



Oregon

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April 24, 2019

Via Electronic Filing

OREGON PUBLIC UTILITY COMMISSION
ATTENTION: FILING CENTER
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**RE: Docket No. UM 1817 – In the Matter of PORTLAND GENERAL
ELECTRIC COMPANY, Application for the Deferral of Storm-
Related Restoration Costs.**

Attached are staff reply testimony (100) and exhibit (101) for filing.

/s/ Kay Barnes

Kay Barnes

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CASE: UM 1817
WITNESS: MITCHELL MOORE

**PUBLIC UTILITY COMMISSION
OF
OREGON**

STAFF EXHIBIT 100

Response Testimony

April 24, 2019

1 **Q. Please state your name, occupation, and business address.**

2 A. My name is Mitchell Moore. I am a Senior Utility Analyst employed
3 in the Energy Finance and Audit Division of the Public Utility
4 Commission of Oregon (OPUC). My business address is 201 High
5 Street SE., Suite 100, Salem, Oregon 97301.

6 **Q. Please describe your educational background and work
7 experience.**

8 A. My witness qualification statement is found in exhibit Staff/101.

9 **Q. What is the purpose of your testimony?**

10 A. The purpose of my testimony is to respond to the opening testimony
11 of Portland General Electric Company (PGE or Company) in this
12 docket, in which the Company seeks Commission authorization to
13 defer approximately \$8 million in Level III storm damage restoration
14 costs between January 11, 2017 and year-end 2017. Staff opposes
15 the Company's request. Actual costs vary from the forecasted costs
16 on which rates are based. PGE can and should be expected to
17 absorb a certain level of excess costs above what is modeled in
18 customer rates in a given year.

19 **Q. Did you prepare an exhibit for this docket?**

20 A. No. I do not have additional exhibits.

21

1 **Q. Briefly discuss the history of this issue.**

2 A. The issue before the Commission is whether PGE should be allowed
3 to defer for later recovery in rates “Level III” storm damage
4 restoration costs that exceed amounts for such costs that PGE
5 collects in rates within an annual period. Level III storms are those
6 that cause outages that meet at least one of the following criteria,
7 affects at least 50,000 customers, qualifies for Institute of Electrical
8 and Electronics Engineers (IEEE) Major Day Event exclusion, or
9 includes several substations or feeders.¹ PGE filed this request for
10 deferred accounting on January 11, 2017, in the midst of a severe
11 winter storm that began in the evening on January 10, 2017. PGE
12 reported that it incurred \$11.4 million in Level III storm damage
13 restoration costs in 2017.²

14 **Q. Are Level III storm damage restoration costs included in**
15 **PGE’s rates?**

16 A. Yes. PGE’s revenue requirement includes \$3.8 million of projected
17 expense for Level III storm damage restoration costs annually. The
18 \$3.8 million is based on a ten-year rolling average of annual Level III
19 storm damage restoration costs. The Commission first approved a
20 ten-year rolling average to determine the appropriate amount of
21 expense for Level III storm damage restoration in PGE’s 2010

¹ PGE/100, Nicholson-Bekkedahl/2.

² In its revised testimony UM 1817 PGE/100, PGE reported \$10.6 million in restoration costs in 2017.

1 General Rate Case (GRC).³ The Commission also authorized an
2 accounting order allowing PGE to reserve any savings reflecting the
3 amount by which the annual cost for Level III storms is less than the
4 amount collected in rates for use against future Level III storm costs.

5 **Q. Why is the expense for Level III storm damage restoration**
6 **based on a ten-year average?**

7 A. Staff proposed a ten-year average in PGE's 2010 GRC in response
8 to PGE's proposal to recover costs for Level III storms with a
9 balancing account. Staff explained:

10 Costs fluctuate from year to year and Staff does not
11 believe that it is appropriate to establish a balancing
12 account for Level III outages. While it is true that
13 expenses associated with Level III outages can vary
14 from year to year, setting rates based on a historical
15 average addresses these fluctuations, incents the
16 company to operate in a manner to control costs, and
17 does not put the burden of auditing and micro managing
18 the company's efforts to restore service on Staff.⁴

19 The parties to Docket No. UE 215 ultimately stipulated to including
20 expense in PGE's revenue requirement for Level III storm damage
21 restoration costs using a ten-year rolling average to determine the

³ In the Matter of Portland General Electric Company Request for a General Rate Revision (UM 215), Order No. 10-478, p. 6.

⁴ Docket No. UE 215 Staff/400, Ball/4-5.

1 appropriate level of expense and the Commission adopted the
2 stipulation.⁵

3 In its most recent GRC, Docket No. UE 335, the Commission
4 adopted parties' stipulation to increase the amount collected for
5 Level III storm damage restoration from \$2.6 to \$3.8 million to reflect
6 an update of the rolling 10-year average of costs. The Commission
7 also adopted the UE 335 parties' stipulation to move to its own
8 docket the issue of whether to allow PGE's request to defer and
9 recover excess Level III storm damage restoration costs incurred in
10 2017.

11 **Q. Why does Staff oppose PGE's request for deferred**
12 **accounting?**

13 A. As the Commission has stated in previous dockets, "[d]eferred
14 accounting is, essentially, single-issue ratemaking, where rates are
15 set based on a change to only one component of costs without
16 considering whether changes to other costs might have offset the
17 increase."⁶ The Commission has explained its concerns about
18 single-issue ratemaking "are grounded in the idea that the
19 ratemaking formula is designed to determine a company's revenue

⁵ *In the Matter of Portland General Electric Request for a General Rate Revision, Docket No. UE 215, Order No. 10-478.*

⁶ *In the Matters of Northwest Natural Gas Company, dba, NW Natural, Mechanism for Recovery of Environmental Remediation Costs (UM 1635,) and Request for Determination of the Prudence of Environmental Remediation Costs for the Calendar Year 2013 and the First Quarter of 2014 (UM 1706), Order No. 15-049.*

1 requirement based on the aggregate costs and demands of the
2 utility. Except in limited circumstances, it is improper to consider
3 changes to components of the revenue requirement in isolation.”⁷

4 **Q. Why is it improper to consider changes to components of**
5 **revenue requirement in isolation?**

6 A. The Commission has previously explained that “[i]f rates are
7 increased based solely on the fact that one type of expense is higher
8 than expected, without considering changes to other elements of
9 revenue requirement, the company’s reasonable revenue
10 requirement could be overstated.”⁸

11 **Q. Staff has previously opposed PGE’s use of a balancing**
12 **account to track and recover Level III storm damage**
13 **restoration costs and has noted that a balancing account is**
14 **not necessary because PGE has the opportunity to defer**
15 **excess Level III storm damage restoration costs.**⁹

16 **Why does Staff oppose the deferral in this case?**
17

18 A. Although the costs for Level III storm damage restoration exceed the
19 expense included in PGE’s revenue requirement, the costs do not
20 satisfy the Commission’s criteria for deferred accounting.

⁷ *In the Matter of Northwest Natural Gas Company, dba NW Natural, Request for a General Rate Revision*, Docket No. UG 221, Order No. 12-437, p. 26.

⁸ *Id.*

⁹ *See UE 215 Staff/400, Ball/5.*

1 **Q. Please discuss the criteria the Commission applies to**
2 **determine whether to grant an application for deferred**
3 **accounting under ORS 757.259(2)(e).**

4 A. The Commission applies a two-stage review. The first stage involves
5 a determination of whether a proposed deferral meets the criteria set
6 forth in ORS 757.259(2)(e). ORS 757.259(2)(e) is a catch-all
7 provision that allows deferral of “[i]dentifiable utility expenses or
8 revenues, the recovery or refund of which the commission finds
9 should be deferred in order to minimize the frequency of rate
10 changes or the fluctuation of rate levels or to match appropriately the
11 costs borne by and the benefits received by ratepayers.”¹⁰

12 The other stage entails an exercise of Commission discretion under
13 ORS 757.259(2), which provides “the commission by order may
14 authorize deferral of the following amounts for later incorporation in
15 rates[.]” When exercising this discretion, the Commission considers
16 two interrelated factors: the type of event that caused the deferral;
17 and the magnitude of the event’s effect. These two considerations
18 interact with each other so that neither is dispositive without the
19 other.

¹⁰ *In the Matter of Public Utility Commission of Oregon Staff Request to Open an Investigation Related to Deferred Accounting* (Docket No. UM 1147), Order No. 05-1070, p. 2.

1 **Q. What are the two types of risk events the Commission**
2 **considers?**

3 A. The Commission draws a distinction between risks that can be
4 predicted to occur as part of the normal course of events, classified
5 as stochastic risks, and risks that are not susceptible to prediction
6 and quantification, classified as scenario risks.

7 To determine whether a risk is scenario or stochastic, the
8 Commission will look to whether the event was modeled in rates,
9 and, if so, whether extenuating circumstances were involved that
10 were not foreseeable during the rate case, or whether the event fell
11 within a foreseen range of risk when rates were last set. If the event
12 was not modeled, the Commission will consider whether it was
13 foreseeable as happening in the normal course of events, or not
14 likely to have been capable of forecast.

15 Events are considered “stochastic” when, even though their
16 occurrence has a randomness to it, they are still able to be modeled
17 and forecasted with some degree of certainty. For example, local
18 weather is stochastic in the sense that the warmest day of the year
19 can be predicted with a high degree of confidence to occur in July or
20 August even though the exact day it will occur is unknowable and not
21 easy to predict beforehand.

22 An event that is not stochastic in nature and thus not reasonably able
23 to be forecasted is considered a scenario risk.

1 **Q. What is the relationship between the type of risk and the**
2 **magnitude of the event's effect?**

3 A. The type of event—modeled in rates or not, foreseeable or not—will
4 affect the amount of harm that must be shown by the utility in order to
5 justify special rate treatment. If the event was modeled or foreseen,
6 without extenuating circumstances (that is, the event was considered
7 a stochastic risk), then the magnitude of harm must be substantial to
8 warrant the Commission's exercise of discretion in opening a
9 deferred account. If, on the other hand, the event was neither
10 modeled nor foreseen, or if extenuating circumstances were not
11 foreseen, then the magnitude of harm that would justify deferral likely
12 would be lower.

13
14 **Q. What category do Level III storm damage restoration costs fall**
15 **within – stochastic or scenario?**

16 A. Under the Commission's analysis, the risk of Level III storm damage
17 restoration costs should be treated like a stochastic risk because
18 these costs were modeled and foreseen. As I note in the answer
19 immediately above, under Order No. 05-1070, the Commission will
20 treat an event as a stochastic risk if it is modeled in rates and/or is
21 foreseeable. Expense for Level III storm damage restoration costs is
22 included in rates. Accordingly, under Order No. 05-1070, the
23 amounts at issue must be "substantial" to be eligible for deferral.

1 **Q. Are the costs at issue “substantial” for purposes of the**
2 **Commission’s deferral analysis?**

3 A. No. PGE seeks to defer and recover approximately \$8 million in
4 Level III storm damage restoration costs. This amount is not
5 substantial when compared to the amount at issue in PGE’s request
6 to defer excess variable net power costs associated with hydro
7 conditions. In Docket No. UM 1071, the Commission declined to
8 allow PGE to defer any part of \$31.6 million in excess power costs
9 related to poor hydro conditions:¹¹

10 In the present application, PGE claims that it has incurred
11 \$31.6 million in excess NVPC, only some of which is
12 attributable to hydro replacement costs. PGE asserts that
13 this excess NVPC amounts to 172 basis points of return on
14 equity. This is well short of the 250 basis points of return on
15 equity within which we allowed no recovery in UM 995.
16 Moreover, Staff estimates the hydro related excess NVPC
17 to be about \$17.5 million, which, by extension, amounts to
18 about 95 basis points of return on equity. That figure is
19 about 55 percent of PGE’s \$31.6 million. Finally, we note
20 that PGE claims that without deferral, its return on equity
21 will drop to 8 percent. That is far from a dire figure. We find
22 that the impact of excess hydro costs is not significant
23 enough in this case to warrant a deferral.¹²

¹¹ See *In the Matter of Portland General Electric Company Application for an Order Approving the Deferral of Hydro Replacement Power Costs* (UM 1071), Order No. 04-108 (Denying PGE’s request to defer hydro replacement power costs noting that financial impact equal to 171 bp ROE was not sufficient to warrant deferred accounting.).

¹² *Id.*, p. 9.

1

2

Q. How does PGE address Staff's argument regarding

3

Commission precedent?

4

A. PGE argues that Commission precedent as represented by Staff in its

5

UE 335 testimony relies on an irrelevant comparison to NVPC (net

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variable power cost).

7

Additionally, PGE argues in its opening testimony that the 10-year

8

rolling average does not constitute a stochastic modeling approach,

9

and therefore the type of risk at issue is more appropriately

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categorized as a scenario or paradigm risk.¹³ With a paradigm or

11

scenario risk, Commission precedent indicates that the "magnitude

12

of harm that would justify deferral would likely be lower.¹⁴

13

Q. How does Staff respond in regards to PGE's assertion that the

14

risk should be categorized as a paradigm/scenario risk rather

15

than stochastic risk?

16

A. PGE is conflating the idea of a stochastic process with a stochastic

17

model. A stochastic process is one that, although characterized by

18

randomness, is to some degree bounded and able to be modeled

19

and forecast. A stochastic model, such as Monte Carlo, attempts

20

to mimic the randomness of the underlying stochastic process;

21

however, it is by no means necessary that a stochastic process be

¹³ *UM 1817 PGE 100 Nicholson-Bekkedahl/8.*

¹⁴ *Commission Order No. 05-1070 p. 2*

1 modeled by a stochastic method. Deterministic models, such as
2 the use of the 10-year rolling average, serve as reasonable
3 approximations for modeling purposes and offer advantages such
4 as greater ease of implementation and greater transparency.

5 **Q. How does Staff respond in regards to its use of NVPC as a**
6 **comparator?**

7 A. Staff has not overstated the comparison of storm costs to NVPC, and
8 acknowledges that the threshold for the absorption of storm costs
9 may not necessarily be as high as it has been for NVPC. However,
10 the fact remains the pertinent consideration is whether PGE could
11 reasonably be expected to bear these costs between rate cases.
12 Whether the costs are to purchase power replacement or storm
13 damage restoration is not particularly pertinent to the resolution of
14 this question.

15 In any event, the comparison to NVPC provides a general
16 comparison for the scale of loss the Company would absorb in a
17 single year in this case. The Commission decision in creating the
18 power cost deadband indicates that the Commission believes a loss

1 of up to 250 basis points of ROE for NVPC is reasonable risk for the
2 Company to absorb, vs the 36 basis points¹⁵ at issue in this case.¹⁶

3 **Q. Is there another crucial distinction between NVPC and the**
4 **storm accrual mechanism?**

5 A. Yes. A crucial distinction between NVPC and the storm accrual
6 mechanism is the fact that NVPC losses in a given year are not
7 associated with future rates. For example, if the Company under-
8 collects for power costs in a given year and is within the deadband,
9 then that loss is not subsequently “fixed” by increasing next year’s
10 rates. This is in contrast to the rolling 10-year average that escalates
11 past costs to present value in the storm accrual mechanism and
12 ensures that PGE recovers its losses over time.

13 **Q. Are you saying that while NVPC losses are completely absorbed**
14 **by the company, the storm accrual mechanism allows for**
15 **complete cost recovery?**

16 A. Yes. Any NVPC loss due to under-collection that falls within the
17 deadband is simply absorbed by the company and not subject to
18 subsequent rate adjustment. In contrast, the current storm accrual
19 method allows for periodic increases in the amount collected in rates,

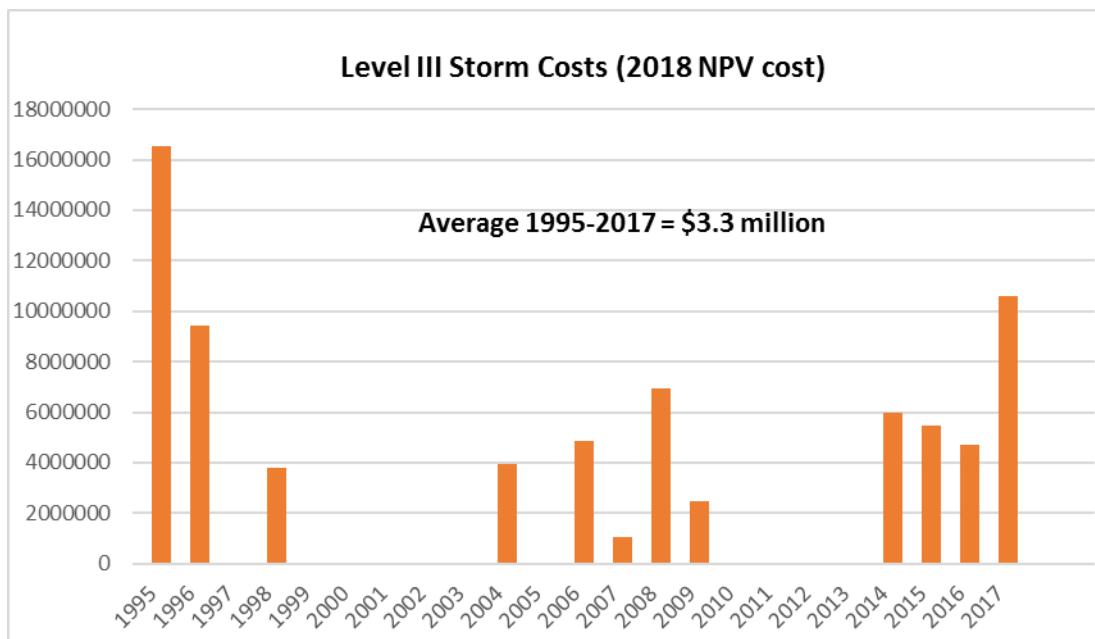
¹⁵ Staff testimony in UE 335 Moore/700 identified 47 basis points as the amount of ROE at issue in this case. PGE’s downward revision of its 2017 costs results in a corresponding decrease in the basis points.

¹⁶ Order No. 04-108 (Denying PGE’s request to defer hydro replacement power costs noting that financial impact equal to 172 bp ROE “was well short of the 250 basis points of return on equity within which we allowed no recovery in UM 995.”

1 which is reflected in the 10-year average of costs. So, while PGE
2 suffers a 36 basis point loss in 2017, it is made whole over time.

3 **Q. What does the history of Level III storm costs demonstrate?**

4 A. A review of a 23-year history of Level III storm damage restoration
5 costs demonstrates that 2017 costs, while relatively high, are not
6 historically unprecedented. Table 1 below illustrates a wide and
7 random distribution of costs incurred from 1995-2017. The table also
8 shows that for 11 out of these 23 years PGE incurred no Level III
9 storm costs at all. Moreover, there doesn't appear to be a trend of
10 increasing Level III storm costs at this point in time. The average
11 2018 net present value cost of these years is \$3.3 million. When
12 considering 2017 storm costs in a larger historical timeframe, they do
13 not appear to be particularly abnormal.



15 Table 1. Data from PGE UE 319 Exhibit 804 Nicholson-Bekkedahl/1
16

1 **Q. PGE states that Staff testimony in UE 335 regarding storm**
2 **costs is inconsistent with its previous testimony on the issue**
3 **in Docket No. UE 319. Does Staff agree?**

4 A. No. In its testimony PGE states that Staff's position in this case
5 contradicts its testimony in in Docket No. UE 319. In UE 319 Staff
6 indicated the potential for the utility to file a deferral in the event of
7 excessive storm costs as part of an argument against the
8 establishment of a balancing account. As with a deferral, the
9 establishment of a balancing account is an extraordinary form of
10 ratemaking that ensures dollar-for-dollar recovery of costs that has
11 the effect of shifting all business risk onto ratepayers. Staff's position
12 in Docket No. UE 335 and in this docket do not preclude the ability
13 for the utility to defer extraordinary storm costs.

14 The question is, what is the threshold that constitutes an
15 unreasonable level of risk to warrant a deferral?

16 **Q. What is the threshold that constitutes a reasonable level of**
17 **risk to warrant a deferral?**

18 A. The Commission has previously declined to set a specific threshold
19 for unexpected costs a utility should be expected to absorb between
20 rate cases. In Docket Nos. 1008/1009 (PGE deferral of excess
21 NVPC associated with Western Power Crisis) and UM 995
22 (PacifiCorp deferral of excess NVPC associated with Western Power
23 Crisis), the Commission concluded that utilities reasonably could be

1 expected to absorb excess NVPC equal to or less than 250 basis
2 points of ROE between rate cases.¹⁷ In Docket No. UM 1071, the
3 Commission declined to allow PGE to defer any part of \$31.6 million
4 of excess power costs, which equaled approximately 172 basis
5 points of ROE.¹⁸ In Docket No. UE 215, the Commission concluded
6 that an adjusted 150 basis points of ROE deadband represented
7 normal business risk for PGE.¹⁹ In Docket No. UM 1234, the
8 Commission concluded that a deadband of 100 basis points of ROE
9 approximated the appropriate level of risk that PGE should absorb
10 between rate cases and declined to allow deferral of replacement
11 power costs within that band.²⁰

12 Even assuming the threshold is half of the 100 basis point deadband
13 the Commission considered reasonable and applied in the last case
14 in which it considered a similar application to defer, (PGE's request
15 to defer excess power costs associated with plant outage in Docket
16 No. UM 1234), the amount at issue in this docket would not qualify.

¹⁷ *In the Matter of the Application of PacifiCorp for an Accounting Order Regarding Excess Net Power Costs (UM 995), Order No. 02-469; In the Matter of Staff of the Public Utility Commission of Oregon for Deferral of a Portion of Portland General Electric Company's Excess NVPC (UM 1008/1009), Order No. 01-231.*

¹⁸ *Order No. 04-108 (Boardman outage deferral).*

¹⁹ *See In the Matter of Portland General Electric company Application for Deferred Accounting of Excess Power Costs Due to Plant Outage, (UM 1234), Order No. 07-409, citing Order No. 07-049 ("In Order No. 07-015, entered in UE 180, we applied an adjusted 150 basis points on ROE deadband as an explicit measure of normal business risk.") (150 basis point deadband "adjusted" to account for SB 408).*

²⁰ *Id.*, p. 19.

1 **Q. What was Staff's position on the Level III storm damage**
2 **restoration costs in UE 335?**

3 A. Staff took a two-factor approach in its analysis, in that it considered
4 PGE's deferral request in context with the request to update the 10-
5 year rolling average and thereby increase the Level III storm accrual
6 account from \$2.6 to \$3.8 million – a 46 percent increase.

7 Staff supported PGE's request to increase the amount collected in
8 rates to \$3.8 million. This amount reflects an update to the 10-year
9 rolling average, escalated to 2018 present value that includes the full
10 storm costs incurred in 2017. In part based on that support, Staff
11 opposed recovery of "excess" 2017 costs in the deferral request.
12 Because the full amount of 2017 costs are fully included in the 10-
13 year average, it is not consistent for PGE to then argue that 2017
14 costs lie outside the "normal" range.

15 In other words, if Staff had agreed with PGE that the storm costs
16 incurred in 2017 were so far outside the normal range of events that
17 it believed a deferral was warranted, it would have recommended an
18 adjustment to normalize the 2017 actual costs in calculating the 10-
19 year average, and thereby reducing the annual amount PGE is
20 allowed to collect in rates.

21 As demonstrated by the above chart in Table 1, while 2017 costs are
22 higher than normal costs, it is difficult to identify what is "normal"
23 when costs range from zero to over \$16 million. The average storm

1 cost of \$3.3 million over this 23 year period is substantially less than
2 the \$3.8 million currently modeled in rates.

3 **Q. What would be the impact to ratepayers if PGE's deferral**
4 **request is granted?**

5 A. Customers would essentially be double paying for "excess" 2017
6 costs. In requesting both that 2017 costs be included in the 10-year
7 average collected in rates and recovery of "excess" costs incurred in
8 a single year over the amount included in rates, PGE is essentially
9 asking to have its cake and eat it too. Assuming that the 10-year
10 rolling average continues to be the method by which the storm
11 accrual is derived, PGE is guaranteed to recover its 2017 costs over
12 a 10-year period. It should not be allowed to double recover those
13 costs by also deferring "excess" 2017 costs.

14 **Q. What other factors should the Commission consider with**
15 **regard to this deferral?**

16 A. First, as discussed in its UE 335 testimony, Staff believes that the
17 use of a deferral in this case would shift the entire risk of weather-
18 related events onto ratepayers. Staff does not believe this is
19 appropriate given that a certain level of risk is accounted for in the
20 ROE that PGE is authorized to earn – they are not guaranteed to
21 earn that amount. Forward-looking rate making is meant to function
22 as a proxy for a competitive market. Any business exposed to
23 weather-related events is at risk of loss when weather is more

1 extreme than normal. Given the level at stake here, PGE is
2 essentially asking to be entirely shielded from weather-related risk.

3 Second, Staff believes that the existing Commission precedent
4 regarding the use of deferrals and the analysis used to evaluate
5 them remains a useful and valid framework that should be retained.

6 It provides the Commission with the necessary flexibility to exercise
7 its discretion in a wide variety of scenarios and to manage a
8 changing regulatory environment. It also contains the understanding
9 that deferred accounting is an extraordinary form of ratemaking that
10 should be reserved for use in limited circumstances.

11 Third, Commission approval of this deferral would set a future
12 precedent that would open the door for PGE and other utilities to
13 seek deferral of all manner of unexpected costs, and would result in
14 a proliferation of single-issue ratemaking mechanisms that further
15 increase risks for ratepayers and reduce risk for the utilities.

16 Shielding PGE from this risk would set a difficult precedent for Staff
17 and other stakeholders to overcome in future proceedings.

18 Fourth, Staff recognizes that risks are changing over time as a result
19 of climate change. Staff remains open to discussion with the utilities
20 and other stakeholders regarding alternative ways to address
21 weather-related risk, as well as the uncertainties that accompany a
22 changing climate.

23

1 **Q. Does this conclude your response testimony?**

2 A. Yes.

CASE: UM 1817
WITNESS: MITCHELL MOORE

**PUBLIC UTILITY COMMISSION
OF
OREGON**

STAFF EXHIBIT 101

Witness Qualifications Statement

April 24, 2019

WITNESS QUALIFICATIONS STATEMENT

NAME: Mitchell Moore

EMPLOYER: Public Utility Commission of Oregon

TITLE: Senior Utility Analyst
Energy Rates, Finance and Audit Division

ADDRESS: 201 High Street SE. Suite 100
Salem Oregon 97301-3612

EDUCATION: Bachelor of Arts, Journalism and Political Science
University of Hawaii at Manoa (1992)

EXPERIENCE: I have been employed by the Public Utility Commission of Oregon since 2009, with my current position being a Senior Utility Analyst in the utility program's Energy Rates, Finance and Audit division.

My prior position at the Commission was as a Senior Telecommunications Analyst, where my assignments included reviewing carrier interconnection agreements, wholesale service quality, and resolution of carrier-to-carrier complaints.

Prior to my utility regulatory career, I worked with AT&T as a loop electronics coordinator, designing and implementing high-speed broadband and fiber optic services in Los Angeles. I have also worked as an outside plant design engineer with Qwest Corporation, and I spent several years as a newspaper reporter with the Honolulu Star-Bulletin.