Docket No. UE 374
Exhibit KWUA/100
Witness: Lloyd C. Reed

BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

KLAMATH WATER USERS ASSOCIATION

OPENING TESTIMONY OF

LLOYD C. REED

June 4, 2020

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ATTACHED EXHIBITS

I. INTRODUCTION AND QUALIFICATIONS

Q. Please state your name, occupation, position, and business address.

A. My name is Lloyd C. Reed. My business address is 10025 Heatherwood Lane, Highlands Ranch, Colorado 80126. I am President of Reed Consulting.

Q. Briefly describe your educational background and work experience.

A. I have a Bachelor of Science Degree in Electrical Engineering from the University of Washington. I have been involved in the electric utility industry for over 35 years and I previously held several positions of increasing responsibility at two Pacific Northwest based investor-owned utilities including the Director of Power Supply Operations for Puget Sound Energy. I also held several positions of increasing responsibility at two power marketing companies including the Vice President of Power Marketing for e-prime. Since 2001, I have been an energy consultant and have provided a wide range of professional services to multiple clients including investor-owned and publicly-owned electric utilities, irrigation districts, and law firms in such areas as wholesale and retail ratemaking, short-term power systems operation, power marketing and trading, long-term utility load/resource planning, wind plant integration analyses, hydroelectric systems operations, and energy risk management. A copy of my resume is included in Exhibit KWUA/101.

Q. Have you testified in previous regulatory proceedings?

A. Yes, I have previously testified in multiple wholesale power proceedings before the Federal Energy Regulatory Commission ("FERC") on behalf of several different clients.

Q. On whose behalf are you submitting testimony in this proceeding?

A. I am submitting testimony on behalf of the Klamath Water Users Association ("KWUA"). KWUA is a non-profit, mutual benefit with members corporation that represents the interests of multiple irrigation/water users who: (1) receive water through the U.S. Bureau of Reclamation's ("Reclamation") Klamath Irrigation Project ("Klamath Project" or "Project") in southern Oregon and northern California, and (2) purchase electricity from PacifiCorp ("PAC" or the "Company") under retail rate tariffs. KWUA's members purchase electricity for irrigation pumping and drainage purposes primarily under PacifiCorp's Schedule 41 Rate Tariff. In addition, some of KWUA's members and their patrons have also participated in PAC's Irrigation Time of Use Pilot Program which the Company is proposing to continue on a long-term basis, pursuant to modified terms and conditions, under a new Schedule 741 Rate Tariff.

KWUA's membership includes irrigation districts, drainage districts, and other organizations (collectively, the "Districts") who deliver water to nearly all of the Klamath Project lands in Oregon that use water diverted from Upper Klamath Lake and the Klamath River, which is in excess of 100,000 acres. In addition, KWUA does not represent, but has certain information regarding, other water users in the Upper Klamath Basin who are PacifiCorp retail tariff customers. This includes the two Districts in the Klamath Project that receive water exclusively from the Lost River system, and so-called "off-Project" users who are generally located adjacent to, or on tributaries of, Upper Klamath Lake.

Irrigation water users in the Klamath Project can incur costs for power in three ways. First, Reclamation owns and operates certain large pumping facilities, including for drainage, and passes on its costs to the Districts. Second, the Districts own and operate

pumps for various purposes and pass on their costs, as well as the costs incurred by Reclamation, to the individual water users. Third, the individual water users own and operate pumps of various types, for diversion, pressurizing systems, recirculation and drainage, and groundwater pumping, with the specifics depending on the individual operation.[1] The Klamath Project is considered to be extremely efficient in its use of water, and a significant reason is the recycling and reuse of water that occurs throughout the Project.

From 1917 through 2006, water users in the Klamath Project received power at favorable rates under contracts entered into between Reclamation and PacifiCorp's predecessor-in-interest. Water users in the "off-Project" area similarly received power at favorable rates under a separate contract that went into effect in 1956. These contract-based power rates were reflected in a separate tariff until the contracts terminated in 2006 and were not extended or renewed. In accordance with state legislation intended to mitigate rate increase shock,[2] the Commission adopted in Order 06-172 a schedule for a stair-step increase in rates to the Schedule 41 irrigation tariff.

II. PURPOSE AND SUMMARY OF TESTIMONY

Q. Please state the purpose of your testimony.

A. I discuss several issues raised by PAC's initial February 14, 2020 General Rate Case ("GRC") filing in Docket UE 374 regarding: (1) PAC's proposal to increase its

[1] It should be noted that PacifiCorp's proposed +10% increase to the Schedule 41 Irrigation Rate impacts all three levels of pumping costs (i.e., Reclamation, Districts, and individual water users) in an additive fashion. Since all three levels of electricity/pumping costs are ultimately passed along to individual water users, even relatively small increases in PAC's power rates end up having a much larger multiplying effect on farmer's overall cost of production.
[2] Oregon Senate Bill 81 (2005).

Schedule 41 Base Rates by an average of +10.0%, (2) PAC's proposal to modify two aspects of the Rate Design for Schedule 41 Base Rates, (3) PAC's proposed Rate Mitigation Adjustment ("RMA") to be applied to Schedule 41 Base Rates, (4) PAC's proposed Return on Equity ("ROE"); and (5) PAC's proposal to modify the Power Cost Adjustment Mechanism ("PCAM").

Q. Did you prepare an exhibit for this docket?

A. Yes. I prepared the following KWUA Exhibits:

- KWUA/101: Resume of Lloyd C. Reed
- KWUA/102: Referenced News Articles
- KWUA/103: 1956 United States Department of the Interior Contract with the California Oregon Power Company

Q. How is your testimony organized?

A. My testimony is organized as follows:

- Issue 1, PAC's Proposed Increases to Schedule 41 Irrigation Base Rates.
- Issue 2, PAC's Proposed Rate Design for Schedule 41 Base Rates – Basic Charges and Load Size Charges.
- Issue 3, PAC's Proposed Rate Design for Schedule 41 Base Rates – Energy Distribution Charge.
- Issue 4, PAC's Proposed Schedule 41 Rate Spread.
- Issue 5, PAC's Proposed Return on Equity.
- Issue 6, PAC's Proposal to Modify the Power Cost Adjustment Mechanism.

Q. Please summarize your recommendations and adjustments

A. My recommendations and adjustments are as follows:

1. Increases to Schedule 41 Irrigation Base Rates:

   a. The Commission should limit PAC's average percentage increase to its Schedule 41 Net Rates to a level no higher than the average percentage increase that it approves for PAC's Schedule 4 Residential Net Rates.

2. Rate Design for Schedule 41 Base Rates – Basic Charges and Load Size Charges:

   a. The Commission should consider PAC's proposed changes from multiple public policy perspectives. Irrigation customers are under acute economic distress due to market conditions, COVID-19 related impacts, drought, and regulatory constraints. There is also a strong policy history and practice of supporting low-cost power for irrigation and drainage pumping, in both the Upper Klamath Basin and throughout the Western region. Additionally, in this context, PAC appears to be proposing fundamental structural changes to its Rate Design to collect an increased percentage of its Schedule 41 Revenue Requirement from non-bypassable fixed Basic Charges and Load Size Charges.

   b. The Commission should require that PacifiCorp assess, and factor into its derivation of updated Schedule 41 Basic Charges and Load Size Charges, the negative economic impacts on irrigation customers (as compared to currently-in-effect Base Rates) who desire to install self-generation such as non-carbon emitting solar PV and/or implement pumping/sprinkler energy efficiency upgrades.

   c. The Commission should require that PacifiCorp assess, and factor into its derivation of updated Schedule 741 Basic Charges and Load Size Charges, the negative economic impacts on irrigation customers (as compared to currently-in-

effect Base Rates) who desire to take service under PAC's optional Schedule 741 Time of Use Rate Tariff.

3. Rate Design for Schedule 41 Base Rates – Energy Distribution Charge:

   a. The Commission should require that PacifiCorp: (1) review the applicability of its standard hypothetical 7-branch Distribution Circuit Model to the Company's actual physical distribution infrastructure that exists in the Upper Klamath Basin, and (2) make the appropriate adjustments to ensure that the terms and conditions of the 1956 Power Sales Agreement are accurately reflected in the updated Distribution Energy Charge to be incorporated into the new Schedule 41 Base Rates.

4. Schedule 41 Rate Spread:

   a. The Commission should establish the RMA/Schedule 299 credit to be applied to the Schedule 41 at the level needed such that, when combined with other changes that the Commission may accept to PAC's initial 2020 GRC rate proposals, the resultant overall average percentage increase in Base Rates to Schedule 41 Irrigation customers is no higher than the average percentage increase in Base Rates to Schedule 4 Residential customers.

5. Return on Equity:

   a. The Commission should reject PAC's request to increase its allowed ROE from 9.8% to 10.2%.

   b. If the Commission allows PAC to do away with the dead bands and sharing bands currently incorporated into the PCAM, the Commission should factor this change into its determination of a new just and reasonable ROE for the Company that is

lower than 9.8% and that reflects the reduced financial risks to the Company associated with this change.

6. Modifications to the Power Cost Adjustment Mechanism:

a. To the extent that the Commission accepts PAC's proposal to combine the Transitional Adjustment Mechanism ("TAM") and PCAM into a single combined Annual Power Cost Adjustment ("APCA") process, the Commission should reject PAC's associated proposal to eliminate the current set of PCAM dead bands and sharing bands.

b. If the Commission does not accept PAC's proposal to create the combined APCA process, the Commission should require that the current set of dead bands and sharing bands be retained in the PCAM.

c. If the Commission allows PAC to do away with the dead bands and sharing bands currently incorporated into the PCAM, the Commission should factor this change into its determination of a new just and reasonable ROE for the Company that is lower than 9.8% and that reflects the reduced financial risks to the Company associated with this change.

III. ISSUES

ISSUE 1, PAC's PROPOSED INCREASES TO SCHEDULE 41 IRRIGATION BASE RATES AND NET RATES

Q. Can you summarize PacifiCorp's proposed increases to the Base Rates and Net Rates contained in its Schedule 41 Irrigation Tariff?

A. Yes. PacifiCorp is proposing an overage average increase to Schedule 41 Base Rates of +10.1%. Including the applicable adjustment schedule charges and credits, PAC's proposed overall average increase to Schedule 41 Net Rates would be +10.0%.[3]

Q. How does PAC's proposed increases to the Schedule 41 Irrigation Base Rates and Net Rates compare to the rate increases that it is proposing for its other customer classes in the 2020 GRC?

A. PAC's proposed average increase to Schedule 41 Base Rates is 68% higher than the average increase of +6.0% as measured across all of its Oregon customer classes.[4] PAC's proposed average increase to Schedule 41 Net Rates is 85% higher than the average increase of +5.4% as measured across all of its Oregon customer classes.[5] Furthermore, PAC's proposal to increase Schedule 41 Base Rates is 58% higher than its proposed average increase of +6.4% to its Schedule 4 Residential customers.[6] PAC's proposal to increase Schedule 41 Net Rates is exactly double its proposed average increase of +5.0% to its Schedule 4 Residential customers.[7]

Q. Do you believe that PAC increasing Net Rates to its Schedule 41 customers at twice the level as for its Schedule 4 Residential customers is a just and reasonable proposal?

A. No. First, PacifiCorp's Schedule 41 irrigation customers in the state of Oregon are facing many of the same economic pressures currently being felt by the Company's Residential

[3] PAC/1410, Meredith/1. The cited rate percentage increases do not include the effects of the Low Income Bill Payment Assistance Charge (Schedule 91), the BPA Credit (Schedule 98), the Public Purchase Charge (Schedule 290), and the Energy Conservation Charge (Schedule 297).
[4] *Ibid.*
[5] *Ibid.*
[6] *Ibid.*
[7] *Ibid.*

customers and by other agricultural producers located throughout the country due to the COVID-19 recession, including adequacy of a workforce, workforce safety challenges, and supply-chain disruptions, all of which were added on top of already problematic market conditions. Second, farmers in the Upper Klamath Basin are currently experiencing extreme shortages of surface water due to severe drought and regulatory conditions that are present in that portion of the state.[8] Most producers in the off-Project area are subject to water curtailments based on instream tribal water right calls that have become common in recent years. As a result, revenues are severely depleted and parties that have supplemental groundwater supplies must pump from wells in order to substitute for surface water that was historically available. In the Klamath Project, the combination of a drought and Endangered Species Act restrictions led to the announcement in April 2020 that there would be only about 140,000 acre-feet of water available from Upper Klamath Lake for irrigation purposes, which is at best 40% of what is usually needed. The 140,000 acre-foot figure was reduced in early May, even though producers had already made crop investments based on the supply that had been announced in April. It is currently uncertain what the actual 2020 water supply volume will be, but it is sure to be far short of demand which will lead to very significant decreases in revenues for farmers in the Upper Klamath Basin. This year's conditions will also have impacts for years to come due to farmers needs to recover losses, finance debt, and potential loss of customers. It bears noting that irrigation water users in the Klamath Project are required to pay costs for operation and maintenance of federal and District-operated works,

[8] Exhibit KWUA/102 contains copies of a May 25, 2020 San Francisco Chronicle article and a June 3, 2020 California Farm Bureau Federation article that describe the current drought situation in the Upper Klamath Basin and the associated difficulties being faced by farmers in the Klamath Project.

whether they actually receive water or not. Also, both Districts and individual farms will incur atypical pumping costs in order to manage water supplies in ways that have not previously occurred. Additionally, the lack of available surface water supplies will result in many farmers who normally receive water deliveries from the Klamath Project having an increased reliance on deep well pumping which acts to materially increase these farms' costs of production. This situation creates an economic "double whammy" for Basin farmers in that they not only have higher costs of production but also lower crop yields on which to earn revenues. A few Districts in the Klamath Project also own wells, which will be operated within applicable constraints and at increased cost to producers. On top of these already critical conditions, farmers in the region are also facing the looming possibility of a 10% increase in their PacifiCorp irrigation-related electricity costs.

Q. Do you believe that PAC's Schedule 41 Irrigation customers should be treated in a similar fashion as its Schedule 4 Residential customers with regard to potential increases in Net Rates?

A. Yes. First of all, many of the farmers that are located in PacifiCorp's Oregon service territory are both irrigation and residential customers. In addition, many of PAC's individual irrigation loads are quite small in nature; for example, the average annual energy consumption across all of PAC's Schedule 41 irrigation customer class is only about 3.2 aKW per customer.[9] Second, there is a long-established precedent in the Pacific Northwest ("PNW") of Residential and Small Farm customers being treated in a

[9] PAC/1410, Meredith/1.

similar fashion with regard to the wholesale power costs that are incorporated into the retail rates of investor-owned utilities such as PacifiCorp.

Q. Can you describe the long-term precedent that you mentioned above that links the rates of Residential and Small Farm customers served by Investor-owned Utilities located in the PNW?

A. Yes. In 1980, the United States Congress enacted the Pacific Northwest Electric Power Planning and Conservation Act (the "Act").[10] Passage of the Act was the culmination of years of discussion and negotiation between the Bonneville Power Administration ("BPA"), regional publicly-owned and investor-owned utilities, and multiple other policy stakeholders. One of the key provisions of the Act was the creation of the BPA Residential Exchange ("ResEx") Program. Under the ResEx Program, Residential and eligible Small Farm electricity customers of investor-owned utilities receive a portion of the benefits of BPA's relatively low-cost wholesale power supply.[11]

Q. Do PacifiCorp's Oregon Residential and eligible Small Farm customers receive any benefits under the BPA ResEx Program?

A. Yes. PacifiCorp's Oregon Schedule 4 Residential and eligible Schedule 41 Irrigation customers receive BPA ResEx benefits via an adjustment Schedule 98 credit.[12] The

[10] The full text of the Act (Pub. L. 96-501) is available at https://uscode.house.gov/view.xhtml?path=/prelim@title16/chapter12H&edition=prelim.
[11] Under the Act, Small Farm customers are eligible to receive ResEx benefits if: (1) their peak load demand is less than 400 HP, and (2) their total monthly energy consumption is less than 222,000 Kwh. It is believed that the majority of PAC's Irrigation customers located in the Oregon portion of the Upper Klamath Basin and in other parts of the state meet the criteria to be eligible Small Farms as defined in the Act. The latest version of the Customer Load Eligibility Guidelines (May 2019) for the BPA ResEx Program is available at: https://www.bpa.gov/Finance/ResidentialExchangeProgram/Documents/REP%20CLEG%202019_05_31_19.pdf
[12] On PacifiCorp's Oregon customers' bills, the Schedule 98 credit is labeled as "BPA Columbia River Benefits."

amount of the ResEx credit is recalculated by BPA every two years; for 2020 the Schedule 98 credit amount is 0.691 cents/Kwh.

Q. Do any other classes of PacifiCorp's Oregon electricity customers receive the Schedule 98 ResEx Credit?

A. No. The language in the Act is very explicit that the BPA ResEx credit is only available to Residential and eligible Small Farm customers. It is very apparent from the language contained in the Act that Congress' intent – and the intent of multiple stakeholders in the PNW region as well – was to provide the ResEx benefit only to small electricity customers. While the BPA ResEx Program does not prevent local investor-owned utility providers – such as PAC – from raising their retail electric rates to Residential and Small Farm customers over time, the ResEx credits do nevertheless help to mitigate the impacts of such rate increases.

Q. With regard to establishing retail electric rates, is the Commission required to treat Oregon Residential and Small Farm customers in an equal fashion similar to how they are treated under the BPA ResEx Program?

A. No. The Commission has broad authority to establish retail electric rates consistent with Oregon State statues and the Commission's own established policies and procedures. However, in my opinion the structure of the BPA ResEx Program provides a clear example of how many different and often disparate interest groups in the PNW came together and jointly agreed that both Residential and Small Farm customers deserved to receive the same level of economic benefits under the ResEx Program in order to help reduce their overall electricity purchase costs. I believe that this same concept of small customer equivalency could also be applied by the Commission with regard to mitigating

the increases in Net Rates currently being proposed by PacifiCorp for its Schedule 41 Irrigation customers.

Q. Are there any other historical or policy considerations that you believe to be relevant to the Commission's consideration?

A. Yes. As discussed elsewhere in my testimony, there is a long history of availability and use of low-cost power for irrigation water users in the Upper Klamath Basin. This history has been associated with interrelated issues of irrigation and power development that afforded PacifiCorp hydroelectric generation opportunities that benefitted, and continue to benefit, all its customers. Consistent with this history, the Klamath River Basin Compact, in Article IV, expresses a policy of Oregon and California for development of the hydroelectric potential of the Klamath River to provide the lowest power cost that is reasonable for irrigation and drainage pumping. (Oregon Revised Statutes section 542.) The infrastructure of the Klamath Project was originally designed around, and relied upon, the availability of low-cost power; however, power supply circumstances have changed, and state policies regarding potential hydropower development have shifted as well. In addition, higher electricity prices – which translate directly into higher pumping costs – can inhibit the efficient recirculation and reuse of water in the Basin by making these operations economically infeasible for the Districts and individual irrigators.

Q. Do you have any overall recommendations regarding PAC's proposed new set of Schedule 41 Net Rates?

A. Yes. Consistent with the general treatment of similarly situated Residential and Small Farm customers under the BPA ResEx Program, I recommend that the Commission limit

PAC's average percentage increase to Schedule 41 Net Rates to a level no higher than the average percentage increase that it approves for PAC's Schedule 4 Residential Net Rates.

ISSUE 2, PAC's PROPOSED RATE DESIGN FOR SCHEDULE 41 BASE RATES – BASIC CHARGES AND LOAD SIZE CHARGES

Q. Can you briefly describe the concept of electric utility retail Rate Design?

A. Yes. Once a utility has determined the annual amount of revenue that it is targeting to collect from each customer class – referred to as the "Revenue Requirement" – the utility will then establish a set of rate components (i.e., "determinants") that are designed to allow the utility to recover its Revenue Requirement from each individual customer class. Individual customer classes may have varying sets of individual rate determinants, especially with regard to small electrical loads versus large loads. The specific mix of these different rate determinants to be applied to each customer class is often referred to as Rate Design.

Q. Can you summarize the general rate determinant categories that are incorporated into PAC's currently-in-effect Schedule 41 Base Rates?

A. Yes. PAC's Schedule 41 Tariff presently contains four different general categories of rate determinants. The first determinant category is the annual Basic Charges; these are fixed annual dollar amounts that are assessed in November of each year to each Schedule 41 load based upon the load's maximum rated demand (as measured in KW). The second rate determinant category is the annual Load Size Charges. Load Size Charges – which are a form of demand charge – are also fixed dollar amounts that are assessed in November of each year, based upon the highest actual KW usage recorded across a historical two-month period. The third determinant category consists of multiple

energy-related charges that are assessed on the basis of the load's actual monthly energy consumption (as measured in Kwh). The majority of the Schedule 41 Base Rate energy charges consist of the Distribution Energy Charge and the Schedule 200 Energy Charge. Finally, the fourth rate determinant category is reactive power; this charge is assessed based upon the actual monthly amount of reactive power consumed by the load (as measured in Kvar).

Q. Is PacifiCorp proposing any significant changes to the Schedule 41 Irrigation Rate Design in the 2020 GRC?

A. Yes. PAC is proposing to implement a major shift in how it allocates its overall Revenue Requirement across the four Schedule 41 rate determinant categories. First, PAC is proposing to significantly increase the amount of its annual Revenue Requirement that it collects from non-bypassable fixed Basic Charges and the Load Size Charges. Second, the Company is proposing a large increase to its Distribution Energy Charge. I discuss this second Rate Design topic separately under Issue 3.

Q. Can you Summarize PAC's proposal to significantly increase the Schedule 41 Basic Charges and the Load Size Charges?

A. Yes. According to information contained in an exhibit to the direct testimony of Robert M. Meredith, PAC is proposing to increase its overall annual Basic Charges by +25.9% for Schedule 41 Irrigation customers that take service at secondary voltage (which includes 99.98% of PAC's total irrigation loads).[13] In addition, the Company is proposing to increase its overall annual Load Size Charges by +28.0%.[14]

[13] PAC/1409, Meredith/7.
[14] *Ibid.*

Q. How does PAC support its proposal to increase the Schedule 41 Load Size Charges by an average of +28.0%?

A. Details purporting to support PacifiCorp's proposal to increase the Schedule 41 Load Size Charges by an average of +28.0% are contained in the Company's updated Marginal Cost Study, which is sponsored in testimony by Mr. Meredith.[15]

Q. Is PAC also proposing significant increases to the Load Size Charges and/or Demand charges to customer classes other than its Schedule 41 Irrigation Class?

A. Yes. For example, as shown in Mr. Meredith's testimony, PAC is proposing to increase the combined Schedule 23 Load Size/Demand Charges by +25.7%, the Schedule 28 combined Load Size/Demand Charges by +14.9%, and the combined Schedule 30 Load Size/Demand Charges by +16.8%.[16] All three of these percentage increases are much higher than PAC's proposed overall increase in Base Rates to these three customer classes, which is indicative of a revenue collection shift between rate determinant categories similar to what I described above for Schedule 41. This situation provides further evidence that PAC is likely employing a concerted strategy of shifting more of its annual revenue collection onto non-bypassable fixed charges and demand-related charges.

Q. Do you have any opinions as to why PAC appears to be shifting a significant portion of its revenue collection onto fixed charges and demand-related charges?

A. Yes. Shifting more of its revenue collection onto fixed and demand-related charges can act to reduce PAC's overall earnings volatility since the Company would be recovering a

[15] See PAC/1400, Meredith/7-14, and PAC/1408, Meredith/1-82.
[16] PAC/1409, Meredith/4-6. All cited figures are for customers who take service at secondary voltage.

lesser portion of its overall Revenue Requirement via energy-related charges which can vary from year-to-year based on customers' energy consumption.

Q. Can you describe some of the negative aspects to irrigation customers associated with PAC shifting more of its Schedule 41 revenue collection onto fixed charges and demand-related charges?

A. Yes. First, PacifiCorp shifting more of its revenue collection onto non-bypassable fixed and demand-related charges also makes it more difficult for customers to be able to economically install small-scale self-generation such as solar PV panels. This action also discourages the installation of energy efficiency improvements by irrigators – such as variable speed pumping equipment – since customers still have to pay the full tariff Basic Charges and Load Size Charges even if they reduce their overall energy consumption. And finally, the ability of irrigation customers to utilize PAC's Schedule 741 Irrigation Time of Use Rate option is materially reduced since, once again, customers still have to pay the high Basic Charge and Load Size Charges even if they shift their energy consumption off of PacifiCorp's designated On-Peak hours.

Q. Do you have any recommendations regarding PAC's proposal to shift more of its revenue collection from Schedule 41 irrigation customers onto non-bypassable Basic Charges and Load Size Charges?

A. Yes, I have three recommendations. First, in establishing new PacifiCorp Base Rates I recommend that the Commission consider PAC's proposed changes from multiple public policy perspectives. In my opinion, PAC is not merely attempting to incorporate the results of some updated models into its retail rate tariffs (including the Schedule 41 Irrigation Tariff) but rather PAC appears to be proposing some fundamental structural

changes to its Rate Design. Second, I recommend that the Commission require that PacifiCorp assess and factor into its derivation of updated Schedule 41 Basic Charges and Load Size Charges, the negative economic impacts on irrigation customers (as compared to currently-in-effect Base Rates) who desire to install self-generation such as non-carbon emitting solar PV and/or implement pumping/sprinkler energy efficiency upgrades. Lastly, I recommend that the Commission require that PacifiCorp assess, and factor into its derivation of updated Schedule 741 Basic Charges and Load Size Charges, the negative economic impacts on irrigation customers (as compared to currently-in-effect Base Rates) who desire to take service under PAC's optional Schedule 741 Time of Use Rate Tariff.

ISSUE 3, PAC's PROPOSED RATE DESIGN FOR SCHEDULE 41 BASE RATES - DISTRIBUTION ENERGY CHARGES

Q. Can you briefly summarize PAC's proposal with regard to updating the Schedule 41 Distribution Energy Charge?

A. Yes. PAC is proposing to significantly increase the Distribution Energy Charge in the Schedule 41 Rate Tariff from its current level of 3.569 cents/Kwh to 4.464 cents/Kwh, which represents an increase of 25.1%.

Q. How does PAC support its proposal to increase the Schedule 41 Distribution Energy Charge by +25.1%?

A. PAC's proposal to significantly increase to the Schedule 41 Distribution Energy Charge is largely based upon the results of its updated Distribution Circuit Model. In his Direct Testimony, Mr. Meredith states that since PAC does not have the analytical capability to model its entire actual six state electrical distribution system; therefore it has instead

developed a more simplified and hypothetical 7-branch circuit model that attempts to capture how different load types are physically connected to PAC's distribution grid.[17] Using various sets of PacifiCorp input parameters derived from Oregon state-wide averages, the model then allocates a portion of PAC's distribution system costs to each individual load class through a series of complex calculations. Use of this updated, hypothetical circuit modeling process has resulted in PAC assigning a much higher share of its distribution costs to the Irrigation load class relative to the cost assignments that are incorporated into the current set of Schedule 41 Base Rates, which are based upon PAC's modeling methodology that it used in its 2013 GRC.

Q. Do you agree with the results of PAC's updated Distribution Model with regard to its allocation of distribution costs to the Schedule 41 Irrigation class?

A. No. First of all, PAC has failed to demonstrate why the methodology it previously used to determine the allocation of distribution costs that are incorporated into the currently-in-effect Schedule 41 Base Rates (which are based upon figures contained in the 2013 GRC's Stipulation Agreement as approved by the Commission in Order 13-474) suddenly no longer results in a reasonable Energy Distribution Charge. Mr. Meredith states that the updated Distribution Circuit Model study ". . . is similar to the cost of service study the Company presented in docket UE 263 (2013 Rate Case), with some notable updates to the methodology which better reflect marginal costs as they exist today."[18] In my opinion, however, it is extremely unlikely that PAC's costs could have changed so much over a short 7-year period of time as to create a +25.1% increase to the

[17] PAC/1408, Meredith/5.
[18] PAC/1400, Meredith/5.

Distribution Energy Charge to be assessed to the Schedule 41 customer class. Second, based upon information provided to me by several water users and long-time residents in the Upper Klamath Basin, PAC's simplified Distribution Circuit Model may not take into consideration some important characteristics that are present in the Basin where approximately one-half of PAC's total Oregon irrigation load is located.

Q. Can you describe any characteristics of PAC's distribution system in the Upper Klamath Basin that you believe may not be accurately incorporated into PAC's updated Distribution Circuit Model?

A. Yes. In 1956, PacifiCorp – then known as the California Oregon Power Company or Copco – entered into a 50-year power sales contract (the "1956 Agreement") with the United States Department of the Interior.[19] In addition to specifying the terms and conditions for Copco's sale of power to the United States and individual Copco retail customers in the Upper Klamath Basin, the 1956 Agreement also contained language that addressed the costs associated with interconnecting new pumping loads with Copco's existing distribution system within the Basin. In particular, section 5 of Exhibit B to the 1956 Agreement stated:

> For installations of more than 7-1/2 H.P., Copco shall make all necessary line extensions at its own expense.

In reviewing PAC's updated Distribution Circuit Model, I could not identify how, or if, PAC incorporated the above-referenced contractual obligation into their assignment of distribution-related costs to the Schedule 41 Irrigation class of customers. While it is true that the 1956 Agreement expired in 2006 and was not renewed, the manner in which

[19] A copy of the 1956 Agreement is included in Exhibit KWUA/103.

PacifiCorp chose to add new pumping loads onto their existing distribution system in the Upper Klamath Basin under the terms of the Agreement may not be entirely consistent with their hypothetical 7-branch distribution circuit diagram, which assumes that all load types are connected to the system at the same point in time with seven sections of distribution lines of exactly equal length. This is an especially relevant point since many of the pumping loads that exist today in the Upper Klamath Basin were originally installed during the late 1950's and 1960's pursuant to the above cited contract provision.

Q. Do you have any recommendations regarding PAC's Rate Design proposal to significantly increase the Schedule 41 Distribution Energy Charge?

A. Yes, I recommend that the Commission require that PacifiCorp: (1) review the applicability of its standard hypothetical 7-branch Distribution Circuit Model to the Company's actual physical distribution infrastructure that exists in the Upper Klamath Basin and, (2) make the appropriate adjustments to ensure that the terms and conditions of the 1956 Agreement are accurately reflected in the updated Distribution Energy Charge to be incorporated into the new Schedule 41 Base Rates.

ISSUE 4, PAC's PROPOSED RATE SPREAD FOR SCHEDULE 41 NET RATES

Q. Can you describe PacifiCorp's Rate Mitigation Adjustment?

A. Yes. As discussed in Mr. Meredith's testimony,[20] the RMA is a mechanism used to implement the so-called Rate Spread between PAC's various different customer classes. While the Commission establishes electricity rates on the basis of the cost to serve each customer class, the Commission nevertheless has the ability to set rates for any specific

[20] PAC/1400, Meredith/21-23.

class at a level either above, or below the indicated cost of service by applying RMAs. The RMA mechanism allows the Commission: (1) to incorporate additional information into their rate decisions that might not have been completely reflected in PAC's cost of service calculations, and/or (2) to implement various public policy initiatives. RMAs for PAC's individual customer classes are applied via an adjustment Schedule 299 charge or credit. In addition, it should be noted that the RMA is a revenue neutral process such that the arithmetic sum of the RMAs applied across all of PAC's individual rate classes (as measured in dollars) will equal zero.

Q. What is PAC proposing with regard to the RMA to be applied to the new Schedule 41 Base Rates?

A. PAC is proposing an adjustment Schedule 299 RMA credit of 0.544 cents/Kwh for the Schedule 41 customer class; the application of this RMA credit amount to PAC's proposed new set of Base Rates results in an overall increase to Base Rates of +10.0%. I note, however, that even though PAC is proposing an increase to the Schedule 41 Base Rates that is almost double the average percentage increase as measured across all of its customer classes, the Company is actually proposing to *decrease* the Schedule 41 RMA credit relative to its current level of 0.595 cents/Kwh.

Q. Do you have a recommendation regarding the RMA to be applied to PAC's Schedule 41 Base Rates?

A. Yes. I recommend that the Commission establish the RMA/Schedule 299 credit to be applied to Schedule 41 Base Rates at the level needed such that, when combined with other changes that the Commission may accept to PAC's initial 2020 GRC rate proposals, the resultant overall average percentage increase in Base Rates to Schedule 41 Irrigation

customers is no higher than the average percentage increase in Base Rates to Schedule 4 Residential customers.

ISSUE 5, PAC's PROPOSED RETURN ON EQUITY

Q. What is PacifiCorp's currently allowed Return on Equity?

A. PacifiCorp's current allowed ROE is 9.8%. This figure was established in the Company's 2013 GRC.[21]

Q. What allowed ROE is PacifiCorp requesting under its initial 2020 GRC proposal?

A. According to the testimony of Company witness Ann E. Bulkley, Ms. Bulkley states that a reasonable range of ROEs for PacifiCorp is between 9.75% and 10.25%. Ms. Bulkley then recommends that PAC's allowed ROE be established at 10.20%.[22]

Q. Does Ms. Bulkley present any analyses in support of her recommendation to increase PAC's allowed ROE from 9.8% to 10.2%?

A. Yes. In her testimony, Ms. Bulkley presents the results of six different analyses that are commonly utilized in the electric utility industry to establish ranges of just and reasonable ROEs for investor-owned utilities such as PacifiCorp. Specifically, Ms. Bulkley conducted the following types of ROE analyses for PAC: (1) Constant Growth DCF Model, (2) Multi-Stage DCF Model, (3) Discounted Cash Flow Model, (4) Capital Asset Pricing Model, (5) Bond Yield Plus Risk Premium Analysis, and (6) Expected Earning Analysis.

[21] See Order 13-474, *In the Matter of PacifiCorp, dba Pacific Power, Request for a General Rate Revision* (Dec. 18, 2013).
[22] PAC/400, Bulkley/4.

Q. Do you have any overall concerns regarding the various ROE analyses that Ms. Bulkley performed in recommending that PAC's allowed ROE be increased from its current level of 9.8% to 10.2%?

A. Yes. One of the key inputs that is incorporated in one form or another into all of Ms. Bulkley's ROE analyses are the assumed long-term interest rates.[23] In general, I would expect that lower long-term interest rate assumptions and/or lower costs of long-term capital assumptions would tend to produce lower overall ranges of reasonable ROEs from the types of analyses performed by Ms. Bulkley, with all other factors in the analyses held constant.

Q. Did Ms. Bulkley discuss the long-term interest rate assumptions that she incorporated into her various PacifiCorp ROE analyses?

A. Yes. Ms. Bulkley's testimony contains a lengthy section titled, "The Current and Expected Interest Rate Environment."[24] In this portion of her testimony, Ms. Bulkley cites several different historical interest rate figures and also various forecasts of future short-term and long-term rates. Of particular note is Ms. Buckley's observation that the recent decline in interest rates in late 2019 and early 2020 was not indicative of a long-term trend.[25] Therefore, in performing her various ROE analyses Ms. Bulkley tended to place a higher weighting on future 10-year and 30-year interest rate forecasts than on the recently observed actual rates, based upon her general assumption that the relatively low

[23] Ms. Bulkley's interest rate assumptions also factored into her assessment of long-term capital market conditions.
[24] PAC/400, Bulkley/19-26.
[25] PAC/400, Bulkley/23. Ms. Buckley goes on to state that interest rates had recently been driven to abnormally low levels due to the Federal Reserve cutting its federal funds rate several times in 2019 in response to financial market uncertainties regarding the ongoing trade dispute between the United States and China.

interest rates seen in mid-to-late 2019 were not indicative of expected conditions going forward in time.

Q. How did Ms. Bulkley derive the specific long-term interest rates that she utilized in her various PacifiCorp ROE Analyses?

A. Ms. Bulkley assembled interest rate forecasts from multiple different publicly-available sources which she cites in her testimony. The type of information that Ms. Bulkley relied upon in deriving the long-term interest rates utilized in her ROE analyses includes the following:

> According to the December 2019 issue of the Blue Chip Financial Forecasts, the yields on 10-and 30-year Treasury Bonds are expected to increase over the near-term of Q1 2020 to Q1 2021. Similarly, strategists at both JP Morgan Chase and Merrill Lynch are projecting increases in long-term government bond yields over the near-term. Merrill Lynch is projecting that the yield on the 10-year Treasury Bond will increase to 2.00 percent by the end of 2019, while strategists at JP Morgan Chase indicated that yields on the 10-year Treasury Bond could increase up to 100 basis points over the next six months.[26]

Likewise, Ms. Buckley's testimony contains the following re-statement from Kiplinger Personal Finance (Aug. 12, 2019):

> While the trade war lasts, 10-year Treasury note rates are likely to remain 2% or a bit lower. Mortgage rates will stay around the current 3.6% for 30-year fixed, 3.1% for 15-year. If the trade war relents, we expect that 10-year Treasury notes could rise to the mid-to-upper 2% range. The 30-year fixed-rate mortgage would also rise to 4.2%, and the 15-year fixed-rate mortgage to 3.7%.[27]

[26] PAC/400, Bulkley/25.
[27] PAC/400, Bulkley/24.

Additionally, in conducting her Bond Yield Risk Premium analysis, Ms. Bulkley stated that she incorporated a 30-year U.S. Treasury bond yield of 2.36%; this figure was based on projections referenced to the period Q1 2020 – Q1 2021.[28]

Q. Has Ms. Bulkley's opinion that she stated in her testimony that long-term interest rates would likely rise from the levels observed in mid-to-late 2019 turn out to be an accurate assumption?

A. No. In fact, just the opposite has occurred. For example, for the 30-day period ending on June 2, 2020, the average yield on 10-year U.S. Treasury bonds was 0.66% and the average yield on 30-year U.S. Treasury notes was 1.34%.[29] In addition, the average 30-year fixed rate mortgage rate for the week ending May 28, 2020 was 3.15% and the average 15-year fixed mortgage rate was 2.62%.[30] All four of these long-term interest rate benchmarks are significantly lower than the forecasts that Ms. Bulkley relied upon when performing her set of PacifiCorp ROE analyses. I would therefore expect that if Ms. Bulkley were to re-run her various PAC ROE analyses using these current long-term interest rates, the resultant range of reasonable ROEs would likely be lower than what Ms. Bulkley presented in her initial testimony.

Q. Besides assumptions regarding long-term interest rates, do you have any other observations regarding Ms. Bulkley's recommendation to increase PAC's allowed ROE from 9.8% to 10.2%?

[28] PAC/400, Bulkley/62.
[29] Daily interest rates on U.S. Treasury bonds and notes since January 1, 2020 are available at: https://www.treasury.gov/resource-center/data-chart-center/interest-rates/pages/TextView.aspx?data=yieldYear&year=2020
[30] Weekly average U.S. mortgage rates are available at: http://www.freddiemac.com/pmms/.

A. Yes. According to information contained in the testimony of Shelley E. McCoy, increasing PacifiCorp's allowed ROE from its current level of 9.8% to 10.2% would result in an additional $21.0M per year of earnings for the Company; this figure represents approximately 30% of PAC's overall requested rate increase of $70.8M per year.[31] In my opinion, given the current nationwide economic recession and the additional hardships being experienced by many farm owners located in the Upper Klamath Basin due to farming and marketing challenges and ongoing drought conditions (and whom are facing a +10.0% increase in electricity rates), it is not just and reasonable that PacifiCorp be allowed to raise its rates at this time in order to generate an additional $21.0M/year in corporate profits.

Q. Do you have any recommendations regarding PacifiCorp's proposal to increase its allowed ROE from 9.8% to 10.2%?

A. Yes. For the reasons stated above, I recommend that the Commission reject the Company's request to increase its allowed ROE from 9.8% to 10.2%. Furthermore, should the Commission allow PAC to do away with the dead bands and sharing bands currently incorporated into the PCAM (which I address under Issue 6), I recommend that the Commission factor this change into its determination of a new just and reasonable ROE for the Company that: (1) is lower than 9.8%, and (2) reflects the reduced financial risks to the Company associated with this change.

[31] PAC/1301, McCoy/1.0-1.1.

ISSUE 6, PAC's PROPOSAL TO MODIFY THE POWER COST ADJUSTMENT MECHANISM

Q. Is PacifiCorp proposing any changes to the Power Cost Adjustment Mechanism in its 2020 GRC?

A. Yes. PAC witness Michael G. Wilding proposes that the Company modify the PCAM in two general ways. First, Mr. Wilding proposes that the timing of the annual backward-looking PCAM and the forward-looking TAM processes be better aligned to help reduce potential inconsistencies. Mr. Wilding therefore proposes that the PCAM and TAM be combined into a single annual process which he refers to as the APCA.[32] Second, Mr. Wilding proposes that the so-called dead bands and sharing bands that are incorporated into the current version of the PCAM be eliminated and not be included in the new APCA process.[33]

Q. Do you support PAC's proposal to combine the PCAM and TAM processes into a single APCA process?

A. I take no position regarding whether or not PAC should combine the PCAM and TAM into the single APCA.

Q. Do you support PAC's proposal to eliminate the dead bands and sharing bands that are currently incorporated into the PCAM?

A. No.

Q. Can you explain why you oppose PAC eliminating the dead bands and sharing bands that are currently incorporated into the PCAM?

[32] PAC/500, Wilding/9-15.
[33] PAC/500, Wilding/14.

A. Yes. In my experience, the purpose of including dead bands and sharing bands in electric utility power cost adjustment mechanisms such as PAC's PCAM is generally three-fold. First, establishing dead bands act to reduce the number of potentially contentious power cost adjustment cases, which helps to reduce regulatory burdens on both the utility and stakeholders. Second, sharing bands are a mechanism whereby power cost forecast risk is shared between the utility and its customers. And lastly, the overall combination of dead bands and sharing bands provides an incentive for the utility to produce reasonable power cost forecasts. All three of these aforementioned characteristics are exhibited in the current set of dead bands and sharing bands that are incorporated into PAC's current PCAM.

Q. Why is PAC proposing to eliminate the current set of dead bands and sharing bands as part of its new combined APCA process?

A. According to Mr. Wilding's testimony, there are two primary reasons. First, PAC believes that the current structure of the PCAM dead bands and sharing bands have resulted in PAC under collecting its actual Net Power Costs ("NPC") from its customers.[34] Second, according to Mr. Wilding and the testimony of Frank Graves, the addition of several large new wind plants into PAC's power supply portfolio will make forecasting its NPC more difficult than in the past.[35]

Q. Do you believe that the two issues you summarize in the previous question justify PAC's proposal to completely eliminate the dead bands and sharing bands that are currently incorporated into the PCAM?

[34] PAC/500, Wilding/4-5.
[35] PAC/500, Wilding/19.

A. No. With regard to PAC's belief that the current set of PCAM dead bands and sharing bands result in under collections of its NPC over time, PAC should propose a new set of dead bands and/or sharing bands that specifically addresses this perceived shortcoming. Instead, PAC is taking a sledgehammer approach of simply wanting to eliminate all of the dead bands and sharing bands without demonstrating that some other more measured approach would address their under-collection issue. Also, based upon my own experience in analyzing the impacts of adding wind generation to electric utility power supply portfolios, PAC adding more wind plants to its portfolio will not suddenly make forecasting PAC's NPC "difficult, if not impossible, to accurately forecast" as Mr. Wilding states.[36] While adding wind plants to an electric utility's power supply portfolio may tend to increase variable power supply forecast accuracy to some degree, this risk can be at least partially mitigated thru the utility's use of weather forecasting services and operational models. Furthermore, if PAC believes that having more wind generation in its power supply portfolio will decrease the accuracy of its forward-looking NPC forecasts, then PAC should propose specific adjustments to the currently-in-place PCAM dead bands and sharing bands that would help mitigate its increased NPC forecast risk.

Q. Do you believe that doing away with the dead bands and sharing bands that are currently incorporated into the PCAM would provide a benefit to PAC's Oregon electric customers?

[36] PAC/500, Wilding/13.

A. No. Essentially what PAC is proposing to do is to replace the current PCAM that result in a sharing of NPC forecast risk between the Company and its customers with a new mechanism that places 100% of the NPC forecast risk onto PAC's retail customers. I do not see how this proposed change provides a benefit to customers, especially when it is PAC itself that creates the NPC forecasts. Furthermore, in shifting 100% of its NPC forecast risk onto its customers, PAC would no longer have any incentive to produce reasonable forecasts of its variable power supply costs.

Q. Do you have any recommendations regarding PAC's proposal to eliminate the current set of PCAM dead bands and sharing bands?

A. Yes. To the extent that the Commission accepts PAC's proposal to combine the TAM and PCAM into a single combined APCA process, I recommend that the Commission reject PAC's associated proposal to eliminate the current set of PCAM dead bands and sharing bands. In addition, should the Commission not accept PAC's proposal to create the combined APCA process, I recommend that the current set of dead bands and sharing bands be retained in the PCAM. Finally, should the Commission allow PAC to do away with the dead bands and sharing bands currently incorporated into the PCAM, I recommend that the Commission factor this change into its determination of a new just and reasonable ROE for the Company that: (1) is lower than 9.8%, and (2) reflects the reduced financial risks to the Company associated with this change.

Q. Does this conclude your testimony?

A. Yes.

LLOYD C. REED
10025 Heatherwood Lane
Highlands Ranch, CO 80126

EXPERIENCE:

REED CONSULTING, Highlands Ranch, CO. August 2009 - Present

President. Provided advice to multiple utility companies and/or their outside legal counsel regarding power system operational and regulatory issues. Assisted an electric utility in incorporating potential regional power shortage events into their long-term integrated resource plan. Performed a cost-of-service study for a Tribally-owned hydroelectric facility. Advised a group of Northwest publicly-owned utilities on proposals received under an RFP issued for new renewable and conventional generating resources. Prepared and submitted expert testimony to the Federal Energy Regulatory Commission in the California Refund Case and Pacific Northwest Refund Case proceedings. Performed a detailed analysis regarding the design and implementation of an intermittent resources regulation tariff on behalf of a large investor-owned utility and submitted expert testimony in a related rate case proceeding at the FERC. Derived wind generation integration costs to be included in an investor-owned utility's retail rate case. Assisted a publicly-owned utility with the marketing of surplus renewable energy and renewable energy credits into the Western markets. Performed multiple triennial Market Power Studies on behalf of two Northwest electric utilities and also prepared numerous Market Concentration Studies in support of generating plant acquisitions by these utilities. Performed preliminary feasibility studies for the development of a solar generating plant to be located in the Northwest region and hydroelectric pumped storage plants to be located in the Rocky Mountain and Northwest regions. Made multiple presentations to FERC Staff regarding the impacts of utility-scale wind generation plants on power systems operations.

GOLDEN ENERGY SERVICES, INC., Highlands Ranch/Littleton, CO. April 2001 - August 2009

Partner/Vice President. Acted as an arbitrator in a contract dispute regarding the operation of a group of hydroelectric generating facilities and an associated set of long-term multi-party wholesale power purchase agreements. Advised the trading staff of a major Western utility in the short term and intermediate term optimization of the utility's wholesale power and natural gas portfolios. Advised a group of Northwest publically-owned utilities regarding potential power pooling arrangements and performed a preliminary pooling feasibility study. Performed multiple Market Power Studies on behalf of two electric utilities in support of FERC Section 203 and 205 rate tariff filings. Submitted testimony to the FERC in the California Refund Case on behalf of a large Northwest utility. Analyzed and recommended actions concerning open access electricity purchase options for several large industrial end use customers. Provided ongoing operational and contractual support to utility and end user customers concerning the operation of the Pacific Northwest hydroelectric generation system. Researched and presented to a national scope merchant power plant developer an assessment of Northwest area transmission availability and potential future impacts of RTO formation. Assisted the staff of an electric utility in the redesign of its retail tariff structure to incorporate alternate pricing and hedging mechanisms. Actively participated in the ongoing risk management process for a major electric/natural gas utility. Assisted in the analysis of a proposed new interstate natural gas pipeline and a proposed new major lateral for a natural gas LDC system. Advised a large Western utility in power marketing strategies for the Northwest and California markets. Assisted several end use industrial customers in the drafting and implementation of integrated energy management policies.

PUGET SOUND ENERGY, INC., Bellevue, WA. September 1999 - March 2001

Director Power Supply Operations. Directed all aspects of PSE's forward power trading, real-time trading, scheduling, and power operations activities. Managed the operations of a diverse, 4500 MW power supply portfolio consisting of hydroelectric, coal, gas, and contract resources. Established and implemented short-term and seasonal operating plans for PSE's hydroelectric resources. Actively managed PSE's rights and obligations pursuant to the Pacific Northwest Coordination Agreement and the Mid-Columbia Hourly Coordination Agreement. Coordinated daily with the PSE Gas Operations group to optimize the operation of 1200 MW of gas-fired generation. Pursued long term power supply agreements and generation development projects as well as negotiating numerous intermediate-term power/heat rate purchases and sales. Actively assisted in the development and implementation of PSE's energy risk management procedures. Recommended various forward hedging strategies to senior management. Prompted PSE's expansion into new markets such as the CAISO and PX. Actively participated in regional energy initiatives such as RTO formation, BPA power and transmission rate cases, and WECC power supply coordination issues. Worked with large end use retail customers on market based pricing programs.

***e prime, inc.*/NEW CENTURY ENERGIES,** Denver, CO. February 1996 - August 1999
Vice President Power Marketing. Responsible for managing all aspects of *e prime's* power business including marketing, trading, scheduling, contract administration, generating plant acquisitions, and regulatory affairs. Developed and presented to senior management long-term business strategies for both *e prime* and its parent company, New Century Energies. Analyzed numerous merchant generating project opportunities and successfully completed negotiations for the purchase of long-term tolling rights from a new gas-fired generating facility. Co-authored *e prime's* risk management policies and procedures including the development and implementation of the company's power trading parameters and limits. Actively participated with other NCE personnel in the preparation of bid packages for utility sponsored asset auctions.

Director of Power Marketing. Developed all business systems necessary to start up a new power marketing/trading affiliate. Responsible for hiring and supervising all of *e prime's* power marketing and trading staff, as well as directing all of the company's wholesale and retail electric trading and marketing activities. Developed and implemented various marketing/trading strategies and policies designed to establish and rapidly grow *e prime's* business. Negotiated numerous power sale, purchase, and transmission agreements ranging in duration from one month to two years. Designed and implemented *e prime's* original power scheduling/accounting software systems as well as establishing the company's power related credit procedures. Oversaw the company's involvement in several electric retail open access programs.

PANENERGY POWER SERVICES, INC., Spokane, WA. October 1994 - January 1996
Manager Power Operations. Developed all necessary business and energy accounting systems required to start up a new power marketing company. Supervised and coordinated PanEnergy's short/intermediate term power marketing and trading activities throughout the Western United States. Negotiated and implemented enabling/tariff agreements allowing PanEnergy to transact business with over 100 different electric utilities and power marketers. Negotiated numerous power sale, purchase, and energy management agreements.

WASHINGTON WATER POWER, Spokane, WA. August 1993 - September 1994
Systems Operations Engineer. Acted as WWP's lead negotiator for the twenty-year extension of the eighteen party Pacific Northwest Coordination Agreement. Provided operational expertise and training to WWP's energy traders and support staff. Actively managed and optimized WWP's contractual rights under multiple power sale and hydroelectric resource coordination agreements. Coordinated WWP's short-term and seasonal hydroelectric operating plans with WWP's marketing and trading strategies. Responsible for all aspects of WWP's data submittals to the PNCA annual planning process.

PUGET SOUND POWER & LIGHT, Bellevue, WA. July 1982 - July 1993
Senior Power Scheduler/Intercompany Pool Representative. Managed the sale and purchase of up to 1000 aMW of short-term firm and non-firm energy. Developed and executed medium range operating and marketing strategies. Aggressively exercised and defended Puget's rights and obligations under more than thirty long-term power and transmission contracts. Provided real-time operational direction to Puget's power dispatchers. Represented Puget at regional Northwest Power Pool and Western Systems Power Pool meetings.

Power Scheduler/Intercompany Pool Representative. Devised hourly preschedules of Puget's hydroelectric, thermal, and contract resources while arranging all of Puget's prescheduled power purchase and sales transactions. Provided technical expertise during the negotiation of long-term power supply contracts. Developed and implemental short-term operating strategies for Puget's hydroelectric resources. Improved energy accounting methods and cut billing preparation time in half. Personally established new trading relationships with twelve utilities throughout the WECC region.

Assistant Power Resource Engineer. Provided technical support for PSE's annual hydroelectric and thermal resource planning processes. Performed hydroelectric plant optimization and redevelopment studies. Assisted in the development of PSE's short-term and medium-term resource operations strategies. Developed streamflow and generation forecasts for several of PSE's hydroelectric generating plants.

EDUCATION:
UNIVERSITY OF WASHINGTON – Seattle, WA. June 1982
B.S., Electrical Engineering

When Life Dries Up

Klamath Basin faces renewed conflict, as drought saps the water and farmers run out of time

Story by Kurtis Alexander | Photos by Carlos Avila Gonzalez | San Francisco Chronicle May 25, 2020

Nowhere has California's dry winter hit harder than the state's far north. In a handful of counties along the rural Oregon border, where late-season rains have done little to sate the parched forests and dusty plains, hundreds of farmers are at risk of having their irrigation water shut off — and watching their crops wither in the field. The Klamath Project, a U.S. government-operated waterworks that steers runoff from the towering Cascades to more than 200,000 acres of potatoes, alfalfa, wheat, onions and other produce on both sides of the state line, is running low on supplies. The local water agencies served by the project say they may not have water to send to farms beyond next month.

The last time irrigation supplies were this scarce in the upper Klamath Basin, 350 miles north of San Francisco, federal marshals were called in to maintain order after angry residents broke through a project head gate in protest. Nineteen years later, the prospect of running out of water arrives as the farm-dependent region faces the additional hardship of the coronavirus outbreak. Many businesses here have had to close or cut hours during the pandemic, leaving little cushion for the imminent fallout of drought.

"I'm very concerned," said Leah Ross, 62, owner of a small convenience store, Ross Market, in Tulelake (Siskiyou County). "I love this place. But without water and because of the coronavirus, the income into town is less. Families move away. It's tough to make ends meet." Even before the recent trials, the town of Tulelake, like many of the neighboring communities in this remote, high-elevation basin, showed the economic scars of empty storefronts, rundown barns and abandoned produce warehouses. The population has slipped over the past two decades, with the loss of farm jobs, and fewer than 1,000 people live here today. Already this year, little water is flowing to the fields that sprawl in every direction from town to the browning foothills that flank the region. The local irrigation district is trying to conserve supplies to prepare for the anticipated shutoff.

Still, growers like Ben DuVal, 39, say there's no way their crops will make it through the growing season, which sometimes runs to late fall, if project supplies dry up. DuVal, who farms alfalfa on a couple of hundred acres south of town, says he's watered his land enough to ensure one alfalfa cutting this year but he can't count on his usual three or four. "The first cutting goes to the bills," he said. "I need the other cuttings to support the family." Additionally, if DuVal doesn't provide hay to his buyers, some of whom are halfway around the world — including Saudi Arabia and South Korea — they will turn elsewhere and may never come back. "This water thing scares me to death," he said.

The 1,200 farms in California and Oregon that rely on the project's water knew it was going to be a difficult season. As of last week, the region had received barely half the precipitation it typically gets at this point in the water year, which begins Oct. 1. Oregon Gov. Kate Brown has declared a drought emergency north of the state line while the situation on the California side is categorized as "severe" by the U.S. Drought Monitor. Little runoff has come from the mountains that feed the project's primary water source, the Upper Klamath Lake near Klamath Falls, Ore., and the 250-mile-long Klamath River, which flows from the lake to the California coast.

"I grew up here and I've never seen it this dry," said Tricia Hill, 43, who farms potatoes, grains and alfalfa in California and Oregon. "You could watch the cows walk in April and see dust come out of the grass."

Making matters worse for the growers, the Bureau of Reclamation, which runs the water project, recently had to adjust the amount it expects to provide for agriculture this year in light of the weather. The April 1 estimate of 140,000 acre-feet of water, already far less than the full annual allocation of 350,000 acre-feet, dropped to 80,000 acre-feet. An acre-foot is 326,000 gallons, about enough water to cover a football field at a depth of 1 foot.

Most farmers in the basin made their planting decisions based on the April 1 water estimate, and even as that required them to scale back, learning this month that they're still overextended hurt more. "What's going to happen when there's no water in the ditch?" Hill wondered. "What's going to happen to our small communities? My husband and I have had conversations and, frankly, I've cried a lot. I've had to have my children watch me cry, which is tough." A third of the project's revised allocation has already been shipped out, which leaves about 55,000 acre-feet of irrigation water for the rest of the season. It's an amount that everyone agrees is too little for the more than $300 million worth of crops annually harvested in the basin. "There's just simply not enough water this year," said Jeff Nettleton, the Bureau of Reclamation's area manager. "Everyone is disappointed and frustrated."

On top of drought conditions, project deliveries are constrained by regulations that protect native fish. The Bureau of Reclamation is obligated to keep a minimum amount of water in Upper Klamath Lake for endangered suckerfish while sending a minimum amount of water down the Klamath River for threatened salmon. With so little water available recently, the Bureau of Reclamation diverged from the project's agreed-upon deliveries two weeks ago and began limiting downstream flows that the salmon count on. Nettleton said "the drastic change in hydrology" left no choice but to exercise a stipulation in a region-wide agreement on allocations that calls for working with farmers, fish advocates and others to renegotiate how project water is divvied up.

The parties have been meeting but to no avail, and the lack of consensus has only opened a new front in the basin's long-running water war. On May 13, groups concerned about the salmon, including fishermen and members of the Yurok Tribe, revived an ongoing legal fight against the Bureau of Reclamation, claiming in the U.S. District Court in San Francisco that the agency had abandoned its water commitments and put the needs of farmers ahead of fish. The motion they filed demands that the agency release 23,000 acre-feet of water down the Klamath River for salmon. The higher flows, the filing says, are particularly important in spring. They help juvenile coho swim to sea and flush out a parasite known to kill both coho and chinook.

"We have to fight for the fish as if our lives depend on it," said Yurok Vice Chair Frankie Myers, whose tribe lives in Humboldt and Del Norte counties, several hours southwest of the basin's farms, but similarly relies on the Klamath's water — for food and ritual. Myers said he knows the farmers are struggling, though he thinks the agricultural community has come to expect too much and that a reckoning is inevitable. "We really are trying to find a balance," he said. "But if we live outside of our means we are heading down a path that will lead to the destruction of all our communities." On Friday, a federal judge said he was not likely to grant the request by the Yurok and others for more water for salmon. He said he wants the parties to continue to work among themselves to figure out how this year's scant water supply is distributed.

Farmers say they've been making sacrifices for years. Many point to 2001, when almost no project water was provided to irrigate the fields in order to help the fish. That year, protests erupted among growers, hastening the push for a grand compromise on water supplies that, to this day, remains elusive. The tussle over water allocations has since been an annual exercise in the basin, hitting another peak in 2018

just after California's five-year drought. Most say this year's fight, with so many crops in the ground at risk of perishing, has much greater stakes. "At some point this has to stop," said Scott Seus, 46, a farmer outside of Tulelake who grows horseradish and mint, among other regional staples. "I don't think any of us are opposed to fish. At the same time, we have to have something here that keeps us going."

The Homestead Bar, now closed, is one of the casualties of the economic downturn Tulelake. The coronavirus pandemic has put a stop to much business across the Klamath Basin, where farmers are now facing a lack of water for their crops. With little hope of sufficient water, the Bureau of Reclamation is working with the U.S. Department of Agriculture to secure financial aid for farmers in the basin. The Klamath Project Drought Response Agency, a consortium of local government groups, is also tapping federal funds for those who lose their water. Meanwhile, managers of the Klamath Project are trying to augment supplies, even if only a bit, possibly transferring water from other federal reservoirs or buying it from nearby hydroelectric facilities, to salvage as many of the crops as possible. "We're looking at all the types of options," said Dave Felstul, area water operations chief for the Bureau of Reclamation. "But we just haven't seen much runoff from the snowpack we had this year. And the snowpack was already on the low side." "It's definitely going to be challenging," he said.

Klamath farmers protest early water cutoff

Issue Date: June 3, 2020

By Christine Souza

Farm equipment and trucks participate in a convoy to draw attention to the Klamath Basin water crisis, which has resulted this season in a severe cutback of the allocation announced by the U.S. Bureau of Reclamation in April, which was already about one-third of average supplies. The latter reduction was announced after crops were planted and investments made by farmers, leaving them with water only through mid-June.
Photo/Chelsea Shearer

In two weeks or less, farmers and ranchers near the California-Oregon border will see their water supplies run dry, after operators of the federal Klamath Water Project unexpectedly cut allocations in response to concerns about protected fish.

Klamath Basin farmers say crops planted in response to an earlier allocation from the U.S. Bureau of Reclamation will wither without enough water to complete the season.

"It's going to be heartbreaking," said farmer Scott Seus of Tulelake. "We're at a weak state of the economy because of COVID and you go throw this on top of it, this is something that no community should have to weather."

Farmer Ben DuVal of Tulelake said farmers in the Klamath Project planned for the growing season based on an early allocation of 140,000 acre-feet, and invested dollars in planting crops. Then, he said, the agency, "cut the early, already meager allocation to between 55,000 and 75,000 acre-feet." The average irrigation demand in the project is 400,000 acre-feet.

Cody Dodson of Tulelake, who grows alfalfa and barley in the basin, said farmers planned according to the initial allocation, "then, May 1, we got absolutely blindsided."

"I had already planted all my grain, so I didn't have a chance to take advantage of preventative-plant programs or land-idling programs. Hopefully, I get my bills paid," Dodson said.

To call attention to the situation, some 2,000 or more farmers, community members and supporters from California and Oregon took part in a convoy of tractors, farm vehicles and pickup trucks in the basin last week,

rallying for lasting solutions to the decades-long Klamath Basin water crisis that benefit all interests and recover fish.

Although it has been a dry year in the basin, farmers say water shortages have been worsened by outdated science guiding biological opinions for protected fish: endangered Lost River and shortnose suckers and threatened coho salmon. Speakers at a rally following the convoy said the approach hasn't improved fish populations but has resulted in farmers going out of business.

California Farm Bureau Federation President Jamie Johansson was among those addressing the crowd at a farm near Midland, Oregon.

"In California, battles over everything from spotted owls and delta smelt to salmon have reshaped our rural communities and, sadly, have only created tremendous industries of conflict with little to show in the way of improvements for these species," Johansson said, adding that the lack of success shows that conservation efforts have reached a crossroads.

"We can either continue down the path of escalating conflict and seemingly endless cycles of listings and lawsuits, or we can take a long look at what the past 45 years of implementing the Endangered Species Act has taught us, conflict after conflict," said Johansson, who was joined at the convoy by CFBF First Vice President Shannon Douglass and Second Vice President Shaun Crook.

"This fight isn't about farmers versus fish," Johansson said. "This fight is about a scientific model that has failed our communities and wildlife of our states and our nation."

Elected officials at the rally said they remained hopeful short- and long-term solutions could be developed.

Rep. Doug LaMalfa, R-Richvale, said he and Rep. Greg Walden, R-Ore., would seek financial assistance for the basin, "but that's not what this is about."

"We're going to fight for getting the full allocation back so you can at least finish the season," LaMalfa said.

Walden said the time has come "for a complete reset" of policies governing the basin and expressed hope the Trump administration would re-examine those policies.

Klamath Water Users Association Executive Director Paul Simmons said the organization is working aggressively with federal agencies and congressional representatives from California and Oregon to secure relief for the region, adding that a longer-term hope is that irrigators can return to a more collaborative process with other parties, including tribes and fishing and environmental groups.

In 2001, Klamath Basin farmers organized a "bucket brigade" to protest a cutoff of project water, and the region's water supply has been the subject of ongoing negotiations and litigation in the years since.

DuVal, who serves as vice president of the KWUA, said that for the past 20 years, the Klamath Project "has been used as a backstop for fisheries issues, and it hasn't done any good but is absolutely devastating to the communities here."

"Whether it be the farmers, the suckerfish or the salmon, nobody is in any better shape," he said. "We've gone to higher and higher lake levels in our main reservoir, Upper Klamath Lake, with zero enhancement for suckerfish. Until the parties can work together on coordinating some objective science that looks at those issues, we're going to be continuing to fight it in court, and that's not productive for anybody."

Farmer John Crawford of Tulelake, who took part in the 2001 protest, said the higher lake levels are "decimating" the protected fish while also reducing habitat for bird species and other wildlife on Klamath Basin refuges.

"We are all victims of water policy that seems to be guided by broken promises, not just broken promises to project irrigators regarding allocations, but promises to protect endangered fish in Upper Klamath Lake," Crawford said.

"I was hopeful that I would not be standing here today, and during a crisis much more serious than in 2001," he said. "My hope is that somehow my 4-year-old triplet grandsons will have the opportunity that was afforded my brother and myself, our grandfather and father. Without change, that hope will surely fade away."

(Christine Souza is an assistant editor of Ag Alert. She may be contacted at **csouza@cfbf.com**.)

Contract No.
14-06-200-5075

UNITED STATES
DEPARTMENT OF THE INTERIOR

CONTRACT WITH THE CALIFORNIA OREGON POWER COMPANY

THIS CONTRACT, made this 31st day of January, 1956, in pursuance of the Act of Congress of June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, hereinafter referred to as "the Federal reclamation laws", and acts of Congress relating to the preservation and development of fish and wildlife resources, between THE UNITED STATES OF AMERICA, hereinafter called "the United States", represented by the officer executing this contract, his duly appointed successor, or his duly authorized representative, hereinafter called "the Contracting Officer", and THE CALIFORNIA OREGON POWER COMPANY, a California corporation, its successors or assigns, hereinafter called "Copco";

WITNESSETH:

WHEREAS, the United States, pursuant to the Federal reclamation laws, is now engaged in the reclamation and irrigation of lands lying in the State of Oregon and in the State of California in the vicinity of Klamath Falls, Oregon, known as the Klamath Project; and

WHEREAS, the United States has investigated and is further investigating and preparing plans for the development of water and related resources of the Upper Klamath River Basin, including the area in California known as Butte Valley; and

WHEREAS, on February 24, 1917, an agreement was made for the term of fifty (50) years between the United States and a predecessor of Copco, which agreement was thereafter assigned to Copco, providing, among other things, for the construction of Link River Dam, Klamath County, Oregon, for the purpose of regulating the level of Upper Klamath Lake, and said agreement has been amended and supplemented from time to time; and

WHEREAS, the parties deem it to their advantage and to the best interest of the users of the water in the Upper Klamath River Basin that a new agreement be entered into for a period of fifty (50) years, upon the terms and conditions hereinafter expressed;

NOW, THEREFORE, in consideration of the premises and the mutual covenants hereinafter contained, the parties hereto agree as follows:

1. Whenever used in this contract, the following terms shall have the respective meanings set opposite thereto:

(a) Upper Klamath River Basin -- The area so designated and delineated on the map annexed hereto and made a part hereof, marked Exhibit "A".

(b) Klamath Water -- The water lying or flowing in or which has been diverted from Upper Klamath Lake, Link River, Lake Ewauna, Lost River, Klamath River, or their tributaries, or water that is pumped from underground sources for use on Project Land as part of a plan for maximum water resource development.

(c) Project Land -- All land of the United States lying in the Upper Klamath River Basin, and all land in the Upper Klamath River Basin lying within any public district or within the service area of any association which has contracted or may hereafter contract and any land of individuals or corporations in the Upper Klamath River Basin which have contracted or may hereafter contract with the United States, pursuant to the Federal reclamation laws, for water service or for the construction of irrigation, drainage, or other reclamation works.

2. Copco shall operate and maintain for a period of fifty (50) years from the effective date hereof, subject to the conditions hereinafter provided, Link River Dam, located in Klamath County, Oregon, heretofore constructed by Copco and transferred to the United States pursuant to the agreement of February 24, 1917. Copco may regulate the water level of Upper Klamath Lake between the elevations 4143.3 and 4137, (Reclamation Service Datum), but the water level shall not be raised above elevation 4143.3 and shall not be lowered below elevation 4137, except at such times, and on such conditions, as may be satisfactory to the Contracting Officer: Provided, That the Contracting Officer from time to time may specify a higher minimum elevation than 4137 if in his opinion such must be maintained in order to protect the irrigation and reclamation requirements of Project Land. Whenever the elevation of the

lake drops to a point two-tenths of a foot above the applicable minimum elevation, the Contracting Officer may assume control of the Link River Dam and its outlets and continue in control so long as the lake level remains at or below that elevation.

All elevations stated in this article, or specified by the Contracting Officer pursuant to this article, shall mean elevations in a state of calm.

3. Copco shall at its own expense maintain the approach channel to the "A" Canal of the Klamath Project to the satisfaction of the Contracting Officer so far as may be necessary to carry a flow of not less than 1200 c.f.s. into the "A" Canal with the water of Upper Klamath Lake at an elevation of 4137.

4. Copco assumes any and all liability for damages resulting from operation of the Link River Dam by Copco or resulting from its regulation and control of the water levels of Upper Klamath Lake. Copco hereby undertakes to hold the United States harmless from any and all liability for damage arising out of the operation by Copco of Link River Dam and the regulation and control by Copco of Upper Klamath Lake herein provided for.

5. For the period of this contract Copco agrees to furnish electric power for the purposes and for the rates set forth in Exhibit "B", attached hereto and hereby made a part of this contract.

6. Nothing in this agreement shall curtail or in anywise be construed

as curtailing the rights of the United States to Klamath Water or to the lands along or under the margin of Upper Klamath Lake. No Klamath Water shall be used by Copco when it may be needed or required by the United States or any irrigation or drainage district, person, or association obtaining water from the United States for use for domestic, municipal, and irrigation purposes on Project Land: Provided, That nothing in this agreement shall curtail or interfere with the water rights of Copco having a priority earlier than May 19, 1905, and: Provided further, That no water originating in the Upper Klamath River Basin shall be transported beyond the Upper Klamath River Basin except under the provisions of Article 7 of this contract and except for that water which originates within the drainage area of Fourmile Lake.

7. If there shall be authorized for construction pursuant to the Federal reclamation laws projects or units of projects including lands lying within Butte Valley, all drainage water shall be returned to the Klamath River at a point above the town of Keno, Oregon, unless the Secretary of the Interior shall determine that this would render the irrigation and reclamation of lands within Butte Valley economically less feasible than under an alternate plan of development, in which event, upon construction of such projects or units of projects, the drainage water from Project Land lying within Butte Valley shall be returned to the Klamath River at such point upstream from Copco Lake as shall be determined by the Secretary of the Interior: Provided, That

if Copco makes economic benefits available to such projects or units of projects by means of power rates lower than those specified in Exhibit "B", or otherwise, that will make it equally feasible, to the satisfaction of the Secretary of the Interior, to return the drainage water to a point in the Klamath River above Keno, then the drainage water shall be returned to the Klamath River above Keno. Copco shall have the first right to develop, for power purposes, drainage water removed by the United States from Project Land lying within Butte Valley, subject to establishment by Copco of its rights under the applicable state law.

8. Nothing in this agreement shall be deemed to confer on the United States or upon any of its successors any right to the use of Klamath Water for the purpose of generating electric power.

9. Except for the water rights of Copco having a priority earlier than May 19, 1905, no Klamath Water shall be used by Copco when it may be needed or required by the United States for waterfowl conservation in the Upper Klamath River Basin in the quantities in which it is being used for that purpose as of the effective date of this contract.

10. The failure of Copco to comply in the true intent and meaning with any of the provisions of this agreement in regard to the operation and use of Link River Dam during the fifty (50) year period shall render this contract in regard to said dam subject to cancellation by the Secretary of the Interior upon sixty (60) days' written notice to Copco stating the cause for such proposed cancellation and in case of failure

or refusal of Copco to comply with the provisions of this contract within the period allowed by the Secretary of the Interior he may cancel this contract. After such cancellation, or at the expiration of the fifty (50) year period of this contract, Copco shall have no further rights in regard to the use of Link River Dam and its appurtenances, the operation and control of which shall immediately pass to the United States, but such cancellation shall in nowise curtail or affect the rights which Copco now has in the waters of Link River and Klamath River.

11. This contract shall become effective on the date of its approval by the Public Utility Commissioner of the State of Oregon or the Public Utilities Commission of the State of California, whichever shall occur later, and shall not be effective in any way until approved by both regulatory authorities. Within thirty (30) days after the execution of this contract Copco shall file applications with both regulatory authorities for orders authorizing Copco to carry out the terms thereof and shall prosecute the applications and any proceedings on them diligently. If such orders are not issued and effective within nine (9) months after execution of this contract, the United States may, within sixty (60) days, terminate this contract on thirty (30) days' notice to Copco.

12. This contract shall supersede and cancel the contract, including all amendments thereto, entered into under date of February 24, 1917, by Copco and its predecessor company, California-Oregon Power Company, and the United States, upon the effective date hereof.

13. In connection with the performance of work under this contract, the contractor agrees not to discriminate against any employee or applicant for employment because of race, religion, color, or national origin. The aforesaid provision shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post hereafter in conspicuous places, available for employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of the non-discrimination clause. The contractor further agrees to insert the foregoing provision in all subcontracts hereunder, except subcontracts for standard commercial supplies or raw materials.

14. No Member of or Delegate to Congress, or Resident Commissioner, shall be admitted to any share or part of this contract or to any benefit that may arise therefrom, but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

15. This contract binds and inures to the benefit of the parties hereto, their successors and assigns, including without limitation any water users' organization or similar group which may succeed either by assignment or by operation of law to the rights of the United States hereunder.

16. Copco warrants that it has not employed any person to solicit or

secure this contract upon any agreement for a commission, percentage, brokerage, or contingent fee. Breach of this warranty shall give the United States the right to annul the contract or, in its discretion, to deduct from the contract price or consideration the amount of such commission, percentage, brokerage, or contingent fee. This warranty shall not apply to commissions payable by contractors upon contracts or sales secured or made through bona fide established commercial or selling agencies maintained by Copco for the purpose of securing business.

17. This contract shall be in effect for a period of fifty (50) years from the effective date determined pursuant to article 11.

IN WITNESS WHEREOF, the parties hereto set their hands and the seal of Copco is hereto affixed.

APPROVED AS TO LEGAL FORM AND SUFFICIENCY
ACTING REGIONAL SOLICITOR
DEPARTMENT OF THE INTERIOR

THE UNITED STATES OF AMERICA

By _____

Title Regional Director, Region 2
Bureau of Reclamation,
U. S. Department of the Interior

Address P. O. Box 2511
Sacramento 11, California

THE CALIFORNIA OREGON POWER COMPANY

By _____
A. S. CUMMINS

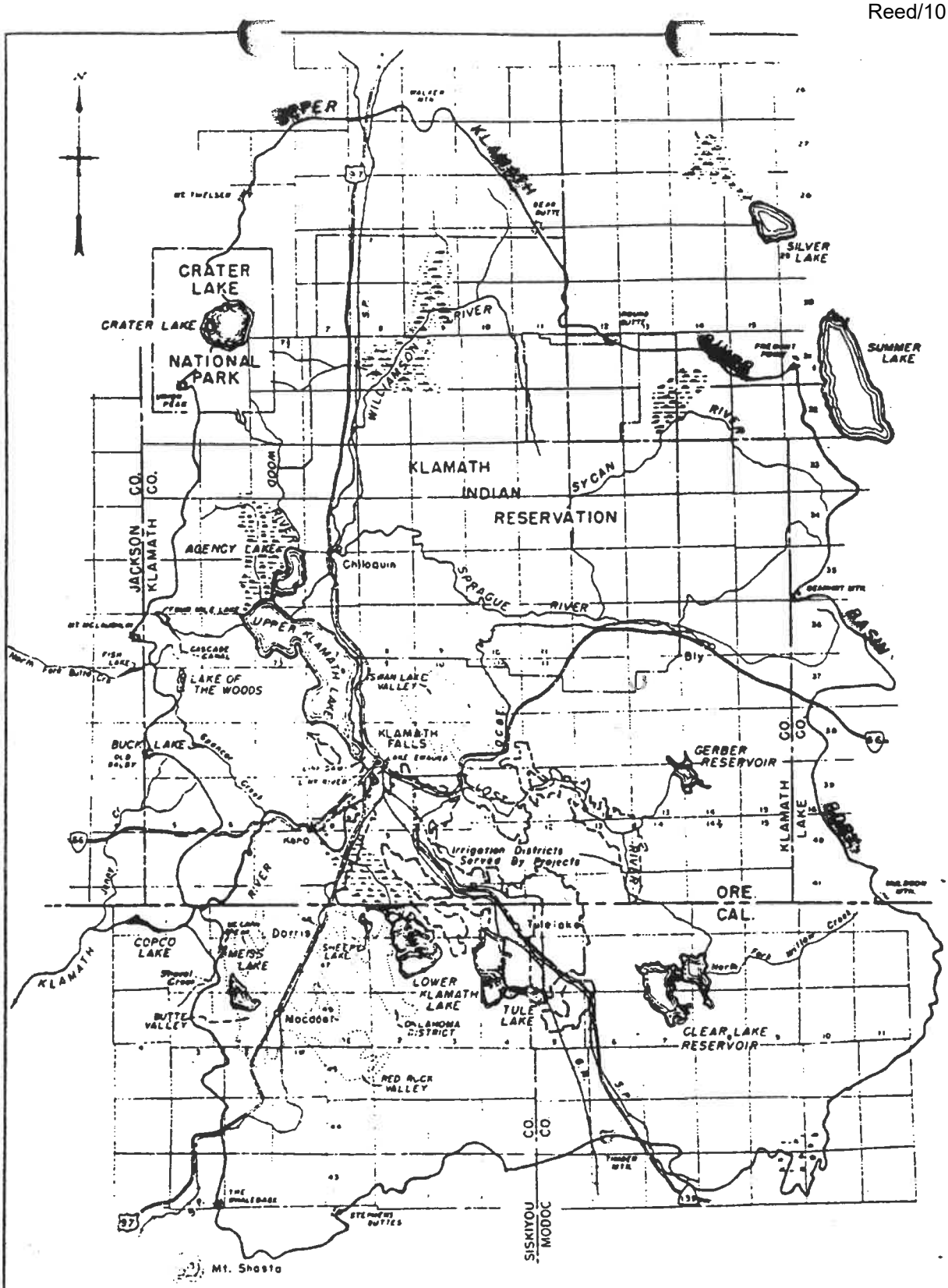
Title President

Address 216 West Main Street
Medford, Oregon

Attest:

_____
E. L. LENOX

Title Secretary



UPPER KLAMATH RIVER BASIN
OREGON – CALIFORNIA

Exhibit "B"

STATES OF CALIFORNIA AND OREGON

SPECIAL GOVERNMENT POWER RATE UNDER CONTRACT DATED JANUARY 31, 1956, BETWEEN UNITED STATES OF AMERICA AND THE CALIFORNIA OREGON POWER COMPANY

AGRICULTURAL POWER SERVICE: --RATE SCHEDULE "A"

This rate schedule shall be applicable only to pumping Klamath Water for use on Project Land and for drainage of Project Land.

Territory:

Applicable to the Upper Klamath River Basin.

Rate:

0.6¢ per kwh

Annual Minimum Charge:

The annual minimum charge is based on the name plate rating in horsepower of the maximum connected motor load at each installation during a calendar year.

100 H.P. or over:

for first two years of service	$10.45 per H.P. per calendar year
after two years of service	No Charge

99 H.P. or less:

for first five years of service

first 25 H.P.	$6.00 per H.P. per calendar year
next 74 H.P.	$5.25 " " " " "

after five years of serivce

first 25 H.P.	$3.00 per H.P. per calendar year
next 74 H.P.	$2.625 " " " " "

Special Conditions:

(1) Where 3-phase service is required for installation under 7-1/2 H.P., the annual minimum charge will be based on 7-1/2 H.P.

(2) Installations in service prior to the effective date of this contract shall receive credit for the time service has been rendered under special power contracts entered into pursuant to the contract between the United States and Copco dated February 24, 1917, in meeting the time requirements used in determining annual minimum charges.

(3) Energy will be supplied either single-phase or 3-phase at nominal voltages consistent with those in effect elsewhere in the territory served by Copco.

(4) Special contracts shall be executed for all installations under this rate and all contracts shall have attached thereto a letter from the Contracting Officer stating the proposed consumer is entitled to this rate.

(5) For installations of more than 7-1/2 H.P., Copco shall make all necessary line extensions at its own expense.

(6) For installations of 7-1/2 H.P., or less, Copco shall make necessary line extensions in accordance with its established line extension policies as filed with the State regulatory authorities having jurisdiction.

(7) The annual minimum charge is payable in consecutive monthly installments of 1/6 (one-sixth) of the annual minimum charge, beginning the first month of operation until such time as the accumulated energy charges equal the annual minimum charge.

DRAINAGE PUMPING: --RATE SCHEDULE "B"

This rate schedule shall be applicable only to the pumps operated by the United States, or its successors in interest, for the removal of water from Tule Lake Sumps and Lower Klamath Lake Sumps and any drains leading thereto or therefrom and for power used to pump such drainage water for the irrigation of the areas lying within the beds of Tule Lake and Lower Klamath Lake, all as shown on the map marked Exhibit "A".

Rate:

On-peak pumping--eight (8:00) A.M. to eight (8:00) P.M. of each day except Saturdays, Sundays and legal holidays--five (5) mills per kwh

Off-peak pumping--eight (8:00) P.M. to eight (8:00) A.M. of each day and during the 24-hour period of Saturdays, Sundays and legal holidays--three (3) mills per kwh

If at any time Copco's commercial rates for like service are lower than the rates specified in Schedules "A" and "B" herein, the commerical rates shall prevail during such time.