

Application No. 22-05-\_\_\_\_  
Exhibit PAC/600  
Witness: Ryan D. McGraw

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA

PACIFICORP

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Direct Testimony of Ryan D. McGraw

The Kiewit Studies

May 2022

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**ATTACHED EXHIBITS**

Confidential Exhibit PAC/601 – January 15, 2020 Kiewit Decommissioning Study

Confidential Exhibit PAC/602 – March 15, 2020 Kiewit Decommissioning Study

1                   **I.       INTRODUCTION AND QUALIFICATIONS**

2   **Q.     Please state your name, business address, and present position with PacifiCorp**  
3       **d/b/a Pacific Power (PacifiCorp or Company).**

4   A.    My name is Ryan D. McGraw. My business address is 1407 West North Temple,  
5        Suite 310, Salt Lake City, Utah. My position is Vice President of Project  
6        Development.

7   **Q.     Please describe your education and business experience including a description**  
8       **of your current duties.**

9   A.    I have a Bachelor of Science Degree from the University of California at Davis, a  
10        Juris Doctorate from the Willamette University College of Law, and a Master of  
11        Business Administration from Willamette University's Atkinson Graduate School of  
12        Management. My career in energy began in 2003, including positions at Pacific Gas  
13        and Electric and the Bonneville Power Administration. Prior to joining PacifiCorp in  
14        July 2020, I was Vice President of Development for Orion Renewable Energy Group  
15        LLC, a developer of renewable energy facilities across the United States. In my  
16        current role at PacifiCorp as Vice President of Project Development, my  
17        responsibilities encompass strategic planning, regulatory support, stakeholder  
18        engagement, and development and execution of major generation resource additions.

19                   **II.       PURPOSE OF TESTIMONY**

20   **Q.     What is the purpose of your testimony in this proceeding?**

21   A.    My testimony supports and explains in technical detail the process the Company used  
22        to ensure that the January 15, 2020 and March 15, 2020 decommissioning studies  
23        prepared by Kiewit Engineering Group, Inc. (Kiewit) for eight of PacifiCorp's

1 coal-fired generation resources (Kiewit Studies or Decommissioning Studies) are  
2 reasonable, accurate, and comply with the Association for the Advancement of Cost  
3 Engineers (AACE)<sup>1</sup> Class 3 standards. The Kiewit Studies are included as  
4 Confidential Exhibits PAC/601 and PAC/602 to my testimony.

5 **Q. Please summarize your testimony.**

6 A. My testimony:

- 7 • Discusses the preparation of the Decommissioning Studies and the steps  
8 PacifiCorp and Kiewit took to ensure that they were independently prepared,  
9 accurate, and satisfy the standards of an AACE Class 3 cost estimate.
- 10 • Outlines the specific itemized costs provided by PacifiCorp. While Kiewit and  
11 its subcontractors developed most costs contained in the Kiewit Studies,  
12 PacifiCorp did provide some inputs. I describe the specific nature and purpose  
13 of each input.

14 **III. PREPARATION OF THE KIEWIT STUDIES**

15 **Q. Why were the Kiewit Studies developed?**

16 A. The Kiewit Studies were prepared in conjunction with the 2020 PacifiCorp  
17 Inter-Jurisdictional Allocation Protocol (2020 Protocol) described in testimony  
18 provided by witness Steven R. McDougal (Exhibit PAC/900). The 2020 Protocol  
19 requires PacifiCorp to procure a third-party decommissioning study to provide an  
20 accurate decommissioning cost estimate to inform the Company's recommendation

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<sup>1</sup> AACE International is the Association for the Advancement of Cost Engineers and is commonly referred to as AACE. AACE is a 501(c)(3) non-profit professional association founded in 1956 that offers publications, practice guides, education, certification, and recommended practices for cost estimating.

1 on the amount of decommissioning cost responsibility allocated to states that elect to  
2 exit from coal-fueled resources prior to planned closure date.<sup>2</sup> The Company  
3 committed to undertaking contractor-assisted engineering studies by January 15,  
4 2020, for the Jim Bridger, Dave Johnston, Hunter, Huntington, Naughton, Wyodak,  
5 and Hayden plants and by March 15, 2020, for Colstrip Units 3 and 4.<sup>3</sup>

6 **Q. Please describe the scope of the Kiewit Studies.**

7 A. The scope of work for the Kiewit Studies included the following:

- 8 • Provide an owner-informed, overall decommissioning design basis for all of the  
9 generating facilities in the Decommissioning Studies. The design basis  
10 established the fundamental assumptions for the cost estimates provided in the  
11 final Kiewit Studies.
- 12 • Provide an AACE Class 3 cost estimate to identify all the costs for the  
13 decommissioning, demolition, reclamation, and remediation of the Jim Bridger,  
14 Dave Johnston, Hunter, Huntington, Naughton, Wyodak, Hayden, and Colstrip  
15 Units 3 and 4 coal-fueled resources.
- 16 • Provide a narrative report describing the entities involved, the process used to  
17 prepare the report, and the underlying assumptions.
- 18 • Provide a spreadsheet report incorporating the AACE Class 3 cost estimates  
19 inclusive of certain PacifiCorp-provided cost estimates, reviewed by Kiewit.
- 20 • Provide cost estimates based on fourth-quarter 2019 dollars.

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<sup>2</sup> 2020 Protocol § 4.3.1.1.

<sup>3</sup> *Id.* (The 2020 Protocol stipulated that PacifiCorp would use its best efforts to estimate the decommissioning cost requirements for Jim Bridger, Dave Johnson, Hunter, Huntington, Naughton, Wyodak, and Hayden by January 15, 2020. The Company also committed to use its best efforts to complete a decommissioning cost study for Colstrip Units 3 and 4 by March 15, 2020.)

1 **Q. Given that the scope of work dictated that cost estimates be provided as of**  
2 **fourth-quarter 2019, did Kiewit escalate its cost estimates to correspond with the**  
3 **projected retirement dates of the facilities?**

4 A. No. The scope of work assumed that all units at each plant were retired on  
5 December 31, 2019, and that work to begin the decommissioning, demolition, and  
6 reclamation could begin January 1, 2020. However, the cost estimates included a cost  
7 escalation for the projected length of the reclamation period which ranged from 30 to  
8 50 months.

9 **Q. Why did PacifiCorp select Kiewit to prepare its decommissioning studies?**

10 A. PacifiCorp engaged Kiewit to perform the Decommissioning Studies consistent with  
11 the 2020 Protocol.<sup>4</sup> Kiewit is an independent and highly regarded engineering and  
12 construction firm founded in 1884 with approximately 25 years of experience  
13 performing decommissioning work on coal-fueled generation facilities, specializing  
14 in the earthwork required to restore sites.

15 **Q. Did Kiewit bring on other engineering firms to add depth and expertise to its**  
16 **team?**

17 A. Yes. Kiewit brought on North American Dismantling Corporation (NADC) to assist  
18 in preparing the Kiewit Studies. NADC is an engineering firm known for precision  
19 demolition, with approximately 35 years and 27,000 megawatts of decommissioning  
20 experience. The Kiewit Studies also included review and input from independent  
21 hazardous materials abatement contractors Winter Environmental and ABC  
22 Abatement. Two additional independent demolition contractors, Bierlein Companies,

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<sup>4</sup> See *Id.*

1 Inc. and Brandenburg Industrial Service Company, reviewed the Kiewit Studies to  
2 verify their reasonableness.

3 **A. AACE Class 3 Cost Estimates**

4 **Q. Describe an AACE Class 3 estimate.**

5 A. AACE Class 3 estimates are generally prepared to form the basis for budget  
6 authorization, appropriation, and funding of major projects. As such, they typically  
7 form the initial control estimate against which actual costs will be monitored.  
8 Because of the increased specificity, a Class 3 estimate has an expected accuracy of  
9 minus 20 percent to plus 30 percent and defines 10 to 40 percent of the project scope.<sup>5</sup>

10 **Q. What inputs are required to prepare an AACE Class 3 cost estimate?**

11 A. Class 3 estimates use deterministic estimating methods instead of generic methods.  
12 They typically involve a substantial number of cost line items, although factoring and  
13 other methods can be used for less-defined project areas. An AACE Class 3 estimate  
14 provides the most accurate possible estimate for defining a project's costs without  
15 beginning the request for proposal process.

16 **Q. How does an AACE Class 3 estimate compare to an AACE Class 5 estimate?**

17 A. PacifiCorp conducted an AACE Class 5 estimate for the Company's "Depreciation  
18 Study – Calculated Annual Depreciation Accruals Related to Electric Plant as of  
19 December 31, 2017" (Depreciation Study) that is sponsored by Company witness  
20 Ms. Nikki L. Kobliha. Class 5 estimates are generally prepared on limited  
21 information and subsequently, have a wide accuracy range. Specifically, a Class 5

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<sup>5</sup> See generally

[https://www.costengineering.eu/Downloads/articles/AACE\\_CLASSIFICATION\\_SYSTEM.pdf](https://www.costengineering.eu/Downloads/articles/AACE_CLASSIFICATION_SYSTEM.pdf)

1 estimate has an expected accuracy of minus 50 percent to plus 100 percent and  
2 defines 0 to 2 percent of the project's scope.<sup>6</sup> Class 5 estimates typically use generic,  
3 or proxy estimates developed from costs based on demolition of similar sized plants.  
4 These estimates are then adjusted with cost factors to compensate for regional or  
5 locational differences, acres of land involved or obvious high-cost items such as  
6 evaporation ponds, coal pile restoration, or offsite raw water supply reservoirs.  
7 Accordingly, AACE Class 5 estimates are used for concept screening and assessments  
8 of long-range capital planning.

9 **B. Kiewit's Process for Preparing its AACE Class 3 Cost Estimates**

10 **Q. Did Kiewit use AACE Class 3 level methodologies to conduct its**  
11 **decommissioning studies for PacifiCorp?**

12 A. Yes. The Kiewit Studies focused on the individual generation units and all common  
13 plant facilities, both inside and outside the facility perimeter. Specifically, Kiewit and  
14 NADC conducted site visits by touring each facility and gathering detailed  
15 information concerning site layout and conditions. Kiewit also requested drawings,  
16 reports, environmental studies, and additional documentation regarding each facility  
17 which were incorporated into their assessments. Kiewit then broke the  
18 decommissioning and reclamation costs down into major line items including: (1) site  
19 investigation and development; (2) decommissioning; (3) pre-demolition  
20 decontamination; (4) demolition, salvage, and scrap; and (5) reclamation. These  
21 broad line items are further broken down and identified in the Kiewit report as Cost  
22 Categories. For each component of the Cost Category, quantities of materials, labor,

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<sup>6</sup> *Id.*

1 equipment and specialty subcontractor costs are estimated, and to those estimated  
2 quantities, experiential or historical pricing is applied from Kiewit's proprietary cost  
3 database to calculate the estimated costs. The methodology, quantities, costs, and  
4 documented assumptions are summarized in the Kiewit Studies, provided as  
5 Confidential Exhibits PAC/601 and PAC/602.

6 **Q. Do the Kiewit Studies expand the scope of the Company's Depreciation Study?**

7 A. Yes. The Depreciation Study focused primarily at the facility level and limited its  
8 site-specific analysis to three generating units. The previous estimates also did not  
9 include all infrastructure and utilities outside the plant perimeter. In contrast, the  
10 Kiewit Studies focused on all of the individual units, as well as on all common plant  
11 facilities, both inside and outside the facility perimeter.

12 **Q. Did the Kiewit Studies address site reclamation?**

13 A. Yes. The Kiewit Studies include site reclamation costs as a specific line item for each  
14 generating facility. Reclamation scope assumptions include grading to meet permit  
15 and regulatory conditions, installing topsoil, and seeding for native plants. Topsoil  
16 installation and seeding were not estimated for the Wyodak plant because it is located  
17 within an industrial park, and the site will be restored for industrial use. PacifiCorp's  
18 Depreciation Study did not include site reclamation costs.

19 **Q. Did the Kiewit Studies address owner's costs and indirect costs?**

20 A. Yes. The Kiewit Studies include the cost of preparing each facility for  
21 decommissioning work, project management overhead, long-lead permitting, site  
22 demolition management, and indirect contractor and engineering costs.<sup>7</sup> The

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<sup>7</sup> Indirect costs are defined at section 5.9 of the January 15, 2020 Kiewit Decommissioning Study.

1 Depreciation Study did not include owner's project development and oversight costs  
2 or indirect costs.

3 **Q. How did the Company provide information to Kiewit?**

4 A. Throughout the process, PacifiCorp ensured that Kiewit had access to documents,  
5 power plant sites, and power plant personnel. PacifiCorp provided a liaison,  
6 Mr. H. Grant Laughter, who visited each power plant along with Kiewit's team to  
7 provide a consistent evaluation of each plant.

8 **Q. Did Kiewit work independently from the Company when preparing these  
9 studies?**

10 A. Yes. Once PacifiCorp developed the scope of work and provided information about  
11 its plants, the Company did not participate in Kiewit's cost estimation process.  
12 Kiewit prepared its own cost estimates for the decommissioning, decontamination,  
13 demolition, and reclamation of the Company's coal-fired resources based on the  
14 design parameters outlined in the Kiewit Studies.

15 **Q. Were the Kiewit Studies' cost estimates subject to additional, independent  
16 review?**

17 A. Yes. As noted above, two additional independent demolition contractors—Bierlein  
18 Companies, Inc. and Brandenburg Industrial Service Company—reviewed the results  
19 of the Kiewit Studies. Both companies are leaders in the field of demolition and  
20 restoration of industrial sites, and both companies agreed that the cost estimates  
21 provided in the Kiewit Studies represent accurate AACE Class 3 cost estimates.

22 The costs included in the Depreciation Study were never independently  
23 reviewed and endorsed in this manner and are considered a base level of

1 decommissioning costs that were used to develop depreciation rates. The costs  
2 estimated in the Kiewit Studies that exceed the base level of decommissioning costs  
3 are the incremental decommissioning costs being addressed in the Company's current  
4 application.

5 **IV. SPECIFIC COSTS PROVIDED BY PACIFICORP**

6 **Q. Did PacifiCorp provide some of the cost inputs used in the Kiewit Studies?**

7 A. Yes. While Kiewit independently developed the vast majority of the costs contained  
8 within the Kiewit Studies, PacifiCorp provided some limited inputs for items with  
9 less-defined costs, costs that the Company had already developed, and remediation  
10 and closure costs.

11 **Q. How do the Kiewit Studies break down these costs?**

12 A. Very generally, the Kiewit Studies break down costs into two categories: (1) "Base  
13 Estimate"; and (2) "Other Items to be Considered." Base estimates, which represent  
14 the majority of decommissioning costs, include the costs to decommission,  
15 decontaminate, demolish, and reclaim the site. Kiewit developed the majority of  
16 these costs. The "Other Items to be Considered" category encompasses remediation  
17 and closure costs, such as materials and supply (M&S) inventory, unspecified  
18 liabilities, and coal pile excavation and haul off.

19 **Q. What costs did PacifiCorp provide as part of the Kiewit Studies' base estimates?**

20 A. PacifiCorp provided (1) owner's costs for decommissioning; (2) the Company's  
21 asbestos removal estimates; and (3) the Coal Combustion Residuals (CCR).  
22 PacifiCorp also provided owner plant-specific liabilities, which were inadvertently  
23 identified as a separate cost category in section 5.8 of the Kiewit Studies, but should

1 have been included in section 5.14, Other Items to Consider.

2 **Q. What is included in the line item for owner's costs for decommissioning?**

3 A. This line item includes internal Company costs to oversee the decommissioning  
4 process. This process includes equipment shutdown, disconnection from  
5 transmission, removal of personal property, closeout of operating permits, and  
6 disposition of spares, inventory, consumables, chemicals, and universal wastes.

7 **Q. How did the Company prepare these costs for the Kiewit Studies?**

8 A. PacifiCorp estimated owner's costs based on the actual owner costs incurred for  
9 decommissioning and demolition of the Carbon generating facility, adjusted for the  
10 size of the generating facility and economies of scale.

11 **Q. Based on your professional experience, do you believe that the cost estimates  
12 contained in the Kiewit Studies are a reasonable, AACE Class 3 estimate of  
13 PacifiCorp's decommissioning and remediation costs?**

14 A. Yes.

15 **Q. Does this conclude your direct testimony?**

16 A. Yes.

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**REDACTED**

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January 15, 2020 Kiewit Decommissioning Study

May 2022

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