311.0	Structures & Improvements	20,459,054	1.05	21,482,007	17,934,640	3,510,715	17,971,292	5.38	3,340,389	16.33%
312.0	Boiler Plant Equipment	377,283,656	1.05	396,147,839	299,691,357	135,025,634	261,122,205	5.42	48,177,529	12.77%
314.0	Turbogenerator Units	46,210,041	1.05	48,520,543	40,792,616	25,957,091	22,563,452	5.42	4,162,999	9.01%
315.0	Accessory Electrical Equipment	21,223,839	1.05	22,285,031	18,828,319	13,881,206	8,403,825	5.46	1,539,162	7.25%
316.0	Misc. Power Plant Equip.	18,289,214	1.05	19,203,675	15,235,851	8,610,312	10,593,363	5.37	1,972,693	10.79%
	Total	483,465,804		507,639,094	392,482,784	186,984,958	320,654,136		59,192,771	12.24%
RAIL SPUR										
310.1	Rail Spur - Land Rights	939,196	1.00	939,196	585,631	233,504	705,692	5.50	128,308	13.66%
312.0	Rail Spur	22,359,915	1.00	22,359,915	18,322,504	17,955,973	4,403,942	5.50	800,717	3.58%
312.11	Rail Cars	5,255,850	1.00	5,255,850	4,372,008	5,198,828	57,022	5.43	10,501	0.20%
	Total	28,554,961		28,554,961	23,280,143	23,388,305	5,166,656		939,526	3.29%
	Total Coal Plants	**512,020,765**	**1.05**	**536,194,055**	**415,762,927**	**210,373,263**	**325,820,792**	**5.42**	**60,132,297**	**11.74%**
Gas & Combined Cycle Plants										
COMANCHE										
311.3	Structures & Improvements	6,704,510	1.03	6,905,645	4,472,065	3,568,493	3,337,152	14.29	233,531	3.48%
312.3	Boiler Plant Equipment	66,469,107	1.03	68,463,180	29,523,156	22,260,287	46,202,893	13.77	3,355,330	5.05%
314.3	Turbogenerator Units	70,267,023	1.03	72,375,034	41,343,769	39,285,241	33,089,793	13.24	2,499,229	3.56%
315.3	Accessory Electrical Equipment	7,864,069	1.03	8,099,991	5,240,698	4,669,987	3,430,004	14.24	240,871	3.06%
316.3	Misc. Power Plant Equip.	3,326,973	1.03	3,426,782	1,923,080	1,778,503	1,648,279	13.41	122,914	3.69%
	Total	154,631,682		159,270,632	82,502,768	71,562,511	87,708,121		6,451,875	4.17%
NORTHEASTERN UNITS 1 AND 2										
311.3	Structures & Improvements	12,099,317	1.07	12,946,269	9,062,642	7,152,033	5,794,236	15.32	378,214	3.13%
312.3	Boiler Plant Equipment	94,695,651	1.07	101,324,347	60,513,151	58,188,962	43,135,385	15.08	2,860,437	3.02%
314.3	Turbogenerator Units	143,820,980	1.07	153,888,449	85,339,936	84,039,767	69,848,682	13.88	5,032,326	3.50%
315.3	Accessory Electrical Equipment	16,206,082	1.07	17,340,508	9,917,465	9,327,506	8,013,002	14.79	541,785	3.34%
316.3	Misc. Power Plant Equip.	8,491,520	1.07	9,085,926	5,042,509	5,420,305	3,665,621	14.61	250,898	2.95%
	Total	275,313,550		294,585,499	169,875,704	164,128,573	130,456,926		9,063,659	3.29%
RIVERSIDE UNITS 1 AND 2										
311.3	Structures & Improvements	11,467,300	1.20	13,760,760	7,794,535	5,222,437	8,538,323	19.71	433,198	3.78%
312.3	Boiler Plant Equipment	79,247,369	1.20	95,096,843	59,715,302	53,234,350	41,862,493	19.76	2,118,547	2.67%
314.3	Turbogenerator Units	72,855,844	1.20	87,427,013	52,293,637	43,383,012	44,044,001	19.45	2,264,473	3.11%
315.3	Accessory Electrical Equipment	11,268,102	1.20	13,521,722	8,416,661	8,765,986	4,755,736	19.84	239,704	2.13%
316.3	Misc. Power Plant Equip.	8,590,228	1.20	10,308,274	4,348,905	2,420,930	7,887,344	18.28	431,474	5.02%
	Total	183,428,843		220,114,612	132,569,040	113,026,715	107,087,897		5,487,396	2.99%
SOUTHWESTERN UNITS 1-3										
311.3	Structures & Improvements	8,978,821	1.14	10,235,856	7,768,204	4,031,359	6,204,497	11.08	559,973	6.24%
312.3	Boiler Plant Equipment	37,883,646	1.14	43,187,356	29,276,403	18,631,606	24,555,750	11.19	2,194,437	5.79%
314.3	Turbogenerator Units	38,039,551	1.14	43,365,088	30,129,299	17,628,492	25,736,596	11.29	2,279,592	5.99%
315.3	Accessory Electrical Equipment	11,587,644	1.14	13,209,914	8,268,138	5,130,811	8,079,103	11.38	709,939	6.13%
316.3	Misc. Power Plant Equip.	1,850,553	1.14	2,109,630	1,338,836	884,123	1,225,507	9.20	133,207	7.20%
	Total	98,340,215		112,107,845	76,780,880	46,306,391	65,801,454		5,877,148	5.98%
TULSA UNITS 2 AND 4										
311.3	Structures & Improvements	8,084,569	1.14	9,216,409	6,841,828	4,080,823	5,135,586	13.14	390,836	4.83%
312.3	Boiler Plant Equipment	26,996,282	1.14	30,775,761	22,624,483	16,071,938	14,703,823	12.61	1,166,045	4.32%
314.3	Turbogenerator Units	31,925,874	1.14	36,395,496	25,927,730	20,788,721	15,606,775	13.21	1,181,436	3.70%
315.3	Accessory Electrical Equipment	10,517,251	1.14	11,989,666	7,728,496	3,833,330	8,156,336	12.99	627,893	5.97%
316.3	Misc. Power Plant Equip.	3,285,344	1.14	3,745,292	2,117,107	1,704,023	2,041,269	10.49	194,592	5.92%
	Total	80,809,320		92,122,625	65,239,644	46,478,835	45,643,790	12.82	3,560,803	4.41%
	Total Gas & Combined Cycle	**792,523,610**	**1.11**	**878,201,212**	**526,968,037**	**441,503,025**	**436,698,187**	**14.35**	**30,440,881**	**3.84%**
	Total Steam Production Plant	**1,304,544,375**	**1.08**	**1,414,395,268**	**942,730,964**	**651,876,288**	**762,518,980**	**8.42**	**90,573,178**	**6.94%**

PUBLIC SERVICE COMPANY OF OKLAHOMA
SCHEDULE I - CALCULATION OF DEPRECIATION RATES BY THE REMAINING LIFE METHOD
BASED ON PLANT IN SERVICE AT DECEMBER 31, 2020
AVERAGE LIFE GROUP (ALG) METHOD ACCRUAL RATES

Acct. No. (I)	Account Title (II)	Original Cost (III)	Net Salvage Ratio (IV)	Total to Be Recovered (V)	Calculated Depreciation Requirement (VI)	Accumulated Depreciation (VII)	Remaining to Be Recovered (VIII)	Average Remain Life (IX)	Accrual Amount (X)	Accrual Percent (XI)
OTHER PRODUCTION PLANT										
WELEETKA										
341.0	Structures & Improvements	922,151	1.08	995,923	927,978	691,514	304,409	1.49	204,301	22.15%
342.0	Fuel Holders, Producers & Access.	1,383,128	1.08	1,493,778	1,415,815	1,318,239	175,539	1.50	117,026	8.46%
344.0	Generators	16,445,048	1.08	17,760,652	16,950,631	15,243,728	2,516,924	1.49	1,689,211	10.27%
345.0	Accessory Electrical Equip.	567,519	1.08	612,921	518,079	276,510	336,411	1.47	228,851	40.32%
346.0	Misc. Power Plant Equip.	2,690,372	1.08	2,905,602	2,624,414	2,221,502	684,100	1.50	456,067	16.95%
	Total	22,008,218		23,768,875	22,436,917	19,751,493	4,017,382		2,695,455	12.25%
COMANCHE - Diesel										
342.0	Fuel Holders, Producers & Access.	2,994	1.03	3,084	1,641	2,063	1,021	14.50	70	2.35%
344.0	Generators	819,929	1.03	844,527	632,555	685,559	158,968	14.50	10,963	1.34%
346.0	Misc. Power Plant Equip.	58,180	1.03	59,925	18,312	14,742	45,183	13.68	3,303	5.68%
	Total	881,103		907,536	652,508	702,364	205,172		14,337	1.63%
NORTHEASTERN U1 AND 2 - Diesel										
342.0	Fuel Holders, Producers & Access.	63,289	1.07	67,719	50,789	50,048	17,671	15.50	1,140	1.80%
344.0	Generators	644,479	1.07	689,593	393,425	185,082	504,511	15.50	32,549	5.05%
345.0	Accessory Electrical Equip.	83,558	1.07	89,407	53,233	54,538	34,869	15.50	2,250	2.69%
346.0	Misc. Power Plant Equip.	3,019	1.07	3,230	2,165	2,705	525	15.50	34	1.12%
	Total	794,345		849,949	499,612	292,373	557,576		35,973	4.53%
NORTHEASTERN UNIT 3 - Diesel										
344.0	Generators	437,950	1.05	459,848	403,644	391,970	67,878	5.50	12,341	2.82%
	Total	437,950		459,848	403,644	391,970	67,878		12,341	2.82%
RIVERSIDE - Diesel										
342.0	Fuel Holders, Producers & Access.	24,392	1.20	29,270	20,039	9,872	19,398	20.50	946	3.88%
344.0	Generators	470,175	1.20	564,210	386,239	418,282	145,928	20.50	7,118	1.51%
345.0	Accessory Electrical Equip.	68,642	1.20	82,370	38,558	29,132	53,238	17.68	3,011	4.39%
	Total	563,209		675,851	444,836	457,286	218,565		11,076	1.97%
SOUTHWESTERN - Diesel										
342.0	Fuel Holders, Producers & Access.	58,811	1.14	67,045	49,485	39,226	27,819	16.50	1,686	2.87%
344.0	Generators	212,484	1.14	242,232	175,995	193,995	48,237	16.30	2,959	1.39%
	Total	271,295		309,276	225,480	233,221	76,055		4,645	1.71%
TULSA - Diesel										
342.0	Fuel Holders, Producers & Access.	70,372	1.14	80,224	62,174	63,807	16,417	13.50	1,216	1.73%
344.0	Generators	608,404	1.14	693,581	553,829	556,194	137,387	13.50	10,177	1.67%
	Total	678,776		773,805	616,003	620,001	153,804		11,393	1.68%
WELEETKA - Diesel										
342.0	Fuel Holders, Producers & Access.	10,291	1.08	11,114	10,624	9,625	1,489	1.50	993	9.65%
344.0	Generators	666,380	1.08	719,690	696,120	630,755	88,935	1.50	59,290	8.90%
345.0	Accessory Electrical Equip.	36,296	1.08	39,200	37,734	36,793	2,407	1.49	1,615	4.45%
346.0	Misc. Power Plant Equip.	63,417	1.08	68,490	41,094	6,076	62,414	1.50	41,610	65.61%
	Total	776,384		838,495	785,572	683,249	155,246		103,508	13.33%
RIVERSIDE - Units 3&4										
342.0	Fuel Holders, Producers & Access.	9,797,993	1.20	11,757,592	3,058,248	2,741,123	9,016,469	35.50	253,985	2.59%
344.0	Generators	46,474,344	1.20	55,769,213	14,520,071	12,735,221	43,033,992	35.34	1,217,713	2.62%
345.0	Accessory Electrical Equip.	4,942,565	1.20	5,931,078	1,166,106	337,503	5,593,575	34.12	163,938	3.32%
346.0	Misc. Power Plant Equip.	182,932	1.20	219,518	33,752	30,782	188,736	35.50	5,317	2.91%
	Total	61,397,834		73,677,401	18,778,177	15,844,629	57,832,772		1,640,953	2.67%
SOUTHWESTERN - Units 4&5										
341.0	Structures & Improvements	4,849,128	1.14	5,528,006	1,553,070	249,296	5,278,710	31.02	170,171	3.51%
344.0	Generators	45,401,789	1.14	51,758,039	13,179,613	9,879,414	41,878,625	33.34	1,256,108	2.77%
345.0	Accessory Electrical Equip.	9,429,248	1.14	10,749,343	2,827,797	3,019,249	7,730,094	34.12	226,556	2.40%
346.0	Misc. Power Plant Equip.	52,297	1.14	59,619	5,792	3,951	55,668	35.50	1,568	3.00%
	Total	59,732,462		68,095,007	17,566,272	13,151,910	54,943,097	33.21	1,654,403	2.77%
	Total Other Production Plant	**147,541,576**	**1.15**	**170,356,042**	**62,409,021**	**52,128,496**	**118,227,546**	**19.12**	**6,184,084**	**4.19%**
	TOTAL PRODUCTION PLANT	**1,452,085,951**	**1.09**	**1,584,751,310**	**1,005,139,985**	**704,004,784**	**880,746,526**	**9.10**	**96,757,262**	**6.66%**

PUBLIC SERVICE COMPANY OF OKLAHOMA
SCHEDULE I - CALCULATION OF DEPRECIATION RATES BY THE REMAINING LIFE METHOD
BASED ON PLANT IN SERVICE AT DECEMBER 31, 2020
AVERAGE LIFE GROUP (ALG) METHOD ACCRUAL RATES

Acct. No. (I)	Account Title (II)	Original Cost (III)	Net Salvage Ratio (IV)	Total to Be Recovered (V)	Calculated Depreciation Requirement (VI)	Accumulated Depreciation (VII)	Remaining to Be Recovered (VIII)	Average Remain Life (IX)	Accrual Amount (X)	Accrual Percent (XI)
TRANSMISSION PLANT										
350.1	Land Rights	45,326,605	1.00	45,326,605	44,801,177	18,221,977	27,104,628	50.51	536,619	1.18%
352.0	Structures & Improvements	17,290,782	1.03	17,809,505	1,837,694	1,332,240	16,477,265	53.81	306,212	1.77%
353.0	Station Equipment	469,303,389	1.04	488,075,525	89,343,538	92,388,991	395,686,534	46.57	8,496,597	1.81%
354.0	Towers & Fixtures	17,858,379	1.61	28,751,990	12,753,953	8,580,303	20,171,687	41.73	483,386	2.71%
355.0	Poles & Fixtures	318,474,098	1.60	509,558,557	82,653,851	54,311,453	455,247,104	35.19	12,936,832	4.06%
356.0	OH Conductor & Devices	197,879,589	1.60	316,607,342	82,424,010	66,602,717	250,004,625	49.56	5,044,484	2.55%
358.0	Underground Conductor	71,915	1.00	71,915	49,704	52,510	19,405	13.90	1,396	1.94%
	Total Transmission Plant	**1,066,204,757**	**1.32**	**1,406,201,439**	**313,863,927**	**241,490,191**	**1,164,711,248**	**41.89**	**27,805,526**	**2.61%**
DISTRIBUTION PLANT										
360.1	Land Rights	2,825,149	1.00	2,825,149	660,142	1,165,540	1,659,609	53.64	30,940	1.10%
361.0	Structures & Improvements	18,523,980	1.05	19,450,179	1,884,414	2,535,738	16,914,441	36.12	468,285	2.53%
362.0	Station Equipment	458,744,588	1.08	495,444,155	52,379,225	78,546,100	416,898,055	67.07	6,215,865	1.35%
364.0	Poles, Towers, & Fixtures	482,354,853	2.00	964,709,706	163,206,610	132,207,761	832,501,945	45.70	18,216,673	3.78%
365.0	Overhead Conductor & Devices	477,878,778	1.46	697,703,016	120,547,653	101,443,271	596,259,745	37.22	16,019,875	3.35%
366.0	Underground Conduit	101,670,983	1.60	162,673,573	19,716,837	18,500,293	144,173,280	68.55	2,103,184	2.07%
367.0	Underground Conductor	393,438,559	1.29	507,535,741	80,551,152	77,373,591	430,162,150	58.89	7,304,502	1.86%
368.0	Line Transformers	391,772,570	1.15	450,538,456	120,607,409	108,277,007	342,261,449	25.63	13,353,939	3.41%
369.0	Services	291,143,953	1.65	480,387,522	98,650,794	102,966,361	377,421,161	47.68	7,915,712	2.72%
370.0	Meters	17,325,918	1.30	22,523,693	5,538,377	5,205,687	17,318,006	11.31	1,531,212	8.84%
370.16	AMI - Meters	94,745,778	1.30	123,169,511	38,295,504	28,752,062	94,417,449	10.34	9,131,281	9.64%
371.0	Installations on Custs. Prem.	49,897,588	1.18	58,879,154	12,839,857	16,136,383	42,742,771	26.59	1,607,475	3.22%
373.0	Street Lighting & Signal Sys.	64,435,725	1.27	81,833,371	17,096,048	30,815,391	51,017,980	35.60	1,433,089	2.22%
	Total Distribution Plant	**2,844,758,422**	**1.43**	**4,067,673,226**	**731,974,022**	**703,925,185**	**3,363,748,041**	**39.42**	**85,332,033**	**3.00%**
GENERAL PLANT (2)										
390.0	Structures & Improvements	71,876,748	1.10	79,064,423	11,981,950	10,159,550	68,904,873	47.51	1,450,324	2.02%
391.0	Office Furniture & Equipment	1,552,458	1.00	1,552,458	741,242	628,502	923,956	10.45	88,417	5.70%
391.1	Office Equipment - Computers	89,985	1.00	89,985	70,580	59,845	30,140	1.08	27,907	31.01%
392.0	Transportation Equipment	1,880,130	1.00	1,880,130	630,746	534,812	1,345,318	9.97	134,937	7.18%
393.0	Stores Equipment	2,650,341	1.00	2,650,341	1,357,120	1,150,708	1,499,633	14.64	102,434	3.86%
394.0	Tools Shop & Garage Equipment	29,352,116	1.00	29,352,116	10,320,030	8,750,401	20,601,715	16.21	1,270,926	4.33%
395.0	Laboratory Equipment	1,160,776	1.00	1,160,776	736,252	624,271	536,505	7.31	73,393	6.32%
396.0	Power Operated Equipment	637,521	1.00	637,521	470,349	398,811	238,710	4.72	50,574	7.93%
397.0	Communication Equipment	65,774,167	1.00	65,774,167	15,259,607	12,938,691	52,835,476	11.52	4,586,413	6.97%
397.16	AMI - Communication Equipment	14,427,599	1.00	14,427,599	4,847,673	4,110,364	10,317,235	9.96	1,035,867	7.18%
398.0	Miscellaneous Equipment	8,439,973	1.03	8,693,172	3,380,012	2,865,928	5,827,244	12.22	476,861	5.65%
	Total General Plant	**197,841,814**	**1.04**	**205,282,688**	**49,795,561**	**42,221,884**	**163,060,805**	**17.54**	**9,298,053**	**4.70%**
	Total Depreciable Plant	**5,560,890,944**	**1.31**	**7,263,908,663**	**2,100,773,495**	**1,691,642,044**	**5,572,266,620**	**25.42**	**219,192,873**	**3.94%**

Notes:

(1) Northeastern Unit 3 includes the undepreciated balance of the Oklaunion Plant accumulated depreciation. The Oklaunion Plant was retired in September 2020.

(2) The depreciation study allocated accumulated depreciation for general plant using the calculated depreciation requirement, since two accounts had a negative reserve balance at December 31, 2020. The depreciation study recommends that we reallocate the actual accumulated depreciation book balance for general plant using the calculated depreciation requirement from this study.

PUBLIC SERVICE COMPANY OF OKLAHOMA
ANNUAL DEPRECIATION RATES AND ACCRUALS BY THE REMAINING LIFE METHOD
SCHEDULE II - COMPARE DEPRECIATION EXPENSE USING CURRENT AND STUDY RATES
BASED ON PLANT IN SERVICE AT DECEMBER 31, 2020

Account No. (1)	Title (2)	Original Cost (3)	Current Approved Rate (4)	Annual Accrual (5)	Study Rate (6)	Study Accrual (7)	Difference (Decrease) (8)
STEAM PRODUCTION PLANT							
Coal Plants							
NORTHEASTERN UNIT 3 (1)							
311.0	Structures & Improvements	20,459,054	2.55%	521,706	16.33%	3,340,389	2,818,683
312.0	Boiler Plant Equipment	377,283,656	3.29%	12,412,632	12.77%	48,177,529	35,764,897
314.0	Turbogenerator Units	46,210,041	2.13%	984,274	9.01%	4,162,999	3,178,725
315.0	Accessory Electrical Equipment	21,223,839	1.47%	311,990	7.25%	1,539,162	1,227,172
316.0	Misc. Power Plant Equip.	18,289,214	2.61%	477,348	10.79%	1,972,693	1,495,345
	Total	483,465,804	3.04%	14,707,950	12.24%	59,192,771	44,484,821
RAIL SPUR							
310.1	Rail Spur - Land Rights	939,196	3.77%	35,408	13.66%	128,308	92,900
312.0	Rail Spur	22,359,915	1.34%	299,623	3.58%	800,717	501,094
312.11	Rail Cars	5,255,850	0.14%	7,358	0.20%	10,501	3,143
	Total	28,554,961	1.20%	342,389	3.29%	939,526	597,137
	Total Coal Plants	**512,020,765**	**2.94%**	**15,050,339**	**11.74%**	**60,132,297**	**45,081,958**
Gas & Combined Cycle Plants							
COMANCHE							
311.3	Structures & Improvements	6,704,510	2.35%	157,556	3.48%	233,531	75,975
312.3	Boiler Plant Equipment	66,469,107	4.80%	3,190,517	5.05%	3,355,330	164,813
314.3	Turbogenerator Units	70,267,023	2.71%	1,904,236	3.56%	2,499,229	594,993
315.3	Accessory Electrical Equipment	7,864,069	1.84%	144,699	3.06%	240,871	96,172
316.3	Misc. Power Plant Equip.	3,326,973	2.61%	86,834	3.69%	122,914	36,080
	Total	154,631,682	3.55%	5,483,842	4.17%	6,451,875	968,033
NORTHEASTERN UNITS 1 AND 2							
311.3	Structures & Improvements	12,099,317	3.07%	371,449	3.13%	378,214	6,765
312.3	Boiler Plant Equipment	94,695,651	3.12%	2,954,504	3.02%	2,860,437	(94,067)
314.3	Turbogenerator Units	143,820,980	2.67%	3,840,020	3.50%	5,032,326	1,192,306
315.3	Accessory Electrical Equipment	16,206,082	2.63%	426,220	3.34%	541,785	115,565
316.3	Misc. Power Plant Equip.	8,491,520	2.88%	244,556	2.95%	250,898	6,342
	Total	275,313,550	2.85%	7,836,749	3.29%	9,063,659	1,226,910
RIVERSIDE UNITS 1 AND 2							
311.3	Structures & Improvements	11,467,300	3.00%	344,019	3.78%	433,198	89,179
312.3	Boiler Plant Equipment	79,247,369	2.19%	1,735,517	2.67%	2,118,547	383,030
314.3	Turbogenerator Units	72,855,844	2.75%	2,003,536	3.11%	2,264,473	260,937
315.3	Accessory Electrical Equipment	11,268,102	2.09%	235,503	2.13%	239,704	4,201
316.3	Misc. Power Plant Equip.	8,590,228	4.06%	348,763	5.02%	431,474	82,711
	Total	183,428,843	2.54%	4,667,338	2.99%	5,487,396	820,058
SOUTHWESTERN UNITS 1-3							
311.3	Structures & Improvements	8,978,821	3.55%	318,748	6.24%	559,973	241,225
312.3	Boiler Plant Equipment	37,883,646	3.51%	1,329,716	5.79%	2,194,437	864,721
314.3	Turbogenerator Units	38,039,551	3.51%	1,335,188	5.99%	2,279,592	944,404
315.3	Accessory Electrical Equipment	11,587,644	3.54%	410,203	6.13%	709,939	299,736
316.3	Misc. Power Plant Equip.	1,850,553	3.08%	56,997	7.20%	133,207	76,210
	Total	98,340,215	3.51%	3,450,852	5.98%	5,877,148	2,426,296
TULSA UNITS 2 AND 4							
311.3	Structures & Improvements	8,084,569	4.20%	339,552	4.83%	390,836	51,284
312.3	Boiler Plant Equipment	26,996,282	3.07%	828,786	4.32%	1,166,045	337,259
314.3	Turbogenerator Units	31,925,874	3.55%	1,133,369	3.70%	1,181,436	48,067
315.3	Accessory Electrical Equipment	10,517,251	4.59%	482,742	5.97%	627,893	145,151
316.3	Misc. Power Plant Equip.	3,285,344	4.28%	140,613	5.92%	194,592	53,979
	Total	80,809,320	3.62%	2,925,062	4.41%	3,560,803	635,741
	Total Gas & Combined Cycle	**792,523,610**	**3.07%**	**24,363,843**	**3.84%**	**30,440,881**	**6,077,038**
	Total Steam Production Plant	**1,304,544,375**	**3.02%**	**39,414,182**	**6.94%**	**90,573,178**	**51,158,996**

PUBLIC SERVICE COMPANY OF OKLAHOMA
ANNUAL DEPRECIATION RATES AND ACCRUALS BY THE REMAINING LIFE METHOD
SCHEDULE II - COMPARE DEPRECIATION EXPENSE USING CURRENT AND STUDY RATES
BASED ON PLANT IN SERVICE AT DECEMBER 31, 2020

Account No. (1)	Title (2)	Original Cost (3)	Current Approved Rate (4)	Annual Accrual (5)	Study Rate (6)	Study Accrual (7)	Difference (Decrease) (8)
OTHER PRODUCTION PLANT							
WELEETKA							
341.0	Structures & Improvements	922,151	12.20%	112,502	22.15%	204,301	91,799
342.0	Fuel Holders, Producers & Access.	1,383,128	3.25%	44,952	8.46%	117,026	72,074
344.0	Generators	16,445,048	4.09%	672,602	10.27%	1,689,211	1,016,609
345.0	Accessory Electrical Equip.	567,519	11.47%	65,094	40.32%	228,851	163,757
346.0	Misc. Power Plant Equip.	2,690,372	9.35%	251,550	16.95%	456,067	204,517
	Total	22,008,218	5.21%	1,146,700	12.25%	2,695,455	1,548,755
COMANCHE - Diesel							
342.0	Fuel Holders, Producers & Access.	2,994	2.44%	73	2.35%	70	(3)
344.0	Generators	819,929	1.03%	8,445	1.34%	10,963	2,518
346.0	Misc. Power Plant Equip.	58,180	0.00%	0	5.68%	3,303	3,303
	Total	881,103	0.97%	8,518	1.63%	14,337	5,819
NORTHEASTERN UNITS 1 AND 2 - Diesel							
342.0	Fuel Holders, Producers & Access.	63,289	1.12%	709	1.80%	1,140	431
344.0	Generators	644,479	1.91%	12,310	5.05%	32,549	20,239
345.0	Accessory Electrical Equip.	83,558	4.32%	3,610	2.69%	2,250	(1,360)
346.0	Misc. Power Plant Equip.	3,019	1.36%	41	1.12%	34	(7)
	Total	794,345	2.10%	16,670	4.53%	35,973	19,303
NORTHEASTERN UNIT 3 - Diesel							
344.0	Generators	437,950	2.05%	8,978	2.82%	12,341	3,363
	Total	437,950	2.05%	8,978	2.82%	12,341	3,363
RIVERSIDE - Diesel							
342.0	Fuel Holders, Producers & Access.	24,392	4.97%	1,212	3.88%	946	(266)
344.0	Generators	470,175	1.02%	4,796	1.51%	7,118	2,322
345.0	Accessory Electrical Equip.	68,642	1.67%	1,146	4.39%	3,011	1,865
	Total	563,209	1.27%	7,154	1.97%	11,076	3,922
SOUTHWESTERN - Diesel							
342.0	Fuel Holders, Producers & Access.	58,811	3.67%	2,158	2.87%	1,686	(472)
344.0	Generators	212,484	0.88%	1,870	1.39%	2,959	1,089
	Total	271,295	1.48%	4,028	1.71%	4,645	617
TULSA - Diesel							
342.0	Fuel Holders, Producers & Access.	70,372	1.47%	1,034	1.73%	1,216	182
344.0	Generators	608,404	1.42%	8,639	1.67%	10,177	1,538
	Total	678,776	1.43%	9,673	1.68%	11,393	1,720
WELEETKA - Diesel							
342.0	Fuel Holders, Producers & Access.	10,291	6.49%	668	9.65%	993	325
344.0	Generators	666,380	6.63%	44,181	8.90%	59,290	15,109
345.0	Accessory Electrical Equip.	36,296	7.75%	2,813	4.45%	1,615	(1,198)
346.0	Misc. Power Plant Equip.	63,417	8.46%	5,365	65.61%	41,610	36,245
	Total	776,384	6.83%	53,027	13.33%	103,508	50,481
RIVERSIDE - Units 3&4							
342.0	Fuel Holders, Producers & Access.	9,797,993	2.54%	248,869	2.59%	253,985	5,116
344.0	Generators	46,474,344	2.74%	1,273,397	2.62%	1,217,713	(55,684)
345.0	Accessory Electrical Equip.	4,942,565	5.97%	295,071	3.32%	163,938	(131,133)
346.0	Misc. Power Plant Equip.	182,932	3.54%	6,476	2.91%	5,317	(1,159)
	Total	61,397,834	2.97%	1,823,813	2.67%	1,640,953	(182,860)
SOUTHWESTERN - Units 4&5							
341.0	Structures & Improvements	4,849,128	2.91%	141,110	3.51%	170,171	29,061
344.0	Generators	45,401,789	2.48%	1,125,964	2.77%	1,256,108	130,144
345.0	Accessory Electrical Equip.	9,429,248	5.10%	480,892	2.40%	226,556	(254,336)
346.0	Misc. Power Plant Equip.	52,297	3.18%	1,663	3.00%	1,568	(95)
	Total	59,732,462	2.93%	1,749,629	2.77%	1,654,403	(95,226)
	Total Other Production Plant	**147,541,576**	**3.27%**	**4,828,190**	**4.19%**	**6,184,084**	**1,355,894**
	TOTAL PRODUCTION PLANT	**1,452,085,951**	**3.05%**	**44,242,372**	**6.66%**	**96,757,262**	**52,514,890**

PUBLIC SERVICE COMPANY OF OKLAHOMA
ANNUAL DEPRECIATION RATES AND ACCRUALS BY THE REMAINING LIFE METHOD
SCHEDULE II - COMPARE DEPRECIATION EXPENSE USING CURRENT AND STUDY RATES
BASED ON PLANT IN SERVICE AT DECEMBER 31, 2020

Account No. (1)	Title (2)	Original Cost (3)	Current Approved Rate (4)	Annual Accrual (5)	Study Rate (6)	Study Accrual (7)	Difference (Decrease) (8)
TRANSMISSION PLANT							
350.1	Land Rights	45,326,605	1.07%	484,995	1.18%	536,619	51,624
352.0	Structures & Improvements	17,290,782	2.05%	354,461	1.77%	306,212	(48,249)
353.0	Station Equipment	469,303,389	1.72%	8,072,018	1.81%	8,496,597	424,579
354.0	Towers & Fixtures	17,858,379	1.73%	308,950	2.71%	483,386	174,436
355.0	Poles & Fixtures	318,474,098	3.92%	12,484,185	4.06%	12,936,832	452,647
356.0	OH Conductor & Devices	197,879,589	2.18%	4,313,775	2.55%	5,044,484	730,709
358.0	Underground Conductor	71,915	2.09%	1,503	1.94%	1,396	(107)
	Total Transmission Plant	**1,066,204,757**	**2.44%**	**26,019,887**	**2.61%**	**27,805,526**	**1,785,639**
DISTRIBUTION PLANT							
360.1	Land Rights	2,825,149	1.07%	30,229	1.10%	30,940	711
361.0	Structures & Improvements	18,523,980	2.38%	440,871	2.53%	468,285	27,414
362.0	Station Equipment	458,744,588	1.20%	5,504,935	1.35%	6,215,865	710,930
364.0	Poles, Towers, & Fixtures	482,354,853	4.14%	19,969,491	3.78%	18,216,673	(1,752,818)
365.0	Overhead Conductor & Devices	477,878,778	3.44%	16,439,030	3.35%	16,019,875	(419,155)
366.0	Underground Conduit	101,670,983	2.06%	2,094,422	2.07%	2,103,184	8,762
367.0	Underground Conductor	393,438,559	1.95%	7,672,052	1.86%	7,304,502	(367,550)
368.0	Line Transformers	391,772,570	3.15%	12,340,836	3.41%	13,353,939	1,013,103
369.0	Services	291,143,953	2.85%	8,297,603	2.72%	7,915,712	(381,891)
370.0	Meters	17,325,918	9.58%	1,659,823	8.84%	1,531,212	(128,611)
370.16	AMI - Meters	94,745,778	6.76%	6,404,815	9.64%	9,131,281	2,726,466
371.0	Installations on Custs. Prem.	49,897,588	4.06%	2,025,842	3.22%	1,607,475	(418,367)
373.0	Street Lighting & Signal Sys.	64,435,725	2.69%	1,733,321	2.22%	1,433,089	(300,232)
	Total Distribution Plant	**2,844,758,422**	**2.97%**	**84,613,270**	**3.00%**	**85,332,033**	**718,763**
GENERAL PLANT							
390.0	Structures & Improvements	71,876,748	1.76%	1,265,031	2.02%	1,450,324	185,293
391.0	Office Furniture & Equipment	1,552,458	2.44%	37,880	5.70%	88,417	50,537
391.1	Office Equipment - Computers	89,985	20.00%	17,997	31.01%	27,907	9,910
392.0	Transportation Equipment	1,880,130	6.67%	125,405	7.18%	134,937	9,532
393.0	Stores Equipment	2,650,341	3.33%	88,256	3.86%	102,434	14,178
394.0	Tools Shop & Garage Equipment	29,352,116	4.00%	1,174,085	4.33%	1,270,926	96,841
395.0	Laboratory Equipment	1,160,776	1.94%	22,519	6.32%	73,393	50,874
396.0	Power Operated Equipment	637,521	4.24%	27,031	7.93%	50,574	23,543
397.0	Communication Equipment	65,774,167	4.54%	2,986,147	6.97%	4,586,413	1,600,266
397.16	AMI - Communication Equipment	14,427,599	6.67%	962,321	7.18%	1,035,867	73,546
398.0	Miscellaneous Equipment	8,439,973	5.00%	421,999	5.65%	476,861	54,862
	Total General Plant	**197,841,814**	**3.60%**	**7,128,671**	**4.70%**	**9,298,053**	**2,169,382**
	Total Depreciable Plant	**5,560,890,944**	**2.91%**	**162,004,200**	**3.94%**	**219,192,873**	**57,188,673**

Notes:

(1) Northeastern Unit 3 includes the undepreciated balance of the Oklaunion Plant accumulated depreciation. The Oklaunion Plant was retired in September 2020.

(2) The depreciation study allocated accumulated depreciation for general plant using the calculated depreciation requirement, since two accounts had a negative reserve balance at December 31, 2020. The depreciation study recommends that we reallocate the actual accumulated depreciation book balance for general plant using the calculated depreciation requirement from this study.

PUBLIC SERVICE COMPANY OF OKLAHOMA
SCHEDULE III - COMPARISON OF MORTALITY CHARACTERISTICS
DEPRECIATION STUDY AS OF DECEMBER 31, 2020

(1)		(2)	(3)	(4)	(5)	(6)		(7)	(8)	(9)	(10)	(11)
		Existing Rates (a)						Current Study Rates				
		Avg. Service Life	Iowa Curve	Salvage	Cost of Removal	Net Salvage Factor		Avg. Service Life	Iowa Curve	Salvage	Cost of Removal	Net Salvage Factor
TRANSMISSION PLANT												
350.1	Land Rights	75	R4.0	0%	0%	0%		75	R4.0	0%	0%	0%
352	Structures & Improvements	60	R3.0	0%	5%	-5%		60	R3.0	2%	5%	-3%
353	Station Equipment	60	R1.5	0%	5%	-5%		57	L1.0	8%	12%	-4%
354	Towers & Fixtures	75	R3.0	0%	20%	-20%		75	R3.0	0%	61%	-61%
355	Poles & Fixtures	46	R1.0	0%	60%	-60%		42	R0.5	0%	60%	-60%
356	Overhead Conductor & Devices	69	S1.0	0%	45%	-45%		67	R2.0	0%	60%	-60%
358	Underground Conductor and Devices	45	R4.0	0%	0%	0%		45	R4.0	0%	0%	0%
DISTRIBUTION PLANT												
360.1	Land Rights	70	R4.0	0%	0%	0%		70	R4.0	0%	0%	0%
361	Structures & Improvements	45	S0.0	0%	5%	-5%		40	L0.0	0%	5%	-5%
362	Station Equipment	75	R0.5	0%	5%	-5%		75	L0.0	10%	18%	-8%
364	Poles, Towers, & Fixtures	53	R1.0	0%	100%	-100%		55	L0.5	0%	100%	-100%
365	Overhead Conductor & Devices	46	R0.5	0%	50%	-50%		45	R0.5	4%	50%	-46%
366	Underground Conduit	78	R2.0	0%	60%	-60%		78	R2.5	0%	60%	-60%
367	Underground Conductor	65	R1.5	0%	25%	-25%		70	R1.5	3%	32%	-29%
368	Line Transformers	36	R1.0	0%	15%	-15%		35	R1.0	9%	24%	-15%
369	Services	60	R1.5	0%	70%	-70%		60	R1.5	0%	65%	-65%
370	Meters	15	L0.0	0%	30%	-30%		15	L0.0	0%	30%	-30%
370.16	AMI - Meters	15	S2.5	0%	0%	0%		15	R2.0	0%	30%	-30%
371	Installations on Custs. Prem.	30	O1.0	0%	30%	-30%		34	L0.0	0%	18%	-18%
373	Street Lighting & Signal Sys.	40	R0.5	0%	35%	-35%		45	L0.0	1%	28%	-27%
GENERAL PLANT												
390	Structures & Improvements	64	S0.0	0%	10%	-10%		56	L0.0	5%	15%	-10%
391	Office Furniture & Equipment	20	SQ	0%	0%	0%		20	SQ	0%	0%	0%
391.1	Office Equipment - Computers	5	SQ	0%	0%	0%		5	SQ	0%	0%	0%
392	Transportation Equipment	15	SQ	0%	0%	0%		15	SQ	0%	0%	0%
393	Stores Equipment	30	SQ	0%	0%	0%		30	SQ	0%	0%	0%
394	Tools Shop & Garage Equipment	25	SQ	0%	0%	0%		25	SQ	0%	0%	0%
395	Laboratory Equipment	20	SQ	0%	0%	0%		20	SQ	0%	0%	0%
396	Power Operated Equipment	18	SQ	0%	0%	0%		18	SQ	0%	0%	0%
397	Communication Equipment	15	SQ	0%	0%	0%		15	SQ	0%	0%	0%
397.16	AMI - Communication Equipment	15	SQ	0%	0%	0%		15	SQ	0%	0%	0%
398	Miscellaneous Equipment	20	SQ	0%	0%	0%		20	SQ	0%	3%	-3%

(a) Existing rates were set in the Order in Cause No. PUD 201700151. "N/A" equals not available.

PUBLIC SERVICE COMPANY OF OKLAHOMA
SCHEDULE IV - ESTIMATED LIFE SPAN, GENERATING PLANTS
DEPRECIATION STUDY AS OF DECEMBER 31, 2020

Plant	Fuel	Year Installed	Estimated Year Retired	Life Span (Years)
Steam Production Plant				
Northeastern - see note (1)				
Unit 3	Coal	1979	2026	47
Rail Spur		1995	2026	31
Comanche	Combined Cycle	1973	2035	62
Northeastern				
Unit 1	Combined Cycle	2001	2036	35
Unit 2	Gas	1970	2036	66
Riverside				
Unit 1	Gas	1974	2041	67
Unit 2	Gas	1976	2041	65
Southwestern				
Unit 1	Gas	1952	2022	70
Unit 2	Gas	1954	2024	70
Unit 3	Gas	1967	2037	70
Tulsa				
Unit 2	Gas	1963	2034	71
Unit 4	Gas	1964	2034	70
Other Production Plant				
Weleetka Plant	Gas	1975	2022	47
Weleetka	Diesel	1963	2022	59
Comanche	Diesel	1962	2035	73
Northeastern Units 1&2	Diesel	1968	2036	68
Northeastern Unit 3	Diesel	1980	2026	46
Riverside	Diesel	1976	2041	65
Southwestern	Diesel	1962	2037	75
Tulsa	Diesel	1967	2034	67
Riverside - Units 3&4	Gas	2008	2056	48
Southwestern - Units 4&5	Gas	2008	2056	48

Note (1): As noted in Cause No. PUD 201700151, the Company plans to retire Northeastern Unit 3 no later than December 31, 2026 to comply with the EPA's regional haze rule. Depreciation rates were calculated in this depreciation study and for this Cause to reflect the actual retirement date of the plant.

Comanche Plant

DEMOLITION COST ESTIMATE

Prepared for:
Public Service Company of Oklahoma (Owner)
and American Electric Power

Project No. A13351.022
February 26, 2021
Revision 0

Sargent & Lundy LLC

55 East Monroe Street
Chicago, IL 60603-5780 USA

Issue Summary Page

Revision Number	Date	Purpose	Prepared By	Reviewed By	Approved By	Pages Affected
A	02/1/21	Comments	G. Amen	B. Andric		All
0	02/26/21	Use	G. Amen	B. Andric	A. Redd	All

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1.0 INTRODUCTION

The Comanche Plant Unit 1 located near Lawton, Oklahoma, in Comanche County is owned and operated by Public Service Company of Oklahoma (PSO). The plant consists of one (1) combined cycle generating unit consisting of two (2) Westinghouse 501B combustion turbines and associated heat recovery steam generators, and one (1) Westinghouse steam turbine. The total plant nameplate generating capacity is 290 megawatts and the unit was placed in service in 1974. There are two (2) black start diesel generators rated at 2 megawatts each.

Sargent & Lundy (S&L) previously prepared a Demolition Cost Estimate for Comanche Plant in 2017. AEP recently contracted S&L to update the previously prepared cost estimate to 1st Quarter 2021 pricing levels. The objective of the conceptual demolition cost estimate is to determine the gross demolition costs for Comanche Plant (including gross salvage credits and any other benefits). The cost estimate considers the demolition/dismantlement methodology which complies with current OSHA rules and regulations.

2.0 COST ESTIMATE SUMMARY

Demolition Cost Estimate No 23329G, was prepared and is included as Exhibit 1. The cost estimate is structured into a code of accounts as identified in Table 2-1.

Table 2-1
Cost Estimate Code of Accounts

Account Number	Description
10	Demolition Costs (including steel, equipment & piping scrap value)
18	Scrap Value Costs
21	Civil Work Costs
90, 91, 92	General Conditions Costs
93	Indirect Costs
94	Contingency Costs
96	Escalation Costs

The results of the cost estimate are provided in Table 2-2 below:

Table 2-2
Cost Estimate Results Summary

Description	Total Cost
Demolition Cost	$ 2,480,887
Scrap Value	($ 2,189,719)
General Conditions Costs	$ 916,700
Indirect Cost	$ 339,800
Contingency Cost	$ 889,300
Total Project Cost	$ 2,436,968

3.0 TECHNICAL BASIS

The scope of dismantlement includes the complete Comanche Plant generating facility and plant common services. Common facilities include:

- Fuel Oil facilities
- Roadways
- Black Start Diesel Generators
- Retention Ponds: Total Retention Ponds (Northwest and Southeast Cells); Sewage Waste Ponds

The following are excluded from the scope of the demolition cost estimate:

- Asbestos Removal
- Switchyard
- Gas Yard
- Cooling Lake
- Tornado Shelter

The following scope revisions were included in the current cost estimate:

- Chemical building

4.0 COMMERCIAL BASIS

4.1 General Information

The Conceptual Demolition Cost Estimate prepared for the Comanche Plant is a conceptual estimate of the cost to dismantle Comanche Plant and the Black Start Diesel Generators. Costs were calculated for (1) demolition of existing plant structures and equipment and associated site restoration costs, (2) scrap value of metals, (3) associated indirect costs, and (4) contingency. All units used in the cost estimate are U.S. Standard and all costs are in US Dollars (2021 levels). A one (1) year demolition schedule is anticipated not including asbestos removal (to be performed prior to start of demolition work). All items identified above will be demolished at the same time.

4.2 Quantities/Material Cost

Quantities of pieces of equipment and/or bulk material commodities used in this cost estimate were intended to be reasonable and representative of projects of this type. Material quantities were estimated from the site plot plan and other drawings and data provided by AEP and Plant Personnel.

4.3 Construction Labor Wages

Craft labor rates (Craft Hourly Rate) for the cost estimate are based on the prevailing wages for Lawton, Oklahoma as published in "R.S. Means Labor Rates for the Construction Industry", 2021 Edition. These prevailing rates are representative of union or non-union rates, whichever is prevailing in the area. Costs have been added to cover social security, workmen's compensation, federal and state unemployment insurance. The resulting burdened craft rates were then used to develop typical crew rates applicable to the task being performed.

4.3.1 Labor Work Schedule and Incentives

The estimate assumed a 5x8 work week. No other labor incentives are included.

4.3.2 General Conditions Cost

Allowances were included in the cost estimate as direct costs as noted for the following:

- Labor Supervision
- Construction Management
- Field Office Expenses
- Safety
- Temporary Facilities
- Mobilization / Demobilization
- Legal Expenses / Claims
- Small Tools & Consumables
- General Liability Insurance
- Construction Equipment Mobilization / Demobilization
- Freight on Material
- Contractor's General and Administrative Costs

- Contractor's Profit

4.4 Scrap Value

The value of scrap is based on "Scrap Metals Market Watch" as published in the January 2021 Edition of "American Recycler News" (www.americanrecycler.com) using Zone 3 (USA Southwest).
The values obtained are delivered prices to the recycler. Transportation cost to the recycler is assumed @ 30 $/ton resulting in the values below:

- Carbon Steel @ 216 $/ton
- Admiralty Brass @ 5,515 $/ton
- #1 Insulated Copper Wire 65% @ 3,182 $/ton

Note: 1 Ton = 2,000 Lbs

4.5 Indirect Costs

Allowances were included in the cost estimate as indirect costs as noted for the following:

- Engineering, Procurement and Project Services: None included.
- Construction Management Support: None included.
- Owners Cost: Included as 10.0% of the total direct labor and material cost. Owners Costs include owner project engineering, administration and construction management, permits and fees, legal expenses, taxes, etc.

4.6 Escalation

No allowance for escalation was included in the cost estimate.

4.7 Contingency

Allowances were included in the cost estimate as contingency as noted for the following:

- Scrap Value: Included as a 15.0% reduction in the salvage value resulting in a total net reduction in the salvage value. The contingency assumes a potential drop in salvage value thus increasing the project cost.
- Material: Included as 15.0% of the total material cost.
- Labor: Included as 15.0% of the total labor cost.
- Indirect: Included as 15.0% of the total indirect cost.

4.8 Assumptions

The following assumptions apply to the cost estimate.

- All chemicals will be removed by the Owner prior to demolition, from the facilities to be demolished.
- All fuel oil will be consumed prior to demolition.
- All electrical equipment and wiring is de-energized prior to start of dismantlement.
- No extraordinary environmental costs for demolition have been included. Removal of two (2) feet of fill inside the fuel oil tank foundation is included.
- Asbestos and PCB'**s** are removed from site by others prior to start of demolition.
- Handling, on-site and off-site disposal of hazardous materials would be performed in compliance with methods approved by Owner.
- Switchyards within the plant boundaries are not part of the scope, neither are access roads to these facilities. Fences and gates needed to protect the switchyard will be left in place.
- The existing Cooling Lake is to be left in place.
- All items above grade and to a depth of two (2) foot will be demolished. Any other items buried more than two (2) foot will remain in place. All foundations are removed and buried on site.
- Underground piping, conduit and cable ducts will be abandoned in place.
- Underground piping larger than four (4) feet diameter will be filled with sand or slurry and capped at the ends to prevent collapse. Non-metal pipe will be collapsed.
- All demolished materials are considered debris, except for organic combustibles and non-embedded metals which have scrap value.
- The basis for salvage estimating is for scrap value only. No resale of equipment or material is included.
- Disturbed areas will be buried under two (2) feet of topsoil mulched and seeded with grass – no other landscaping is included.
- All borrow material is assumed to be from onsite sources.
- Debris not suitable for burial is to be disposed of off-site. Assumed distance to final disposal is within a five (5) mile haul.

5.0 REFERENCES

Drawings utilized in the preparation of the demolition cost estimate are identified in Table 5-1.

Table 5-1
Reference Drawings

Unit	Document Number	Revision	Title
0	E-430	4	Electrical Site Plan
0	C-431	11	Plant Site Regrading Plan
0	C-433	4	Sections & Details
0	C-434	4	Sections & Details
0	C-530	A	Site Plan

0 = Common

EXHIBIT 1
Comanche Plant
Demolition Cost Estimate No. 23329G

AEP/PSO
COMANCHE PLANT - UNIT 1
DEMOLITION COST ESTIMATE

Estimator	GA
Labor rate table	21OKLAW
Project No.	A13351.022
Estimate Date	2/24/21
Reviewed By	BA
Approved By	BA
Estimate No.	23329G

Group	Description	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
10.00.00	WHOLE PLANT DEMOLITION	69,720		7,730	32,737	1,420,119	801,297	2,298,866
18.00.00	SCRAP VALUE		(2,189,719)					(2,189,719)
21.00.00	CIVIL WORK				91	4,117	1,582	5,699
22.00.00	CONCRETE			144,000	600	24,624	7,698	176,322
	TOTAL DIRECT	69,720	(2,189,719)	151,730	33,428	1,448,860	810,577	291,168

Estimate Totals

Description	Amount	Totals	Hours
Labor	1,448,860		33,428
Material	151,730		
Subcontract	69,720		
Construction Equipment	810,577		
Scrap Value	(2,189,719)		
	291,168	**291,168**	
General Conditions			
Additional Labor Costs			
90-1 Labor Supervision	86,900		
90-2 Show-up Time	29,000		
90-3 Cost Due To OT 5-10's			
90-4 Cost Due To OT 6-10's			
90-5 Per Diem			
Site Overheads			
91-1 Construction Management	156,500		
91-2 Field Office Expenses	34,400		
91-3 Material&Quality Control			
91-4 Site Services			
91-5 Safety	30,900		
91-6 Temporary Facilities	23,500		
91-7 Temporary Utilities			
91-8 Mobilization/Demob.	24,800		
91-9 Legal Expenses/Claims	3,700		
Other Construction Indirects			
92-1 Small Tools & Consumables	15,600		
92-2 Scaffolding			
92-3 General Liability Insur.	15,600		
92-4 Constr. Equip. Mob/Demob	8,100		
92-5 Freight on Material	7,600		
92-6 Freight on Scrap			
92-7 Sales Tax			
92-8 Contractors G&A	197,700		
92-9 Contractors Profit	282,400		
	916,700	**1,207,868**	
Project Indirect Costs			
93-1 Engineering Services			
93-2 CM Support			
93-3 Start-Up/Commissioning			
93-4 Start-Up/Spare Parts			
93-5 Excess Liability Insur.			
93-6 Sales Tax On Indirects			
93-7 Owners Cost	339,800		
93-8 EPC Fee			
	339,800	**1,547,668**	
Contingency			
94-1 Contingency on Const Eq	143,500		
94-3 Contingency on Material	28,000		
94-4 Contingency on Labor	327,800		
94-5 Contingency on Subcontr.	10,500		
94-6 Contingency on Scrap	328,500		
94-7 Contingency on Indirect	51,000		
	889,300	**2,436,968**	
Escalation			
96-1 Escalation on Const Equip			
96-3 Escalation on Material			
96-4 Escalation on Labor			
96-5 Escalation on Subcontract			
96-6 Escalation on Scrap			
96-7 Escalation on Indirects			
		2,436,968	
98 Interest During Constr			
		2,436,968	
Total		**2,436,968**	

Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
10.00.00		WHOLE PLANT DEMOLITION									
	10.21.00	CIVIL WORK									
		EXCAVATION BORROW		15,947.00 CY	-	-		957	43,124	16,132	59,256
		COVERED DISTURBED AREAS OF SITE W/2 FT TOPSOIL		15,342.00 CY	-	-		767	35,977	35,425	71,402
		SEED AND MULCH		5.00 AC	-	-	7,730	66	2,460	276	10,467
		PAVED SURFACES		9,000.00 SY	-	-		1,080	50,652	49,874	100,526
		CIVIL WORK					7,730	2,869	132,213	101,707	241,651
	10.22.00	CONCRETE									
		BUILDING/EQUIPMENT FOUNDATION/PAD	TRANSFORMER FOUNDATION AND FIRE WALLS	70.00 CY	-	-		79	3,710	1,732	5,442
		BUILDING/EQUIPMENT FOUNDATION/PAD	TANK FOUNDATIONS AND CONCRETE BERMS	205.00 CY	-	-		231	10,865	5,071	15,936
		BUILDING/EQUIPMENT FOUNDATION/PAD	CONCRETE CONTAINMENT STRUCTURE	235.00 CY	-	-		264	12,455	5,814	18,268
		BUILDING/EQUIPMENT FOUNDATION/PAD	OFFICE	333.00 CY	-	-		375	17,649	8,238	25,887
		BUILDING/EQUIPMENT FOUNDATION/PAD	TURBINE / HRSG BUILDING	2,689.00 CY	-	-		3,025	142,514	66,523	209,036
		BUILDING/EQUIPMENT FOUNDATION/PAD	SOUTH WAREHOUSE 80'X40'X14'H	119.00 CY	-	-		134	6,307	2,944	9,251
		BUILDING/EQUIPMENT FOUNDATION/PAD	WATER TREATMENT BUILDING	111.00 CY	-	-		125	5,883	2,746	8,629
		BUILDING/EQUIPMENT FOUNDATION/PAD	MISCELLANEOUS FOUNDATIONS	200.00 CY	-	-		225	10,600	4,948	15,548
		WALKWAYS		150.00 CY	-	-		79	3,710	1,732	5,442
		INTAKE STRUCTURE		1.00 LS	-	-		100	4,711	2,199	6,910
		CONCRETE						4,636	218,402	101,946	320,348
	10.23.00	STEEL									
		STRUCTURAL AND GIRT STEEL	MISC. STEEL	200.00 TN	-	-		203	9,158	3,426	12,584
		STEEL						203	9,158	3,426	12,584
	10.24.00	ARCHITECTURAL									
		BUILDING	WATER TREATMENT BUILDING	60,000.00 CF	-	-		180	7,880	4,991	12,872
		BUILDING	SOUTH WAREHOUSE 80'X40'X14'H	44,800.00 CF	-	-		134	5,884	3,727	9,611
		BUILDING	TURBINE / HRSG BUILDING	1,452,000.00 CF	-	-		4,356	190,706	120,792	311,498
		BUILDING	OFFICE	162,000.00 CF	-	-		486	21,277	13,477	34,754
		BUILDING	BATTERY ROOM PREFAB BLD 20'X20'X12'H	4,800.00 CF	-	-		14	630	399	1,030
		BUILDING	CHEMICAL BUILDING	16,200.00 CF	-	-		49	2,128	1,348	3,475
		ARCHITECTURAL						5,219	228,505	144,734	373,239
	10.31.00	MECHANICAL EQUIPMENT									
		COMBUSTION TURBINE	2 X 85MW, WESTINGHOUSE W-501	708.00 TN	-	-		2,478	103,952	56,424	160,376
		HEAT RECOVERY STEAM GENERATOR	(2) PACKAGE HRSGS, AND AUX EQUIPMENT	2,514.00 TN	-	-		8,799	369,118	200,353	569,471
		STEAM TURBINE GENERATOR		585.00 TN	-	-		1,185	49,695	26,974	76,669
		TANKS AND SILOS	MISC. SMALL TANKS	50.00 TN	-	-		135	5,663	3,074	8,737
		TANKS AND SILOS	FUEL OIL STORAGE TANK 150,000 BBL	191.00 TN	-	-		516	21,634	11,742	33,376
		WATER TREATMENT DEMINERALIZATION & CHEMICAL TREATMENT EQUIPMENT		150.00 TN	-	-		304	12,742	6,916	19,659
		MISCELLANEOUS EQUIPMENT		130.00 TN	-	-		263	11,043	5,994	17,038
		MISCELLANEOUS EQUIPMENT	INTAKE RACKS, MISC.	48.00 TN	-	-		130	5,437	2,951	8,388
		MISCELLANEOUS EQUIPMENT	(2) - 2 MW DIESEL GENERATORS, GE MP-36	110.00 TN	-	-		297	12,459	6,763	19,222
		CONDENSER SHELL		189.00 TN	-	-		383	16,055	8,715	24,770
		CONDENSER RECOVERABLE ADMIRALTY TUBING		61.00 TN	-	-		124	5,182	2,813	7,995
		CIRCULATING WATER EQUIPMENT - PUMPS, MOTORS, SWITCHGEAR, TRAV. SCREENS		286.00 TN	-	-		579	24,295	13,187	37,483
		MISCELLANEOUS FUEL OIL EQUIPMENT		236.00 TN	-	-		637	26,731	14,509	41,240
		20 TON GANTRY CRANE	CIRC. WATER SYSTEM	1.00 EA	-	-		68	2,853	1,548	4,401
		TURBINE ROOM O.H. CRANE 100/20 TON		1.00 EA	-	-		267	12,034	4,502	16,535
		TURBINE ROOM GANTRY CRANE 5 TON		1.00 EA	-	-		28	1,175	638	1,812
		MECHANICAL EQUIPMENT						16,192	680,068	367,103	1,047,171
	10.35.00	PIPING									
		PIPING, VALVES AND HANGERS		1,294.00 TN	-	-		2,620	109,924	59,665	169,589
		PIPING						2,620	109,924	59,665	169,589
	10.41.00	ELECTRICAL EQUIPMENT									
		TRANSFORMERS	GENERATOR BUS TRANSFORMERS AND MISC. ELECTRICAL EQUIPMENT	164.00 TN	-	-		438	18,383	9,978	28,361

Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
	10.41.00	ELECTRICAL EQUIPMENT									
		MISCELLANEOUS ELECTRICAL EQUIPMENT	INTERCONNECTING ELECTRICAL EQUIPMENT	157.00 TN	-	-		559	23,466	12,737	36,204
		ELECTRICAL EQUIPMENT						998	41,849	22,715	64,565
	10.86.00	WASTE									
		2 FT OF MATERIAL INSIDE OIL TANK RING FOUNDATION - TRANSPORT & DISPOSAL		605.00 CY	18,150	-					18,150
		RUBBISH AND TENANT DEBRIS - TRANSPORT & DISPOSAL		1,910.00 CY	51,570	-					51,570
		WASTE			69,720						69,720
		WHOLE PLANT DEMOLITION			**69,720**		**7,730**	**32,737**	**1,420,119**	**801,297**	**2,298,866**
18.00.00		**SCRAP VALUE**									
	18.10.00	MIXED STEEL									
		CARBON STEEL	TURBINE / HRSG BUILDING	-800.00 TN	-	(172,800)	-				(172,800)
		CARBON STEEL		-7,073.00 TN	-	(1,527,768)	-				(1,527,768)
		MIXED STEEL				(1,700,568)					(1,700,568)
	18.30.00	COPPER									
		#1 INSULATED COPPER WIRE 65%		-48.00 TN	-	(152,736)	-				(152,736)
		ADMIRALTY BRASS, 70CU / 30 ZINC	CONDENSER TUBES	-61.00 TN	-	(336,415)	-				(336,415)
		COPPER				(489,151)					(489,151)
		SCRAP VALUE				**(2,189,719)**					**(2,189,719)**
21.00.00		**CIVIL WORK**									
	21.17.00	EXCAVATION									
		FOUNDATION EXCAVATION, COMMON EARTH USING 1 CY BACKHOE	2 FT OF MATERIAL INSIDE OIL TANK RING FOUNDATION	605.00 CY	-	-		91	4,117	1,582	5,699
		EXCAVATION						91	4,117	1,582	5,699
		CIVIL WORK						**91**	**4,117**	**1,582**	**5,699**
22.00.00		**CONCRETE**									
	22.13.00	CONCRETE									
		FLOWABLE FILL, 1500 PSI	CIRCULATING WATER SYSTEM PIPING AND TUNNELS	1,200.00 CY	-	-	144,000	600	24,624	7,698	176,322
		CONCRETE					144,000	600	24,624	7,698	176,322
		CONCRETE					**144,000**	**600**	**24,624**	**7,698**	**176,322**

Northeastern Plant Units 1 & 2

DEMOLITION COST ESTIMATE

Prepared for:
Public Service Company of Oklahoma (Owner)
and American Electric Power

Project No. A13351.022
February 26, 2021
Revision 0

55 East Monroe Street
Chicago, IL 60603-5780 USA

Issue Summary Page

Revision Number	Date	Purpose	Prepared By	Reviewed By	Approved By	Pages Affected
A	01/18/21	Comments	G. Amen	B. Andric		All
0	2/26/21	Use	G. Amen	B. Andric	A. Redd	All

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1.0 INTRODUCTION

The Northeastern Plant Units 1 through 4, located near Oologah, Oklahoma, in Rogers County, is owned and operated by Public Service Company of Oklahoma (PSO). The plant consists of four (4) generating units:

- Unit 1 was placed in operation in 1961 and was converted into a combined cycle unit in 2001 when its boiler was retired. Two (2) GE7F combustion turbines and two (2) heat recovery steam generators were added to replace the boiler. The total unit is rated at 420 megawatts.
- Unit 2 is a 1970 gas fired steam generating unit, with a nameplate capacity of 470 megawatts.
- Units 3 and 4, both with nameplate ratings of 473 megawatts, are conventional coal fired steam generating units commissioned in 1979 and 1980 respectively.
- There is one (1) emergency diesel generator rated at 2.7 megawatts associated with Units 1 and 2 and one (1) 1.2 MW emergency diesel generator associated with Units 3 and 4.

Units 1 and 2 are physically separate from Units 3 and 4 although on the same property site.

This report addresses Units 1 and 2 only.

Sargent & Lundy (S&L) previously prepared a Demolition Cost Estimate for Northeastern Plant Units 1 and 2 in 2017. AEP recently contracted S&L to update the previously prepared cost estimate to 1st Quarter 2021 pricing levels. The objective of the conceptual demolition cost estimate is to determine the gross demolition costs for Northeastern Plant Units 1 and 2 (including gross salvage credits and any other benefits). The cost estimate considers the demolition/dismantlement methodology which complies with current OSHA rules and regulations.

2.0 COST ESTIMATE SUMMARY

Demolition Cost Estimate No 23327G, was prepared and is included as Exhibit 1. The cost estimate is structured into a code of accounts as identified in Table 2-1.

Table 2-1
Cost Estimate Code of Accounts

Account Number	Description
10	Demolition Costs (including steel, equipment & piping scrap value)
18	Scrap Value Costs
21	Civil Work Costs
90, 91, 92	General Conditions Costs
93	Indirect Costs
94	Contingency Costs
96	Escalation Costs

The results of the cost estimate are provided in Table 2-2 below:

Table 2-2
Cost Estimate Results Summary

Description	Total Cost
Demolition Cost	$ 10,339,657
Scrap Value	($ 8,811,130)
General Conditions Costs	$ 3,963,600
Indirect Cost	$ 1,430,100
Contingency Cost	$ 3,681,500
Total Project Cost	$ 10,603,727

3.0 TECHNICAL BASIS

The scope of dismantlement includes the complete Northeastern Plant Units 1 and 2 generating facility and plant common services associated with units 1 and 2. Common facilities include:

- Railroad tracks
- Fuel Oil facilities
- Roadways
- Units 1 and 2 Emergency Diesel Generator

The following are excluded from the scope of the demolition cost estimate:

- Asbestos Removal
- Switchyard

The following scope revisions were included in the current cost estimate:

- None

4.0 COMMERCIAL BASIS

4.1 General Information

The Demolition Cost Estimate prepared for the Northeastern Plant is a conceptual estimate of the cost to dismantle Northeastern Plant Units 1 and 2 and the associated Emergency Diesel Generator. Costs were calculated for (1) demolition of existing plant structures and equipment and associated site restoration costs, (2) scrap value of metals, (3) associated indirect costs, and (4) contingency. All units used in the cost estimate are U.S. Standard and all costs are in US Dollars (2021 levels). A one (1) year demolition schedule is anticipated not including asbestos removal (to be performed prior to start of demolition work). All items identified above will be demolished at the same time.

4.2 Quantities/Material Cost

Quantities of pieces of equipment and/or bulk material commodities used in this cost estimate were intended to be reasonable and representative of projects of this type. Material quantities were estimated from the site plot plan and other drawings and data provided by AEP and Plant Personnel.

4.3 Construction Labor Wages

Craft labor rates (Craft Hourly Rate) for the cost estimate are based on the prevailing wages for Tulsa, Oklahoma as published in "R.S. Means Labor Rates for the Construction Industry", 2021 Edition. These prevailing rates are representative of union or non-union rates, whichever is prevailing in the area. Costs have been added to cover social security, workmen's compensation, federal and state unemployment insurance. The resulting burdened craft rates were then used to develop typical crew rates applicable to the task being performed.

4.3.1 Labor Work Schedule and Incentives

The estimate assumed a 5x8 work week. No other labor incentives are included.

4.3.2 General Conditions Cost

Allowances were included in the cost estimate as direct costs as noted for the following:

- Labor Supervision
- Construction Management
- Field Office Expenses
- Safety
- Temporary Facilities
- Mobilization / Demobilization

- Legal Expenses / Claims
- Small Tools & Consumables
- General Liability Insurance
- Construction Equipment Mobilization / Demobilization
- Freight on Material
- Contractor's General and Administrative Costs
- Contractor's Profit

4.4 Scrap Value

The value of scrap is based on "Scrap Metals Market Watch" as published in the January 2021 Edition of "American Recycler News" (www.americanrecycler.com) using Zone 3 (USA Southwest).
The values obtained are delivered prices to the recycler. Transportation cost to the recycler is assumed @ 30 $/ton resulting in the values below:

- Carbon Steel @ 216 $/ton
- Admiralty Brass @ 5,515 $/ton
- #1 Insulated Copper Wire 65% @ 3,182 $/ton
- Stainless Steel @ 1150 $/ton

Note: 1 Ton = 2,000 Lbs

4.5 Indirect Costs

Allowances were included in the cost estimate as indirect costs as noted for the following:

- Engineering, Procurement and Project Services: None included.
- Construction Management Support: None included.
- Owners Cost: Included as 10.0% of the total direct labor and material cost. Owners Costs include owner project engineering, administration and construction management, permits and fees, legal expenses, taxes, etc.

4.6 Escalation

No allowance for escalation was included in the cost estimate.

4.7 Contingency

Allowances were included in the cost estimate as contingency as noted for the following:

- Scrap Value: Included as a 15.0% reduction in the salvage value resulting in a total net reduction in the salvage value. The contingency assumes a potential drop in salvage value thus increasing the project cost.
- Material: Included as 15.0% of the total material cost.
- Labor: Included as 15.0% of the total labor cost.

- Indirect: Included as 15.0% of the total indirect cost.

4.8 Assumptions

The following assumptions apply to the cost estimate.

- All chemicals will be removed by the Owner prior to demolition, from the facilities to be demolished.
- All fuel oil will be consumed prior to demolition.
- All electrical equipment and wiring is de-energized prior to start of dismantlement.
- No extraordinary environmental costs for demolition have been included. Removal of two (2) feet of fill inside the fuel oil tank foundation is included.
- Asbestos and PCB's are removed from site by others prior to start of demolition.
- Handling, on-site and off-site disposal of hazardous materials would be performed in compliance with methods approved by Owner.
- Switchyards within the plant boundaries are not part of the scope, neither are access roads to these facilities. Fences and gates needed to protect the switchyard will be left in place.
- All items above grade and to a depth of two (2) foot will be demolished. Any other items buried more than two (2) foot will remain in place. All foundations are removed and buried on site.
- Underground piping, conduit and cable ducts will be abandoned in place.
- Underground piping larger than four (4) feet diameter will be filled with sand or slurry and capped at the ends to prevent collapse. Non-metal pipe will be collapsed.
- All demolished materials are considered debris, except for organic combustibles and non-embedded metals which have scrap value.
- The basis for salvage estimating is for scrap value only. No resale of equipment or material is included.
- Disturbed areas will be buried under two (2) feet of topsoil mulched and seeded with grass – no other landscaping is included.
- All borrow material is assumed to be from onsite sources.
- Debris not suitable for burial is to be disposed of off-site. Assumed distance to final disposal is within a five (5) mile haul.

5.0 REFERENCES

Drawings utilized in the preparation of the demolition cost estimate are identified in Table 5-1.

Table 5-1
Reference Drawings

Unit	Document Number	Revision	Title
0	PA00001	11	General Site Arrangement
0	PA0011	11	Plot Arrangement Plant Site Area I
0	PA0013	11	Plot Arrangement Site Area III
0	NES12	0	Northeastern Power Station Units 1,2,3 & 4 (For SPCC, Storm Water & OPA-FRP)
0	PSCO 43837	8	Plot Plan, Area C
2	PSCO 43841	7	Unit 2 West Elevation Unit 1
2	PSCO 43842	10	Unit 2 West Elevation – Unit 2 Addition
2	PSCO 43843	10	Unit 2 North Elevation – Unit 2 Addition
2	PSCO 43844	9	Unit 2 East Elevation – Unit 2 Addition
2	PSCO 43845	8	Unit 2 East Elevation – Unit 1
2	PSCO 43846	8	Unit 2 South Elevation – Unit 2 Addition
1	PSCO 31291-5	2	Unit 1 Arrangement South Elevation
1	PSCO 31292-5	1	Unit 1 Arrangement East Elevation

0 = Common

1 = Unit 1

2 = Unit 2

EXHIBIT 1
Northeastern Plant Units 1 and 2
Demolition Cost Estimate No. 23327G

AEP/PSO
NORTHEASTERN PLANT - UNITS 1 & 2
DEMOLITION COST ESTIMATE

Estimator	GA
Labor rate table	21OKTUL
Project No.	A13351.022
Estimate Date	2/24/21
Reviewed By	BA
Approved By	BA
Estimate No.	23327G

Area	Description	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
1	UNIT 1		(2,793,302)		29,878	1,318,333	653,471	(821,498)
2	UNIT 2		(4,103,996)		58,397	2,623,022	1,263,446	(217,529)
3	COMMON FACILITIES	150,351	(280,446)	64,932	27,093	1,253,972	1,044,507	2,233,316
4	COGENERATING PLANT		(1,633,386)		30,100	1,284,857	682,766	334,238
	TOTAL DIRECT	150,351	(8,811,130)	64,932	145,467	6,480,183	3,644,191	1,528,527

Estimate Totals

Description	Amount	Totals	Hours
Labor	6,480,183		145,467
Material	64,932		
Subcontract	150,351		
Construction Equipment	3,644,191		
Scrap Value	(8,811,130)		
	1,528,527	**1,528,527**	
General Conditions			
Additional Labor Costs			
90-1 Labor Supervision	388,900		
90-2 Show-up Time	129,600		
90-3 Cost Due To OT 5-10's			
90-4 Cost Due To OT 6-10's			
90-5 Per Diem			
Site Overheads			
91-1 Construction Management	700,000		
91-2 Field Office Expenses	154,000		
91-3 Material&Quality Control			
91-4 Site Services			
91-5 Safety	138,300		
91-6 Temporary Facilities	105,200		
91-7 Temporary Utilities			
91-8 Mobilization/Demob.	110,900		
91-9 Legal Expenses/Claims	16,400		
Other Construction Indirects			
92-1 Small Tools & Consumables	70,000		
92-2 Scaffolding			
92-3 General Liability Insur.	70,000		
92-4 Constr. Equip. Mob/Demob	36,400		
92-5 Freight on Material	3,200		
92-6 Freight on Scrap			
92-7 Sales Tax			
92-8 Contractors G&A	840,300		
92-9 Contractors Profit	1,200,400		
	3,963,600	**5,492,127**	
Project Indirect Costs			
93-1 Engineering Services			
93-2 CM Support			
93-3 Start-Up/Commissioning			
93-4 Start-Up/Spare Parts			
93-5 Excess Liability Insur.			
93-6 Sales Tax On Indirects			
93-7 Owners Cost	1,430,100		
93-8 EPC Fee			
	1,430,100	**6,922,227**	
Contingency			
94-1 Contingency on Const Eq	644,500		
94-3 Contingency on Material	12,000		
94-4 Contingency on Labor	1,466,200		
94-5 Contingency on Subcontr.	22,600		
94-6 Contingency on Scrap	1,321,700		
94-7 Contingency on Indirect	214,500		
	3,681,500	**10,603,727**	
Escalation			
96-1 Escalation on Const Equip			
96-3 Escalation on Material			
96-4 Escalation on Labor			
96-5 Escalation on Subcontract			
96-6 Escalation on Scrap			
96-7 Escalation on Indirects			
		10,603,727	
98 Interest During Constr			
		10,603,727	
Total		**10,603,727**	

Area	Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
1			**UNIT 1**									
	10.00.00		**WHOLE PLANT DEMOLITION**									
		10.22.00	**CONCRETE**									
			BUILDING/EQUIPMENT FOUNDATION/PAD	DRAFT EQUIPMENT FOUNDATION (2FT BELOW GRADE)	200.00 CY	-	-		225	10,600	4,948	15,548
			BUILDING/EQUIPMENT FOUNDATION/PAD	TRANSFORMER FOUNDATION, FIRE WALLS, PIERS, CURBS, AND BASIN XXX LB/CY	449.00 CY	-	-		505	23,796	11,108	34,904
			MAIN POWER BLOCK FOUNDATION		2,464.00 CY	-	-		2,080	97,971	45,731	143,701
			ELEVATED CONCRETE FLOORS, STAIRS, ROOFS		1,735.00 CY	-	-		1,039	48,960	22,853	71,813
			TURBINE PEDESTAL		1,209.00 CY	-	-		2,176	102,521	47,855	150,375
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	TURBINE ROOM	12,240.00 SF	-	-		184	8,275	3,096	11,370
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	CONTROL BUILDING	4,674.00 SF	-	-		70	3,198	2,232	5,429
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	MACHINE SHOP	9,000.00 SF	-	-		135	6,157	4,297	10,454
			CONCRETE						**6,414**	**301,477**	**142,118**	**443,596**
		10.23.00	**STEEL**									
			STRUCTURAL, GIRT AND GALLERY STEEL		2,109.00 TN	-	-		2,143	96,573	36,127	132,700
			STEEL						**2,143**	**96,573**	**36,127**	**132,700**
		10.24.00	**ARCHITECTURAL**									
			EXTERIOR WALLS - METAL SIDING		14,520.00 SF	-	-		87	3,814	2,416	6,230
			MASONRY WALLS - CONCRETE BLOCK & TILES		16,834.00 SF	-	-		135	5,896	3,734	9,630
			MAIN BUILDING ELEVATOR		2.00 EA	-	-		300	12,585	6,831	19,416
			MAIN BUILDING HVAC		1.00 LS	-	-		1,125	47,194	25,616	72,810
			MAIN BUILDING ELECTRICAL	INCLUDES: (5)7.5KVA TO 30KVA TRANSFORMERS, (1048) FIXTURES, MISC. ELECTRICAL	1.00 LS	-	-		900	37,755	20,493	58,248
			ARCHITECTURAL						**2,547**	**107,244**	**59,091**	**166,334**
		10.25.00	**CONCRETE CHIMNEY & STACK**									
			REMOVAL OF U1 METAL STACK SUPPORTED ON BOILER		20.00 TN	-	-		480	21,634	8,093	29,726
			CONCRETE CHIMNEY & STACK						**480**	**21,634**	**8,093**	**29,726**
		10.31.00	**MECHANICAL EQUIPMENT**									
			MAIN BOILER AND APPURTENANCES		2,851.00 TN	-	-		5,773	260,202	126,146	386,348
			BOILER PLANT PIPING AND HANGERS		416.00 TN	-	-		842	35,339	19,181	54,520
			FLUES AND DUCTS INCL. BREACHING		594.00 TN	-	-		1,604	72,283	35,043	107,326
			FEEDWATER DEAERATING EQUIPMENT		118.00 TN	-	-		239	10,024	5,441	15,465
			TANKS AND SILOS		59.00 TN	-	-		159	6,683	3,627	10,310
			WATER TREATMENT DEMINERALIZATION & CHEMICAL TREATMENT EQUIPMENT		100.00 TN	-	-		203	8,495	4,611	13,106
			MISCELLANEOUS EQUIPMENT		154.00 TN	-	-		312	13,082	7,101	20,183
			TURBINE GENERATOR		720.00 TN	-	-		1,458	61,163	33,199	94,362
			CONDENSER		270.00 TN	-	-		547	22,936	12,450	35,386
			CONDENSER	ADMIRALTY CONDENSER TUBING	74.00 TN	-	-		150	6,286	3,412	9,698
			CIRCULATING WATER EQUIPMENT - PUMPS, MOTORS, SWITCHGEAR, TRAV. SCREENS		356.00 TN	-	-		721	30,242	16,415	46,657
			COOLING TOWER		2.00 EA	-	-		2,600	109,070	59,202	168,272
			GANTRY CRANE		1.00 EA	-	-		150	6,293	3,416	9,708
			TURBINE ROOM O.H. CRANE 70/30 TON		1.00 EA	-	-		267	12,034	4,502	16,535
			TURBINE ROOM GANTRY CRANE 5 TON		1.00 EA	-	-		28	1,262	472	1,734
			MECHANICAL EQUIPMENT						**15,053**	**655,392**	**334,217**	**989,609**
		10.35.00	**PIPING**									
			PIPING, VALVES AND HANGERS		180.00 TN	-	-		365	15,291	8,300	23,590
			PIPING						**365**	**15,291**	**8,300**	**23,590**
		10.41.00	**ELECTRICAL EQUIPMENT**									
			GENERATOR BUS TRANSFORMERS AND MISC. ELECTRICAL EQUIPMENT		1,077.00 TN	-	-		2,878	120,721	65,526	186,248
			ELECTRICAL EQUIPMENT						**2,878**	**120,721**	**65,526**	**186,248**
			WHOLE PLANT DEMOLITION						**29,878**	**1,318,333**	**653,471**	**1,971,804**
	18.00.00		**SCRAP VALUE**									
		18.10.00	**MIXED STEEL**									
			CARBON STEEL		-9,098.00 TN	-	(1,965,168)	-				(1,965,168)
			MIXED STEEL				**(1,965,168)**					**(1,965,168)**

Area	Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
		18.30.00	COPPER									
			#1 INSULATED COPPER WIRE 65%		-132.00 TN	-	(420,024)	-				(420,024)
			ADMIRALTY BRASS, 70CU / 30 ZINC	CONDENSER TUBES	-74.00 TN	-	(408,110)	-				(408,110)
			COPPER				(828,134)					(828,134)
			SCRAP VALUE				(2,793,302)					(2,793,302)
			1 UNIT 1				(2,793,302)		29,878	1,318,333	653,471	(821,498)
2			UNIT 2									
	10.00.00		WHOLE PLANT DEMOLITION									
		10.22.00	CONCRETE									
			BUILDING/EQUIPMENT FOUNDATION/PAD	DRAFT EQUIPMENT FOUNDATION (2FT BELOW GRADE)	7,232.00 CY	-	-		8,136	383,287	178,911	562,198
			BUILDING/EQUIPMENT FOUNDATION/PAD	TRANSFORMER FOUNDATION, FIRE WALLS, PIERS, CURBS, AND BASIN XXX LB/CY	230.00 CY	-	-		259	12,190	5,690	17,880
			MAIN POWER BLOCK FOUNDATION		2,219.00 CY	-	-		1,873	88,229	41,184	129,413
			ELEVATED CONCRETE FLOORS, STAIRS, ROOFS		830.00 CY	-	-		497	23,422	10,933	34,354
			TURBINE PEDESTAL		1,578.00 CY	-	-		2,840	133,811	62,460	196,272
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	TURBINE ROOM	14,880.00 SF	-	-		223	10,180	7,104	17,285
			CONCRETE						13,828	651,119	306,282	957,401
		10.23.00	STEEL									
			STRUCTURAL, GIRT AND GALLERY STEEL		2,353.00 TN	-	-		2,391	107,747	40,306	148,053
			STEEL						2,391	107,747	40,306	148,053
		10.24.00	ARCHITECTURAL									
			EXTERIOR WALLS - METAL SIDING		20,000.00 SF	-	-		120	5,254	3,328	8,581
			MASONRY WALLS - CONCRETE BLOCK & TILES		11,989.00 SF	-	-		96	4,199	2,660	6,859
			MAIN BUILDING ELEVATOR		1.00 EA	-	-		150	6,293	3,416	9,708
			MAIN BUILDING HVAC		1.00 LS	-	-		1,125	47,194	25,616	72,810
			MAIN BUILDING ELECTRICAL	INCLUDES: (7)7.5KVA TO 30KVA TRANSFORMERS, (1738) FIXTURES, MISC. ELECTRICAL	1.00 LS	-	-		938	39,349	21,358	60,707
			ARCHITECTURAL						2,429	102,288	56,377	158,665
		10.25.00	CONCRETE CHIMNEY & STACK									
			REMOVAL OF STEEL STACK 183' H		140.00 TN	-	-		3,360	151,435	56,650	208,085
			CONCRETE CHIMNEY & STACK						3,360	151,435	56,650	208,085
		10.31.00	MECHANICAL EQUIPMENT									
			MAIN BOILER AND APPURTENANCES		9,419.00 TN	-	-		19,073	859,642	416,755	1,276,397
			BOILER PLANT PIPING AND HANGERS		1,498.00 TN	-	-		3,033	136,718	66,281	202,998
			FLUES AND DUCTS INCL. BREACHING		1,774.00 TN	-	-		4,790	215,876	104,657	320,533
			FEEDWATER DEAERATING EQUIPMENT		156.00 TN	-	-		316	13,252	7,193	20,445
			TANKS AND SILOS		49.00 TN	-	-		132	5,550	3,012	8,562
			WATER TREATMENT DEMINERALIZATION & CHEMICAL TREATMENT EQUIPMENT		177.00 TN	-	-		358	15,036	8,161	23,197
			MISCELLANEOUS EQUIPMENT		508.00 TN	-	-		1,029	43,154	23,424	66,577
			TURBINE GENERATOR		1,080.00 TN	-	-		2,187	91,745	49,798	141,543
			CONDENSER		320.00 TN	-	-		648	27,184	14,755	41,939
			CONDENSER	SS CONDENSER TUBING	64.00 TN	-	-		130	5,437	2,951	8,388
			CIRCULATING WATER EQUIPMENT - PUMPS, MOTORS, SWITCHGEAR, TRAV. SCREENS		365.00 TN	-	-		739	31,006	16,830	47,836
			COOLING TOWER		2.00 EA	-	-		2,600	109,070	59,202	168,272
			MECHANICAL EQUIPMENT						35,036	1,553,669	773,020	2,326,688
		10.35.00	PIPING									
			PIPING, VALVES AND HANGERS		180.00 TN	-	-		365	15,291	8,300	23,590
			PIPING						365	15,291	8,300	23,590
		10.41.00	ELECTRICAL EQUIPMENT									
			GENERATOR BUS TRANSFORMERS AND MISC. ELECTRICAL EQUIPMENT		370.00 TN	-	-		989	41,473	22,511	63,985
			ELECTRICAL EQUIPMENT						989	41,473	22,511	63,985
			WHOLE PLANT DEMOLITION						58,397	2,623,022	1,263,446	3,886,467
	18.00.00		SCRAP VALUE									
		18.10.00	MIXED STEEL									
			CARBON STEEL		-18,453.00 TN	-	(3,985,848)	-				(3,985,848)

Area	Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
			MIXED STEEL				(3,985,848)					(3,985,848)
		18.20.00	STAINLESS STEEL									
			STAINLESS STEEL	CONDENSER TUBING	-64.00 TN	-	(73,600)	-				(73,600)
			STAINLESS STEEL				(73,600)					(73,600)
		18.30.00	COPPER									
			#1 INSULATED COPPER WIRE 65%		-14.00 TN	-	(44,548)	-				(44,548)
			COPPER				(44,548)					(44,548)
			SCRAP VALUE				(4,103,996)					(4,103,996)
			2 UNIT 2				**(4,103,996)**		**58,397**	**2,623,022**	**1,263,446**	**(217,529)**
3			**COMMON FACILITIES**									
	10.00.00		WHOLE PLANT DEMOLITION									
		10.21.00	CIVIL WORK									
			EXCAVATION BERMS AND DIKES		7,611.00 CY	-	-		457	21,417	21,089	42,506
			EXCAVATION BORROW		124,683.00 CY	-	-		7,481	350,858	345,472	696,330
			REMOVE RAILROAD TRACK RAIL, TIES, SPREAD BALLAST		6,400.00 TF	-	-		1,440	67,536	66,499	134,035
			COVERED DISTURBED AREAS OF SITE W/2 FT TOPSOIL		132,044.00 CY	-	-		6,602	309,643	304,890	614,533
			SEED AND MULCH	BLUE GRASS 4#/MSF	42.00 AC	-	-	64,932	546	20,546	2,304	87,782
			PAVED SURFACES		20,000.00 SY	-	-		2,400	112,560	110,832	223,392
			CIVIL WORK					64,932	18,926	882,560	851,085	1,798,578
		10.22.00	CONCRETE									
			BUILDING/EQUIPMENT FOUNDATION/PAD	MISCELLANEOUS EQUIPMENT PADS AND SITE BUILDINGS FOUNDATIONS XXX LB/CY	1,750.00 CY	-	-		1,969	92,748	43,293	136,041
			BUILDING/EQUIPMENT FOUNDATION/PAD		1,620.00 CY	-	-		1,823	85,858	40,077	125,935
			BUILDING/EQUIPMENT FOUNDATION/PAD	CONCRETE WATER SOFTENER TANKS	200.00 CY	-	-		225	10,600	4,948	15,548
			BUILDING/EQUIPMENT FOUNDATION/PAD	TRANSFORMER FOUNDATION, FIRE WALLS, PIERS, CURBS, AND BASIN XXX LB/CY	100.00 CY	-	-		113	5,300	2,474	7,774
			CURBS		16,850.00 LF	-	-		202	9,526	4,446	13,972
			WALKWAYS		120.00 CY	-	-		63	2,968	1,385	4,353
			DISCHARGE OUTFALL STRUCTURE		300.00 CY	-	-		225	9,536	10,769	20,304
			CONCRETE						4,619	216,534	107,391	323,926
		10.24.00	ARCHITECTURAL									
			BUILDING	WAREHOUSE AND STOREROOMS	13,950.00 CF	-	-		42	1,832	1,161	2,993
			BUILDING	WATER TREATMENT BUILDING	112,500.00 CF	-	-		338	14,776	9,359	24,135
			BUILDING	MISCELLANEOUS SMALL SIZE BUILDINGS	20,000.00 CF	-	-		60	2,627	1,664	4,291
			OUTDOOR LIGHTING		1.00 LS	-	-		750	35,333	16,493	51,825
			ARCHITECTURAL						1,189	54,567	28,676	83,243
		10.31.00	MECHANICAL EQUIPMENT									
			TANKS AND SILOS	FUEL OIL TANK 130' DIA. 40' TALL; 4,200,000 GALLONS	352.00 TN	-	-		950	39,869	21,641	61,510
			TANKS AND SILOS	(2) DEMIN WATER STORAGE TANKS 375,000, 37' DIA AND 40' TALL	64.00 TN	-	-		173	7,249	3,935	11,184
			TANKS AND SILOS	TREATED WATER STORAGE TANK	95.00 TN	-	-		257	10,760	5,841	16,601
			MISCELLANEOUS EQUIPMENT	2.7 MW EMERGENCY DIESEL GENERATOR & ENCLOSURE	60.00 TN	-	-		162	6,796	3,689	10,485
			MISCELLANEOUS FUEL OIL EQUIPMENT		70.00 TN	-	-		189	7,929	4,304	12,232
			HYDRANTS		1.00 LS	-	-		188	8,794	8,659	17,453
			MECHANICAL EQUIPMENT						1,918	81,397	48,067	129,463
		10.41.00	ELECTRICAL EQUIPMENT									
			STATION AUXILIARY TRANSFORMERS AND MISC. ELECTRICAL EQUIPMENT		113.00 TN	-	-		302	12,666	6,875	19,541
			ELECTRICAL EQUIPMENT						302	12,666	6,875	19,541
		10.86.00	WASTE									
			2FT OF MATERIAL INSIDE OIL TANK RING FOUNDATION		923.00 CY	27,690	-					27,690
			RUBBISH AND TENANT DEBRIS - TRANSPORT & DISPOSAL		3,000.00 CY	81,000	-					81,000
			RAILROAD TIES - TRANSPORT & DISPOSAL		1,543.00 CY	41,661	-					41,661
			WASTE			150,351						150,351
			WHOLE PLANT DEMOLITION			150,351		64,932	26,954	1,247,725	1,042,094	2,505,102
	18.00.00		SCRAP VALUE									
		18.10.00	MIXED STEEL									
			CARBON STEEL		-754.00 TN	-	(162,864)	-				(162,864)

Area	Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
		18.10.00	MIXED STEEL									
			CARBON STEEL	RR TRACKS	-235.00 TN	-	(50,760)	-				(50,760)
			MIXED STEEL				(213,624)					(213,624)
		18.30.00	COPPER									
			#1 INSULATED COPPER WIRE 65%		-21.00 TN	-	(66,822)	-				(66,822)
			COPPER				(66,822)					(66,822)
			SCRAP VALUE				(280,446)					(280,446)
	21.00.00		CIVIL WORK									
		21.17.00	EXCAVATION									
			FOUNDATION EXCAVATION, COMMON EARTH USING 1 CY BACKHOE	2FT OF MATERIAL INSIDE OIL TANK RING FOUNDATION	923.00 CY	-	-		138	6,247	2,413	8,660
			EXCAVATION						138	6,247	2,413	8,660
			CIVIL WORK						138	6,247	2,413	8,660
			3 COMMON FACILITIES			**150,351**	**(280,446)**	**64,932**	**27,093**	**1,253,972**	**1,044,507**	**2,233,316**
4			**COGENERATING PLANT**									
	10.00.00		WHOLE PLANT DEMOLITION									
		10.22.00	CONCRETE									
			BUILDING/EQUIPMENT FOUNDATION/PAD	FOUNDATION 2 FT BELOW GRADE	3,776.00 CY	-	-		4,248	200,123	93,414	293,537
			CONCRETE						4,248	200,123	93,414	293,537
		10.24.00	ARCHITECTURAL									
			BUILDING	HRSG BUILDING	48,000.00 CF	-	-		144	6,304	3,993	10,297
			ARCHITECTURAL						144	6,304	3,993	10,297
		10.31.00	MECHANICAL EQUIPMENT									
			COMBUSTION TURBINE	COMBUSTION TURBINE GE 2@ 170MW EACH , GE7FA	1,641.00 TN	-	-		5,744	240,940	130,780	371,719
			HEAT RECOVERY STEAM GENERATOR		5,500.00 TN	-	-		19,250	807,538	438,323	1,245,860
			MECHANICAL EQUIPMENT						24,994	1,048,477	569,102	1,617,579
		10.41.00	ELECTRICAL EQUIPMENT									
			INTERCONNECTING ELECTRICAL EQUIPMENT		200.00 TN	-	-		714	29,952	16,258	46,210
			ELECTRICAL EQUIPMENT						714	29,952	16,258	46,210
			WHOLE PLANT DEMOLITION						30,100	1,284,857	682,766	1,967,624
	18.00.00		SCRAP VALUE									
		18.10.00	MIXED STEEL									
			CARBON STEEL		-7,341.00 TN	-	(1,585,656)	-				(1,585,656)
			MIXED STEEL				(1,585,656)					(1,585,656)
		18.30.00	COPPER									
			#1 INSULATED COPPER WIRE 65%		-15.00 TN	-	(47,730)	-				(47,730)
			COPPER				(47,730)					(47,730)
			SCRAP VALUE				(1,633,386)					(1,633,386)
			4 COGENERATING PLANT				**(1,633,386)**		**30,100**	**1,284,857**	**682,766**	**334,238**

Northeastern Plant Units 3 & 4

DEMOLITION COST ESTIMATE

Prepared for:
Public Service Company of Oklahoma (Owner)
and American Electric Power

Project No. A13351.022
February 26, 2021
Revision 0

55 East Monroe Street
Chicago, IL 60603-5780 USA

Issue Summary Page

Revision Number	Date	Purpose	Prepared By	Reviewed By	Approved By	Pages Affected
A	01/18/21	Comments	G. Amen	B. Andric		All
0	2/26/21	Use	G. Amen	B. Andric	A. Redd	All

TABLE OF CONTENTS

1.0 INTRODUCTION

The Northeastern Plant Units 1 through 4, located near Oologah, Oklahoma, in Rogers County, is owned and operated by Public Service Company of Oklahoma (PSO). The plant consists of four (4) generating units:

- Unit 1 was placed in operation in 1961 and was converted into a combined cycle unit in 2001 when its boiler was retired. Two (2) GE7F combustion turbines and two (2) heat recovery steam generators were added to replace the boiler. The total unit is rated at 420 megawatts.
- Unit 2 is a 1970 gas fired steam generating unit, with a nameplate capacity of 470 megawatts.
- Units 3 and 4, both with nameplate ratings of 473 megawatts, are conventional coal fired steam generating units commissioned in 1979 and 1980 respectively.
- There is one (1) emergency diesel generator rated at 2.7 megawatts associated with Units 1 and 2 and one (1) 1.2 MW emergency diesel generator associated with Units 3 and 4.

Units 1 and 2 are physically separate from Units 3 and 4 although on the same property site.

This report addresses Units 3 and 4 only.

Sargent & Lundy (S&L) previously prepared a Demolition Cost Estimate for Northeastern Plant Units 3 and 4 in 2017. AEP recently contracted S&L to update the previously prepared cost estimate to 1st Quarter 2021 pricing levels. The objective of the conceptual demolition cost estimate is to determine the gross demolition costs for Northeastern Plant Units 3 and 4 (including gross salvage credits and any other benefits). The cost estimate considers the demolition/dismantlement methodology which complies with current OSHA rules and regulations.

2.0 COST ESTIMATE SUMMARY

Demolition Cost Estimate No 23326F, was prepared and is included as Exhibit 1. The cost estimate is structured into a code of accounts as identified in Table 2-1.

Table 2-1
Cost Estimate Code of Accounts

Account Number	Description
10	Demolition Costs (including steel, equipment & piping scrap value)
18	Scrap Value Costs
21	Civil Work Costs
90, 91, 92	General Conditions Costs
93	Indirect Costs
94	Contingency Costs
96	Escalation Costs

The results of the cost estimate are provided in Table 2-2 below:

Table 2-2
Cost Estimate Results Summary

Description	Total Cost
Demolition Cost	$ 20,519,817
Scrap Value	($ 15,232,473)
General Conditions Costs	$ 6,990,700
Indirect Cost	$ 2,751,100
Contingency Cost	$ 6,824,200
Total Project Cost	$ 21,853,344

3.0 TECHNICAL BASIS

The scope of dismantlement includes the complete Northeastern Plant Units 3 and 4 generating facility and plant common services associated with units 3 and 4. Common facilities include:

- Railroad tracks (including the "PSO Northeast Station Industrial Spur")
- Fuel Oil facilities
- Roadways
- Units 3 and 4 Emergency Diesel Generator

The following are excluded from the scope of the demolition cost estimate:

- Asbestos Removal
- Switchyard
- Bottom Ash Pond and Fly Ash Landfill

The following scope revisions were included in the current cost estimate:

- None

4.0 COMMERCIAL BASIS

4.1 General Information

The Demolition Cost Estimate prepared for the Northeastern Plant is a conceptual estimate of the cost to dismantle Northeastern Plant Units 3 and 4 and the associated Emergency Diesel Generator. Costs were calculated for (1) demolition of existing plant structures and equipment and associated site restoration costs, (2) scrap value of metals, (3) associated indirect costs, and (4) contingency. All units used in the cost estimate are U.S. Standard and all costs are in US Dollars (2021 levels). A two (2) year demolition schedule is anticipated not including asbestos removal (to be performed prior to start of demolition work). All items identified above will be demolished at the same time.

4.2 Quantities/Material Cost

Quantities of pieces of equipment and/or bulk material commodities used in this cost estimate were intended to be reasonable and representative of projects of this type. Material quantities were estimated from the site plot plan and other drawings and data provided by AEP and Plant Personnel.

4.3 Construction Labor Wages

Craft labor rates (Craft Hourly Rate) for the cost estimate are based on the prevailing wages for Tulsa, Oklahoma as published in "R.S. Means Labor Rates for the Construction Industry", 2021 Edition. These prevailing rates are representative of union or non-union rates, whichever is prevailing in the area. Costs have been added to cover social security, workmen's compensation, federal and state unemployment insurance. The resulting burdened craft rates were then used to develop typical crew rates applicable to the task being performed.

4.3.1 Labor Work Schedule and Incentives

The estimate assumed a 5x8 work week. No other labor incentives are included.

4.3.2 General Conditions Cost

Allowances were included in the cost estimate as direct costs as noted for the following:

- Labor Supervision
- Construction Management
- Field Office Expenses
- Safety
- Temporary Facilities

- Mobilization / Demobilization
- Legal Expenses / Claims
- Small Tools & Consumables
- General Liability Insurance
- Construction Equipment Mobilization / Demobilization
- Freight on Material
- Contractor's General and Administrative Costs
- Contractor's Profit

4.4 Scrap Value

The value of scrap is based on "Scrap Metals Market Watch" as published in the January 2021 Edition of "American Recycler News" (www.americanrecycler.com) using Zone 3 (USA Southwest).
The values obtained are delivered prices to the recycler. Transportation cost to the recycler is assumed @ 30 $/ton resulting in the values below:

- Carbon Steel @ 216 $/ton
- #1 Insulated Copper Wire 65% @ 3,182 $/ton
- Stainless Steel @ 1150 $/ton

Note: 1 Ton = 2,000 Lbs

4.5 Indirect Costs

Allowances were included in the cost estimate as indirect costs as noted for the following:

- Engineering, Procurement and Project Services: None included.
- Construction Management Support: None included.
- Owners Cost: Included as 10.0% of the total direct labor and material cost. Owners Costs include owner project engineering, administration and construction management, permits and fees, legal expenses, taxes, etc.

4.6 Escalation

No allowance for escalation was included in the cost estimate.

4.7 Contingency

Allowances were included in the cost estimate as contingency as noted for the following:

- Scrap Value: Included as a 15.0% reduction in the salvage value resulting in a total net reduction in the salvage value. The contingency assumes a potential drop in salvage value thus increasing the project cost.
- Material: Included as 15.0% of the total material cost.
- Labor: Included as 15.0% of the total labor cost.

- Indirect: Included as 15.0% of the total indirect cost.

4.8 Assumptions

The following assumptions apply to the cost estimate.

- All chemicals will be removed by the Owner prior to demolition, from the facilities to be demolished.
- All fuel oil will be consumed prior to demolition.
- All electrical equipment and wiring is de-energized prior to start of dismantlement.
- No extraordinary environmental costs for demolition have been included. Removal of two (2) feet of fill inside the fuel oil tank foundation is included.
- Asbestos and PCB's are removed from site by others prior to start of demolition.
- Handling, on-site and off-site disposal of hazardous materials would be performed in compliance with methods approved by Owner.
- Switchyards within the plant boundaries are not part of the scope, neither are access roads to these facilities. Fences and gates needed to protect the switchyard will be left in place.
- Remediation and closure of the bottom ash pond and fly ash landfill are excluded from the cost estimate.
- All items above grade and to a depth of two (2) foot will be demolished. Any other items buried more than two (2) foot will remain in place. All foundations are removed and buried on site.
- Underground piping, conduit and cable ducts will be abandoned in place.
- Underground piping larger than four (4) feet diameter will be filled with sand or slurry and capped at the ends to prevent collapse. Non-metal pipe will be collapsed.
- All demolished materials are considered debris, except for organic combustibles and non-embedded metals which have scrap value.
- The basis for salvage estimating is for scrap value only. No resale of equipment or material is included.
- Disturbed areas will be buried under two (2) feet of topsoil mulched and seeded with grass – no other landscaping is included.
- All borrow material is assumed to be from onsite sources.
- Debris not suitable for burial is to be disposed of off-site. Assumed distance to final disposal is within a five (5) mile haul.

5.0 REFERENCES

Drawings utilized in the preparation of the demolition cost estimate are identified in Table 5-1.

Table 5-1
Reference Drawings

Unit	Document Number	Revision	Title
0	PA11202	5	Car Dumper Bldg Plans
	Engineering Summary		Engineering Summary Units 3 & 4 PPI-349 Plus Dwgs
0	PA0001	11	General Site Arrangement
0	PA0011	11	Plot Arrangement Plant Site Area 1
0	PA0013	11	Plot Arrangement Plant Site Area III
0	NES12	0	Northeastern Power Station Units 1,2,3 & 4 (For SPCC, Storm Water & OPA-FRP)
0	PSCO 43837	8	Plot Plan Area C
0	PA1202	3	Unit 3 & 4 Car Dumper Bldg
0	PS3501		Office Bldg
0	PS1206		Ash Water Pump House
0	PS2312		Coal Crusher Bldg
0	PS2314		Cooling Tower Switchgear Bldg
0	PS2402		Vehicle Maintenance Bldg
3	MSK-002-E		Fabric Filter AC I/DSI Project, General Arrangement
3	MSK-002-E		Fabric Filter ACI/DSI/Project, Plot Plan

0 = Common

3 = Unit 3

4 = Unit 4

EXHIBIT 1
Northeastern Plant Units 3 and 4
Demolition Cost Estimate No. 23326F

AEP / PSO
NORTHEASTERN PLANT - UNITS 3 & 4
DEMOLITION COST ESTIMATE

Estimator	GA
Labor rate table	21OKTUL
Project No.	A13351.022
Estimate Date	2/24/21
Reviewed By	BA
Approved By	BA
Estimate No.	23326F

Area	Description	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
1	UNIT 3	1,700,000	(7,124,524)	204,000	80,014	3,562,383	1,736,396	78,256
2	UNIT 4		(6,311,432)	204,000	65,629	2,901,428	1,422,114	(1,783,890)
3	COMMON FACILITIES	230,580	(1,140,558)	374,774	86,869	4,019,646	3,298,821	6,783,264
4	2014 MODS UNIT 3		(628,527)		8,946	397,654	201,526	(29,348)
5	2014 MODS COMMON FACILITIES	21,465	(27,432)	3,092	2,614	122,337	119,601	239,063
	TOTAL DIRECT	1,952,045	(15,232,473)	785,866	244,071	11,003,448	6,778,458	5,287,344

Estimate Totals

Description	Amount	Totals	Hours
Labor	11,003,448		244.071
Material	785,866		
Subcontract	1,952,045		
Construction Equipment	6,778,458		
Scrap Value	(15,232,473)		
	5,287,344	**5,287,344**	
General Conditions			
Additional Labor Costs			
90-1 Labor Supervision	660,200		
90-2 Show-up Time	220,100		
90-3 Cost Due To OT 5-10's			
90-4 Cost Due To OT 6-10's			
90-5 Per Diem			
Site Overheads			
91-1 Construction Management	1,188,400		
91-2 Field Office Expenses	261,400		
91-3 Material&Quality Control			
91-4 Site Services			
91-5 Safety	234,800		
91-6 Temporary Facilities	178,600		
91-7 Temporary Utilities			
91-8 Mobilization/Demob.	188,200		
91-9 Legal Expenses/Claims	27,800		
Other Construction Indirects			
92-1 Small Tools & Consumables	118,800		
92-2 Scaffolding			
92-3 General Liability Insur.	118,800		
92-4 Constr. Equip. Mob/Demob	67,800		
92-5 Freight on Material	39,300		
92-6 Freight on Scrap			
92-7 Sales Tax			
92-8 Contractors G&A	1,518,000		
92-9 Contractors Profit	2,168,500		
	6,990,700	**12,278,044**	
Project Indirect Costs			
93-1 Engineering Services			
93-2 CM Support			
93-3 Start-Up/Commissioning			
93-4 Start-Up/Spare Parts			
93-5 Excess Liability Insur.			
93-6 Sales Tax On Indirects			
93-7 Owners Cost	2,751,100		
93-8 EPC Fee			
	2,751,100	**15,029,144**	
Contingency			
94-1 Contingency on Const Eq	1,199,800		
94-3 Contingency on Material	144,800		
94-4 Contingency on Labor	2,489,200		
94-5 Contingency on Subcontr.	292,800		
94-6 Contingency on Scrap	2,284,900		
94-7 Contingency on Indirect	412,700		
	6,824,200	**21,853,344**	
Escalation			
96-1 Escalation on Const Equip			
96-3 Escalation on Material			
96-4 Escalation on Labor			
96-5 Escalation on Subcontract			
96-6 Escalation on Scrap			
96-7 Escalation on Indirects			
		21,853,344	
98 Interest During Constr			
		21,853,344	
Total		**21,853,344**	

Area	Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
1			**UNIT 3**									
	10.00.00		**WHOLE PLANT DEMOLITION**									
		10.22.00	**CONCRETE**									
			BUILDING/EQUIPMENT FOUNDATION/PAD	DRAFT EQUIPMENT	9,040.00 CY	-	-		10,170	479,109	223,638	702,747
			MAIN POWER BLOCK FOUNDATION		5,743.00 CY	-	-		4,847	228,347	106,588	334,934
			ELEVATED CONCRETE FLOORS, STAIRS, ROOFS		1,735.00 CY	-	-		1,039	48,960	22,853	71,813
			TRANSFORMER FOUNDATION, FIRE WALLS, PIERS, CURBS, AND BASIN XXX LB/CY		449.00 CY	-	-		485	22,845	10,663	33,508
			TURBINE PEDESTAL		1,578.00 CY	-	-		2,840	133,811	62,460	196,272
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	BOILER ROOM	26,578.00 SF	-	-		399	18,183	12,690	30,873
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	TURBINE ROOM	31,330.00 SF	-	-		470	21,434	14,959	36,393
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	CONTROL BUILDING	6,500.00 SF	-	-		98	4,447	3,103	7,550
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	MACHINE SHOP	13,000.00 SF	-	-		195	8,894	6,207	15,101
			CONCRETE						**20,543**	**966,029**	**463,162**	**1,429,191**
		10.23.00	**STEEL**									
			STRUCTURAL AND GIRT STEEL	INCLUDES GALLERY GRATING	8,277.00 TN	-	-		8,409	379,013	141,783	520,796
			STEEL						**8,409**	**379,013**	**141,783**	**520,796**
		10.24.00	**ARCHITECTURAL**									
			MASONRY WALLS - CONCRETE BLOCK & TILES		23,055.00 SF	-	-		184	8,075	5,115	13,189
			MAIN BUILDING ELEVATOR		2.00 EA	-	-		300	12,585	6,831	19,416
			MAIN BUILDING HVAC		1.00 LS	-	-		1,125	47,194	25,616	72,810
			MAIN BUILDING ELECTRICAL	INCLUDES: (5)7.5KVA TO 30KVA TRANSFORMERS, (1048) FIXTURES, MISC. ELECTRICAL	1.00 LS	-	-		900	37,755	20,493	58,248
			ARCHITECTURAL						**2,509**	**105,609**	**58,055**	**163,663**
		10.25.00	**CONCRETE CHIMNEY & STACK**									
			REMOVAL OF U3 & 4 CONCRETE CHIMNEY WITH BRICK LINER 600' H (INCLUDING CONCRETE SHEATHING)		1.00 CY	1,700,000	-					1,700,000
			CONCRETE CHIMNEY & STACK			**1,700,000**						**1,700,000**
		10.31.00	**MECHANICAL EQUIPMENT**									
			MAIN BOILER AND APPURTENANCES		9,419.00 TN	-	-		19,073	859,642	416,755	1,276,397
			PRECIPITATOR		5,322.00 TN	-	-		10,777	452,097	245,393	697,491
			STEAM TURBINE GENERATOR		1,080.00 TN	-	-		2,187	91,745	49,798	141,543
			FLUES AND DUCTS INCL. BREACHING		1,774.00 TN	-	-		4,790	215,876	104,657	320,533
			FEEDWATER DEAERATING EQUIPMENT		156.00 TN	-	-		316	13,252	7,193	20,445
			TANKS AND SILOS	MISC SMALL TANKS	116.00 TN	-	-		313	13,139	7,132	20,270
			WATER TREATMENT DEMINERALIZATION & CHEMICAL TREATMENT EQUIPMENT		177.00 TN	-	-		358	15,036	8,161	23,197
			MISCELLANEOUS EQUIPMENT		549.00 TN	-	-		1,112	46,637	25,314	71,951
			CONDENSER		318.00 TN	-	-		644	27,014	14,663	41,676
			CONDENSER	SS TUBING	106.00 TN	-	-		215	9,005	4,888	13,892
			CIRCULATING WATER SYSTEM EQUIPMENT		365.00 TN	-	-		739	31,006	16,830	47,836
			GANTRY CRANE		1.00 EA	-	-		150	6,293	3,416	9,708
			TURBINE ROOM O.H. CRANE 70/30 TON		1.00 EA	-	-		267	12,034	4,502	16,535
			TURBINE ROOM GANTRY CRANE 5 TON		1.00 EA	-	-		28	1,262	472	1,734
			MECHANICAL EQUIPMENT						**40,969**	**1,794,036**	**909,173**	**2,703,209**
		10.33.00	**MATERIAL HANDLING EQUIPMENT**									
			MATERIAL HANDLING EQUIPMENT	ASH HANDLING EQUIPMENT	104.00 TN	-	-		281	11,780	6,394	18,173
			MATERIAL HANDLING EQUIPMENT	CONVEYORS INCLUDING TRUSSES, BENTS, EQUIPMENT	73.00 TN	-	-		197	8,268	4,488	12,756
			MATERIAL HANDLING EQUIPMENT						**478**	**20,048**	**10,882**	**30,930**
		10.35.00	**PIPING**									
			PIPING, VALVES AND HANGERS	BOILER PLANT PIPING AND HANGERS	1,498.00 TN	-	-		3,033	127,253	69,072	196,325
			PIPING, VALVES AND HANGERS	BOP	170.00 TN	-	-		344	14,441	7,839	22,280
			PIPING						**3,378**	**141,695**	**76,910**	**218,605**
		10.41.00	**ELECTRICAL EQUIPMENT**									
			GENERATOR BUS TRANSFORMERS AND MISC. ELECTRICAL EQUIPMENT		1,077.00 TN	-	-		2,878	120,721	65,526	186,248
			ELECTRICAL EQUIPMENT						**2,878**	**120,721**	**65,526**	**186,248**
			WHOLE PLANT DEMOLITION			**1,700,000**			**79,164**	**3,527,151**	**1,725,491**	**6,952,642**

Area	Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
	18.00.00		SCRAP VALUE									
		18.10.00	MIXED STEEL									
			CARBON STEEL		-30,475.00 TN	-	(6,582,600)	-				(6,582,600)
			MIXED STEEL				(6,582,600)					(6,582,600)
		18.20.00	STAINLESS STEEL									
			STAINLESS STEEL	CONDENSER TUBING	-106.00 TN	-	(121,900)	-				(121,900)
			STAINLESS STEEL				(121,900)					(121,900)
		18.30.00	COPPER									
			#1 INSULATED COPPER WIRE 65%		-132.00 TN	-	(420,024)	-				(420,024)
			COPPER				(420,024)					(420,024)
			SCRAP VALUE				(7,124,524)					(7,124,524)
	22.00.00		CONCRETE									
		22.13.00	CONCRETE									
			FLOWABLE FILL, 1500 PSI	CIRCULATING WATER SYSTEM PIPING AND TUNNELS	1,700.00 CY	-	-	204,000	850	35,233	10,906	250,138
			CONCRETE					204,000	850	35,233	10,906	250,138
			CONCRETE					204,000	850	35,233	10,906	250,138
			1 UNIT 3			**1,700,000**	**(7,124,524)**	**204,000**	**80,014**	**3,562,383**	**1,736,396**	**78,256**
2			**UNIT 4**									
	10.00.00		WHOLE PLANT DEMOLITION									
		10.22.00	CONCRETE									
			BUILDING/EQUIPMENT FOUNDATION/PAD	DRAFT EQUIPMENT	2,000.00 CY	-	-		2,250	105,998	49,478	155,475
			MAIN POWER BLOCK FOUNDATION		4,290.00 CY	-	-		3,621	170,574	79,621	250,195
			ELEVATED CONCRETE FLOORS, STAIRS, ROOFS		790.00 CY	-	-		473	22,293	10,406	32,699
			TRANSFORMER FOUNDATION, FIRE WALLS, PIERS, CURBS, AND BASIN XXX LB/CY		230.00 CY	-	-		248	11,702	5,462	17,164
			TURBINE PEDESTAL		1,578.00 CY	-	-		2,840	133,811	62,460	196,272
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	BOILER ROOM	26,578.00 SF	-	-		399	18,183	12,690	30,873
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	TURBINE ROOM	31,330.00 SF	-	-		470	21,434	14,959	36,393
			CONCRETE						10,301	483,996	235,075	719,070
		10.23.00	STEEL									
			STRUCTURAL AND GIRT STEEL	INCLUDES GALLERY GRATING	7,066.00 TN	-	-		7,179	323,560	121,039	444,599
			STEEL						7,179	323,560	121,039	444,599
		10.24.00	ARCHITECTURAL									
			MASONRY WALLS - CONCRETE BLOCK & TILES		1,713.00 SF	-	-		14	600	380	980
			MAIN BUILDING ELEVATOR		1.00 EA	-	-		150	6,293	3,416	9,708
			MAIN BUILDING HVAC		1.00 LS	-	-		1,125	47,194	25,616	72,810
			MAIN BUILDING ELECTRICAL	INCLUDES: (7)7.5KVA TO 30KVA TRANSFORMERS, (1738) FIXTURES, MISC. ELECTRICAL	1.00 LS	-	-		938	39,349	21,358	60,707
			ARCHITECTURAL						2,227	93,435	50,770	144,205
		10.31.00	MECHANICAL EQUIPMENT									
			MAIN BOILER AND APPURTENANCES		9,419.00 TN	-	-		19,073	859,642	416,755	1,276,397
			PRECIPITATOR		5,322.00 TN	-	-		10,777	452,097	245,393	697,491
			STEAM TURBINE GENERATOR		1,080.00 TN	-	-		2,187	91,745	49,798	141,543
			FLUES AND DUCTS INCL. BREACHING		1,774.00 TN	-	-		4,790	215,876	104,657	320,533
			FEEDWATER DEAERATING EQUIPMENT		156.00 TN	-	-		316	13,252	7,193	20,445
			MISC. SMALL TANKS		49.00 TN	-	-		99	4,162	2,259	6,422
			WATER TREATMENT DEMINERALIZATION & CHEMICAL TREATMENT EQUIPMENT		177.00 TN	-	-		358	15,036	8,161	23,197
			MISCELLANEOUS EQUIPMENT		508.00 TN	-	-		1,029	43,154	23,424	66,577
			CONDENSER		318.00 TN	-	-		644	27,014	14,663	41,676
			CONDENSER	SS TUBING	106.00 TN	-	-		215	9,005	4,888	13,892
			CIRCULATING WATER SYSTEM EQUIPMENT		365.00 TN	-	-		739	31,006	16,830	47,836
			MECHANICAL EQUIPMENT						40,227	1,761,989	894,021	2,656,010
		10.33.00	MATERIAL HANDLING EQUIPMENT									
			MATERIAL HANDLING EQUIPMENT	ASH HANDLING EQUIPMENT	104.00 TN	-	-		281	11,780	6,394	18,173
			MATERIAL HANDLING EQUIPMENT	CONVEYORS INCLUDING TRUSSES, BENTS, EQUIPMENT	73.00 TN	-	-		197	8,268	4,488	12,756

Area	Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
			MATERIAL HANDLING EQUIPMENT						478	20,048	10,882	30,930
		10.35.00	PIPING									
			PIPING, VALVES AND HANGERS	BOILER PLANT PIPING AND HANGERS	1,498.00 TN	-	-		3,033	127,253	69,072	196,325
			PIPING, VALVES AND HANGERS	BOP	170.00 TN	-	-		344	14,441	7,839	22,280
			PIPING						3,378	141,695	76,910	218,605
		10.41.00	ELECTRICAL EQUIPMENT									
			GENERATOR BUS TRANSFORMERS AND MISC. ELECTRICAL EQUIPMENT		370.00 TN	-	-		989	41,473	22,511	63,985
			ELECTRICAL EQUIPMENT						989	41,473	22,511	63,985
			WHOLE PLANT DEMOLITION						64,779	2,866,195	1,411,208	4,277,404
	18.00.00		SCRAP VALUE									
		18.10.00	MIXED STEEL									
			CARBON STEEL		-28,449.00 TN	-	(6,144,984)	-				(6,144,984)
			MIXED STEEL				(6,144,984)					(6,144,984)
		18.20.00	STAINLESS STEEL									
			STAINLESS STEEL	CONDENSER TUBING	-106.00 TN	-	(121,900)	-				(121,900)
			STAINLESS STEEL				(121,900)					(121,900)
		18.30.00	COPPER									
			#1 INSULATED COPPER WIRE 65%		-14.00 TN	-	(44,548)	-				(44,548)
			COPPER				(44,548)					(44,548)
			SCRAP VALUE				(6,311,432)					(6,311,432)
	22.00.00		CONCRETE									
		22.13.00	CONCRETE									
			FLOWABLE FILL, 1500 PSI	CIRCULATING WATER SYSTEM PIPING AND TUNNELS	1,700.00 CY	-	-	204,000	850	35,233	10,906	250,138
			CONCRETE					204,000	850	35,233	10,906	250,138
			CONCRETE					204,000	850	35,233	10,906	250,138
			2 UNIT 4				(6,311,432)	204,000	65,629	2,901,428	1,422,114	(1,783,890)
3			COMMON FACILITIES									
	10.00.00		WHOLE PLANT DEMOLITION									
		10.21.00	CIVIL WORK									
			EXCAVATION BERMS AND DIKES		6,925.00 CY	-	-		416	19,487	19,188	38,675
			EXCAVATION BORROW		344,056.00 CY	-	-		20,643	968,174	953,310	1,921,484
			FILL	WASTE WATER POND	19,602.00 CY	-	-		1,176	55,160	54,313	109,473
			REMOVE RAILROAD TRACK RAIL, TIES, SPREAD BALLAST	COAL YARD LOOPS	28,300.00 TF	-	-		6,368	298,636	294,051	592,687
			REMOVE RAILROAD TRACK RAIL, TIES, SPREAD BALLAST	NE STATION INDUSTRIAL SPUR, BRIDGES TO REMAIN	43,970.00 TF	-	-		9,893	463,993	456,870	920,864
			COVERED DISTURBED AREAS OF SITE W/2 FT TOPSOIL		331,379.00 CY	-	-		16,569	777,084	765,154	1,542,238
			SEED AND MULCH		102.70 AC	-	-	158,774	1,341	50,472	5,660	214,906
			PAVED SURFACES		20,000.00 SY	-	-		2,400	112,560	110,832	223,392
			CIVIL WORK					158,774	58,806	2,745,565	2,659,379	5,563,718
		10.22.00	CONCRETE									
			MISCELLANEOUS EQUIPMENT PADS AND SITE BUILDINGS FOUNDATIONS XXX LB/CY		1,750.00 CY	-	-		1,969	92,748	43,293	136,041
			CONCRETE WATER SOFTENER TANKS		200.00 CY	-	-		225	10,600	4,948	15,548
			BUILDING/EQUIPMENT FOUNDATION/PAD	TANKS	1,620.00 CY	-	-		1,823	85,858	40,077	125,935
			BUILDING/EQUIPMENT FOUNDATION/PAD	FUEL EQUIPMENT - MATERIAL HANDLING	1,765.00 CY	-	-		1,986	93,543	43,664	137,207
			TRANSFORMER YARD FOUNDATIONS, FIRE WALLS, PIERS, CURBS, AND BASIN XXX LB/CY		100.00 CY	-	-		108	5,088	2,375	7,463
			CURBS		16,850.00 LF	-	-		202	9,526	4,446	13,972
			WALKWAYS		120.00 CY	-	-		63	2,968	1,385	4,353
			DISCHARGE OUTFALL STRUCTURE		300.00 CY	-	-		225	10,600	4,948	15,548
			CONCRETE						6,600	310,930	145,136	456,065
		10.24.00	ARCHITECTURAL									
			BUILDING, WAREHOUSE AND STOREROOMS		13,950.00 CF	-	-		42	1,832	1,161	2,993
			BUILDING, VEHICLE MAINTENANCE FACILITY		144,620.00 CF	-	-		434	18,994	12,031	31,025
			BUILDING, ADMINISTRATION BUILDING STEEL FRAME/CONCRETE BLOCK BUILDING		94,500.00 CF	-	-		284	12,412	7,861	20,273
			BUILDING, PUMPHOUSES - STEEL FRAME/CONCRETE BLOCK BUILDING		10,000.00 CF	-	-		30	1,313	832	2,145
			BUILDING, PRECIPITATOR LOWER ENCLOSURE		523,000.00 CF	-	-		1,569	68,691	43,508	112,199

Area	Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
		10.24.00	ARCHITECTURAL									
			BUILDING, BUILDINGS AND TOWERS - CRUSHER HOUSE		440,000.00 CF	-	-		1,320	57,790	36,604	94,393
			BUILDING, MISCELLANEOUS SMALL SIZE BUILDINGS		20,000.00 CF	-	-		60	2,627	1,664	4,291
			OUTDOOR LIGHTING		1.00 LS	-	-		750	35,333	16,493	51,825
			ARCHITECTURAL						4,488	198,991	120,153	319,144
		10.31.00	MECHANICAL EQUIPMENT									
			TANKS AND SILOS	(2) DEMIN WATER STORAGE TANKS 375,000, 37' DIA AND 40' TALL	86.00 TN	-	-		232	9,741	5,287	15,028
			TANKS AND SILOS	TREATED WATER STORAGE TANKS 1,000,000 GALLONS	95.00 TN	-	-		257	10,760	5,841	16,601
			MISCELLANEOUS EQUIPMENT	1.2 MW DIESEL GENERATOR AND ENCLOSURE	37.00 TN	-	-		100	4,191	2,275	6,466
			CIRCULATING WATER SYSTEM EQUIPMENT		300.00 TN	-	-		608	25,485	13,833	39,317
			COOLING TOWER	INCLUDES DEMO OF BASIN WALLS ABOVE GRADE AND FLUMES	2.00 EA	-	-		10,000	471,100	219,900	691,000
			MISCELLANEOUS FUEL OIL EQUIPMENT		70.00 TN	-	-		189	7,929	4,304	12,232
			HYDRANTS		1.00 LS	-	-		188	8,794	8,659	17,453
			GANTRY CRANE		1.00 EA	-	-		150	6,293	3,416	9,708
			MECHANICAL EQUIPMENT						11,723	544,291	263,513	807,804
		10.33.00	MATERIAL HANDLING EQUIPMENT									
			MATERIAL HANDLING EQUIPMENT	CONVEYORS INCLUDING TRUSSES, BENTS, EQUIPMENT	1,500.00 TN	-	-		4,050	169,898	92,219	262,116
			MATERIAL HANDLING EQUIPMENT						4,050	169,898	92,219	262,116
		10.41.00	ELECTRICAL EQUIPMENT									
			STATION AUXILIARY TRANSFORMERS AND MISC. ELECTRICAL EQUIPMENT		113.00 TN	-	-		302	12,666	6,875	19,541
			ELECTRICAL EQUIPMENT						302	12,666	6,875	19,541
		10.86.00	WASTE									
			RUBBISH AND TENANT DEBRIS - TRANSPORT & DISPOSAL		3,000.00 CY	81,000	-					81,000
			RAILROAD TIES - TRANSPORT & DISPOSAL		5,540.00 CY	149,580	-					149,580
			WASTE			230,580						230,580
			WHOLE PLANT DEMOLITION			230,580		158,774	85,969	3,982,341	3,287,274	7,658,970
	18.00.00		SCRAP VALUE									
		18.10.00	MIXED STEEL									
			CARBON STEEL		-2,201.00 TN	-	(475,416)	-				(475,416)
			CARBON STEEL	RAILROAD RAIL	-2,770.00 TN	-	(598,320)	-				(598,320)
			MIXED STEEL				(1,073,736)					(1,073,736)
		18.30.00	COPPER									
			#1 INSULATED COPPER WIRE 65%		-21.00 TN	-	(66,822)	-				(66,822)
			COPPER				(66,822)					(66,822)
			SCRAP VALUE				(1,140,558)					(1,140,558)
	22.00.00		CONCRETE									
		22.13.00	CONCRETE									
			FLOWABLE FILL, 1500 PSI	CIRCULATING WATER SYSTEM PIPING AND TUNNELS	1,800.00 CY	-	-	216,000	900	37,305	11,547	264,852
			CONCRETE					216,000	900	37,305	11,547	264,852
			CONCRETE					216,000	900	37,305	11,547	264,852
			3 COMMON FACILITIES			230,580	(1,140,558)	374,774	86,869	4,019,646	3,298,821	6,783,264
4			2014 MODS UNIT 3									
	10.00.00		WHOLE PLANT DEMOLITION									
		10.22.00	CONCRETE									
			BUILDING/EQUIPMENT FOUNDATION/PAD	BOOSTER FAN	395.00 CY	-	-		444	20,935	9,772	30,706
			BUILDING/EQUIPMENT FOUNDATION/PAD	ACI UNLOADING & STORAGE	110.00 CY	-	-		124	5,830	2,721	8,551
			BUILDING/EQUIPMENT FOUNDATION/PAD	ACI FEED & INJECTION	29.00 CY	-	-		33	1,537	717	2,254
			BUILDING/EQUIPMENT FOUNDATION/PAD	DSI UNLOADING & STORAGE	275.00 CY	-	-		309	14,575	6,803	21,378
			BUILDING/EQUIPMENT FOUNDATION/PAD	DSI FEED & INJECTION	19.00 CY	-	-		21	1,007	470	1,477
			BUILDING/EQUIPMENT FOUNDATION/PAD	CHILLER LEAN TO FOUNDATION	169.00 CY	-	-		190	8,957	4,181	13,138
			BUILDING/EQUIPMENT FOUNDATION/PAD	ACI/DSI ELECTRICAL PDC BUILDING	89.00 CY	-	-		100	4,717	2,202	6,919
			BUILDING/EQUIPMENT FOUNDATION/PAD	FABRIC FILTER SWITCHGEAR & CONTROL PDC BUILDING	91.00 CY	-	-		102	4,823	2,251	7,074
			BUILDING/EQUIPMENT FOUNDATION/PAD	ACI/DSI BLOWER BUILDING	336.00 CY	-	-		378	17,808	8,312	26,120

Area	Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
		10.22.00	CONCRETE									
			BUILDING/EQUIPMENT FOUNDATION/PAD	AIR COMPRESSOR/BY PRODUCT BLOWER BUILDING	247.00 CY	-	-		278	13,091	6,110	19,201
			BUILDING/EQUIPMENT FOUNDATION/PAD	DUCTWORK SUPPORT STEEL	162.00 CY	-	-		182	8,586	4,008	12,593
			BUILDING/EQUIPMENT FOUNDATION/PAD	FABRIC FILTER	377.00 CY	-	-		424	19,981	9,327	29,307
			BUILDING/EQUIPMENT FOUNDATION/PAD	FLY ASH EXTRACTION SYSTEM	161.60 CY	-	-		182	8,565	3,998	12,562
			BUILDING/EQUIPMENT FOUNDATION/PAD	UTILITY RACK	122.00 CY	-	-		137	6,466	3,018	9,484
			CONCRETE						2,905	136,875	63,890	200,765
		10.23.00	STEEL									
			STRUCTURAL AND GIRT STEEL	ACI UNLOADING & STORAGE	6.70 TN	-	-		7	307	115	422
			STRUCTURAL AND GIRT STEEL	DSI UNLOADING & STORAGE	83.00 TN	-	-		84	3,801	1,422	5,222
			STRUCTURAL AND GIRT STEEL	FCR DUCTWORK SUPPORT STEEL	169.30 TN	-	-		172	7,752	2,900	10,653
			STRUCTURAL AND GIRT STEEL	FLY ASH EXTRACTION SYSTEM	1.00 TN	-	-		1	46	17	63
			STRUCTURAL AND GIRT STEEL	BY PRODUCT HANDLING SYSTEM	35.00 TN	-	-		36	1,603	600	2,202
			STRUCTURAL AND GIRT STEEL	UTILITY RACK	147.00 TN	-	-		149	6,731	2,518	9,249
			STEEL						449	20,240	7,571	27,811
		10.24.00	ARCHITECTURAL									
			CHILLER LEAN-TO 34'X61'X15'	FF/ACI/DSI/BYPRODUCT PROJECT	31,110.00 CF	-	-		93	4,086	2,588	6,674
			ACI/DSI ELECTRICAL PDC BUILDING 28'X53'X15'	FF/ACI/DSI/BYPRODUCT PROJECT	22,260.00 CF	-	-		67	2,924	1,852	4,775
			FABRIC FILTER SWITCHGEAR & CONTROL PDC BUILDING 28'X60'X15'	FF/ACI/DSI/BYPRODUCT PROJECT	25,200.00 CF	-	-		76	3,310	2,096	5,406
			ACI/DSI BLOWER BUILDING 45'X92'X30'	FF/ACI/DSI/BYPRODUCT PROJECT	124,200.00 CF	-	-		373	16,312	10,332	26,645
			AIR COMPRESSOR/BY PRODUCT BLOWER BUILDING 85'X35'X24'	FF/ACI/DSI/BYPRODUCT PROJECT	71,400.00 CF	-	-		214	9,378	5,940	15,317
			ARCHITECTURAL						823	36,010	22,808	58,818
		10.31.00	MECHANICAL EQUIPMENT									
			FLUES AND DUCTS INCL. BREACHING	FF/ACI/DSI/BYPRODUCT PROJECT	533.00 TN	-	-		1,439	64,860	31,444	96,305
			BOOSTER ID FAN, 7000 HP	FF/ACI/DSI/BYPRODUCT PROJECT	99.00 TN	-	-		200	8,410	4,565	12,975
			SILOS	ACI UNLOADING & STORAGE	24.00 TN	-	-		65	2,718	1,476	4,194
			SILOS (2)	DSI UNLOADING & STORAGE	157.20 TN	-	-		424	17,805	9,665	27,470
			SILO	BY PRODUCT HANDLING SYSTEM	53.00 TN	-	-		143	6,003	3,258	9,261
			MISCELLANEOUS EQUIPMENT	ACI FEED & INJECTION	21.00 TN	-	-		43	1,784	968	2,752
			MISCELLANEOUS EQUIPMENT	DSI UNLOADING & STORAGE	5.00 TN	-	-		10	425	231	655
			MISCELLANEOUS EQUIPMENT	DSI FEED & INJECTION	4.00 TN	-	-		8	340	184	524
			MISCELLANEOUS EQUIPMENT	FABRIC FILTER	1,088.00 TN	-	-		2,203	92,424	50,167	142,591
			MISCELLANEOUS EQUIPMENT	BY PRODUCT HANDLING SYSTEM EQUIPMENT	10.00 TN	-	-		20	849	461	1,311
			MECHANICAL EQUIPMENT						4,556	195,619	102,419	298,038
		10.35.00	PIPING									
			PIPING, VALVES AND HANGERS	DSI UNLOADING & STORAGE	5.00 TN	-	-		10	425	231	655
			PIPING, VALVES AND HANGERS	DSI FEED & INJECTION	26.00 TN	-	-		53	2,209	1,199	3,408
			PIPING, VALVES AND HANGERS	FABRIC FILTER	20.20 TN	-	-		41	1,716	931	2,647
			PIPING, VALVES AND HANGERS	FLY ASH EXTRACTION SYSTEM	7.00 TN	-	-		14	595	323	917
			PIPING, VALVES AND HANGERS	PLANT AIR	15.50 TN	-	-		31	1,317	715	2,031
			PIPING, VALVES AND HANGERS	SS INSTRUMENT AIR	13.90 TN	-	-		28	1,181	641	1,822
			PIPING, VALVES AND HANGERS	SERVICE WATER	14.40 TN	-	-		29	1,223	664	1,887
			PIPING, VALVES AND HANGERS	SS POTABLE WATER	0.90 TN	-	-		2	76	42	118
			PIPING, VALVES AND HANGERS	SS INSTRUMENT AIR	2.00 TN	-	-		4	170	92	262
			PIPING						212	8,911	4,837	13,748
			WHOLE PLANT DEMOLITION						8,946	397,654	201,526	599,179
	18.00.00		SCRAP VALUE									
		18.10.00	MIXED STEEL									
			CARBON STEEL		-2,524.30 TN	-	(545,249)	-				(545,249)
			MIXED STEEL				(545,249)					(545,249)
		18.20.00	STAINLESS STEEL									
			STAINLESS STEEL	PIPE	-14.80 TN	-	(17,020)	-				(17,020)
			STAINLESS STEEL	SS INSTRUMENT AIR	-2.00 TN	-	(2,300)	-				(2,300)
			STAINLESS STEEL				(19,320)					(19,320)
		18.30.00	COPPER									
			#1 INSULATED COPPER WIRE 65%		-20.10 TN	-	(63,958)	-				(63,958)
			COPPER				(63,958)					(63,958)
			SCRAP VALUE				(628,527)					(628,527)
			4 2014 MODS UNIT 3				**(628,527)**		**8,946**	**397,654**	**201,526**	**(29,348)**

Area	Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
5			2014 MODS COMMON FACILITIES									
	10.00.00		WHOLE PLANT DEMOLITION									
		10.21.00	CIVIL WORK									
			EXCAVATION BERMS AND DIKES	STORM WATER POND	1,485.00 CY	-	-		89	4,179	4,115	8,293
			EXCAVATION BORROW	STORM WATER POND	6,453.00 CY	-	-		387	18,159	17,880	36,039
			REMOVE RAILROAD TRACK RAIL, TIES, SPREAD BALLAST	DSI PROJECT 115 LB RAIL, FF/ACI/DSI/BYPRODUCT PROJECT	3,300.00 TF	-	-		743	34,823	34,289	69,112
			COVERED DISTURBED AREAS OF SITE W/2 FT TOPSOIL	STORM WATER POND	4,968.00 CY	-	-		248	11,650	11,471	23,121
			SEED AND MULCH	STORM WATER POND	2.00 AC	-	-	3,092	26	983	110	4,185
			PAVED SURFACES	FF/ACI/DSI/BYPRODUCT PROJECT	9,336.00 SY	-	-		1,120	52,543	51,736	104,279
			CIVIL WORK					3,092	2,614	122,337	119,601	245,030
		10.86.00	WASTE									
			RAILROAD TIES - TRANSPORT & DISPOSAL		795.00 CY	21,465	-					21,465
			WASTE			21,465						21,465
			WHOLE PLANT DEMOLITION			21,465		3,092	2,614	122,337	119,601	266,495
	18.00.00		SCRAP VALUE									
		18.10.00	MIXED STEEL									
			CARBON STEEL	DSI PROJECT 115 LB RAIL, FF/ACI/DSI/BYPRODUCT PROJECT	-127.00 TN	-	(27,432)	-				(27,432)
			MIXED STEEL				(27,432)					(27,432)
			SCRAP VALUE				(27,432)					(27,432)
			5 2014 MODS COMMON FACILITIES			21,465	(27,432)	3,092	2,614	122,337	119,601	239,063

Riverside Plant Units 1-4

DEMOLITION COST ESTIMATE

Prepared for:
Public Service Company of Oklahoma (Owner)
and American Electric Power

Project No. A13351.022
February 26, 2021
Revision 0

55 East Monroe Street
Chicago, IL 60603-5780 USA

Issue Summary Page

Revision Number	Date	Purpose	Prepared By	Reviewed By	Approved By	Pages Affected
A	02/1/21	Comments	G. Amen	B. Andric		All
0	2/26/21	Use	G. Amen	B. Andric	A. Redd	All

TABLE OF CONTENTS

1.0 INTRODUCTION

The Riverside Plant Units 1 through 4, located near Jenks, Oklahoma, in Tulsa County, is owned and operated by Public Service Company of Oklahoma (PSO). The plant consists of four (4) generating units. Units 1 and 2 are gas fired units, each with a nameplate capacity of 473 megawatts and were placed in operation in 1974 and 1976 respectively. Units 3 and 4 are simple cycle gas-fired units (peakers) with a total generating nameplate capacity of 170 megawatts (85 megawatts each) and were both placed in operation in 2008. There is one (1) emergency power diesel generator rated at 2.7 megawatts and was placed in operation in 1976.

Sargent & Lundy (S&L) previously prepared a Demolition Cost Estimate for Riverside Plant in 2017. AEP recently contracted S&L to update the previously prepared cost estimate to 1st Quarter 2021 pricing levels. The objective of the conceptual demolition cost estimate is to determine the gross demolition costs for Riverside Plant (including gross salvage credits and any other benefits). The cost estimate considers the demolition/dismantlement methodology which complies with current OSHA rules and regulations.

2.0 COST ESTIMATE SUMMARY

Demolition Cost Estimate No 23322G, was prepared and is included as Exhibit 1. The cost estimate is structured into a code of accounts as identified in Table 2-1.

Table 2-1
Cost Estimate Code of Accounts

Account Number	Description
10	Demolition Costs (including steel, equipment & piping scrap value)
18	Scrap Value Costs
21	Civil Work Costs
90, 91, 92	General Conditions Costs
93	Indirect Costs
94	Contingency Costs
96	Escalation Costs

The results of the cost estimate are provided in Table 2-2 below:

Table 2-2
Cost Estimate Results Summary

Description	Total Cost
Demolition Cost	$ 18,374,043
Scrap Value	($ 9,768,172)
General Conditions Costs	$ 5,811,700
Indirect Cost	$ 2,418,600
Contingency Cost	$ 5,455,900
Total Project Cost	$ 22,292,071

3.0 TECHNICAL BASIS

The scope of dismantlement includes the complete Riverside Plant generating facility and plant common services. Common facilities include:

- Railroad tracks (except spur that runs through property that is not owned by AEP/PSO)
- Fuel Oil facilities
- Roadways
- Emergency Diesel Generator
- Retention Ponds: Total Retention Pond; Make-Up Water Ponds (total of 2); Process Water Pond

The following are excluded from the scope of the demolition cost estimate:

- Asbestos Removal
- Switchyard
- Make-up water wells

The following scope revisions were included in the current cost estimate:

- New parking area
- Fogging system structures
- Make Up building

4.0 COMMERCIAL BASIS

4.1 General Information

The Conceptual Demolition Cost Estimate prepared for the Riverside Plant is a conceptual estimate of the cost to dismantle Riverside Plant and the Emergency Diesel Generator. Costs were calculated for (1) demolition of existing plant structures and equipment and associated site restoration costs, (2) scrap value of metals, (3) associated indirect costs, and (4) contingency. All units used in the cost estimate are U.S. Standard and all costs are in US Dollars (2021 levels). A two (2) year demolition schedule is anticipated not including asbestos removal (to be performed prior to start of demolition work). All items identified above will be demolished at the same time.

4.2 Quantities/Material Cost

Quantities of pieces of equipment and/or bulk material commodities used in this cost estimate were intended to be reasonable and representative of projects of this type. Material quantities were estimated from the site plot plan and other drawings and data provided by AEP and Plant Personnel.

4.3 Construction Labor Wages

Craft labor rates (Craft Hourly Rate) for the cost estimate are based on the prevailing wages for Tulsa, Oklahoma as published in "R.S. Means Labor Rates for the Construction Industry", 2020 Edition. These prevailing rates are representative of union or non-union rates, whichever is prevailing in the area. Costs have been added to cover social security, workmen's compensation, federal and state unemployment insurance. The resulting burdened craft rates were then used to develop typical crew rates applicable to the task being performed.

4.3.1 Labor Work Schedule and Incentives

The estimate assumed a 5x8 work week. No other labor incentives are included.

4.3.2 General Conditions Cost

Allowances were included in the cost estimate as direct costs as noted for the following:

- Labor Supervision
- Construction Management
- Field Office Expenses
- Safety
- Temporary Facilities
- Mobilization / Demobilization
- Legal Expenses / Claims
- Small Tools & Consumables
- General Liability Insurance
- Construction Equipment Mobilization / Demobilization
- Freight on Material
- Contractor's General and Administrative Costs

- Contractor's Profit

4.4 Scrap Value

The value of scrap is based on "Scrap Metals Market Watch" as published in the January 2021 Edition of "American Recycler News" (www.americanrecycler.com) using Zone 3 (USA Southwest).
The values obtained are delivered prices to the recycler. Transportation cost to the recycler is assumed @ 30 $/ton resulting in the values below:

- Carbon Steel @ 216 $/ton
- #1 Insulated Copper Wire 65% @ 3,182 $/ton
- Stainless Steel @ 1150 $/ton

Note: 1 Ton = 2,000 Lbs

4.5 Indirect Costs

Allowances were included in the cost estimate as indirect costs as noted for the following:

- Engineering, Procurement and Project Services: None included.
- Construction Management Support: None included.
- Owners Cost: Included as 10.0% of the total direct labor and material cost. Owners Costs include owner project engineering, administration and construction management, permits and fees, legal expenses, taxes, etc.

4.6 Escalation

No allowance for escalation was included in the cost estimate.

4.7 Contingency

Allowances were included in the cost estimate as contingency as noted for the following:

- Scrap Value: Included as a 15.0% reduction in the salvage value resulting in a total net reduction in the salvage value. The contingency assumes a potential drop in salvage value thus increasing the project cost.
- Material: Included as 15.0% of the total material cost.
- Labor: Included as 15.0% of the total labor cost.
- Indirect: Included as 15.0% of the total indirect cost.

4.8 Assumptions

The following assumptions apply to the cost estimate.

- All chemicals will be removed by the Owner prior to demolition, from the facilities to be demolished.
- All fuel oil will be consumed prior to demolition.
- All electrical equipment and wiring is de-energized prior to start of dismantlement.
- No extraordinary environmental costs for demolition have been included. Removal of two (2) feet of fill inside the fuel oil tank foundation is included.
- Asbestos and PCB'**s** are removed from site by others prior to start of demolition.
- Handling, on-site and off-site disposal of hazardous materials would be performed in compliance with methods approved by Owner.
- Switchyards within the plant boundaries are not part of the scope, neither are access roads to these facilities. Fences and gates needed to protect the switchyard will be left in place.
- All items above grade and to a depth of two (2) foot will be demolished. Any other items buried more than two (2) foot will remain in place. All foundations are removed and buried on site.
- Underground piping, conduit and cable ducts will be abandoned in place.
- Underground piping larger than four (4) feet diameter will be filled with sand or slurry and capped at the ends to prevent collapse. Non-metal pipe will be collapsed.
- All demolished materials are considered debris, except for organic combustibles and non-embedded metals which have scrap value.
- The basis for salvage estimating is for scrap value only. No resale of equipment or material is included.
- Disturbed areas will be buried under two (2) feet of topsoil mulched and seeded with grass – no other landscaping is included.
- All borrow material is assumed to be from onsite sources.
- Debris not suitable for burial is to be disposed of off-site. Assumed distance to final disposal is within a five (5) mile haul.

5.0 REFERENCES

Drawings utilized in the preparation of the demolition cost estimate are identified in Table 5-1.

Table 5-1
Reference Drawings

Unit	Document Number	Revision	Title
0	52550-1	-------	Riverside Power Station Location
0	61937-E	-------	Site Plan
0	102282-E1	------	Site and Floor Plan Elevations ASD Building
0	1470-2-6811 (PSO#57958)	-------	Plan & Elevations Cooling Tower
2	M2-001	15	Ground Floor Elevations
2	M2-002	13	Mezzanine Floor
2	M2-003	12	Arrangement Operating Floor
2	M2-004	11	Arrangement, Heater Platform, Upper Burner Platform, Boiler Access Platform
2	M2-006	11	Arrangement Boiler Access Platform, Flash Tank Platform
2	M2-007	10	Arrangement Boiler Access Platform, Bypass System
2	M2-008	7	Arrangement Section Looking North
2	M2-009	8	Arrangement Mezzanine Machine Shop, Transformer Location
2	MS-002	5	Arrangement Separate Structures
0	SY-002	17	Site Grading Plan – North Area
0	SY-053	25	Site Finishing Plan - South Area
0	SY-054	2	Site Finishing Plan -West Area
0	SY-055	2	Site Finishing Plant – East Area
0	SY-061	6	Plot Plan Area 1
0	SY-062	5	Plot Plan Area II
0	SY-063	9	Plot Plan Area III
0	SY-064	13	Plot Plan Area IV
0	SY-066	14	Plot Plan Area VI
2	S2-101	7	Architectural, Turbine Area – West Elevation
2	S2-102	6	Architectural, Turbine Area – East Elevation
2	S2-103	7	Architectural, Turbine Area – South Elevation
1	M1-001	19	Arrangement Ground Floor
1	M1-002	13	Arrangement Mezzanine Floor Lower Burner Platform and Burner Platform
1	M1-003	15	Arrangement Operating Floor, Burner Platform
1	M1-004	12	Arrangement Upper Burners Platform, Heater Platform
1	M1-005	11	Arrangement Boiler Access Platform, Deareator Storage Tank Platform
1	M1-006	12	Arrangement Boiler Access Platforms, Deaerator Platform
1	M1-007	12	Arrangement Boiler Access Platforms, Flash Tank Platform
1	M1-008	12	Arrangement Boiler Access Platform, Bypass System Platform

Unit	Document Number	Revision	Title
1	M1-009	11	Arrangement Section Looking North
1	M1-010	18	Control Wing, Ground Floor
1	M1-011	10	Control Wing, Mezzanine Floor
1	M1-012	9	Control Wing, Operating Floor
1	MS-001	13	Arrangement Separate Structure
1	S1-101	8	Turbine Area West Elevation
1	S1-102	8	Turbine Area North Elevation
1	S1-103	8	Turbine Area East Elevation
1	S1-104	7	Turbine Area South Elevation

0 = Common For Units 1 through 4

1 = Unit 1

2 = Unit 2

3 = Unit 3

4 = Unit 4

EXHIBIT 1
Riverside Plant
Demolition Cost Estimate No. 23322G

AEP/PSO
RIVERSIDE PLANT - UNITS 1 & 2 AND PEAKERS
DEMOLITION COST ESTIMATE

Estimator	GA
Labor rate table	21OKTUL
Project No.	A13351.022
Estimate Date	2/24/21
Reviewed By	BA
Approved By	BA
Estimate No.	23322G

Area	Description	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
1	UNIT 1	16,200	(4,511,366)	204,000	67,995	3,051,973	1,481,428	242,236
2	UNIT 2	16,200	(4,395,158)	204,000	66,091	2,969,079	1,438,636	232,757
3	PEAKERS (UNITS 3 & 4)	918	(369,522)	3,092	9,758	432,640	235,635	302,764
4	COMMON FACILITIES	3,313,971	(492,126)	226,980	63,251	2,920,861	1,858,429	7,828,115
	TOTAL DIRECT	3,347,289	(9,768,172)	638,072	207,095	9,374,554	5,014,128	8,605,872

Estimate Totals

Description	Amount	Totals	Hours
Labor	9,374,554		207,095
Material	638,072		
Subcontract	3,347,289		
Construction Equipment	5,014,128		
Scrap Value	(9,768,172)		
	8,605,871	**8,605,871**	
General Conditions			
Additional Labor Costs			
90-1 Labor Supervision	562,500		
90-2 Show-up Time	187,500		
90-3 Cost Due To OT 5-10's			
90-4 Cost Due To OT 6-10's			
90-5 Per Diem			
Site Overheads			
91-1 Construction Management	1,012,500		
91-2 Field Office Expenses	222,700		
91-3 Material&Quality Control			
91-4 Site Services			
91-5 Safety	200,000		
91-6 Temporary Facilities	152,200		
91-7 Temporary Utilities			
91-8 Mobilization/Demob.	160,400		
91-9 Legal Expenses/Claims	23,700		
Other Construction Indirects			
92-1 Small Tools & Consumables	101,200		
92-2 Scaffolding			
92-3 General Liability Insur.	101,200		
92-4 Constr. Equip. Mob/Demob	50,100		
92-5 Freight on Material	31,900		
92-6 Freight on Scrap			
92-7 Sales Tax			
92-8 Contractors G&A	1,237,700		
92-9 Contractors Profit	1,768,100		
	5,811,700	**14,417,571**	
Project Indirect Costs			
93-1 Engineering Services			
93-2 CM Support			
93-3 Start-Up/Commissioning			
93-4 Start-Up/Spare Parts			
93-5 Excess Liability Insur.			
93-6 Sales Tax On Indirects			
93-7 Owners Cost	2,418,600		
93-8 EPC Fee			
	2,418,600	**16,836,171**	
Contingency			
94-1 Contingency on Const Eq	887,500		
94-3 Contingency on Material	117,600		
94-4 Contingency on Labor	2,120,700		
94-5 Contingency on Subcontr.	502,100		
94-6 Contingency on Scrap	1,465,200		
94-7 Contingency on Indirect	362,800		
	5,455,900	**22,292,071**	
Escalation			
96-1 Escalation on Const Equip			
96-3 Escalation on Material			
96-4 Escalation on Labor			
96-5 Escalation on Subcontract			
96-6 Escalation on Scrap			
96-7 Escalation on Indirects			
		22,292,071	
98 Interest During Constr			
		22,292,071	
Total		**22,292,071**	

Area	Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
1			**UNIT 1**									
	10.00.00		**WHOLE PLANT DEMOLITION**									
		10.22.00	**CONCRETE**									
			BUILDING/EQUIPMENT FOUNDATION/PAD	DRAFT EQUIPMENT FOUNDATION (2FT BELOW GRADE)	7,325.00 CY	-	-		8,241	388,216	181,211	569,427
			BUILDING/EQUIPMENT FOUNDATION/PAD	TRANSFORMER FOUNDATION, FIRE WALLS, PIERS, CURBS, AND BASIN XXX LB/CY	430.00 CY	-	-		484	22,789	10,638	33,427
			BUILDING/EQUIPMENT FOUNDATION/PAD	COOLING TOWER CURB ABOVE GRADE	365.00 CY	-	-		411	19,345	9,030	28,374
			MAIN POWER BLOCK FOUNDATION		3,885.00 CY	-	-		3,279	154,471	72,104	226,575
			ELEVATED CONCRETE FLOOR / ROOF		9,585.00 CY	-	-		5,741	270,478	126,254	396,732
			TURBINE PEDESTAL		1,512.00 CY	-	-		2,722	128,215	59,848	188,063
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	TURBINE ROOM	21,700.00 SF	-	-		326	14,846	10,361	25,207
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	CONTROL HOUSE	11,270.00 SF	-	-		169	7,710	5,381	13,091
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	BOILER ROOM	3,360.00 SF	-	-		50	2,299	1,604	3,903
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	AIR HEATER AND VARIABLE SPEED FAN MOTOR CONTROLS ROOM	11,270.00 SF	-	-		169	7,710	5,381	13,091
			CONCRETE						**21,591**	**1,016,079**	**481,811**	**1,497,890**
		10.23.00	**STEEL**									
			STRUCTURAL AND GIRT STEEL	INCLUDES GALLERY GRATING (40,500SF)	2,615.00 TN	-	-		2,657	119,744	44,794	164,538
			STEEL						**2,657**	**119,744**	**44,794**	**164,538**
		10.24.00	**ARCHITECTURAL**									
			METAL SIDING		59,541.00 SF	-	-		357	16,294	11,371	27,665
			MASONRY WALLS		22,050.00 SF	-	-		176	7,723	4,892	12,614
			MAIN BUILDING ELEVATOR		2.00 EA	-	-		278	11,662	6,330	17,992
			MAIN BUILDING HVAC		1.00 LS	-	-		1,125	47,194	25,616	72,810
			MAIN BUILDING ELECTRICAL	INCLUDES: (5)7.5KVA TO 30KVA TRANSFORMERS, (1048) FIXTURES, MISC. ELECTRICAL	1.00 LS	-	-		900	37,755	20,493	58,248
			ARCHITECTURAL						**2,837**	**120,628**	**68,702**	**189,330**
		10.25.00	**STACK**									
			REMOVAL OF U1 STEEL STACK 216"D AND 183' H		100.00 TN	-	-		2,400	108,168	40,464	148,632
			STACK						**2,400**	**108,168**	**40,464**	**148,632**
		10.31.00	**MECHANICAL EQUIPMENT**									
			MAIN BOILER AND APPURTENANCES, INCL. ID, FD FANS AND MOTORS		9,025.00 TN	-	-		18,276	823,682	399,322	1,223,005
			STEAM TURBINE GENERATOR		1,035.00 TN	-	-		2,096	87,922	47,723	135,645
			FLUES AND DUCTS INCL. BREACHING		1,700.00 TN	-	-		4,590	206,871	100,292	307,163
			FEEDWATER SYSTEM DEAERATING EQUIPMENT		150.00 TN	-	-		304	12,742	6,916	19,659
			TANKS AND SILOS	DEMIN WATER TANKS, (2) 46'6" DIA X 40' TALL	86.00 TN	-	-		232	9,741	5,287	15,028
			TANKS AND SILOS	SERVICE WATER STORAGE TANK, 57' DIA X 40' TALL	75.00 TN	-	-		203	8,495	4,611	13,106
			TANKS AND SILOS	MISC. SMALL TANKS	111.00 TN	-	-		300	12,572	6,824	19,397
			WATER TREATMENT DEMINERALIZATION & CHEMICAL TREATMENT EQUIPMENT		170.00 TN	-	-		344	14,441	7,839	22,280
			MISCELLANEOUS EQUIPMENT		526.00 TN	-	-		1,065	44,683	24,253	68,937
			CONDENSER		312.00 TN	-	-		632	26,504	14,386	40,890
			CONDENSER SS TUBING		94.00 TN	-	-		190	7,985	4,334	12,319
			CIRCULATING WATER SYSTEM EQUIPMENT		350.00 TN	-	-		709	29,732	16,138	45,870
			COOLING TOWER		1,134,000.00 CF	-	-		2,268	95,143	51,642	146,785
			TURBINE ROOM O.H. CRANE 70/30 TON		1.00 EA	-	-		267	12,034	4,502	16,535
			TURBINE ROOM GANTRY CRANE 5 TON		1.00 EA	-	-		28	1,262	472	1,734
			CIRCULATING WATER SYSTEM GANTRY CRANE		1.00 EA	-	-		150	6,293	3,416	9,708
			MECHANICAL EQUIPMENT						**31,653**	**1,400,102**	**697,958**	**2,098,060**
		10.35.00	**PIPING**									
			PIPING, VALVES AND HANGERS	BOILER PLANT PIPING AND HANGERS	1,435.00 TN	-	-		2,906	121,901	66,167	188,068
			PIPING, VALVES AND HANGERS	BALANCE OF PLANT PIPING AND HANGERS	170.00 TN	-	-		344	14,441	7,839	22,280
			PIPING						**3,250**	**136,343**	**74,005**	**210,348**
		10.41.00	**ELECTRICAL EQUIPMENT**									
			GENERATOR BUS TRANSFORMERS AND MISC. ELECTRICAL EQUIPMENT		1,032.00 TN	-	-		2,758	115,677	62,788	178,466

Area	Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
			ELECTRICAL EQUIPMENT						2,758	115,677	62,788	178,466
		10.86.00	WASTE									
			RUBBISH AND TENANT DEBRIS - TRANSPORT & DISPOSAL		600.00 CY	16,200	-					16,200
			WASTE			16,200						16,200
			WHOLE PLANT DEMOLITION			16,200			67,145	3,016,741	1,470,523	4,503,464
	18.00.00		SCRAP VALUE									
		18.10.00	MIXED STEEL									
			CARBON STEEL		-18,986.00 TN	-	(4,100,976)	-				(4,100,976)
			MIXED STEEL				(4,100,976)					(4,100,976)
		18.20.00	STAINLESS STEEL									
			STAINLESS STEEL	CONDENSER TUBING	-94.00 TN	-	(108,100)	-				(108,100)
			STAINLESS STEEL				(108,100)					(108,100)
		18.30.00	COPPER									
			#1 INSULATED COPPER WIRE 65%		-95.00 TN	-	(302,290)	-				(302,290)
			COPPER				(302,290)					(302,290)
			SCRAP VALUE				(4,511,366)					(4,511,366)
	22.00.00		CONCRETE									
		22.13.00	CONCRETE									
			FLOWABLE FILL, 1500 PSI	CIRCULATING WATER SYSTEM PIPING AND TUNNELS	1,700.00 CY	-	-	204,000	850	35,233	10,906	250,138
			CONCRETE					204,000	850	35,233	10,906	250,138
			CONCRETE					204,000	850	35,233	10,906	250,138
			1 UNIT 1			**16,200**	**(4,511,366)**	**204,000**	**67,995**	**3,051,973**	**1,481,428**	**242,236**
2			**UNIT 2**									
	10.00.00		WHOLE PLANT DEMOLITION									
		10.22.00	CONCRETE									
			BUILDING/EQUIPMENT FOUNDATION/PAD	DRAFT EQUIPMENT FOUNDATION (2FT BELOW GRADE)	7,325.00 CY	-	-		8,241	388,216	181,211	569,427
			BUILDING/EQUIPMENT FOUNDATION/PAD	TRANSFORMER FOUNDATION, FIRE WALLS, PIERS, CURBS, AND BASIN XXX LB/CY	430.00 CY	-	-		484	22,789	10,638	33,427
			BUILDING/EQUIPMENT FOUNDATION/PAD	COOLING TOWER CURB ABOVE GRADE	365.00 CY	-	-		411	19,345	9,030	28,374
			MAIN POWER BLOCK FOUNDATION		3,885.00 CY	-	-		3,279	154,471	72,104	226,575
			ELEVATED CONCRETE FLOOR / ROOF		9,585.00 CY	-	-		5,741	270,478	126,254	396,732
			TURBINE PEDESTAL		1,512.00 CY	-	-		2,722	128,215	59,848	188,063
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	TURBINE ROOM	21,700.00 SF	-	-		326	14,846	10,361	25,207
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	BOILER ROOM	3,360.00 SF	-	-		50	2,299	1,604	3,903
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	MISC.	1,063.00 SF	-	-		16	727	508	1,235
			CONCRETE						21,269	1,001,385	471,557	1,472,942
		10.23.00	STEEL									
			STRUCTURAL AND GIRT STEEL	INCLUDES GALLERY GRATING	2,152.00 TN	-	-		2,186	98,542	36,863	135,406
			STEEL						2,186	98,542	36,863	135,406
		10.24.00	ARCHITECTURAL									
			METAL SIDING		59,541.00 SF	-	-		357	16,294	11,371	27,665
			MASONRY WALLS		1,713.00 SF	-	-		14	600	380	980
			MAIN BUILDING ELEVATOR		1.00 EA	-	-		75	3,146	1,708	4,854
			MAIN BUILDING HVAC		1.00 LS	-	-		1,125	47,194	25,616	72,810
			MAIN BUILDING ELECTRICAL	INCLUDES: (7)7.5KVA TO 30KVA TRANSFORMERS, (1846) FIXTURES, MISC. ELECTRICAL	1.00 LS	-	-		900	37,755	20,493	58,248
			ARCHITECTURAL						2,471	104,989	59,568	164,557
		10.25.00	STACK									
			REMOVAL OF U2 CORTEN STEEL STACK 216" DIA X 184' H		100.00 TN	-	-		2,400	108,168	40,464	148,632
			STACK						2,400	108,168	40,464	148,632
		10.31.00	MECHANICAL EQUIPMENT									

Area	Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
		10.31.00	MECHANICAL EQUIPMENT									
			MAIN BOILER AND APPURTENANCES, INCL. ID, FD FANS AND MOTORS	B & W SUPERCRITICAL	9,156.00 TN	-	-		18,541	835,638	405,119	1,240,757
			STEAM TURBINE GENERATOR		1,035.00 TN	-	-		2,096	87,922	47,723	135,645
			FLUES AND DUCTS INCL. BREACHING		1,700.00 TN	-	-		4,590	206,871	100,292	307,163
			FEEDWATER SYSTEM DEAERATING EQUIPMENT		150.00 TN	-	-		304	12,742	6,916	19,659
			TANKS AND SILOS	MISC. SMALL TANKS	52.00 TN	-	-		140	5,890	3,197	9,087
			WATER TREATMENT DEMINERALIZATION & CHEMICAL TREATMENT EQUIPMENT		170.00 TN	-	-		344	14,441	7,839	22,280
			MISCELLANEOUS EQUIPMENT		540.00 TN	-	-		1,094	45,872	24,899	70,771
			CONDENSER		312.00 TN	-	-		632	26,504	14,386	40,890
			CONDENSER SS TUBING		94.00 TN	-	-		190	7,985	4,334	12,319
			CIRCULATING WATER SYSTEM EQUIPMENT		350.00 TN	-	-		709	29,732	16,138	45,870
			COOLING TOWER		1,134,000.00 CF	-	-		2,268	95,143	51,642	146,785
			MECHANICAL EQUIPMENT						30,908	1,368,741	682,485	2,051,226
		10.35.00	PIPING									
			PIPING, VALVES AND HANGERS	BOILER PLANT PIPING AND HANGERS	1,435.00 TN	-	-		2,906	121,901	66,167	188,068
			PIPING, VALVES AND HANGERS	BALANCE OF PLANT PIPING AND HANGERS	170.00 TN	-	-		344	14,441	7,839	22,280
			PIPING						3,250	136,343	74,005	210,348
		10.41.00	ELECTRICAL EQUIPMENT									
			GENERATOR BUS TRANSFORMERS AND MISC. ELECTRICAL EQUIPMENT		1,032.00 TN	-	-		2,758	115,677	62,788	178,466
			ELECTRICAL EQUIPMENT						2,758	115,677	62,788	178,466
		10.86.00	WASTE									
			RUBBISH AND TENANT DEBRIS - TRANSPORT & DISPOSAL		600.00 CY	16,200	-					16,200
			WASTE			16,200						16,200
			WHOLE PLANT DEMOLITION			16,200			65,241	2,933,846	1,427,731	4,377,777
	18.00.00		SCRAP VALUE									
		18.10.00	MIXED STEEL									
			CARBON STEEL		-18,448.00 TN	-	(3,984,768)	-				(3,984,768)
			MIXED STEEL				(3,984,768)					(3,984,768)
		18.20.00	STAINLESS STEEL									
			STAINLESS STEEL	CONDENSER TUBING	-94.00 TN	-	(108,100)	-				(108,100)
			STAINLESS STEEL				(108,100)					(108,100)
		18.30.00	COPPER									
			#1 INSULATED COPPER WIRE 65%		-95.00 TN	-	(302,290)	-				(302,290)
			COPPER				(302,290)					(302,290)
			SCRAP VALUE				(4,395,158)					(4,395,158)
	22.00.00		CONCRETE									
		22.13.00	CONCRETE									
			FLOWABLE FILL, 1500 PSI	CIRCULATING WATER SYSTEM PIPING AND TUNNELS	1,700.00 CY	-	-	204,000	850	35,233	10,906	250,138
			CONCRETE					204,000	850	35,233	10,906	250,138
			CONCRETE					204,000	850	35,233	10,906	250,138
			2 UNIT 2			**16,200**	**(4,395,158)**	**204,000**	**66,091**	**2,969,079**	**1,438,636**	**232,757**
3			**PEAKERS (UNITS 3 & 4)**									
	10.00.00		WHOLE PLANT DEMOLITION									
		10.21.00	CIVIL WORK									
			EXCAVATION BORROW		4,598.00 CY	-	-		276	12,939	12,740	25,679
			REMOVE FENCE		1,030.00 LF	-	-		26	1,208	1,189	2,397
			COVERED DISTURBED AREAS OF SITE W/2 FT TOPSOIL		4,840.00 CY	-	-		242	11,350	11,176	22,525
			SEED AND MULCH	BLUE GRASS 4#/MSF	2.00 AC	-	-	3,092	26	986	111	4,188
			PAVED SURFACES		1,333.00 SY	-	-		160	7,502	7,387	14,889
			CIVIL WORK					3,092	730	33,984	32,602	69,679
		10.22.00	CONCRETE									
			BUILDING/EQUIPMENT FOUNDATION/PAD	TANK FOUNDATION AND BERMS	30.00 CY	-	-		34	1,590	742	2,332
			BUILDING/EQUIPMENT FOUNDATION/PAD	MISC. EQUIPMENT AND SITE BUILDING FOUNDATIONS	992.00 CY	-	-		1,116	52,575	24,541	77,116
			TURBINE PEDESTAL		1,460.00 CY	-	-		2,628	123,805	57,790	181,595
			WALKWAYS		100.00 CY	-	-		53	2,473	1,154	3,628

Area	Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
			CONCRETE						3,830	180,443	84,227	264,670
		10.24.00	ARCHITECTURAL									
			BUILDING	UNIT 3 FOGGING SYSTEM BUILDING	21,060.00 CF	-	-		63	2,766	1,752	4,518
			BUILDING	UNIT 4 FOGGING SYSTEM BUILDING	9,360.00 CF	-	-		28	1,229	779	2,008
			ARCHITECTURAL						91	3,995	2,531	6,526
		10.31.00	MECHANICAL EQUIPMENT									
			COMBUSTION TURBINE	GE 2 X 85.4MW, GE7E/EA	1,050.00 TN	-	-		3,675	154,166	83,680	237,846
			TANKS AND SILOS	MISC. STORAGE TANKS AND PUMPS	120.00 TN	-	-		324	13,592	7,377	20,969
			MECHANICAL EQUIPMENT						3,999	167,758	91,057	258,815
		10.35.00	PIPING									
			PIPING, VALVES AND HANGERS	FUEL OIL AND MISC. PIPING	100.00 TN	-	-		203	8,495	4,611	13,106
			PIPING						203	8,495	4,611	13,106
		10.41.00	ELECTRICAL EQUIPMENT									
			MISCELLANEOUS ELECTRICAL EQUIPMENT	INTERCONNECTING ELECTRICAL EQUIPMENT	254.00 TN	-	-		905	37,965	20,607	58,572
			ELECTRICAL EQUIPMENT						905	37,965	20,607	58,572
		10.86.00	WASTE									
			RUBBISH AND TENANT DEBRIS - TRANSPORT & DISPOSAL	BUILDING WASTE	34.00 CY	918	-					918
			WASTE			918						918
			WHOLE PLANT DEMOLITION			918		3,092	9,758	432,640	235,635	672,286
	18.00.00		SCRAP VALUE									
		18.10.00	MIXED STEEL									
			CARBON STEEL		-1,524.00 TN	-	(329,184)	-				(329,184)
			MIXED STEEL				(329,184)					(329,184)
		18.30.00	COPPER									
			COPPER		-12.50 TN	-	(40,338)	-			-	(40,338)
			COPPER				(40,338)					(40,338)
			SCRAP VALUE				(369,522)					(369,522)
			3 PEAKERS (UNITS 3 & 4)			**918**	**(369,522)**	**3,092**	**9,758**	**432,640**	**235,635**	**302,764**
4			**COMMON FACILITIES**									
	10.00.00		WHOLE PLANT DEMOLITION									
		10.21.00	CIVIL WORK									
			EXCAVATION BERMS AND DIKES		15,513.00 CY	-	-		931	41,950	15,693	57,643
			EXCAVATION BORROW		373,154.00 CY	-	-		22,389	1,050,055	-	1,050,055
			REMOVE RAILROAD TRACK RAIL, TIES, SPREAD BALLAST		1,700.00 TF	-	-		383	17,939	17,664	35,603
			COVERED DISTURBED AREAS OF SITE W/2 FT TOPSOIL		266,667.00 CY	-	-		13,333	625,334	615,734	1,241,068
			SEED AND MULCH	BLUE GRASS 4#/MSF	130.00 AC	-	-	200,980	1,703	64,084	7,187	272,251
			PAVED SURFACES		20,000.00 SY	-	-		2,400	112,560	110,832	223,392
			PAVED SURFACES	NEW PARKING AREA OUTSIDE VFD BUILDING	2,400.00 SY	-	-		288	13,507	13,300	26,807
			DISCHARGE CLOSURE		1.00 LS	-	-	26,000	300	14,070	13,854	53,924
			CIVIL WORK					226,980	41,727	1,939,500	794,263	2,960,743
		10.22.00	CONCRETE									
			BUILDING/EQUIPMENT FOUNDATION/PAD		1,750.00 CY	-	-		1,969	92,748	43,293	136,041
			BUILDING/EQUIPMENT FOUNDATION/PAD	TANK FOUNDATIONS AND CONCRETE BERMS	3,042.00 CY	-	-		3,422	161,222	75,255	236,477
			BUILDING/EQUIPMENT FOUNDATION/PAD	CONCRETE WATER SOFTENER TANKS	200.00 CY	-	-		225	10,600	4,948	15,548
			BUILDING/EQUIPMENT FOUNDATION/PAD	TRANSFORMER FOUNDATION, FIRE WALLS, PIERS, CURBS, AND BASIN XXX LB/CY	100.00 CY	-	-		113	5,300	2,474	7,774
			CURBS		16,850.00 LF	-	-		202	9,483	9,338	18,821
			WALKWAYS		120.00 CY	-	-		63	2,968	1,385	4,353
			CONCRETE						5,994	282,321	136,693	419,013
		10.24.00	ARCHITECTURAL									
			BUILDING	WAREHOUSE MACHINE SHOP (STEEL FRAME)	260,000.00 CF	-	-		780	34,148	21,629	55,778
			BUILDING	ASD (STEEL FRAME / CONCRETE BLOCK)	82,320.00 CF	-	-		247	10,812	6,848	17,660
			BUILDING	CIRCULATING WATER CHEM FEED	12,250.00 CF	-	-		37	1,609	1,019	2,628

Area	Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
		10.24.00	ARCHITECTURAL									
			BUILDING	(CONCRETE BLOCK)	12,250.00 CF	-	-		37	1,609	1,019	2,628
			BUILDING	TWO WAREHOUSES, 100'X40'X12' (STEEL FRAME)	96,000.00 CF	-	-		288	12,609	7,986	20,595
			BUILDING	EQUIPMENT SHED	60,000.00 CF	-	-		180	7,880	4,991	12,872
			BUILDING	ADMINISTRATION	49,000.00 CF	-	-		147	6,436	4,076	10,512
			BUILDING	COOLING TOWER SWITCHGEAR	5,500.00 CF	-	-		17	722	458	1,180
			BUILDING	MISCELLANEOUS SMALL SIZE BUILDINGS	18,000.00 CF	-	-		54	2,364	1,497	3,862
			BUILDING	MAKE UP BUILDING	13,770.00 CF	-	-		41	1,809	1,146	2,954
			OUTDOOR LIGHTING		1.00 LS	-	-		750	35,333	16,493	51,825
			ARCHITECTURAL						2,541	113,721	66,144	179,865
		10.31.00	MECHANICAL EQUIPMENT									
			TANKS AND SILOS	(4) FOUR FUEL OIL TANKS, 200,000 BBL EACH	1,500.00 TN	-	-		4,050	169,898	92,219	262,116
			TANKS AND SILOS	MISC. STORAGE TANKS AND PUMPS	120.00 TN	-	-		324	13,592	7,377	20,969
			MISCELLANEOUS EQUIPMENT	(1) - 2.75 MW DIESEL GENERATORS	64.00 TN	-	-		173	7,249	3,935	11,184
			MISCELLANEOUS FUEL OIL EQUIPMENT		70.00 TN	-	-		189	7,929	4,304	12,232
			HYDRANTS		1.00 LS	-	-		188	8,817	8,682	17,499
			MECHANICAL EQUIPMENT						4,924	207,484	116,516	324,000
		10.41.00	ELECTRICAL EQUIPMENT									
			STATION AUXILIARY TRANSFORMERS AND MISC. ELECTRICAL EQUIPMENT		150.00 TN	-	-		401	16,814	9,126	25,940
			ELECTRICAL EQUIPMENT						401	16,814	9,126	25,940
		10.86.00	WASTE									
			RUBBISH AND TENANT DEBRIS - TRANSPORT & DISPOSAL	BUILDING WASTE	663.00 CY	17,901	-					17,901
			RAILROAD TIES - TRANSPORT & DISPOSAL		410.00 CY	11,070	-					11,070
			TRANSPORTATION AND DISPOSAL	SPECIAL WASTE - NON-HAZ. CONTAMINATED SOIL	109,500.00 CY	3,285,000	-					3,285,000
			WASTE			3,313,971						3,313,971
			WHOLE PLANT DEMOLITION			3,313,971		226,980	55,586	2,559,840	1,122,742	7,223,533
	18.00.00		SCRAP VALUE									
		18.10.00	MIXED STEEL									
			CARBON STEEL		-1,904.00 TN	-	(411,264)	-				(411,264)
			CARBON STEEL	RR TRACKS	-65.00 TN	-	(14,040)	-				(14,040)
			MIXED STEEL				(425,304)					(425,304)
		18.30.00	COPPER									
			#1 INSULATED COPPER WIRE 65%		-21.00 TN	-	(66,822)	-				(66,822)
			COPPER				(66,822)					(66,822)
			SCRAP VALUE				(492,126)					(492,126)
	21.00.00		CIVIL WORK									
		21.17.00	EXCAVATION									
			MASS EXCAVATION, CLAY USING 1.5 CY BACKHOE AND (6) 12 CY DUMP TRUCKS, 4 MI ROUNDTRIP	SPECIAL WASTE - NON-HAZ. CONTAMINATED SOIL	109,500.00 CY	-	-		7,665	361,022	735,687	1,096,708
			EXCAVATION						7,665	361,022	735,687	1,096,708
			CIVIL WORK						7,665	361,022	735,687	1,096,708
			4 COMMON FACILITIES			**3,313,971**	**(492,126)**	**226,980**	**63,251**	**2,920,861**	**1,858,429**	**7,828,115**

Southwestern Plant Units 1-5

DEMOLITION COST ESTIMATE

Prepared for:
Public Service Company of Oklahoma (Owner)
and American Electric Power

Project No. A13351.022
February 26, 2021
Revision 0

55 East Monroe Street
Chicago, IL 60603-5780 USA

Issue Summary Page

Revision Number	Date	Purpose	Prepared By	Reviewed By	Approved By	Pages Affected
A	1/25/21	Comments	G. Amen	B. Andric		All
0	2/26/21	Use	G. Amen	B. Andric	A. Redd	All

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1.0 INTRODUCTION

The Southwestern Plant Units 1 through 5 located near Andarko, Oklahoma, in Caddo County, is owned and operated by Public Service Company of Oklahoma (PSO). The plant consists of five (5) generating units. Units 1 and 2 with a total generating nameplate capacity of 168 megawatts were placed in operation in 1952 and 1954 respectively. Unit 3 with a total generating nameplate capacity of 315 megawatts was placed in operation in 1967. Units 4 and 5 are simple cycle generators with a total generating nameplate capacity of 173 megawatts. Units 4 and 5 were placed in operation in 2008. There is one (1) emergency diesel generator rated at 2 megawatts.

Sargent & Lundy (S&L) previously prepared a Conceptual Demolition Cost Estimate for Southwestern Plant Units 1 through 5 in 2017. AEP recently contracted S&L to update the previously prepared cost estimate to 1st Quarter 2021 pricing levels. The objective of the conceptual demolition cost estimate is to determine the gross demolition costs for Southwestern Plant Units 1 through 5 (including gross salvage credits and any other benefits). The cost estimate considers the demolition/dismantlement methodology which complies with current OSHA rules and regulations

2.0 COST ESTIMATE SUMMARY

Demolition Cost Estimate No 23328F, was prepared and is included as Exhibit 1. The cost estimate is structured into a code of accounts as identified in Table 2-1.

Table 2-1
Cost Estimate Code of Accounts

Account Number	Description
10	Demolition Costs (including steel, equipment & piping scrap value)
18	Scrap Value Costs
21	Civil Work Costs
90, 91, 92	General Conditions Costs
93	Indirect Costs
94	Contingency Costs
96	Escalation Costs

The results of the cost estimate are provided in Table 2-2 below:

Table 2-2
Cost Estimate Results Summary

Description	Total Cost
Demolition Cost	$ 8,137,139
Scrap Value	($ 6,637,906)
General Conditions Costs	$ 2,965,900
Indirect Cost	$ 1,110,300
Contingency Cost	$ 2,827,600
Total Project Cost	$ 8,403,033

3.0 TECHNICAL BASIS

The scope of dismantlement includes the complete Southwestern Plant Units 1-5 generating facility and plant common services associated with all units. Common facilities include:

- Railroad tracks
- Fuel Oil facilities
- Roadways
- Emergency Diesel Generator
- Retention Ponds: Make-Up Water Ponds (Reservoir 1 and 2); Sludge Pond North of Washita

The following are excluded from the scope of the demolition cost estimate:

- Asbestos Removal
- Switchyard
- Reservoir

The following scope revisions were included in the current cost estimate:

- None

4.0 COMMERCIAL BASIS

4.1 General Information

The Demolition Cost Estimate prepared for the Southwestern Plant is a conceptual estimate of the cost to dismantle Southwestern Plant Units 1-5 and the associated Emergency Diesel Generator. Costs were calculated for (1) demolition of existing plant structures and equipment and associated site restoration costs, (2) scrap value of metals, (3) associated indirect costs, and (4) contingency. All units used in the cost estimate are U.S. Standard and all costs are in US Dollars (2021 levels). A two (2) year demolition schedule is anticipated not including asbestos removal (to be performed prior to start of demolition work). All items identified above will be demolished at the same time.

4.2 Quantities/Material Cost

Quantities of pieces of equipment and/or bulk material commodities used in this cost estimate were intended to be reasonable and representative of projects of this type. Material quantities were estimated from the site plot plan and other drawings and data provided by AEP and Plant Personnel.

4.3 Construction Labor Wages

Craft labor rates (Craft Hourly Rate) for the cost estimate are based on the prevailing wages for Lawton, Oklahoma as published in "R.S. Means Labor Rates for the Construction Industry", 2021 Edition. These prevailing rates are representative of union or non-union rates, whichever is prevailing in the area. Costs have been added to cover social security, workmen's compensation, federal and state unemployment insurance. The resulting burdened craft rates were then used to develop typical crew rates applicable to the task being performed.

4.3.1 Labor Work Schedule and Incentives

The estimate assumed a 5x8 work week. No other labor incentives are included.

4.3.2 General Conditions Cost

Allowances were included in the cost estimate as direct costs as noted for the following:

- Labor Supervision
- Construction Management
- Field Office Expenses
- Safety
- Temporary Facilities
- Mobilization / Demobilization
- Legal Expenses / Claims
- Small Tools & Consumables
- General Liability Insurance
- Construction Equipment Mobilization / Demobilization
- Freight on Material

- Contractor's General and Administrative Costs
- Contractor's Profit

4.4 Scrap Value

The value of scrap is based on "Scrap Metals Market Watch" as published in the January 2021 Edition of "American Recycler News" (www.americanrecycler.com) using Zone 3 (USA Southwest).
The values obtained are delivered prices to the recycler. Transportation cost to the recycler is assumed @ 30 $/ton resulting in the values below:

- Carbon Steel @ 216 $/ton
- Admiralty Brass @ 5,515 $/ton
- #1 Insulated Copper Wire 65% @ 3,182 $/ton
- Stainless Steel @ 1150 $/ton

Note: 1 Ton = 2,000 Lbs

4.5 Indirect Costs

Allowances were included in the cost estimate as indirect costs as noted for the following:

- Engineering, Procurement and Project Services: None included.
- Construction Management Support: None included.
- Owners Cost: Included as 10.0% of the total direct labor and material cost. Owners Costs include owner project engineering, administration and construction management, permits and fees, legal expenses, taxes, etc.

4.6 Escalation

No allowance for escalation was included in the cost estimate.

4.7 Contingency

Allowances were included in the cost estimate as contingency as noted for the following:

- Scrap Value: Included as a 15.0% reduction in the salvage value resulting in a total net reduction in the salvage value. The contingency assumes a potential drop in salvage value thus increasing the project cost.
- Material: Included as 15.0% of the total material cost.
- Labor: Included as 15.0% of the total labor cost.
- Indirect: Included as 15.0% of the total indirect cost.

4.8 Assumptions

The following assumptions apply to the cost estimate.

- All chemicals will be removed by the Owner prior to demolition, from the facilities to be demolished.
- All fuel oil will be consumed prior to demolition.
- All electrical equipment and wiring is de-energized prior to start of dismantlement.
- No extraordinary environmental costs for demolition have been included. Removal of two (2) feet of fill inside the fuel oil tank foundation is included.
- Asbestos and PCB'**s** are removed from site by others prior to start of demolition.
- Handling, on-site and off-site disposal of hazardous materials would be performed in compliance with methods approved by Owner.
- Switchyards within the plant boundaries are not part of the scope, neither are access roads to these facilities. Fences and gates needed to protect the switchyard will be left in place.
- All items above grade and to a depth of two (2) foot will be demolished. Any other items buried more than two (2) foot will remain in place. All foundations are removed and buried on site.
- Underground piping, conduit and cable ducts will be abandoned in place.
- Underground piping larger than four (4) feet diameter will be filled with sand or slurry and capped at the ends to prevent collapse. Non-metal pipe will be collapsed.
- All demolished materials are considered debris, except for organic combustibles and non-embedded metals which have scrap value.
- The basis for salvage estimating is for scrap value only. No resale of equipment or material is included.
- Disturbed areas will be buried under two (2) feet of topsoil mulched and seeded with grass – no other landscaping is included.
- All borrow material is assumed to be from onsite sources.
- Debris not suitable for burial is to be disposed of off-site. Assumed distance to final disposal is within a five (5) mile haul.
- Reservoirs 1 and 2 are perched ponds. The retaining berms will be removed to allow them to drain naturally toward the river.
- Reservoir 3 is to be retained "as is" due to past client commitments.

5.0 REFERENCES

Drawings utilized in the preparation of the demolition cost estimate are identified in Table 5-1.

Table 5-1
Reference Drawings

Unit	Document Number	Revision	Title
4 & 5	500-117 sht 1	0	Site Plot Plan Demin Water Line Route
0	25818-5		Contour and Property Layout
1 & 2	19775-5		Property Plat
0	SKC2197-1		Site Grading Plan – Southwestern Station
0	29708	5	Company Owned Property in & near Caddo Co. OK
0	G003	0	PSO Southwestern Station Reservoir No. 3 Dam Site Plan
	23487-D	5	Property Plat
	SWS-70.40		Table 2.0 "Tanks & Oil Filled Equipment"
3	CB-101	4	Southwestern Station Unit 3, Arrangement, Ground Floor Elevation
3	CB-102	5	Southwestern Station, Unit 3, Arrangement, Mezzanine Floor
3	CB-103	3	Southwestern Station, Unit 3, Arrangement, Operating Floor Elevation
3	CG-001	5	Southwestern Station, Unit 3, Plot Plan
3	CG-002	1	Southwestern Station, Unit 3, Plot Plan
3	CG-003	6	Southwestern Station, Unit 3, Plot Plan – Area A, Underground Utilities
3	CG-004	6	Southwestern Station, Unit 3, Plot Plan – Area B, Underground Utilities
3	CB-104	2	Southwestern Station, Unit 3, Arrangement, Upper Burner Floor, Boiler Access Platform
3	CB-105	2	Southwestern Station, Unit 3, Arrangement, Deareater Floor, Boiler Access Platform
3	CB-106	3	Southwestern Station, Unit 3, Arrangement, Boiler Access Platform Drum Floors Elevation
3	CB-107	2	Southwestern Station, Unit 3, Arrangement, Section Looking South
3	CY-101	4	Southwestern Station, Unit 3, Arrangement, Yard Structures
3	SB-101	1	Southwestern Station, Unit 3, Main Building, East Elevation
3	SB-102	2	Southwestern Station, Unit 3, Main Building, South Elevations
4&5	60-021	2	Three Line Diagram Main GSU and SAT -1 Transformers Southwestern Power Station Units 4 & 5
2	2-16610-1	16	Unit 2 Gen & Main Power Transformer Three Line Diagram

Unit	Document Number	Revision	Title
3	EB-717	2	Wiring Diagram Generator Transformer 3
1	16631-E		Three Line Diagram Gen & Main Power Transformers Unit 1 Southwestern Station

0 = Common

1 = Unit 1

2 = Unit 2

3 = Unit 3

4 = Unit 4

5 = Unit 5

EXHIBIT 1
Southwestern Plant Units 1-5
Demolition Cost Estimate No. 23328F

AEP/PSO
SOUTHWESTERN PLANT - UNITS 1, 2, 3, 4 & 5
DEMOLITION COST ESTIMATE

Estimator	GA
Labor rate table	21OKLAW
Project No.	A13351.022
Estimate Date	2/24/21
Reviewed By	BA
Approved By	BA
Estimate No.	23328E

Area	Description	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
1	UNIT 1		(1,488,736)	180,000	19,073	855,718	410,113	(42,905)
2	UNIT 2		(1,597,168)	180,000	19,149	858,332	410,187	(148,649)
3	UNIT 3		(2,863,966)	144,000	34,943	1,568,292	761,097	(390,577)
4	COMMON FACILITIES	310,932	(233,922)	45,857	21,696	998,219	804,152	1,925,238
5	UNITS 4 & 5		(454,114)	3,092	8,656	382,951	224,196	156,125
	TOTAL DIRECT	310,932	(6,637,906)	552,949	103,517	4,663,513	2,609,745	1,499,233

Estimate Totals

Description	Amount	Totals	Hours
Labor	4,663,513		103,517
Material	552,949		
Subcontract	310,932		
Construction Equipment	2,609,745		
Scrap Value	(6,637,906)		
	1,499,233	**1,499,233**	
General Conditions			
Additional Labor Costs			
90-1 Labor Supervision	279,800		
90-2 Show-up Time	93,300		
90-3 Cost Due To OT 5-10's			
90-4 Cost Due To OT 6-10's			
90-5 Per Diem			
Site Overheads			
91-1 Construction Management	503,700		
91-2 Field Office Expenses	110,800		
91-3 Material&Quality Control			
91-4 Site Services			
91-5 Safety	99,500		
91-6 Temporary Facilities	75,700		
91-7 Temporary Utilities			
91-8 Mobilization/Demob.	79,800		
91-9 Legal Expenses/Claims	11,800		
Other Construction Indirects			
92-1 Small Tools & Consumables	50,400		
92-2 Scaffolding			
92-3 General Liability Insur.	50,400		
92-4 Constr. Equip. Mob/Demob	26,100		
92-5 Freight on Material	27,600		
92-6 Freight on Scrap			
92-7 Sales Tax			
92-8 Contractors G&A	641,100		
92-9 Contractors Profit	915,900		
	2,965,900	**4,465,133**	
Project Indirect Costs			
93-1 Engineering Services			
93-2 CM Support			
93-3 Start-Up/Commissioning			
93-4 Start-Up/Spare Parts			
93-5 Excess Liability Insur.			
93-6 Sales Tax On Indirects			
93-7 Owners Cost	1,110,300		
93-8 EPC Fee			
	1,110,300	**5,575,433**	
Contingency			
94-1 Contingency on Const Eq	461,900		
94-3 Contingency on Material	101,900		
94-4 Contingency on Labor	1,055,000		
94-5 Contingency on Subcontr.	46,600		
94-6 Contingency on Scrap	995,700		
94-7 Contingency on Indirect	166,500		
	2,827,600	**8,403,033**	
Escalation			
96-1 Escalation on Const Equip			
96-3 Escalation on Material			
96-4 Escalation on Labor			
96-5 Escalation on Subcontract			
96-6 Escalation on Scrap			
96-7 Escalation on Indirects			
		8,403,033	
98 Interest During Constr			
		8,403,033	
Total		**8,403,033**	

Area	Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
1			**UNIT 1**									
	10.00.00		**WHOLE PLANT DEMOLITION**									
		10.22.00	**CONCRETE**									
			BUILDING/EQUIPMENT FOUNDATION/PAD	DRAFT EQUIPMENT	208.00 CY	-	-		234	11,024	5,146	16,169
			BUILDING/EQUIPMENT FOUNDATION/PAD	TRANSFORMER FOUNDATION, FIRE WALLS, PIERS, CURBS, AND BASIN, INCL. TRANSFER CAR & R/R TRACK SLAB XXX LB/CY	160.00 CY	-	-		180	8,480	3,958	12,438
			MAIN POWER BLOCK FOUNDATION		1,560.00 CY	-	-		1,317	62,027	28,953	90,980
			ELEVATED CONCRETE FLOORS, STAIRS, ROOFS		285.00 CY	-	-		171	8,042	3,754	11,796
			TURBINE PEDESTAL		777.00 CY	-	-		1,399	65,888	30,755	96,643
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	BOILER ROOM	5,777.00 SF	-	-		87	3,952	1,839	5,791
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	TURBINE ROOM	7,808.00 SF	-	-		117	5,342	3,728	9,070
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	AIR HEATER RM, MISC.	2,092.00 SF	-	-		31	1,431	999	2,430
			CONCRETE						**3,535**	**166,186**	**79,132**	**245,318**
		10.23.00	**STEEL**									
			STRUCTURAL AND GIRT STEEL	INCLUDES GALLERY GRATING (21,700 SF)	1,416.00 TN	-	-		1,439	64,840	24,256	89,096
			STEEL						**1,439**	**64,840**	**24,256**	**89,096**
		10.24.00	**ARCHITECTURAL**									
			MASONRY WALLS		4,165.00 SF	-	-		33	1,459	924	2,383
			MAIN BUILDING ELEVATOR		1.00 EA	-	-		150	6,293	3,416	9,708
			MAIN BUILDING HVAC		1.00 LS	-	-		300	12,585	6,831	19,416
			MAIN BUILDING ELECTRICAL	INCLUDES: 7.5KVA TO 30KVA TRANSFORMERS, FIXTURES, MISC. ELECTRICAL	1.00 LS	-	-		450	18,878	10,247	29,124
			ARCHITECTURAL						**933**	**39,214**	**21,417**	**60,631**
		10.25.00	**CONCRETE CHIMNEY & STACK**									
			STEEL STACK		104.00 TN	-	-		211	8,835	4,795	13,630
			CONCRETE CHIMNEY & STACK						**211**	**8,835**	**4,795**	**13,630**
		10.31.00	**MECHANICAL EQUIPMENT**									
			MAIN BOILER AND APPURTENANCES		1,906.00 TN	-	-		3,860	173,954	84,333	258,288
			BOILER PLANT PIPING AND HANGERS		312.00 TN	-	-		632	26,504	14,386	40,890
			FLUES AND DUCTS INCL. BREACHING		140.00 TN	-	-		378	17,036	8,259	25,296
			FEEDWATER DEAERATING EQUIPMENT		104.00 TN	-	-		211	8,835	4,795	13,630
			TANKS AND SILOS	MISC. SMALL TANKS	50.00 TN	-	-		135	5,663	3,074	8,737
			WATER TREATMENT DEMINERALIZATION & CHEMICAL TREATMENT EQUIPMENT		62.00 TN	-	-		126	5,267	2,859	8,126
			MISCELLANEOUS EQUIPMENT		145.00 TN	-	-		294	12,318	6,686	19,003
			MISCELLANEOUS EQUIPMENT	12 TN GANTRY CRANE	30.00 TN	-	-		81	3,398	1,844	5,242
			TURBINE GENERATOR		500.00 TN	-	-		1,013	42,474	23,055	65,529
			CONDENSER		167.00 TN	-	-		338	14,186	7,700	21,887
			CONDENSER RECOVERABLE ADMIRALTY TUBING	ASSUME 40% LOST TO CORROSION/EROSION	38.00 TN	-	-		77	3,228	1,752	4,980
			CIRCULATING WATER EQUIPMENT - PUMPS, MOTORS, SWITCHGEAR, TRAV. SCREENS		156.00 TN	-	-		316	13,252	7,193	20,445
			COOLING WATER TOWER		1.00 EA	-	-		4,000	188,440	87,960	276,400
			MECHANICAL EQUIPMENT						**11,459**	**514,556**	**253,897**	**768,453**
		10.35.00	**PIPING**									
			PIPING, VALVES AND HANGERS		175.00 TN	-	-		354	14,866	8,069	22,935
			PIPING						**354**	**14,866**	**8,069**	**22,935**
		10.41.00	**ELECTRICAL EQUIPMENT**									
			MISCELLANEOUS ELECTRICAL EQUIPMENT	GENERATOR BUS TRANSFORMERS AND MISC. ELECTRICAL EQUIPMENT	110.00 TN	-	-		392	16,441	8,924	25,366
			ELECTRICAL EQUIPMENT						**392**	**16,441**	**8,924**	**25,366**
			WHOLE PLANT DEMOLITION						**18,323**	**824,938**	**400,490**	**1,225,429**
	18.00.00		**SCRAP VALUE**									
		18.10.00	**MIXED STEEL**									
			CARBON STEEL		-5,377.00 TN	-	(1,161,432)	-				(1,161,432)
			MIXED STEEL				**(1,161,432)**					**(1,161,432)**
		18.30.00	**COPPER**									
			#1 INSULATED COPPER WIRE 65%		-37.00 TN	-	(117,734)	-				(117,734)

Area	Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
		18.30.00	COPPER									
			ADMIRALTY BRASS, 70CU / 30 ZINC	CONDENSER TUBES	-38.00 TN	-	(209,570)	-				(209,570)
			COPPER				(327,304)					(327,304)
			SCRAP VALUE				(1,488,736)					(1,488,736)
	22.00.00		CONCRETE									
		22.13.00	CONCRETE									
			FLOWABLE FILL, 1500 PSI	CIRCULATING WATER SYSTEM PIPING AND TUNNELS	1,500.00 CY	-	-	180,000	750	30,780	9,623	220,403
			CONCRETE					180,000	750	30,780	9,623	220,403
			CONCRETE					180,000	750	30,780	9,623	220,403
			1 UNIT 1				**(1,488,736)**	**180,000**	**19,073**	**855,718**	**410,113**	**(42,905)**
2			**UNIT 2**									
	10.00.00		WHOLE PLANT DEMOLITION									
		10.22.00	CONCRETE									
			BUILDING/EQUIPMENT FOUNDATION/PAD	DRAFT EQUIPMENT	200.00 CY	-	-		225	10,600	4,948	15,548
			BUILDING/EQUIPMENT FOUNDATION/PAD	TRANSFORMER FOUNDATION, FIRE WALLS, PIERS, CURBS, AND BASIN, INCL. TRANSFER CAR & R/R TRACK SLAB XXX LB/CY	160.00 CY	-	-		180	8,480	3,958	12,438
			MAIN POWER BLOCK FOUNDATION		1,116.00 CY	-	-		942	44,373	20,712	65,086
			ELEVATED CONCRETE FLOORS, STAIRS, ROOFS		241.00 CY	-	-		144	6,801	3,174	9,975
			TURBINE PEDESTAL		777.00 CY	-	-		1,399	65,888	30,755	96,643
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	BOILER ROOM	6,943.00 SF	-	-		104	4,750	3,315	8,065
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	TURBINE ROOM	8,122.00 SF	-	-		122	5,557	3,878	9,435
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	AIR HEATER RM, MISC	1,955.00 SF	-	-		29	1,338	933	2,271
			CONCRETE						3,145	147,786	71,674	219,460
		10.23.00	STEEL									
			STRUCTURAL AND GIRT STEEL	INCLUDES GALLERY GRATING (32,028 SF)	1,948.00 TN	-	-		1,979	89,201	33,369	122,570
			STEEL						1,979	89,201	33,369	122,570
		10.24.00	ARCHITECTURAL									
			MASONRY WALLS		5,240.00 SF	-	-		42	1,835	1,162	2,998
			MAIN BUILDING ELEVATOR		1.00 EA	-	-		150	6,293	3,416	9,708
			MAIN BUILDING HVAC		1.00 LS	-	-		300	12,585	6,831	19,416
			MAIN BUILDING ELECTRICAL	INCLUDES: 7.5KVA TO 30KVA TRANSFORMERS, FIXTURES, MISC. ELECTRICAL	1.00 LS	-	-		450	18,878	10,247	29,124
			ARCHITECTURAL						942	39,590	21,655	61,246
		10.25.00	CONCRETE CHIMNEY & STACK									
			STEEL STACK	REMOVAL OF STEEL STACKS 2 EA	158.00 TN	-	-		320	13,422	7,285	20,707
			CONCRETE CHIMNEY & STACK						320	13,422	7,285	20,707
		10.31.00	MECHANICAL EQUIPMENT									
			MAIN BOILER AND APPURTENANCES		1,872.00 TN	-	-		3,791	170,851	82,829	253,680
			BOILER PLANT PIPING AND HANGERS		305.00 TN	-	-		618	25,909	14,063	39,973
			FLUES AND DUCTS INCL. BREACHING		137.00 TN	-	-		370	16,671	8,082	24,754
			FEEDWATER DEAERATING EQUIPMENT		102.00 TN	-	-		207	8,665	4,703	13,368
			TANKS AND SILOS	MISC. SMALL TANKS	50.00 TN	-	-		135	5,663	3,074	8,737
			WATER TREATMENT DEMINERALIZATION & CHEMICAL TREATMENT EQUIPMENT		60.00 TN	-	-		122	5,097	2,767	7,863
			MISCELLANEOUS EQUIPMENT		145.00 TN	-	-		294	12,318	6,686	19,003
			TURBINE GENERATOR		500.00 TN	-	-		1,013	42,474	23,055	65,529
			CONDENSER		167.00 TN	-	-		338	14,186	7,700	21,887
			CONDENSER RECOVERABLE ADMIRALTY TUBING	ASSUME 40% LOST TO CORROSION/EROSION	38.00 TN	-	-		77	3,228	1,752	4,980
			CIRCULATING WATER EQUIPMENT - PUMPS, MOTORS, SWITCHGEAR, TRAV. SCREENS		150.00 TN	-	-		304	12,742	6,916	19,659
			COOLING WATER TOWER		1.00 EA	-	-		4,000	188,440	87,960	276,400
			MECHANICAL EQUIPMENT						11,266	506,246	249,588	755,833
		10.35.00	PIPING									
			PIPING, VALVES AND HANGERS		175.00 TN	-	-		354	14,866	8,069	22,935
			PIPING						354	14,866	8,069	22,935

Area	Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
		10.41.00	ELECTRICAL EQUIPMENT									
			MISCELLANEOUS ELECTRICAL EQUIPMENT	GENERATOR BUS TRANSFORMERS AND MISC. ELECTRICAL EQUIPMENT	110.00 TN	-	-		392	16,441	8,924	25,366
			ELECTRICAL EQUIPMENT						392	16,441	8,924	25,366
			WHOLE PLANT DEMOLITION						18,399	827,552	400,565	1,228,117
	18.00.00		SCRAP VALUE									
		18.10.00	MIXED STEEL									
			CARBON STEEL		-5,879.00 TN	-	(1,269,864)	-				(1,269,864)
			MIXED STEEL				(1,269,864)					(1,269,864)
		18.30.00	COPPER									
			#1 INSULATED COPPER WIRE 65%		-37.00 TN	-	(117,734)	-				(117,734)
			ADMIRALTY BRASS, 70CU / 30 ZINC	CONDENSER TUBES	-38.00 TN	-	(209,570)	-				(209,570)
			COPPER				(327,304)					(327,304)
			SCRAP VALUE				(1,597,168)					(1,597,168)
	22.00.00		CONCRETE									
		22.13.00	CONCRETE									
			FLOWABLE FILL, 1500 PSI	CIRCULATING WATER SYSTEM PIPING AND TUNNELS	1,500.00 CY	-	-	180,000	750	30,780	9,623	220,403
			CONCRETE					180,000	750	30,780	9,623	220,403
			CONCRETE					180,000	750	30,780	9,623	220,403
			2 UNIT 2				(1,597,168)	180,000	19,149	858,332	410,187	(148,649)
3			UNIT 3									
	10.00.00		WHOLE PLANT DEMOLITION									
		10.22.00	CONCRETE									
			BUILDING/EQUIPMENT FOUNDATION/PAD	DRAFT EQUIPMENT	480.00 CY	-	-		540	25,439	11,875	37,314
			BUILDING/EQUIPMENT FOUNDATION/PAD	TRANSFORMER FOUNDATION, FIRE WALLS, PIERS, CURBS, AND BASIN, INCL. TRANSFER CAR & R/R TRACK SLAB XXX LB/CY	165.00 CY	-	-		186	8,745	4,082	12,827
			MAIN POWER BLOCK FOUNDATION		2,577.00 CY	-	-		2,175	102,464	47,828	150,292
			ELEVATED CONCRETE FLOORS, STAIRS, ROOFS		467.00 CY	-	-		280	13,178	6,151	19,330
			TURBINE PEDESTAL		1,800.00 CY	-	-		3,240	152,636	71,248	223,884
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	BOILER ROOM	4,900.00 SF	-	-		74	3,352	2,340	5,692
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	TURBINE ROOM	16,150.00 SF	-	-		242	11,049	7,711	18,760
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	AIR HEATER RM, MISC.	2,400.00 SF	-	-		36	1,642	1,146	2,788
			CONCRETE						6,772	318,506	152,380	470,885
		10.23.00	STEEL									
			STRUCTURAL AND GIRT STEEL	INCLUDES GALLERY GRATING (40,435 SF)	2,452.00 TN	-	-		2,491	112,280	42,002	154,282
			STEEL						2,491	112,280	42,002	154,282
		10.24.00	ARCHITECTURAL									
			MASONRY WALLS		45,679.00 SF	-	-		365	15,999	10,133	26,132
			MAIN BUILDING HVAC		1.00 LS	-	-		320	13,424	7,286	20,710
			MAIN BUILDING ELECTRICAL	INCLUDES: (6) 7.5KVA TO 30KVA TRANSFORMERS, (570) FIXTURES, MISC. ELECTRICAL	1.00 LS	-	-		550	23,073	12,524	35,596
			ARCHITECTURAL						1,235	52,495	29,943	82,438
		10.25.00	CONCRETE CHIMNEY & STACK									
			STEEL STACK		180.00 TN	-	-		365	15,291	8,300	23,590
			CONCRETE CHIMNEY & STACK						365	15,291	8,300	23,590
		10.31.00	MECHANICAL EQUIPMENT									
			MAIN BOILER AND APPURTENANCES		4,716.00 TN	-	-		9,550	430,414	208,665	639,079
			BOILER PLANT PIPING AND HANGERS		649.00 TN	-	-		1,314	55,132	29,925	85,057
			FLUES AND DUCTS INCL. BREACHING		413.00 TN	-	-		1,115	50,258	24,365	74,623
			FEEDWATER DEAERATING EQUIPMENT		142.00 TN	-	-		288	12,063	6,548	18,610
			TANKS AND SILOS	MISC. SMALL TANKS	83.00 TN	-	-		224	9,401	5,103	14,504
			MISCELLANEOUS EQUIPMENT		260.00 TN	-	-		527	22,087	11,988	34,075
			MISCELLANEOUS EQUIPMENT	INTAKE RACKS, MISC.	50.00 TN	-	-		135	5,663	3,074	8,737
			TURBINE GENERATOR		842.00 TN	-	-		1,705	71,527	38,824	110,351
			CONDENSER		354.00 TN	-	-		717	30,072	16,323	46,395

Area	Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
		10.31.00	MECHANICAL EQUIPMENT									
			CONDENSER TUBING		118.00 TN	-	-		239	10,024	5,441	15,465
			CIRCULATING WATER EQUIPMENT - PUMPS, MOTORS, SWITCHGEAR, TRAV. SCREENS		300.00 TN	-	-		608	25,485	13,833	39,317
			COOLING WATER TOWER		1.00 EA	-	-		5,200	244,972	114,348	359,320
			MECHANICAL EQUIPMENT						21,621	967,096	478,436	1,445,532
		10.35.00	PIPING									
			PIPING, VALVES AND HANGERS		232.00 TN	-	-		470	19,708	10,697	30,405
			PIPING						470	19,708	10,697	30,405
		10.41.00	ELECTRICAL EQUIPMENT									
			MISCELLANEOUS ELECTRICAL EQUIPMENT	GENERATOR BUS TRANSFORMERS AND MISC. ELECTRICAL EQUIPMENT	390.00 TN	-	-		1,390	58,292	31,641	89,933
			ELECTRICAL EQUIPMENT						1,390	58,292	31,641	89,933
			WHOLE PLANT DEMOLITION						34,343	1,543,668	753,399	2,297,067
	18.00.00		SCRAP VALUE									
		18.10.00	MIXED STEEL									
			CARBON STEEL		-11,181.00 TN	-	(2,415,096)	-				(2,415,096)
			MIXED STEEL				(2,415,096)					(2,415,096)
		18.20.00	STAINLESS STEEL									
			STAINLESS STEEL		-118.00 TN	-	(165,672)	-				(165,672)
			STAINLESS STEEL				(165,672)					(165,672)
		18.30.00	COPPER									
			#1 INSULATED COPPER WIRE 65%		-89.00 TN	-	(283,198)	-				(283,198)
			COPPER				(283,198)					(283,198)
			SCRAP VALUE				(2,863,966)					(2,863,966)
	22.00.00		CONCRETE									
		22.13.00	CONCRETE									
			FLOWABLE FILL, 1500 PSI	CIRCULATING WATER SYSTEM PIPING AND TUNNELS	1,200.00 CY	-	-	144,000	600	24,624	7,698	176,322
			CONCRETE					144,000	600	24,624	7,698	176,322
			CONCRETE					144,000	600	24,624	7,698	176,322
			3 UNIT 3				**(2,863,966)**	**144,000**	**34,943**	**1,568,292**	**761,097**	**(390,577)**
4			**COMMON FACILITIES**									
	10.00.00		WHOLE PLANT DEMOLITION									
		10.21.00	CIVIL WORK									
			EXCAVATION BERMS AND DIKES		6,926.00 CY	-	-		416	19,490	19,191	38,680
			EXCAVATION BORROW		95,803.00 CY	-	-		5,748	269,590	265,451	535,041
			REMOVE RAILROAD TRACK RAIL, TIES, SPREAD BALLAST		1,600.00 TF	-	-		360	16,884	16,625	33,509
			COVERED DISTURBED AREAS OF SITE W/2 FT TOPSOIL		102,729.00 CY	-	-		5,136	240,900	237,201	478,101
			SEED AND MULCH		21.90 AC	-	-	33,857	287	10,776	1,211	45,844
			PAVED SURFACES		14,500.00 SY	-	-		1,740	81,606	80,353	161,959
			INTAKE WELLS CLOSURE		1.00 LS	-	-	6,000	143	6,707	6,604	19,310
			DISCHARGE CLOSURE		1.00 LS	-	-	6,000	48	2,251	2,217	10,468
			CIVIL WORK					45,857	13,878	648,202	628,852	1,322,912
		10.22.00	CONCRETE									
			BUILDING/EQUIPMENT FOUNDATION/PAD	TANK FOUNDATIONS AND CONCRETE BERMS	355.00 CY	-	-		399	18,000	6,733	24,733
			BUILDING/EQUIPMENT FOUNDATION/PAD	TRANSFORMER FOUNDATION, FIRE WALLS, PIERS, CURBS, AND BASIN, INCL. TRANSFER CAR & R/R TRACK SLAB XXX LB/CY	50.00 CY	-	-		56	2,650	1,237	3,887
			BUILDING/EQUIPMENT FOUNDATION/PAD		1,010.00 CY	-	-		1,136	53,529	24,986	78,515
			BUILDING/EQUIPMENT FOUNDATION/PAD	NEW BUILDING FOUNDATIONS	186.00 CY	-	-		209	9,858	4,601	14,459
			BUILDING/EQUIPMENT FOUNDATION/PAD	PIPE STORAGE RACK FOUNDATIONS NORTH OF TOWN	145.00 CY	-	-		163	7,685	3,587	11,272
			CURBS		2,000.00 LF	-	-		24	1,126	1,108	2,234
			WALKWAYS		150.00 CY	-	-		79	3,710	1,732	5,442
			INTAKE STRUCTURE		300.00 CY	-	-		420	19,786	9,236	29,022
			DISCHARGE STRUCTURE		100.00 CY	-	-		140	6,595	3,079	9,674
			CONCRETE						2,627	122,938	56,300	179,238
		10.24.00	ARCHITECTURAL									

Area	Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
		10.24.00	ARCHITECTURAL									
			BUILDING	WAREHOUSE AND STOREROOMS	201,400.00 CF	-	-		604	26,452	16,754	43,206
			BUILDING	OFFICE - SHOP BUILDING - STEEL FRAME/CONCRETE BLOCK BUILDING	47,390.00 CF	-	-		142	6,224	3,942	10,167
			BUILDING	PUMPHOUSES - STEEL FRAME/CONCRETE BLOCK BUILDING	4,100.00 CF	-	-		12	538	341	880
			BUILDING	MISCELLANEOUS SMALL SIZE BUILDINGS	20,400.00 CF	-	-		61	2,679	1,697	4,376
			BUILDING	NEW WAREHOUSE BETWEEN RESERVOIR #1&2 40'X80'X20' TALL	64,000.00 CF	-	-		192	8,406	5,324	13,730
			BUILDING	NEW BUILDING NW OF ADMIN BLDG 30'X60'X14' TALL	25,200.00 CF	-	-		76	3,310	2,096	5,406
			OUTDOOR LIGHTING		1.00 LS	-	-		300	14,133	6,597	20,730
			ARCHITECTURAL						1,387	61,742	36,753	98,495
		10.31.00	MECHANICAL EQUIPMENT									
			TANKS AND SILOS	MISCELLANEOUS STORAGE TANKS AND PUMPS	300.00 TN	-	-		810	33,980	18,444	52,423
			MISCELLANEOUS EQUIPMENT	2.0 MW DIESEL DRIVEN GENERATOR AND SHELTER	51.00 TN	-	-		103	4,332	2,352	6,684
			MISCELLANEOUS FUEL OIL EQUIPMENT		390.00 TN	-	-		1,053	44,173	23,977	68,150
			HYDRANTS		1.00 LS	-	-		150	7,035	6,927	13,962
			MECHANICAL EQUIPMENT						2,116	89,520	51,699	141,219
		10.41.00	ELECTRICAL EQUIPMENT									
			MISCELLANEOUS ELECTRICAL EQUIPMENT	STATION AUXILIARY TRANSFORMERS AND MISC. ELECTRICAL EQUIPMENT	60.00 TN	-	-		214	8,968	4,868	13,836
			ELECTRICAL EQUIPMENT						214	8,968	4,868	13,836
		10.86.00	WASTE									
			TRANSPORTATION AND DISPOSAL	SLUDGE POND NORTH OF WASHITA	8,667.00 CY	260,010	-					260,010
			TRANSPORTATION AND DISPOSAL	RUBBISH AND TENANT DEBRIS	1,500.00 CY	40,500	-					40,500
			TRANSPORTATION AND DISPOSAL	RAILROAD TIES	386.00 CY	10,422	-					10,422
			WASTE			310,932						310,932
			WHOLE PLANT DEMOLITION			310,932		45,857	20,223	931,371	778,471	2,066,631
	18.00.00		SCRAP VALUE									
		18.10.00	MIXED STEEL									
			CARBON STEEL		-801.00 TN	-	(173,016)	-				(173,016)
			CARBON STEEL	115 LB/YD RAIL	-61.00 TN	-	(13,176)	-				(13,176)
			MIXED STEEL				(186,192)					(186,192)
		18.30.00	COPPER									
			#1 INSULATED COPPER WIRE 65%		-15.00 TN	-	(47,730)	-				(47,730)
			COPPER				(47,730)					(47,730)
			SCRAP VALUE				(233,922)					(233,922)
	21.00.00		CIVIL WORK									
		21.17.00	EXCAVATION									
			FOUNDATION EXCAVATION, CLAY USING 1 CY BACKHOE	SLUDGE POND NORTH OF WASHITA	8,667.00 CY	-	-		1,473	66,848	25,681	92,529
			EXCAVATION						1,473	66,848	25,681	92,529
			CIVIL WORK						1,473	66,848	25,681	92,529
			4 COMMON FACILITIES			**310,932**	**(233,922)**	**45,857**	**21,696**	**998,219**	**804,152**	**1,925,238**
5			**UNITS 4 & 5**									
	10.00.00		WHOLE PLANT DEMOLITION									
		10.21.00	CIVIL WORK									
			REMOVE FENCE		1,000.00 LF	-	-		25	1,173	1,155	2,327
			COVERED DISTURBED AREAS OF SITE W/2 FT TOPSOIL		9,680.00 CY	-	-		484	22,700	22,351	45,051
			SEED AND MULCH		2.00 AC	-	-	3,092	26	984	111	4,187
			PAVED SURFACES		6,300.00 SY	-	-		756	35,456	34,912	70,368
			CIVIL WORK					3,092	1,291	60,313	58,528	121,933
		10.22.00	CONCRETE									
			BUILDING/EQUIPMENT FOUNDATION/PAD		120.00 CY	-	-		135	6,360	2,969	9,329
			BUILDING/EQUIPMENT FOUNDATION/PAD	TANK FOUNDATIONS	168.00 CY	-	-		189	8,904	4,156	13,060
			TURBINE PEDESTAL	COMBUSTION TURBINE FOUNDATIONS - COMMON MAT AND PEDESTALS XXX LB/CY	1,250.00 CY	-	-		2,250	105,998	49,478	155,475
			WALKWAYS		140.00 CY	-	-		74	3,463	1,616	5,079
			CONCRETE						2,648	124,724	58,219	182,942

Area	Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
		10.24.00	ARCHITECTURAL									
			BUILDING	MISCELLANEOUS SITE BUILDINGS	2,000.00 CF	-	-		6	263	166	429
			ARCHITECTURAL						6	263	166	429
		10.31.00	MECHANICAL EQUIPMENT									
			COMBUSTION TURBINE	2 EA @ 71.2MW	1,050.00 TN	-	-		3,675	154,166	83,680	237,846
			MECHANICAL EQUIPMENT						3,675	154,166	83,680	237,846
		10.35.00	PIPING									
			PIPING, VALVES AND HANGERS	FUEL OIL & MISC. PIPING 2000LF - 2-OIL, 1-WATER	160.00 TN	-	-		324	13,592	7,377	20,969
			PIPING						324	13,592	7,377	20,969
		10.41.00	ELECTRICAL EQUIPMENT									
			MISCELLANEOUS ELECTRICAL EQUIPMENT	INTERCONNECTING ELECTRICAL EQUIPMENT	200.00 TN	-	-		713	29,894	16,226	46,119
			ELECTRICAL EQUIPMENT						713	29,894	16,226	46,119
			WHOLE PLANT DEMOLITION					3,092	8,656	382,951	224,196	610,239
	18.00.00		SCRAP VALUE									
		18.10.00	MIXED STEEL									
			CARBON STEEL		-1,410.00 TN	-	(304,560)	-				(304,560)
			MIXED STEEL				(304,560)					(304,560)
		18.30.00	COPPER									
			#1 INSULATED COPPER WIRE 65%		-47.00 TN	-	(149,554)	-				(149,554)
			COPPER				(149,554)					(149,554)
			SCRAP VALUE				(454,114)					(454,114)
			5 UNITS 4 & 5				**(454,114)**	**3,092**	**8,656**	**382,951**	**224,196**	**156,125**

Tulsa Plant Units 2-4

DEMOLITION COST ESTIMATE

Prepared for:
Public Service Company of Oklahoma (Owner)
and American Electric Power

Project No. A13351.022
February 26, 2021
Revision 0

Sargent & Lundy LLC

55 East Monroe Street
Chicago, IL 60603-5780 USA

Issue Summary Page

Revision Number	Date	Purpose	Prepared By	Reviewed By	Approved By	Pages Affected
A	1/25/21	Comments	G. Amen	B. Andric		All
0	2/26/21	Use	G. Amen	B. Andric	A. Redd	All

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1.0 INTRODUCTION

The Tulsa Plant Units 2 through 4 located in Tulsa, Oklahoma, in Tulsa County, is owned and operated by Public Service Company of Oklahoma (PSO). The plant consists of three (3) generating units; Unit 3 was placed in operation in 1948 and was retired in 2012. Units 2 and 4 with a total generating nameplate capacity of 340 megawatts were placed in operation in 1956 and 1958 respectively. There are three (3) blackstart diesel generators rated at 2.7 megawatts each which were placed in operation in 1967.

Sargent & Lundy (S&L) previously prepared a Demolition Cost Estimate for Tulsa Plant Units 2 through 4 in 2017. AEP recently contracted S&L to update the previously prepared cost estimate to 1st Quarter 2021 pricing levels. The objective of the conceptual demolition cost estimate is to determine the gross demolition costs for Northeastern Plant Units 1 and 2 (including gross salvage credits and any other benefits). The cost estimate considers the demolition/dismantlement methodology which complies with current OSHA rules and regulations.

2.0 COST ESTIMATE SUMMARY

Demolition Cost Estimate No 23330G, was prepared and is included as Exhibit 1. The cost estimate is structured into a code of accounts as identified in Table 2-1.

Table 2-1
Cost Estimate Code of Accounts

Account Number	Description
10	Demolition Costs (including steel, equipment & piping scrap value)
18	Scrap Value Costs
21	Civil Work Costs
90, 91, 92	General Conditions Costs
93	Indirect Costs
94	Contingency Costs
96	Escalation Costs

The results of the cost estimate are provided in Table 2-2 below:

Table 2-2
Cost Estimate Results Summary

Description	Total Cost
Demolition Cost	$ 7,350,341
Scrap Value	($ 5,694,508)
General Conditions Costs	$ 2,645,000
Indirect Cost	$ 999,500
Contingency Cost	$ 2,503,500
Total Project Cost	$ 7,803,833

3.0 TECHNICAL BASIS

The scope of dismantlement includes the complete Tulsa Plant Units 2 through 4 generating facility and plant common services associated with all units. Common facilities include:

- Railroad tracks
- Fuel Oil facilities
- Roadways
- Blackstart Diesel Generators
- Ponds: Total Retention Ponds (Settling Pond and former Cooling Tower Basin) and Secondary Make-Up Water Pond
- Make-Up Water Pump (deep well caisson)

The following are excluded from the scope of the demolition cost estimate:

- Asbestos Removal
- Switchyard
- Per Client's request, the primary make-up water pond was deleted from the estimate

The following scope revisions were included in the current cost estimate:

- New chemical building added

4.0 COMMERCIAL BASIS

4.1 General Information

The Demolition Cost Estimate prepared for the Tulsa Plant is a conceptual estimate of the cost to dismantle Tulsa Plant Units 2-4 and the Black Start Diesel Generators. Costs were calculated for (1) demolition of existing plant structures and equipment and associated site restoration costs, (2) scrap value of metals, (3) associated indirect costs, and (4) contingency. All units used in the cost estimate are U.S. Standard and all costs are in US Dollars (2021 levels). A two (2) year demolition schedule is anticipated not including asbestos removal (to be performed prior to start of demolition work). All items identified above will be demolished at the same time.

4.2 Quantities/Material Cost

Quantities of pieces of equipment and/or bulk material commodities used in this cost estimate were intended to be reasonable and representative of projects of this type. Material quantities were estimated from the site plot plan and other drawings and data provided by AEP and Plant Personnel.

4.3 Construction Labor Wages

Craft labor rates (Craft Hourly Rate) for the cost estimate are based on the prevailing wages for Tulsa, Oklahoma as published in "R.S. Means Labor Rates for the Construction Industry", 2021 Edition. These prevailing rates are representative of union or non-union rates, whichever is prevailing in the area. Costs have been added to cover social security, workmen's compensation, federal and state unemployment insurance. The resulting burdened craft rates were then used to develop typical crew rates applicable to the task being performed.

4.3.1 Labor Work Schedule and Incentives

The estimate assumed a 5x8 work week. No other labor incentives are included.

4.3.2 General Conditions Cost

Allowances were included in the cost estimate as direct costs as noted for the following:

- Labor Supervision
- Construction Management
- Field Office Expenses
- Safety
- Temporary Facilities
- Mobilization / Demobilization

- Legal Expenses / Claims
- Small Tools & Consumables
- General Liability Insurance
- Construction Equipment Mobilization / Demobilization
- Freight on Material
- Contractor's General and Administrative Costs
- Contractor's Profit

4.4 Scrap Value

The value of scrap is based on "Scrap Metals Market Watch" as published in the January 2021 Edition of "American Recycler News" (www.americanrecycler.com) using Zone 3 (USA Southwest).
The values obtained are delivered prices to the recycler. Transportation cost to the recycler is assumed @ 30 $/ton resulting in the values below:

- Carbon Steel @ 216 $/ton
- #1 Insulated Copper Wire 65% @ 3,182 $/ton
- Stainless Steel @ 1150 $/ton

Note: 1 Ton = 2,000 Lbs

4.5 Indirect Costs

Allowances were included in the cost estimate as indirect costs as noted for the following:

- Engineering, Procurement and Project Services: None included.
- Construction Management Support: None included.
- Owners Cost: Included as 10.0% of the total direct labor and material cost. Owners Costs include owner project engineering, administration and construction management, permits and fees, legal expenses, taxes, etc.

4.6 Escalation

No allowance for escalation was included in the cost estimate.

4.7 Contingency

Allowances were included in the cost estimate as contingency as noted for the following:

- Scrap Value: Included as a 15.0% reduction in the salvage value resulting in a total net reduction in the salvage value. The contingency assumes a potential drop in salvage value thus increasing the project cost.
- Material: Included as 15.0% of the total material cost.
- Labor: Included as 15.0% of the total labor cost.
- Indirect: Included as 15.0% of the total indirect cost.

4.8 Assumptions

The following assumptions apply to the cost estimate.

- All chemicals will be removed by the Owner prior to demolition, from the facilities to be demolished.
- All fuel oil will be consumed prior to demolition.
- All electrical equipment and wiring is de-energized prior to start of dismantlement.
- No extraordinary environmental costs for demolition have been included. Removal of two (2) feet of fill inside the fuel oil tank foundation is included.
- Asbestos and PCB's are removed from site by others prior to start of demolition.
- Handling, on-site and off-site disposal of hazardous materials would be performed in compliance with methods approved by Owner.
- Switchyards within the plant boundaries are not part of the scope, neither are access roads to these facilities. Fences and gates needed to protect the switchyard will be left in place.
- Make-up water wells are excluded from the cost estimate.
- All items above grade and to a depth of two (2) foot will be demolished. Any other items buried more than two (2) foot will remain in place. All foundations are removed and buried on site.
- Underground piping, conduit and cable ducts will be abandoned in place.
- Underground piping larger than four (4) feet diameter will be filled with sand or slurry and capped at the ends to prevent collapse. Non-metal pipe will be collapsed.
- All demolished materials are considered debris, except for organic combustibles and non-embedded metals which have scrap value.
- The basis for salvage estimating is for scrap value only. No resale of equipment or material is included.
- Disturbed areas will be buried under two (2) feet of topsoil mulched and seeded with grass – no other landscaping is included.
- All borrow material is assumed to be from onsite sources.
- Debris not suitable for burial is to be disposed of off-site. Assumed distance to final disposal is within a five (5) mile haul.

5.0 REFERENCES

Drawings utilized in the preparation of the demolition cost estimate are identified in Table 5-1.

Table 5-1
Reference Drawings

Unit	Document Number	Revision	Title
0	51642-E	Rev 8	As Built, Property Plat
0	N/A	----------	Proposed Landscape Development Plan
0	PA 1114	Rev 2	Arrangement Section looking North
3	P-3001	Rev 1	Plot Plan Supplement Yard Piping
4	17151-5	Rev 7	Plot Plan
0	25781-5	Rev 5	Street Lighting Plan
0	25782-5	Rev 2	Street Lighting Details
0	25787-5	Rev 2	Proposed Landscape Development Plan
0	25788-5	Rev 2	Landscape Planting Details
0	25789-5	Rev 3	Landscape Planting Details
0	25790-5	Rev 2	Landscape Planting Details

0 = Common

2 = Unit 2

3 = Unit 3

4 = Unit 4

EXHIBIT 1
Tulsa Plant Units 2-4
Demolition Cost Estimate No. 23330G

AEP/PSO
TULSA PLANT - UNITS 2, 3 & 4
DEMOLITION COST ESTIMATE

Estimator	GA
Labor rate table	21OKTUL
Project No.	A13351.022
Estimate Date	2/24/21
Reviewed By	BA
Approved By	BA
Estimate No.	23330G

Area	Description	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
1	UNIT 2		(1,864,068)	144,000	24,753	1,107,653	542,117	(70,298)
2	UNIT 3		(1,642,094)	144,000	23,456	1,053,636	512,205	67,747
3	UNIT 4		(1,887,396)	144,000	23,883	1,066,040	519,056	(158,300)
4	COMMON FACILITIES	410,523	(300,950)	36,734	20,911	957,958	712,419	1,816,684
	TOTAL DIRECT	410,523	(5,694,508)	468,734	93,004	4,185,286	2,285,798	1,655,833

Estimate Totals

Description	Amount	Totals	Hours
Labor	4,185,286		93,004
Material	468,734		
Subcontract	410,523		
Construction Equipment	2,285,798		
Scrap Value	(5,694,508)		
	1,655,833	**1,655,833**	
General Conditions			
Additional Labor Costs			
90-1 Labor Supervision	251,100		
90-2 Show-up Time	83,700		
90-3 Cost Due To OT 5-10's			
90-4 Cost Due To OT 6-10's			
90-5 Per Diem			
Site Overheads			
91-1 Construction Management	452,000		
91-2 Field Office Expenses	99,400		
91-3 Material&Quality Control			
91-4 Site Services			
91-5 Safety	89,300		
91-6 Temporary Facilities	67,900		
91-7 Temporary Utilities			
91-8 Mobilization/Demob.	71,600		
91-9 Legal Expenses/Claims	10,600		
Other Construction Indirects			
92-1 Small Tools & Consumables	45,200		
92-2 Scaffolding			
92-3 General Liability Insur.	45,200		
92-4 Constr. Equip. Mob/Demob	22,900		
92-5 Freight on Material	23,400		
92-6 Freight on Scrap			
92-7 Sales Tax			
92-8 Contractors G&A	569,300		
92-9 Contractors Profit	813,400		
	2,645,000	**4,300,833**	
Project Indirect Costs			
93-1 Engineering Services			
93-2 CM Support			
93-3 Start-Up/Commissioning			
93-4 Start-Up/Spare Parts			
93-5 Excess Liability Insur.			
93-6 Sales Tax On Indirects			
93-7 Owners Cost	999,500		
93-8 EPC Fee			
	999,500	**5,300,333**	
Contingency			
94-1 Contingency on Const Eq	404,600		
94-3 Contingency on Material	86,400		
94-4 Contingency on Labor	946,800		
94-5 Contingency on Subcontr.	61,600		
94-6 Contingency on Scrap	854,200		
94-7 Contingency on Indirect	149,900		
	2,503,500	**7,803,833**	
Escalation			
96-1 Escalation on Const Equip			
96-3 Escalation on Material			
96-4 Escalation on Labor			
96-5 Escalation on Subcontract			
96-6 Escalation on Scrap			
96-7 Escalation on Indirects			
		7,803,833	
98 Interest During Constr			
		7,803,833	
Total		**7,803,833**	

Area	Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
1			**UNIT 2**									
	10.00.00		**WHOLE PLANT DEMOLITION**									
		10.22.00	**CONCRETE**									
			BUILDING/EQUIPMENT FOUNDATION/PAD	DRAFT EQUIPMENT	200.00 CY	-	-		225	10,600	4,948	15,548
			BUILDING/EQUIPMENT FOUNDATION/PAD	TRANSFORMER FOUNDATION, FIRE WALLS, PIERS, CURBS, AND BASIN, INCL. TRANSFER CAR & R/R TRACK SLAB XXX LB/CY	83.00 CY	-	-		93	4,399	2,053	6,452
			MAIN POWER BLOCK FOUNDATION		1,865.00 CY	-	-		1,574	74,154	34,614	108,768
			ELEVATED CONCRETE FLOORS, STAIRS, ROOFS		1,191.00 CY	-	-		713	33,609	15,688	49,297
			TURBINE PEDESTAL		1,178.00 CY	-	-		2,120	99,892	46,628	146,520
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	BOILER ROOM	2,469.00 SF	-	-		37	1,689	786	2,475
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	TURBINE ROOM	16,082.00 SF	-	-		241	11,003	7,678	18,681
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	AIR HEATER RM, MISC.	5,629.00 SF	-	-		84	3,851	2,688	6,539
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	CONTROL HOUSE	2,600.00 SF	-	-		39	1,779	1,241	3,020
			CONCRETE						**5,128**	**240,975**	**116,323**	**357,298**
		10.23.00	**STEEL**									
			STRUCTURAL AND GIRT STEEL	INCLUDES GALLERY GRATING	1,587.00 TN	-	-		1,612	72,671	27,185	99,855
			STEEL						**1,612**	**72,671**	**27,185**	**99,855**
		10.24.00	**ARCHITECTURAL**									
			MASONRY WALLS		11,270.00 SF	-	-		90	3,947	2,500	6,447
			MAIN BUILDING ELEVATOR		1.00 EA	-	-		150	6,293	3,416	9,708
			MAIN BUILDING HVAC		1.00 LS	-	-		300	12,585	7,628	20,213
			MAIN BUILDING ELECTRICAL	INCLUDES: 7.5KVA TO 30KVA TRANSFORMERS, FIXTURES, MISC. ELECTRICAL	1.00 LS	-	-		450	18,878	12,546	31,424
			ARCHITECTURAL						**990**	**41,702**	**26,090**	**67,792**
		10.25.00	**CONCRETE CHIMNEY & STACK**									
			STEEL STACK		20.00 TN	-	-		41	1,699	922	2,621
			CONCRETE CHIMNEY & STACK						**41**	**1,699**	**922**	**2,621**
		10.31.00	**MECHANICAL EQUIPMENT**									
			MAIN BOILER AND APPURTENANCES		2,851.00 TN	-	-		5,773	260,202	126,146	386,348
			BOILER PLANT PIPING AND HANGERS		416.00 TN	-	-		842	35,339	19,181	54,520
			FLUES AND DUCTS INCL. BREACHING		594.00 TN	-	-		1,604	72,283	35,043	107,326
			FEEDWATER DEAERATING EQUIPMENT		119.00 TN	-	-		241	10,109	5,487	15,596
			TANKS AND SILOS	MISC. SMALL TANKS	59.00 TN	-	-		159	6,683	3,627	10,310
			MISCELLANEOUS EQUIPMENT		145.00 TN	-	-		294	12,318	6,686	19,003
			MISCELLANEOUS EQUIPMENT	20 TN GANTRY CRANE, CIRC WATER SYSTEM	25.00 TN	-	-		68	2,832	1,537	4,369
			MISCELLANEOUS EQUIPMENT	OVERHEAD CRANE 100/20 TN	100.00 TN	-	-		270	11,327	6,148	17,474
			MISCELLANEOUS EQUIPMENT	5 TN GANTRY CRANE	10.00 TN	-	-		27	1,133	615	1,747
			MISCELLANEOUS EQUIPMENT	INTAKE RACKS, CIRC WATER SYSTEM	60.00 TN	-	-		162	6,796	3,689	10,485
			TURBINE GENERATOR		720.00 TN	-	-		1,458	61,163	33,199	94,362
			CONDENSER		270.00 TN	-	-		547	22,936	12,450	35,386
			CONDENSER RECOVERABLE STAINLESS STEEL TUBING		74.00 TN	-	-		150	6,286	3,412	9,698
			CIRCULATING WATER EQUIPMENT - PUMPS, MOTORS, SWITCHGEAR, TRAV. SCREENS		356.00 TN	-	-		721	30,242	16,415	46,657
			COOLING WATER TOWER		2.00 EA	-	-		3,000	141,330	65,970	207,300
			MECHANICAL EQUIPMENT						**15,315**	**680,976**	**339,604**	**1,020,581**
		10.35.00	**PIPING**									
			PIPING, VALVES AND HANGERS		175.00 TN	-	-		354	14,866	8,069	22,935
			PIPING						**354**	**14,866**	**8,069**	**22,935**
		10.41.00	**ELECTRICAL EQUIPMENT**									
			MISCELLANEOUS ELECTRICAL EQUIPMENT	GENERATOR BUS TRANSFORMERS AND MISC. ELECTRICAL EQUIPMENT	200.00 TN	-	-		713	29,894	16,226	46,119
			ELECTRICAL EQUIPMENT						**713**	**29,894**	**16,226**	**46,119**
			WHOLE PLANT DEMOLITION						**24,153**	**1,082,783**	**534,419**	**1,617,202**
	18.00.00		**SCRAP VALUE**									
		18.10.00	**MIXED STEEL**									
			CARBON STEEL		-7,707.00 TN	-	(1,664,712)	-				(1,664,712)

Area	Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
			MIXED STEEL				(1,664,712)					(1,664,712)
		18.20.00	STAINLESS STEEL									
			STAINLESS STEEL		-74.00 TN	-	(103,896)	-				(103,896)
			STAINLESS STEEL				(103,896)					(103,896)
		18.30.00	COPPER									
			#1 INSULATED COPPER WIRE 65%		-30.00 TN	-	(95,460)	-				(95,460)
			COPPER				(95,460)					(95,460)
			SCRAP VALUE				(1,864,068)					(1,864,068)
	22.00.00		CONCRETE									
		22.13.00	CONCRETE									
			FLOWABLE FILL, 1500 PSI	CIRCULATING WATER SYSTEM PIPING AND TUNNELS	1,200.00 CY	-	-	144,000	600	24,870	7,698	176,568
			CONCRETE					144,000	600	24,870	7,698	176,568
			CONCRETE					144,000	600	24,870	7,698	176,568
			1 UNIT 2				**(1,864,068)**	**144,000**	**24,753**	**1,107,653**	**542,117**	**(70,298)**
2			**UNIT 3**									
	10.00.00		WHOLE PLANT DEMOLITION									
		10.22.00	CONCRETE									
			BUILDING/EQUIPMENT FOUNDATION/PAD	DRAFT EQUIPMENT	200.00 CY	-	-		225	10,600	4,948	15,548
			BUILDING/EQUIPMENT FOUNDATION/PAD	TRANSFORMER FOUNDATION, FIRE WALLS, PIERS, CURBS, AND BASIN, INCL. TRANSFER CAR & R/R TRACK SLAB XXX LB/CY	70.00 CY	-	-		79	3,710	1,732	5,442
			MAIN POWER BLOCK FOUNDATION		4,187.00 CY	-	-		3,534	166,479	77,709	244,188
			ELEVATED CONCRETE FLOORS, STAIRS, ROOFS		1,040.00 CY	-	-		623	29,348	13,699	43,047
			TURBINE PEDESTAL		1,209.00 CY	-	-		2,176	102,521	47,855	150,375
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	OLD BOILER ROOM	7,865.00 SF	-	-		118	5,381	3,755	9,136
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	NEW BOILER ROOM	4,500.00 SF	-	-		68	3,079	2,149	5,227
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	OLD TURBINE ROOM	18,815.00 SF	-	-		282	12,872	8,983	21,856
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	NEW TURBINE ROOM	10,922.00 SF	-	-		164	7,472	5,215	12,687
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	AIR HEATER RM, MISC	2,640.00 SF	-	-		40	1,806	1,260	3,067
			CONCRETE						7,308	343,267	167,304	510,571
		10.23.00	STEEL									
			STRUCTURAL AND GIRT STEEL	INCLUDES GALLERY GRATING	2,251.00 TN	-	-		2,287	103,076	38,559	141,635
			STEEL						2,287	103,076	38,559	141,635
		10.24.00	ARCHITECTURAL									
			MASONRY WALLS		65,918.00 SF	-	-		527	23,087	14,623	37,710
			MAIN BUILDING ELEVATOR		1.00 EA	-	-		150	6,293	3,416	9,708
			MAIN BUILDING HVAC		1.00 LS	-	-		335	14,053	7,628	21,681
			MAIN BUILDING ELECTRICAL		1.00 LS	-	-		551	23,114	12,546	35,661
			ARCHITECTURAL						1,563	66,547	38,213	104,760
		10.25.00	CONCRETE CHIMNEY & STACK									
			STEEL STACK		20.00 TN	-	-		41	1,699	922	2,621
			CONCRETE CHIMNEY & STACK						41	1,699	922	2,621
		10.31.00	MECHANICAL EQUIPMENT									
			MAIN BOILER AND APPURTENANCES		2,012.00 TN	-	-		4,074	183,629	89,023	272,652
			BOILER PLANT PIPING AND HANGERS		294.00 TN	-	-		595	24,975	13,556	38,531
			FLUES AND DUCTS INCL. BREACHING		251.00 TN	-	-		678	30,544	14,808	45,352
			FEEDWATER DEAERATING EQUIPMENT		84.00 TN	-	-		170	7,136	3,873	11,009
			TANKS AND SILOS	MISC. SMALL TANKS	50.00 TN	-	-		135	5,663	3,074	8,737
			MISCELLANEOUS EQUIPMENT		130.00 TN	-	-		263	11,043	5,994	17,038
			MISCELLANEOUS EQUIPMENT	INTAKE RACKS, CIRC WATER SYSTEM	50.00 TN	-	-		135	5,663	3,074	8,737
			TURBINE GENERATOR		606.00 TN	-	-		1,227	51,479	27,942	79,421
			CONDENSER		290.00 TN	-	-		587	24,635	13,372	38,007
			CONDENSER RECOVERABLE STAINLESS STEEL TUBING		80.00 TN	-	-		162	6,796	3,689	10,485
			CIRCULATING WATER EQUIPMENT - PUMPS, MOTORS, SWITCHGEAR, TRAV. SCREENS		356.00 TN	-	-		721	30,242	16,415	46,657
			COOLING WATER TOWER		1.00 EA	-	-		2,000	94,220	43,980	138,200

Area	Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
			MECHANICAL EQUIPMENT						10,748	476,025	238,800	714,825
		10.35.00	PIPING									
			PIPING, VALVES AND HANGERS		150.00 TN	-	-		304	12,742	6,916	19,659
			PIPING						304	12,742	6,916	19,659
		10.41.00	ELECTRICAL EQUIPMENT									
			MISCELLANEOUS ELECTRICAL EQUIPMENT	GENERATOR BUS TRANSFORMERS AND MISC. ELECTRICAL EQUIPMENT	170.00 TN	-	-		606	25,410	13,792	39,202
			ELECTRICAL EQUIPMENT						606	25,410	13,792	39,202
			WHOLE PLANT DEMOLITION						22,856	1,028,766	504,507	1,533,273
	18.00.00		SCRAP VALUE									
		18.10.00	MIXED STEEL									
			CARBON STEEL		-6,714.00 TN	-	(1,450,224)	-				(1,450,224)
			MIXED STEEL				(1,450,224)					(1,450,224)
		18.20.00	STAINLESS STEEL									
			STAINLESS STEEL		-80.00 TN	-	(112,320)	-				(112,320)
			STAINLESS STEEL				(112,320)					(112,320)
		18.30.00	COPPER									
			#1 INSULATED COPPER WIRE 65%		-25.00 TN	-	(79,550)	-				(79,550)
			COPPER				(79,550)					(79,550)
			SCRAP VALUE				(1,642,094)					(1,642,094)
	22.00.00		CONCRETE									
		22.13.00	CONCRETE									
			FLOWABLE FILL, 1500 PSI	CIRCULATING WATER SYSTEM PIPING AND TUNNELS	1,200.00 CY	-	-	144,000	600	24,870	7,698	176,568
			CONCRETE					144,000	600	24,870	7,698	176,568
			CONCRETE					144,000	600	24,870	7,698	176,568
			2 UNIT 3				**(1,642,094)**	**144,000**	**23,456**	**1,053,636**	**512,205**	**67,747**
3			**UNIT 4**									
	10.00.00		WHOLE PLANT DEMOLITION									
		10.22.00	CONCRETE									
			BUILDING/EQUIPMENT FOUNDATION/PAD	DRAFT EQUIPMENT	200.00 CY	-	-		225	10,600	4,948	15,548
			BUILDING/EQUIPMENT FOUNDATION/PAD	TRANSFORMER FOUNDATION, FIRE WALLS, PIERS, CURBS, AND BASIN, INCL. TRANSFER CAR & R/R TRACK SLAB XXX LB/CY	83.00 CY	-	-		93	4,399	2,053	6,452
			MAIN POWER BLOCK FOUNDATION		1,177.00 CY	-	-		993	46,799	21,845	68,643
			ELEVATED CONCRETE FLOORS, STAIRS, ROOFS		612.00 CY	-	-		367	17,270	8,061	25,331
			TURBINE PEDESTAL		1,178.00 CY	-	-		2,120	99,892	46,628	146,520
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	BOILER ROOM	4,875.00 SF	-	-		73	3,335	1,552	4,887
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	TURBINE ROOM	16,082.00 SF	-	-		241	11,003	7,678	18,681
			PRECAST CONCRETE CHANNEL & LIGHTWEIGHT CONCRETE ROOF	AIR HEATER RM, MISC.	2,400.00 SF	-	-		36	1,642	1,146	2,788
			CONCRETE						4,149	194,939	93,910	288,849
		10.23.00	STEEL									
			STRUCTURAL AND GIRT STEEL	INCLUDES GALLERY GRATING	1,587.00 TN	-	-		1,612	72,671	27,185	99,855
			STEEL						1,612	72,671	27,185	99,855
		10.24.00	ARCHITECTURAL									
			MASONRY WALLS		1,280.00 SF	-	-		10	448	284	732
			MAIN BUILDING ELEVATOR		1.00 EA	-	-		150	6,293	3,416	9,708
			MAIN BUILDING HVAC		1.00 LS	-	-		320	13,424	7,628	21,052
			MAIN BUILDING ELECTRICAL		1.00 LS	-	-		550	23,073	12,546	35,619
			ARCHITECTURAL						1,030	43,237	23,874	67,111
		10.25.00	CONCRETE CHIMNEY & STACK									
			STEEL STACK		20.00 TN	-	-		41	1,699	922	2,621
			CONCRETE CHIMNEY & STACK						41	1,699	922	2,621
		10.31.00	MECHANICAL EQUIPMENT									
			MAIN BOILER AND APPURTENANCES		2,851.00 TN	-	-		5,773	260,202	126,146	386,348

Area	Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
		10.31.00	MECHANICAL EQUIPMENT									
			BOILER PLANT PIPING AND HANGERS		416.00 TN	-	-		842	35,339	19,181	54,520
			FLUES AND DUCTS INCL. BREACHING		594.00 TN	-	-		1,604	72,283	35,043	107,326
			FEEDWATER DEAERATING EQUIPMENT		119.00 TN	-	-		241	10,109	5,487	15,596
			TANKS AND SILOS	MISC. SMALL TANKS	59.00 TN	-	-		159	6,683	3,627	10,310
			MISCELLANEOUS EQUIPMENT		154.00 TN	-	-		312	13,082	7,101	20,183
			MISCELLANEOUS EQUIPMENT	20 TN GANTRY CRANE, CIRC WATER SYSTEM	25.00 TN	-	-		68	2,832	1,537	4,369
			MISCELLANEOUS EQUIPMENT	OVERHEAD CRANE 100/20 TN	100.00 TN	-	-		270	11,327	6,148	17,474
			MISCELLANEOUS EQUIPMENT	5 TN GANTRY CRANE	10.00 TN	-	-		27	1,133	615	1,747
			MISCELLANEOUS EQUIPMENT	INTAKE RACKS, CIRC WATER SYSTEM	60.00 TN	-	-		162	6,796	3,689	10,485
			TURBINE GENERATOR		720.00 TN	-	-		1,458	61,163	33,199	94,362
			CONDENSER		270.00 TN	-	-		547	22,936	12,450	35,386
			CONDENSER RECOVERABLE STAINLESS STEEL TUBING		74.00 TN	-	-		150	6,286	3,412	9,698
			CIRCULATING WATER EQUIPMENT - PUMPS, MOTORS, SWITCHGEAR, TRAV. SCREENS		356.00 TN	-	-		721	30,242	16,415	46,657
			COOLING WATER TOWER		2.00 EA	-	-		3,000	141,330	65,970	207,300
			MECHANICAL EQUIPMENT						15,334	681,741	340,019	1,021,760
		10.35.00	PIPING									
			PIPING, VALVES AND HANGERS		200.00 TN	-	-		405	16,990	9,222	26,212
			PIPING						405	16,990	9,222	26,212
		10.41.00	ELECTRICAL EQUIPMENT									
			MISCELLANEOUS ELECTRICAL EQUIPMENT	GENERATOR BUS TRANSFORMERS AND MISC. ELECTRICAL EQUIPMENT	200.00 TN	-	-		713	29,894	16,226	46,119
			ELECTRICAL EQUIPMENT						713	29,894	16,226	46,119
			WHOLE PLANT DEMOLITION						23,283	1,041,170	511,358	1,552,528
	18.00.00		SCRAP VALUE									
		18.10.00	MIXED STEEL									
			CARBON STEEL		-7,815.00 TN	-	(1,688,040)	-				(1,688,040)
			MIXED STEEL				(1,688,040)					(1,688,040)
		18.20.00	STAINLESS STEEL									
			STAINLESS STEEL		-74.00 TN	-	(103,896)	-				(103,896)
			STAINLESS STEEL				(103,896)					(103,896)
		18.30.00	COPPER									
			#1 INSULATED COPPER WIRE 65%		-30.00 TN	-	(95,460)	-				(95,460)
			COPPER				(95,460)					(95,460)
			SCRAP VALUE				(1,887,396)					(1,887,396)
	22.00.00		CONCRETE									
		22.13.00	CONCRETE									
			FLOWABLE FILL, 1500 PSI	CIRCULATING WATER SYSTEM PIPING AND TUNNELS	1,200.00 CY	-	-	144,000	600	24,870	7,698	176,568
			CONCRETE					144,000	600	24,870	7,698	176,568
			CONCRETE					144,000	600	24,870	7,698	176,568
			3 UNIT 4				(1,887,396)	144,000	23,883	1,066,040	519,056	(158,300)
4			COMMON FACILITIES									
	10.00.00		WHOLE PLANT DEMOLITION									
		10.21.00	CIVIL WORK									
			EXCAVATION BERMS AND DIKES		16,451.00 CY	-	-		987	44,487	16,642	61,129
			EXCAVATION BORROW		67,304.00 CY	-	-		4,038	189,393	186,486	375,879
			REMOVE RAILROAD TRACK RAIL, TIES, SPREAD BALLAST	MOST OF THE TRACKS HAVE BEEN REMOVED ALREADY	150.00 TF	-	-		34	1,583	1,559	3,141
			COVERED DISTURBED AREAS OF SITE W/2 FT TOPSOIL		46,771.00 CY	-	-		2,339	109,678	107,994	217,672
			FILL SECONDARY MAKE-UP WATER POND TO GRADE		20,533.00 CY	-	-		1,027	48,150	47,411	95,561
			SEED AND MULCH		12.70 AC	-	-	19,634	166	6,261	702	26,597
			PAVED SURFACES		20,000.00 SY	-	-		2,400	112,560	110,832	223,392
			FILL INTAKE WITH SAND		300.00 CY	-	-	9,900	450	21,105	20,781	51,786
			CIVIL WORK					29,534	11,441	533,217	492,406	1,055,157
		10.22.00	CONCRETE									
			BUILDING/EQUIPMENT FOUNDATION/PAD		2,400.00 CY	-	-		2,700	127,197	59,373	186,570
			BUILDING/EQUIPMENT FOUNDATION/PAD	TRANSFORMER FOUNDATION, FIRE WALLS, PIERS, CURBS, AND BASIN, INCL. TRANSFER CAR & R/R TRACK SLAB XXX LB/CY	30.00 CY	-	-		34	1,590	742	2,332

Area	Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
		10.22.00	CONCRETE									
			CURBS		15,000.00 LF	-	-		180	8,442	8,312	16,754
			WALKWAYS		600.00 CY	-	-		315	14,840	6,927	21,767
			INTAKE STRUCTURE		1.00 LS	-	-		400	18,844	8,796	27,640
			DISCHARGE STRUCTURE		100.00 CY	-	-		140	6,595	3,079	9,674
			FLOOD LIGHT POLES		180.00 EA	-	-		270	12,720	5,937	18,657
			CONCRETE						4,039	190,228	93,166	283,394
		10.24.00	ARCHITECTURAL									
			BUILDING	WAREHOUSE AND STOREROOMS	96,000.00 CF	-	-		288	12,609	7,986	20,595
			BUILDING	WATER TREATMENT	48,000.00 CF	-	-		144	6,304	3,993	10,297
			BUILDING	MACHINE SHOP AND WAREHOUSE	250,000.00 CF	-	-		750	32,835	20,798	53,633
			BUILDING	MISCELLANEOUS SMALL SIZE BUILDINGS	30,000.00 CF	-	-		90	3,940	2,496	6,436
			BUILDING	CHEMICAL BUILDING	28,000.00 CF	-	-		84	3,678	2,329	6,007
			ARCHITECTURAL						1,356	59,366	37,602	96,968
		10.31.00	MECHANICAL EQUIPMENT									
			TANKS AND SILOS	MISCELLANEOUS STORAGE TANKS AND PUMPS	687.00 TN	-	-		1,855	77,813	42,236	120,049
			TANKS AND SILOS	DIESEL OIL TANK, 30FT DIA X 16 FT TALL	15.00 TN	-	-		41	1,699	922	2,621
			MISCELLANEOUS EQUIPMENT	3 EACH, 2.75 MW DIESEL GENERATORS	187.00 TN	-	-		505	21,181	11,497	32,677
			MISCELLANEOUS FUEL OIL EQUIPMENT		50.00 TN	-	-		135	5,663	3,074	8,737
			PLASTIC TANKS	CHEMICAL BUILDING	1.00 LS	-	-		60	2,814	2,771	5,585
			HYDRANTS		1.00 LS	-	-		60	2,814	2,771	5,585
			MECHANICAL EQUIPMENT						2,655	111,984	63,270	175,254
		10.35.00	PIPING									
			PIPING, VALVES AND HANGERS	CHEMICAL BUILDING	20.00 TN	-	-		41	1,699	922	2,621
			PIPING						41	1,699	922	2,621
		10.41.00	ELECTRICAL EQUIPMENT									
			MISCELLANEOUS ELECTRICAL EQUIPMENT	STATION AUXILIARY TRANSFORMERS AND MISC. ELECTRICAL EQUIPMENT	60.00 TN	-	-		214	8,968	4,868	13,836
			ELECTRICAL EQUIPMENT						214	8,968	4,868	13,836
		10.86.00	WASTE									
			TRANSPORTATION AND DISPOSAL	RUBBISH AND TENANT DEBRIS	8,480.00 CY	228,960	-					228,960
			TRANSPORTATION AND DISPOSAL	RAILROAD TIES	36.00 CY	972	-					972
			TRANSPORTATION AND DISPOSAL	OILY SAND UNDER OIL TANK	59.00 CY	1,770	-					1,770
			TRANSPORTATION AND DISPOSAL	RETENTION POND, 1.7 ACRES, 2FT DEEP	5,456.00 CY	147,312	-					147,312
			TRANSPORTATION AND DISPOSAL	FORMER COOLING TOWER BASIN USED AS RETENTION POND 15775 SF USED AS A ZERO RELEASE BASIN 2 FT	1,167.00 CY	31,509	-					31,509
			WASTE			410,523						410,523
			WHOLE PLANT DEMOLITION			410,523		29,534	19,745	905,461	692,235	2,037,753
	18.00.00		SCRAP VALUE									
		18.10.00	MIXED STEEL									
			CARBON STEEL		-1,019.00 TN	-	(220,104)	-				(220,104)
			CARBON STEEL	115 LB/YD RAIL	-6.00 TN	-	(1,296)	-				(1,296)
			MIXED STEEL				(221,400)					(221,400)
		18.30.00	COPPER									
			#1 INSULATED COPPER WIRE 65%		-25.00 TN	-	(79,550)	-				(79,550)
			COPPER				(79,550)					(79,550)
			SCRAP VALUE				(300,950)					(300,950)
	21.00.00		CIVIL WORK									
		21.17.00	EXCAVATION									
			FOUNDATION EXCAVATION, CLAY USING 1 CY BACKHOE	OILY SAND UNDER OIL TANK	59.00 CY	-	-		10	453	175	627
			FOUNDATION EXCAVATION, CLAY USING 1 CY BACKHOE	RETENTION POND, 1.7 ACRES, 2FT DEEP	5,456.00 CY	-	-		928	41,850	16,167	58,016
			FOUNDATION EXCAVATION, CLAY USING 1 CY BACKHOE	FORMER COOLING TOWER BASIN USED AS RETENTION POND 15775 SF USED AS A ZERO RELEASE BASIN 2 FT	1,167.00 CY	-	-		198	8,951	3,458	12,409
			EXCAVATION						1,136	51,254	19,799	71,053
			CIVIL WORK						1,136	51,254	19,799	71,053
	22.00.00		CONCRETE									
		22.13.00	CONCRETE									
			FLOWABLE FILL, 1500 PSI	MAKE UP WATER PUMP DEEP WELL CAISSON	60.00 CY	-	-	7,200	30	1,244	385	8,828

Area	Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
			CONCRETE					7,200	30	1,244	385	8,828
			CONCRETE					7,200	30	1,244	385	8,828
			4 COMMON FACILITIES			**410,523**	**(300,950)**	**36,734**	**20,911**	**957,958**	**712,419**	**1,816,684**

Weleetka Plant

DEMOLITION COST ESTIMATE

Prepared for:
Public Service Company of Oklahoma (Owner)
and American Electric Power

Project No. A13351.022
February 26, 2021
Revision 0

Sargent & Lundy LLC

55 East Monroe Street
Chicago, IL 60603-5780 USA

Issue Summary Page

Revision Number	Date	Purpose	Prepared By	Reviewed By	Approved By	Pages Affected
A	1/18/21	Comments	G. Amen	B. Andric		All
0	2/26/21	Use	G. Amen	B. Andric	A. Redd	All

TABLE OF CONTENTS

1.0 INTRODUCTION

The Weleetka Plant Units 4 through 6, located in Weleetka, Oklahoma, in Okfuskee County, is owned and operated by Public Service Company of Oklahoma (PSO). The plant consists of three (3) simple cycle gas or oil fed turbine generator generating units. Unit 4 was placed in operation in 1975, Unit 5 in 1976 and Unit 6 in 1976. Each unit has a nameplate capacity of 53 megawatts. There are two (2) blackstart diesel generators rated at 2 megawatts each which were placed in operation in 1963.

Sargent & Lundy (S&L) previously prepared a Demolition Cost Estimate for Weleetka Plant Units 4 through 6 in 2017. AEP recently contracted S&L to update the previously prepared cost estimate to 1st Quarter 2021 pricing levels. The objective of the conceptual demolition cost estimate is to determine the gross demolition costs for Weleetka Plant Units 4 through 6 (including gross salvage credits and any other benefits). The cost estimate considers the demolition/dismantlement methodology which complies with current OSHA rules and regulations.

2.0 COST ESTIMATE SUMMARY

Demolition Cost Estimate No 23331F, was prepared and is included as Exhibit 1. The cost estimate is structured into a code of accounts as identified in Table 2-1.

Table 2-1
Cost Estimate Code of Accounts

Account Number	Description
10	Demolition Costs (including steel, equipment & piping scrap value)
18	Scrap Value Costs
21	Civil Work Costs
90, 91, 92	General Conditions Costs
93	Indirect Costs
94	Contingency Costs
96	Escalation Costs

The results of the cost estimate are provided in Table 2-2 below:

Table 2-2
Cost Estimate Results Summary

Description	Total Cost
Demolition Cost	$ 1,410,293
Scrap Value	($ 597,160)
General Conditions Costs	$ 494,000
Indirect Cost	$ 190,400
Contingency Cost	$ 403,800
Total Project Cost	$ 1,901,333

3.0 TECHNICAL BASIS

The scope of dismantlement includes the complete Weleetka Plant Units 4 though 6 generating facility and plant common services. Common facilities include:

- Fuel Oil facilities
- Roadways
- Black Start Diesel Generator

The following are excluded from the scope of the demolition cost estimate:

- Asbestos Removal
- Switchyard

The following scope revisions were included in the current cost estimate:

- None

4.0 COMMERCIAL BASIS

4.1 General Information

The Conceptual Demolition Cost Estimate prepared for the Weleetka Plant is a conceptual estimate of the cost to dismantle Weleetka Plant Units 4, 5 and 6 and the Blackstart Diesel Generators. Costs were calculated for (1) demolition of existing plant structures and equipment and associated site restoration costs, (2) scrap value of metals, (3) associated indirect costs, and (4) contingency. All units used in the cost estimate are U.S. Standard and all costs are in US Dollars (2021 levels). A one (1) year demolition schedule is anticipated not including asbestos removal (to be performed prior to start of demolition work). All items identified above will be demolished at the same time.

4.2 Quantities/Material Cost

Quantities of pieces of equipment and/or bulk material commodities used in this cost estimate were intended to be reasonable and representative of projects of this type. Material quantities were estimated from the site plot plan and other drawings and data provided by AEP and Plant Personnel.

4.3 Construction Labor Wages

Craft labor rates (Craft Hourly Rate) for the cost estimate are based on the prevailing wages for Tulsa, Oklahoma as published in "R.S. Means Labor Rates for the Construction Industry", 2021 Edition. These prevailing rates are representative of union or non-union rates, whichever is prevailing in the area. Costs have been added to cover social security, workmen's compensation, federal and state unemployment insurance. The resulting burdened craft rates were then used to develop typical crew rates applicable to the task being performed.

4.3.1 Labor Work Schedule and Incentives

The estimate assumed a 5x8 work week. No other labor incentives are included.

4.3.2 General Conditions Cost

Allowances were included in the cost estimate as direct costs as noted for the following:

- Labor Supervision
- Construction Management
- Field Office Expenses
- Safety
- Temporary Facilities
- Mobilization / Demobilization
- Legal Expenses / Claims
- Small Tools & Consumables
- General Liability Insurance
- Construction Equipment Mobilization / Demobilization
- Freight on Material
- Contractor's General and Administrative Costs
- Contractor's Profit

4.4 Scrap Value

The value of scrap is based on "Scrap Metals Market Watch" as published in the January 2021 Edition of "American Recycler News" (www.americanrecycler.com) using Zone 3 (USA Southwest).
The values obtained are delivered prices to the recycler. Transportation cost to the recycler is assumed @ 30 $/ton resulting in the values below:

- Carbon Steel @ 216 $/ton
- #1 Insulated Copper Wire 65% @ 3,182 $/ton

Note: 1 Ton = 2,000 Lbs

4.5 Indirect Costs

Allowances were included in the cost estimate as indirect costs as noted for the following:

- Engineering, Procurement and Project Services: None included.
- Construction Management Support: None included.
- Owners Cost: Included as 10.0% of the total direct labor and material cost. Owners Costs include owner project engineering, administration and construction management, permits and fees, legal expenses, taxes, etc.

4.6 Escalation

No allowance for escalation was included in the cost estimate.

4.7 Contingency

Allowances were included in the cost estimate as contingency as noted for the following:

- Scrap Value: Included as a 15.0% reduction in the salvage value resulting in a total net reduction in the salvage value. The contingency assumes a potential drop in salvage value thus increasing the project cost.
- Material: Included as 15.0% of the total material cost.
- Labor: Included as 15.0% of the total labor cost.
- Indirect: Included as 15.0% of the total indirect cost.

4.8 Assumptions

The following assumptions apply to the cost estimate.

- All chemicals will be removed by the Owner prior to demolition, from the facilities to be demolished.
- All fuel oil will be consumed prior to demolition.
- All electrical equipment and wiring is de-energized prior to start of dismantlement.
- No extraordinary environmental costs for demolition have been included. Removal of two (2) feet of fill inside the fuel oil tank foundation is included.
- Asbestos and PCB'**s** are removed from site by others prior to start of demolition.
- Handling, on-site and off-site disposal of hazardous materials would be performed in compliance with methods approved by Owner.
- Switchyards within the plant boundaries are not part of the scope, neither are access roads to these facilities. Fences and gates needed to protect the switchyard will be left in place.
- All items above grade and to a depth of two (2) foot will be demolished. Any other items buried more than two (2) foot will remain in place. All foundations are removed and buried on site.
- Underground piping, conduit and cable ducts will be abandoned in place.
- Underground piping larger than four (4) feet diameter will be filled with sand or slurry and capped at the ends to prevent collapse. Non-metal pipe will be collapsed.
- All demolished materials are considered debris, except for organic combustibles and non-embedded metals which have scrap value.
- The basis for salvage estimating is for scrap value only. No resale of equipment or material is included.
- Disturbed areas will be buried under two (2) feet of topsoil mulched and seeded with grass – no other landscaping is included.
- All borrow material is assumed to be from onsite sources.
- Debris not suitable for burial is to be disposed of off-site. Assumed distance to final disposal is within a five (5) mile haul.

5.0 REFERENCES

Drawings utilized in the preparation of the demolition cost estimate are identified in Table 5-1.

Table 5-1
Reference Drawings

Unit	Document Number	Revision	Title
0	18113-B	8	Weleetka Power Station Site Plan Property Plat

0 = Common

EXHIBIT 1
Weleetka Plant Units 4, 5, 6
Demolition Cost Estimate No. 23331F

AEP/PSO
WELEETKA PLANT - UNITS 4,5, & 6 PEAKERS
DEMOLITION COST ESTIMATE

Estimator	GA
Labor rate table	21OKTUL
Project No.	A13351.022
Estimate Date	2/24/21
Reviewed By	BA
Approved By	BA
Estimate No.	23331F

AEP/PSO
WELEETKA PLANT - UNITS 4,5, & 6 PEAKERS
DEMOLITION COST ESTIMATE

Group	Description	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
10.00.00	WHOLE PLANT DEMOLITION	96,870		37,104	17,437	773,977	494,995	1,402,947
18.00.00	SCRAP VALUE		(597,160)					(597,160)
21.00.00	CIVIL WORK				117	5,299	2,047	7,346
	TOTAL DIRECT	**96,870**	**(597,160)**	**37,104**	**17,555**	**779,277**	**497,042**	**813,133**

Estimate Totals

Description	Amount	Totals	Hours
Labor	779,277		17,555
Material	37,104		
Subcontract	96,870		
Construction Equipment	497,042		
Scrap Value	(597,160)		
	813,133	**813,133**	
General Conditions			
Additional Labor Costs			
90-1 Labor Supervision	46,800		
90-2 Show-up Time	15,600		
90-3 Cost Due To OT 5-10's			
90-4 Cost Due To OT 6-10's			
90-5 Per Diem			
Site Overheads			
91-1 Construction Management	84,200		
91-2 Field Office Expenses	18,500		
91-3 Material&Quality Control			
91-4 Site Services			
91-5 Safety	16,600		
91-6 Temporary Facilities	12,700		
91-7 Temporary Utilities			
91-8 Mobilization/Demob.	13,300		
91-9 Legal Expenses/Claims	2,000		
Other Construction Indirects			
92-1 Small Tools & Consumables	8,400		
92-2 Scaffolding			
92-3 General Liability Insur.	8,400		
92-4 Constr. Equip. Mob/Demob	5,000		
92-5 Freight on Material	1,900		
92-6 Freight on Scrap			
92-7 Sales Tax			
92-8 Contractors G&A	107,300		
92-9 Contractors Profit	153,300		
	494,000	**1,307,133**	
Project Indirect Costs			
93-1 Engineering Services			
93-2 CM Support			
93-3 Start-Up/Commissioning			
93-4 Start-Up/Spare Parts			
93-5 Excess Liability Insur.			
93-6 Sales Tax On Indirects			
93-7 Owners Cost	190,400		
93-8 EPC Fee			
	190,400	**1,497,533**	
Contingency			
94-1 Contingency on Const Eq	88,000		
94-3 Contingency on Material	6,800		
94-4 Contingency on Labor	176,300		
94-5 Contingency on Subcontr.	14,500		
94-6 Contingency on Scrap	89,600		
94-7 Contingency on Indirect	28,600		
	403,800	**1,901,333**	
Escalation			
96-1 Escalation on Const Equip			
96-3 Escalation on Material			
96-4 Escalation on Labor			
96-5 Escalation on Subcontract			
96-6 Escalation on Scrap			
96-7 Escalation on Indirects			
		1,901,333	
98 Interest During Constr			
		1,901,333	
Total		**1,901,333**	

Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
10.00.00		**WHOLE PLANT DEMOLITION**									
	10.21.00	CIVIL WORK									
		COVERED DISTURBED AREAS OF SITE W/2 FT TOPSOIL	INCLUDES RESERVOIR 1 WITH 12.6 ACRES & # 2 WITH 7.7 ACRES	77,440.00 CY	-	-		3,872	181,597	178,809	360,406
		SEED AND MULCH	UTILITY MIX, 7#/MSF HYDRO AIR SEEDING W MULCH	24.00 AC	-	-	37,104	314	11,831	1,327	50,262
		PAVED SURFACES		5,200.00 SY	-	-		624	29,266	28,816	58,082
		CIVIL WORK					37,104	4,810	222,693	208,952	468,749
	10.22.00	CONCRETE									
		BUILDING/EQUIPMENT FOUNDATION/PAD	MISC. EQUIPMENT AND SITE BUILDING FOUNDATIONS	85.00 CY	-	-		96	4,505	2,103	6,608
		BUILDING/EQUIPMENT FOUNDATION/PAD	TANKS	796.00 CY	-	-		896	42,187	19,692	61,879
		COMBUSTION TURBINE COMMON MAT AND PEDESTALS		1,700.00 CY	-	-		3,060	144,157	67,289	211,446
		WALKWAYS		20.00 CY	-	-		11	495	231	726
		CONCRETE						4,062	191,343	89,315	280,658
	10.24.00	ARCHITECTURAL									
		BUILDING	BUTLER TYPE OFFICE BUILDING	50,400.00 CF	-	-		151	6,620	4,193	10,812
		BUILDING	GARAGE - BRICK CONSTRUCTION	35,000.00 CF	-	-		105	4,597	2,912	7,509
		BUILDING	WAREHOUSE - BRICK CONSTRUCTION	23,280.00 CF	-	-		70	3,058	1,937	4,994
		BUILDING	OIL STORAGE BUILDING - BRICK CONSTRUCTION	5,280.00 CF	-	-		16	693	439	1,133
		ARCHITECTURAL						342	14,968	9,480	24,448
	10.31.00	MECHANICAL EQUIPMENT									
		COMBUSTION TURBINE	TURBODYNE 3 X 53 MW EACH	1,592.00 TN	-	-		5,572	233,745	126,874	360,620
		TANKS AND SILOS	FUEL OIL STORAGE TANK - 4,000,000 GALLONS	300.00 TN	-	-		810	33,980	18,444	52,423
		MISCELLANEOUS EQUIPMENT	2 - 2.0 MW DIESEL DRIVEN GENERATORS W SHELTERS	110.00 TN	-	-		297	12,459	6,763	19,222
		MECHANICAL EQUIPMENT						6,679	280,184	152,081	432,265
	10.35.00	PIPING									
		PIPING, VALVES AND HANGERS		80.00 TN	-	-		162	6,796	3,689	10,485
		PIPING						162	6,796	3,689	10,485
	10.41.00	ELECTRICAL EQUIPMENT									
		MISCELLANEOUS ELECTRICAL EQUIPMENT		388.00 TN	-	-		1,382	57,994	31,478	89,472
		ELECTRICAL EQUIPMENT						1,382	57,994	31,478	89,472
	10.86.00	WASTE									
		SPECIAL WASTE - NON-HAZ. CONTAMINATED SOIL - TRANSPORTATION & DISPOSAL	2FT OF MATERIAL INSIDE OIL TANK RING FOUNDATION	2,959.00 CY	88,770	-					88,770
		RUBBISH AND TENANT DEBRIS - TRANSPORT & DISPOSAL		300.00 CY	8,100	-					8,100
		WASTE			96,870						96,870
		WHOLE PLANT DEMOLITION			**96,870**		**37,104**	**17,437**	**773,977**	**494,995**	**1,402,947**
18.00.00		**SCRAP VALUE**									
	18.10.00	MIXED STEEL									
		CARBON STEEL		-2,470.00 TN	-	(533,520)	-				(533,520)
		MIXED STEEL				(533,520)					(533,520)
	18.30.00	COPPER									
		#1 INSULATED COPPER WIRE 65%		-20.00 TN	-	(63,640)	-				(63,640)
		COPPER				(63,640)					(63,640)
		SCRAP VALUE				**(597,160)**					**(597,160)**
21.00.00		**CIVIL WORK**									

Group	Phase	Description	Notes	Quantity	Subcontract Cost	Scrap Value	Material Cost	Man Hours	Labor Cost	Equip Amount	Total Cost
	21.17.00	EXCAVATION									
		FOUNDATION EXCAVATION, COMMON EARTH USING 1 CY BACKHOE	2FT OF MATERIAL INSIDE OIL TANK RING FOUNDATION	783.00 CY	-	-		117	5,299	2,047	7,346
		EXCAVATION						117	5,299	2,047	7,346
		CIVIL WORK						**117**	**5,299**	**2,047**	**7,346**

AFFIDAVIT OF JASON A. CASH

STATE OF OHIO)

COUNTY OF FRANKLIN)

On the _26th day of April 2021, before me appeared Jason A. Cash, to me personally known, who, being by me first duly sworn, states that he is an Accounting, Senior Manager for American Electric Power Service Corporation and acknowledges that he has read the above and foregoing document and believes that the statements therein are true and correct to the best of his information, knowledge and belief.

Jason Cash
Signed on 2021/04/26 07:18:27 -8:00

Jason A. Cash

Subscribed and sworn to before me this 26th day of April, 2021.

NOTARY PUBLIC STATE OF OHIO

Sarah Smithhisler
Commission # 2019-RE-775042
Electronic Notary Public
State of Ohio
My Comm Exp. Apr 29, 2024

Notary Stamp 2021/04/26 07:18:27 PST E3C434862BB5

S Smithhisler
Signed on 2021/04/26 07:18:27 -8:00

Notary Public

My commission expires: _April 29, 2024_

26B599D2-5119-421A-AB84-DAE09C3D3C23 --- 2021/04/26 06:28:09 -8:00 --- Remote Notary