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IDAHO PUBLIC
UTILITIES COMMISSION

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION)
OF IDAHO POWER COMPANY FOR)
AUTHORITY TO ESTABLISH NEW) CASE NO. IPC-E-17-13
SCHEDULES FOR RESIDENTIAL AND)
SMALL GENERAL SERVICE CUSTOMERS)
WITH ON-SITE GENERATION)

)

IDAHO IRRIGATION PUMPERS ASSOCIATION, INC.

DIRECT TESTIMONY

OF

ANTHONY J. YANKEL

DECEMBER 22, 2017

1 Q. PLEASE STATE YOUR NAME, ADDRESS, AND EMPLOYMENT.

2

3 A. I am Anthony J. Yankel. I am President of Yankel and Associates, Inc. My
4 address is 12700 Lake Ave Suite 2505, Lakewood, Ohio, 44107.

5

6 Q. WOULD YOU BRIEFLY DESCRIBE YOUR EDUCATIONAL
7 BACKGROUND AND PROFESSIONAL EXPERIENCE?

8

9 A. I received a Bachelor of Science Degree in Electrical Engineering from Carnegie
10 Institute of Technology in 1969 and a Master of Science Degree in Chemical Engineering from
11 the University of Idaho in 1972. From 1969 through 1972, I was employed by the Air
12 Correction Division of Universal Oil Products as a product design engineer. My chief
13 responsibilities were in the areas of design, start-up, and repair of new and existing product lines
14 for coal-fired power plants. From 1973 through 1977, I was employed by the Bureau of Air
15 Quality for the Idaho Department of Health & Welfare, Division of Environment. As Chief
16 Engineer for the Bureau, my responsibilities covered a wide range of investigative functions.
17 From 1978 through June 1979, I was employed as the Director of the Idaho Electrical Consumers
18 Office. In that capacity, I was responsible for all organizational and technical aspects of
19 advocating a variety of positions before various governmental bodies that represented the
20 interests of the electrical consumers in the State of Idaho. From July 1979 through October
21 1980, I was a partner in the firm of Yankel, Eddy, and Associates. Since that time, I have been
22 in business for myself. I have been a registered Professional Engineer in the states of Ohio and
23 Idaho. I have presented testimony before the Federal Energy Regulatory Commission (FERC),

1 as well as the State Public Utility Commissions of Idaho, Montana, Ohio, Pennsylvania, Utah,
2 and West Virginia.

3

4 Q. ON WHOSE BEHALF ARE YOU TESTIFYING?

5

6 A. I am testifying on behalf of the Idaho Irrigation Pumpers Association, Inc. (IIPA).

7

8 Q. PLEASE SUMMARIZE YOUR TESTIMONY.

9

10 A. I have reviewed Idaho Power's ("the Company") direct testimony in this case. I
11 agree that the number of Net Metering customers on Schedule 84 (Customer Energy Production,
12 Net Metering Service) are growing rapidly. I further agree that Schedule 84 has moved from the
13 experimental stage and that it is now time to address the costs and benefits that are unique to that
14 schedule. The Company has presented a number of concerns/problems with the way Schedule
15 84 costs and benefits are treated. The Company's proposal is that a Workshop be initiated to
16 address these concerns/problems. I agree with that proposal.

17 My testimony will address some additional concerns/problems with the way Schedule 84
18 is implemented. I also recommend that a Workshop, to address these concerns/problems, be
19 initiated as soon as possible.

20 The Company has proposed two new rate schedules for Net Metering customers—
21 Schedule 6 for Residential customers and Schedule 8 for Small Commercial customers. I do not
22 disagree that these new schedules may be appropriate, but it is premature to establish such rate

1 schedules at this time. After the Workshop, all parties will have a better idea of cost-of-service
2 and appropriate rate design for Net Metering customers.

4 **Overview of Present Schedule 84**

6 Q. Please give a brief history of Net Metering on the Company's system.

8 A. According to the Company, Net Metering was initiated in 1983 for one customers
9 that installed a solar generation system. This initial offering contained in Schedule 86
10 (Cogeneration and Small Power Production Non-Firm) charged this customer retail rates for all
11 net energy delivered to the customer and paid the customer at retail rates for all net excess
12 energy that the customer put into the Company's system.

13 As a result of Case IPC-E-95-15, the pricing structure for Net Metering customers was
14 changed to a formula rate in order to recover certain non-generation costs associated with Net
15 Metering customers.

16 In Case IPC-E-01-39, Schedule 84 was created to separate Net Metering customers from
17 Schedule 86. Additionally, the formula rate was abandoned, because it was too cumbersome to
18 apply to multiple customers. The rate went back to charging simple retail rates for usage greater
19 than generation and crediting the excess net energy (generation that was greater than usage) to
20 offset future billed kWh consumption. Schedule 84 has not been materially modified since.

22 Q. What rationale was employed in Schedule 86 and later in Schedule 84 with
23 respect to Net Metering customers?

1

2 A. The Net Metering portion of Schedule 86 (and ultimately Schedule 84) was
3 designed as an experimental rate that would facilitate the development of small, distributive
4 resources. By employing a simple watt-hour meter and using standard retail rates, administrative
5 and metering cost were kept low and the rate design was easily understood by customers. A
6 possible subsidy was expected, but was considered to be insignificant if the number of Net
7 Metering customers remained low.

8

9 Q. Have things changed since Net Metering was introduced over 30 years ago?

10

11 A. Yes. First, one of the main driving forces for the existing rate design for Net
12 Metering customers was the cost of metering. With only watt-hour meters being the standard for
13 measuring energy usage for smaller customers 30 years ago, and with watt-hour meters having
14 the ability to run backwards, it would have been too expensive to use more sophisticated
15 metering at the time. Additionally, there was an administrative cost burden associated with
16 calculations using this more sophisticated metering. Today, virtually all residential and small
17 commercial customers have AMI metering standard and the associated metering cost is standard
18 as well. The need for using a simple rate design to accommodate a watt-hour meter no longer
19 exists. It is possible to now implement more sophisticated rates.

20 Second, the use of solar based generation has begun to grow rapidly in the Company's
21 service territory. Consequently, the number of Net Metering customers on the Company's
22 system is suddenly growing very rapidly.

1 It is now time to go from an experimental rate that was designed to facilitate the growth
2 of small, distributive generation, to cost-of-service and a rate design that reflects the contribution
3 of these customers to the system's costs and benefits.

4
5 Q. Why do Net Metering customers need to have this cost-of-service review and an
6 appropriate rate design developed?

7
8 A. IPCo has presented a strong set of reasons why on-site generation customers
9 require the same facilities as other customers that simply take one-way service, but do not pay
10 the full cost of those facilities. Basically, on-site generation customers require the use of the
11 Company's generation, transmission, and distribution system. On-site generation customers,
12 especially those relying on solar, reduce their need for energy from the Company or export
13 excess energy during certain hours of the day. During those hours, these on-site generation
14 customers may use the Company's facilities to purchase additional energy/power from the
15 Company, or to send excess energy back into the Company's system. During the times when the
16 customer is generating and is also purchasing energy from the Company, the demand for energy
17 from the Company is reduced from what it otherwise would be. During other hours of the day,
18 these on-site generation customers are not generating, and thus, take energy/power from the
19 Company in a manner that is the same as if they did not have on-site generation.

20 There are standard methods that determine cost-of-service for these non-generation
21 hours. However, there are questions as to how to determine cost-of-service for those hours when
22 these customers are both generating and purchasing some energy and when they are putting

1 excess generation back into the system. An even larger problem is to determine a proper rate
2 design that reflects the total cost-of-service for these customers.

3 Under the present rate design, the net amount of energy purchased in a month (energy
4 provided by the Company less energy generated on-site) is priced at the same tariff rate used for
5 customers that do not have on-site generation. The problem with this treatment of on-site
6 generation customers is most easily demonstrated by the customer that during a given month
7 produces as much excess generation into the Company's system as the amount of energy it
8 separately receives from the Company. When the amount of energy given back to the system
9 during a given month is equal to the amount of energy consumed during that month, the net
10 amount is zero (a net-zero customer). In such a case (under the present rate schedule and rate
11 design), the customer would only pay the customer charge, with no payment made to reflect the
12 fact that the generation, transmission, and distribution facilities were all used to support the
13 energy being brought to the customer as well as distributing the excess energy that is made at
14 other times.

15 It is intuitively obvious that such a customer is essentially paying nothing for its use of
16 the generation, transmission, and distribution system for every hour during the month. Although
17 the Company provided a great deal of information in its filing, this hearing is not the forum to
18 address that issue. It will take more effort than what has been put into this case. The Company's
19 recommendation to establish a Workshop to address these issues is on point. Given the recent
20 rapid rise in on-site generation, I recommend that a new case be initiated, and a Workshop
21 started as soon as possible.

22

1 Q. Should this Workshop just focus on costs and problems with on-site generation
2 that have already been mentioned by the Company?

3

4 A. No. Certainly, the costs and problems with on-site generation that have already
5 been mentioned by the Company should be further reviewed and quantified. I assume that
6 additional problems will come to light and they will need to be investigated and addressed as
7 well. I am aware that there are also system benefits associated with on-site generation that have
8 not been addressed in the Company's direct testimony. I assume that these benefits will be
9 brought up by other parties. These benefits will need to be investigated and addressed as well.
10 The entire cost-of-service (cost and benefits) needs to be addressed and then an appropriate rate
11 design must be developed that recovers costs (less benefits) in a manner that is understandable
12 by all parties, including the customers.

13

14

Additional Problems

15

16 Q. Are there other problems with the present customers on Schedule 84 that
17 were not addressed in the Company's filing, but require consideration?

18

19 A. Yes. The Company's filing brought up several problems that need to be
20 addressed with respect to the customers on Schedule 84. The Company did not try to
21 address or quantify these problems in a detailed manner, but presented them as issues that
22 support the need for a Workshop for all stakeholders to thoroughly address those issues.

23 I want to add the following additional issues that need to be addressed:

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Homogeneity of Customers on Schedule 84

Q. Are the customers on Schedule 84 homogeneous?

A. No. Most of the discussion in the Company’s case, as well as the discovery requests and responses, deal with on-site generation that is solar based. In fact, Schedule 84 is not limited to generation based upon solar. Solar based generation facilities have unique characteristics that are predictably the same from facility to facility. Solar generation only takes place when the sun is shining and the more the sun shines or its energy is captured, the more it will generate. This means that solar generation is available every day during daylight hours—depending upon the available solar radiation. This also means that solar is not available during nighttime hours and is less/minimally available when the sun is rising, setting, or obscured by clouds.

Exhibit 301 lists the annual net metered kWh for 563 Schedule 84 customers from 2016.¹ At least four of those customers had excess energy being put into the IPCo system during more than just daylight hours. For example:

- Customer 35 had excess for 100 continuous hours between Jan. 26 and 31
- Customer 73 had excess for ~117 continuous hours between Feb.1 and 6²
- Customer 352 had excess for 449 continuous hours between Jan. 1 and 19
- Customer 535 had excess for 32 continuous hours between Jan. 8 and 10

¹ Data from IPCo Response to Volt Solar’s Request No. 59, Attachment 2, Tab Original reflecting usage of all net metering customer for which 12 months of data was available for 2016.

1 Over 99% of the customer data from 2016 appears to be solar bases. It would be best to
2 address this 99% of the Net Metering customers and to separate/remove the outliers that
3 are not solar based. Although these four customers listed have self-generation, the
4 magnitude of the generation consistently exceeds their internal loads during almost all
5 hours and not just when the sun is shining. The net result is that these customers act
6 more like Cogenerator and Small Power Producers. The Workshop should consider
7 pricing these customers like that used for Schedule 86 customers.

8

9 **Generation During Times of System Peaks**

10

11 Q. Do solar facilities under Schedule 84 generate during all of the Company's
12 system peaks?

13

14 A. No. There is little or no generation that takes place during some of the
15 monthly winter system peaks. For example, because of the timing of the monthly system
16 peaks, the following winter peaks would have little, if any, solar radiation, and thus, there
17 would be little or no solar generation:

18	February 2, 2016	8:00 a.m.
19	November 30, 2016	7:00 p.m.
20	December 19, 2016	9:00 a.m.

21 Add to this fact that there often is more cloud cover during the winter months and the
22 solar radiation is even less, and thus, solar generation is less during the morning and late
23 afternoon hours.

² Only 3 hours did not have excess generation.

1

2 Q. In this case, is there a way to qualify the lack of solar radiation during the
3 winter months compared to the summer months?

4

5 A. Yes. Exhibit 301 ranks these 563 Schedule 84 customers from 2016 by the
6 annual amount (far left two columns) of excess net energy each customer puts into the
7 system, down to the highest amount that the customer used above the amount generated
8 (highest amount of excess net energy down to the highest net amount consumed). The
9 Exhibit also lists, by month, the same ranking of customers from highest amount of
10 excess net energy down to the highest net amount consumed. It can be seen from the
11 Exhibit that there are fewer customers with excess net energy during the winter months
12 than during the summer months. The following table lists the number of customers each
13 month that provided more net energy for the system than was consumed by the customer:

14

15

		Table 1											
		Number of Customers With Excess Generation											
		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Cust.		10	55	96	232	239	175	155	152	174	63	28	3
%		1.8%	9.8%	17.1%	41.2%	42.5%	31.1%	27.5%	27.0%	30.9%	11.2%	5.0%	0.5%

16 From Table 1 it can be seen that net-excess energy is produced by 10% or less of the Net
17 Metering customers during the four winter months—dropping as low as 0.5% during
18 December. The Company’s cost-of-service study in the last rate case segregated
19 production demand and energy costs into Summer (June, July, and August) and Non-
20 Summer (the other nine months). The Workshop should develop a more granular
21 differentiation of production demand and energy costs for the Solar Net Metering

1 customers, because the number of customers generating excess are significantly different
2 between the various 9-months that the Company defined as Non-Summer.

3

4 Q. Are there any other differences in the monthly patterns of the Net-
5 Metering customers that needs to be addressed in the Workshop?

6

7 A. Yes. Similar to the number of customers that have net excess energy in
8 any given month, the amount of net excess energy by month is something that needs to be
9 addressed. Table 2 lists the amount of excess net energy (MWh) that was put into the
10 system by these same 563 customers during each month in 2016:

11

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
10.1	21.7	37.4	118.2	122.5	93.8	81.7	72.3	71.9	24.8	20.2	11.4

12 This monthly pattern of excess Net Energy, along with present rate design results in
13 inappropriate cost shifting. Presently, all excess net energy in a given month is carried
14 forward into the future and not compensated for in the month it was generated. The
15 excess net energy is used to offset future kWh purchased energy/usage by a given
16 customer. From Table 2 it can be seen that the highest months of excess net energy are
17 April and May. These are the months when wholesale power costs are at their lowest and
18 there are times when there is so much excess energy in the region that Idaho Power must
19 pay others to take the excess energy (negative sale price). It is inappropriate that during
20 these times of low energy costs that some of the Net Metering customers would be
21 banking their excess net energy to save it as an offset to their usage during the high cost

1 summer months or some other time in the future. Hopefully, this can be addressed in the
2 Workshop.

3

4 **Recommendations**

5

6 Q. Do you have any specific recommendations that would correct the
7 problems that you have cited?

8

9 A. No. The Company has pointed out a number of problems in its direct case
10 and has not made specific recommendations regarding the resolution of those problems. I
11 assume that other parties will raise concerns regarding other costs and/or benefits of Net
12 Metering. In the aggregate, all of these concerns/problems should be addressed in a
13 Workshop and cost-of-service methodologies and rate designs that appropriately address
14 these problems/concern should be developed.

15 Q. Should the new Schedules proposed by the Company be implemented at
16 this time?

17

18 A. No. The Company has proposed two new rate schedules for Net Metering
19 customers—Schedule 6 for Residential customers and Schedule 8 for Small Commercial
20 customers. I do not disagree that these new schedules may be appropriate, but it is
21 premature to establish such rate schedules at this time. After the Workshop, all parties
22 will have a better idea of appropriate rate schedules and rate design for Net Metering
23 customers.

1

2

Q. Does this conclude your direct testimony?

3

4

A. Yes.